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# Geomagnetic Results, Secular Variation, and Archaeomagnetic Chronology, United States and Mesoamerica, including Archaeomagnetic Data and Time Assignments

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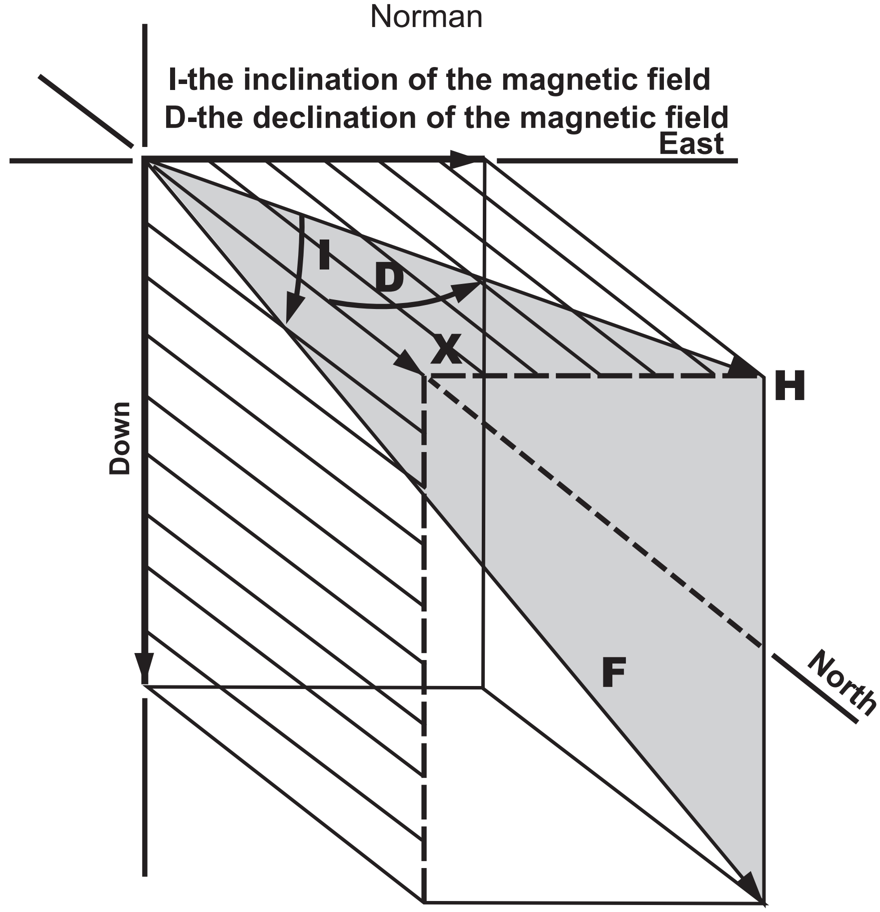


**F-the vector direction of the magnetic field**

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## ABSTRACT

Magnetic measurements of ancient materials reveal that the earth's magnetic field for the last 10,000 yrs—changes in direction, declination and inclination, and intensity. The archaeomagnetic results are based on ~2,000 fired features sampled in the Midcontinent, the American Southwest, Mesoamerica, and a few other areas. Data were plotted as archaeomagnetic poles grouped by area and time range, and then were drawn as average magnetic polar curves. Average values of declination and inclination enable comparison of data at various times and areas. The archaeomagnetic polar curves have a cloverleaf pattern circumscribing the earth's axis of rotation and forming loops that extend outward from the axis between lat 75ºN. and lat 90ºN. (the north geographic pole). An average pole position for the Southwest data set is calculated to be near the north geographic pole or axis of rotation but displaced to the near side.

Data for the Southwest show maximum extensions for the polar curve about A.D. 500, 850, 1100, 1350, and approximately 1850. Between A.D. 850 and A.D. 1100, a large change in polar position occurred—~23° of subtended angle—a shift of perhaps 1° every 6.5 yrs. During the same time, declination changed from 10° E to 15° W; change in inclination was 43° to 64°. Geomagnetic intensity ranged from 1.4 to 0.75 times that of the present day.

A field intensity of 1 (i.e., the intensity we know today) coincided with times when the ancient geomagnetic field aligned with the earth's axis of rotation or nearly so. Assuming an intensity of 1 and the archaeomagnetic pole at lat 90ºN., and using archaeomagnetic field-intensity data and the average archaeomagnetic pole positions (the direction and intensity of that part of the field left after subtracting the axial part) permits calculation of a nonaxial component. That part of the field varies in intensity from +0.5 to −0.2 times that of a field of 1 and in direction from essentially north polar to south polar—lat 90ºN. to lat 90ºS.

Results for the Midcontinent resemble those from the Southwest. From a special group of results for times before A.D. 500, a selected set from 7800 B.C. to 6300 B.C. yields polar curves extending from the axis of rotation almost to lat 70ºN. No results from older samples suggest other than a normal geomagnetic field with north polarity.

Results from Mesoamerica resemble those from the United States, with expected variations. The curves of wandering by the magnetic pole circle the geographic pole, but generally remain above lat 80ºN.

Changes of declination and inclination in time and geography are illustrated in a series of maps (based upon the average archaeomagnetic pole positions given in this report): for the Southwest, time periods are represented from A.D. 400 to A.D. 1965; for the Midcontinent, from A.D. 200 to A.D. 1965. The combined area extends across the continent from long 80ºW to long 114ºW and from lat 32ºN to lat 40ºN.

## INTRODUCTION

### Secular Variation

Geophysicists have long been interested in secular variation in the earth's magnetic field and how it relates to changes in physical and thermal features of the earth's interior. However, studies have been few. Many observatories around the globe have reported direct measurements of the geomagnetic field for the last few hundred years: Bauer (1895) recorded early data from London, Paris, Rome, and elsewhere. Malin and Bullard (1981) reviewed data concerning the direction of the magnetic field from 1570 to 1975 at London. The number of records decline with age of observation, and continuous records are scarce.

Archaeomagnetism yields information about direction and intensity of the field during thousands of years in the past. Research involves measuring magnetism in baked-clay samples collected as oriented pieces from archaeological sites. Given reliable assignment of age, it provides historical details of secular variations.

Secular variation includes changes in direction, declination, and inclination. Direct measurements of the geomagnetic field suggest that these changes range from a few tenths of a degree over 1 to 10 yrs, to a few degrees over decades; changes in direction of 10º–30º over a few hundred years have been recorded. Changes in the direction of the geomagnetic field may reflect changes in earth's fluid core or solid inner core, or at the core-mantle boundary. Electrical features of the inner core and at the core-mantle boundary may be involved. Changes in thermal properties of the fluid core are important in generating the magnetic field, but perturbations and time and frequency considerations are most important in bringing about major changes in the field, shifts in intensity, and reversals. Smaller changes in the magnetic field may have extraterrestrial causes—notably the effects of solar wind on earth's magnetosphere.

Archaeomagnetic data for the southwestern United States presented here indicate changes in declination and inclination of ~10º in 100–300 yrs, ~20º in 500 yrs, and ~30º in ~1,350 yrs. These variations at the surface represent changes in the earth's interior. In studying such a field, it helps to think of it as having both a simple—axial—component and also a more complex—nonaxial—component, coupled with a local to regional geologic contribution. In this model, the main field would have a dipolar part of consistent intensity along the axis of rotation and a secular part with variable intensity and direction.

The treatment in this work was suggested by paleointensity data that the had varied in intensity by a value of about 1 over the last ~2,000 yrs. Also, the archaeomagnetic polar curves circle the axis of rotation, and calculations show an average position that coincides closely with the north pole over the same period. The question posed is: "What would the values of direction and intensity be if an axial component of intensity 1 is subtracted?" That is, subtract a consistent long-term component, leaving the variable. Of course, the sample in time is highly selective and may not be representative of the long history of the earth's field.

Geologic contributions to the earth's field arise from magnetic, electrical, and thermal anomalies in the crust and distort the internally derived field. The main component probably is generated in the electrically conductive fluid core, but a more variable component may be generated in outer parts of the core or near the core-mantle boundary. One effect could be a regional aspect of secular variations in the global field.

## Earlier Studies

Glatzmaier and Roberts (1995) performed a computer simulation of the earth's magnetic field in three dimensions. Their numerical model of the geodynamo, simulating ~40,000 yrs of geomagnetic activity, demonstrated several polarity excursions, and—near the end of the model run—a reversal of the field. The model specifies a finitely conducting inner core that provides magnetic torque between the inner and outer core, and also magnetic torque in a thin conductive layer between the outer fluid core and the mantle. (The mantle is an insulator.) The torque provides time dependency in rotation rates between the inner core and the fluid outer core, and also between the outer core and the mantle—leading to secular variation of the magnetic field.

The controlling features would be the electrically conductive inner core that contributes to stability and also to variation of intensity and frequency; the fluid outer core that contributes to general field characteristics; and the thin conductive core-mantle boundary zone that contributes to variations in intensity and frequency.

Effects of the inner core and core-mantle boundary areas may be regional; those of the inner core, global. The rate of change in the surface field during a field reversal suggested by Glatzmaier and Roberts (1995) is ~0.01º/day; that agrees generally with rates found in the present study. However, their annual rate is ~4º; the present study suggests 0.1º–0.6º (with some slower periods).

More than four decades ago (DuBois, 1967) presented a preliminary archaeomagnetic polar curve (and the individual pole positions used to construct it) for the period A.D. 200 to modern time. Plotting pole positions provides good geographical control for polar curves. Computer methods—such as averaging pole positions of similar times to obtain a pole for a given time—can be used to develop polar curves, but they tend to produce a smoothed version devoid of fine-scale secular variation structure. With good chronological control, a geographical curve preserves fine-scale changes in secular variation. With such geographical curves, smaller-scale time designations might be used to derive specific times.

The 1967 preliminary archaeomagnetic polar curve was used by the author to study secular variation until 1970, when new data suggested that archaeological sites in New Mexicoat Canyon de Chelly, at Chaco Canyon, and in the Santa Fe area dated approximately from A.D. 1100 to A.D. 1200. For some sites, that was ~65 yrs earlier than previously thought. Because of agreements with collaborating archaeologists regarding use of the data, as well as uncertainties about time sequences for particular samples, the data were not published. Some results were tabulated and sent to supporting agencies with the understanding that the data were not for publication. At the insistence of the agencies, the pole positions and α95 values originally listed were changed to values of time and an estimated parameter derived from the α95 values while using a rate of change along the polar curve of 1° per 10 yrs. These values were simply time positions along a curve and the intersecting positions of the cone of confidence, and they were understood as such by the agencies. The values were intended only as preliminary examples, not as final results to be tested rigorously.

By early 1980, the DuBois archaeomagnetic polar curve of 1967 had been updated for use in the author's laboratory and had been discussed at scientific meetings. Time designations for both the DuBois (1967) curve and its updated version were from archaeologists, who used various chronological tools. As chronological information was updated, so were the time designations on the polar curves.

Eighmy and others (1980, p. 516) note "no major discrepancies with the DuBois curve" (as published in DuBois, 1975), thus supporting the DuBois curve of 1967. McGuire and Sternberg (1982) accept the DuBois curve of 1967, although they think it should be smoother and with fewer zigzags and loops. (Characteristics of a polar curve depend somewhat on the methods used to construct the curve as well as on the number of samples and their distribution.)

Data by Hathaway and others (1983) for A.D. 700–900 suggest a polar path quite different from that of DuBois (1967) but in the same general geographical location. Individual pole-position data are not given, but only their averaged pole positions, so it is difficult to compare this work directly with that of DuBois (1967), which did plot individual pole positions. (It would be possible to calculate pole positions from declination and inclination values published in Hathaway and others [1983].)

In April 1987, DuBois presented an updated preliminary polar curve at the NATO advanced research workshop in Durham, England. Thus, the updated preliminary polar curve, as published in DuBois (1988, 1989), is referred to here as the 1987 curve. Detailed plots in DuBois (1988, 1989) show the distribution and number of poles used to define the curve. Also included in DuBois (1988, 1989) is the original DuBois (1967) curve and its data points (for comparison with the updated curve), as well as a discussion of the large Chaco Canyon data set and associated α95 values and their effects on results.

Based on time designations provided by archaeologists, some samples best fit the DuBois curve of 1987; a few others seem to fit the DuBois curve of 1967. As most seem to agree with times on the 1987 curve, the 1987 curve is used in this report. The differences in time on the 1967 and 1987 curves may not be real, or they could result from a very slow rate of change along the polar curve, or from a small loop in the polar curve about A.D. 1100–1200. The rate of time change along the polar curve varies, as shown by the DuBois curves of 1967 and 1987 and by small loops in the curves.

Eighmy and Doyel (1987) used dates for Hohokam that have never been published by DuBois because of their preliminary nature and also uncertainties in curve development and the ages used. In the paper, they compare the DuBois 1967 curve (as published in DuBois and Wolfman [1970]) to the SWCV 386 curve created at the Colorado State University Archaeometric Lab. The author's own comparison of the two curves suggests an approximately 65- to maybe 100-yr difference about A.D. 1200. This preliminary earlier time correlation was suggested to various archaeologists quite a while before the author had collected enough data to support publication of the 1987 curve (DuBois, 1988, 1989).

A comparison of the DuBois curve of 1987 for the southwestern United States with the Eighmy and Doyel (1987) curve shows some similarity in shape. Some differences may be related to the methods used to produce the curves. At some points on the curves, time designations differ by ~50–100 yrs, but the positions of A.D. 1100 seem to be in approximate agreement.

Doyel and Eighmy (1994) compare the DuBois curve of 1967 (as published in DuBois, 1975) with the SWCV590-CSU curve of Eighmy (1991) and note the difference in time designation about A.D. 1100–1200. They cite DuBois (1989), which contains the 1967 and 1987 curves and their data points. The SWCV590 position and time marks given in Doyel and Eighmy (1994) are similar to those of the DuBois (1988, 1989) curve.

Archaeomagnetic results obtained by different laboratories should agree, provided that field methods were proper, enough specimens were collected, and laboratory work was done correctly. Secular variation and time relations should agree. Polar curves should have roughly the same shape, though details may depend on methodology.

The archaeomagnetic data should yield a pole position—a point almost at the north pole—the axis of rotation about which the secular variation might average out. If enough data are available to describe secular variation properly—that is, the fine structure is not lost in curve smoothing—the database can be used for chronological purposes. Then its applications can be assessed and its limitations noted.

## PROCEDURES AND INITIAL LABORATORY STUDY

### Sample Characteristics

For this study, magnetic measurements were made of ~2,000 sets of baked-clay samples collected from in-place fired features at ancient Indian sites. Multiple oriented specimens were collected from hearths or roasting pits. Plaster walls, floors, and post-hole rims were also sampled if they had been fired. Hearths, the most common feature sampled, generally were 15 cm to 1 m in diameter and 10–50 cm in depth. The baked clay occurred in layers a few millimeters to 10 cm or more in thickness, usually baked harder than nearby ground; it generally consisted of clay- to silt-size particles, but locally it contained small rock fragments. Features sampled ranged from a baked layer of soil at very old sites to artificial features with a lining of pottery-like material.

We assumed that the baked clay had acquired magnetism at the time of firing, and that the direction of magnetism paralleled the magnetic field that imposed it. More important was uniformity of the magnetic field and its local distortion. Samples should indicate the direction and intensity of the earth's field at the site, and also enable use of the local magnetic field in orienting specimens. To study the local field, we ran magnetometer surveys at many sites during the first stage of collection. We found no distortion of the earth's local field, nor any strongly magnetized mass that would disturb the local field in any of the areas we studied. (Such local distortion must be assessed for each collection area, especially in volcanic or other igneous terrain.) To assess distortion of the very local field around individual features, magnetic gradiometer readings were made next. Strongly magnetized material within a hearth would be detected if it deflected the needle of a compass used for magnetic orientation when samples were collected. In the Southwest, no magnetism of a hearth was detected intense enough to cause problems, nor appreciable distortion of the local field. Similar studies at some sites in Mesoamerica did reveal local field distortion—which was attributed to nearby volcanoes or lava flows—but baked-clay features sampled there did not distort the local field. Tectonic movement was not considered a problem in the Southwest, but in Mesoamerica recent faults and soil movement were noted.

Specimens from a baked feature consisted of small columns of baked clay, each 3 cm in diameter and ~3 cm in length. The size was large enough to yield a record of the magnetic field and small enough to assure enough individual specimens for a representative sample from a hearth of average size. (The presence in some baked clays of foreign rock fragments that could distort the magnetic field, would limit the minimum size of specimens. In such cases, small specimens would not provide reliable data on magnetic field directions; larger specimens would minimize the magnetic effect of foreign inclusions and be preferable.)

## Sample Collection

For each specimen, excess material was cut away from the perimeter of a column of the proper size but left it attached to the ground. Then a rim of nonmagnetic modeling clay was placed around the base to seal the plaster and keep the mold in place. (If the column was disturbed during collection, it was discarded.) Next, a nonmagnetic 43-mm cubic mold was placed over the column and pressed into the seal. At first the mold was oriented with a special orienter (a compass—containing a Brunton-like needle—mounted on a brass cage), a diagonal of the cube being aligned with magnetic north. As the demand for our collection equipment became greater, we began aligning the vertical axis of the mold using a cross-test level, the magnetic azimuth of one edge of the mold being measured with a Brunton compass. Either method produced good results, but the orienter did not require a separate Brunton, and it also proved reliable and consistent; when carefully used, it proved accurate within 0.25º. A Brunton was generally accurate within 0.5º and sometimes within 0.25º. Vertical measurements with a cross-test level generally were accurate within 0.5º, though special levels enabled greater precision.

Each cross-test level, Brunton, and orienter was calibrated in the laboratory. The plaster was tested for magnetism, and then rebagged in 10-cube quantities; it was discovered early that some plaster was contaminated magnetically.

After orienting the mold, the space around the column and in the mold was filled with plaster, and allowed to set before taking orientation measurements. After the mold and the enclosed specimen were separated from the ground, the bottom of the mold was cleaned and sealed with plaster. A sample set from a feature consisted of 8–20 individually oriented specimens. (Sets of 8–10 specimens produced good results, but the margin for error was small. Larger sets provided cubes for additional laboratory tests as well as preserving specimens for future study.) Before removal from its mold, each cube was marked with orientation, cube number, and feature name.

## Sample Processing

*Cleaning and demagnetization*

In the laboratory, surfaces of specimens arriving from the field often were contaminated by magnetized particles from the fired clays. Thus, every cube was meticulously brushed clean by hand with a plastic-bristle brush.

Magnetism of each specimen was measured by magnetometer—astatic, spinner, or cryogenic. During early stages of the program, only the astatic type was used. Later, most measurements were by spinner magnetometer; earlier astatic results were checked also. Later yet, a cryogenic magnetometer was used. Repeated measurements by spinner magnetometer typically gave an $\alpha 95$ cone of confidence of 0.1°–0.3º in radius. (The $\alpha 95$, a statistical parameter, is the radius of a cone of confidence about the mean that would contain the true mean 95% of the time.) Multihearth comparison of the same feature, two or more sample sets collected from the same hearth, or features of the same age from the same site, gave means differing in direction by <0.5º.

After physical cleaning, each sample in each set was measured (except for cubes to be preserved as pristine) to obtain the direction of natural remanent magnetism (NRM)—the data being used to establish a preliminary procedure for magnetic cleaning of the set. The set was magnetically tested for stability and cleaned using either thermal methods or alternating-field (AF) demagnetization in a progressive sequence. Because a steep thermal gradient was associated with most specimens, and also because of risk of chemical change, thermal demagnetization at high temperature was avoided. AF demagnetization was used throughout the process. As the original NRM was surely contaminated, selected subsets were subjected incrementally to tumbled demagnetization.

A procedure that found the "best grouping" and/or consistent final direction during demagnetization, was used. Typically three to six cubes from each set (about a third of the set) were taken for initial AF processing. Fields as high as 3,000 G P-P were used in cleaning (1 T [tesla] = 104 G [gauss]; P-P = peak to peak.). Many sets required as much as 1,600 or 2,400 G P-P. Many sets could be cleaned satisfactorily at 400 G, but others required higher fields to reach stability.

The AF unit was mounted at the center of three pairs of Helmholtz coils calibrated to cancel the earth's magnetic field. The cube was locked into a container that could be rotated about two axes simultaneously. Tumbling the specimen about the two axes randomized the demagnetization on all three axes. The gearing and the rotation mechanism were chosen so as to give a uniform trace around all faces of the cube with 60-cycle current. A ramp function was used to increase the demagnetizing field progressively to the maximum value. The peak field was held for some time; then a second ramp function returned the field to zero.

Computer simulation of the demagnetization unit's ideal performance, including application of the demagnetizing field and rotation of the tumbler, gave a vector summation of very nearly zero. Cubes were inserted randomly at various stages, helping to ensure that any magnetic moment added by the AF unit would be essentially random. AF cleaning without tumbling distorted results by magnetizing the cube in a definite direction. Also, incomplete cancellation of the earth's field during AF demagnetization could add a distorting magnetic moment. The direction of the residual magnetization can be reversed at AF demagnetization levels as low as 800 G. Although not usual, a substantial magnetic moment can be imparted during AF demagnetization. Experiments confirmed that all samples must be magnetically cleaned of low-stability components or tested for their presence to give reliable information. Many samples contained viscous remanent magnetization

(VRM), and some, particularly from Mesoamerica, contained isothermal remanent magnetization (IRM)—probably caused by lightning.

The final mean direction of a set of cubes could be determined by mathematical methods including minimum-alpha technique, lost-vector analysis, search for a stable endpoint direction, and principal-component analysis. The last method seemed slowest but most useful. For some baked-clay features, analyzing the results from a three- to six-cube subset, and cleaning the remaining cubes under optimum conditions, produced acceptable results. Because the maximum temperature of firing varied from cube to cube and from hearth to hearth, no one cleaning method served in all cases.

The steep thermal gradient associated with many hearths meant non-uniform heating and therefore non-uniform magnetism. Often the optimum cleaning conditions for hearths varied from cube to cube even in a given set; the best results were obtained by using directions from individual cubes that had been cleaned at different AF values. It can be argued that since there was a substantial thermal gradient across a fired hearth and its associated variation in magnetic properties, not all specimens would acquire the same secondary magnetization. For a cube taken at the fire interface, a 200 G cleaning may remove 80% of the contamination and 5% of the thermally induced magnetism; for a specimen taken farther out, the same demagnetization level may remove 80% contamination and 80% or more of the thermally induced magnetism.

Thus, the best grouping and the truest direction would be derived from the best results for individual cubes from all demagnetization levels. Example: cube 1, NRM; cube 2, 50 G; cube 3, 150 G; cube 4, 400 G; cube 5, NRM; cube 6, 150 G; cube 7, 200 G; cube 8, 400 G. The best result here might mean the stable direction or the tightest grouping. This method yields a very low or minimum dispersion for the group, but determination of the average direction is slow and requires that each specimen be progressively cleaned.

In processing large sets, we tried to preserve some cubes exactly as they came from the field—never cleaned. Also, in some sets, cubes were preserved with no processing, as even basic measurement could change the magnetism. Generally, 8 to 10 cubes yielded statistical values sufficiently precise for acceptable results; thus, if 20 cubes had been collected, 10 cubes could be preserved for future study.

For data in the tables (see Appendixes 1–12), the final direction for a set was obtained either from the NRM or from demagnetization of a set of 6 to 12 cubes. The demagnetization level chosen was usually the level for which the small subset had the closest grouping. If the grouping did not change with demagnetization level, the entire set was sometimes demagnetized at multiple levels and the best grouping taken as representative. Occasionally a cube was eliminated from a set, because its direction differed too much from the directions for the rest of the set. The decision to exclude the results from a cube was made by a computer program after measurement at all levels and during computation of the average for the set. If a cube's angular variance was too high, it was discarded and the average recalculated; however, both averages were kept for presentation in computer output. The threshold for rejection, drawn from Grubbs (1949), was set to keep all cubes in the 90% distribution. The procedure generally changed the mean direction by a degree or two, but it made the overall results easier to compare and prevented outliers from distorting results.

*Storage of specimens*

Laboratory storage of specimens proved important. During initial processing, the direction of the first cube measured was likely to differ from the rest of the set at NRM, but the difference usually disappeared after initial demagnetization at 25–50 G. At first the magnetometer was suspected, but later it was recognized that the problem was in storage. Samples were stored in cabinets for periods of a few days to two months before measurement—enough time for the specimens to acquire substantial IRM from the magnetic field in the laboratory. When cubes were taken from storage and placed in the magnetometer with its canceling coils, the IRM began to decay. The first measurement showed that the cube had barely begun to lose its acquired IRM; cubes measured later had lost enough IRM to group tightly and differently from the first cube, suggesting a decay time on the order of minutes for low-level IRM.

The angular variation observed was ~2°–5º in extreme cases—enough for concern. Afterwards, all cubes were stored in field-canceling coils or in a shielded room for a few hours before measurement. As IRM acquired in storage was unstable, demagnetizing removed it along with any acquired during later processing.

## Dating of sites and samples

A vital aspect of the work was the dating of sites and samples by archaeologists. Their methods involved archaeological context, radiocarbon analysis, tree-ring analysis, historical records, and stratigraphic control.

Dating also depended on interrelationships of the material dated, the fired area, and the time of firing. It can be difficult to reconcile ages of material obtained from radiocarbon or tree-ring analysis, and this is also true for the time of firing that magnetized a sample. The exact level of a carbon sample may be hard to determine. A tree-ring sample may be from a log used in associated construction, or from a reused log, or from a new log used in repair. A hearth may have been used continuously for many years after construction, it may have been remodeled, or its use may have been interrupted (temporarily abandoned) and then resumed after the site was reoccupied.

Sometimes ages were assigned at the request of an archaeologist, who subsequently used this information to date other features before they were sampled. So there was a risk of circular reasoning. Recourse was in the use of multiple results, that is, obtaining duplicate sample sets from numerous features of similar age for comparison.

### Experimental Hearths for Study of Firing Conditions

To study firing conditions, we built and fired our own hearths at the laboratory ( see laboratory samples 327–329 and 914–923, Appendix 7). We also refired ancient hearths, placing thermocouples outward from the fire-hearth interface at intervals up to a meter away, and determined thermal gradients (see laboratory samples 103, 109, Appendix 2. When hearths were fired up to 48 h continuously, thermal data suggested a temperature of ~600ºC at the fire-hearth interface and a "normal" ground temperature 50 cm away. There was a steep thermal gradient across the fired zone that depended, in part, on duration of firing and thermal conductivity of the hearth's material. After a hearth had been fired for only a few hours, a temperature of 100ºC was measured only a few centimeters from the interface. Some samples showed that the temperature had been high enough—perhaps 800ºC—to partly fuse the clay-like material. The experiments revealed variations in temperature of firing in ancient hearths and in their thermal gradients, and helped to establish laboratory routines for processing samples.

Some hearths showed the thermal gradient as bands of color—red, orange, and buff through brown, gray, and black. The thickness of the colored layers ranged from a few millimeters to a few decimeters. The colors reflected chemical changes associated with oxidation-reduction during firing; other factors affecting color were chemical composition and mechanical content of water, oxygen, and carbon.

Magnetic effects of firing were also studied at the experimental hearths. Specimens demonstrated that magnetic intensity increased with temperature of firing. The magnetic direction consistently paralleled the existing field at the hearth site (specimens 914–923, Appendix 7). Unfired samples, collected from a hearth before firing, showed low intensity and a direction of magnetization that was scattered, but consistent with the local field.

Color change associated with firing of the hearth suggested formation of chemical remanent magnetization (CRM) in addition to thermal or partial thermal remanent magnetization (TRM and PTRM, respectively). The magnetization had been acquired by ferromagnetic grains, whether or not newly formed by chemical change in the baked clay. Detrital remanent magnetism (DRM) was suggested by measurements of unfired hearth material; it probably resulted from natural causes or hearth construction. Refiring or repeated firing of the hearth in ancient times may have increased the PTRM component. Refiring may not have affected the CRM or TRM if the temperature was low. If a later firing temperature was high enough, it could alter the magnetism or produced new TRM or even CRM. Specimens from cooler parts of a hearth with a steep thermal gradient could preserve magnetism formed earlier by intense firing (specimens 103 and 109, Appendix 2). Depending on the temperature, subsequent refiring of outer areas might affect only extant PTRM and not earlier CRM.

The CRM in the baked clay results from both dehydration and oxidation of hydrous iron associated with clays and other iron-bearing minerals. Color changes in the fired area are the result of firing or may be an original reddish material that remains after firing. Multiple firings of the hearth would cause changes in the direction of magnetism at progressively greater distances from the fire. At a particular distance, changes in magnetism would occur in the ferromagnetic fraction with unblocking temperatures below the temperature gradient—the unblocking temperature depending on the chemical composition and grain size. (Finer grains have a lower blocking temperature—the temperature at which grains acquire magnetism during cooling. At the unblocking temperature, grains lose their magnetism during heating. Such temperatures are below the Curie temperature of the magnetic fraction.) Posthole rims and plaster areas of floors have chemical and thermal histories similar to a hearth, but they may not undergo repeated firings.

Baked clay collected from the hearths was usually quite uniform, because the material used in hearths and their liners had been carefully selected by the builders. The material was generally fine grained, but here and there it contained pebble-sized rock fragments. Depending on their magnetic properties, inhomogeneities can distort the magnetic information obtained from a specimen if the firing temperature was not sufficiently high. To minimize the magnetic effect of inclusions, the firing temperature must have exceeded the blocking-temperature spectrum of the ferromagnetic minerals in them.

To study the magnetic effects of inclusions, both strongly and weakly magnetized rock fragments were fired in a prepared hearth (laboratory samples 914–921, Appendix 7). Fragments having a high blocking temperature and strong magnetization affected the measured direction in their enclosing cubes. Such fragments could affect the results obtained during magnetic cleaning of samples, particularly those fired at low temperature.

### Example of Processing

For an example of laboratory processing, consider sample 1620 from Pueblo Alto, Chaco Canyon (Appendix 4). The cleaned set of 12 cubes was initially stored in a magnetic field of zero. All 12 were originally measured as received or NRM. Cubes 9–12 were preserved as received for future study. Cubes 1, 3, and 4 were progressively demagnetized in a tumbler system at 50, 100, 150, 200, 400, 600, and 800 G.

As the results were consistently alike, except at 800 G (alike in direction of the group and α95 values), cubes 2 and 5–8 were demagnetized in the same way, except that the 800 level was omitted. Results at 800 G for the original three cubes indicated that the group was growing larger, as shown by an increase and large α95 value—16.5°.

After demagnetization, the set averages were calculated for the six demagnetization levels. Values of α95 (measures of dispersion) for the sets were: 1.5º at 50 G; 1.2º at 100 G; 0.7º at 150 G; 0.6º at 200 G; 1.2º at 400 G; and 4.4º at 600 G. (The group gets tighter, then expands after a minimum.) The results at 150 and 200 G were selected as final. The difference in pole position between the two was 0.6º in latitude and 2.3º in longitude—a difference of ~5 yrs in age using a typical rate of change in time and position along the polar curve.

### Lost-Vector Analysis

Another mathematical method is lost-vector analysis—considering magnetism as the vector removed during demagnetization. If demagnetization removes only simple magnetism acquired during a single magnetizing event, the magnetism lost between various demagnetization stages would be a single component, the same as originally acquired. To test the concept, we looked at various lost vectors calculated for the sample lost from NRM at 50 G, and also at 50–100 G, 100–150 G, 150–200 G, 200–400 G, and 400–600 G. Data for 200–400 G yielded the tightest group with an α95 value of 1.8º. The pole position for this vector was similar to that for the set demagnetized at 200 G. The difference was ~2.3º in latitude and 7.4º in longitude, or a difference in time of ~10 yrs. That suggests a single short-lived magnetization event.

### The Running Mean Method

To develop average archaeomagnetic polar curves, polar data from individual sets were grouped together using graphical averages or running means. (The term “archaeomagnetic pole” follows the example of “paleomagnetic pole” [Irving, 1964].) The procedures were applied to the plotted polar data for broad temporal and geographic groups and processed by computer.

In the running-mean method, averaging windows of 1º were used with successive windows overlapping by 0.5º. The resulting averages were then linked into one continuous curve—basically a computerized geographical averaging of pole positions according to location.

Time-controlled averaging for a particular group was not used because of uncertainty about the ages of many individual features. A time-controlled averaging method uses ages provided by archaeologists to group data, which are then averaged for position. (Assigning an age to some archaeomagnetic features can be harder than measuring magnetic direction.) The archaeological results are averaged; then a geographical position is located.

The geographical averaging method uses archaeomagnetic results of geophysical data from sets having a selected range of precision. For this research, samples having an α95 value of ≤3.99º were used. (An α95 value is a statistical measure of the cone of confidence about the mean direction; thus, it indicates the dispersal of directions among samples. The smaller the α95, the more tightly grouped the series of measurements; that in turn implies a more reliable position of the archaeomagnetic pole, and therefore, a more reliable inferred time.)

In geographical averaging, individual values for different sites and features in a given geographical region are averaged to obtain the geographical position of a pole and thence polar curves. Ages assigned by an archaeologist are used for temporal control along the curve. It is not the age of a single feature that determines time, but the ages of various features both older and younger. The ages yield a curve that best fits the temporal input. A modification of the graphical method uses a computer count of polar distributions collected in broad geographical and temporal groups to establish the position of the polar curves. Some averaging methods smooth the resulting curve and obscure short-term data; the effect depends on the size of the averaging window and its constraints.

### Thoughts about the Importance of Procedures and Laboratory Study

Not enough is known yet about basic geophysical properties of the baked clay. The location, distribution, and identity of the magnetically susceptible iron and its magnetization must be considered carefully. The center of a feature may or may not be the center of the area of the chemically and thermally induced magnetization best suited for measurement. The center may not have been the hottest part, or the most magnetized. Understanding the thermal gradient is critical, and sets archaeomagnetics apart from magnetic study of rock lacking a steep thermal gradient. The hottest part may not give the best answer. It is important to find the area of thermally and chemically induced magnetization specifically related to the feature. Useful geomagnetic results and relative ages for features as determined by Archaeomagnetism, can be obtained only after complete laboratory processing, including physical and magnetic cleaning of samples. The magnetic, thermal, and chemical setting and the history of the sample must all be taken into account.

How to treat, group, and quantify archaeomagnetic data deserves much thought. Combining measurements from individual cubes of a cleaned set to obtain a mean direction is most important. Statistical methods can be used to decide whether a particular result belongs to a given group with a certain degree of variance. They can indicate which group in a series of results has the smallest cone of confidence about its mean direction; they quantify differences between sets of results. They can help define populations and decide whether a given unit is a member of a stated population. But statistics cannot say that because a given set has the tightest grouping, it must therefore be the best answer. Statistics may help to determine a range of ages for a particular archaeomagnetic result. They can be used to identify the most precise results, but they may be misleading about which result is most correct. Physical factors sometimes play an overriding role.

More basic research concerning these areas and about the magnetism of fired clays is strongly urged. Work continues on these problems at laboratories at the Museum of New Mexico, Colorado State University, and others worldwide.

## GEOGRAPHIC LOCATION OF SAMPLE SITES

For this study of ancient magnetic fields, geomagnetic data were gathered in a broad band extending east and west of Oklahoma. An area to the southwest produced many samples and so did an area east of the Midcontinent. The central area was not so productive, but southern Mexico and Guatemala provided a good collection.

The archaeomagnetic samples collected were divided by geographic area (Table 1, Figs. 1–11; Appendixes 1–12) and subdivided by sample distribution and geomagnetism. Time of magnetization was used later in further subdivision of the geographic groups. Some areas are rather large, but they usually have only a few samples near their margins. Although their outlying position may distort archaeomagnetic results, they were too few to justify separate study. A few samples, near borders, were considered twice, in adjoining areas (see Figs. 1–2; 4–5; 7–8).

Separation of data enabled study of blocks with similar geomagnetic characteristics and with geomagnetic variation that was expected to be small. The resulting breakdown groups samples from nearby archaeological areas. (Sample sites are generally listed alphabetically in the appendixes so that archaeological features can be found.) The eastern Midcontinent furnished few samples and none in its central or southern parts. So although samples from New York were geomagnetically separate from those from Tennessee, their inclusion in the group produced only minor geomagnetic distortion. Northern and southern areas overlapped somewhat, and sites near the boundary fell in both groups. A miscellaneous category contains 44 samples from various places around the world, too few to justify a detailed list. For the same reasons, a group of samples from northern Colorado and Wyoming were set aside; their geomagnetic parameters probably differed enough from those of locations farther south that their inclusion would have distorted results. Their numbers do not justify separate discussion here.

Although the samples from Chaco Canyon are grouped together and treated separately, they are also discussed together with those from northwestern New Mexico. (Data from Chaco Canyon are tabulated in Appendix 4, which also includes introductory material by Thomas C. Windes.) The Chaco Canyon data consists of more than 300 sets totaling more than 3,000 cubes (some sets having 20 cubes) from a very small area—essentially a single geomagnetic setting. The suite represents a considerable span of geomagnetic time (nearly 1,000 yrs) that can be studied as a unit. The samples were collected by a few experienced workers who made very accurate measurements, many to within 0.25°.

Archaeologically, Chaco Canyon is one of the most studied and best documented areas in the United States. It is an archaeomagnetic showcase, with many well-fired features ideally suited for archaeomagnetic studies, many with α95 values of ≤0.5°.

Samples from the Santa Fe area (Table 1) are a subset of data from northeastern New Mexico (Appendix 5) and are plotted on Figure 4 as part of that data.

## ARCHAEOMAGNETIC DATA TABLES

Appendixes 1–12 tabulate archaeomagnetic results from individual areas, each area a geomagnetic unit. The appendixes also group archaeological features from similar geographic areas. All of the ~2,000 sample sets are included.

A few sets of rock cores are reported. They were collected because of their proximity in space (and, in some cases, time) to archaeological features being studied. However, few of their measurements were precise enough to plot on maps.

An explanation of the data tables is given at the beginning of the appendixes. In addition, Appendix 4 (Chaco Canyon, Northwestern New Mexico) includes notes by Thomas C. Windes about the Chaco Canyon data.

## ARCHAEOMAGNETIC RESULTS

Regional differences in the geomagnetic field may be resolved by archaeomagnetic methods. One problem is to determine the size of an area whose features can be considered as a group. Secular variation must be defined within an area so that the areal distribution will not distort results.

Consider data from sample sets collected in Chaco Canyon: Figure 12 shows archaeomagnetic poles for A.D. 1080–1460, the poles clustering in an area bounded by lat 90°N to 70°N and long 90°W to 170°E. Figure 13 shows poles based on sets of the same age from the Santa Fe area. The geographic distribution of poles in the two areas is similar.

Comparison shows that archaeomagnetic methods cannot resolve geomagnetic differences for that time in those areas; therefore, their data sets can be merged into one for determining average archaeomagnetic pole positions.

Figure 14 shows polar data from southern Arizona in the same time frame as in the two areas of northern New Mexico. Again, the maps of points are much alike in geographical distribution and polar positions. Thus, all the archaeomagnetic results from the Southwest were merged into a single data set and used to establish archaeomagnetic apparent polar curves (AAPC).

Next, consider the effect of samples with different degrees of dispersion (as defined by α95 values) on the resulting data. One question is how widely the results from a sample can be dispersed before the cone of confidence about the mean encompasses too much time along the curve to be useful.

The larger the sample, the smaller the α95 value is for a given degree of dispersion. Generally, 8–10 cubes gave useful results. A set of fewer than 6 cubes was usually too small and the α95 value rather large. Increasing the number of cubes from 6 to 8 reduced the α95 value markedly. (Here the α95 value indicates quality; small values are more desirable.) The cone of confidence can be laid off on the polar curve and a range of time derived. Generally, 1° of angle subtended onto the polar curve encompasses 5–10 yrs.

Sets with more than 15 cubes were generally larger than needed to define a single result. (It was assumed that the material had been adequately fired and that it contained enough ferromagnetic material.) To consider the problem of dispersion, Figure 15 shows pole positions derived from Chaco Canyon samples dated A.D. 1080–1140 and with α95 values ≤1.99°. Given the restricted time range and the small alpha value, the samples are quite dispersed and often the cones of confidence do not overlap.

Compare that with Figure 16, which displays pole positions from Chaco Canyon of the same time range, but with α95 values of 2.0°–2.99°. The pattern of pole positions resembles that in Figure 15. Although either group would yield useful results and much the same average polar curve, the similarity of group size and distribution of the second group is different from that expected for a group defined by a larger value of α95.

Figure 17 depicts pole positions for the same area and time range, but with α95 values of 3.0°–3.99°. Here, the number of sets limits the conclusions that can be made. Poles are dispersed in the same area as groups with smaller values of α95.

Figures 15–17 and studies of other sample sets (DuBois, 1988, 1989) led to the use of data from sets with α95 ≤3.99° in developing archaeomagnetic polar curves. While these results are supported by the data from the United States, it is yet to be determined whether they would be supported by results from other areas.

### The Southwest (United States)

Archaeomagnetic data from the southwestern United States in A.D. 350–1965, plotted as archaeomagnetic poles (AMPs), appear in Figure 18. (Results are based on about 1,200 sets.) The AMPs circumscribe the earth's axis of rotation in a three-lobe pattern. Selection criteria required only that the samples be from the Southwest and have α95 values of ≤3.99°. Paucity of outliers is striking, as is lack of pole positions in the upper-left quadrant of the graph. Age of poles, quality of data, and range of secular variation explain the limited distribution.

Declination and inclination for A.D. 350–1965 are shown in Figures 19 and 20. Declination data form a very tight curve with a maximum negative (westerly) declination about A.D. 1100 and maximum positive (easterly) declination about A.D. 550 and, in recent times, with a secondary maximum about A.D. 850. Minimum inclination occurred about A.D. 850, with maximums about A.D. 550–650, 1080, 1350, and in recent times. A minimum inclination implies that the pole was far from the sample site; a maximum implies that it was nearby. In the case here, inclination varied >20°, and declination varied from 25°W. to almost 20°E., ~45°. Note the tight grouping of declination and inclination values. Temporal control of the data, which caused the tight grouping, is far greater than dispersal caused by the geography. That justifies the geographical limits used here to define the Southwest archaeomagnetic area.

To combine magnetic measurements of samples and to develop an AAPC, data from the Southwest were divided into temporal groups. The longest was A.D. 350–850, and the shortest were A.D. 1080–1140 and A.D. 1260–1340. Figures 21–27 show the locations and distributions of poles. Best-fit AAPCs for the groups were combined as an extended curve for A.D. 350–1965 (Fig. 28).

The overall curve makes a counterclockwise loop around the earth's axis of rotation, going forward in time. Within the overall curve, separate loops of shorter time span—all but one clockwise—developed with smaller amplitude and regular intervals into a cloverleaf.

Loop A, partially developed, shows pole locations in near-recent time. It starts about A.D. 1460 and extends outward from the axis of rotation at long 45°W., moving forward in time, clockwise.

Loop B, fully developed, starts about A.D. 1260. Moving counterclockwise, it extends outward from the axis of rotation near long 120°W. and ends about A.D. 1460.

Loop C starts about A.D. 970 and moves clockwise. It extends outward from the axis of rotation near long 160°W. and develops about A.D. 1100.

Loop D starts about A.D. 700 and moves clockwise. It extends outward from the axis of rotation near long 45°E. and develops about A.D. 850.

Loop E begins about A.D. 300 and moves clockwise. It develops about A.D. 550 near long 45°W. (compare its path with that of loop A).

The overall polar curve for the Southwest generally extends around and outward from the axis of rotation, contained above lat 75°N. The average position for ~2,000 yrs was a point slightly outward from the axis of rotation, west of long 90°W. Only Loop D extends markedly into the upper half of the polar diagram. Note that the connection between Loops D and E does not cross the axis of rotation as plotted with the present data set. (That observation may not be significant considering the number of samples involved. Also, the displacement from the axis is only ~5°.) Loop A (incomplete) covers the most time, from A.D. 1460 to the present—~ 500 yrs. Loop B developed over perhaps 200 yrs and competes with loop D for the shortest duration. Loop D developed within ~200 yrs. Loop C developed over ~300 yrs; Loop E, over ~200 yrs. Time progression along the curve ranges from ~6 yrs per degree subtended to 11 yrs per degree. Time wise, Loop A seems anomalous, for it extends over the longest time, and therefore shows the slowest development—~20 yrs per degree.

The methods used in data averaging to produce this curve exclude the recognition of detail with finer amplitude and shorter term duration in the geomagnetic field.

Possibly the curve is like that of a fractal, in that, as the time of resolution of the data is increased, the more detail will be observed, and shorter term variations may well resemble spatially longer term ones observed in the curve, but with less amplitude. To some degree the smoothing of the resulting polar curve is a function of the method used to construct it. Whereas the similarity in the spatial positions of loops A and E suggests a repeating of a pattern, if more data were available to extend the ends of the curves, then the pattern might not repeat and become more of a random walk. There is, of course, a large time difference between loops A and E. There is a limit to the "walk," however, in that the data are confined to the spatial position of lat >75°N. Current methods of research seem to place stringent limits on the degree of resolution that can be obtained from the archaeomagnetic method, but this may not be critical as higher frequencies generated in the earth's magnetic field inside the earth are attenuated as they moved outward from the core, and therefore, may not be observed.

Using the average AAPC for the Southwest, values of declination and inclination were calculated for over 1,600 yrs. Figure 29 shows declination as a sinusoidal-like curve beginning at A.D. 400

Maximum westerly declination of ~15° for the Southwest occurred about A.D. 1100. A maximum easterly declination, ~20°, occurred about A.D. 1850. Other notable points are a maximum easterly declination of ~12° about A.D. 550 and ~9° at A.D. 850. In the period A.D. 1100–1850, drift continued almost always easterly for ~35°. During A.D. 850–1100, it was continuously westward, from ~10°E. to 15°W., a change of 25° in 250 yrs at an average rate of 1° per decade. Overall, declination shifted eastward.

For inclination as calculated from the average polar curve for the Southwest, see Figure 30. Again, a sinuous curve represents inclination, roughly following the 55° line. The smallest inclination, ~43°, occurred about A.D. 800 with maximum inclination of 62°–64° about A.D. 600, 1100, 1335, and the present day. Minimums occurred near A.D. 450, 1260, and 1460.

A running-mean average polar curve for A.D. 350–1965 (DuBois, 1989) enables comparison and provides detailed temporal values (Fig. 31). This curve follows in all details the curve developed by average graphical means for Figure 28. Time indications on the curve represent a best-estimate of chronology based on available archaeological control and various dating methods (including C-14 techniques, dendrochronology, and archaeological context). The chronology may shift somewhat with refinements of this time base. Archaeomagnetic resolution seems to differ at various parts of the curve, but is probably ~10–50 yrs. Precision of age dating would have to take into account both the precision related to archaeological context and also that of the archaeomagnetic value, including a factor associated with curve assignment where they approach or overlap. For a comparison of the North American results with those from other areas, see DuBois (1989).

The angle between the archaeomagnetic pole and the axial dipole proves interesting. Results of calculations appear in Figure 32 as a sinusoidal graph from A.D. 400 to the present. The angle ranges from 0° to ~17° with decreasing time. Maximum angles occurred at A.D. 550 (11°), 850 (12.5°), 1100 (13°), and 1350 (9°). A modern maximum occurred at A.D. 1850 (17°). Minimums occurred at A.D. 700, 970, 1280, and 1440. All the minimums approach zero except that of ~5° at A.D. 700. The time between minimums progressively decreased from 270 yrs (A.D. 700–970) to 160 yrs (A.D. 1280–1440). The slow change in the pole-to-axis angle since A.D. 1440 seems anomalous. Archaeomagnetic results for recent times do not provide close control of the polar curve. The uniformity of the maximum angle suggests a physical relationship with the nonaxial field.

Relative intensity of the North American field as reported by DuBois in 1989 is shown in Figure 33 as recalculated with changes in time. The paleointensity is relative to the current field (taken as 1). The plot shows a maximum intensity of ~1.35 and a minimum of ~0.75. The curve has other minimums of ~0.8 and maximums of ~1.1 and ~1.2. The figures for intensity were verified by measurements of modern baked clays, which yielded values quite close to 1 (0.95–0.97).

Comparing intensity graphs with polar curves reveals some agreement of the times of maximum and minimum paleointensity with maximum and minimum distances between the archaeomagnetic pole and the geographic pole. At A.D. 200 and 1450, the intensity was at a minimum and the field essentially axial. At A.D. 550 and 1100, the intensity was at a maximum and so was the angle between the archaeomagnetic pole and the rotational axis. Anomalous conditions occurred at a minimum about A.D. 850, when the angle between the axis and the archaeomagnetic pole was at a maximum. Also possibly anomalous is the time A.D. 970 when the polar angle was zero and the intensity was increasing through 1.2. These discrepancies may be related to the paleointensity data or its time indications and be resolved or better understood with the accumulation of additional paleointensity results in the future.

### Nonaxial field, the Southwest (United States)

The paleointensity curve in Figure 33 is roughly symmetrical about an intensity value of 1. Think of the geomagnetic field as consisting of two components, one—an axial or dipole field—along the axis of rotation (the average direction of this part of the field over time is axial) and the other, a nonaxial field. "Nonaxial" denotes only the variable component of the earth's field that does not follow the axis of rotation; the field along the axis is consistent and rather constant. (Those terms do not imply origin, source, or mechanism of generation; they only name aspects of the field.)

As the nonaxial field deviates from the axis, one can calculate its intensity as a function of the axial dipole field. The calculation uses data from archaeomagnetic poles in

Figure 28 and paleointensity values in Figure 33; results appear in Figure 34, where they form a sinusoidal-like curve distributed about zero, times at which there would be no nonaxial component but only an axial field. Now consider the paleointensity data in Figure 33; the values are distributed about a value of 1, which represents the axial part—or common component—of the field. This is the field direction in the polar plot at lat 90°N., the direction of the distribution of points making up the polar curve.

The nonaxial field (Fig. 34) had a maximum positive intensity of 0.3 to 0.4 times an axial field with intensity 1 and a maximum negative intensity of −0.25 to −0.23. Maximum positive intensities of the nonaxial field occurred about A.D. 550, 1100, and 1700. Negative intensities—i.e., a magnitude producing a total field less than that of the axial field—occurred about A.D. 850, A.D. 1400, and in approximately our own time. The curve summarizes a time and an intensity of the nonaxial component, and implies frequency and rate of change for variations.

Using the intensity of the nonaxial field (Fig. 34) and the polar directional data (Fig. 28) of the total field as determined by archaeomagnetic methods, one can calculate the direction of the nonaxial field. In Figure 35 the direction is shown as poles for A.D. 350–1900. The diagram centers on the axis of rotation (lat 90°N.). The curve, marked with pole positions at 50-yr intervals, begins at A.D. 350 at a high latitude and low-angle west longitude. It continues in the same quadrant through A.D. 600–650. It crosses to easterly longitudes at low latitudes about A.D. 700 and into the southern hemisphere. At A.D. 900 the polar position is nearly equatorial. The curve then crosses into the northern hemisphere and at A.D. 950 it is in high latitudes and easterly longitudes. The curve nears the axis of rotation at about A.D.1000 and until A.D. 1200 continues in the northern hemisphere at high-angle west longitudes. At A.D. 1250 the curve is nearly equatorial, moving into the southern hemisphere, and by A.D. 1400 it nears the axis of rotation. It remains in the southern hemisphere until shortly before A.D. 1550. About A.D. 1600–1650 it is in the middle latitudes of the northern hemisphere where it stays through A.D. 1700, when it again nears the equator. The curve crosses into the southern hemisphere about A.D. 1750 and on to A.D. 1900 in westerly longitudes and low latitudes.

Note that the direction of the nonaxial field gives pole positions ranging from north axial to south axial. Also the field ranges from equatorial to the middle latitudes in all four quadrants of the diagram. Directions are generally westerly longitudes or low-angle easterly longitudes (as shown by pole positions); high-angle easterly direction lasted for only a very short time.

The angles between the nonaxial-field pole and the axial dipole have been calculated to study and understand their relationship better, and are presented in Figure 36. As expected from the discussion of the nonaxial-field pole positions, the angle between the nonaxial-field pole and the axial dipole ranges from 0° (or parallel to the axis of rotation) to 180° (or reversed to the axis of rotation). Figure 36 should be viewed along with the results shown in Figure 35 along with its discussion. Figure 36 gives a good view of the relative position of the pole of the nonaxial field relative to the axis of rotation and its chronology. The results shown in Figure 36 can be compared to those calculated for the archaeomagnetic pole and presented in Figure 32 to see the role that the nonaxial field plays in the direction of the total field. The magnitude of the angle between the nonaxial pole and the axial dipole, for the nondipole field, is much larger (as shown in Fig. 36) than that for the total field (Fig. 32). The times of maximums and minimums as shown in both curves agree somewhat. This can be expected considering the role that the nonaxial field plays in the determination of the total field.

Figure 36 illustrates the direction of the nonaxial component. Figures 33 and 34 show intensity data, and must be considered at the same time to understand the contribution of the nonaxial field. A part of the curve for the nonaxial field for ca. A.D. 1100 is not directly comparable to that for the total field. A well-developed maximum is shown in the total-field curve of polar angles, but the maximum is poorly represented in the curve for the nonaxial field. That may be expected, for the results reflect both the direction and the intensity of the nonaxial field.

## The Midcontinent

Archaeomagnetic measurement of samples from the Midcontinent enabled calculation of archaeomagnetic poles. The data, representing A.D. 250–1975, appear in Figure 37 as pole locations extending from the axis of rotation to lat 70°N. With its three lobes, the pattern resembles that for the Southwest (Fig. 18). Poles are sparse in the quadrant of long 45°E, but only for lack of samples. Poles are also few in the quadrant of long 135°E.; also resembling the pattern for the Southwest. The quadrant of long 135°W. is well populated as is that of long 45°W., with poles both ancient and modern.

Declinations in the Midcontinent for the last two millennia are shown in Figure 38. Although not all periods are adequately represented, about A.D. 1150 negative (westerly) declinations of 25° are abundant. Inclination data for the same time appear in Figure 39, in which some periods are not well represented, and inclinations are rather spread out between 50° and 70°.

Detailed plots of pole positions in the Midcontinent (Figs. 40–46) were constructed as they were for the Southwest to develop an average polar curve. Figure 40 shows archaeomagnetic poles for A.D. 250–900. Although there are only nine samples for that time, they were enough to indicate pole positions.

Archaeomagnetic poles for A.D. 900–1150 appear in Figure 41, where location of the poles yielded a general position for the average archaeomagnetic polar curve. Archaeomagnetic poles for A.D. 1150–1200 are shown in Figure 42. The location of poles defines a curve although the data are considerably scattered. Figure 43 shows archaeomagnetic poles for A.D. 1200–1310, and an aver age pole position curve for this time period can be drawn. Poles for A.D. 1310–1370, shown in Figure 44, are tightly grouped. Archaeomagnetic poles for A.D. 1370–1500 are shown in Figure 45. An average pole position curve can be drawn despite outliers. The distribution of archaeomagnetic poles for A.D. 1500–1975 (Fig. 46) yields an average position for the archaeomagnetic polar curve. (The outlier probably is a result of an incorrect time assignment.)

A graphical average archaeomagnetic polar curve for A.D. 250–1975 in the Midcontinent, developed from plots in Figs. 40–46, is shown in Figure 47. The curve is reasonably well defined for much of the time range, but not in A.D. 500–700 and A.D. 850–950. In addition, more data would be useful for the period A.D. 1500–1975.

The distribution of poles for A.D. 250–500 enabled a polar curve to be plotted. Then, assuming similarity with data from the Southwest, the polar curve could be connected with the curve controlled by polar data for A.D. 750. The general curve then follows a loop that extends in the long 45°E. quadrant to lat 75–80°N. The same reasoning places a connecting loop between A.D. 850 and A.D. 950. The rest of the average polar curve, for A.D. 950–1975, has good control up to about A.D. 1500; thereafter control is limited (Fig. 47).

The average pole positions in Figure 47 enabled calculation of the declinations graphed in Figure 48. Data for A.D. 600, 850, and 1500 are lacking. Declination for A.D. 200 to about A.D. 950 was easterly, as it was for A.D. 1500 and thereafter. Declination was westerly in A.D. 950–1500 with a maximum of 20°W. about A.D. 1150. About A.D. 1450 the declination was 10°W—a local minimum in the curve.

Data for inclination as calculated from the average pole position curve (Fig. 47) appear in Figure 49. Inclination ranged from a minimum of 45° (at about A.D. 900) to a maximum of ~70° in recent times. Other high values for inclination were 65° at A.D. 1150 and 62° at A.D. 1400.

### North America, Samples Older Than A.D. 500

Archaeomagnetic poles based on samples older than A.D. 500 are plotted in Figure 50. (The oldest material collected in North America was dated at 10,000 B.C.) Data points in Figure 50 are scattered rather randomly around the axis of rotation, extending to about lat 70°N. For the plot, poles from samples with $\alpha95 \leq 5.99°$ (instead of $\alpha95 \leq 3.99°$) were used. Even though dispersion was greater at a few sites, the information proved useful (considering the ages of the sites). Most samples revealed high-angle westerly longitudes, but a significant number yielded low angles. A scattering of points occurred in the quadrant of long 135°E., but only a few in the quadrant of long 45°E. No significance is attributed to the differential spatial distribution, because of the great span of time and a scarcity of samples from some periods. The general position of the poles, however, confines the geomagnetic field for the last 10,000 yrs to directions similar to those measured for the last 2,000 yrs. Apparently no field reversals occurred in all that time.

Declinations measured in those samples yielded a scattering of points about 0° from 8000 B.C. to A.D. 500 (Fig. 51); many samples lay in the range 8000–6000 B.C. The scattered distribution of inclinations (Fig. 52) is similar to that for declinations.

Dating of samples from so early a time required C-14 methods, although at some sites stratigraphic control was available. Limitations in dating explain vertical patterns, with various degrees of inclination for the same time.
Specimens dated 7800–6300 B.C. were selected for additional study. For 66 samples in that group, the α95 value was ≤ 5.99°, enabling definition of secular variation in that period. Stratigraphy was used to determine relative ages. The results are not as good as those from the Southwest, where more samples were available and the chronology was better defined. However, the archaeomagnetic poles plotted in Figure 53 help define variations in the earth's magnetic field. The results are tentative and greatly extend the data—most likely too much—but the group is the largest available.

Poles depicted in Figure 53 range from the axis of rotation to lat 65°N., concentrated in the quadrant of long 135°W; only a few poles occur in the other quadrants. Declinations for 7800–6300 B.C. are shown in Figure 54, with dates based on C-14 methods and stratigraphy. The data points are scattered, with declinations ranging from 20°E to 30°W. Scatter precludes a curve, but the pattern suggests that more chronological control (from multiple sources) would greatly enhance the data set. In Figure 55, the range of inclination values (47°–69°) is great and the scatter is larger than that for declination values, precluding a curve.

Average archaeomagnetic polar curves were developed by dividing the data into three age groups; ages were provided by archaeologists working with C-14 and stratigraphy. The oldest group consists of samples from 7800 to 7200 B.C.; the middle group, 7200–6800 B.C.; and the youngest, 6800–6300 B.C. The curve for the oldest group (Fig. 56) generally circumscribes the axis of rotation, and extends nearly to lat 70°N. The curve for the middle group (Fig. 57) lies entirely in the quadrant of long 160°W., and extends below lat 70°N. The curve for the youngest group (Fig. 58), in the same quadrant, extends to lat 65°N.

The polar curve for the oldest group (Fig. 56), with loops, resembles the curves for the Southwest (Fig. 28) and the Midcontinent (Fig. 47). Its length, representing some 600 yrs, suggests a rate of change more rapid than in the Southwest. The rate is 4–6 yrs per degree of latitude along the polar curve. The average rate of change, ~5 yrs per degree, is about twice that observed for the Southwest data (8–10 yrs per degree). The other data sets (Figs. 57 and 58) indicate a rate of change of 5–8 yrs per degree.
Declinations calculated from the average polar curves are plotted in Figure 59. The curve is sinusoidal with a maximum east declination of 20° at 7500 B.C.; maximum west declination is 30° at 7000, 6800, and 6400 B.C. The time between maximums is 200–300 yrs. Note that for about

1,000 yrs—two-thirds the time considered here—declination was westerly. Calculated values for inclination for 7800–6300 B.C. plot as a sinusoidal-like curve with amplitudes of 50°–60° (Fig. 60). The rate of change appears to be similar to that for declinations, but it may have been slightly faster.

### Mesoamerica

Archaeomagnetic results from Mesoamerica span the time from 1000 B.C. to the present. Although data are thinly distributed, they are sufficient to suggest curves of pole positions for 1000 B.C. to A.D. 600, and for A.D. 500 to the present. Breaking the data set into the two groups better represents the time span, and provides more useful archaeomagnetic polar curves.

Pole positions for 1000 B.C. to A.D. 600, shown in Figure 61, circumscribe the axis of rotation and extend to about lat 75°N. Measured declinations appear in Figure 62, with a maximum of 11°E. and 15°W. Measured inclinations for the same period (Fig. 63) range from 12° to 45°; scatter is more or less uniform. Concentrations at certain times of declination or inclination ranges suggest uncertainty about age or possibly magnetic direction. A given time should be represented by a single magnetic direction. In some cases the magnetic direction is better or more easily determined than age.

An average archaeomagnetic polar curve for 1000 B.C. to A.D. 600 (Fig. 64) extends to just below lat 80°N., generally circumscribing the axis of rotation. Values for declination are plotted against time (Fig. 65), and form an irregular sinusoidal curve distributed about zero. Declination ranges from 10°E. to 8°W. Values for inclination (Fig. 66) range from ~18° to nearly 50° on a curve more or less symmetric about 30°. The sinusoidal character of the curve is striking, but estimates of period may not be significant.

Archaeomagnetic poles for A.D. 500–1800 are shown in Figure 67. Nearly all pole positions lie above lat 75°N, mainly in the quadrant of long 135°E. Measured declination values (Fig. 68) are scattered from 8°E to 16°W. Distribution is more or less uniform. Data later than A.D. 1600 are few. Measured inclinations for the same period are shown in Figure 69, where the maximum inclination is ~41°; the minimum is ~6°. Data points are scattered.

In developing plots of declination and inclination, time estimates for a site or feature are critical. Considering the number of samples, lack of chronological control may explain some of the scatter in Figures 68 and 69.

An average archaeomagnetic polar curve for A.D. 600–1800 (Fig. 70) favors high-angle longitudes east and west, but in recent time it extends into the quadrant of long 45°W.; the curve crosses the axis of rotation but is not distributed evenly around it.

Values of declination, calculated from the average archaeomagnetic polar curve, range from 15°W. in A.D. 1150 to 7°E. in recent time (Fig. 71). Calculated inclination angles for A.D. 600–1800 (Fig. 72) range from 20° to 45° and gradually increase after A.D. 1000. Data from samples younger than A.D. 1600 are few.

### South America

Archaeomagnetic data from 7000 B.C. to A.D. 1600 in South America led to the pole positions in Figure 73; they are too few to permit drawing average archaeomagnetic polar curves; they show that useful archaeomagnetic data can be obtained from sites in the area. No attempt was made to plot declination or inclination for the pole positions. Because nearly all poles lie above lat 70°N., suggesting that there are some constraints for directions of the field.

## ARCHAEOMAGNETIC CHRONOLOGY

For chronology since A.D. 350 in the Southwest, see Figure 31. Hundred-year time points are marked all along the curve, and in some segments the data available could justify 50-yr and even 10-yr segments. The curve was drawn by a computer program using a running mean of the data shown in Figure 28; some smoothing resulted. The chronology was based on dates provided by archaeologists at the time of sampling, but it was revised later in some cases. Temporal information from various sites was considered and/or averaged to establish time along a polar curve. Such chronology permits estimates of archaeomagnetic age for samples at various places. Because the curves have parallel segments and cross-over points, different age ranges are possible for some samples. It might seem desirable to list all possible ages inferred by a given archaeomagnetic pole, but such a list would be incomplete. Older and younger polar-curve loops, only some of which have yet been researched, could give similar positions. If an archaeologist determined the possible age range for a sample and placed it on a particular segment of the polar curve, it would limit the range of possible archaeomagnetic ages.

An $\alpha 95$ value is a statistical measure of the cone of confidence about the mean direction; thus, indicating the dispersal of directions among individual specimens in a sample set. The smaller the $\alpha 95$, the more tightly grouped the series of measurements, implying a more reliable position of the archaeomagnetic pole, and therefore, a more reliable inferred time. Using archaeomagnetism for dating requires error estimates relating to the archaeomagnetism as well as to the archaeological controls used in developing the curves.

An archaeomagnetic chronology curve for the Midcontinent since A.D. 250 appears in Figure 47. Chronological markings are noted at 50- or 100-yr intervals, but in places the data available would justify 10-yr intervals. Chronological control for the curve came from archaeologists. Samples from different sites with similar ages allowed some averaging of time as well as the geographical position of the curve. The data came from fewer specimens collected over a broader area than in the Southwest. The curve reveals some computer smoothing, but was developed graphically from various subplots (Figs. 40–46).

One archaeomagnetic chronology curve for 1000 B.C. to A.D. 600 in Mesoamerica is shown in Figure 64, and one for A.D. 600–1800 in Figure 70; they were developed from data in Figures 61 and 67, respectively. The number of data points for the two curves does not approach the quantity for the Midcontinent or Southwest, and so they are less reliable. As before, smoothing was important in developing the curves.

## DISCUSSION OF ARCHAEOMAGNETIC RESULTS

Data sets for this research were selected by α95 value. Almost all sets used in developing archaeomagnetic polar curves for the Southwest, the Midcontinent, and Mesoamerica had α95 values of ≤3.99°. In one exception, curves for 8000–6500 B.C. were based on sets with α95 values of ≤5.99°. The higher threshold was used for the very old sites to include as many points as possible so that they might give reliable information on secular variation. Data sets from very old sites were limited, and they often came from features poorly prepared or fired at low temperatures. So results were not as good as those from younger sites.

Overall, the range of errors in collecting and measuring probably was ~0.1°–0.5°. Such small errors are partly the result of size and shape of samples, which were "cubes," approximately 43 mm on each side. The longest face of a sample "cube" was used as the reference surface for determining orientation in the field; in the laboratory, it provided a good surface to use in initial positioning and subsequent repositioning of the sample for measuring and for magnetic cleaning. Errors in reference or position were randomized, in part, by collecting and measuring 8–12 samples from a feature, because all the samples contributed to the mean direction determined for that feature. Errors also added to the statistical noise and raised the α95 value for the set.

Distortion of the earth's magnetic field occurred in some regions, particularly in terrain with volcanic terrane or where strongly magnetized rocks are present; they could distort the local magnetic field enough to affect the sample's field as well as the compass direction during sample collection. Tectonism could move a feature after it was magnetized. Compaction, settling, and change in water content of sedimentary rock can move features; so can removal of oil or ground water from the subsurface causing subsidence.

Consider Chaco Canyon, where samples were collected from nearly contiguous archaeological sites scattered over several square miles. Most specimens came from Pueblo Alto (Windes, 1987), situated on a large mesa just above the canyon. Samples plotted in Figure 15 had α95 values of ≤1.99° and should be distributed about the mean position on or near the AAPC. The cone of confidence should contain the polar curve within the statistical limits used.The distribution seems greater than expected, and some samples with apparently similar ages of magnetization do not have overlapping cones of confidence. The angular difference may have been caused by differential settling of the bedrock; a shift of 2° could account for the observed differences.

To assess regional geomagnetic variation that contributes to magnetic variations among samples, virtual geomagnetic poles were calculated for present-day field directions from Canada to South America. Small differences in calculated pole positions between regions increased eastward from long 115°W. Along lat 35°N., differences between subsequent pole positions of ~1.5° were calculated for 5°-intervals of longitude westward. A difference of 1° was found between pole positions at long 95°W. and 100°W., and a difference of ~0.5° was found between long 100°W. and 105°W. Pole positions at long 105°W., 110°W., and 115°W. are similar. Analysis down the meridian at long 270°W. revealed small differences in pole position from lat 20°N. to lat 20°S., with increasing differences at higher north and south latitudes. Evidently pole positions for a rather large area of the Southwest could be comparable archaeomagnetically, but they should differ when compared to positions based on data sets from central and eastern North America. Rregional differences from east to west observed in recent times had remained constant for two millennia. Sites widely separated between north and south seem to have large differences, and therefore support that conclusion.

In summary, errors in archaeomagnetic data generally were not significant in data sets from the Southwest or the Midcontinent. Errors affecting samples from Mesoamerica were related to age assignment; to geological control and its contribution to distortion of the geomagnetic field; to local ground movement; and to acquired magnetism (local distortion of the original geomagnetic field). Other errors could be related to orientations in recording samples. Some samples from Mesoamerica showed effects of secondary magnetization by lightning or by secondary chemical magnetization. Generally, magnetic cleaning removed secondary effects.

To compare archaeomagnetic data from the Southwest and the Midcontinent, see Figures 31 and 47. The shapes of the two AAPCs are similar, the main difference being representation of time; data for the Midcontinent seem to yield pole positions on its curve later than those at corresponding points on the curve for the Southwest. Compare A.D. 800 on the Southwest curve to A.D. 850 on the Midcontinent curve. Likewise, compare A.D. 1100 for the Southwest curve to A.D. 1150 for the Midcontinent curve.

The apparent shift seems to conflict with westward drift of the geomagnetic field. A drift rate of 0.18°–0.2°/ yr translates into ~4° along the polar curve—given the difference in longitude between the two areas. Geomagnetic parameters related to position, as represented by the pole for the Midcontinent, should precede those for the Southwest by a time equivalent of drifting 4° in longitude. Polar motion of 1° per decade along the Southwest curve (as previously noted in the discussion of Fig. 29) translates into a difference of 40 yrs between the areas; the pole positions for the Midcontinent are earlier. This discrepancy cannot be resolved without better age representation of the Midcontinent data.

Loops A, B, C, and D of the polar curves are equally developed for the Southwest and the Midcontinent (Figs. 31, 47). Because data representing the time period is lacking, no Loop E of the polar curve was drawn for the Midcontinent.

To evaluate results from Mesoamerica with those from the Southwest, compare Figures 64 and 70 to Figure 31. Figure 64 for Mesoamerica overlaps Figure 31 for the Southwest by only 250 yrs (A.D. 350–600), and data for the Southwest do not suffice for a detailed comparison. Figure 70 for Mesoamerica overlaps Figure 31 by 1,200 yrs (A.D. 600–1800). At A.D. 600–700 in both areas, loops are seen in the same relative geographical position, but with opposite motion—counterclockwise in Mesoamerica, clockwise in the Southwest (about A.D. 500).

If the curve for Mesoamerica at A.D. 600–700 (Fig. 70) is not considered a loop, but rather a curve from westerly longitudes across the axis of rotation to easterly longitudes, then a comparison is easier. Data for Mesoamerica about A.D. 900 form a clockwise loop quite like Loop D for the Southwest. A time shift of ~100 yrs occurs between the two data series with the Mesoamerica loop being later. Also, the position of the Mesoamerica loop is near long 115°E., while that of the Southwest is about long 45°E. The Mesoamerica data developed a loop about A.D. 1100 similar in position and time to Loop C of the Southwest. The Mesoamerica loop is open, ~50 yrs younger, and moving counterclockwise, contrasting with the clockwise motion in the Southwest. A Mesoamerica loop developed about A.D. 1450, about the same time as loop B in the Southwest, but was displaced spatially and temporally; both loops are counterclockwise. Data for Mesoamerica in recent times seem similar to those from the Southwest because the curves are spatially positioned in a like manner, but again time for the Mesoamerica curve seems to be about 100 yrs younger or more modern than that for the data from the Southwest.

## GEOMAGNETIC DECLINATIONS AND INCLINATIONS FOR LAT 32°–40°N, LONG 80°–114°W, NORTH AMERICA, A.D. 200–1965

Declinations and inclinations showing the variation of geomagnetic values over time for particular geographical locations on the earth's surface have been presented in this study (Figs. 19–20, 29–30, 38–39, and 48–49). Estimates of declination and inclination for a broad geographical area can also be calculated by using an average magnetic-pole position, and assuming a dipolar geomagnetic field

This section concerns geomagnetic declinations and inclinations at various times in the last ~1,500 yrs for a strip across the North American continent, ~8° north-south and 34° east-west; the strip includes lat 32°–40°N and long 98°–114°W in the Southwest and lat 32°–40°N and long 80°–114°W in the Midcontinent. (For lack of data, long 96°–98°W. are excluded.) Times for individual maps were selected because they are maximums and minimums in the geomagnetic field, or because they mark changes in the field.

Declinations and inclinations have been plotted separately for the Southwest (Figs. 74–107) and the Midcontinent (Figs. 108–137). Data for all but four of the plots (Figs. 74, 91, 108, and 123; discussed below) are derived from the average polar curves in Figures 28 and 47. Equations were developed to calculate declination and inclination values, assuming a dipole geomagnetic field and using average pole positions for a 2° grid. (The method reverses the usual calculation of paleomagnetic pole positions. A unique solution is not always attained for the entire globe, but testing by a method of recalculation can reveal errors.)

One initial goal was to develop a series of magnetic-variation maps for the Southwest only, but geomagnetic data accumulated and made possible a series for the Midcontinent as well. Maps for the Southwest represent A.D. 400–1965; for the Midcontinent, A.D. 200–1965. For comparison, data from the U.S. Coast and Geodetic Survey's Isogonic Charts and the U.S. Coast and Geodetic Survey's Isoclinic Charts (1965a and b, respectively) were adapted for both areas (Figs. 74, 91, 108, and 123). Each individual map shows magnetic data as a contour field on a geographic base with a 2° grid. Contour intervals were selected by a computer plotting program.

Figure 74 shows declinations in the Southwest as derived from data from the U.S. Coast and Geodetic Survey's 1965 isogonic chart; Figure 75 shows declinations calculated by using the average archaeomagnetic pole for 1965. Agreement between the two data sets is generally within a degree or two. Curves derived from the map show some irregularity, partly due to local magnetic anomalies that affected field measurements. The largest difference between the two data sets occurs near their extremes. However, application should be restricted to the area represented by the paleopole, and extrapolation must be limited.

The same comparison of maps for inclination (Figs. 91 and 92) reveals good agreement. For the Midcontinent (Figs. 108–109 for declination; Figs. 123–124 for inclination), the results are very similar— within one or two degrees—and justify use of average archaeomagnetic poles to derive declination and inclination in ancient times.

Figures 76–90 show declination calculated by using average archaeomagnetic poles for the Southwest at various years in the period A.D. 450–1600. Low values for declination over the entire map area for A.D. 1450 (Fig. 77) show that the magnetic pole was then near the geographic pole. Much the same juxtaposition occurred at A.D. 1300 (Fig. 80) and also at A.D. 1000 (Fig. 84).

Low values of declination over the entire area resulting from closeness of the two poles must not be confused with zero declination observed along a line connecting those poles. The values of inclination do not indicate closeness of the poles; they indicate the distance between the magnetic pole and the observer (at the magnetic pole, the inclination is 90°).

Figures 93–107 show inclination calculated for the Southwest for A.D. 400–1600. Increasing inclination through time, with a maximum about A.D. 1370 (Fig. 96) and again at A.D. 1150 (Fig. 99), indicates that the pole was as near the Southwest in that period as it ever was. Minimum inclination occurred about A.D. 900 to A.D. 850 (Figs. 102–103), when the pole reached its maximum distance from the Southwest.

Figures 109–122 show declination calculated for A.D. 200–1700 in the Midcontinent. As before, zero declination (Fig.108) denotes a position aligned with the two poles. Again, low values for declination in the Midcontinent (Fig. 111) at A.D. 1450 indicate closeness of the poles. Evidence of closeness recurs in Figure 114 at A.D. 1300 and in Figure 118 at A.D. 1000; it may have occurred at A.D. 200 (Fig. 122), but earlier data is lacking.

Figures 124–137 show inclinations calculated for the Midcontinent in A.D. 200–1700. Data for A.D. 1150 (Fig. 131) show that the magnetic pole was then close to the sample site.

Now compare data sets along the border of the Southwest and the Midcontinent. As the databases used for the two areas differed, and as the positions at long 96°–98° are near the extreme of each set, the agreement is remarkable. Given an infinite number of average pole curves across the longitudes and latitudes being considered, a better fit could be obtained. The centers of the two areas are some 18° of longitude apart, yet a 9° projection from each shows reasonable agreement. That may relate something about the uniformity of the field and of its sources at depth, and about interaction of the core, mantle, and the core-mantle interface.

## SUMMARY

Study of ~2,000 archaeological features, represented by ~25,000 samples of baked clay, enabled drawing archaeomagnetic apparent polar curves (AAPC) for various regions and times. Pole positions plotted with the earth's axis of rotation at the center reveal a rather asymmetrical pattern. The poles generally lie above lat 70°N., possibly except during recent times. This report classifies results by geographic region—the American Southwest, the Midcontinent and eastern United States, and Mesoamerica. Some data are included for South America, but not enough to develop archaeomagnetic polar curves. Periods of variation can be deduced from pole-position curves and data for declination and inclination that range from 150 to 350 yrs. A period of ~1,350 yrs is also indicated. The 1,350-yr period is generally represented by counterclockwise motion of the AAPC going forward in time; the shorter-period loops generally move clockwise. Loop A occurred essentially in recent times; B, about A.D. 1350; C, about A.D. 1100; D, about A.D. 800; E, about A.D. 550; and F (for some sets), about A.D. 200. The loops generally are demonstrated in all three geographical data sets.

Comparison of the intensity of the ancient field with the direction of the field for the Southwest suggests a period of maximum intensity about A.D. 1100—a time when both inclination and declination reached a maximum. It also corresponds to the time for development of Loop C. A minimum intensity of the field occurred about A.D. 800, at a time of minimum inclination and local maximum easterly declination. Loop D occurred at the same time. A maximum intensity at A.D. 550 was associated with a maximum inclination and a maximum easterly declination; the period also corresponds to loop E. The time for loop B was one of minimum intensity, maximum inclination, and a minor maximum of easterly declination. The most recent easterly maximum in declination seems to have occurred about the 19th century, but a local minimum intensity occurred about A.D. 1650.

The AAPC for the Southwest resembles a cloverleaf, with broad loops extending outward in three general directions from the earth's axis of rotation (Fig. 28). All points on the curve lie above lat 75°N., except for a maximum extension outward about A.D. 1850. A.D. 500, 850, 1100, and 1350 were times of maximum extension; about A.D. 970, 1260, and 1460, the curve essentially coincided with the axis of rotation.

The declination curve for the Southwest shows several periods of easterly declination with local maximums, but a characteristic is the maximum westerly declination of 15° at A.D. 1100 (Fig. 29). The inclination curve shows several highs—points at which the magnetic pole approached the sample site—and a minimum inclination occurred about A.D. 800, when the pole was at a maximum distance from the Southwest (Fig. 30).

The angle between the archaeomagnetic pole and the axial dipole is a measure of the variation of the field from an axial position. The maximum angle outward from the dipole field ranged from 9° to 13°—except in recent times, when the angle has been ~18° (Fig. 32). The data show equally well, times of minimum angle, when the field lay in the direction of the axial dipole.

Combining data on paleointensity with data on directions yields the direction and intensity of the nonaxial field (Fig. 34). (That assumes a field consisting of two parts, axial and nonaxial.) Intensity of the nonaxial field is suggested to be ~30–45% of the axial field. Sometimes intensity was either positive or negative. When it was positive, the field enhanced the direction of the axial field; when it was negative, it opposed the direction of the axial field. Maximum positive intensities of the nonaxial field occurred about A.D. 550, 1100, and 1700; high negative values have been found at about A.D. 850, 1400, and the present (Fig. 34). The direction of the nonaxial field revealed pole positions in both northern and southern hemispheres, generally circumscribing the axis of rotation (Fig. 35). For short periods, the nonaxial field was coincident with the axis of rotation or 180° opposed. Therefore, the directions are found in both hemispheres, and extending to the equa-

tor. As plotted (Fig. 36), the angle between the nonaxial field pole and the axial dipole forms a sinusoidal curve, its points tending toward 0° or 180°. A 90° angle corresponds to an equatorial location for the pole. At A.D. 750 and 1400, the nonaxial field had a general direction of 180°; at A.D. 1000, its direction corresponded to the axis of rotation, 0°.

Archaeomagnetic results from the Midcontinent led to an AAPC whose shape resembled the AAPC for the Southwest, but apparently displaced forward in time by 50 yrs (Fig. 47). Such temporal correlation contradicts westward drift of the nondipole field. A.D. 1100 of the Southwest curve approximates A.D. 1150 on the Midcontinent curve illustrating the time shift. Curves of declination and inclination for the Midcontinent (Figs. 48–49) resemble spatially those for the Southwest (Figs. 29–30).

Archaeomagnetic polar data for 7800–6300 B.C. (Fig. 53) generally lie above lat 65°N. Although this AAPC was developed from data from only 72 sample sites, it suggests secular variation. The data tend to cluster about the axis of rotation with preference for high-angle westerly longitudes. Some data indicate pole positions in the high-angle easterly longitude quadrant and in the low-angle easterly and westerly longitude quadrants. Declination reached 27°E. at 7500 B.C.; 30°W. at 7000, 6800, and 6400 B.C.; and essentially zero declination at 7200 and 6650 B.C. (Fig. 54). Inclination had maximum high values at 7800 and 6500 B.C.; minimums occurred at 7400 and 6650 B.C. (Fig. 55).

Archaeomagnetic results from Mesoamerica yield an AAPC generally circumscribing the axis of rotation and lying above lat 70°N. (Figs. 64, 70). Considering the length of time—from about 1000 B.C. to A.D. 1800—and the number of features involved, the results can only suggest lines of future research. Although the AAPCs resemble curves for the Southwest and Midcontinent, they are shifted in both time and position. Maximum easterly declinations occurred in Mesoamerica at 650 and 250 B.C. and at A.D. 400, 650, 950, and 1350, and in the recent past; maximum westerly declinations occurred at 400 B.C. and at A.D. 300, 500, 850, 1150, and 1500 (Figs. 65, 71). Data from Mesoamerica show maximum inclination angles about 800 and 100 B.C., A.D. 500, and in the recent past, and minimum angles about 300 B.C. and A.D. 400 and 900 (Figs. 66, 72).

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(Note re references for these two maps: Dr. DuBois has been unable to locate these maps in his files. Could the Geology Librarian help in identifying the maps and suggesting how they are correctly referenced? If not, use references as they are.)

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# APPENDIXES
## Explanation of the Archaeomagnetic Data Tables

These tables of archaeomagnetic results—which include sample size, location, magnetic direction, and associated statistical parameters—are grouped according to geographical location. Approximately 2,000 sets of samples are represented. Several sets are rock cores collected because of their proximity in space (and, in some cases, time) to archaeological features being studied.

Thomas C. Windes's introductory material to Appendix 4 pertains particularly to the large sample set from Chaco Canyon presented in that appendix, but much of it applies equally to the other data sets. His comments on dating and period/phase assignment are very important to the assessment of archaeomagnetic age.

The order of the data in the tables is described here and illustrated below.

The first line includes, from left to right:

1. laboratory number;
2. number of data lines included in the listing;
3. number of comment lines;
4. location of the feature.

The second line includes, from left to right:

1. latitude of the sample site;
2. longitude of the sample site;
3. declination correction value at the sample site (used to calculate the direction of magneti zation as measured to true north);
4. number of sample cubes collected (in large sample sets, some cubes were not used in these studies but have been stored by the author in pristine condition for future experiments); (NOTE: This needs to be reworded to reflect the archival location of Dr. DuBois's full collection of samples and field notes.)
5. age assigned by the archaeologist.

Each data line includes, from left to right:

1. designation of the type of magnetic processing used for the set (NRM or, for example, 100 G);
2. number of cubes analyzed for that line of data;
3. measured magnetic declination as referenced to true north;
4. inclination of the magnetic field;
5. and 6. major and minor axes of the oval of confidence about the pole position;
7. K statistical value;
8. and 9. latitude and longitude of the archaeomagnetic pole;
10. α95 value for the set;
11. numbers used for sorting.
12. time assignment, where one was determined. The code 3000 in the last column excludes the line of data from computer plots; the code 2500 designates lines from multi-line sets without a time assignment that are to be included in a computer presentation or plot of the data; a specially developed single-line data set would either have the 2500 designated line, the line with a time assignment, or the 3000 line for single-line sets without a time.

Please note that a set may have two NRM lines or even two demagnetization lines with the same value. In these cases, the NRM was measured initially on one type of magnetometer (for example, an astatic magnetometer) and, at a later time, was measured again on a different magnetometer (usually a spinner magnetometer). Such multiple measurement lines are listed in order of acquisition. In order to keep the length of the tables down, only a few of the demagnetization tests are listed. Complete results are available on hand-written cards, punch cards, or computer printouts at the author's laboratory. [See above NOTE about storage of Dr. DuBois's notes and samples at the OGS.] A few examples of multiple run cleaning procedures are included.

The data lines are followed by comment lines, which are generally self-explanatory. They deal with sample location, archaeological information, or archaeomagnetic results of stability testing or cleaning procedures. In the comment lines, "Sp" (or, "SP") refers to a special Chaco Canyon curve used in considering the sample; "U" refers to uncertain curve assignment, to a large α95 value (which suggests uncertain pole position and reduced precision), and/or to a pole position off the curve beyond normal ranges (which suggests uncertainty in time selection).

The seventh entry (from The Fajada Gap Community Area, Chaco Canyon) in Appendix 4 is labeled here as a guide to the tables.

**1492 4 6 Kiva 1, Floor 1, burn next to firepit**
^ Location of feature sampled
^ Number of comment lines
^ Number of data lines
^ Laboratory number for this set of samples

**36.0 −108.0 13.6 12 980–1040**
^ ^ ^ ^ ^ Age of feature, assigned by archaeologist
^ Cubes in sample set
^ Magnetic declination
^ Longitude (− [minus sign] = West)
^ Latitude of sample site

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **NRM[a]** | **12** | **10.7** | **61.9** | **6.0** | **7.7** | **77** | **79.1** | **−61.9** | **5.0** | **170** | **3000[b]** |
| **100G[a]** | **9** | **1.3** | **60.0** | **3.9** | **5.1** | **230** | **85.0** | **−96.8** | **3.4** | | **1030[b]** |
| **150G[a]** | **9** | **2.1** | **61.4** | **4.3** | **5.6** | **204** | **83.3** | **−94.9** | **3.6** | | **3000[b]** |
| **200G[a]** | **9** | **359.9** | **62.5** | **4.9** | **6.3** | **167** | **82.1** | **−108.3** | **4.0** | | **3000[b]** |

^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ Time assignmentb
^ Sorting code
^ $\alpha_{95}$ (alpha 95)
^ Longitude (Archaeomagnetic pole)
^ Latitude
^ K statistical value
^ Minor axis, oval of confidence
^ Major axis, oval of confidence for pole position
^ Inclination of magnetic field
^ Magnetic declination
^ Number of cubes used for data in this line
^ Magnetic processing type

**Comments[c]:** SP
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, neck indented corrugated, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000 ±)

---

[a] A set may have two NRM lines or even two demagnetization lines with the same value if the lines were measured by magnetometers of more than one type. Multiple lines are listed in order of acquisition.

[b] Time assignment, if determined, or codes: 3000 = no date, line excluded from computer plots; 2500 = no date, line included in computer presentation or plot of the data.

[c] Comment lines include information about, for instance, sample location, archaeology, and/or archaeomagnetic results of stability testing or cleaning. In the Chaco Canyon appendix, additional lines give information about dominant ceramics, tree ring dates, $^{14}$C dates, and period/phase. See Appendix 4 for explanation.

**APPENDIX 1. Northern Arizona and Adjacent Areas**

```
 194   1   0 AMPHITHEATER (ROCK CORE)
 35.2 -111.6  14.5 14
NRM    13 340.7  41.9  3.6  5.9     76  70.0  130.3 48.0        3000

 195   1   0 AMPHITHEATER (ROCK CORE)
 35.2 -111.6  14.5 14
NRM    13 148.8  68.4 21.8 25.8      8   1.1  -92.8 15.3        3000

 555   1   1 BLACK MESA, AZ
 36.7 -110.2  14.5  8    1200
NRM     8 343.5  62.3  4.6  5.9    218  75.7 -166.5  3.8        1130
  COMMENTS: 50G of 2 cubes gave 0.8 deg. change in decl

 548   1   1 BLACK MESA, AZ, D:11:102, PITHOUSE 1
 36.7 -110.2  14.5  3
NRM     3 357.6  55.0  8.2 11.6    229  87.7  128.9  8.2        3000
  COMMENTS: hearth 2

 261   2   0 BLACK MESA, AZ, D:11:11, PC-6
 36.5 -110.2  14.5  8    1100-1150
NRM     8 346.9  71.4 36.7 42.0      6  68.6 -130.5 24.0        3000
NRM     8   4.6  69.6 27.0 31.6     10  72.9  119.6 18.4        2500

 445   2   1 BLACK MESA, AZ, D:11:113, PITHOUSE
 36.7 -110.2  14.5  8     600
NRM     8   9.9  49.3  2.4  3.7    403  79.5   15.1  2.8        3000
100G    6   7.5  47.6  0.9  1.4   4074  79.9   29.4  1.0         865
  COMMENTS: Prescott College

 446   2   1 BLACK MESA, AZ, D:11:18, PITHOUSE STRUC. NO. 2
 36.7 -110.2  14.5  8     255
NRM     7 356.1  65.4  5.0  6.2    255  78.8 -123.7  3.8        1070
100G    8   1.9  65.6  9.8 12.1     56  78.9 -103.7  7.4        3000
  COMMENTS: uncertain curve assignment

 462   1   0 BLACK MESA, AZ, D:11:18, STRUC. 10, PITHOUSE
 36.7 -110.2  14.5  8
NRM     7 320.2  69.0 19.0 22.4     22  58.1 -157.9 13.2        3000

 459   1   0 BLACK MESA, AZ, D:11:18, STRUC. 11, KIVA
 36.7 -110.2  14.5  4    -200-200
NRM     4 309.5  62.2  8.3 10.7    181  51.4 -174.0  6.8        3000

 463   1   0 BLACK MESA, AZ, D:11:18, STRUC. 13, JACAL
 36.7 -110.2  14.5  4
NRM     4 339.6  77.6 44.9 47.9     14  58.1 -125.6 25.5        3000
```

```
 460   1   0 BLACK MESA, AZ, D:11:18, STRUC. 14, KIVA
 36.7 -110.2  14.5  7
NRM     6 326.2  63.4  6.5  8.3    164  63.4 -171.6  5.2        3000

 461   1   0 BLACK MESA, AZ, D:11:18, STRUC. 7, PITHOUSE
 36.7 -110.2  14.5  7
NRM     7 357.2  67.8 19.4 23.2     20  75.8 -117.3 13.9        3000

 256   1   2 BLACK MESA, AZ, D:11:3, PC-1
 36.5 -110.2  14.5  8    1100
NRM     8 352.1  66.5 12.2 14.8     39  76.3 -132.6  9.0        3000
  COMMENTS: Prescott College is PC
  COMMENTS: 50G of 2 cubes gave 12.5 deg. change in decl.

 257   2   0 BLACK MESA, AZ, D:11:3, PC-2
 36.5 -110.2  14.5  6    1100
NRM     6  21.4  59.7 17.4 23.0     17  72.8  -40.3 15.3        2500
NRM     6  32.4  60.5 12.7 16.7     38  64.5  -41.4 11.0        3000

 258   2   0 BLACK MESA, AZ, D:11:3, PC-3
 36.5 -110.2  14.5  7    1100-1150
NRM     7 136.8  63.5 47.4 59.9      4   0.4  -81.3 37.9        3000
NRM     7  94.3  53.5 30.4 43.7      5  16.4  -50.7 31.4        2500

 259   2   0 BLACK MESA, AZ, D:11:3, PC-4
 36.5 -110.2  14.5  8
NRM     8 345.3  60.7 10.8 14.2     43  77.5 -170.9  9.3        3000
NRM     8   7.9  57.3  6.5  8.8     85  83.5  -35.4  6.1        2500

 260   2   0 BLACK MESA, AZ, D:11:8, PC-5
 36.5 -110.2  14.5  5    1100-1250
NRM     5   2.4  60.1  9.2 12.2     91  85.1  -88.3  8.1        3000
NRM     5   4.0  58.3  6.8  9.2    153  86.0  -60.0  6.2        2500

 551   1   0 BLACK MESA, AZ, D:11:93, FEAT. 14, HEARTH
 36.7 -110.2  14.5  8
NRM     8 356.7  52.1 20.2 29.5      8  85.2  105.4 21.5        3000

 549   1   1 BLACK MESA, AZ, D:11:93, KIVA 1, HEARTH
 36.7 -110.2  14.5  8
NRM     7 358.7  34.7 13.6 19.2     21  88.2  103.9 13.6        3000
  COMMENT: 100G of 2 cubes gave 3.5 deg. change in decl

 550   2   2 BLACK MESA, AZ, D:11:93, KIVA 1, HEARTH
 36.7 -110.2  14.5  8
NRM     8 353.8  64.2  4.1  5.2    295  79.6 -134.9  3.2        1070
100G    4 349.2  65.7  7.2  8.9    279  76.8 -143.9  5.5        3000
  COMMENTS: 100G of 2 cubes gave 9.7 deg. change in decl
  COMMENTS: uncertain curve assignment
```

```
 554   1   0 BLACK MESA, AZ, D:11:93, KIVA 1, POSTHOLE
 36.7 -110.2  14.5  3
NRM     2 339.7  41.4  3.4  5.6   2970  68.3  128.9  4.6        3000

 553   1   0 BLACK MESA, AZ, D:11:93, STRUC. 3, HEARTH
 36.7 -110.2  14.5  8
NRM     6  33.4  60.9  6.0  7.9    169  63.8  -42.1  5.2        3000

 552   1   0 BLACK MESA, AZ, D:11:93, STRUC. 4, HEARTH
 36.7 -110.2  14.5  8
NRM     8   9.1  59.1 10.7 14.3     35  82.2  -47.0  9.5        3000

 895   1   2 BLACK MESA, AZ, D:7:27, FEATURE 21 KIVA
 36.7 -110.2  14.5  8    1025-1150
NRM     8 348.5  62.5  1.9  2.4   1320  78.7 -157.1  1.5        1100
  COMMENTS: 50G and 100G of 2 cubes gave some
  COMMENTS: change in direction

 896   1   2 BLACK MESA, AZ, FEATURE 1
 36.7 -110.2  14.5  8    -700-700
NRM     8  17.3  80.0 99.7  104      2  54.9 -100.3 54.4        3000
  COMMENTS: 50G and 100G of 2 cubes gave some
  COMMENTS: change in direction

 712   1   1 BLACK MESA, AZ, FEATURE 12
 36.7 -110.2  14.5  8
NRM     8   4.6  59.3  3.0  4.0    427  85.1  -64.9  2.7         630
  COMMENTS: 150G of 2 cubes gave some change in direction

 717   2   0 BLACK MESA, AZ, FEATURE 2
 36.7 -110.2  14.5  8
NRM     8 355.1  46.9  5.7  8.8     68  80.5   96.9  6.8        3000
100G    8 350.5  48.6  5.8  8.8     69  79.3  120.4  6.7        2500

 716   2   0 BLACK MESA, AZ, FEATURE 24
 36.7 -110.2  14.5  8
NRM     8   8.1  30.4  2.8  5.0    151  68.4   48.3  4.5        3000
150G    6   2.9  53.9  2.7  3.9    575  86.7   21.7  2.8         940

 714   1   0 BLACK MESA, AZ, FEATURE 5
 36.7 -110.2  14.5  8
NRM     8   5.5  61.6 13.8 17.9     24  82.6  -77.1 11.6        3000

 713   2   0 BLACK MESA, AZ, FEATURE 8
 36.7 -110.2  14.5  8
NRM     8  10.6  56.6  4.4  6.0    178  81.5  -26.3  4.2        3000
100G    7   9.1  57.5  2.6  3.6    601  82.7  -34.1  2.5         660
```

```
 715   2   0 BLACK MESA, AZ, FEATURE FIRE PIT 2
 36.7 -110.2  14.5  8
NRM      8   5.8  59.9  5.9  7.8    115  83.9  -63.7  5.2         3000
150G     8   2.2  58.5  5.4  7.2    130  86.9  -76.2  4.9         2500

 447   3   0 BLACK MESA, AZ, KIVA, PRESCOTT COLLEGE
 36.7 -110.2  14.5  8
NRM      8 346.0  62.4  3.3  4.3    411  77.5 -162.0  2.7         3000
100G     8 346.6  63.6  4.1  5.2    283  76.8 -156.1  3.3         1100
100G     8 347.3  63.3  4.2  5.3    268  77.5 -155.9  3.4         3000

 369   3   1 BLACK MESA NE, AZ, D:11:12 (PC)
 36.7 -110.2  14.5  8
NRM      8  12.0  66.1  4.6  5.6    265  75.3  -77.2  3.4         2500
NRM      8  10.0  68.4  6.0  7.2    170  73.4  -87.9  4.3         3000
100G     8   5.0  65.2  6.6  8.1    123  78.8  -92.5  5.0         3000
  COMMENTS: Uncertain curve assignment

 373   3   0 BLACK MESA NE, AZ, D:11:23 A
 36.7 -110.2  14.5  8    1050-1150
NRM      8   2.9  58.2  6.5  8.8     87  86.8  -64.8  6.0         3000
NRM      8   1.7  59.7  6.3  8.4    101  85.9  -91.8  5.5         2500
100G     8 357.9  59.3  6.5  8.7     92  86.3 -135.5  5.8         3000

 370   2   0 BLACK MESA NE, AZ, D:7:11
 36.7 -110.2  14.5  8     800
NRM      7   2.9  63.6  7.0  8.8    118  81.3  -96.8  5.6         3000
NRM      7   7.2  69.9  6.6  7.7    185  72.1  -96.2  4.5         2500

 372   3   0 BLACK MESA NE, AZ, D:7:11 A
 36.7 -110.2  14.5  8     800
NRM      7   0.7  65.2  1.9  2.4   1675  79.5 -107.8  1.5         3000
NRM      7   0.6  64.2  2.2  2.8   1184  80.7 -107.7  1.8         3000
100G     6 359.9  61.2  3.0  3.9    709  84.4 -111.2  2.5         1070

 374   3   0 BLACK MESA NE, AZ, D:7:11 B
 36.7 -110.2  14.5  8     800
NRM      8 358.9  62.1  4.9  6.2    227  83.2 -117.0  4.0         3000
NRM      7   1.8  61.5  3.8  4.9    355  83.9  -97.6  3.2         3000
150G     7   3.1  61.2  4.3  5.7    269  84.0  -88.1  3.7         1030

 371   3   0 BLACK MESA NE, AZ, D:7:11 C
 36.7 -110.2  14.5  8     800
NRM      6 356.2  62.5  3.0  3.9    727  82.3 -131.1  2.5         3000
NRM      8 351.4  62.0  3.9  5.0    291  80.7 -152.5  3.3         3000
150G     7 351.5  63.7  4.4  5.5    305  78.7 -142.0  3.5         1080

 193   1   0 BLACK POINT (ROCK CORE)
 35.2 -111.6  14.5 11
```

```
NRM    11  76.2  19.5 22.1 42.3      2  17.0  -22.1 40.5        3000

 201   1   0 BONITA FLOW-1 (ROCK CORE)
 35.2 -111.6  14.5 10    1000-1100
NRM    10  21.6  65.7  5.0  6.1    168  69.6  -66.6  3.7        3000

 202   1   0 BONITA FLOW-2 (ROCK CORE)
 35.2 -111.6  14.5 10    1000-1100
NRM     9   6.9  56.7  2.5  3.5    523  84.1  -44.1  2.4        3000

 556   2   1 CANYON DE CHELLEY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  8
NRM     8 350.7  66.3  5.3  6.4    200  75.7 -135.1  3.9        1090
100G    8 350.2  64.7  5.6  7.0    165  77.3 -144.7  4.3        3000
  COMMENTS: room 1, floor 1, hearth

 557   6   2 CANYON DE CHELLEY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  8
NRM     8   2.8  61.6  3.8  4.9    301  83.1  -92.3  3.2        3000
50G     7 357.2  62.9  3.5  4.4    457  81.6 -123.4  2.8        3000
100G    7 356.5  62.9  3.4  4.4    465  81.4 -126.5  2.8        1060
150G    7 357.7  62.5  3.9  5.0    362  82.1 -121.6  3.2        3000
200G    7 356.9  61.2  4.1  5.4    299  83.5 -129.8  3.5        3000
400G    7 355.5  62.9  5.0  6.3    224  81.2 -131.0  4.0        3000
  COMMENTS: cleaned area South of room 28,
  COMMENTS: called room 38(0145)

 558   1   2 CANYON DE CHELLEY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9 10
NRM     9 346.6  64.5  2.0  2.5   1100  75.7 -150.2  1.6        1090
  COMMENTS: room 21, wall, NW corner
  COMMENTS: 150G of 3 cubes gave some change in decl

 559   1   1 CANYON DE CHELLEY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  8
NRM     8  13.8  42.0 29.3 47.7      3  73.1   21.9 38.9        3000
  COMMENTS: provenience 420 in M444

 560   1   1 CANYON DE CHELLEY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  1
NRM     1 349.5  63.6  452  571      0  78.0 -147.4  360        1090
  COMMENTS: hearth in N-1-52

 854   1   2 CANYON DE CHELLY, AZ
 36.2 -109.4  13.9  9
NRM     8 346.2  63.4  1.8  2.3   1410  76.4 -155.3  1.5        1100
  COMMENTS: feature 144, patio B, south plaza
  COMMENTS: 100G of 2 cubes gave little change in direction
```

```
 673   2   0 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  9
NRM      9   5.1  46.7  2.3  3.6    341  80.4   42.5  2.8         3000
150G     8   5.0  44.2  1.9  3.0    542  78.6   47.2  2.4          890

 675   2   0 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  4
NRM      4   0.5  53.5  3.5  5.0    645  87.5   61.7  3.6          950
100G     4   1.6  51.0  4.3  6.4    375  85.1   54.7  4.8         3000

 676   1   1 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  5
NRM      5 140.0  74.4 13.6 15.1     86  12.7  -90.7  8.3         3000
  COMMENTS: fallen block

 677   2   1 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  9
NRM      8   2.6  50.0  2.5  3.8    386  83.9   48.8  2.8         3000
50G      6   5.7  51.4  1.1  1.7   2945  83.7   20.2  1.2          900
  COMMENTS: uncertain curve assignment

 680   2   1 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  8
NRM      8   8.6  71.2 13.1 15.0     43  69.6  -95.3  8.6         3000
NRM      7   2.9  68.2  8.2  9.7    110  74.7 -102.5  5.8         2500
  COMMENTS: kiva C, hearth 293

 682   1   2 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  8
NRM      8 345.5  62.9  1.7  2.1   1648  76.3 -158.3  1.4         1100
  COMMENTS: room 38, hearth 2
  COMMENTS: 150G of 2 cubes gave little change in direction

 684   1   1 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  8
NRM      8 345.4  66.0  6.0  7.3    154  73.8 -146.1  4.5         3000
  COMMENTS: Trench #633

 831   3   1 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  9
NRM      9 353.0  60.7  2.6  3.5    519  82.3 -152.0  2.2         3000
100G     6 351.6  59.3  2.0  2.7   1397  82.4 -166.5  1.8         3000
150G     5 351.1  58.5  1.4  1.8   3660  82.3 -173.4  1.3         1180
  COMMENTS: hearth 1, room 29, floor 1

 832   1   1 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  8
NRM      8  22.8  51.8 18.3 26.8      9  70.9  -14.6 19.6         3000
  COMMENTS: F 552, 729, hearth 2
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```
 833   1   1 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  8
NRM     8 352.5  64.2  8.4 10.5     72  78.7 -136.9  6.6        1080
  COMMENTS: room 75, feat. 2, floor 1

 907   1   3 CANYON DE CHELLY, AZ, ANTELOPE HOUSE
 36.2 -109.4  13.9  6
NRM     6 345.4  63.9  1.2  1.5   4932  75.6 -154.4  1.0        1100
  COMMENTS: collected in lab to be eccentric in the cube
  COMMENTS: to note affects on direction
  COMMENTS: room 21, N.W. corner wall

 674   2   0 CANYON DE CHELLY, AZ, ANTELOPE HOUSE, RM. 18
 36.2 -109.4  13.9 10
NRM    10 348.6  60.2  1.9  2.6    770  80.0 -168.7  1.7        3000
100G    7 348.6  60.8  2.1  2.8   1117  79.7 -164.5  1.8        1150

 685   1   0 CANYON DE CHELLY, AZ, ANTELOPE HOUSE RM. 31
 36.2 -109.4  13.9  8
NRM     8 348.9  60.2  4.8  6.3    177  80.1 -166.4  4.2        1160

 672   2   0 CANYON DE CHELLY, AZ, ANTELOPE HOUSE, RM. 41
 36.2 -109.4  13.9  4
NRM     4 359.2  63.3  5.8  7.4    386  81.6 -113.4  4.7        3000
50G     4 355.0  64.9  7.7  9.6    240  79.0 -127.5  5.9        1080

 681   1   1 CANYON DE CHELLY, AZ, ANTELOPE HOUSE, RM. 41
 36.2 -109.4  13.9  8
NRM     8 351.4  63.1  3.8  4.8    333  79.4 -144.8  3.0        1070
  COMMENTS: 50G of 2 cubes gave little change in direction

 683   1   1 CANYON DE CHELLY, AZ, ANTELOPE HOUSE, STRUC. 60
 36.2 -109.4  13.9  8
NRM     8 358.0  52.3  5.4  7.9     94  86.3   97.6  5.8        3000
  COMMENTS: 150G of 2 cubes gave little change in direction

1088   2   1 CANYON DE CHELLY, AZ, CDM-140
 36.2 -109.4  14.1  8     690         TR
NRM     7   3.7  54.4  1.6  2.3   1384  86.8    1.8  1.6        3000
150G    6   4.8  53.5  1.8  2.6   1256  85.5    7.3  1.9         700
  COMMENTS: west wall, Sheeps Point Pithouse

1951   2   1 CANYON DE CHELLY, AZ, JWH
 36.2 -109.4  14.2 10
NRM     9 338.0  39.1 10.2 17.9     13  66.3  130.2 15.0        3000
400G    6 343.1  66.1  1.2  1.5   5671  72.5 -149.4  0.9        1090
 COMMENTS: uncertain curve assignment
```

```
  13   3   0 CANYON DE CHELLY, AZ, ROOM 1, TSITA
 36.2 -109.4  13.9  8     200-300
NRM      7   9.7  54.6  3.0  4.3    420  82.0  -14.2  3.0         300
NRM      8   5.2  56.3  4.9  6.8    140  85.7  -29.8  4.7        3000
100G     8   6.7  55.9  4.7  6.5    149  84.6  -23.8  4.6        3000

 855   1   2 CANYON DE CHELLY, AZ, ROOM 23
 36.2 -109.4  13.9  9
NRM      9 348.3  60.6  2.0  2.6    891  79.4 -165.5  1.7        1160
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction

  12   1   1 CANYON DE CHELLY, AZ, ROOM 69, MUMMY HOUSE
 36.2 -109.4  13.9  9     800-1000
NRM      8   5.1  48.0  1.3  2.0   1294  81.7   38.3  1.5         870
  COMMENTS: 100G of 2 cubes gave 1.7 deg. change in decl.

 678   1   1 CANYON DE CHELLY, AZ, SLIDING ROCK
 36.2 -109.4  13.9 10
NRM     10 348.3  62.6  1.1  1.4    276  78.4 -155.7  0.9        1100
  COMMENTS: 150G of 2 cubes gave 1.5 deg. change in decl

  14   1   1 CANYON DE CHELLY, AZ, SLIDNG ROCK
 36.2 -109.4  13.9  8     800-1000
NRM      8 358.1  70.1   .    .       .  72.0 -113.0  4.1        3000
  COMMENTS: Collected as blocks and cut into cubes in lab

 857   1   2 CANYON DE CHELLY, AZ, STRUCTURE 47
 36.2 -109.4  13.9  8
NRM      6 351.2  60.5  2.7  3.5    832  81.4 -159.1  2.3        1180
  COMMENTS: 100G of 2 cubes gave large
  COMMENTS: changes in direction

 853   2   0 CANYON DE CHELLY, AZ, STRUCTURE 58
 36.2 -109.4  13.9  9
NRM      8   1.5  56.4  4.2  5.8    188  88.6  -50.6  4.1        3000
50G      7   0.9  56.1  4.1  5.7    230  89.2  -49.4  4.0         970

 856   2   0 CANYON DE CHELLY, AZ, STRUCTURE 67-71
 36.2 -109.4  13.9  8     692           TR
NRM      7   6.0  47.9  3.2  4.9    264  81.1   33.9  3.7        3000
50G      7   6.4  50.3  2.4  3.5    529  82.6   22.7  2.6         710

 878   2   1 CEDAR MESA, UT, 42-SA-2142, EGG HAMLET
 37.5 -109.7  14.5 10     600-900
NRM     10   0.2  61.0  2.1  2.7    744  85.5 -108.2  1.8        3000
100G    10   0.3  60.9  1.9  2.5    877  85.5 -106.7  1.6        1020
  COMMENTS: Uncertain curve assignment?
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 877   3   1 CEDAR MESA, UT, 42-SA-3201
 37.5 -109.7  14.6  8     600-900
NRM     7   5.2  54.6  0.6  0.9   9635  85.2    7.5  0.6        3000
50G     7   4.0  54.9  0.7  0.9   8491  86.1   12.0  0.7        3000
100G    7   3.9  54.7  0.5  0.7  16050  86.1   15.0  0.5         700
  COMMENTS: Long point village

 874   1   2 CEDAR MESA, UT, 42-SA-3205
 37.5 -109.7  14.5  7    1200
NRM     6 347.1  62.8  1.1  1.4   5705  78.2 -160.9  0.9        1110
  COMMENTS: 50G to 150G of 2 cubes gave little
  COMMENTS: change in direction

 875   1   2 CEDAR MESA, UT, 42-SA-320S
 37.5 -109.7  14.5  8    1200
NRM     7 344.0  63.9  0.9  1.1   7508  75.7 -160.7  0.7        1110
  COMMENTS: 50G to 150G of 2 cubes gave little
  COMMENTS: change in direction

 876   3   0 CEDAR MESA, UT, NR-11-4 BMIII
 37.4 -109.7  14.6  7     650-700
NRM     5   9.8  58.7  2.0  2.7   1838  82.1  -37.8  1.8        3000
50G     5   4.7  58.1  2.0  2.8   1658  86.0  -41.8  1.9        3000
100G    5   3.2  57.9  2.1  2.9   1547  87.3  -44.8  1.9         650

 192   1   0 CEDAR WASH (ROCK CORE)
 35.2 -111.6  14.5 10
NRM    10 314.0  24.2  3.5  6.6     62  25.3  119.3  6.2        3000

1099   1   3 CONNIE SITE, AZ, N2-225, PIT HOUSE 48
 34.5 -109.9  13.8  8     600-800
NRM     8 306.1  46.0 36.6 57.3      3  43.8  166.6 44.8        3000
  COMMENTS: arch date says 225 AD from C14
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1098   1   3 CONNIE SITE, AZ, NS-225
 34.5 -109.9  13.8 11     600-800
NRM    11  12.8  49.0 28.5 43.1      3  78.3   -0.5 32.6         690
  COMMENTS: pit structure 67 hearth
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1100   1   3 CONNIE SITE, AZ, NS225, PIT HOUSE 41 HEARTH
 34.5 -109.9  13.8  8     600-800
NRM     8 146.8  63.5  107  135      1  -5.0  -87.0 85.2        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 5 cubes gave large
  COMMENTS: changes in direction
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1101   1   3 CONNIE SITE, AZ, NS225, PIT STRUC. 17
 34.5 -109.9  13.8  9     600-800
NRM      9  40.4 -16.2 47.1 91.4      1  32.7   20.5 88.7        3000
  COMMENTS: C14 date is 225, hearth
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1102   1   3 CONNIE SITE, AZ, NS225, PIT STRUC. 31
 34.5 -109.9  13.8  9     600-800
NRM      9  60.2  10.6  7.7 15.2     13  27.4   -6.7 15.0        3000
  COMMENTS: C14 date is 225, hearth
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1103   1   3 CONNIE SITE, AZ, NS225, PIT STRUCTURE 20
 34.5 -109.9  13.8  8     600-800
NRM      8  17.9  53.1 26.1 37.7      5  75.2  -21.7 27.2        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1111   1   2 CONNIE SITE, AZ, PIT HOUSE 13 FLOOR
 34.5 -109.9  13.8  8     300-400
NRM      7 312.4  39.9 41.8 69.5      2  47.0  157.3 57.8        3000
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1108   1   3 CONNIE SITE, AZ, PIT HOUSE 16 HEARTH
 34.5 -109.9  13.8  8     600-800
NRM      8  44.2 -21.4 32.6 61.8      2  28.1   19.3 58.7        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1110   1   0 CONNIE SITE, AZ, PIT HOUSE 56 FLOOR
 34.5 -109.9  13.8  8     300-400
NRM      8  43.3   5.2 55.8  111.0    1  38.7    8.8111.0        3000

1109   2   0 CONNIE SITE, AZ, PIT HOUSE 57 HEARTH
 34.5 -109.9  13.8  9     300-400
NRM      7   5.1  56.6  2.8  3.8    525  85.0  -54.5  2.6        3000
100G     7   7.0  56.7  2.5  3.5    625  83.6  -48.1  2.4         400

1106   2   4 CONNIE SITE, AZ, PIT STRUC. 57, SOUTH WALL
 34.5 -109.9  13.8  8     600-800
NRM      8   6.5  61.2  3.4  4.4    371  80.7  -78.3  2.9         600
100G     8   5.9  62.6  3.8  6.8    327  79.5  -85.9  3.1        3000
  COMMENTS: C14 date is 225
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  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction
  COMMENTS: uncertain curve assignment

1105   1   3 CONNIE SITE, AZ, PIT STRUCTURE 11
 34.5 -109.9  13.8  8     600-800
NRM     8  17.0  53.0 61.6 88.9      2  75.9  -21.1 64.1        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1104   1   3 CONNIE SITE, AZ, PIT STRUCTURE 22 HEARTH
 34.5 -109.9  13.8  8     600-800
NRM     8  17.2  61.1  102  133      1  74.5  -54.7 86.7        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1112   1   2 CONNIE SITE, AZ, PIT STRUCTURE 32 HEARTH
 34.5 -109.9  13.8  8     300-400
NRM     7 313.7  35.5 33.4 57.7      2  46.6  152.4 49.9        3000
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1107   1   3 CONNIE SITE, AZ, PIT STRUCTURE 8 HEARTH
 34.5 -109.9  13.8  9     600-800
NRM     8 345.5  48.7 19.8 30.0      7  76.8  142.7 22.8        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

 200   1   0 GRABIN RUIN (ROCK CORE)
 35.2 -111.6  14.5 11
NRM    10 359.0  62.5  3.7  4.7    258  81.3 -116.3  3.0        3000

 249   2   1 GRAND CANYON, AZ
 36.1 -109.9  14.8  8    1080-1150
NRM     8 357.7  65.3  3.6  4.4    491  78.6 -117.8  2.7        1080
200G    7   8.2  61.5  7.0  9.1    106  80.9  -68.5  5.9        3000
  COMMENTS: uncertain curve assignment

 251   2   0 GRAND CANYON, AZ
 36.1 -109.9  14.8  8    1080-1150
NRM     8   2.6  53.4  9.9 14.2     30  87.0   25.6 10.2         950
200G    8   7.9  47.7 10.9 16.7     20  80.1   25.4 12.8        3000

 252   2   0 GRAND CANYON, AZ
 36.1 -109.9  14.8  8     900
NRM     8 359.0  17.0 25.2 30.4     14  76.3 -112.8 18.3        3000
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200G    7  11.2  65.4 32.8 40.4      7  75.8  -77.4 24.9         2500

 255   2   0 GRAND CANYON, AZ
 36.1 -109.9  14.8  8    1080-1150
NRM     8  77.0  60.8 63.2 82.8      2  31.9  -51.1 54.2         3000
200G    7 321.9  53.7 23.0 33.0      8  59.0  168.1 23.6         2500

 349   1   0 GRAND CANYON, AZ, GC 212, Rm-10
 36.2 -112.0  14.8  8    1050-1100
NRM     8  26.3  73.1 23.5 26.3     18  61.7  -83.0 14.7         3000

 347   3   0 GRAND CANYON, AZ, GC 212, Rm-12
 36.2 -112.0  14.8  8    1050-1100
NRM     8 332.6  51.1 52.1 77.0      2  66.9  154.9 56.9         3000
NRM     8  17.5  26.7 29.7 54.8      2  62.9   28.1 50.5         3000
150G    8 344.9  49.1 48.5 73.4      2  75.9  136.2 55.5         2500

 348   2   1 GRAND CANYON, AZ, GC 212, Rm-12
 36.2 -112.0  14.8  8    1050-1100
NRM     8  12.1  77.6 22.5 24.0     20  59.1 -102.5 12.8         3000
NRM     8   2.6  74.8 29.0 31.9     11  64.7 -109.1 17.5         2500
  COMMENTS: +90 deg added to decl

 253   2   0 GRAND CANYON, AZ, UN-1
 36.1 -109.9  14.8  9    1080-1150
NRM     9  20.8  59.2 33.0 44.0      4  73.2  -39.7 29.4         3000
200G    8  39.6  55.1 22.0 30.9      8  58.2  -31.1 21.7         2500

 250   2   0 GRAND CANYON, AZ, UN-11
 36.1 -109.9  14.8  8    1080-1150
NRM     8   5.0  58.9  6.8  9.1     82  84.7  -63.0  6.1         3000
200G    8   9.2  57.6  7.1  9.7     70  82.4  -39.1  6.6         2500

 247   2   0 GRAND CANYON, AZ, UN-3
 36.1 -109.9  14.8  7    1080-1150
NRM     6   4.0  60.2  8.6 11.3     81  84.1  -72.2  7.5         2500
200G    7  10.6  56.6 16.2 22.4     16  81.4  -30.4 15.5         3000

 248   2   0 GRAND CANYON, AZ, UN-43
 36.1 -109.9  14.8  8    1080-1150
NRM     6 347.9  57.2  4.2  5.8    287  80.2  173.6  4.0         2500
200G    6   3.5  60.1  7.7 10.1    101  84.4  -82.0  6.7         3000

 254   2   0 GRAND CANYON, AZ, UN-8
 36.1 -109.9  14.8  8    1080-1150
NRM     7 322.2  52.4 19.1 27.8     10  58.9  165.5 20.2         2500
200G    8  78.2  58.1 69.2 93.8      2  29.9  -48.3 63.6         3000

 246   2   0 GRAND CANYON, AZ, UN-8, FEATURE 14
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 36.1 -109.9  14.8  8
NRM      8 357.6  60.9  7.6  9.9    108  83.9 -126.5  6.5          2500
200G     8 356.1  45.0 30.4 48.1      3  79.9   90.7 38.0          3000

 245   2   0 GRAND CANYON, AZ, UN-9, FEATURE 2
 36.1 -109.9  14.8  8    1080-1150
NRM      6 357.5  58.9  6.0  8.0    157  85.9 -137.9  5.4          2500
200G     7   6.3  53.0  8.8 12.7     44  84.2    4.9  9.2          3000

  72   3   0 GRASSHOPPER, AZ, KIVA (LINDA'S AREA)
 34.1 -110.6  14.0  8    1300-1400
NRM      7 357.2  56.4  2.7  3.7    549  86.3 -148.1  2.6          1310
NRM      8   6.8  51.3  6.5  9.6     62  83.9   -2.4  7.1          3000
100G     8   5.1  55.9  6.2  8.7     85  85.2  -51.7  6.0          3000

  84   2   2 GRASSHOPPER, AZ, ROOM 20
 34.1 -110.6  14.0  8    1300-1400
NRM      8 354.8  60.0  2.4  3.1    727  82.1 -140.1  2.1          3000
NRM      8 358.0  60.1  1.7  2.2   1421  82.9 -122.8  1.5          1360
  COMMENTS: TR-65-29 and TR-65-30 taken from this hearth
  COMMENTS: 150G of 2 cubes gave 2 deg. change in decl

  85   1   2 GRASSHOPPER, AZ, SECT. 2 GREAT KIVA
 34.1 -110.6  14.0  8    1300-1400
NRM      8 350.0  58.0  2.9  3.9    431  80.7 -167.8  2.7          1340
  COMMENTS: 150G of 2 cubes gave no change in decl
  COMMENTS: feature 2a

   9   2   1 HOUCK, AZ, KIVA 1
 35.2 -109.2  13.8 10     995-1115      TR
NRM     10 350.5  62.2  2.0  2.5    886  79.0 -148.1  1.6          3000
110C     7 348.5  62.3  3.1  3.9    569  77.8 -152.3  2.5          1090
  COMMENTS: 100G of 2 cubes gave 0.8 deg. change in decl

  36   1   1 HOUCK, AZ, KIVA 1
 35.2 -109.2  13.8  7
110C     7 348.5  62.3  3.1  3.9    569  77.8 -152.3  2.5          1080
  COMMENTS: heating experiment on lab. No. 9

   8   2   3 HOUCK, AZ, PH 3
 35.2 -109.2  13.8 12     942           TR
NRM     12   6.0  45.6  1.3  2.0    784  80.4   37.1  1.6          3000
100C     9   4.6  45.5  1.4  2.2    920  80.9   44.2  1.7           870
  COMMENTS: C14 date 1320+-130BP, 1280+-120BP
  COMMENTS: 100G of 2 cubes 0.5 deg. change in decl
  COMMENTS: THR see lab. No. 35

  35   1   1 HOUCK, AZ, PH 3
 35.2 -109.2  13.8  9
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100C    9   4.6  45.5  1.4  2.2    920  80.9   44.2  1.7          890
  COMMENTS: heating experiment on lab #8, approx. 100C

 679   1   2 HUBBELL TRADING POST, AZ, WIDE REED RUIN
 35.5 -109.5  13.9  8    1275           TR
NRM     8 351.9  63.8  2.9  3.7    574  78.3 -138.5  2.3         1340
  COMMENTS: 100G of 2 cubes gave little change in direction
  COMMENTS: TR date of 1275 is a cluster of dates

 970   2   1 INSCRIPTION HOUSE, AZ
 36.6 -110.8  14.6  8
NRM     6   0.7  54.0  7.9 11.2     71  87.9   54.4  8.0         2500
75G     6  12.1  64.2 13.1 16.4     43  77.0  -70.3 10.3         3000
  COMMENTS: Hearth south corner of room 2

  63   1   0 KAYENTA, AZ, NA 8300
 36.7 -110.3  14.5  8     863
NRM     8   6.1  56.0  8.9 12.4     42  85.1  -20.8  8.6         3000

  10   3   1 KIET SIEL, AZ, ROOM 92
 36.6 -110.6  14.6  9    1258-1270      TR
NRM     7 355.9  59.9  3.7  4.9    349  84.8 -147.0  3.2         1320
NRM     7 353.0  61.9  4.1  5.3    311  81.5 -147.7  3.4         3000
100G    8 357.4  60.6  5.0  6.6    163  84.7 -131.6  4.4         3000
  COMMENTS: TR date also given as 1156, U, AM could be 1210

1569   1   3 MONTEZUMA CANYON, BLANDING, UT
 37.6 -109.2  15.2 10     700-900
NRM     7   8.4  61.3  5.1  6.6    199  82.0  -59.0  4.3          610
  COMMENTS: cave canyon village, compound H, pit 1
  COMMENTS: 50G to 100G of 5 cubes gave some
  COMMENTS: change in direction, could be modern

1570   3   1 MONTEZUMA CANYON, BLANDING, UT
 37.6 -109.2  15.2 10     700-900
NRM    11 341.0  58.3 14.5 19.5     13  75.0  172.2 13.2         3000
50G    11 339.7  60.0 12.3 16.3     19  74.0  179.0 10.8         3000
100G   11 349.4  59.4 12.8 17.0     17  81.3 -178.3 11.4         2500
  COMMENTS: cave canyon village compound H, pit structure

1571   2   1 MONTEZUMA CANYON, BLANDING, UT
 37.6 -109.2  15.2  8     900-1000
NRM     6 349.9  65.7  6.1  7.5    214  77.3 -141.6  4.6         3000
50G     6 353.5  61.6  3.0  3.9    692  82.9 -151.0  2.5         1030
  COMMENTS: 42SA2096 pit structure 2

1572   2   1 MONTEZUMA CANYON, BLANDING, UT
 37.6 -109.2  15.2  8     900-1000
NRM     8  23.6  63.7 19.6 24.7     14  70.8  -50.3 15.6         2500
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50G      9 353.5  51.3 28.0 41.3      4  82.2  116.2 30.5         3000
  COMMENTS: pit structure 1, 42SA2096

1573   2   1 MONTEZUMA CANYON, BLANDING, UT
 37.6 -109.2  15.2  8
NRM      8   6.7  59.9  4.2  5.5    231  83.9  -52.4  3.6         3000
100G     6   7.7  58.1  2.9  3.9    635  83.8  -32.5  2.7          660
  COMMENTS: 42SA2096, operation 4, 1977

1574   3   2 MONTEZUMA CANYON, BLANDING, UT
 37.6 -109.2  15.2  8
NRM      7  12.1  50.8  3.4  5.1    261  78.4    8.5  3.7          700
50G      7   7.5  52.5  4.0  5.7    210  82.4   15.1  4.2         3000
100G     7   6.1  49.0  4.9  7.4    117  80.8   35.9  5.6         3000
  COMMENTS: 42SA971, compound K
  COMMENTS:  U, uncertain curve assignment

1575   3   1 MONTEZUMA CANYON, BLANDING, UT
 37.6 -109.2  15.2  8
NRM      7 356.4  53.3 13.3 19.1     20  85.3  109.7 13.8         3000
50G      7  23.5  42.8 12.1 19.6     16  66.3    6.6 15.8         2500
100G     7 251.5  52.8 19.7 28.6      9  81.9  131.7 20.7         3000
  COMMENTS: 42SA971, compound A

 454   1   0 MONTEZUMA CANYON, SE, UT
 37.6 -109.2  14.5  6     700-900
NRM      6   8.6  52.1 10.1 14.7     40  81.5   13.2 10.7         3000

 455   1   0 MONTEZUMA CANYON, SE, UT
 37.6 -109.2  14.5  6     700-900
NRM      6   8.8  53.3 15.3 22.0     19  81.9    5.7 15.8         3000

 456   1   0 MONTEZUMA CANYON, SE, UT
 37.6 -109.2  14.5  6     700-900
NRM      6  26.6  60.5 10.6 14.0     54  69.2  -38.3  9.2         3000

 457   1   0 MONTEZUMA CANYON, SE, UT
 37.6 -109.2  14.5  6     700-900
NRM      6   5.5  47.2  2.3  3.6    592  79.6   42.6  2.8          800

 642   1   0 N:7:29, AZ
 34.6 -112.3  14.4  1    1000-1100
NRM      1 346.1  59.8  409  543      0  77.5 -169.3  360         1140

  21   2   1 NAVAJO MOUNTAIN, AZ, ROOM 15
 37.0 -110.6  14.8 10    1270
NRM      9  11.8  45.1 12.1 19.0     13  75.6   21.9 15.0         3000
NRM      9   4.9  52.3 15.4 22.4     11  84.3   23.5 16.3         2500
  COMMENTS: Hearth very sandy
```

```
  22   2   1 NAVAJO MOUNTAIN, AZ, ROOM 2
 37.0 -110.6  14.8 10    1270
NRM      9  21.4  50.4 18.5 27.6      7  71.4   -8.5 20.6        3000
NRM      7 349.5  65.3 67.9 83.8      2  77.0 -144.1 51.7        2500
  COMMENTS: Hearth very sandy

 199   1   0 ROUND MOUNTAIN (ROCK CORE)
 35.2 -111.6  14.5 10
NRM      9  25.3  54.9  2.1  3.0    607  69.4  -29.6  2.1        3000

 798   1   0 SAN JUAN RIVER, UT
 37.2 -110.0  14.5  7
NRM      7   2.9  52.6 31.3 45.4      4  85.4   39.0 32.9        3000

 799   0   0 SAN JUAN RIVER, UT
 37.2 -110.0  14.5  4

 198   1   0 SP QUAD B3 (ROCK CORE)
 35.2 -111.6  14.5 10
NRM     10 113.1  -3.6  4.9  9.8     25 -19.8  -33.9  9.8        3000

 196   1   0 SP WEST (ROCK CORE)
 35.2 -111.6  14.5 11
NRM     11  32.7  69.5 53.4 62.4      3  60.8  -70.0 36.5        3000

 197   1   0 SUGAR LOAF RHYOLITE (ROCK CORE)
 35.2 -111.6  14.5 10
NRM      9 200.2  61.6 19.3 25.0     11  -9.8  126.5 16.2        3000

 351   2   0 SUMMIT, UT, k MEDIAN VILLAGE B, F69
 37.8 -112.9  15.1 10     950-1050
NRM     10   8.0  67.6  6.0  7.1    129  76.1  -91.3  4.3        2500
NRM     10   8.5  67.5  6.3  7.5    116  76.1  -89.8  4.5        3000

 309   1   0 SUMMIT, UT, MEDIAN VILLAGE, 1A-1J
 37.8 -112.9  15.6  9
NRM      8  35.6  65.1 10.2 12.6     51  62.4  -54.1  7.8        3000

 310   1   2 SUMMIT, UT, MEDIAN VILLAGE, 2A-2H
 37.8 -112.9  15.6  6
NRM      6  34.8  68.0  5.5  6.6    295  62.2  -62.5  3.9        3000
  COMMENTS: 150G of 2 cubes gave 2.9 deg. change in decl
  COMMENTS: U uncertain curve assignment

 352   2   1 SUMMIT, UT, MEDIAN VILLAGE A, F24
 37.8 -112.9  15.1  8     950-1050
NRM      8   2.2  64.4  5.6  7.0    162  81.5 -102.6  4.4        3000
NRM      8   7.3  64.4  4.9  6.2    207  80.0  -82.5  3.9        2500
```

```
  COMMENTS: U uncertain curve assignment

 353   1   0 SUMMIT, UT, MEDIAN VILLAGE B, F73
 37.8 -112.9  15.1  8     950-1050
NRM     8 341.9  74.5  8.2  9.1    123  64.2 -133.1  5.0        3000

 354   2   1 SUMMIT, UT, MEDIAN VILLAGE C, NW of F81
 37.8 -112.9  15.1  8     950-1050
NRM     7 353.6  68.6  5.2  6.2    273  75.2 -128.5  3.6        3000
NRM     7 354.3  69.9  4.6  5.4    368  73.6 -124.9  3.2        2500
  COMMENTS: U uncertain curve assignment

 355   1   1 SUMMIT, UT, MEDIAN VILLAGE D, F23
 37.8 -112.9  15.1  8     950-1050
NRM     7 359.0  68.7  6.0  7.1    210  75.7 -115.4  4.2        3000
  COMMENTS: U uncertain curve assignment

1094   2   0 SWANNIE SITE, AZ, R24, FEAT. 47, HEARTH RS-2
 34.5 -110.0  13.8  8    1100
NRM     8   0.3  62.9 21.8 27.8     11  80.2 -108.7 17.7        3000
50G     8 349.8  70.5 28.4 32.8     10  68.6 -126.2 19.0        2500

1095   1   3 SWANNIE SITE, AZ, R24, FEATURE 16
 34.5 -110.0  13.8  8    1100
NRM     8  36.4  80.8 48.0 49.8      6  48.0  -94.1 25.8        3000
  COMMENTS: NRM weak. Room structure 15
  COMMENTS: 50G and 100G of 3 cubes gave large
  COMMENTS: changes in direction

1097   1   3 SWANNIE SITE, AZ, R24, FEATURE 2
 34.5 -110.0  13.8  8    1100
NRM     8  21.5  67.8 26.2 31.3     10  67.4  -72.9 18.7        3000
  COMMENTS: room structure 12
  COMMENTS: 50G to 200G of of 3 cubes gave some
  COMMENTS: change in direction

1092   1   3 SWANNIE SITE, AZ, R24, FEATURE 53
 34.5 -110.0  13.8  8    1100
NRM     7   5.2  57.3  6.2  8.5    108  84.6  -61.1  5.8        3000
  COMMENTS: room structure 2-hearth
  COMMENTS: 50G and 100G of 3 cubes gave large
  COMMENTS: changes in direction

1093   2   1 SWANNIE SITE, AZ, R24, FEATURE 54
 34.5 -110.0  13.8  8    1100
NRM     7   6.8  61.1  7.8 10.2     83  80.7  -77.2  6.7        3000
50G     6 348.0  60.0  4.7  6.2    265  78.5 -162.4  4.1        1115
  COMMENTS: hearth, room structure 2
```

```
1096   2   1 SWANNIE SITE, AZ, R24, FEATURE 9C
 34.5 -110.0  13.8  8    1100
NRM      8 359.0  59.9  2.7  3.6    556  83.6 -117.1  2.4        3000
100G     7 348.4  60.8  4.3  5.6    268  78.3 -157.5  3.7        1100
  COMMENTS: room structure 12

 299   2   0 WALNUT CREEK, AZ, P:13:10, Y-5
 34.0 -111.0 13.7 8
NRM      8 352.2  50.7  9.4 14.0     29  83.0  139.8 10.4        3000
150G     8 348.2  51.7 10.7 15.7     24  80.0  152.8 11.5        2500

 286   3   0 WALNUT CREEK, AZ, YOUNG 1
 34.0 -111.0  13.7  8    1100-1200
NRM      8   1.9  59.1  4.8  6.4    201  84.0  -97.2  4.3        3000
NRM      7 359.4  60.3  4.2  5.5    280  82.7 -114.7  3.6        3000
150G     7 353.2  60.1  3.9  5.2    315  81.2 -146.7  3.4        1170

 287   1   1 WALNUT CREEK, AZ, YOUNG 2, P:13:10, FEAT. 4
 34.0 -111.0  13.7  8    1250
NRM      8 356.1  57.7  3.1  4.2    376  84.6 -145.3  2.9        1200
  COMMENTS: 150G of 2 cubes gave 0.9 deg. change in decl

 288   1   1 WALNUT CREEK, AZ, YOUNG 3
 34.0 -111.0  13.7  9    1300
NRM      9 354.8  65.3 11.3 13.9     37  76.0 -125.8  8.6        3000
  COMMENTS: 150G of 2 cubes gave 13.5 deg. change in decl

 289   1   0 WALNUT CREEK, AZ, YOUNG 4
 34.0 -111.0  13.7  2    1175
NRM      2 317.1  61.4 12.2 15.9    588  55.6 -173.7 10.3        3000

 290   1   2 WALNUT CREEK, AZ, YOUNG 6, P:13:10, FEAT 1
 34.0 -111.0  13.7  8    1050-1200
NRM      7 346.8  57.0  2.3  3.2    743  78.7 -178.8  2.2        1150
  COMMENTS: sample may be remagnetized at a later time
  COMMENTS: 150G of 2 cubes gave 4.7 deg. change in decl

 897   3   1 WEBB TANK SITE, AZ
 34.3 -110.0  14.0  8     700-850
NRM      7   2.7  45.1  4.8  7.5    104  82.0   52.5  6.0        3000
50G      8   3.4  48.6  7.9 12.0     38  84.5   37.3  9.1         740
100G     8   3.9  48.1  9.4 14.4     26  83.9   35.9 11.0        3000
  COMMENTS: Az. State Museum #MNA4529, pit house 1

 898   2   1 WEBB TANK SITE, AZ
 34.3 -110.0  14.0  8     700-850
NRM      8   4.0  51.8  1.8  2.7    806  86.2    8.1  2.0        3000
50G      8   3.6  51.9  2.0  3.0    654  86.5    9.5  2.2         700
  COMMENTS: Pit house 2, earliest house
```

```
 900   1   2 WEBB TANK SITE, AZ, FEATURE 7
 34.3 -110.0  14.0  8     700-850
NRM     8 358.0  49.9  2.0  3.0    617  86.0   95.6  2.2         750
  COMMENTS: 50G to 200G of 2 cubes gave a large
  COMMENTS: change in direction

 899   1   2 WEBB TANK SITE, AZ, PIT HOUSE 5
 34.3 -110.0  14.0  8
NRM     8   3.7  56.6  5.1  7.0    131  85.8  -64.7  4.9         640
  COMMENTS: 50G to 200G of 2 cubes gave a large
  COMMENTS: change in direction, U uncertain curve

  16   3   0 WIDE RUINS, AZ, NA7512, KIVA
 35.3 -109.5  13.8 10     870
NRM     8 356.9  52.3  3.2  4.6    272  86.4  118.4  3.4         960
NRM     8 358.9  52.5  3.7  5.4    197  87.6   92.7  4.0        3000
100G    8 356.7  53.8  4.1  5.8    176  87.1  142.8  4.2        3000
```

**APPENDIX 2. Southern Arizona**

```
1143   1   2 AZ, SON-C:2:20
 31.9 -112.6  13.4 14
NRM    14 327.2  63.6 46.0 58.1      2  61.4 -165.4 36.7        3000
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

 911   2   0 AZ, U:9:46, FEATURE 14-HEARTH
 33.4 -111.9  13.9  8     850-975
NRM     8   4.8  53.3  2.6  3.7    436  86.0  -29.9  2.7        3000
100G    8   2.3  52.7  2.7  3.9    379  88.1  -19.1  2.9         950

 910   1   2 AZ, U:9:46, FEATURE 15-HEARTH
 33.4 -111.9  13.9  8     850-975
NRM     8   0.5  52.6  2.2  3.2    572  89.5    5.9  2.3         970
  COMMENTS: 50G to 150G of 2 cubes gave little
  COMMENTS: change in direction

 912   1   2 AZ, U:9:46, FEATURE 16-HEARTH
 33.4 -111.9  13.9  8     850-975
NRM     7   2.3  52.0  0.8  1.1   5433  87.9   -1.7  0.9         950
  COMMENTS: 50G to 150G of 2 cubes gave little
  COMMENTS: change in direction

 908   1   2 AZ, U:9:46, FEATURE 29-HEARTH
 33.4 -111.9  13.9  8    1100-1200
NRM     8 348.5  58.1  1.5  2.1   1518  79.3 -168.7  1.4        1150
  COMMENTS: 50G to 150G cubes gave little
  COMMENTS: change in direction

 909   2   0 AZ, U:9:46, FEATURE 32-HEARTH
 33.4 -111.9  13.9  8    1100-1200
NRM     8 346.9  59.6  4.1  5.4    239  77.4 -164.2  3.6        3000
100G    8 348.1  60.0  3.8  5.1    275  77.9 -160.3  3.3        1110

 913   1   2 AZ, U:9:46, FEATURE K-HEARTH
 33.4 -111.9  13.9  8     850-975
NRM     8   0.2  53.8  1.1  1.6   2259  89.1  -99.2  1.2         970
  COMMENTS: 50G to 150G of 2 cubes gave little
  COMMENTS: change in direction

   4   1   1 BYLAS, AZ, V:16:10, U-2, ROOM 20
 33.1 -110.1  13.5  8    1100-1200
NRM     7 347.0  56.8  1.1  1.5   3232  78.5 -174.3  1.1        1150
  COMMENTS: AF and THR of 3 cubes, little change in dir

   2   1   1 BYLAS, AZ, V:16:10, U-3, ROOM 1
 33.1 -110.1  13.5  6    1100-1200
```

```
NRM     6 353.1  56.4  3.3  4.6    434  83.2 -163.7  3.2         1190
  COMMENTS: AF and THR of 3 cubes, little change in dir

   3   1   1 BYLAS, AZ, V:16:10, U-3, ROOM 3
 33.1 -110.1  13.5  6    1100-1200
NRM     5 352.4  56.2  1.2  1.7   4043  82.8 -167.0  1.2         1190
  COMMENTS: AF and THR of 3 cubes, little change in dir

   5   3   1 BYLAS, AZ, V:16:10, U-6, ROOM 4
 33.1 -110.1  13.5  7    1100-1200
NRM     5 348.1  57.3  3.0  4.2    715  79.2 -170.4  2.9         3000
NRM     5 346.1  56.6  2.6  3.5    987  77.9 -176.6  2.4         3000
100G    5 345.4  58.9  2.6  3.5   1073  76.6 -166.8  2.3         1130
  COMMENTS: 2 cubes THR gave little change in direction

   6   3   1 BYLAS, AZ, V:16:8, ROOM 6
 33.1 -110.1  13.5  6    1100-1200
NRM     5 357.2  56.1  1.2  1.6   4681  85.8 -142.2  1.1         3000
NRM     6 356.7  53.8  2.3  3.3    796  87.0 -174.7  2.4         3000
100G    5 352.2  57.5  1.3  1.8   3905  82.0 -159.6  1.2         1180
  COMMENTS: 2 cubes THR gave little change in direction

   7   3   1 BYLAS, AZ, V:16:8, ROOM 8
 33.1 -110.1  13.5  6    1100-1200
NRM     6 357.7  55.4  3.0  4.2    517  86.6 -142.2  3.0         3000
NRM     6 357.6  55.4  2.6  2.7    672  86.6 -144.1  2.6         3000
100G    6 351.7  57.9  1.6  2.2   2097  81.3 -158.5  1.5         1170
  COMMENTS: 2 cubes THR gave little change in direction

1555   1   1 CASA GRANDE, AZ, COMPOUND A, STRUCTRE 5
 32.9 -111.6  13.6  8
NRM     8 355.3  56.0  1.9  2.7    879  84.7 -157.0  1.9         1360
  COMMENTS: 100G of 4 cubes gave 0.8 deg. change in decl

1554   1   1 CASA GRANDE, AZ, COMPOUND A, STRUCTURE 1
 32.9 -111.6  13.6  8
NRM     7  12.9  70.8 22.9 26.4     17  66.1  -93.3 15.2         3000
  COMMENTS: 100G of 4 cubes gave 5.6 deg. change in decl

1556   1   1 CASA GRANDE, AZ, COMPOUND B, PITHOUSE FLOOR
 32.9 -111.6  13.6  8
NRM     8  13.9  63.6 30.2 38.1      6  73.7  -74.5 24.1         3000
  COMMENTS: 100G of 4 cubes gave 34.0 deg. change in decl

1557   1   1 CASA GRANDE, AZ, COMPOUND B, PLATFORM A
 32.9 -111.6  13.6  7
NRM     6 353.4  66.2 21.2 25.9     19  73.6 -127.3 15.8         3000
  COMMENTS: 150G of 4 cubes gave 1.3 deg. change in decl
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1558   1   2 CASA GRANDE, AZ, ROOM 6
 32.9 -111.6  13.6  8
NRM     8 352.5  54.8 19.8 28.0      9  83.4 -178.2 19.8        3000
  COMMENTS: compound A, west hearth
  COMMENTS: 100G of 4 cubes gave 11.0 deg. change in decl

1689   3   1 CASHION RUIN, AZ, PITHOUSE 13, HEARTH
 33.6 -112.2  13.9  8    1100
NRM     7 351.6  55.0  7.8 11.0     62  82.8  175.3  7.7        3000
NRM     8 351.8  55.9  7.0  9.8     67  82.7 -176.5  6.8        3000
100G    7 355.9  58.9  5.1  6.9    173  83.1 -139.3  4.6        1030
  COMMENTS: 2 miles S. of Cashion, Feature 86

1693   2   1 CASHION RUIN, AZ, SITE #NA14690
 33.6 -112.2  13.9  8     650
NRM     8 356.1  48.0  6.0  9.2     62  84.3  104.7  7.1        3000
100G    6   0.2  44.0  1.9  3.0    776  82.2   66.3  2.4         790
  COMMENTS: feature 87, pithouse 14, hearth

1692   1   2 CASHION RUIN, AZ, SITE #NA14690
 33.6 -112.2  13.9  8
NRM     7  17.2  50.0 21.9 32.8      7  75.2  -15.9 24.5        3000
  COMMENTS: feature 34, pithouse 7, hearth
  COMMENTS: 100G of 3 cubes gave 4.4 deg. change in decl

1691   2   1 CASHION RUIN, AZ, SITE #NA14690
 33.6 -112.2  13.9  8
NRM     8 356.4  58.0  5.6  7.6    117  84.2 -140.8  5.1        3000
100G    6   0.5  55.3  2.8  3.9    607  87.8 -102.7  2.7         990
  COMMENTS: feature 14, pithouse 3, hearth

1690   1   2 CASHION RUIN, AZ, SITE #NA14690
 33.6 -112.2  13.9  8    1115
NRM     8   0.1  51.5 23.1 33.9      6  88.6   65.4 24.9        3000
  COMMENTS: feature #8, pithouse 1, hearth
  COMMENTS: 100G of 5 cubes gave 10.6 deg. change in decl.

1694   1   2 CASHION RUIN, AZ, SITE #NA14690
 33.6 -112.2  13.9  8
NRM     8 333.9  58.8  7.7 10.4     64  68.3 -178.8  7.0        1130
  COMMENTS: feature 28, pithouse 5, hearth
  COMMENTS: 100G of 3 cubes gave 12.5 deg. change in decl

 949   2   1 COLUMBUS, AZ
 33.4 -110.8  13.6  8    1200-1250
NRM     6 341.3  57.7  5.2  7.1    193  74.1 -177.5  4.8        3000
100G    6 340.4  57.8  5.0  6.9    207  73.4 -177.6  4.7        1130
  COMMENTS: V:9:57, feature 24, pithouse 2-hearth
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```
 948   1   2 COLUMBUS, AZ, V:9:57, FEATURE 6-HEARTH
 33.4 -110.8  13.6  8    1250
NRM     8 347.7  60.2  4.5  6.0    200  77.6 -159.1  3.9        1110
  COMMENTS: 50G to 200G of 4 cubes gave little
  COMMENTS: change in direction

1099   1   3 CONNIE SITE, AZ, N2-225, PIT HOUSE 48
 34.5 -109.9  13.8  8     600-800
NRM     8 306.1  46.0 36.6 57.3      3  43.8  166.6 44.8        3000
  COMMENTS: arch date says 225 AD from C14
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1098   1   3 CONNIE SITE, AZ, NS-225
 34.5 -109.9  13.8 11     600-800
NRM    11  12.8  49.0 28.5 43.1      3  78.3   -0.5 32.6         690
  COMMENTS: pit structure 67 hearth
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1100   1   3 CONNIE SITE, AZ, NS225, PIT HOUSE 41 HEARTH
 34.5 -109.9  13.8  8     600-800
NRM     8 146.8  63.5  107  135      1  -5.0  -87.0 85.2        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 5 cubes gave large
  COMMENTS: changes in direction

1101   1   3 CONNIE SITE, AZ, NS225, PIT STRUC. 17
 34.5 -109.9  13.8  9     600-800
NRM     9  40.4 -16.2 47.1 91.4      1  32.7   20.5 88.7        3000
  COMMENTS: C14 date is 225, hearth
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1102   1   3 CONNIE SITE, AZ, NS225, PIT STRUC. 31
 34.5 -109.9  13.8  9     600-800
NRM     9  60.2  10.6  7.7 15.2     13  27.4   -6.7 15.0        3000
  COMMENTS: C14 date is 225, hearth
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1103   1   3 CONNIE SITE, AZ, NS225, PIT STRUCTURE 20
 34.5 -109.9  13.8  8     600-800
NRM     8  17.9  53.1 26.1 37.7      5  75.2  -21.7 27.2         670
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1111   1   2 CONNIE SITE, AZ, PIT HOUSE 13 FLOOR
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```
 34.5 -109.9  13.8  8     300-400
NRM     7 312.4  39.9 41.8 69.5      2  47.0  157.3 57.8        3000
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1108   1   3 CONNIE SITE, AZ, PIT HOUSE 16 HEARTH
 34.5 -109.9  13.8  8     600-800
NRM     8  44.2 -21.4 32.6 61.8      2  28.1   19.3 58.7        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1110   1   0 CONNIE SITE, AZ, PIT HOUSE 56 FLOOR
 34.5 -109.9  13.8  8     300-400
NRM     8  43.3   5.2 55.8  111.0    1  38.7    8.8111.0        3000

1109   2   0 CONNIE SITE, AZ, PIT HOUSE 57 HEARTH
 34.5 -109.9  13.8  9     300-400
NRM     7   5.1  56.6  2.8  3.8    525  85.0  -54.5  2.6        3000
100G    7   7.0  56.7  2.5  3.5    625  83.6  -48.1  2.4         400

1106   2   4 CONNIE SITE, AZ, PIT STRUC. 57, SOUTH WALL
 34.5 -109.9  13.8  8     600-800
NRM     8   6.5  61.2  3.4  4.4    371  80.7  -78.3  2.9         600
100G    8   5.9  62.6  3.8  6.8    327  79.5  -85.9  3.1        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction
  COMMENTS: uncertain curve assignment

1105   1   3 CONNIE SITE, AZ, PIT STRUCTURE 11
 34.5 -109.9  13.8  8     600-800
NRM     8  17.0  53.0 61.6 88.9      2  75.9  -21.1 64.1        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1104   1   3 CONNIE SITE, AZ, PIT STRUCTURE 22 HEARTH
 34.5 -109.9  13.8  8     600-800
NRM     8  17.2  61.1  102  133      1  74.5  -54.7 86.7        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

1112   1   2 CONNIE SITE, AZ, PIT STRUCTURE 32 HEARTH
 34.5 -109.9  13.8  8     300-400
NRM     7 313.7  35.5 33.4 57.7      2  46.6  152.4 49.9        3000
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction
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1107   1   3 CONNIE SITE, AZ, PIT STRUCTURE 8 HEARTH
 34.5 -109.9  13.8  9     600-800
NRM     8 345.5  48.7 19.8 30.0      7  76.8  142.7 22.8        3000
  COMMENTS: C14 date is 225
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

 208   3   0 COOLIDGE, AZ, U 14-9, MOUND 6, ROOM 1
 32.9 -111.6  14.0  8    1250-1400
NRM     8 355.6  60.2  6.1  8.0    111  81.1 -133.7  5.3        3000
NRM     8   2.9  56.8  6.8  9.3     75  84.9  -84.6  6.4        3000
150G    8   1.5  56.3  7.0  9.8     68  85.9  -95.1  6.8        1400

 210   3   0 COOLIDGE, AZ, U 14-9, MOUND 6, ROOM 3
 32.9 -111.6  14.0  8    1250-1400
NRM     7 359.8  57.4  1.6  2.1   1721  84.9 -113.6  1.5        3000
NRM     7 358.8  57.1  2.3  3.2    760  85.1 -123.0  2.2        3000
150G    8   0.3  55.9  2.5  3.5    507  86.4 -107.6  2.5        1400

 209   3   0 COOLIDGE, AZ, U 14-9, MOUND 6, ROOM 5
 32.9 -111.6  14.0  8    1300-1400
NRM     8   0.1  55.6  5.4  7.5    112  86.8 -110.8  5.2        3000
NRM     8   0.5  54.8  4.3  6.1    164  87.5 -102.3  4.3        3000
150G    8 360.0  55.4  3.6  5.1    241  86.9 -112.0  3.6        1430

 211   4   1 COOLIDGE, AZ, U 14-9, MOUND 6, TRENCH PIT
 32.9 -111.6  14.0  8    1100-1400
NRM     8 351.8  61.7  4.4  5.7    227  78.1 -142.1  3.7        3000
NRM     8 354.7  60.9  4.2  5.5    234  80.0 -135.0  3.6        1350
150G    8   4.2  56.2  4.2  5.8    189  84.9  -70.7  4.0        3000
200G    8   5.9  56.2  4.5  6.3    163  83.8  -61.6  4.4        3000
  COMMENTS: Uncertain curve assignment

 838   2   0 CURTIS RANCH SITE, AZ, HOUSE 3, ROOM 6
 32.7 -109.6  13.1  8
NRM     8 359.6  57.3  2.4  3.3    601  84.8 -112.7  2.7        3000
100G    8 359.7  57.6  2.0  2.8    855  84.5 -112.2  1.9        1390

 836   2   0 CURTIS RANCH SITE, AZ, HOUSE 3, ROOM 7
 32.7 -109.6  13.1  8
NRM     8 354.9  57.9  2.0  2.7    898  83.1 -144.9  1.8        3000
100G    8 356.3  55.8  1.9  2.6    911  85.3 -148.2  1.8        1320

 837   1   2 CURTIS RANCH SITE, AZ, HOUSE 3, ROOM 8
 32.7 -109.6  13.1  8
NRM     8 359.3  57.0  1.8  2.4   1091  85.1 -115.8  1.7        1390
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction
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 969   1   2 CURTIS RANCH SITE, AZ, RM. 4, HOUSE 4 HEARTH
 32.7 -109.6  13.1  8
NRM     8 355.7  57.1  1.4  1.9   1830  83.9 -143.8  1.3        1330
  COMMENTS: 50G to 400G of 2 cubes gave little
  COMMENTS: change in direction

 834   1   2 CURTIS RANCH SITE, AZ, ROOM 12, CENTRAL HOUSE
 32.7 -109.6  13.1  8
NRM     8 347.6  59.5  5.1  6.8    152  77.5 -158.4  4.5        1110
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction

 835   1   2 CURTIS RANCH SITE, AZ, ROOM 4, HOUSE 3
 32.7 -109.6  13.1  8
NRM     8   0.7  56.7  1.5  2.1   1424  85.4 -102.4  1.5        1390
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction

 892   1   3 ESCALANTE PROJ., AZ, 15:3:6, RM. 6, FEAT. 6
 33.0 -111.4  13.6  8
NRM     6 348.7  60.1  3.1  4.1    603  78.0 -156.6  2.7        1100
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction,  Many samples from this
  COMMENTS: project could be either 1100-1200 or 1300-1400.

 850   1   2 ESCALANTE PROJ., AZ, SITE 29, RM. 2, FEAT. 1
 33.0 -111.4  13.6  8
NRM     7 357.8  57.3  1.5  2.0   1890  84.8 -130.5  1.4        1320
  COMMENTS: 100G and 150G of 2 cubes gave some
  COMMENTS: change in direction.  See 892.

 849   3   0 ESCALANTE PROJ., AZ, SITE 29, RM. 7, FEAT. 4
 33.0 -111.4  13.6  8
NRM     8 344.7  59.5  0.7  0.9   7859  75.8 -166.3  0.6        3000
100G    4 349.3  58.3  1.3  1.7   6144  79.5 -163.7  1.2        3000
150G    8 350.1  58.6  0.5  0.7  13225  79.8 -160.4  0.5        1110

 841   1   2 ESCALANTE PROJ., AZ, SITE 40, RM. 1, FEAT. 10
 33.0 -111.4  13.6  8
NRM     7 355.7  53.7  2.1  3.0    776  86.2  178.5  2.2        1225
  COMMENTS: 100G and 150G of 2 cubes gave some
  COMMENTS: change in direction.  See 892.

 842   1   2 ESCALANTE PROJ., AZ, SITE 41, RM. 1, FEAT. 1
 33.0 -111.4  13.6  8
NRM     8 359.3  56.6  1.0  1.4   3489  85.7 -119.0  0.9        1400
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction,  See 892.
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 852   1   2 ESCALANTE PROJ., AZ, SITE 41, RM. 22, FEAT. 1
 33.0 -111.4  13.6  8
NRM     8 358.5  58.6  2.0  2.7    932  83.6 -121.9  1.8        1370
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction.  See 892.

 851   2   2 ESCALANTE PROJ., AZ, SITE 41, RM. 5, FEAT. 1
 33.0 -111.4  13.6  8
NRM     8 357.5  56.8  0.9  1.2   4457  85.1 -135.9  0.8        3000
NRM     7 357.6  57.0  0.9  1.4   4295  85.1 -134.1  0.9        1320
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction.  See 892.

 848   1   1 ESCALANTE PROJ., AZ, SITE 6, RM. 2, FEAT. 1
 33.0 -111.4  13.6  8
NRM     6 350.0  57.3  1.0  1.3   5291  80.5 -167.6  0.9        1160
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction.  See 892.

 889   1   0 ESCALANTE PROJECT, AZ, ROOM 3, FEATURE 1
 33.0 -111.4  13.6  8
NRM     8 351.5  57.6  1.7  2.3   1239  81.3 -163.4  1.6        1170

 845   1   3 ESCALANTE PROJECT, AZ
 33.0 -111.4  13.6  8
NRM     8 357.4  56.3  0.7  1.0   6081  85.6 -139.4  0.7        1300
  COMMENTS: site 41, east wall of room 17
  COMMENTS: 100G and 150G of 3 cubes gave little
  COMMENTS: change in direction.  See 892.

 847   1   3 ESCALANTE PROJECT, AZ
 33.0 -111.4  13.6  8
NRM     8 353.0  58.1  2.2  3.0    765  81.9 -153.4  2.0        1340
  COMMENTS: Site 41, N.E. quad of unit-0-7, feature 1
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction.  See 892.

 846   1   3 ESCALANTE PROJECT, AZ
 33.0 -111.4  13.6  8
NRM     8 359.3  51.8  1.8  2.7    791  89.2  114.8  2.0        1460
  COMMENTS: burned floor, room 16, S.W. quad
  COMMENTS: 100G and 150G of 2 cubes gave some
  COMMENTS: change in direction.  See 892.

 890   1   3 ESCALANTE PROJECT, AZ
 33.0 -111.4  13.6  8
NRM     7 346.3  52.4  2.4  3.6    546  78.5  162.4  2.6        1140
  COMMENTS: 15:3:43, room 5, burned wall
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  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction.  See 892.

 844   3   1 ESCALANTE PROJECT, AZ
 33.0 -111.4  13.6  8
NRM     8 354.1  55.0  2.7  3.8    432  84.5 -172.2  2.7          3000
100G    8 354.6  56.2  3.2  4.5    319  84.2 -159.7  3.1          1210
150G    8 358.8  54.9  3.4  4.8    265  84.3 -174.6  3.4          3000
  COMMENTS: Site 41, unit Q8, N.E. quad.  See 892.

 893   1   2 ESCALANTE PROJECT, AZ, ROOM 12, FEATURE 1
 33.0 -111.4  13.6  8
NRM     7 352.6  57.8  0.9  1.2   4799  81.9 -157.0  0.9          1180
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction.  See 892.

 891   3   0 ESCALANTE PROJECT, AZ, ROOM 4, FEATURE 1
 33.0 -111.4  13.6  8
NRM     8 354.8  57.5  3.8  5.3    241  83.4 -149.7  3.6          3000
100G    8 354.4  56.6  3.2  4.4    333  83.8 -157.9  3.0          1200
150G    8 355.1  57.1  3.3  4.5    326  83.9 -150.5  3.1          3000

 894   4   0 ESCALANTE PROJECT, AZ, ROOM 6, FEATURE 2
 33.0 -111.4  13.6  8
NRM     8 344.1  56.5  5.5  7.6    112  76.4 -179.8  5.3          3000
100G    8  12.2  61.0 14.3 18.6     22  76.8  -67.8 12.2          3000
150G    8   4.6  60.6 15.9 20.9     17  80.7  -89.8 13.7          3000
400G    8 343.5  56.3  5.6  7.7    108  75.9  174.1  5.4          1140

 843   1   2 ESCALANTE PROJECT, AZ, SITE 41, ROOM 2
 33.0 -111.4  13.6  8
NRM     8 359.1  53.9  1.8  2.6    862  88.4 -137.4  1.9          1260
  COMMENTS: 100G and 150G of 2 cubes gave some
  COMMENTS: change in direction.  See 892.

 178   1   0 FORT BOWIE, AZ
 32.1 -109.4  12.8  8    1886-1894
NRM     7   3.3  63.2 11.1 14.0     47  77.1  -98.8  8.9          1890

  19   4   0 FT. HUACHUCA, AZ, NO. 1, PH 3
 31.7 -110.3  13.0 10    1100-1200
NRM     9 353.3  56.5  3.1  4.2    310  82.3 -154.5  2.9          3000
NRM     9 350.1  57.7  2.4  3.3    520  79.5 -158.0  2.3          3000
100G   10 352.5  58.9  3.9  5.2    191  80.0 -145.9  3.5          1070
150G   10 352.3  59.1  4.1  5.5    171  79.7 -145.6  3.7          3000

   1   1   1 GILA BUTTE, AZ
 33.2 -111.8  14.1  6    1200-1300
NRM     6   1.1  56.4  2.1  2.9   1096  86.1  -98.4  2.0          1400
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  COMMENTS: AF and THR of 3 cubes, little change in dir

 628   1   1 GILA PUEBLO, AZ
 33.4 -110.6  13.6 10
NRM    10   0.8  54.3  4.6  6.6    108  88.5  -86.3  4.7        1260
  COMMENTS: 200G of 2 cubes gave 0.3 deg. change in decl

 515   1   1 GILA PUEBLO, AZ, TERRACE 3, ROOM 6, HEARTH
 33.4 -110.6  13.6  8    1300-1400
NRM     8 357.4  58.1  2.2  3.0    731  84.2 -131.3  2.1        1350
  COMMENTS: 150G of 2 cubes gave 0.9 deg. change in decl

 516   2   0 GILA PUEBLO, AZ, TERRACE 3, ROOM 6, HEARTH
 33.4 -110.6  13.6  8    1300-1400
NRM     8   2.1  63.0  5.8  7.4    139  78.9 -102.9  4.7        1370
150G    8 357.1  60.0  6.9  9.1     86  82.2 -127.2  6.0        3000

  99   2   0 GLOBE, AZ, V:9:10, ROOM 1
 33.4 -110.6  13.9  8    1300-1400
NRM     8 353.4  53.6  2.0  2.9    717  84.5  168.7  2.1        3000
150G    8 358.5  57.2  2.1  2.8    826  85.4 -126,0  1.9        1310

  98   1   2 GLOBE, AZ, V:9:10, ROOM 2
 33.4 -110.6  13.9  8    1300-1400
NRM     7 348.5  46.0  3.4  5.4    207  78.4  131.2  4.2        3000
  COMMENTS: Two components 700-1250 & 1259-1350
  COMMENTS: 150G of 2 cubes gave 1.8 deg. change in decl

 100   3   1 GLOBE, AZ, V:9:10, ROOM 3
 33.4 -110.6  13.9  7    1300-1400
NRM     7 358.4  52.3  3.2  4.6    321  88.6  140.3  3.4        3000
NRM     7 358.9  54.0  2.4  3.5    588  88.5 -148.5  2.5        1270
150G    7   5.8  56.8  2.5  3.5    636  83.8  -62.1  2.4        3000
  COMMENTS: 2 component site 700-1250 and 1250-1350

  72   3   0 GRASSHOPPER, AZ, KIVA (LINDA'S AREA)
 34.1 -110.6  14.0  8    1300-1400
NRM     7 357.2  56.4  2.7  3.7    549  86.3 -148.1  2.6        1310
NRM     8   6.8  51.3  6.5  9.6     62  83.9   -2.4  7.1        3000
100G    8   5.1  55.9  6.2  8.7     85  85.2  -51.7  6.0        3000

  84   2   2 GRASSHOPPER, AZ, ROOM 20
 34.1 -110.6  14.0  8    1300-1400
NRM     8 354.8  60.0  2.4  3.1    727  82.1 -140.1  2.1        3000
NRM     8 358.0  60.1  1.7  2.2   1421  82.9 -122.8  1.5        1360
  COMMENTS: TR-65-29 and TR-65-30 taken from this hearth
  COMMENTS: 150G of 2 cubes gave 2 deg. change in decl

  85   1   2 GRASSHOPPER, AZ, SECT. 2 GREAT KIVA
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 34.1 -110.6  14.0  8    1300-1400
NRM     8 350.0  58.0  2.9  3.9    431  80.7 -167.8  2.7        1340
  COMMENTS: 150G of 2 cubes gave no change in decl
  COMMENTS: feature 2a

 239   2   0 HEREFORD DAIRY RANCH, AZ, T:13:3, TB-3
 32.2 -110.5  15.1  8   -1150 to -1550     C14
NRM     7 341.3  82.0 21.1 21.7     30  46.9 -117.8 11.2        2500
150G    6  50.7  69.4 31.4 36.8     11  48.4  -66.0 21.5        3000

 375   3   0 JACK MILLS, KUYKENDAL, AZ
 31.7 -109.6  12.7  8
NRM     8 354.5  54.9  4.3  6.1    166  84.1 -159.0  4.3        3000
NRM     8 356.5  53.8  4.7  6.7    134  86.0 -156.8  4.8        3000
150G    8 353.7  55.8  4.7  6.6    146  83.2 -157.8  4.6        1320

 652   1   1 KUYKENDAL, AZ
 31.6 -109.5  12.7  9    1300-1500
NRM     9 356.5  58.2  2.4  3.3    532  82.1 -129.9  2.2        1350
  COMMENTS: 150G of 2 cubes gave 1.6 deg. change in decl

 137   2   1 KUYKENDALL, AZ
 31.9 -109.6  12.8  8    1300-1400
NRM     8 353.3  62.3 11.3 14.5     36  77.2 -132.1  9.3        3000
NRM     8 355.0  57.2  1.4  1.9   1868  82.8 -142.8  1.3        1330
  COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl

 136   1   1 KUYKENDALL, AZ
 31.9 -109.6  12.8  9    1300-1400
NRM     8 354.6  57.1  1.9  2.7    919  82.7 -145.6  1.8        1330
  COMMENTS: 150G of 2 cubes gave 1.0 deg. change in decl

 126   3   0 KUYKENDALL, AZ, 8 MILES EAST OF SUNIZONA
 31.9 -109.6  12.8  7    1400
NRM     7 357.3  57.5  2.5  3.4    688  83.4 -128.8  2.3        1330
NRM     7 358.0  55.8  2.6  3.6    573  85.2 -129.4  2.5        3000
150G    7 359.6  54.3  3.9  5.5    292  87.1 -116.0  3.9        3000

 839   2   0 LAS COLINAS, AZ, FEATURE 114, T:12:10
 33.3 -112.1  14.0  8    1250-1300
NRM     8 353.0  60.0  1.9  2.7   1069  80.6 -146.3  1.7        3000
100G    6 358.4  58.6  2.5  3.3    894  83.8 -123.7  2.2        1365

 840   2   0 LAS COLINAS, AZ, FEATURE 125, T:12:10
 33.3 -112.1  14.0  8
NRM     8 344.9  59.9  3.1  4.0    429  75.8 -165.8  2.7        3000
100G    6 350.0  59.3  2.8  3.7    721  79.5 -158.9  2.5        1130

 669   2   1 LAST WATER, AZ, FEATURE 4
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 32.9 -111.7  13.7  9     500-900
NRM      9   0.7  56.5  1.2  1.6   2152  85.8 -104.5  1.1         3000
150G     9   2.1  54.4  1.1  1.5   2318  87.3  -71.7  1.1          630
  COMMENTS: uncertain curve assignment

 670   2   1 LAST WATER, AZ, FEATURE 5
 32.9 -111.7  13.7  7     500-900
NRM      7 358.8  53.6  2.3  3.2    682  88.4 -151.6  2.3         3000
150G     6   2.6  54.6  2.6  3.7    642  86.9  -68.3  2.6          640
  COMMENTS: uncertain curve assignment

 671   2   0 LAST WATER, AZ, FEATURE 8
 32.9 -111.7  13.7  9     500-900
NRM      9   0.2  46.8  1.3  2.1   1034  85.2   66.5  1.6         3000
150G     9   6.1  48.4  1.5  2.3    869  83.7   10.6  1.7          700

 641   2   1 LASTWATER RUIN, AZ, FEAT. 3
 32.9 -111.7  13.7  8
NRM      7   9.6  56.5  5.2  7.2    147  81.0  -52.3  5.0         3000
150G     8   3.8  56.5  3.8  5.2    239  84.8  -76.4  3.6          630
  COMMENTS: uncertain curve assignment

 222   2   1 MESA, AZ, U:9:100, ROOM 25
 33.4 -112.0  14.1  8    1350
NRM      8 356.2  57.5  1.4  1.9   1818  84.3 -144.1  1.3         3000
NRM      8 357.7  57.5  1.0  1.4   3572  84.9 -133.0  0.9         1320
  COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl

 221   2   1 MESA, AZ, U:9:100, ROOM 8
 33.4 -112.0  14.1  8    1350
NRM      8 355.6  55.8  3.9  5.5    213  85.4 -161.6  3.8         3000
NRM      8 355.8  56.2  3.1  4.4    335  85.2 -155.9  3.0         1320
  COMMENTS: 150G of 2 cubes gave 0.4 deg. change in decl

 946   1   2 MONITOR, AZ, V:9:56, FEATURE 1-HEARTH
 33.3 -110.8  13.6  8    1250-1325
NRM      5 357.5  57.3  2.4  3.3   1119  85.1 -134.3  2.3         1320
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction

 945   2   0 MONITOR, AZ, V:9:56, FEATURE 1-HEARTH
 33.4 -110.8  13.6  8    1250-1325
NRM      8   0.2  56.8  3.0  4.2    374  86.0 -108.9  2.9         3000
100G     8   0.5  55.7  3.3  4.6    300  87.2 -103.0  3.2         1300

 947   1   2 MONITOR, AZ, V:9:56, PITHOUSE 15-HEARTH
 33.3 -110.8  13.6  8    1100-1300
NRM      8 356.2  57.0  2.6  3.6    510  84.8 -146.4  2.5         1320
  COMMENTS: 100G to 200G of 2 cubes gave little
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  COMMENTS: change in direction

 134   3   0 MURRY SPRINGS, AZ
 31.5 -110.2  13.2 10    1200
NRM      8   4.1  61.9  6.0  7.7    124  78.0  -95.7  5.0        3000
150G     9   8.8  66.4  6.7  8.2    108  71.4  -91.8  5.0        3000
150G     9  14.9  51.0  5.0  7.4     88  77.3  -24.9  5.5        2500

 642   1   0 N:7:29, AZ
 34.6 -112.3  14.4  1    1000-1100
NRM      1 346.1  59.8  409  543      0  77.5 -169.3  360        1130

 151   4   0 PHOENIX, AZ, AZT:7:1
 33.5 -112.1  13.0  8    1200-1300
NRM      6 354.2  59.1  5.2  7.0    208  83.8 -151.7  4.7        3000
NRM      6 353.8  57.6  4.1  5.6    313  84.4 -167.0  3.8        1210
150G     7 356.3  58.2  5.5  7.5    144  85.7 -147.9  5.0        3000
NRM      6 355.0  58.9  5.1  6.8    216  84.4 -149.1  4.6        3000

 244   4   1 PHOENIX, AZ, LAS COLINAS
 33.4 -112.0  13.9  8
NRM      8 343.6  70.9  6.4  7.3    173  65.4 -134.7  4.2        3000
NRM      8 347.0  71.8  5.9  6.7    210  65.1 -129.1  3.8        3000
150G     8   6.6  63.7  5.0  6.3    194  77.0  -91.0  4.0        2500
200G     8 359.8  61.0  5.2  6.8    157  61.8 -112.3  4.4        3000
  COMMENTS: uncertain curve assignment

 243   3   0 PHOENIX, AZ, LAS COLINAS
 33.4 -112.0  13.9 10
NRM     10  16.3  72.3  6.8  7.7    100  63.5  -92.2  4.4        3000
NRM      8  24.6  73.5  8.9  9.9    102  59.4  -87.5  5.5        3000
150G     7   3.0  57.8  2.5  3.4    679  84.4  -87.2  2.3        1390

 292   1   2 PHOENIX, AZ, LAS COLINAS, PHOENIX 1
 33.4 -112.0  14.2  8    1200-1400
NRM      8 352.1  58.9  1.8  2.5   1096  81.1 -155.1  1.7        1340
  COMMENTS: feature 76-68
  COMMENTS: 150G of 2 cubes gave 0.2 deg. change in decl

 293   1   2 PHOENIX, AZ, LAS COLINAS, PHOENIX 2
 33.4 -112.0  14.2  8
NRM      7   1.3  55.7  1.8  2.5   1237  87.0  -91.8  1.7        1290
  COMMENTS: feature 74
  COMMENTS: 150 G of 2 cubes gave 1.2 deg. change in decl

 294   3   1 PHOENIX, AZ, LAS COLINAS, PHOENIX 3
 33.4 -112.0  14.2  8    1200-1400
NRM      8 347.0  62.1  4.3  5.6    239  75.7 -153.6  3.6        3000
NRM      8 346.9  61.9  4.5  5.8    217  75.9 -154.4  3.8        3000
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150G    8 348.3  57.1  3.2  4.3    348  79.6 -173.9  3.0          1160
  COMMENTS: feature 80

 295   3   1 PHOENIX, AZ, LAS COLINAS, PHOENIX 4
 33.4 -112.0  14.2  8    1200-1400
NRM     8 359.3  55.2  3.5  4.9    256  87.6 -123.9  3.5          3000
150G    8 358.2  55.7  4.6  6.4    157  86.8 -138.4  4.4          3000
200     6 355.8  54.6  3.8  5.3    316  86.2 -174.5  3.8          1215
  COMMENTS: feature 26

 296   3   0 PHOENIX, AZ, LAS COLINAS, PHOENIX 5
 33.4 -112.0  14.2  8    1200-1300
NRM     7 294.4  71.0 16.1 18.5     33  40.5 -154.7 10.6          3000
NRM     7 293.4  70.4 15.7 18.2     34  39.9 -156.3 10.5          3000
150G    7 346.7  60.6  2.9  3.7    603  76.7 -160.4  2.5          1110

 219   1   1 PHOENIX, AZ, LAS COLINAS, S-29-68, ROOM 39
 33.4 -112.0  14.2  8
NRM     8 354.7  58.7  2.6  3.5    552  82.6 -145.7  2.4          1340
  COMMENTS: 150G of 2 cubes gave 0.7 deg. change in decl

 220   2   1 PHOENIX, AZ, LAS COLINAS, S-29-68, ROOM 41
 33.4 -112.0  14.2  8
NRM     8   1.5  58.0  1.8  2.5   1074  84.6  -98.9  1.7          1400
NRM     8   5.1  57.4  1.9  2.5   1011  83.8  -71.3  1.7          3000
  COMMENTS: 150G of 2 cubes gave 1.1 deg. change in decl

 224   3   2 PHOENIX, AZ, LAS COLINAS, T-12-10
 33.4 -112.0  14.2  8
NRM     8 358.1  58.7  2.2  3.0    767  83.8 -126.0  2.0          3000
NRM     8 360.0  58.5  2.2  1.6   2552  84.2 -115.3  1.1          3000
150G    8   0.1  58.0  1.3  1.8   2047  84.7 -110.9  1.2          1380
  COMMENTS: room south of room 34, south pit
  COMMENTS: 150G of 2 cubes gave 0.8 deg change in decl

 225   3   1 PHOENIX, AZ, LAS COLINAS, T-12-10
 33.4 -112.0  14.2  8
NRM     7 359.5  57.6  2.2  3.0    894  85.2 -116.8  2.0          3000
NRM     8   1.2  56.5  2.0  2.8    801  86.2  -97.0  2.0          1400
150G    8   3.1  55.7  2.3  3.3    591  86.2  -71.5  2.3          3000
  COMMENTS: east pit of room 34

 223   2   2 PHOENIX, AZ, LAS COLINAS, T-12-10
 33.4 -112.0  14.2  8
NRM     8 352.8  59.9  3.8  5.0    281  80.6 -147.7  3.3          3000
NRM     8 354.0  59.5  3.0  4.0    431  81.6 -144.8  2.7          1340
  COMMENTS: room south of room 34, east pit
  COMMENTS: 150G of 2 cubes gave 0.1 deg. change in decl
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 226   3   1 PHOENIX, AZ, LAS COLINAS, T-12-10
 33.4 -112.0  14.2  8
NRM      8 358.7  60.2  4.3  5.7    220  82.3 -119.1  3.7        3000
NRM      8   1.4  58.5  3.8  5.1    259  84.1 -101.1  3.4        3000
150G     7 358.8  57.2  3.9  5.3    275  85.2 -123.0  3.6        1320
  COMMENTS: west pit of room 34

 217   2   1 PHOENIX, AZ, LAS COLINAS, T-12-10, ROOM 15
 33.4 -112.0  14.2  8
NRM      8 359.5  64.8  8.1 10.1     79  76.7 -113.6  6.3        1370
NRM      8   1.3  62.2  7.8 10.0     76  79.9 -107.3  6.4        3000
  COMMENTS: 150G of 2 cubes gave little change in dir

 218   2   1 PHOENIX, AZ, LAS COLINAS, T-12-10, ROOM 18
 33.4 -112.0  14.2  8
NRM      7 349.6  53.1  6.1  8.8     91  81.4  162.7  6.4        3000
NRM      8 349.3  54.1  5.6  8.1     94  81.1  168.9  5.7        1180
  COMMENTS: 150G of 3 cubes gave little change in dir

 297   1   1 PHOENIX, AZ, U:9:100, FEATURE 5
 33.4 -112.5  13.9  8
NRM      7 353.5  58.8  3.0  4.1    487  81.9 -150.8  2.7        1050
  COMMENTS: 150G of 2 cubes gave 2.5 deg. change in decl

 132   1   1 RED HILL, AZ
 32.4 -111.5  13.5 10    3300        BP
NRM     10 355.3  61.3 23.3 30.3      7  79.4 -130.6 19.7        3000
  COMMENTS: too weak to demagnetize

 131   1   1 RED HILL, AZ
 32.4 -111.5  13.5  8    3300        BP
NRM      8 329.8  56.9 18.2 25.1     11  64.8  178.6 17.3        3000
  COMMENTS: too weak to demagnetize

 133   1   1 RED HILL, AZ
 32.4 -111.5  13.5  8    3300        BP
NRM      7  11.8  54.8  8.2 11.5     56  79.8  -41.4  8.1        3000
  COMMENTS: too weak to demagnetize

 138   1   1 RED HILL, AZ
 32.5 -110.7  14.2  8    3300           BP
NRM      8  15.2  60.8 25.0 32.7      8  74.7  -62.5 21.4        3000
  COMMENTS: cubes too weak to demagnetize

 130   2   1 RED HILL, AZ
 32.4 -111.5  13.5  8    3300        BP
NRM      7  11.5  57.3  9.4 12.9     48  79.1  -55.1  8.8        2500
150G     7  25.2  60.5 13.1 17.2     25  68.0  -53.0 11.3        3000
  COMMENTS: 180 deg added to decl for pole calculation
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 950   2   0 REFUGIA, AZ, V:9:59, FEATURE 1 EAST HEARTH
 33.3 -110.8  13.6  8    1350-1400
NRM      8 357.7  60.4  5.7  7.5    128  81.9 -123.1  4.9        1360
100G     8 355.1  62.0  9.4 12.1     52  79.5 -130.7  7.8        3000

 951   2   0 REFUGIA, AZ, V:9:59, FEATURE 1 WEST HEARTH
 33.3 -110.8  13.6  8    1350-1400
NRM      8 352.5  59.6  3.8  5.0    279  80.8 -148.9  3.3        3000
100G     7 353.4  58.5  2.7  3.6    622  82.1 -151.3  2.4        1340

 129   3   0 SAN PEDRO, AZ
 32.4 -111.5  13.3 11    1400-3300   BP
NRM     11 352.9  51.5 13.6 20.0     11  84.0  157.7 14.7        3000
150G    11 358.7  51.8 15.9 23.4      8  88.9  160.3 17.1        3000
150G    11   2.2  47.5 12.7 19.5     10  85.8   41.4 15.0        2500

 128   3   0 SAN PEDRO, AZ
 32.4 -111.5  13.3 10    1400-3300   BP
NRM     10 353.0  46.1  6.9 12.7     34  82.2  121.1  8.4        3000
150G    10   3.9  51.3  5.8  8.6     59  86.7  -14.7  6.3        3000
150G    10   7.3  48.9  5.3  8.1     64  83.3   -1.0  6.1        2500

 127   2   0 SAN PEDRO, AZ, CREEK BANK
 32.4 -111.5  13.3 10    1400-3300   BP
NRM     10  11.5  48.3  6.6 10.0     41  79.7   -6.9  7.6        3000
150G     7   8.7  45.7  6.0  9.4     68  80.8   11.5  7.4        2500

  95   3   1 SAN XAVIER, AZ, BB:13:16A, HOUSE 1
 32.1 -111.0  13.3  7
NRM      7 356.9  66.7  8.9 10.9     85  72.7 -117.9  6.6        3000
NRM      7 355.0  66.1  7.9  9.7    105  73.1 -122.6  5.9        3000
150G     6 356.1  58.7  3.0  4.0    616  82.0 -133.5  2.7        1350
  COMMENTS: Early Tanque Verde age

  96   1   0 SAN XAVIER, AZ, BB:13:16A, HOUSE 3
 32.1 -111.0  13.3  8
NRM      8   8.8  49.4  4.3  6.4    133  82.3  -10.2  4.8        3000

 106   1   2 SAN XAVIER, AZ, BB:13:50, HOUSE 10
 32.1 -111.0  13.3  8    1100-1250
NRM      8 352.7  59.7  2.3  3.1    740  79.8 -143.7  2.0        1070
  COMMENTS: 150G of 2 cubes gave 1.8 deg. change in decl
  COMMENTS: Rincon age

 101   1   2 SAN XAVIER, AZ, BB:13:50, HOUSE 14
 32.1 -111.0  13.3  8    1100-1250
NRM      7 348.8  58.4  2.8  3.8    567  78.6 -160.4  2.5        1110
  COMMENTS: 150G of 2 cubes gave 0.7 deg. change in decl
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  COMMENTS: Rincon age

 104   3   1 SAN XAVIER, AZ, BB:13:50, HOUSE 18
 32.1 -111.0  13.3  8    1100-1250
NRM     7 346.9  53.1  6.2  9.0     88  78.9  170.5  6.5        3000
150G    7   1.9  54.8  9.7 13.6     40  86.4  -85.6  9.6        3000
NRM     7 351.1  51.1  6.9 10.2     65  82.4  158.7  7.5        1200
  COMMENTS: Late Tanque Verde age

 107   3   1 SAN XAVIER, AZ, BB:13:50, HOUSE 20
 32.1 -111.0  13.3  7    1100-1250
NRM     7 352.9  50.9  4.9  7.3    127  83.9  156.5  5.4        3000
NRM     7 354.5  51.2  4.8  7.1    135  85.3  158.0  5.2        1210
150G    7 354.5  52.6  5.8  8.4     98  85.2  173.1  6.1        3000
  COMMENTS: Rincon age

 105   1   2 SAN XAVIER, AZ, BB:13:50, HOUSE 22
 32.1 -111.0  13.3  8    1100-1250
NRM     8 348.8  57.9  2.1  2.9    794  78.9 -162.8  2.0        1115
  COMMENTS: 150G of 2 cubes gave 1.0 deg. change in decl
  COMMENTS: Rincon-Tanque Verde age

 103   1   2 SAN XAVIER, AZ, BB:13:50, HOUSE 23
 32.1 -111.0  13.3  7
NRM     7 364.4  58.2  2.3  3.2    792  77.0 -165.5  2.1        1120
  COMMENTS: refiring experiment hearth, see Lab. No. 109
  COMMENTS: Late Rincon age

 102   3   3 SAN XAVIER, AZ, BB:13:50, HOUSE 23
 32.1 -111.0  13.3  8    1100-1250
NRM     8 354.0  61.1  2.3  3.0    781  78.9 -134.8  2.0        1080
NRM     8   4.6  58.6  3.4  4.6    326  81.9  -84.7  3.1        3000
150G    8   1.0  55.1  4.1  5.7    193  86.4  -98.3  4.0        3000
  COMMENTS: 150G of 2 cubes gave 4.3 deg. change in decl
  COMMENTS: Second NRM and AF are reruns at a later time
  COMMENTS: Rincon-Tanque Verde age

 108   1   1 SAN XAVIER, AZ, BB:13:50, PIT
 32.1 -111.0  13.3  5    1100-1250
NRM     5   1.4  60.1 11.0 14.5     40  81.1 -104.4  9.6        3000
  COMMENTS: 150G of 2 cubes gave 9.0 deg. change in decl

 109   0   2 SAN XAVIER, AZ, BB:13;50, HOUSE 2
 32.1 -111.0  13.0  19
NRM    18 354.0  58.6  1.5  2.0    680  79.0 -161.0  1.3        3000
  COMMENTS: modern refire experiment, 24 hours firing
  COMMENTS: temperatures recorded by thermocouples, 1966

  97   3   0 SAN XAVIER, AZ, HISTORIC AREA
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 32.1 -111.0  13.3  7
NRM      6   9.6  54.4  5.9  8.4    126  81.5  -43.4  6.0          3000
NRM      6  18.1  55.2  4.3  6.1    246  74.6  -39.4  4.3          1960
150G     7  11.3  51.5  7.7 11.3     54  80.4  -24.6  8.3          3000

  54   2   1 SNAKETOWN, AZ
 33.2 -112.0  14.1  8     700-900
NRM      7   7.8  50.7  5.0  7.4    123  83.2   -8.7  5.5          3000
150G     8   7.0  52.7  1.9  2.7    803  84.1  -24.4  2.0           670
  COMMENTS: Santa Cruz Phase, no location in field notes

  56   1   2 SNAKETOWN, AZ
 33.2 -112.0  14.1  8     600
NRM      8   4.4  47.6  1.3  2.0   1283  84.1   27.2  1.5           720
  COMMENTS: Gila Butte, "cafeteria" east of mound 29
  COMMENTS: 150G gave 0.8 change in decl

  55   1   2 SNAKETOWN, AZ
 33.2 -112.0  14.1  8     550
NRM      7   9.6  56.6  1.5  2.0   1854  81.2  -51.6  1.4           540
  COMMENTS: Snaketown-Gilla Butte transition, no location
  COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl

  49   1   1 SNAKETOWN, AZ, CENTRAL HOUSE, ROOM 10
 33.2 -112.0  14.1  8    1300-1400
NRM      8   1.9  52.7  1.9  2.7    795  88.4  -24.2  2.0          1290
  COMMENTS: Civano Phase

  41   2   1 SNAKETOWN, AZ, HOUSE 1, GRID 5F
 33.2 -112.0  14.1  8    1000-1100
NRM      8 351.4  61.6  1.8  2.3   1330  78.3 -144.8  1.5          1090
150G     2 351.5  61.1  2.1  2.7  19418  78.8 -146.2  1.8          3000
  COMMENTS: Sacaton Phase

  46   1   1 SNAKETOWN, AZ, HOUSE 1, GRID 7H
 33.2 -112.0  14.1  7
100C     7   5.3  50.0  2.9  4.3    347  84.9    4.6  3.2          3000
  COMMENTS: Heating experiment for lab #31, approx. 100C

  31   2   1 SNAKETOWN, AZ, HOUSE 1, GRID 7H
 33.2 -112.0  14.1  8       0-500
NRM      8   5.8  51.6  2.1  3.1    586  85.0  -13.0  2.3           450
100C     7   5.3  50.0  2.9  4.3    347  85.0    5.0  3.2          3000
  COMMENTS: Vakki phase, for THR data see lab. No. 46

  39   3   2 SNAKETOWN, AZ, HOUSE 12, GRID 11F
 33.2 -112.0  14.1  7     300
NRM      7   4.2  45.8  3.8  5.9    172  83.0   35.9  4.6          3000
150G     7   2.5  50.0  3.6  5.4    222  86.7   25.8  4.1           300
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150G    5   4.8  47.4  4.2  6.5    231  83.8   25.0  5.0         3000
  COMMENTS: Sweetwater Phase
  COMMENTS: AF (7) done single axis system

  52   3   0 SNAKETOWN, AZ, HOUSE 19, GRID 10G
 33.2 -112.0  14.1  8     500
NRM     6   4.6  47.0  3.0  3.1    761  83.7   28.3  2.4         3000
NRM     7   6.0  47.6  1.7  2.7    869  83.2   17.7  2.0         3000
150G    8   4.9  47.2  1.4  2.1   1127  83.6   25.4  1.7          720

  33   3   2 SNAKETOWN, AZ, HOUSE 2, GRID 9E
 33.2 -112.0  14.1  8       0-500
NRM     8  12.0  51.7  3.4  5.0    226  79.9  -20.1  3.7          500
150G    7   9.3  52.7  4.1  6.0    193  82.2  -24.9  4.4         3000
150G    6 355.9  54.5 10.3 14.6     43  86.1 -172.1 10.4         3000
  COMMENTS: Sweetwater Phase
  COMMENTS: AF done on single axis system

  43   1   2 SNAKETOWN, AZ, HOUSE 3, GRID 11I
 33.2 -112.0  14.1 12    1000-1100
NRM    11 355.1  57.9  3.2  4.4    237  83.3 -147.3  2.9         1030
  COMMENTS: Sacaton Phase
  COMMENTS: AF of 2 cubes gave 1.2 deg. change in decl

  42   2   2 SNAKETOWN, AZ, HOUSE 4, GRID 11I
 33.2 -112.0  14.1  9    1000-1100
NRM     9 352.7  59.2  1.5  2.0   1495  81.1 -150.9  1.3         1060
NRM     7 350.1  56.9  0.6  0.8  11804  80.9 -171.3  0.6         3000
  COMMENTS: Scataon Phase
  COMMENTS: AF of 2 cubes gave 0.3 deg. change in decl

  44   3   1 SNAKETOWN, AZ, HOUSE 5, GRID 5F
 33.2 -112.0  14.1  8    1000-1100
NRM     8 353.6  59.5  2.6  3.5    570  81.2 -145.6  2.3         3000
NRM     8 358.5  59.7  1.9  2.5   1113  82.5 -121.0  1.7         3000
150G    8 356.6  60.1  2.0  2.7    980  81.7 -130.2  1.8         1060
  COMMENTS:  Sacaton Phase

  38   5   1 SNAKETOWN, AZ, HOUSE 7, GRID 10G
 33.2 -112.0  14.1  9     700-900
NRM     8   3.8  48.9  2.6  3.9    351  85.3   23.6  3.0         3000
NRM     8   3.9  48.4  2.4  3.7    382  85.0   25.8  2.8         3000
100G    9   2.2  47.6  1.2  1.9   1259  84.7   34.5  1.5         3000
150G    9   3.1  47.0  0.9  1.4   2152  84.4   39.0  1.1         3000
200G    9   2.9  46.9  0.8  1.2   3264  84.3   41.5  0.9          740
  COMMENTS: Santa Cruz Phase

  47   1   1 SNAKETOWN, AZ, HOUSE 9, GRID 10G
 33.2 -112.0  14.1 10
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100C   10   3.8  50.5  0.9  1.3   2531  86.2    8.5  1.0         3000
  COMMENTS: Heating experiment for lab #32, approx. 100C

  45   2   2 SNAKETOWN, AZ, HOUSE 9, GRID 5
 33.2 -112.0  14.1  8
NRM     8   4.0  54.7  4.3  6.1    168  86.1  -54.5  4.3         3000
150G    8   2.5  55.9  1.8  2.5   1017  86.2  -80.8  1.7         1400
  COMMENTS: Upper hearth, see lab. No. 48
  COMMENTS: U uncertain curve assignment

  48   2   2 SNAKETOWN, AZ, HOUSE 9, GRID 5
 33.2 -112.0  14.1  9    1000-1100
NRM     9 355.2  54.7  1.3  1.8   1556  85.5 -173.7  1.3         1010
150G    8 354.4  55.9  1.4  2.0   1618  84.4 -164.6  1.4         3000
  COMMENTS: Sacaton Phase, AF done on single axis system
  COMMENTS: Lower hearth, see lab. No. 45

  32   2   2 SNAKETOWN, AZ, HOUSE 9, GRID 7F
 33.2 -112.0  14.1 10     500-900
NRM    10   4.9  50.6  0.6  0.9   5326  85.5    1.1  0.7          690
100C   10   3.8  50.5  0.9  1.3   2531  86.0    8.0  1.0         3000
  COMMENTS: Snaketown Phase, for THR data see lab. No. 47
  COMMENTS: AF on 2 cubes gave <1 deg. change in direction

  34   3   1 SNAKETOWN, AZ, HOUSE NEAR TRENCH 10F+31E 38S
 33.2 -112.0  14.1  8       0-500
NRM     8   8.0  49.5  3.7  5.6    175  82.6   -1.4  4.2         3000
150G    8   1.0  51.3  3.6  5.3    202  88.5   31.8  3.9         3000
150G    4   7.4  50.1  1.6  2.4   2579  83.3   -4.0  1.8          475
  COMMENTS: Vakki Phase, AF(8) done on single axis system

  40   3   1 SNAKETOWN, AZ, N. HEARTH, HOUSE 1, GRID 9F
 33.2 -112.0  14.1  9
NRM     9   0.6  50.3  3.3  5.0    195  87.8   53.9  3.7         3000
NRM     6   4.8  51.9  1.7  2.4   1415  85.9  -13.7  1.8          450
150G    6   5.6  54.0  1.7  2.4   1522  85.2  -40.1  1.7         3000
  COMMENTS: Vakki Phase

  53   3   1 SNAKETOWN, AZ, N.E.HOUSE, RAISED PIT, ROOM 7
 33.2 -112.0  14.1  9    1300-1400
NRM     8   4.4  59.3  4.9  6.6    160  82.2  -86.3  4.4         3000
NRM     8   5.5  60.5  5.9  7.8    117  80.7  -85.7  5.1         3000
150G    9   1.9  57.2  2.6  3.6    440  85.2  -93.7  2.5         1390
  COMMENTS: Civano Phase

  57   1   2 SNAKETOWN, AZ, RECTANGULAR HOUSE
 33.2 -112.0  14.1  8     600
NRM     7   6.4  49.9  2.1  3.2    636  84.0    1.3  2.4          690
  COMMENTS: Gila Butte?, back hoe trench area
```

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  COMMENTS: 150G of 2 cubes gave 1.5 deg. change in decl

  51   1   2 SNAKETOWN, AZ, S.W. HOUSE, ROOM 4
 33.2 -112.0  14.1  9    1300-1400
NRM     9 356.6  56.6  1.8  2.5    891  85.1 -146.2  1.7        1320
  COMMENTS: Civano Phase
  COMMENTS: 150G of 2 cubes gave 3.5 deg change in decl

  50   1   2 SNAKETOWN, AZ, WEST FRONT HOUSE, ROOM 8
 33.2 -112.0  14.1  8    1300-1400
NRM     8   1.3  56.6  2.8  3.8    436  85.9  -96.7  2.7        1400
  COMMENTS: Civano Phase
  COMMENTS: 150G of 2 cubes gave 1.1 deg. change in decl

1094   2   0 SWANNIE SITE, AZ, R24, FEAT. 47, HEARTH RS-2
 34.5 -110.0  13.8  8    1100
NRM     8   0.3  62.9 21.8 27.8     11  80.2 -108.7 17.7        3000
50G     8 349.8  70.5 28.4 32.8     10  68.6 -126.2 19.0        2500

1095   1   3 SWANNIE SITE, AZ, R24, FEATURE 16
 34.5 -110.0  13.8  8    1100
NRM     8  36.4  80.8 48.0 49.8      6  48.0  -94.1 25.8        3000
  COMMENTS: NRM weak. Room structure 15
  COMMENTS: 50G and 100G of 3 cubes gave large
  COMMENTS: changes in direction

1097   1   3 SWANNIE SITE, AZ, R24, FEATURE 2
 34.5 -110.0  13.8  8    1100
NRM     8  21.5  67.8 26.2 31.3     10  67.4  -72.9 18.7        3000
  COMMENTS: room structure 12
  COMMENTS: 50G to 200G of of 3 cubes gave some
  COMMENTS: change in direction

1092   1   3 SWANNIE SITE, AZ, R24, FEATURE 53
 34.5 -110.0  13.8  8    1100
NRM     7   5.2  57.3  6.2  8.5    108  84.6  -61.1  5.8        3000
  COMMENTS: room structure 2-hearth
  COMMENTS: 50G and 100G of 3 cubes gave large
  COMMENTS: changes in direction

1093   2   1 SWANNIE SITE, AZ, R24, FEATURE 54
 34.5 -110.0  13.8  8    1100
NRM     7   6.8  61.1  7.8 10.2     83  80.7  -77.2  6.7        3000
50G     6 348.0  60.0  4.7  6.2    265  78.5 -162.4  4.1        1110
  COMMENTS: hearth, room structure 2

1096   2   1 SWANNIE SITE, AZ, R24, FEATURE 9C
 34.5 -110.0  13.8  8    1100
NRM     8 359.0  59.9  2.7  3.6    556  83.6 -117.1  2.4        3000
```

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100G    7 348.4  60.8  4.3  5.6    268  78.3 -157.5  3.7         1110
  COMMENTS: room structure 12

 139   1   1 TEMPE, AZ, ASU U-9-46, FEAT. 45, SILO SITE
 33.5 -111.8  14.2  8     900-1150
NRM     8 352.5  60.4  7.6 10.0     72  80.1 -146.5  6.6         1070
  COMMENTS: 150G of 2 cubes gave 0.1 change in decl

 140   2   0 TEMPE, AZ, ASU U-9-46, FEATURE 52
 33.5 -111.8  14.2  8     300-500
NRM     8   2.7  56.5  6.7  9.3     74  85.8  -80.7  6.5         3000
NRM     6   6.8  51.9  3.5  5.2   3150  84.2  -13.6  3.8          460

 153   1   2 TOMBSTONE, AZ, TB-2
 31.7 -110.1  13.2  8
NRM     7   3.9  63.2  6.8  8.7    122  80.5  -88.7  5.5         3000
  COMMENTS: dates are A.D. 220 or 570 B.C.
  COMMENTS: 150G of 2 cubes gave 1.1 deg. change in decl

 152   2   0 TOMBSTONE, AZ, TB-1
 31.7 -110.1  13.2  8     220        C14
NRM     6  26.6  46.4 12.0 18.6     22  66.1   -3.7 14.5         3000
150G    6  15.8  52.4 10.0 14.5     42  76.7   -8.3 10.5         2500

 155   2   1 TOMBSTONE, AZ, TB-4
 31.7 -110.1  13.2  7    1050
NRM     7   2.9  70.9 40.9 47.0      6  70.3 -100.8 27.0         3000
NRM     7  11.3  69.4 41.3 48.4      6  70.9  -84.7 28.3         2500
  COMMENTS: weak, date is A.D. 1050 +-120

 154   1   1 TOMBSTONE, AZ, TB-3
 31.7 -110.1  13.2  8    -550
NRM     8   7.6   2.2 23.2 46.3      2  54.7   61.1 46.3         3000
  COMMENTS: weak, date is 550 B.C. +-80

 238   1   0 TOMBSTONE, AZ, GRAVEYARD GULCH, TB-2
 32.2 -110.5  15.1  8   -1990 to -2150     C14
NRM     8 187.2  42.9  276  446      1 -32.5 -118.2  360         3000

 237   2   0 TOMBSTONE, AZ, SAN PEDRO RIVER, TB-1
 32.2 -110.5  15.1  8   -1990 to -2150     C14
NRM     8   5.2  63.6 15.3 19.3     22  76.4  -94.9 12.2         2500
150G    8  12.2  53.8 19.7 28.2      9  79.6  -35.9 20.2         3000

 330   1   2 TUCSON, AZ, AA:12:46, ROOM 5
 32.2 -111.0  13.3  9    1300
NRM     8 344.5  59.3  2.6  3.4    592  75.2 -164.2  2.3         1340
  COMMENTS: Rabies control site
  COMMENTS: 150G of 2 cubes gave 0.9 deg. change in decl
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 331   1   2 TUCSON, AZ, BB:10:3, FEATURE 5, ROOM 12
 32.2 -111.0  13.3  8    1300
NRM     8 351.8  58.7  1.4  1.9   1893  80.1 -151.1  1.3        1340
   COMMENTS: Whiptail ruin
   COMMENTS: 150G of 2 cubes gave 0.7 deg. change in decl

 332   1   2 TUCSON, AZ, BB:10:3, N. FEATURE, ROOM 12
 32.2 -111.0  13.3  8    1300
NRM     8 347.4  56.0  1.8  2.5    994  78.7 -174.9  1.8        1340
   COMMENTS: Whiptail ruin
   COMMENTS: 150G of 2 cubes gave 0.4 deg. change in decl

 333   3   0 TUCSON, AZ, BB:10:3, ROOM 10, WHIPTAIL RUIN
 32.2 -111.0  13.3  8    1300
NRM     8 352.2  59.2  2.4  3.3    643  80.0 -147.8  2.2        3000
NRM     8 350.3  57.9  1.5  2.0   1607  79.9 -159.2  1.4        3000
150G    8 352.4  57.7  1.8  2.5   1045  81.3 -154.3  1.7        1340

 334   3   1 TUCSON, AZ, BB:10:3, ROOM 16, WHIPTAIL RUIN
 32.2 -111.0  13.3  8    1300
NRM     8 354.0  57.4  2.6  3.5    533  82.4 -149.4  2.4        3000
NRM     6 353.5  57.4  1.1  1.5   4045  82.1 -151.9  1.0        3000
150G    7 351.9  57.1  1.6  2.2   1666  81.4 -159.5  1.5        1340
   COMMENTS: Amag age (NRM) could be 1370

 241   1   0 TUCSON, AZ, WHIPTAIL RUIN, BB:10:3, TV-2
 32.2 -111.0  13.2  4    1250-1350
NRM     4  28.2  67.2 43.1 51.9     10  62.6  -69.5 31.3        3000

 242   3   0 TUCSON, AZ, WHIPTAIL RUIN, TV-1
 32.2 -111.0  13.2  8    1250-1350
NRM     6 346.8  54.2  2.1  3.0    997  78.7  175.5  2.1        3000
NRM     8 349.6  52.1  2.7  4.0    371  81.2  165.2  2.9        3000
150G    7 350.7  56.1  3.4  4.8    331  81.1 -168.5  3.3        1330

 240   3   0 TUCSON, AZ, WHIPTAIL RUIN, TV-3, HOUSE 5
 32.2 -111.0  13.2  7    1250-1350
NRM     7   0.8  55.4  4.5  6.3    188  86.2 -101.3  4.4        1400
NRM     7   6.4  54.0  4.9  7.1    144  84.2  -46.2  5.0        3000
100G    7   6.2  52.8  5.4  7.8    114  84.6  -35.4  5.7        3000

 466   2   0 TUMACACORI, AZ, BAKED FLOOR FURNACE
 31.6 -110.9  12.9  8    1800-1890
NRM     8  13.4  61.7  5.4  7.0    149  74.5  -71.5  4.6        3000
150G    8  15.8  59.5  5.4  7.2    134  74.5  -59.6  4.8        2500

 468   1   1 TUMACACORI, AZ, LIME KILN
 31.6 -110.9  12.9 12    1822-1850
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**APPENDIX 3. Northwestern New Mexico (excluding Chaco Canyon) and Adjacent Areas**

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1710   2   0 ANASAZI PITHOUSE, NM
 36.6 -108.4   0.0 13    1050-1180     C14
NRM    13 355.3  59.8  3.6  4.8    173  84.5 -149.4  3.2    5   3000
100G   13 351.3  59.4  3.3  4.4    204  82.3 -168.0  2.9        1180

1709   3   0 ANASAZI PITHOUSE, NM, H-28-66, HEARTH RIM
 36.6 -108.4   0.0 10    1025-1155      C14
NRM     9 354.4  57.9  4.7  6.3    144  85.1 -172.4  4.3    5   3000
50G     9 351.6  59.6  3.7  4.9    248  82.4 -165.4  3.3        1050
100G    9 351.0  58.0  3.7  5.0    232  82.6 -179.2  3.4        3000

1706   3   1 ANASAZI PITHOUSE, NM, H21-1
 36.6 -108.4   0.0 17    1150-1350      C14
NRM    14 344.6  54.9 12.1 17.1     12  77.5  160.8 12.0    5   3000
50G     8 337.6  65.9  2.4  2.9    943  69.9 -156.1  1.8        1100
100G    8 339.4  65.3  2.9  3.6    622  71.3 -156.6  2.2        3000
  COMMENTS: burned area, feature 16

1707   6   1 ANASAZI PITHOUSE, NM, H21-1
 36.6 -108.4   0.0 10    1100
NRM    10 353.3  53.2 23.9 34.4      5  83.8  136.1 24.8    5   3000
50G     9 346.3  56.7  7.0  9.6     61  79.0  169.4  6.6        3000
100G    9 347.5  57.5  5.9  8.1     88  79.9  174.3  5.5        3000
150G    8 350.4  56.6  4.1  5.7    202  82.3  168.5  3.9        3000
200G    8 351.8  55.8  3.7  5.2    239  83.4  162.2  3.6        1190
300G    9 351.8  58.4  5.0  6.8    126  83.1 -175.0  4.6        3000
  COMMENTS: hearth, feature 9A

1711   2   0 ANASAZI PITHOUSE, NM, H28-128 F2-H1
 36.6 -108.4   0.0 12    1235-1355     C14
NRM    12  12.7  60.1  6.9  9.2     52  79.2  -46.4  6.1    5   3000
100G   12   5.3  60.5  5.6  7.3     83  83.6  -70.2  4.8        2500

1712   2   1 ANASAZI PITHOUSE, NM, H28-128 F2-H4
 36.6 -108.4   0.0  9     980-1110     C14
NRM     7 349.8  60.9  9.8 12.8     53  80.5 -161.2  8.4    5   3000
50G     7 347.4  61.9  8.7 11.2     70  78.4 -160.3  7.2        1110
  COMMENTS: lower hearth

1708   1   2 ANASAZI PITHOUSE, NM, H28-15
 36.6 -108.4   0.3 10    1050-1100
NRM     8 342.3  68.4 14.3 17.0     31  70.4 -142.6 10.1    5   3000
  COMMENTS: feature 3, hearth
  COMMENTS: 100G of 4 cubes gave 2.6 deg. change in decl

1705   3   0 ANASAZI PITHOUSE, NM, H28-164
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 36.6 -108.4   0.0 11    1050
NRM    11 353.9  62.2  8.4 10.8     44  81.7 -140.6  6.9    5   3000
50G    11 358.2  61.5  8.0 10.4     47  83.8 -120.8  6.8        1040
100G   11 358.3  61.6  8.6 11.1     41  83.7 -119.9  7.2        3000
  COMMENTS: U special Chaco curve

1450   1   1 ANTELOPE MESA, NM, LA14695 #36
 35.5 -108.2  13.6  9     750
NRM     8   6.1  55.0  5.4  7.7    106  85.0  -20.5  5.4    5    670
  COMMENTS: 100G of 3 cubes gave 16.4 deg. change in decl

  64   2   1 BLANCO, NM, LA 8662, FEATURE 10
 36.7 -107.8  13.8 10     750-950
NRM     9   8.0  44.7  3.6  5.7    132  77.5   36.7  4.5    5   3000
NRM     8   9.4  46.9  2.5  3.9    330  78.3   27.0  3.1         870
  COMMENTS: 50G of 3 cubes gave 0.7 deg. change in decl

  66   1   1 BLANCO, NM, LA 8662, FEATURE 13
 36.7 -107.8  13.8  8     750-950
NRM     8   3.0  46.9  1.8  2.8    638  81.1   54.6  2.2    5    820
  COMMENTS: 150G of 2 cubes gave 0.8 deg. change in decl

  65   2   1 BLANCO, NM, LA 8662, FEATURE 14
 36.7 -107.8  13.8  8     750-950
NRM     6   7.5  50.7  3.0  4.4    425  81.9   20.3  3.3    5   3000
NRM     6  10.7  48.9  2.2  3.3    700  78.7   17.0  2.5         870
  COMMENTS: 100G of 2 cubes gave 0.8 deg. change in decl

  69   3   0 BLANCO, NM, LA 8662, FEATURE 15
 36.7 -107.8  13.8  8     750-950
NRM     8   8.5  47.0  1.1  1.7   1674  78.8   38.6  1.4    5   3000
NRM     8   7.6  50.5  1.1  1.7   1912  81.7   21.1  1.3        3000
150G    8   6.5  49.1  1.2  1.8   1707  81.4   31.4  1.3         870

  67   3   0 BLANCO, NM, LA 8662, FEATURE 16
 36.7 -107.8  13.8 11     750-950
NRM    10   3.6  50.5  4.9  2.8    525  83.8   42.4  2.1    5   3000
NRM    11   4.1  47.7  2.5  3.8    251  81.4   47.7  2.9        3000
100G    9   7.5  49.4  1.6  2.4    831  81.0   26.2  1.8         870

  71   3   0 BLANCO, NM, LA 8662, FEATURE 18
 36.7 -107.8  13.8  8     750-950
NRM     8 357.2  56.4  2.7  3.7    549  86.3 -148.1  2.6    5   3000
NRM     8   7.4  49.0  4.0  6.1    145  80.8   27.5  4.6        3000
150G    8   8.3  45.6  2.8  4.5    251  78.1   33.8  3.5         860

  68   3   0 BLANCO, NM, LA 8662, FEATURE 24
 36.7 -107.8  13.8  6     750-950
NRM     6 358.5  44.5  2.3  3.7    518  79.4   79.5  2.9    5    800
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NRM      6   1.7  51.1  5.0  7.4    149  84.9   55.7  5.5         3000
100G     6  10.9  58.2  6.7  9.0    122  81.1  -35.1  6.1         3000

  70   1   1 BLANCO, NM, WINDY RIDGE HOGAN
 36.7 -107.8  13.8  7    1910
NRM      7  13.8  59.7  3.0  3.9    533  78.5  -41.8  2.6    5   1910
  COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl

 111   1   1 CERRO COLO, NM, ROOM 103
 34.5 -108.5  13.5  8     665           TR
NRM      8 334.6  48.3 16.3 24.9      9  67.9  155.0 19.0    5   3000
  COMMENTS: 50G of 2 cubes gave 3.9 deg. change in decl

 110   3   0 CERRO COLO, NM, ROOM 211
 34.5 -108.5  13.5  8     631           TR
NRM      7 354.4  58.1 14.4 19.5     22  83.8 -153.5 13.2    5   3000
NRM      7 356.2  57.4 14.3 19.5     21  85.3 -148.2 13.3        3000
150G     7 351.5  59.5 20.8 27.7     12  81.1 -155.4 18.4        2500

 112   4   0 CERRO COLO, NM, ROOM 405
 34.5 -108.5  13.5  8     675-687       TR
NRM      8 346.3  66.1 12.8 15.7    344  72.8 -140.6  9.6    5   3000
NRM      6 354.8  62.3  2.7  3.5    880  80.1 -130.8  2.3        2500
NRM      8 351.8  64.6 13.2 16.4     30  76.5 -133.4 10.2        3000
150G     7   1.8  62.5  6.4  8.2    132  78.1 -102.2  5.3        3000

1465   3   0 CHACRA MESA, NM, EAST OF CHACO CANYON
 35.9 -107.6  13.5  8    1225-1375
NRM      8 359.4  56.5  5.9  8.1     98  88.7 -128.4  5.6    5   3000
50G      8 357.4  57.8  4.1  5.6    214  86.7 -145.0  3.8        3000
100G     8 356.1  58.6  3.0  4.1    407  85.3 -148.4  2.8        1320

1440   2   0 DURANGO, CO, 5LP 111, FEATURE 1
 37.3 -107.9  13.9  8     810
NRM      8 354.7  33.1 11.1 19.6     11  70.2   87.1 17.2    5   2500
50G      8 350.0  36.9 17.1 29.2      6  71.2  102.3 24.9        3000

1441   1   1 DURANGO, CO, 5LP 111, FEATURE 2
 37.3 -107.9  13.9  8     810
NRM      8   3.0  50.4  2.1  3.1    569  83.3   49.1  2.3    5    750
  COMMENTS: 100G of 2 cubes gave 0.6 deg. change in decl

 687   3   0 GALLITA SPRINGS, NM, FEAT. 13
 33.9 -108.3  13.1  8
NRM      7 355.3  56.5  3.8  5.3    272  85.0 -156.8  3.7    5   3000
100G     7 350.4  57.4  3.3  4.6    377  81.2 -167.7  3.1        1170
150G     6 348.6  58.1  3.9  5.2    356  79.7 -167.2  3.6        3000

 686   1   1 GALLITA SPRINGS, NM, FEAT. 21
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 33.9 -108.3  13.1  8
NRM     7 344.2  55.9  2.6  3.6    591  76.9  177.2  2.5    5   1140
  COMMENTS: 150G of 2 cubes gave little change in direction

  17   4   0 GALLUP, NM, KIVA
 35.5 -108.7  13.6 10    1100-1300
NRM    10 346.9  60.9  7.0  9.2     65  77.9 -162.2  6.0    5   3000
NRM     8 349.0  58.8  5.3  7.1    135  80.4 -170.3  4.8        1150
100G    7 333.5  56.4  9.2 12.7     48  68.7  173.2  8.8        3000
150G    7 345.9  62.6  7.8 10.1     90  76.2 -156.3  6.4        3000

 814   3   2 GILLIAND SITE, CO, FEATURE 39
 37.3 -108.7  14.2  9
NRM     8  24.5  68.6  3.7  4.4    464  67.2  -66.7  2.6    5    600
100G    9  13,5  60.6  7.9 10.3     59  78.8  -45.3  6.8        3000
150G    9  11.0  65.3  8.9 11.0     59  77.1  -73.4  6.8        3000
  COMMENTS: work area west of Gilliand site
  COMMENTS: uncertain curve assignment

 653   2   2 GILLILAND SITE, CO, FEAT. 17, HEARTH
 37.3 -108.7  14.2  8
NRM     8  10.4  58.6  3.0  4.1    402  81.6  -35.4  2.8    5    520
100G    8   9.8  56.5  5.5  7.6    112  82.2  -20.3  5.3        3000
  COMMENTS: inner rim of hearth (see 657)
  COMMENTS: uncertain curve assignment

 654   2   0 GILLILAND SITE, CO, FEATURE 13, HEARTH
 37.3 -108.7  14.2  8
NRM     8   4.4  59.3  1.9  2.5   1280  85.6  -59.6  1.7    5   3000
100G    8   5.1  57.1  2.1  2.9    762  85.9  -25.5  2.0         670

 659   2   1 GILLILAND SITE, CO, FEATURE 15, BURNED HOUSE
 37.3 -108.7  14.2  8
NRM     7   8.1  59.2  2.5  3.4    719  83.1  -44.3  2.3    5   3000
100G    5   5.5  58.5  1.4  1.9   3625  85.3  -44.2  1.3         650
  COMMENTS: plaster floor and wall (post lab # 653-658)

 660   2   1 GILLILAND SITE, CO, FEATURE 15, HEARTH
 37.3 -108.7  14.2  8
NRM     8   8.2  59.0  3.0  4.1    416  83.1  -42.2  2.7    5   3000
100G    7   7.4  56.6  1.8  2.5   1259  84.1  -19.5  1.7         675
  COMMENTS: Inner rim of hearth (post lab # 653-658)

 658   2   1 GILLILAND SITE, CO, FEATURE 17
 37.3 -108.7  14.2  8
NRM     7   6.6  61.1  2.5  3.2    830  82.9  -64.8  2.1    5   3000
100G    7   5.3  58.5  1.4  1.9   2173  85.4  -44.5  1.3         650
  COMMENTS: burned wall, southeast corner
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 657   2   1 GILLILAND SITE, CO, FEATURE 17, HEARTH
 37.3 -108.7  14.2  8
NRM     8   2.9  63.5  2.4  3.1    793  81.9  -94.1  2.0    5   3000
100G    8  12.3  55.8  3.4  4.8    275  80.1  -16.8  3.3         500
  COMMENTS: outer hearth (see 653)

 655   2   1 GILLILAND SITE, CO, FEATURE 18, HEARTH
 37.3 -108.7  14.2  7
NRM     7   8.6  62.6  2.5  3.2    870  80.7  -67.1  2.0    5   3000
150G    7   8.8  61.4  2.8  3.6    650  81.4  -59.2  2.4         580
  COMMENTS: Inner fired rim of hearth

 656   2   1 GILLILAND SITE, CO, FEATURE 3, HEARTH
 37.3 -108.7  14.2  8
NRM     8   8.3  59.6  1.8  2.3   1279  82.8  -46.8  1.5    5   3000
150G    8  10.0  55.7  2.0  2.8    795  81.9  -14.3  2.0         480
   COMMENTS: inner fired rim of hearth

 953   2   0 HOY HOUSE, CO, KIVA 2, HEARTH 5MTUMR-2150
 37.1 -108.4  14.0  8    1200        TR
NRM     8 351.8  65.0  2.4  2.9    930  78.3 -137.3  1.8    5   3000
100G    8 350.5  65.6  2.3  2.8   1021  77.2 -138.3  1.7        1090

 952   3   1 HOY HOUSE, CO, RM. 13-FS22, HEARTH 5MTUMR-2150
 37.1 -108.4  14.0  8    1145-1161 TR
NRM     8 345.0  61.6  2.4  3.1    756  77.2 -167.6  2.0    5   3000
100G    8 347.7  61.2  1.6  2.0   1753  79.2 -165.7  1.3        1120
150G    8 346.9  61.3  1.8  2.4   1270  78.7 -166.7  1.6        3000
  COMMENTS: 1200-1300 also given for arch date

1958   1   2 LA VIEJA, MALPAS, NM, LA34885
 35.0 -107.9  13.4  8
NRM     7  16.1  65.4 22.8 28.2     13  72.7  -68.8 17.4    5   1960
  COMMENTS: 50G to 400G of 4 cubes gave some
  COMMENTS: change in direction

1467   3   0 LA14704, 35 MILES N. OF CROWNPOINT, NM
 36.1 -108.2  13.7  7     700-800
NRM     7 167.1  80.7 76.3 79.3      3  18.3 -104.0 41.2    5   3000
50G     7 218.3  76.4 60.0 64.7      4  14.8 -124.4 34.9        3000
100G    7  10.8  51.7  7.8 11.5     52  80.3    1.8  8.4         690

1803   2   0 LITTLEWATER, NM, LA16029, F-52
 35.6 -108.8  13.8  8     600-650
NRM     8   7.5  58.6  3.3  4.4    352  83.0  -53.4  3.0    5   3000
50G     8   3.5  60.3  3.7  4.9    294  83.7  -84.0  3.2         620

1804   2   0 LITTLEWATER, NM, LA16029, FEATURE 33
 35.6 -108.8  13.8  8
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NRM      8  11.1  56.6 13.3 18.4      20  80.9  -31.7 12.7    5   3000
50G      8   9.8  56.4 16.4 22.8      13  82.0  -31.5 15.8         880

1806   3   0 LITTLEWATER, NM, LA16029, FEATURE 49
 35.6 -108.8  13.8  8     650-700
NRM      8 356.8  47.1  2.5  3.9      33  82.2   92.2  3.0    5   3000
100G     8 359.5  49.4  3.4  5.1     210  84.9   76.2  3.8        3000
100G     5 358.7  46.1  1.3  2.1     226  81.7   79.4  1.6         800

1807   2   0 LITTLEWATER, NM, LA16029, FEATURE 49A
 35.6 -108.8  13.8  8     650-700
NRM      7 358.2  47.2  2.0  3.1     631  82.6   83.6  2.4    5   3000
100G     6   1.3  46.3  1.4  2.1    1608  82.0   63.0  1.7         790

1802   2   0 LITTLEWATER, NM, LA16029, FEATURE 54
 35.6 -108.8  13.8  8
NRM      7   8.7  62.7  2.9  3.8     635  79.2  -73.5  2.4    5   3000
100G     7   2.9  60.7  2.9  3.8     602  83.5  -89.0  2.5         620

1805   2   0 LITTLEWATER, NM, LA16029, FEATURE F6
 35.6 -108.8  13.8  8     600-650
NRM      8   7.2  61.6  4.1  5.4     254  80.9  -73.2  3.5    5   3000
50G      8  10.1  58.1  3.7  5.0     271  81.4  -43.4  3.4         540

1978   2   1 LOS PILARES, NM
 35.0 -107.8     .  10
NRM     10 340.5  56.7  1.8  2.5     762  74.1   31.9  1.8    5   3000
150G     6 338.1  55.4  1.7  2.4    1608  72.1  171.5  1.7        1140
 COMMENTS: uncertain curve assignment

1979   2   0 LOS PILARES, NM
 35.0 -107.8     .  11
NRM     10 354.6  63.4  3.1  3.9     376  79.2   86.8  2.5    5   3000
100G     7 352.9  61.5  4.2  5.5     287  80.6 -141.4  3.6        1070

 709   2   0 MANCOS CANYON, CO, 5MTUMB 1238, FEAT. 6:17
 37.1 -108.7  14.1  8
NRM      7 340.3  57.5  6.0  8.2     116  74.4  170.9  5.6    5   3000
50G      5 347.5  60.2  3.2  4.2     765  79.5 -172.3  2.8        1150

 707   2   1 MANCOS CANYON, CO, KIVA 1:23
 37.1 -108.7  14.1  8
NRM      7 353.1  64.8  1.7  2.2    1985  79.3 -135.4  1.4    5   3000
50G      6 352.7  63.1  1.6  2.1    3313  80.7 -142.7  1.3        1060
  COMMENTS: hearth H5 MTMUMR 1253

 708   4   0 MANCOS CANYON, CO, SMTUMR 1238, FEAT. 2:23
 37.1 -108.7  14.1  8
NRM      8   9.5  57.7  4.5  6.1     179  82.4  -30.9  4.2    5   3000
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50G      3  10.1  59.2  4.3  5.8   1015  81.6  -41.7  3.9         3000
50G      8   5.9  57.2  2.5  3.4    564  85.3  -29.1  2.3          660
100G     3   6.1  58.4  3.2  4.4   1742  83.9  -54.7  3.0         3000

 298   4   0 MESA VERDE, CO
 37.2 -108.5  14.3  8
NRM      8 341.1  63.6  6.0  7.6    133  73.7 -162.8  4.8    5   3000
NRM      8 343.5  65.8  9.6 11.8     60  73.8 -151.3  7.2         3000
100G     7 354.8  60.0  4.8  6.4    207  84.5 -154.9  4.2         1010
200G     7 357.8  59.3  5.1  6.8    179  86.7 -139.2  4.5         3000

 176   1   1 MESA VERDE, CO, LARGE KIVA D
 37.2 -108.5  14.1  8     845-863    TR
NRM      8 358.5  42.6  7.3 11.8     35  77.4   77.8  9.5    5    800
  COMMENTS:  2 cubes AF to 800G with little change in dir

 448   1   1 MESA VERDE, CO, MV-19-37, PITHOUSE STRUC. 2
 37.2 -108.5  14.1  9     600-650
NRM      9  13.5  58.6  2.8  3.8    404  79.2  -33.7  2.6    5    530
  COMMENTS: Colorado University

 449   2   1 MESA VERDE, CO, MV-1937, STRUC. 3, HEARTH
 37.2 -108.5  14.1  8
NRM      7  10.1  60.0  1.7  2.3   1638  81.4  -47.1  1.5    5   3000
150G     7   9.0  60.4  1.7  2.3   1611  81.9  -51.9  1.5          580
  COMMENTS: hearth in fired room (see 450).

  62   2   0 MESA VERDE, CO, MV1452, KIVA A
 37.2 -108.5  14.1  9    1257           TR
NRM      9 356.8  57.6  2.8  3.8    401  87.3 -176.2  2.6    5   3000
150G     8 354.9  57.2  3.0  4.2    379  85.9  171.6  2.8         1230

  58   2   0 MESA VERDE, CO, MV1644, PH A
 37.2 -108.5  14.1 10     649           TR
NRM      9  13.7  57.1  2.5  3.4    497  79.1  -25.5  2.3    5   3000
150G     9  12.5  60.2  3.7  4.8    262  72.6  -44.5  3.2          550

  59   4   1 MESA VERDE, CO, MV1644, PH B
 37.2 -108.5  14.1  9     667           TR
NRM      9  10.6  53.6  2.9  4.2    292  80.9   -2.3  3.0    5   3000
150G     7  12.1  60.1  4.5  6.0    235  79.8  -44.6  3.9          550
150G     9   9.8  58.5  4.8  6.4    142  82.0  -36.1  4.3         3000
150G     7  14.5  56.4  4.3  5.9    217  78.4  -21.9  4.1         3000

  60   3   1 MESA VERDE, CO, MV1676, HOUSE 4
 37.2 -108.5  14.1  9     860           TR
NRM      9  15.2  57.9  3.1  4.2    329  77.9  -29.4  2.8    5   3000
150G     9   8.5  62.4  4.1  5.2    235  80.8  -66.2  3.4         3000
150G     7  15.7  61.7  3.6  4.7    403  76.7  -48.9  3.0         2500
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  COMMENTS: Uncertain curve assignment, modern?

  61   2   0 MESA VERDE, CO, MV1676, PH G
 37.2 -108.5  14.1 10     556-631       TR
NRM    10   8.4  59.6  3.8  5.1    203  82.7  -47.3  3.4    5   3000
150G    9   3.8  61.8  2.1  2.7    863  83.5  -83.3  1.8          610

 291   2   2 MESA VERDE, CO, NO. 1
 37.2 -108.5  14.1  8
NRM     8 342.0  62.2 13.9 17.9     29  75.0 -168.2 11.5    5   1130
NRM     8  41.5  41.3 21.7 35.6      5  52.1   -9.7 29.2         3000
  COMMENTS: AF of 2 cubes 50G to 800G gave
  COMMENTS: 54.9 deg. change

 177   2   0 MESA VERDE, CO, PH 5
 37.2 -108.5  14.1  8     840-875
NRM     8   5.9  56.3  4.2  5.9    184  85.3  -16.1  4.1    5   2500
200G    8  18.7  52.7  5.6  8.1     89  74.3   -9.6  5.9         3000

  20   2   2 MESA VERDE, CO, STEPHOUSE, PH C
 37.2 -108.5  14.1  9     625
NRM     6 291.4  60.8  5.6  7.3    198  38.3 -170.7  4.8    5   2500
NRM     8 286.8  64.8 15.8 19.7     22  36.8 -163.4 12.2         3000
  COMMENTS: 8 cube data are from a later remeasurement
  COMMENTS: Stabilized hearth

 450   2   1 MESA VERDE, CO, STRUC. 3
 37.2 -108.5  14.1  8
NRM     8   6.3  59.2  0.7  1.0   7071  84.4  -49.7  0.7    5   3000
150G    7   6.7  59.2  0.7  0.9  10230  84.1  -48.4  0.6          640
  COMMENTS: floor in fired room (see 449)

1486   3   0 MILK LAKE, NM
 36.1 -108.2  13.8 10     800
NRM    10   8.7  42.2  3.1  5.0    142  76.1   36.7  4.1    5   3000
50G    10   5.5  44.9  3.6  5.6    118  79.3   44.4  4.5          840
100G   10   8.4  44.7  3.9  6.3     96  77.9   33.2  5.0         3000

 736   2   0 NAVAJO RESERVOIR, NM
 36.9 -107.5  13.7  9
NRM     8 352.8  65.4 12.1 14.9     37  78.1 -131.9  9.2    5   3000
150G    8   0.5  58.8  2.5  3.3    617  87.3  -98.7  2.2         1420

 790   2   1 NAVAJO RESERVOIR, NM, LA4282
 37.0 -107.7  13.7  7       1-400
NRM     7 342.1  65.7 13.5 16.6     36  73.0 -152.4 10.2    5   3000
100G    7 344.2  57.1 10.6 14.5     38  77.4  170.3 10.0         2500
  COMMENTS: hearth NE stone ring
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 791   1   1 NAVAJO RESERVOIR, NM, LA4282
 37.0 -107.7  13.7  9       1-400
NRM     9   6.7  62.3  2.7  3.5    539  81.6  -72.0  2.7    5    600
  COMMENTS: stone hearth, 17 m south of set 790

1468   2   0 NOSE ROCK, 14 MILES NE OF CROWNPOINT, NM
 35.8 -108.0  13.6  9    1175-1225
NRM     8 344.6  61.1  5.8  7.5    128  76.5 -165.2  4.9    5   3000
50G     7 343.6  58.1  5.3  7.2    155  76.6  179.5  4.9        1140

1469   3   1 NOSE ROCK, NM
 35.8 -108.0  13.6  8
NRM     8 355.5  58.9  4.7  6.4    170  84.8 -149.6  4.3    5   3000
50G     8 350.0  59.8  3.6  4.7    312  80.8 -163.5  3.1        3000
150G    6 349.4  60.0  2.0  2.6   1510  80.3 -163.7  1.7        1160

1470   2   0 NOSE ROCK, NM
 35.8 -108.0  13.6  8    1100-1200
NRM     7 349.5  65.2  4.3  5.3    341  76.2 -139.1  3.3    5   3000
50G     7 346.1  62.5  4.1  5.3    322  76.7 -156.9  3.4        1100

1471   2   0 NOSE ROCK, NM
 35.8 -108.0  13.6  8     650-750
NRM     8   8.4  50.8  4.8  7.1    111  81.8   11.3  5.3    5   3000
50G     7  14.5  51.6  5.6  8.2    101  77.4   -5.5  6.0         720

1473   2   0 NOSE ROCK, NM
 35.8 -108.0  13.6  8    1150-1200
NRM     7 342.8  61.6  3.7  4.8    374  75.1 -165.2  3.1    5   3000
50G     8 346.9  59.6  3.9  5.1    263  78.7 -170.1  3.4        1140

1445   2   1 NOSE ROCK, NM, LA13803
 35.8 -108.0  13.6 15    1070
NRM    15 344.2  63.7  2.6  3.3    376  74.9 -155.3  2.1    5   3000
50G     9 341.5  61.7  3.5  4.5    307  74.5 -168.3  2.9        1130
  COMMENTS: room 8, hearth

1446   2   1 NOSE ROCK, NM, LA13803
 35.8 -108.0  13.6 12    1030-1090
NRM    11 348.3  63.1  4.6  5.8    153  77.7 -150.5  3.7    5   1090
50G     7 340.8  61.2  6.1  8.0    136  74.2 -171.1  5.2        3000
  COMMENTS: kiva 1, firepit 2

 815   2   2 OCHO METATES, CO, FEATURE 1
 37.3 -108.7  14.2  8     600
NRM     8  23.9  63.2  1.9  2.5   1269  70.6  -48.8  1.6    5    550
100G    6  23.4  62.6  2.8  3.6    850  71.1  -46.8  2.3        3000
  COMMENTS: basketmaker III pithouse
  COMMENTS: uncertain curve assignment, modern?
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 816   2   2 OCHO METATES, CO, FEATURE 1
 37.3 -108.7  14.2  9     600
NRM      9  23.0  63.7  2.7  3.4    570  71.0  -51.1  2.2    5    560
100G     6  18.5  61.9  3.8  4.9    454  74.8  -46.8  3.1        3000
  COMMENTS: basketmaker III pithouse
  COMMENTS: uncertain curve assignment, modern?

 817   2   1 OCHO METATES, CO, PITHOUSE WITH BURNT FLOOR
 37.3 -108.7  14.2  8     600
NRM      7  23.0  63.8  1.5  1.9   2558  71.0  -51.3  1.2    5    560
100G     7  23.8  61.4  2.5  3.3    799  71.1  -42.1  2.1        3000
  COMMENTS: uncertain curve assignment, modern?

  15   4   0 RED MESA, CROWN PT., NM, LA2987, FEAT. 7
 35.6 -108.6  13.7  9    1200-1300
NRM      9 342.4  63.7 12.0 15.2     30  73.5 -157.2  9.6    5   3000
NRM      9 352.8  58.9 55.0 74.0    109  83.0 -161.4  5.0        3000
NRM      8 355.5  57.6  4.1  5.6    210  85.6 -161.0  3.8        1220
100G     8 350.6  63.1  6.3  8.0    120  78.6 -144.3  5.1        3000

 169   1   0 RED ROCK, NM,RR-28
 36.8 -108.9  14.1  7     669        TR
NRM      7   3.6  65.6 26.9 33.1     10  78.7  -96.6 20.4    5   3000

 170   1   0 RED ROCK, NM, RR-28-2
 36.8 -108.9  14.1  7     669        TR
NRM      5   6.4  62.1  6.0  7.7    241  81.8  -74.6  4.9    5    610

 171   1   0 RED ROCK, NM,  RR-28-3
 36.8 -108.9  14.1  8     669        TR
NRM      6   6.2  59.5  2.8  3.7    730  84.0  -56.6  2.5    5    640

 172   1   0 RED ROCK, NM, RR-28-4
 36.8 -108.9  14.1  8     669        TR
NRM      8   7.0  57.5  5.2  7.2    129  84.3  -34.6  4.9    5    660

 173   1   0 RED ROCK, NM, RR-28-5
 36.8 -108.9  14.1  7     669        TR
NRM      7   8.6  59.5  4.7  6.2    212  82.4  -49.1  4.2     5   640

 174   1   1 RED ROCK, NM, RR-28-6
 36.8 -108.9  14.1  7     669        TR
NRM      7   3.2  63.6  8.1 10.3     87  81.3  -94.2  6.5    5    600
  COMMENTS: Too weak to demagnetize

 175   1   0 RED ROCK, NM, RR-28-7
 36.8 -108.9  14.1  8     669        TR
NRM      8   6.4  62.8  1.4  1.8   2245  84.1  -77.7  1.2    5    600
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 966   3   2 SALMON RUINS, NM
 36.7 -108.1  13.8 12    1250-1300
NRM    12 339.6  63.8  2.1  2.6    706  72.4 -161.9  1.6    5   1150
NRM     7   6.9  64.9  4.9  6.0    260  78.6  -83.5  3.7        3000
150G    7  10.0  65.9  7.4  9.0    121  76.3  -78.7  5.5        3000
  COMMENTS: wall between rooms 81 and 82, hearth
  COMMENTS: uncertain curve assignment

1308   2   1 SALMON RUINS, NM, LA 8846 F-093W|029
 36.7 -108.1  13.8  8
NRM     8 345.0  57.5  8.4 11.4     51  78.0  173.1  7.8    5   3000
50G     8 340.3  57.2  7.8 10.7     58  74.3  172.1  7.3        2500
  COMMENTS: stratum H-7-39

1310   2   1 SALMON RUINS, NM, LA 8846 F-093W|030
 36.7 -108.1  13.8  8
NRM     8 349.1  62.2  4.8  6.2    192  79.3 -155.8  4.0    5   3000
50G     8 351.0  62.6  4.3  5.6    244  80.0 -149.0  3.6        1130
  COMMENTS: Stratum H-7-39

1309   1   2 SALMON RUINS, NM, LA 8846 F-093W|042
 36.7 -108.1  13.8  8
NRM     7 346.9  65.3  8.4 10.3     91  75.6 -146.0  6.4    5   1130
  COMMENTS: stratum H-7-39
  COMMENTS: 100G of 4 cubes gave 12.6 deg. change in decl

1083   2   1 SALMON RUINS, NM, LA-8846 SR2
 36.7 -108.1  13.8  8     900-1300
NRM     7 352.2  60.7  2.0  2.6   1262  82.1 -156.4  1.7    5   1040
100G    7 354.6  60.9  4.4  5.7    263  83.3 -145.0  3.7        3000
  COMMENTS: complex hearth-kiva 121

1084   2   1 SALMON RUINS, NM, LA-8846 SR3
 36.7 -108.1  13.8  8     900-1300
NRM     7  11.1  56.4 13.3 18.4     23  81.2  -23.2 12.8    5   3000
100G    7  11.7  58.0 15.2 20.6     20  80.5  -33.6 14.0         860
  COMMENTS: burned wall and north bench-kiva 130

1548   3   1 SALMON RUINS, NM, LA8846
 36.7 -108.1  13.8  8    1140-1240
NRM     8 141.9  59.8  6.0  8.0    110  -5.1  -80.1  5.3    5   3000
NRM     8   6.9  59.8  6.0  8.0    110  83.3  -56.8  5.3        3000
100G    8   1.9  60.5  5.1  6.7    162  85.0  -91.4  4.4        1390
  COMMENTS: feat. 102A\007 (floor surface H113)

1549   2   1 SALMON RUINS, NM, LA8846
 36.7 -108.1  13.8  8    1263         TR
NRM     8 257.0  79.9 36.1 37.7      9  30.2 -130.2 19.7    5   3000
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100G    8 346.0  61.1  7.1  9.3     85  77.9 -166.9  6.0        1130
  COMMENTS: feat. F151W\101

1550   1   2 SALMON RUINS, NM, LA8846
 36.7 -108.1  13.8  8    1106-1200
NRM     6 355.8  67.1 12.0 14.5     41  76.6 -119.9  8.8    5   3000
  COMMENTS: feat. 127W\127
  COMMENTS: 100G of 4 cubes gave 0.6 deg. change in decl.

1551   1   2 SALMON RUINS, NM, LA8846
 36.7 -108.1  13.8 11    1090-1094
NRM    11  63.3  81.4 28.9 29.8     10  42.5  -87.6 15.4    5   3000
  COMMENTS: room 90W, grid 35E\9N, sub floor hearth
  COMMENTS: 100G of 5 cubes gave 7.8 deg. change in decl

1552   2   1 SALMON RUINS, NM, LA8846
 36.7 -108.1  13.8 10    1140-1245
NRM    10   3.9  67.2  7.6  9.7     61  82.6  -85.4  6.2    5   3000
50G    10 359.3  61.2  9.2 12.0     39  84.4 -113.5  7.8        1380
  COMMENTS: feat. 138\001, stratum L-1-2.5

1553   1   1 SALMON RUINS, NM, LA8846
 36.7 -108.1  13.8  2
NRM     2 176.5  64.5 16.3 20.3    391  -6.9 -105.7 17.7    5   3000
  COMMENTS: feat. 121z\001, station H106

1698   2   0 SALMON RUINS, NM, LA8846
 36.7 -108.1  13.8  9    1100-1250
NRM     9 351.4  62.4  2.6  3.3    601  80.5 -149.0  2.1    5   3000
50G     9 350.5  57.7  2.2  3.0    633  82.3  176.4  2.0        1180

1317   2   0 SALMON RUINS, NM, LA8846 F-086W|025
 36.7 -108.1  13.8  8
NRM     8 352.9  62.4  6.8  8.7     99  81.2 -143.7  5.6    5   3000
50G     8 355.6  62.5  7.4  9.5     84  82.2 -132.1  6.1        1050

1319   2   0 SALMON RUINS, NM, LA8846 F-086W|075
 36.7 -108.1  13.8  9
NRM     7 345.2  60.7  2.3  3.0    914  77.5 -169.8  2.0    5   3000
50G     7 343.7  60.6  2.9  3.8    582  76.5 -171.8  2.5        1140

1314   1   1 SALMON RUINS, NM, LA8846 F-092A|009
 36.7 -108.1  13.8  9
NRM     8 346.0  62.2  2.0  2.6   1134  77.4 -161.6  1.6    5   1110
  COMMENTS: 100G of 2 cubes gave 1.6 deg. change in decl

1313   2   0 SALMON RUINS, NM, LA8846 F-092W|044
 36.7 -108.1  13.8 10
NRM     9 350.6  63.1  6.5  8.2     98  79.4 -147.1  5.2    5   3000
```

50G     9 351.2  61.1  6.6  8.6     84  81.3 -156.5  5.6        1060

1316   2   0 SALMON RUINS, NM, LA8846, F-130W GREAT KIVA
 36.7 -108.1  13.8  8
NRM     8  10.6  57.0  9.7 13.4     37  81.5  -27.1  9.2    5   3000
50G     8  13.3  54.7  9.7 13.7     34  79.2  -14.4  9.9        2500

1311   1   1 SALMON RUINS, NM, LA8846 F-1S1W101
 36.7 -108.1  13.8  8    1200-1300
NRM     6 357.1  63.2  8.4 10.6    100  81.7 -122.7  6.7    5   1360
  COMMENTS: 100G of 4 cubes gave 6.4 deg. change in decl

1312   2   0 SALMON RUINS, NM, LA8846 F092|046
 36.7 -108.1  13.8  9
NRM     9  13.7  63.5 17.6 22.3     14  76.7  -61.4 14.1    5   3000
50G     9  11.2  61.0 17.1 22.3     13  79.9  -53.3 14.6        1960

1315   1   1 SALMON RUINS, NM, LA8846 F103-OE|415,OE|425
 36.7 -108.1  13.8  8
NRM     7 349.0  61.4 28.2 36.6      7  79.7 -160.3 23.8    5   1160
  COMMENTS: U curve assignment, may have moved during roof fall

1318   2   0 SALMON RUINS, NM, LA8846 ROOM 67W B207
 36.7 -108.1  13.8  8
NRM     8  15.2  56.4 17.7 24.5     12  77.9  -24.0 16.9    5   3000
50G     8  16.5  54.3 17.1 24.3     11  76.5  -14.9 17.3        2500

1082   2   1 SALMON RUINS, NM, LA8846 SR1
 36.7 -108.1  13.8        900-1300
NRM     8 352.1  60.9  3.8  5.0    292  82.0 -155.4  3.2    5   1180
100G    9 350.6  57.2  5.2  7.1    114  82.5  173.2  4.8        3000
  COMMENTS: central hearth-kiva 96

1085   2   1 SALMON RUINS, NM, LA8846 SR4
 36.7 -108.1  13.8  8     900-1300
NRM     6 353.8  62.5  4.3  5.5    367  81.5 -140.0  3.5   5    3000
100G    6 355.2  61.6  4.5  5.8    321  82.9 -137.7  3.7        1030
  COMMENTS: burned east side-great kiva room 130

1086   2   1 SALMON RUINS, NM, LA8846 SR5
 36.7 -108.1  13.8  8     900-1300
NRM     7 350.8  57.5  2.5  3.4    662  82.5  175.9  2.3    5   3000
100G    7 349.7  58.2  3.1  4.2    450  81.6 -179.9  2.9        1180
  COMMENTS: central hearth-room 62

1087   3   1 SALMON RUINS, NM, LA8846 SR6
 36.7 -108.1  13.8  9     900-1300
NRM     9 350.8  60.6  4.3  5.7    190  81.4 -161.0  3.7    5   3000
50G     8 344.4  60.6  2.2  2.9    840  77.0 -171.1  1.9        1130

```
100G    8 344.0  61.7  2.5  3.3    679  76.3 -166.4  2.1         3000
  COMMENTS: west edge floor vault-kiva 64

 965   2   0 SALMON RUINS, NM, ROOM 124, KIVA HEARTH
 36.7 -108.1  13.8 15    1185
NRM    15 347.3  60.9  3.9  5.1    130  78.6 -163.5  3.4    5   3000
100G   15 347.8  60.5  4.5  5.9     97  79.4 -167.4  3.9        1150

 968   2   1 SALMON RUINS, NM, ROOM 30
 36.7 -108.1  13.8 16
NRM    14 335.2 -24.9  3.1  5.8     56  35.0  101.8  5.4    5   2500
NRM    14 155.2 -24.9  3.1  5.8     56 -57.6  -58.4  5.4        3000
  COMMENTS: Cubes collected in lab, orientation is ?

 964   3   0 SALMON RUINS, NM, ROOM 64W, TOWER KIVA HEARTH
 36.7 -108.1  13.8 11    1250-1300
NRM    11 356.3  62.6  2.9  3.7    372  82.2 -128.5  2.4    5   3000
100G    7 355.2  60.7  3.5  4.6    395  83.8 -143.4  3.0        3000
150G    7 355.5  60.6  3.3  4.3    451  84.0 -142.3  2.8        1200

 967   2   0 SALMON RUINS, NM, ROOM 96, KIVA HEARTH
 36.7 -108.1  13.8  8    1130
NRM     8 351.2  62.5  4.3  5.5    250  80.2 -148.5  3.5    5   1070
150G    7 353.2  63.9  5.4  6.8    202  79.7 -135.8  4.3        3000

 957   2   1 UTE CANYON, CO
 37.1 -108.2  13.9  8     877         TR
NRM     8   2.7  52.4  1.1  1.6   2146  85.3   42.9  1.2    5   3000
150G    8   2.0  53.0  1.3  1.9   1680  86.1   46.5  1.4         930
  COMMENTS: feature 30, kiva wall 5MTUMR-2347

 955   3   0 UTE CANYON, CO, FEAT. 28, HEARTH 5MTUMR-2347
 37.1 -108.2  13.9  8     600-650
NRM     8 358.9  57.7  9.1 12.4     44  88.5 -142.0  8.4    5   3000
50G     8   3.1  58.5  9.1 12.3     46  86.7  -60.5  8.3        2500
100G    8   1.2  57.6 10.1 13.9     36  88.5  -69.7  9.4        3000

 954   2   0 UTE CANYON, CO, FEAT. 28, WALL 5MTUMR-2347
 37.1 -108.2  13.9  8     600-650
NRM     8   6.8  58.1  4.6  6.3    171  84.4  -37.1  4.2    5   3000
150G    8   5.8  59.2  4.0  5.4    240  84.6  -53.1  3.6         750

 956   3   0 UTE CANYON, CO, FEAT. 32, HEARTH 5MTUMR-2347
 37.1 -108.2  13.9  8     925
NRM     8 353.2  56.5  6.6  9.1     78  84.6  163.7  6.3    5   3000
50G     8   5.4  58.1  4.7  6.4    165  85.4  -41.5  4.3        3000
100G    8 358.5  58.6  8.6 11.6     51  87.5 -135.6  7.8         980

1699   1   1 YELLOW JACKET, CO, SITE Y20
```

```
 37.4 -108.7  14.2  8
NRM     8 312.5  43.5 11.1 17.8     16  48.2  158.7 14.3    5   3000
  COMMENTS: field orientation of 315.0 deg. was used

1700   1   1 YELLOW JACKET, CO, SITE Y20
 37.4 -108.7  14.2  8
NRM     8 317.0  60.6 14.5 19.1     21  56.9 -177.8 12.5    5   3000
  COMMENTS: field orientation of 315.0 deg. was used
```

APPENDIX 4. Chaco Canyon, Northwestern New Mexico, with Explanatory Text by Thomas C. Windes

## THE CHACO CANYON SAMPLE SET

Thomas C. Windes

National Park Service, U.S. Department of the Interior, Santa Fe, New Mexico, and the University of New Mexico, Albuquerque, New Mexico

Assessment of the accuracy of an archaeomagnetic result depends on other temporal indicators or specific provenance at the site. Understanding those factors is important in appraising the validity of the temporal package in these lists (see also Eighmy and Sternberg, 1990). For independent control, information about ceramics, tree-ring dates, and radiocarbon dates are given if available. Each category is discussed below, with remarks about the many pitfalls and also means of appraisal.

### DOMINANT CERAMICS

Ceramics provide the most common temporal marker at Southwestern sites when they have been cross-dated with other chronometric means (commonly tree-ring dating). Because ceramics are typically profuse at sites occupied after about A.D. 400, they provide the usual means of site and provenance dating. In the Chaco Canyon area, sites often have a bewildering number of ceramic types. For that reason, only the most abundant types are listed. The types generally follow the type descriptions refined by the Chaco Center from excavations in Chaco Canyon in the 1970s and later (e.g., McKenna and Toll, 1984, 1991; Toll 1981; Toll and McKenna, 1987, 1992, 1993, 1997; Windes, 1977, 1985; Windes and McKenna, 1989).

Ceramics, like the chronometric dates in the listings, may or may not directly relate to the specific feature or provenance from which the archaeomagnetic sample was derived. In the complex greathouses and some smallhouse sites, the information is generally restricted to the same provenance as the archaeomagnetic sample, e.g., from the same floor. Sometimes the restriction provides little ceramic information, and thus the sample may be annotated with something like “few” shards; that alerts the reader that so few shards were recovered that the ceramic types listed may not be temporally reliable. The problem may include mixed ceramic assemblages, where refuse has been discarded on a floor or in the fill directly above. When possible, mixes have been noted. Finally, in some sites, such as those excavated by the University of New Mexico field schools, precise listings of ceramics by floors from which I secured archaeomagnetic samples are not available. When possible, whole vessels found on floors where archaeomagnetic samples were recovered are listed as the most reliable ceramic markers. Those are identified when specific vessel forms are listed; otherwise the ceramic types are shards.

### TREE-RING DATES

Fortunate circumstances occasionally provide both tree-ring and archaeomagnetic dates from the same site. As with ceramics, they may or may not be specific to the provenance that provided the archaeomagnetic sample. Dates and ceramics are listed if they came from the same or similar temporal event; otherwise more information is appended. For instance, particularly in greathouses, tree-ring dates from elements of initial construction may differ by centuries from final floor use in the same room where the archaeomagnetic samples were taken. Of course, any such "associated" dates must be viewed with great caution. However, associated dates sometimes provide earlier (or rarely, later) temporal limits for the archaeomagnetic date. At sites with archaeologically determined short occupations, associated ceramics and chronometric dates from anywhere at the site might provide reasonable comparative information for the archaeomagnetic dates. In that case, we might expect associated tree-ring dates to coincide with the archaeomagnetic date from the initial firepit in the same structure or feature.

## $^{14}$C DATES

Radiocarbon dates must be carefully appraised because of advances in technology. Most samples from Chaco Canyon were analyzed without attention to their important 13C/12C ratios and consequent adjustment of the final date. In this list, only the radiocarbon dates from the Pithouse 2 lower floor at 29SJ 629 were re-analyzed. Results differed dramatically from earlier analyses of charcoal from the same features—a difference of 50–150 yrs. Samples 29SJ 629 and 29SJ 626 also provide a rare example in which analysis of a cluster of dates (in this case four each) provided statistical evaluation of the cluster. In most archaeological instances, one or two radiocarbon dates cannot be evaluated except intuitively or by comparison with other chronometric data, and sometimes that leads to wildly different dates.

Many of the dates have been recalibrated against atmospheric amounts of carbon though time obtained by dendrochronological means (e.g., Stuiver and Becker, 1986; Stuiver and Reimer, 1987, 1993). A current version of the computer program used herein is distributed, free, online (Stuiver and others, 2006). Recalibration in that way can change considerably the date derived in the laboratory—sometimes by a century or more in the Pueblo II period. Thus, older radiocarbon dates may be unreliable.

Several radiocarbon laboratories produced the dates listed here: Beta Analytic (marked in the table as Beta-), Miami, Florida. Center for Accelerator Mass Spectrometry (CAMS-) at Lawrence Livermore Laboratory, Berkeley, California; Dicarb Radioisotope Company (Dic-), Chagrin Falls, Ohio; Norman, Oklahoma; Gainesville, Florida. The University of Georgia (UGa-), Center for Applied Isotope Studies, Athens, Georgia. The Smithsonian Institution (SI-), Rockville, Maryland. Teledyne Isotopes (I-), Westwood, New Jersey. (Some of the laboratories have moved or are no longer in business.)

## PERIOD/PHASE

The method called period/phase provides the overall temporal assessment of the period from which an archaeomagnetic date is derived. It may differ from tree-ring, radiocarbon, and archaeomagnetic dates. In some cases, information was too sparse to ensure identification of the exact period. The problem was acute for the upper floors at Una Vida, where no records existed for excavation. Judging by ceramic information in the post-occupation fill in those rooms, the last occupation at the site could have been in the A.D. 1100s as well as in the Mesa Verdean period of the A.D. 1200s. Despite many dates in the A.D. 1200s from archaeomagnetic samples at several greathouses (Pueblo Alto, Una Vida, and Bis sa'ani Pueblo and its community sites), the 1200s are too late—based on other archaeological evidence.

## SAMPLERS

Names of collectors of individual samples have not been listed, even though the information would be useful: skill in field collection can make a great difference in results. In general, samples from 29SJ 299 and 29SJ 628 were collected by DuBois and his students from the University of Oklahoma's Earth Sciences Observatory; most of those from 29SJ 627 were collected by W. James Judge of the Chaco Center. Teams from the Chaco Center (Peter J. McKenna, Wirt H. Wills, and Thomas C. Windes) collected all of the Pueblo Alto samples. Windes collected all samples at the Bis sa'ani Pueblo, at Bis sa'ani community sites, and (assisted by Nancy J. Akins and Kelley A. Cooper) at Alemita Wash, as well as at Pueblo del Arroyo, Kin Kletso, Pueblo Bonito, Bc236, Bc362, CM-100, 29SJ 629, 29SJ 724, 29SJ 1765, the 3-C site, Mesa Pueblo, and at the Bc sites around Casa Rinconada. Windes and McKenna collected the Una Vida samples; McKenna, most of the 29SJ 1360 samples. Wills and William H. Doleman collected the Lake Valley samples, and Wills and Earl H. Neller those from Lizard House. The DuBois staff and Windes collected at site 29SJ 721 and Shabikeschee Village. Studies by graduate student Ronald F. Nichols, under DuBois's guiding hand, resulted in the numerous sediment and canal samples except for 29SJ 1765.

In summary, all samples listed were collected by DuBois and his staff and by Chaco Center personnel (except for a few of the Lake Valley samples); hence, there was a greater continuity in collection technique and results than if the samples had been collected by a more diverse group. (Some large projects have made collections by a great number of personnel with little experience. That can only result in poor work, great statistical variability, and little confidence in results. Poor results can diffuse refinement of regional chronology and the archaeomagnetic curve.)

## SITE FIELD NUMBERS

The vast majority of samples were retrieved from sites inventoried during the Chaco Project in the 1970s, although many sites had been numbered earlier. In the Chaco Canyon area, sites were given a prefix (using a system set by the Smithsonian Institution), with "29" for the state of New Mexico, "SJ" for San Juan County, and "Mc" for McKinley County. Earlier numbers may have been given during the University of New Mexico's field-school days with the prefix "Bc"—"B" for New Mexico and "c" for Chaco Canyon. Likewise, "NA" numbers were assigned under a system by the Museum of Northern Arizona. New Mexico's statewide survey assigns "LA" numbers for the Laboratory of Anthropology in Santa Fe. A very few sites have no numbers.

## COLLECTION PERIOD

Sometimes the date of collection helps find the original field notes. (That was no problem for the Chaco Canyon data, but elsewhere it was sometimes troublesome.) Approximately 2,000 sample sets from the Southwest, the Midcontinent, Mesoamerica, and elsewhere were processed at the DuBois laboratory at the University of Oklahoma; they were assigned Earth Science Observatory (ESO) numbers, starting with ESO No. 1, the earliest, in 1964. The last, ESO No. 1992, from Corrales, N.M., was processed in 1985.

## GENERAL COMMENTS

Results from Chaco Canyon were plotted on DuBois's 1987 curve (DuBois, 1989). (In April 1987, DuBois presented an updated preliminary polar curve at the NATO advanced research workshop in Durham, England. Thus, the updated preliminary polar curve, as published in DuBois [1989], is referred to here as the 1987 curve although 1989 is used in some publications.) For the most part, samples that generated dates for the late A.D. 1300s and early A.D. 1400s on the 1987 curve are demonstrably older and now can be confidently assigned to a period soon after A.D. 1000. Other parts of the 1987 curve also need refinement to increase the reliability of the dates.

Finding and appraising the associated field reports for sites that generated archaeomagnetic samples is a long process and delays publication. As a consequence, some dates have been re-analyzed without the initial data (Eighmy and Doyel, 1987; Doyel and Eighmy, 1994). The publication of other regional data sets (Appendixes 1–3 and 5–12) with this report should help rectify those earlier attempts.

**THE FAJADA GAP COMMUNITY AREA, CHACO CANYON**

**29SJ 299 (LA 40299), Fajada Gap Community area**
Quad, County, State: Pueblo Bonito, NM, San Juan County, NM
Reference: Loose 1979, McKenna 1986, Windes 1976a, in press.

**858 3 7 Pithouse A, Floor 1, Firepit 1**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 13.5 | 58.6 | 3.0 | 4.0 | 506 | 78.9 | -39.4 | 2.7 | 110 | 3000 |
| 100G | 7 | 12.9 | 59.3 | 3.2 | 4.3 | 447 | 79.1 | -43.6 | 2.9 | | 3000 |
| 150G | 7 | 12.5 | 59.6 | 3.2 | 4.3 | 455 | 79.2 | -46.2 | 2.8 | | 560 |

**Dominant Ceramics:** La Plata B/w bowl frag, Lino Gray olla, Lino Gray seed jar, Lino Gray small jars (2), Obelisk Gray seed jars (4), Obelisk Gray jars (3) on Floor 1
**Tree ring dates (12):** Roofing: AD 482vv-612r (cutting dates at AD 607r, 608+r, 611r, 612r)
**$^{14}$C dates:**
**Period/Phase:** Basketmaker III/La Plata Phase (AD 600s)

**859 2 8 Pithouse A, burned wall plaster**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 6.6 | 58.6 | 3.7 | 5.0 | 272 | 83.8 | -52.1 | 3.4 | 120 | 3000 |
| 50G | 8 | 8.8 | 59.7 | 2.0 | 2.7 | 943 | 81.7 | -54.2 | 1.8 | | 580 |

**Dominant Ceramics:** La Plata B/w bowl frag, Lino Gray olla, Lino Gray seed jar, Lino Gray small jars (2), Obelisk Gray seed jars (4), Obelisk Gray jars (3) on Floor 1
**Tree ring dates (12):** Roofing: AD 482vv-612r (cutting dates at AD 607r, 608+r, 611r, 612r)
**$^{14}$C dates:**
**Period/Phase:** Basketmaker III/La Plata Phase (AD 600s)
Burned wall coincides with pithouse abandonment

**883 1 7 Pithouse D, burned wall**
36.0 -108.0 13.6 10 650-700

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 9.7 | 59.0 | 4.4 | 5.9 | 151 | 81.4 | -47.3 | 3.9 | 130 | 570 |

Comments: 50G and 100G of 2 cubes gave some direction change
**Dominant Ceramics:** La Plata B/w bowl frags (2), and La La Plata B/w, Lino Gray, Lino Fugitive Red, Obelisk Gray sherds
**Tree ring dates (3):** Roofing: AD 593vv, 600r, 607r
**$^{14}$C dates:**
**Period/Phase:** Basketmaker III/La Plata Phase (AD 600s)

**885 1 8 Kiva B, Floor 1, Firepit 1**
36.0 -108.0 13.6 8 700

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 358.8 | 61.5 | 2.0 | 2.7 | 1032 | 83.3 | -115.5 | 1.7 | 140 | 1030 |

**Comments:** Sp, taken as blocks and cubes collected in lab
**Comments:** 50G and 100G of 2 cubes gave little direction change
**Dominant Ceramics:** Red Mesa B/w pitcher, Tohatchi Banded

jars (2), Tocito Gray jar, Newcomb (neck) Corrugated jar
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo II/Early Bonito Phase (late AD 900s/ early AD 1000s)

**1089 1 6 Pithouse E, Floor 1, Heating Pit 1 (Pit 9)**
36.0 -108.0 13.6 8 725

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 2.2 | 48.0 | 2.0 | 3.0 | 670 | 82.8 | 56.5 | 2.3 | 150 | 770 |

**Comments:** 50G to 400G of 3 cubes gave some direction change
**Dominant Ceramics:** (mixed floor assemblage): Whitemound B/w, Red Mesa B/w, Gallup B/w, plain gray, Lino Fugitive Red
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo I/Whitemound Phase (AD 800s)

***29SJ 625 (LA 40625; the 3-C Site), Marcia's Rincon***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Vivian 1965, Windes 1993

**1401 3 6 Room B, Floor, Feature 5 (heating pit)**
36.0 -108.0 13.6 13 850

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 347.2 | 63.0 | 7.3 | 9.3 | 55 | 77.1 | -153.1 | 5.9 | 160 | 3000 |
| 50G | 12 | 350.6 | 61.2 | 7.0 | 9.1 | 55 | 80.4 | -154.2 | 5.9 | | 3000 |
| 50G | 7 | 350.7 | 60.6 | 4.4 | 5.8 | 251 | 80.9 | -157.4 | 3.8 | | 1060 |

**Comments:** Second 50G set is a group selected by orientation
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, neck indented corrugated, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000 ±)

**1492 4 6 Kiva 1, Floor 1, burn next to firepit**
36.0 -108.0 13.6 12 980-1040

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 10.7 | 61.9 | 6.0 | 7.7 | 77 | 79.1 | -61.9 | 5.0 | 170 | 3000 |
| 100G | 9 | 1.3 | 60.0 | 3.9 | 5.1 | 230 | 85.0 | -96.8 | 3.4 | | 1030 |
| 150G | 9 | 2.1 | 61.4 | 4.3 | 5.6 | 204 | 83.3 | -94.9 | 3.6 | | 3000 |
| 200G | 9 | 359.9 | 62.5 | 4.9 | 6.3 | 167 | 82.1 | -108.3 | 4.0 | | 3000 |

**Comments:** SP
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, neck indented corrugated, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000 ±)

1513 5 6 Kiva 2, Floor 1, Firepit
36.0 -108.0 13.6 10

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 4.2 | 63.3 | 7.4 | 9.4 | 67 | 80.6 | -89.5 | 5.9 | 180 | 3000 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50G | 10 | 358.2 | 61.6 | 5.3 | 6.9 | 119 | 83.1 | -118.9 | 4.5 | | 3000 |
| 100G | 10 | 358.8 | 62.3 | 5.1 | 6.5 | 133 | 82.4 | -114.5 | 4.2 | | 3000 |
| 150G | 10 | 359.4 | 62.2 | 4.8 | 6.2 | 149 | 82.5 | -111.6 | 4.0 | | 3000 |
| 200G | 10 | 0.1 | 61.8 | 3.5 | 4.5 | 279 | 83.0 | -107.7 | 2.9 | | 1030 |

**Comments:** Sp
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, neck indented corrugated, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000 ±)

***29SJ 626 East (LA 40626 East), Marcia's Rincon***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Bradford, McKenna, and Windes 1982-1983

**1963 4 6 Room 2, burned East Wall**
36.0 -107.9 13.6 11

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 350.4 | 62.1 | 2.7 | 3.5 | 418 | 79.6 | -149.9 | 2.2 | 190 | 3000 |
| 100G | 8 | 348.2 | 61.8 | 3.5 | 4.5 | 358 | 78.6 | -156.6 | 2.9 | | 3000 |
| 150G | 8 | 347.7 | 61.3 | 3.0 | 3.9 | 485 | 78.5 | -160.4 | 2.5 | | 1110 |
| 200G | 8 | 351.1 | 63.1 | 4.4 | 5.6 | 242 | 79.0 | -143.5 | 3.6 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, early Gallup B/w, indented corrugated, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates:** Dic-2937 from contemporary Room 5 firepit, recalibrated (Stuiver and Reimer 1987): AD 1143.5 ± 108.5 (2SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000 ±)

**1964 3 6 Room 3, Floor 1, floor burn**
36.0 -107.9 13.6 13

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 13 | 5.2 | 61.5 | 3.3 | 4.3 | 221 | 82.2 | -78.3 | 2.8 | 200 | 3000 |
| 50G | 8 | 8.0 | 61.3 | 3.8 | 5.0 | 295 | 81.1 | -66.4 | 3.2 | | 1960 |
| 100G | 8 | 6.8 | 61.7 | 3.9 | 5.1 | 283 | 81.4 | -72.8 | 3.3 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, Puerco B/w, narrow neckbanded, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:** Dic-2937 from contemporary Room 5 firepit, recalibrated (Stuiver and Reimer 1987): AD 1143.5 ± 108.5 (2SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000 ±)

**1976 5 6 Room 5, Floor 1, Firepit 1**
36.0 -107.9 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 5.3 | 66.4 | 10.0 | 12.2 | 56 | 76.6 | 123.1 | 7.4 | 210 | 3000 |
| 50G | 8 | 5.6 | 64.8 | 10.1 | 12.5 | 52 | 78.5 | -88.4 | 7.8 | | 1960 |
| 100G | 8 | 5.6 | 63.5 | 10.1 | 12.8 | 48 | 80.0 | -84.8 | 8.1 | | 3000 |
| 150G | 8 | 6.1 | 63.0 | 10.6 | 13.4 | 43 | 80.4 | -81.8 | 8.5 | | 3000 |
| 800G | 8 | 342.3 | 66.5 | 8.6 | 10.5 | 77 | 71.7 | -147.5 | 6.4 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, early Gallup B/w, plain gray, neck indented corrugated, indented corrugated

**Tree ring dates:**

**$^{14}$C dates:** Dic-2937 from the same Room 5 firepit, recalibrated (Stuiver and Reimer 1987): AD 1143.5 ± 108.5 (2SD)

**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000 ±)

**1965 3 6 Pitstructure 1, Floor 1, Firepit 1**

36.0 -107.9 13.6 16

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 15 | 345.4 | 63.3 | 2.5 | 3.2 | 358 | 75.8 | -155.0 | 2.0 | 220 | 3000 |
| 50G | 7 | 344.7 | 62.1 | 2.3 | 3.0 | 964 | 76.2 | -161.5 | 1.9 | | 1110 |
| 100G | 7 | 346.2 | 62.4 | 2.4 | 3.1 | 916 | 76.9 | -157.4 | 2.0 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, Puerco B/w, Kana'a Banded, Tohatchi Neckbanded, Blue Shale Corrugated

**Tree ring dates:**

**$^{14}$C dates:** Dic-2935 from same firepit, recalibrated (Stuiver and Reimer 1987): AD 1216 ± 64 (2SD)

**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000-1050)

**1962 2 11 Pitstructure 2, Floor 1, Firepit 1**

36.0 -107.9 13.6 13

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 354.4 | 61.9 | 3.1 | 4.0 | 359 | 81.7 | -137.6 | 2.6 | 230 | 3000 |
| 100G | 8 | 355.0 | 60.0 | 3.7 | 5.0 | 286 | 83.8 | -145.5 | 3.3 | | 1020 |

**Dominant Ceramics:** Red Mesa B/w, Escavada B/w, Gallup B/w, Tohatchi Banded, Blue Shale Corrugated jar

**Tree ring dates:**

**Other AM dates (Colo. St. Univ.):** Same Firepit 1: AD 1040 ± 25

**$^{14}$C dates (6):** All dendrocalibrated (Stuiver and Reimer 1987):
Dic-2938 & 2939 from same firepit & Niche 2: AD 1207 ± 55 (2SD).
Dic-2940-2942 from 3 pits on Floor 2 (under Floor 1):
AD 1089 ± 70 (2SD).
AMS date (CAMS-8178) from corn kernel in OP 3 under Floor 2:
AD 819.5 ± 137.5 (2SD).

**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000-1050)

**1977 2 7 Pitstructure 3, Floor 1, Firepit 1**

36.0 -107.9 13.6 12

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 357.9 | 61.4 | 1.6 | 2.0 | 1189 | 83.4 | 94.7 | 1.3 | 240 | 3000 |
| 100G | 8 | 355.4 | 61.9 | 1.4 | 1.9 | 2120 | 82.1 | -132.7 | 1.2 | | 1040 |

**Comments:** Sp

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, Tohatchi Banded

**Tree ring dates:**

**Other AM dates (Colo. St. Univ.):** Firepit 1: AD 1030 ± 20 or AD 1375 ± 50

**$^{14}$C dates:** Dic-2946 from Firepit 1, dendrocalibrated (Stuiver and Reimer 1987): AD 1139 ± 113 (2SD)

**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000-1050)

***29SJ 627 (LA 40627), Marcia's Rincon***

**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Truell 1992

**1291 3 7 Room 8, Floor 2, Firepit 2 (heating pit)**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | 900 | | | | | | |
| NRM | 7 | 343.6 | 61.0 | 5.1 | 6.7 | 193 | 75.9 | -167.6 | 4.4 | 260 | 3000 |
| 50G | 7 | 344.4 | 60.3 | 6.4 | 8.4 | 120 | 76.8 | -170.1 | 5.5 | | 1130 |
| 150G | 7 | 347.1 | 59.8 | 7.3 | 9.7 | 89 | 78.8 | -169.2 | 6.5 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, Puerco B/w, Gallup B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (1):** AMS date (CAMS-8179) from corn kernel, Room 7, Floor 1, Firepit 1: dendrocalibrated (Stuiver and Reimer 1987): AD 881 ± 130 (2SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 1000s)

**1293 3 8 Room 8, Floor 3, Heating Pit 1 (Ramada B, FP 1)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 9 | 850 | | | | | | | |
| NRM | 9 | 5.1 | 60.2 | 4.4 | 5.8 | 182 | 83.5 | -72.1 | 3.8 | 280 | 3000 |
| 50G | 9 | 4.7 | 56.8 | 4.4 | 6.1 | 152 | 86.0 | -39.4 | 4.2 | | 1960 |
| 100G | 9 | 12.8 | 56.6 | 6.6 | 9.1 | 69 | 79.7 | -28.2 | 6.3 | | 3000 |

**Comments:** uncertain curve assignment
**Dominant Ceramics:** Red Mesa B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (1):** AMS date (CAMS-8179) from corn kernel, Room 7, Floor 1, Firepit 1: dendrocalibrated (Stuiver and Reimer 1987): AD 881 ± 130 (2SD)
**Period/Phase:** Early Pueblo II/Early Bonito Phase (early AD 1000s)

**933 1 8 Room 14, Floor 1, Firepit 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | 950-1050 | | | | | | | |
| NRM | 8 | 352.5 | 58.6 | 13.4 | 18.0 | 22 | 83.2 | -166.3 | 12.1 | 250 | 1030 |

**Comments:** 50G to 150G of 4 cubes gave large direction changes
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (3):** Mean of SI-4502a,b, Dic 795, & Dic 792, dendrocalibrated (Stuiver and Reimer 1987) from contemporary Rooms 5 & 9: AD 1226.5 ± 44 (2SD)
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1294 1 7 Room 21, Floor 1, Firepit 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 8 | 343.9 | 63.2 | 1.9 | 2.4 | 1334 | 75.0 | -157.8 | 1.5 | 290 | 1110 |

**Comments:** 100G of 3 cubes gave 0.9 degree change in declination
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**

**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II-Early Pueblo III/Classic-Late Bonito Phase (late AD 1000s/early AD 1100s)

**1292 2 7 Pithouse C, Floor 1, Heating Pit 2**

36.0 -108.0 13.6 9 850

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 2.1 | 55.4 | 3.6 | 5.0 | 250 | 88.3 | -16.4 | 3.5 | 270 | 3000 |
| 100G | 8 | 1.3 | 52.8 | 4.0 | 5.8 | 175 | 87.2 | 49.8 | 4.2 | | 720 |

**COMMENTS:** could be 940
**Dominant Ceramics:** Early Red Mesa B/w, Red Mesa B/w, plain gray, narrow neckbanded, Tunicha B/w olla
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo I-Early Pueblo II/Kiatuthlanna Phase-Early Bonito Phase (AD 700s-900s)

**1295 2 7 Kiva E, Floor 1, Hearth 1 (Firepit 1)**

36.0 -108.0 13.6 8 1000

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 356.0 | 58.9 | 12.0 | 16.1 | 27 | 85.1 | -147.9 | 10.8 | 300 | 1010 |
| 50G | 8 | 354.3 | 57.5 | 12.8 | 17.5 | 23 | 85.0 | -170.7 | 11.9 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, Chaco B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (1):** SI-3709, dendrocalibrated (Stuiver and Reimer 1987): AD 1144 ± 119 (2SD)
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s/ early AD 1100s)

**1296 3 8 Pitstructure F (Kiva F), Floor 1, Hearth 1 (firepit)**

36.0 -108.0 13.6 8 900

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 359.4 | 57.4 | 4.9 | 6.7 | 146 | 87.9 | -122.2 | 4.6 | 310 | 3000 |
| 50G | 7 | 359.8 | 57.4 | 4.3 | 5.9 | 228 | 88.0 | -111.9 | 4.0 | | 980 |
| 100G | 8 | 357.4 | 52.2 | 7.6 | 11.1 | 48 | 86.2 | 107.2 | 8.1 | | 3000 |

**Comments:** Sp
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, plus 2 Tohatchi Banded jars and a Red Mesa B/w ladle.
**Tree ring dates:**
**$^{14}$C dates (1):** SI-3707, dendrocalibrated (Stuiver and Reimer 1987): AD 762 ± 134 (2SD). Unacceptable date.
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/ early AD 1000s)

**1299 2 6 Kiva G, Floor 1, burn next to Firepit 1**

36.0 -108.0 13.6 6 1000-1025

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 6 | 347.8 | 64.7 | 29.1 | 36.2 | 10 | 76.0 | -144.9 | 22.5 | 320 | 3000 |
| 50G | 6 | 356.0 | 55.8 | 10.0 | 13.9 | 48 | 78.7 | 167.6 | 9.7 | | 2500 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**

**$^{14}$C dates (1):** SI-3708, dendrocalibrated (Stuiver and Reimer 1987): AD 1130 ± 146 (2SD)
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (AD 1000s)

**1559 7 7 Kiva G, Floor 2, Firepit 1**

36.0 -108.0 13.6 15 1000

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 13 | 350.3 | 59.2 | 5.6 | 7.2 | 70 | 81.4 | -167.2 | 5.0 | 330 | 3000 |
| 50G | 15 | 349.4 | 58.3 | 5.9 | 8.0 | 51 | 81.1 | -175.1 | 5.4 | | 3000 |
| 100G | 12 | 349.9 | 57.8 | 8.0 | 10.9 | 35 | 81.6 | -178.3 | 7.4 | | 3000 |
| 150G | 12 | 352.3 | 56.9 | 8.7 | 12.0 | 28 | 83.7 | 177.9 | 8.3 | | 3000 |
| 200G | 7 | 345.2 | 56.8 | 17.1 | 23.6 | 15 | 78.1 | 173.1 | 16.3 | | 3000 |
| 200G | 9 | 4.2 | 54.7 | 3.7 | 5.2 | 194 | 86.5 | -6.7 | 3.7 | | 3000 |
| 400G | 8 | 1.0 | 57.6 | 3.2 | 4.3 | 354 | 87.6 | -89.3 | 2.9 | | 990 |

**Comments:** uncertain curve assignment
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (1):** SI-3708, dendrocalibrated (Stuiver and Reimer 1987): AD 1130 ± 146 (2SD)
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (AD 1000s)

***29SJ 628 (LA 40628), Marcia's Rincon***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Truell 1976; McKenna 1986; Windes in press.

**860 1 5 Pithouse A, Floor 1, Firepit 1 (early plastered collar)**

36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 358.8 | 46.7 | 2.6 | 4.0 | 324 | 81.9 | 79.8 | 3.1 | 340 | 790 |

**Dominant Ceramics:** La Plata B/w, Lino B/g, plain gray, Lino Gray, Lino Fugitive Red
**Tree ring dates:**
**$^{14}$C dates:** Pithouse A yielded two dates, including from the same firepit the archaeomagnetic sample was obtained (Stuiver & Reimer 1987): AD 700±50 (firepit) and AD 710±60 (floor). Pooled together they equal AD 705±38. [Note: These dates are of corrected conventional age, adjusted for their 12C/13C ratios. Unless specified, other 14C dates in this appendix are not.]
**Period/Phase:** Pueblo I/White Mound Phase (early AD 800s)

**881 2 5 Pithouse C, Floor 1, Firepit 1 (last replastering)**

36.0 -108.0 13.6 8 600-700

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 2.8 | 53.8 | 3.9 | 5.6 | 226 | 86.9 | 23.6 | 4.0 | 350 | 3000 |
| 50G | 7 | 4.1 | 52.4 | 4.0 | 5.8 | 207 | 85.5 | 21.9 | 4.2 | | 720 |

**Dominant Ceramics:** La Plata B/w, Lino B/g, plain gray, **Lino Gray, Lino Fugitive Red, smudged ware**
**Tree ring dates:**
**$^{14}$C dates:** Pithouse C yielded three 14C dates (Stuiver & Reimer

1987):
The sample from the firepit yielded a 14C date of the contents at AD 730±60. Others: AD 620±50 (heating pit) and AD 420±70 (ash pit). The latter was rejected and only the first two samples pooled to equal AD 685±27. [Note: These dates are of corrected conventional age, adjusted for their 12C/13C ratios. Unless specified, other 14C dates in this appendix are not.]

**Period/Phase:** Early Pueblo I/White Mound Phase (AD 700s)

**879 1 6 Pithouse D, Floor 1, Firepit 1**

36.0 -108.0 13.6 8 600-700

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 6 | 7.5 | 47.6 | 2.8 | 4.3 | 409 | 80.4 | 29.0 | 3.3 | 360 | 740 |

**Comments:** 50G and 100G of 2 cubes gave some direction change

**Dominant Ceramics:** La Plata B/w, Lino B/g, Red Mesa B/w (intrusive), plain gray, Lino Gray, Lino Fugitive Red

**Tree ring dates (1):** from fill: AD 674vv

**$^{14}C$ dates:**

**Period/Phase:** Early Pueblo I/White Mound Phase (AD 700s)

**886 1 6 Pithouse D antechamber, Floor 1, Firepit 1**

36.0 -108.0 13.6 12

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 3.8 | 50.2 | 9.6 | 14.4 | 17 | 84.1 | 38.6 | 10.7 | 370 | 3000 |

**Comments:** very sandy, collected in lab

**Dominant Ceramics:** La Plata B/w, Lino B/g, plain gray, Lino Gray, Lino Fugitive Red, Obelisk Gray

**Tree ring dates (1):** from fill: AD 674vv

**$^{14}C$ dates:**

**Period/Phase:** Early Pueblo I/White Mound Phase (AD 700s)

**880 2 5 Pithouse E, Floor 1, Firepit 1**

36.0 -108.0 13.6 8 600-700

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 0.9 | 50.7 | 2.1 | 3.1 | 587 | 85.4 | 62.3 | 2.9 | 380 | 3000 |
| 50G | 8 | 4.6 | 49.2 | 2.4 | 3.7 | 404 | 82.9 | 37.5 | 2.8 | | 740 |

**Dominant Ceramics:** La Plata B/w, Lino B/g, plain gray, Lino Gray, Lino Fugitive Red

**Tree ring dates:**

**$^{14}C$ dates:**

**Period/Phase:** Early Pueblo I/White Mound Phase (AD 700s)

**1405 4 5 Pithouse G, Floor 1, Firepit 1**

36.0 -108.0 13.6 10 750-770

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 2.1 | 55.5 | 3.7 | 5.2 | 180 | 88.3 | -20.3 | 3.6 | 390 | 3000 |
| 50G | 10 | 1.4 | 54.8 | 4.0 | 5.6 | 150 | 88.6 | 12.1 | 4.0 | | 700 |
| 100G | 10 | 0.8 | 54.5 | 4.1 | 5.9 | 136 | 88.8 | 38.4 | 4.2 | | 3000 |
| 200G | 10 | 0.0 | 53.7 | 4.6 | 6.6 | 105 | 88.2 | 72.1 | 4.7 | | 3000 |

**Dominant Ceramics:** La Plata B/w, plain gray, Lino Gray, Lino Fugitive Red

**Tree ring dates:**

**$^{14}C$ dates:**

**Period/Phase:** Early Pueblo I/White Mound Phase (AD 700s)

***29SJ 629 (LA 40629; The Spadefoot Toad Site), Marcia's Rincon***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Windes 1993

**1297 2 6 Room 3, Floor 1, Firepit 1 (plastered sides)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 10 | | | | | | | | |
| NRM | 10 | 355.1 | 61.6 | 6.7 | 8.7 | 75 | 82.2 | -135.7 | 5.6 | 400 | 3000 |
| 50G | 10 | 357.6 | 56.2 | 6.6 | 9.2 | 59 | 88.0 | -175.3 | 6.4 | | 980 |

**Dominant Ceramics:** Coolidge (neck) Corrugated jar (restorable); Red Mesa B/w, Gallup B/w, plain gray, narrow neckbanded sherds.
**Tree ring dates:**
**$^{14}$C dates (1):** Dendrocalibrated SI-3716 (Stuiver & Reimer 1987) from Heating Pit 1: AD 1106.5 ± 110.5 (2SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1462 3 7 Room 3, Floor 1, Firepit 1 (bottom plaster)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 13 | 1000-1040 | | | | | | | |
| NRM | 13 | 349.6 | 53.1 | 4.9 | 7.0 | 68 | 81.1 | 149.5 | 5.1 | 410 | 3000 |
| 50G | 12 | 348.8 | 60.6 | 7.1 | 9.3 | 51 | 79.6 | -161.4 | 6.1 | | 3000 |
| NRM | 23 | 351.7 | 56.8 | 4.2 | 5.7 | 60 | 83.2 | 176.3 | 3.9 | | 1030 |

**Comments:** last NRM is combined data for sets 1297 & 1462
**Dominant Ceramics:** Coolidge (neck) Corrugated jar (restorable); Red Mesa B/w, Gallup B/w, plain gray, narrow neckbanded sherds.
**Tree ring dates:**
**$^{14}$C dates (1):** Dendrocalibrated SI-3716 (Stuiver & Reimer 1987) from Heating Pit 1: AD 1106.5 ± 110.5 (2SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1407 5 8 Room 3, Floor 1, Heating Pit 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 10 | 975 | | | | | | | |
| NRM | 9 | 9.3 | 62.0 | 4.4 | 5.7 | 195 | 79.8 | -65.9 | 3.7 | 420 | 3000 |
| 50G | 10 | 1.2 | 61.3 | 5.3 | 6.8 | 119 | 83.5 | -100.1 | 4.4 | | 3000 |
| 100G | 9 | 359.0 | 58.7 | 6.7 | 9.0 | 74 | 86.4 | -120.6 | 6.0 | | 3000 |
| 150G | 9 | 359.8 | 59.4 | 5.8 | 7.7 | 101 | 85.7 | -110.2 | 5.2 | | 3000 |
| NRM | 18 | 358.0 | 60.2 | 4.8 | 6.3 | 70 | 84.6 | -124.5 | 4.1 | | 1020 |

**Comments:** U last NRM is sets 1407 and 1406 combined uncertain curve assignment
**Dominant Ceramics:** Coolidge (neck) Corrugated jar (restorable); Red Mesa B/w, Gallup B/w, plain gray, narrow neckbanded sherds.
**Tree ring dates:**
**$^{14}$C dates (1):** Dendrocalibrated SI-3716 (Stuiver & Reimer 1987) from Heating Pit 1: AD 1106.5 ± 110.5 (2SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1406 2 7 Room 3, Floor 1, Heating Pit 2**

36.0 -108.0 13.6 10 975
NRM 9 349.6 54.3 8.1 11.6 40 81.4 157.5 8.2 430 3000
50G 8 354.4 54.7 5.8 8.2 92 85.4 154.0 5.8 1000
**Comments:** combined with 1407, Heating Pit 1
**Dominant Ceramics:** Coolidge (neck) Corrugated jar (restorable);
Red Mesa B/w, Gallup B/w, plain gray, narrow neckbanded sherds.
**Tree ring dates:**
**$^{14}$C dates (1)**: Dendrocalibrated SI-3716 (Stuiver & Reimer 1987)
from Heating Pit 1: AD 1106.5 ± 110.5 (2SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1408 4 7 Room 3, Floor 1, Heating Pit** 3
36.0 -108.0 13.6 12 970
NRM 12 346.1 50.0 10.8 16.2 14 77.3 141.8 12.1 440 3000
NRM 20 357.3 59.5 6.0 8.0 39 85.2 -132.8 5.3 1010
50G 12 351.3 48.5 10.6 16.1 14 80.2 123.0 12.2 3000
50G 21 357.6 56.2 6.2 8.6 29 87.9 -174.4 6.0 3000
**Comments:** second NRM and 50G are sets 1407 and 1408 combined
**Dominant Ceramics:** Coolidge (neck) Corrugated jar (restorable);
Red Mesa B/w, Gallup B/w, plain gray, narrow neckbanded sherds.
**Tree ring dates:**
**$^{14}$C dates (1):** Dendrocalibrated SI-3716 (Stuiver & Reimer 1987)
from Heating Pit 1: AD 1106.5 ± 110.5 (2sd)
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1409 2 4 Room 3, Floor 2, Firepit 2**
36.0 -108.0 13.6 12 960
NRM 12 355.3 50.6 14.0 20.8 9 83.9 113.2 15.4 450 3000
50G 9 359.6 49.7 5.7 8.5 66 84.5 75.7 6.4 930
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 900s)

**1404 1 6 Room 5, Floor 1 (tub floor), burned spots**
36.0 -108.0 13.6 9 925
NRM 9 355.4 62.5 13.7 17.5 22 81.4 -130.7 11.2 460 1060
**Comments:** 100G of 4 cubes gave 2.1 degree change in declination
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, plain gray,
narrow neckbanded in postoccupational room fill.
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1514 1 6 Room 5, West Wall foundation mortar (unburned)**
36.0 -108.0 13.6 16
NRM 16 354.4 52.6 20.4 29.5 4 84.6 132.7 21.4 470 3000
**Comments:** 100G of 5 cubes gave 41.1 degree change in declination
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, plain gray,

narrow neckbanded sherds in postoccupational room fill.
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo II/Early Bonito Phase (AD 900s)

**1403 2 6 Room 9, Floor 1, Firepit 1 (last burn)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 9 | 900 | | | | | | | |
| NRM | 9 | 358.3 | 60.1 | 5.5 | 7.3 | 116 | 84.8 | -122.2 | 4.8 | 480 | 3000 |
| 100G | 9 | 354.9 | 59.6 | 5.1 | 6.8 | 130 | 84.1 | -148.5 | 4.5 | | 1030 |

**Dominant Ceramics:** Red Mesa B/w pitcher, 2 bowls, and ladle; classic Gallup B/w jar fragment in firepit; plain gray, narrow neckbanded, indented corrugated sherds.
**Tree ring dates (1):** AD 792vv in fill (superstructure frag?)
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early-Classic Bonito Phase (AD 1000s)

**1415 3 7 Room 9, Floor 1, Firepit 1 (first burn)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 7 | 900 | | | | | | | |
| NRM | 7 | 8.6 | 60.5 | 4.4 | 5.8 | 255 | 81.4 | -59.7 | 3.8 | 490 | 3000 |
| 50G | 7 | 5.5 | 58.6 | 4.3 | 5.8 | 237 | 84.6 | -56.8 | 3.9 | | 2500 |
| 100G | 7 | 6.8 | 58.6 | 6.1 | 8.3 | 119 | 83.7 | -52.2 | 5.6 | | 3000 |

**Comments:** uncertain curve assignment
**Dominant Ceramics:** Red Mesa B/w pitcher, 2 bowls, and ladle; classic Gallup B/w jar fragment in firepit; plain gray, narrow neckbanded, indented corrugated sherds.
**Tree ring dates (1):** AD 792vv in fill (superstructure frag?)
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s)

**1410 2 5 Kiva, Floor 1, Firepit 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 10 | 1025 | | | | | | | |
| NRM | 8 | 342.0 | 63.1 | 6.1 | 7.7 | 129 | 73.9 | -160.2 | 4.9 | 500 | 1110 |
| 100G | 10 | 343.0 | 63.6 | 15.0 | 18.9 | 17 | 74.2 | -157.1 | 11.9 | | 3000 |

**Dominant Ceramics:** Chaco-McElmo B/w bowl fragment, Hunter Corrugated jar
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100±)

**1458 3 7 Pithouse 2, Floor 1, Mealing Bin 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | 1030 | | | | | | | |
| NRM | 7 | 345.6 | 57.5 | 4.0 | 5.5 | 261 | 78.4 | 176.6 | 3.7 | 510 | 3000 |
| 150G | 8 | 348.4 | 59.9 | 3.9 | 5.2 | 259 | 79.8 | -167.0 | 3.5 | | 1070 |
| 200G | 8 | 346.5 | 60.8 | 4.9 | 6.4 | 176 | 78.0 | -164.9 | 4.2 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w seed jar, early Gallup B/w bowl and jar, 2 Kana'a Banded jars, 2 Tohatchi Banded jars, 2 Coolidge (neck) Corrugated jars, 1 Chaco Corrugated jar, 1 Blue Shale Corrugated jar.
**Tree ring dates (3):** from Floor 1 vent lintel: AD 813vv-987vv

**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1414 1 8 Pithouse 2, Floor 1, Mealing Bin 2 (burned)**
 36.0 -108.0  13.6 10    1000
NRM    10 346.7  64.6  6.9  8.5     84  75.5 -147.3  5.3  520   1090
**Comments:** 100G of 4 cubes gave 0.7 degree change in declination
**Dominant Ceramics:** Red Mesa B/w seed jar, early Gallup B/w bowl and jar, 2 Kana'a Banded jars, 2 Tohatchi Banded jars, 2 Coolidge (neck) Corrugated jars, 1 Chaco Corrugated jar, 1 Blue Shale Corrugated jar.
**Tree ring dates (3): from Floor 1 vent lintel: AD 813vv-987vv**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1417 2 7 Pithouse 2, Floor 2, Heating Pit 2**
 36.0 -108.0  13.6  8     880
NRM     8   3.3  62.3  7.9 10.1     73  82.0  -90.4  6.5  521   3000
50G     8   0.7  59.5  5.3  7.0    142  85.7 -100.5  4.7          970
**Dominant Ceramics:** Few associated ceramics: Red Mesa B/w, plain gray
**Tree ring dates:**
**$^{14}$C dates (4):** Dendrocalibrated mean of Beta 51962-51965 from Heating Pits 3 & 4 and subfloor Layer 3 = AD 910 ± 30.4 (2SD) (Stuiver and Reimer 1987).
**Period/Phase:** Early Pueblo II/Early Bonito Phase (early AD 900s or earlier)

**1416 1 8 Pithouse 2, Floor 2, Heating Pit 3**
 36.0 -108.0  13.6 11     860
NRM    11   6.1  66.5 13.3 16.2     22  76.3  -90.7  9.9  530   3000
**Comments:** 100G of 4 cubes gave 0.7 degree change in declination.
**Dominant Ceramics:** Few associated ceramics: Red Mesa B/w, plain gray
**Tree ring dates:**
**$^{14}$C dates (4):** Dendrocalibrated mean of Beta 51962-51965 from Heating Pits 3 & 4 and subfloor Layer 3 = AD 910 ± 30.4 (2SD) (Stuiver and Reimer 1987).
**Period/Phase:** Early Pueblo II/Early Bonito Phase (early AD 900s or earlier)

**1419 2 7 Pithouse 2, Floor 2, Heating Pit 4**
 36.0 -108.0  13.6  9     875
NRM     8 342.8  61.7  9.7 12.6     47  75.1 -165.4  8.2  540   1120
50G     8 338.9  55.6 10.5 14.7     30  73.0  168.7 10.3         3000
**Dominant Ceramics:** Few associated ceramics: Red Mesa B/w, plain gray
**Tree ring dates:**
**$^{14}$C dates (4):** Dendrocalibrated mean of Beta 51962-51965 from

Heating Pits 3 & 4 and subfloor Layer 3 =
AD 910 ± 30.4 (2SD) (Stuiver and Reimer 1987).
**Period/Phase:** Early Pueblo II/Early Bonito Phase (early AD 900s or earlier)

**1431 4 7 Plaza Grid 14, Firepit 2 (last burn)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 8 | 358.4 | 57.1 | 6.9 | 9.4 | 74 | 87.9 | -145.3 | 6.5 | 550 | 980 |
| 50G | 8 | 0.3 | 57.9 | 9.8 | 13.3 | 39 | 87.4 | -103.4 | 9.0 | | 3000 |
| NRM | 15 | 353.7 | 58.6 | 5.6 | 7.6 | 57 | 84.0 | -162.5 | 5.1 | | 3000 |
| 50G | 15 | 353.7 | 58.5 | 6.1 | 8.4 | 47 | 83.9 | -163.8 | 5.7 | | 3000 |

**Comments:** second NRM & 50G are 1412 & 1431 combined
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, indented corrugated
**Tree ring dates:**
**$^{14}C$ dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/early AD 1000s)

**1412 2 6 Plaza Grid 14, Firepit 2 (earlier burn)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | 925 | | | | | | | |
| NRM | 7 | 347.7 | 60.2 | 10.2 | 13.5 | 47 | 79.1 | -166.4 | 8.9 | 560 | 3000 |
| 50G | 7 | 345.7 | 58.8 | 8.0 | 10.8 | 71 | 78.1 | -176.3 | 7.2 | | 2500 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, indented corrugated
**Tree ring dates:**
**$^{14}C$ dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/early AD 1000s)

**1411 2 7 Plaza Grid 16, Level 2, Heating Pit 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 11 | 900 | | | | | | | |
| NRM | 11 | 355.6 | 56.0 | 4.3 | 6.0 | 120 | 86.4 | 171.5 | 4.2 | 570 | 1000 |
| 50G | 11 | 357.5 | 53.0 | 5.2 | 7.4 | 73 | 86.8 | 113.6 | 5.4 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, indented corrugated
**Tree ring dates:**
**$^{14}C$ dates (1):** AMS (CAMS-8185) from Level 2 corn kernel: dendro-calibrated (Stuiver and Reimer 1987): AD 912 ± 136 (2SD) or AD 952 ± 62 (1SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

***29SJ 633 (LA 40633; The Eleventh Hour Site), Marcia's Rincon***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Mathien 1991, Truell 1976

**1649 3 5 Room 8, Floor 1, Floor burn in SE corner**
36.0 -108.0 13.6 6 1250-1350

NRM 6 359.8 61.0 10.7 14.0 55 84.0 -109.8 9.1 580 3000
50G 4 354.4 61.6 3.0 3.9 1293 82.0 -139.0 2.6 3000
100G 4 352.5 60.0 3.3 4.3 1042 82.4 -155.9 2.8 1190

**Dominant Ceramics:** Mesa Verde B/w, Crumbled House B/w, Gallup B/w, White Mountain Redware, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo III/Mesa Verde Phase (AD 1200s)

**1672 2 5 Room 7, Floor 1, Firepit 1 (burn in center of floor)**
36.0 -108.0 13.6 13 1255-1295
NRM 12 347.6 61.6 2.7 3.5 374 78.3 -159.0 2.2 590 3000
50G 10 350.5 61.3 3.3 4.3 305 80.3 -154.1 2.8 1160

**Dominant Ceramics:** Mesa Verde B/w, McElmo B/w, Puerco B/r, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo III/Mesa Verde Phase (AD 1200s)

**1676 1 6 Room 7, Floor 2, Firepit 1**
36.0 -108.0 13.6 11 1050-1150
NRM 11 346.8 60.8 3.1 4.0 303 78.2 -164.2 2.6 600 1120

**Comments:** 100G of 5 cubes gave 0.2 degree change in declination
**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/early Pueblo III//Classic Bonito/ Late Bonito Phase (AD 1050-1150)

***29SJ 721 (LA 40721), Werito's Rincon area***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** McKenna 1986, Windes 1976b, in press.

**884 3 5 Pithouse A, Floor 1, Firepit 1**
36.0 -108.0 13.6 8 700
NRM 8 4.6 53.1 2.6 3.7 428 85.6 12.0 2.7 610 3000
50G 8 3.7 52.8 3.2 4.7 266 86.0 21.9 3.4 3000
100G 8 4.4 51.6 2.3 3.4 507 84.8 26.7 2.5 720

**Dominant Ceramics:** Whitemound B/w, plain gray, Lino gray
**Tree ring dates (9):** Associated baking pit (Cist 4): AD 462vv - 621++vv
**$^{14}$C dates:**
**Period/Phase:** Pueblo I/White Mound Phase (AD 700s)

**1515 4 7 Pithouse C, Floor 1, Firepit 1**
36.0 -108.0 13.6 8 700
NRM 8 13.6 58.1 9.0 12.1 46 78.8 -36.5 8.2 620 3000
50G 8 13.9 61.7 11.1 14.4 36 77.3 -54.8 9.3 3000

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 150G | 8 | 8.8 | 63.5 | 7.7 | 9.8 | 82 | 78.7 | -74.5 | 6.2 | | 3000 |
| 200G | 6 | 1.2 | 64.5 | 3.4 | 4.2 | 661 | 79.6 | -103.4 | 2.6 | | 1960 |

**Comments:** U uncertain curve assignment, modern

**Dominant Ceramics:** Few: Whitemound B/w, plain gray, Lino Gray, Lino Fugitive Red, Obelisk Gray

**Tree ring dates (1):** Associated baking pit (Cist 4): AD 462vv - 621++vv

**$^{14}$C dates:**

**Period/Phase:** Pueblo I/White Mound Phase?

***29SJ 724 (LA 40724), Werito's Rincon area***

**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM

**Reference:** McKenna 1986, Windes 1976c, in press.

**1090 3 6 Room 9, Floor 1, Firepit 1 (next to East Wall)**

36.0 -108.0 13.6 16 725

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 2.8 | 37.7 | 5.3 | 9.0 | 53 | 75.0 | 61.8 | 7.7 | 630 | 3000 |
| NRM | 15 | 2.4 | 42.6 | 5.1 | 8.3 | 34 | 78.5 | 61.1 | 6.7 | | 3000 |
| 50G | 15 | 4.2 | 46.2 | 5.9 | 9.2 | 29 | 80.8 | 47.7 | 7.2 | | 830 |

**Comments:** original set consisted of 8 cubes, set size later increased to 15 cubes

**Dominant Ceramics:** La Plata B/w, Whitemound B/w, plain gray, Lino Gray, Lino Fugitive Red

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Pueblo I/White Mound Phase (early AD 800s)

**1091 1 6 Pithouse A, Floor 1, Firepit 1**

36.0 -108.0 13.6 12 725

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 6.9 | 41.3 | 2.9 | 4.8 | 136 | 76.4 | 44.3 | 3.9 | 640 | 840 |

**Comments:** 50G to 200G of 4 cubes gave some change in direction

**Dominant Ceramics:** La Plata B/w, White Mound B/w, Lino Gray

**Tree ring dates:**

**$^{14}$C dates (1):** AMS (CAMS-8184) from corn kernel in floor fill: dendrocalibrated (Stuiver and Reimer 1987): AD 713 $\pm$ 111 (2SD)

**Period/Phase:** Pueblo I/White Mound Phase (early AD 800s)

**1418 2 5 Pithouse A, Floor 1, Firepit 3 (an earlier Firepit 1)**

36.0 -108.0 13.6 12 780

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 7.6 | 45.8 | 1.8 | 2.9 | 370 | 79.1 | 33.6 | 2.3 | 660 | 3000 |
| 50G | 9 | 4.2 | 45.1 | 2.5 | 3.9 | 278 | 80.0 | 49.9 | 3.1 | | 830 |

**Dominant Ceramics:** La Plata B/w, Whitemound B/w, plain gray, Lino Gray, Lino Fugitive Red

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Pueblo I/White Mound Phase (early AD 800s)

**1425 2 5 Pithouse A, Floor 1, Firepit 4 (an earlier Firepit 3)**

36.0 -108.0 13.6 6 775

NRM 6 2.0 50.6 5.8 8.6 111 85.0 52.2 6.4 680 3000
50G 5 0.8 51.9 3.5 5.1 429 86.5 60.5 3.7 740
**Dominant Ceramics:** La Plata B/w, Whitemound B/w, plain gray, Lino Gray, Lino Fugitive Red
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo I/White Mound Phase (early AD 800s)

**1424 2 5 Pithouse A, Floor 1, Firepit 5 (an earlier Firepit 4)**
36.0 -108.0 13.6 11 770
NRM 11 4.5 49.8 1.7 2.5 586 83.4 35.7 1.9 670 3000
50G 11 2.7 48.5 1.4 2.2 751 83.1 51.9 1.7 770
**Dominant Ceramics:** La Plata B/w, Whitemound B/w, plain gray, Lino Gray, Lino Fugitive Red
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo I/White Mound Phase (early AD 800s)

**1413 1 6 Plaza Firepit 2**
36.0 -108.0 13.6 14 800
NRM 13 6.3 53.0 4.1 5.9 97 84.3 4.9 4.2 650 700
**Comments:** 100G of 4 cubes gave 2.0 degree change in declination
**Dominant Ceramics:** La Plata B/w, Whitemound B/w, plain gray, Lino Gray
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo I/White Mound Phase (early AD 800s)

**29SJ 1360 (LA 41360), Fajada Gap Subcommunity**
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** McKenna 1984

1730 1 5 House I, Room 7, Floor 1, Firepit 1 (primary burn)
36.0 -108.0 13.6 12 930-1000
NRM 11 2.5 62.8 13.1 16.8 19 81.6 -95.6 10.7 700 3000
**Comments:** 100G of 4 cubes gave 26.5 degree change in declination
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates (1):** AD 871+vv from Pithouse B post
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s)

**1734 1 5 House I, Room 7, Floor 1, Firepit 1 (secondary burn)**
36.0 -108.0 13.6 10 980-1020
NRM 10 338.4 20.1 29.6 56.4 2 57.7 114.8 53.9 710 3000
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates (1):** AD 871+vv from Pithouse B post
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/

early AD 1000s)

**1736 2 5 House I, Room 11, Floor 1, Firepit 1**
36.0 -108.0 13.6 11 1000
NRM 11 23.0 59.6 16.8 22.3 11 71.4 -38.9 14.8 720 3000
100G 11 15.7 56.8 11.1 15.4 20 77.4 -28.9 10.6 1960
**Dominant Ceramics:** Red Mesa B/w, plain gray, wide neckbanded, narrow neckbanded, neck indented corrugated
**Tree ring dates (1):** AD 871+vv from Pithouse B post
**$^{14}C$ dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late 900s)

**1733 1 5 House I, Room 11, Floor 1, Heating Pit 1**
36.0 -108.0 13.6 8 1000
NRM 8 358.7 41.6 19.8 32.4 5 77.9 77.6 26.5 730 3000
**Dominant Ceramics:** Red Mesa B/w, plain gray, wide neckbanded, narrow neckbanded, neck indented corrugated
**Tree ring dates (1):** AD 871+vv from Pithouse B post
**$^{14}C$ dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s)

**934 1 6 House II, Room 1, Floor burn**
36.0 -108.0 13.6 10
NRM 10 351.6 74.0 17.3 19.2 22 65.3 -118.1 10.6 690 3000
**Comments:** 50G to 150G of 4 cubes gave large changes in direction
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, indented corrugated
**Tree ring dates:**
**$^{14}C$ dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

***29SJ 1659 (LA 530; Shabikeschee Village), Chacra Mesa***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Hayes 1975, McKenna 1986, Windes in press.

**882 3 5 Pithouse Y, Floor 1, Firepit 1**
36.0 -108.0 13.6 8 600-700
NRM 8 7.3 58.8 2.4 3.2 682 83.2 -52.1 2.1 740 3000
50G 8 8.7 58.8 2.1 2.9 837 82.2 -47.8 1.9 3000
100G 8 7.1 59.1 2.3 3.1 708 83.2 -55.0 2.1 600
**Dominant Ceramics:** La Plata B/w, Lino Gray, Lino Fugitive Red, and a Lino Fugitive Red olla, Lino Gray pitcher
**Tree ring dates (3):** AD 242vv - AD 537v from Firepit 1
**$^{14}C$ dates:**
**Period/Phase:** Basketmaker III/La Plata Phase (AD 500s-600s)

**1459 1 6 Great Kiva, west side, top of bench (burned)**
36.0 -108.0 13.6 12 560-600

NRM 12 6.3 48.2 5.1 7.8 54 81.3 32.2 6.0 750 450

**Comments:** 100G of 5 cubes gave 10.2 degree change in declination

**Dominant Ceramics:** La Plata B/w, Lino Gray, Lino Fugitive Red

**Tree ring dates (9):** AD 272++vv - 581++vv (main roof support = AD 557++vv).

**$^{14}$C dates:**

**Period/Phase:** Basketmaker III/La Plata Phase (AD 500s-600s)

***Bc 236 (29SJ 589; LA 40589), Fajada Gap Subcommunity***

**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM

**Reference:** Bradley 1971

**1429 1 8 Deep Firepit at edge of site (masonry lined oven)**

36.0 -108.0 13.6 8 1160

NRM 7 353.8 62.1 1.1 1.4 4274 81.3 -138.9 0.9 760 1060

**Comments:** 100G of 2 cubes gave 0.2 degree change in declination

**Dominant Ceramics:** Unknown. Probably Chaco-McElmo B/w assemblage

**Tree ring dates (2):** AD 1034vv, 1113vv from Deep Firepit

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

***Bc 288 (29SJ 540; LA 40540; Gallo Cliff Dwelling), Gallo Wash***

**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM

**Reference:** Abel 1969

**1466 3 7 East House, Kiva, uppermost floor, Firepit 2 (intermediate between 1st and last FP 1 constructions)**

36.0 -108.0 13.6 9 1225-1325

NRM 8 352.1 62.7 7.2 9.2 90 79.9 -142.5 5.9 770 3000

50G 8 354.6 63.2 3.5 4.4 396 80.4 -131.7 2.8 3000

100G 9 352.3 62.9 3.1 4.0 410 79.8 -140.7 2.5 1160

**Dominant Ceramics:** Gallup B/w, Chaco B/w, Mancos B/w, McElmo B/w, Mesa Verde B/w, Wingate B/r, indented corrugated

**Tree ring dates:**

**$^{14}$C dates (4):** AMS (CAMS-8174-8177) from unburned corn kernels in site: dendrocalibrated mean (Stuiver & Reimer 1987): AD 1019.5 ± 37.5 (2SD)(probability distribution = .78)

**Period/Phase:** Pueblo III/McElmo Phase (AD 1150-1200?)

**1475 2 7 East House, Kiva, uppermost floor, Firepit 3 (earliest construction of Firepit 1)**

36.0 -108.0 13.6 8

NRM 8 344.1 60.8 6.8 9.0 90 69.1 -174.0 5.9 780 3000

50G 7 350.6 59.7 6.4 8.4 117 81.3 -163.5 5.6 1170

**Dominant Ceramics:** Gallup B/w, Chaco B/w, Mancos B/w, McElmo B/w, Mesa Verde B/w, Wingate B/r, indented corrugated

**Tree ring dates:**

**$^{14}$C dates (4):** AMS (CAMS-8174-8177) from unburned corn kernels in site: dendrocalibrated mean (Stuiver & Reimer 1987):

AD 1019.5 ± 37.5 (2SD)(probability distribution = .78)
**Period/Phase:** Pueblo III/McElmo Phase (AD 1150-1200?)

**Una Vida (29SJ 391, Bc 259, LA 143), Fajada Gap Community**
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Akins and Gillespie 1979, Gillespie 1984

**1714 2 6 Room 21, Floor 2, Heating Pit 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 9 | | | | | | | | |
| NRM | 7 | 3.8 | 51.6 | 5.2 | 7.7 | 116 | 85.1 | 31.1 | 5.6 | 790 | 3000 |
| 100G | 5 | 359.7 | 48.9 | 3.7 | 5.7 | 320 | 83.9 | 74.3 | 4.3 | | 2500 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, plain gray, narrow neckbanded, indented corrugated
**Tree ring dates (8):** Viga on Floor 1: AD 931vv. Charcoal on Floor 1: AD 1053vv - 1056r (7 dates)
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Classic Bonito Phase (AD 1000s?)

**1715 2 7 Room 21, Floor 2, Floor Burn 2**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 9 | 950-1250 | | | | | | | |
| NRM | 9 | 345.3 | 59.4 | 3.8 | 5.1 | 229 | 77.7 | -173.7 | 3.4 | 800 | 3000 |
| 150G | 8 | 345.8 | 57.6 | 3.7 | 5.0 | 260 | 78.5 | 177.4 | 3.4 | | 1080 |

**Comments:** U uncertain curve assignment
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, plain gray, narrow neckbanded, indented corrugated
**Tree ring dates (8):** Viga on Floor 1: AD 931vv. Charcoal on Floor 1: AD 1053vv - 1056r (7 dates)
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Classic Bonito Phase (AD 1000s?)

**1721 2 5 Room 23, Floor 1, Firepit 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 13 | 1120-1175 | | | | | | | |
| NRM | 11 | 17.1 | 63.0 | 8.5 | 10.9 | 45 | 74.5 | -56.2 | 6.9 | 810 | 3000 |
| 50G | 10 | 352.4 | 61.2 | 14.0 | 18.2 | 18 | 81.4 | -148.6 | 11.9 | | 1060 |

**Dominant Ceramics:** Gallup B/w, Puerco B/w, Chaco B/w, Chaco-McElmo B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Late Bonito Phase (early AD 1100s?)

**1686 2 6 Room 23, Floor 1, Firepit 2 & associated floor burn**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 10 | 950-1050 | | | | | | | |
| NRM | 10 | 6.1 | 58.1 | 6.5 | 8.9 | 66 | 84.5 | -49.7 | 6.0 | 820 | 3000 |
| 150G | 8 | 0.0 | 59.4 | 3.5 | 4.7 | 313 | 85.8 | -107.7 | 3.1 | | 1010 |

**Comments:** U uncertain curve assignment (1010)
**Dominant Ceramics:** Gallup B/w, Puerco B/w, Chaco B/w, Chaco-McElmo B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**

**Period/Phase:** Pueblo II/Late Bonito Phase (early AD 1100s?)

**1685 2 8 Room 23, Floor 2(?), Heating Pit 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.0 | -108.0 | 13.6 | 10 | 950-1200 | | | | | | |
| NRM | 10 | 7.3 | 54.4 | 3.9 | 5.5 | 153 | 83.9 | -10.3 | 3.9 | 830 | 3000 |
| 150G | 9 | 5.4 | 53.4 | 3.6 | 5.2 | 191 | 85.1 | 5.7 | 3.7 | | 950 |

**Dominant Ceramics:** Few: early Red Mesa B/w, plain gray
**Tree ring dates:**
**$^{14}$C dates (3):** all dendrocalibrated (Stuiver & Reimer 1987):
mean of Dic-3113 & Dic-3114 from Fl.2 = AD 1000 ± 48 (2SD);
AMS (CAMS-8395) from corn kernel in subfloor vent:
AD 898 ± 118 (2SD).
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/
early AD 1000s)

**1719 3 8 Room 23, Floor 2, Firepit 2**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.0 | -108.0 | 13.6 | 10 | 950-1020 | | | | | | |
| NRM | 10 | 16.1 | 54.9 | 11.4 | 16.1 | 19 | 76.9 | -20.1 | 11.4 | 840 | 3000 |
| 50G | 10 | 25.2 | 54.1 | 8.9 | 12.7 | 29 | 69.4 | -21.5 | 9.1 | | 2500 |
| 150G | 10 | 18.7 | 53.7 | 11.4 | 16.3 | 18 | 74.6 | -17.0 | 11.7 | | 3000 |

**Dominant Ceramics:** Few: early Red Mesa B/w, plain gray
**Tree ring dates:**
**$^{14}$C dates (3):** all dendrocalibrated (Stuiver & Reimer 1987):
mean of Dic-3113 & Dic-3114 from Floor 2 = AD 1000 ± 48 (SD);
AMS (CAMS-8395) from corn kernel in subfloor vent:
AD 898 ± 118 (2SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/
early AD 1000s)

**1720 2 8 Room 23, Floor 2, Heating Pit 3**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.0 | -108.0 | 13.6 | 12 | | | | | | | |
| NRM | 12 | 348.8 | 72.9 | 21.6 | 24.2 | 11 | 66.4 | -122.7 | 13.6 | 850 | 3000 |
| 100G | 10 | 352.2 | 64.7 | 10.0 | 12.4 | 40 | 77.9 | -134.4 | 7.7 | | 2500 |

**Dominant Ceramics:** Few: early Red Mesa B/w, plain gray
**Tree ring dates:**
**$^{14}$C dates (3):** all dendrocalibrated (Stuiver & Reimer 1987):
mean of Dic-3113 & Dic-3114 from Floor 2 = AD 1000 ± 48 (2SD);
AMS (CAMS-8395) from corn kernel in subfloor vent:
AD 898 ± 118 (2SD)
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/
early AD 1000s)

**1724 1 6 Room 23, Plaza Surface, Heating Pit 7 (below Floor 2; cut by West Wall foundation)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.0 | -108.0 | 13.6 | 9 | 880-950 | | | | | | |
| NRM | 9 | 346.5 | 48.9 | 6.6 | 10.0 | 47 | 77.1 | 137.0 | 7.6 | 860 | 3000 |

**Comments:** below Floor 2; cut by West Wall foundation
**Comments:** 100G of 4 cubes gave 5.7 degree change in declination
**Dominant Ceramics:** Few: early Red Mesa B/w, plain gray

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Pueblo II/Early Bonito Phase (AD 900s)

**1725 2 6 Room 60, Floor 1, Firepit 1 (all 3 bottom plaster coats)**

```
 36.0 -108.0  13.6 12
NRM    12 350.8  58.8  1.1  1.4   2045  82.0 -169.5  1.0  880   3000
150G    9 346.3  58.7  1.9  2.6    895  78.6 -176.3  1.7         1145
```

**Dominant Ceramics:** Puerco B/w, McElmo/Chaco-McElmo B/w, Wingate B/r, indented corrugated

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Pueblo III/McElmo or Mesa Verde Phase? (AD 1100s/1200s)

**1726 2 5 Room 60, Floor 1, Firepit 1**

```
 36.0 -108.0  13.6  9
NRM     9 348.4  60.7  2.2  2.9    747  79.4 -162.1  1.9  890   3000
150G    7 344.8  59.9  1.5  2.0   2154  77.2 -171.6  1.3         1135
```

**Dominant Ceramics:** Puerco B/w, McElmo/Chaco-McElmo B/w, Wingate B/r, indented corrugated

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Pueblo III/McElmo or Mesa Verde Phase? (AD 1100s/1200s)

**1722 2 5 Room 60, Floor 2, Floor Burn 1**

```
 36.0 -108.0  13.6 15    1050
NRM    14 359.3  67.1  3.7  4.4    225  76.2 -109.9  2.7  900   3000
200G    8 352.5  62.1  3.9  5.1    282  81.5 -149.2  3.3         1060
```

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, Tusayan Whiteware, narrow neckbanded, indented corrugated

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Late Pueblo II?/Classic Bonito Phase? (AD 1050-1100)

**1723 2 5 Room 60, Floor 2, Floor Burn 2**

```
 36.0 -108.0  13.6 12    1050
NRM    12 356.1  58.6  4.4  6.0    118  85.5 -150.2  4.0  910   3000
100G   10 345.3  56.7  3.8  5.3    175  78.1  172.3  3.7         1140
```

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, Tusayan Whiteware, narrow neckbanded, indented corrugated

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Late Pueblo II?/Classic Bonito Phase? (AD 1050-1100)

**1729 2 5 Room 63, Floor 1, Floor Burn 1**

```
 36.0 -108.0  13.6 12    1175-1200
NRM    12   5.6  59.2  5.0  6.7     94  84.0  -61.5  4.5  920   3000
50G    12   3.6  59.5  5.7  7.6     75  84.8  -76.4  5.1         2500
```

**Dominant Ceramics:** Gallup B/w, Chaco B/w, McElmo/Chaco-McElmo B/w, Mesa Verde B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo III/Mesa Verde Phase? (AD 1100s/1200s)

**1718 2 6 Room 64, Floor 1, Burn 1**

36.0 -108.0 13.6 10 925-950

NRM 9 21.4 52.6 12.6 18.3 16 72.2 -15.3 13.3 930 3000

150G 7 17.8 56.9 12.7 17.4 26 75.6 -29.4 12.0 2500

**Dominant Ceramics:** Red Mesa B/w, Chaco B/w, McElmo/ Chaco-McElmo B/w, Tusayan B/r, indented corrugated
**Tree ring dates (2):** Posts? in fill above Floor 1: AD 949+vv, AD 949v (probably relate to room construction)
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1717 1 6 Room 65, Floor 1, floor burn**

36.0 -108.0 13.6 15 1030

NRM 14 16.7 56.3 5.8 8.1 51 76.5 -26.5 5.6 950 3000

**Comments:** 100G of 4 cubes gave 5.7 degree change in declination
**Dominant Ceramics:** Refuse?: Red Mesa B/w, Gallup B/w, Chaco B/w, McElmo/Chaco-McElmo B/w, Tusayan B/r, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III?/Late Bonito Phase? (early AD 1100s?)

**1716 3 6 Room 65, subfloor Layer 5 (initial cultural deposit, rests on bedrock), Burn 1**

36.0 -108.0 13.6 6 925-950

NRM 4 14.9 58.8 11.5 15.4 80 77.7 -39.3 10.4 940 3000

50G 4 14.6 60.5 9.1 11.9 139 77.4 -48.2 7.8 2500

100G 4 19.0 57.0 9.4 13.0 107 74.8 -29.5 8.9 3000

**Comments:** initial cultural deposit, rests on bedrock; Burn 1
**Dominant Ceramics:** Red Mesa B/w, plain gray, neck indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (mid AD 900s?)

**1713 3 5 Room 83, Floor 2, Firepit 2 (masonry lined)**

36.0 -108.0 13.6 9

NRM 8 358.4 62.9 4.7 6.0 215 81.5 -115.7 3.8 960 3000

100G 8 353.8 58.4 4.4 5.9 191 84.2 -163.8 4.0 3000

200G 7 351.2 55.3 3.1 4.4 392 82.9 -163.6 3.1 1190

**Dominant Ceramics:** Puerco B/w, Gallup B/w, plain gray, indented corrugated, PIII indented corrugated jar rim
**Tree ring dates:**
**$^{14}$C dates:**

**Period/Phase:** Pueblo III?/Mesa Verde Phase? (AD 1200s?)

**1727 2 5 Room 83, Plaza Surface 4, Heating Pit 1**

36.0 -108.0 13.6 13 1045

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 13 | 0.2 | 61.9 | 5.7 | 7.3 | 78 | 82.9 | -106.6 | 4.7 | 970 | 3000 |
| 50G | 13 | 349.6 | 61.0 | 3.7 | 4.9 | 170 | 80.0 | -158.1 | 3.2 | | 1060 |

**Dominant Ceramics:** Red Mesa B/w, Chaco-McElmo B/w?, plain gray, narrow neckbanded; Red Mesa B/w ladle on top of HP 2
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 900s?)

**1728 2 5 Room 83, Plaza Surface 4, Heating Pit 2**

36.0 -108.0 13.6 13 1045

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 350.6 | 60.3 | 3.0 | 3.9 | 283 | 81.0 | -159.6 | 2.6 | 980 | 3000 |
| 50G | 12 | 347.0 | 59.4 | 2.8 | 3.8 | 300 | 79.0 | -171.8 | 2.5 | | 1150 |

**Dominant Ceramics:** Red Mesa B/w, Chaco-McElmo B/w?, plain gray, narrow neckbanded; Red Mesa B/w ladle on top of HP 2
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (AD 900s?)

**1687 3 5 Room 84, Floor 1, Heating Pit 1**

36.0 -108.0 13.6 9 1100-2000

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 347.0 | 53.7 | 4.2 | 6.0 | 167 | 79.2 | 156.5 | 4.3 | 981 | 3000 |
| 50G | 7 | 352.9 | 57.4 | 5.5 | 7.5 | 138 | 84.0 | -176.3 | 5.2 | | 3000 |
| 150G | 7 | 352.0 | 58.4 | 5.4 | 7.3 | 152 | 82.9 | -169.3 | 4.9 | | 1190 |

**Dominant Ceramics:** Fill: McElmo/Chaco-McElmo B/w, Wingate B/w, indented corrugated, PIII indented corrugated jar rim
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo III/McElmo or Mesa Verde Phase? (AD 1100s/1200s)

***Kin Nahasbas (29SJ 392, Bc 249, LA 152), Fajada Gap Community***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Mathien and Windes 1988, 1989

**1975 2 10 Pitstructure 1 (under Great Kiva), Floor 1, Firepit 1**

36.0 -107.9 13.6 7

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 6.0 | 62.9 | 7.7 | 9.8 | 95 | 80.5 | 135.1 | 6.2 | 990 | 3000 |
| 150G | 7 | 6.4 | 56.6 | 5.8 | 8.1 | 118 | 84.7 | -32.0 | 5.6 | | 930 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (4):** all dendrocalibrated (Stuiver & Reimer 1987):
mean of Dic-2932 & Dic-2933 from early trash under great kiva wall= AD 988 ± 44 (2SD); AMS (CAMS-8183) from corn kernel in trash under great kiva wall: AD 781 ± 118 (2SD)(probability distribution = .94) and AD 927 ± 23 (2SD)(probability distribution = .06).

Dic-2934 from Firepit 1 charcoal =
873 ± 71 BC (2SD)(bad date).
**Period/Phase:** Early Pueblo II/Early Bonito Phase (late AD 900s)

***POCO SITE (29SJ 1010, LA41010), North Mesa overlooking Escavada Wash***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Drager and Lyons 1983

**1298 1 5 Circle A, Central Hearth**

```
 36.0 -108.0  13.6   8
NRM      8 338.0  59.5  1.2  1.6   2589  72.2 -177.2  1.1 1000   1130
```

**Comments:** 100G of 2 cubes gave 1.5 degree change in declination
**Dominant Ceramics:** Rare. Gallup B/w, Puerco B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

***PUEBLO ALTO (29SJ 389, Bc 251, LA 661), North Mesa, South Gap Community area***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Windes 1987

**1595 1 6 Room 51, Floor 1, Heating Pit 1**

```
 36.0 -108.0  13.6 11
NRM     11 352.8  63.2  4.2  5.4    179  79.7 -138.0  3.4 1010   1070
```

**Comments:** 100G of 5 cubes gave 2.4 degree change in declination
**Dominant Ceramics:** Red Mesa B/w, plain gray, indented corrugated
Tree ring dates (1): AD 1016vv roof post in Room 142 floor above.
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/early AD 1000s)

**1622 2 5 Room 51, Floor 2, Firepit 1**

```
 36.0 -108.0  13.6 14     980-1020
NRM     12 359.6  61.5  1.7  2.3    873  83.3 -110.2  1.5 1020   3000
100G     8 358.0  61.0  3.3  4.3    384  83.7 -121.4  2.8        1050
6Sp
```

**Dominant Ceramics:** Red Mesa B/w, plain gray, indented corrugated
**Tree ring dates (1):** AD 1016vv roof post in Room 142 floor above
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/early AD 1000s)

**1608 3 5 Room 51, Floor 3, Burn 1**

```
 36.0 -108.0  13.6  7     990-1050
NRM      7 354.4  58.1  5.8  7.8    130  84.7 -164.5  5.3 1030   3000
50G      7 354.2  57.3  4.7  6.5    185  84.9 -173.6  4.4        1010
```

```
100G    7 354.9  58.2  4.6  6.3    204  85.0 -161.5  4.2        3000
```

**Dominant Ceramics:** Red Mesa B/w, plain gray, indented corrugated
**Tree ring dates (1):** AD 1016vv roof post in Room 142 floor above
**$^{14}C$ dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/early AD 1000s)

**1610 3 7 Room 51, Floor 3, Heating Pit 1**

```
 36.0 -108.0  13.6  7     970-1030
NRM     6   3.1  61.7  7.1  9.2    128  82.7  -89.9  5.9 1040   3000
50G     6 357.1  61.4  7.0  9.0    132  83.1 -126.2  5.9        1030
100G    7 346.7  61.8 14.4 18.6     26  77.6 -159.8 12.0        3000
```

**Dominant Ceramics:** Red Mesa B/w, plain gray, indented corrugated
**Tree ring dates (1):** AD 1016vv roof post in Room 142 floor above
**$^{14}C$ dates (2):** SI-4007a and SI-4007b from Heating Pit 1, dendro-calibrated mean (Stuiver and Reimer 1987): AD 1000.5 ± 65.5 (2SD; .77 prob. distribution).
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/early AD 1000s)

**1611 3 7 Room 51, Floor 3, Heating Pit 2**

```
 36.0 -108.0  13.6 12     970-1030
NRM    12 358.4  58.4  3.3  4.4    214  86.6 -130.0  3.0 1050    980
50G    10 358.6  59.6  4.9  6.5    126  85.4 -121.9  4.3        3000
100G   10 359.3  59.8  5.5  7.3    101  85.3 -114.7  4.8        3000
```

**Dominant Ceramics:** Red Mesa B/w, plain gray, indented corrugated
**Tree ring dates (1):** AD 1016vv roof post in Room 142 floor above
**$^{14}C$ dates (2):** SI-4007a and SI-4007b from Heating Pit 1, dendro-calibrated mean (Stuiver and Reimer 1987): AD 1000.5 ± 65.5 (2SD; .77 prob. distribution).
**Period/Phase:** Pueblo II/Early Bonito Phase (late AD 900s/early AD 1000s)

**1421 4 9 Room 103, Layer 2 (postoccupational fill),**

```
 36.0 -108.0  13.6 17    1200
NRM    15 355.3  64.1  5.2  6.5     88  79.6 -126.5  4.1 1060   3000
50G    17 352.7  61.5  6.7  8.7     47  81.4 -146.2  5.6        1050
NRM    33 358.2  60.2                   84.7 -122.9  8.4        3000
50G    33   0.1  57.2                   88.2 -106.2  9.2        3000
```

**Comments:** second NRM and 50G are sets 1420 (Rm 106) and 1421 combined, firepit 2
**Dominant Ceramics:** Red Mesa B/w, Puerco B/w, Gallup B/w, McElmo B/w, Chaco-McElmo B/w canteen, Tusayan B/w jar, indented corrugated; Chaco Corrugated jar, and Hunter Corrugated jar.
**Tree ring dates:**
**$^{14}C$ dates:**
**Period/Phase:** Pueblo III or later/unknown phase designation

**1428 2 6 Room 103, Floor 1, Heating Pit 1**
36.0 -108.0 13.6 14
NRM 14 341.5 60.2 2.1 2.7 482 74.7 -172.7 1.8 1070 3000
100G 7 343.5 59.9 4.2 5.6 268 76.2 -172.5 3.7 1130
**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, McElmo B/w, Tusayan B/r jar, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (1):** Dendrocalibrated SI-3712 (Stuiver and Reimer 1987)
**from Heating Pit 5:** AD 1224 ± 75 (2SD); .86 prob. distribution)
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1447 1 7 Room 103, Floor 1, Heating Pit 5**
36.0 -108.0 13.6 12 1190-1230
NRM 10 342.0 57.6 6.3 8.6 69 75.5 176.4 5.8 1080 1130
**Comments:** 50G to 400G of 6 cubes gave little direction change
**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, McElmo B/w, Tusayan B/r jar, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (1):** Dendrocalibrated SI-3712 (Stuiver and Reimer 1987)
**from Heating Pit 5:** AD 1224 ± 75 (2SD); .86 prob. distribution)
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1427 3 6 Room 103, Floor 1, Heating Pit 7**
36.0 -108.0 13.6 10 1050
NRM 8 349.2 61.9 3.1 4.0 451 79.1 -153.9 2.6 1090 3000
50G 9 345.2 59.0 3.5 4.7 265 77.8 -175.8 3.2 3000
100G 8 347.8 59.2 2.5 3.3 618 79.6 -171.6 2.2 1150
**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, McElmo B/w, Tusayan B/r jar, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (1):** Dendrocalibrated SI-3712 (Stuiver & Reimer 1987) from
**Heating Pit 5:** AD 1224 ± 75 (2SD); .86 prob. distribution)
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1452 2 4 Room 103, Floor 2, Heating Pit 2**
36.0 -108.0 13.6 14 1160-1220
NRM 13 349.8 62.7 2.3 3.0 475 78.8 -148.6 1.9 1100 1080
100G 8 347.3 61.4 3.7 4.8 319 78.2 -160.4 3.1 3000
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s?)

**1451 1 5 Room 103, Floor 2, Heating Pit 3**
36.0 -108.0 13.6 9 1175
NRM 9 343.3 61.3 5.5 7.2 121 75.6 -166.8 4.7 1110 1130
**Comments:** 100G of 3 cubes gave 1.9 degree change in declination
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**

**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s?)

**1453 2 4 Room 103, Floor 2, Heating Pit 4**
36.0 -108.0 13.6 7 1160-1220
NRM 6 351.3 59.8 4.1 5.5 339 81.7 -160.9 3.6 1120 3000
50G 6 346.0 62.0 3.9 5.0 425 77.0 -159.7 3.3 1110
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s?)

**1455 2 4 Room 103, Floor 2, Heating Pit 8**
36.0 -108.0 13.6 13 1200
NRM 12 342.5 59.7 2.4 3.2 428 75.6 -174.1 2.1 1130 3000
50G 9 343.0 60.5 2.5 3.2 584 75.7 -170.6 2.1 1130
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s?)

**1454 2 4 Room 103, Floors 2/3, Heating Pit 7**
36.0 -108.0 13.6 10 1150-1200
NRM 9 341.2 59.3 5.5 7.4 111 74.6 -176.9 4.9 1140 2000
100G 10 342.3 60.5 7.6 10.0 55 75.2 -171.1 6.6 1130
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1463 2 5 Room 103, Floor 3, Hearth 1**
36.0 -108.0 13.6 7 1155-1195
NRM 7 351.5 60.8 8.0 10.5 78 81.2 -154.2 6.9 1150 1060
100G 7 344.3 63.7 17.4 21.9 20 75.0 -155.1 13.8 3000
**Dominant Ceramics:** Gallup B/w, Chaco B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (1):** SI-3711 from Hearth 1 dendrocalibrated (Stuiver and **Reimer 1987):** AD 514 ± 127 (2SD). Date unacceptable.
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1460 3 5 Room 103, Floor 3, Heating Pits 4 and 5**
36.0 -108.0 13.6 10 1140-1200
NRM 10 344.9 61.6 7.0 9.1 69 76.6 -163.5 5.9 1160 3000
50G 10 347.4 63.0 4.5 5.7 178 77.2 -152.7 3.6 3000
50G 8 344.6 63.1 2.2 2.8 983 75.5 -157.2 1.8 1110
**Comments:** second 50G is a selected data set
**Dominant Ceramics:** Gallup B/w, Chaco B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**

**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1464 1 5 Room 103, Floor 3, Heating Pit 7**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.0 | -108.0 | 13.6 | 10 | 1155-1195 | | | | | | |
| NRM | 10 | 351.5 | 54.2 | 9.5 | 13.5 | 26 | 82.9 | 154.0 | 9.6 | 1170 | 3000 |

**Comments:** 100G of 5 cubes gave 8.3 degree change in declination
**Dominant Ceramics:** Gallup B/w, Chaco B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1456 2 4 Room 103, Floors 1-3, floor burn**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.0 | -108.0 | 13.6 | 11 | 1150-1200 | | | | | | |
| NRM | 10 | 339.3 | 66.2 | 3.5 | 4.3 | 348 | 70.3 | -151.9 | 2.6 | 1180 | 3000 |
| 50G | 10 | 352.4 | 66.0 | 3.0 | 3.7 | 460 | 76.5 | -130.0 | 2.3 | | 1090 |

**Dominant Ceramics:** Gallup B/w, Chaco B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1100s)

**1461 2 5 Room 103, Floor 4, Heating Pit 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.0 | -108.0 | 13.6 | 15 | | | | | | | |
| NRM | 12 | 335.4 | 60.6 | 3.6 | 4.7 | 199 | 70.1 | -174.2 | 3.1 | 1190 | 3000 |
| 50G | 13 | 343.5 | 63.3 | 3.2 | 4.0 | 263 | 74.7 | -157.5 | 2.6 | | 1110 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented coorugated
**Tree ring dates:**
**$^{14}$C dates (1):** AMS (CAMS-8186) from corn kernels in HP 1: dendro-calibrated (Stuiver & Reimer 1987): AD 1134.5 ± 110.5 (2SD).
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1420 3 4 Room 106, burn in postoccupation fill wall fall**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.0 | -108.0 | 13.6 | 16 | 1100-1300 | | | | | | |
| NRM | 15 | 356.9 | 58.0 | 5.7 | 7.7 | 54 | 86.4 | -149.5 | 5.2 | 1200 | 3000 |
| 50G | 8 | 2.4 | 50.4 | 6.4 | 9.5 | 63 | 84.8 | 48.9 | 7.1 | | 3000 |
| 50G | 15 | 1.8 | 55.0 | 5.7 | 8.1 | 46 | 88.5 | 0.8 | 5.7 | | 1260 |

**Dominant Ceramics:** None associated with burn
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo III or later (post AD 1150)

**1489 3 5 Room 109, Floating Floor 1, floor burn**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.0 | -108.0 | 13.6 | 8 | 1220 | | | | | | |
| NRM | 8 | 358.5 | 63.4 | 8.1 | 10.2 | 75 | 80.9 | -114.7 | 6.5 | 1210 | 3000 |
| 50G | 8 | 348.1 | 64.5 | 6.1 | 7.6 | 138 | 76.3 | -144.9 | 4.7 | | 3000 |
| 100G | 8 | 347.8 | 63.5 | 6.4 | 8.1 | 117 | 77.1 | -149.8 | 5.1 | | 1090 |

**Dominant Ceramics:** Gallup B/w, Puerco B/w, Mesa Verde B/w (only one found at site), indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**

**Period/Phase:** Pueblo III or later/Late Bonito Phase or later

**1592 3 5 Room 110, Floor 1, Firepit 1**
36.0 -108.0 13.6 12 1100-1160
NRM 11 349.4 66.6 10.4 12.6 37 74.8 -135.2 7.6 1220 3000
50G 11 346.3 64.6 3.3 4.2 313 75.4 -148.2 2.6 1090
100G 11 350.0 61.7 3.7 4.7 222 79.7 -153.3 3.1 3000
**Dominant Ceramics:** Gallup B/w, indented corrugated, Blue Shale Corrugated jar in Firepit 1
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1599 2 4 Room 110, Floor 1, Surface 3, Firepit 2**
36.0 -108.0 13.6 11 1150-1175
NRM 5 351.6 62.2 5.6 7.3 271 80.1 -145.9 4.7 1230 3000
50G 5 350.9 61.9 5.4 7.0 292 80.0 -149.6 4.5 1070
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1597 2 4 Room 110, Floor 1, Surface 6, Burn 1**
36.0 -108.0 13.6 13 1150-1175
NRM 12 345.1 62.1 4.5 5.7 139 76.7 -159.9 3.7 1240 3000
50G 11 346.0 61.8 2.4 3.1 512 77.2 -160.8 2.0 1110
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1598 2 4 Room 110, Floor 1, Surface 6, Burn 2**
36.0 -108.0 13.6 11 1150-1175
NRM 11 349.0 62.3 3.5 4.5 248 78.6 -152.7 2.9 1250 3000
100G 9 350.4 62.3 2.5 3.3 608 79.4 -149.4 2.1 1080
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1606 3 8 Room 110, Floor 1, Surface 7, Burn 4**
36.0 -108.0 13.6 7 1000-1100 14C
NRM 6 354.2 56.1 1.7 2.4 1598 85.2 171.3 1.7 1260 3000
50G 7 356.6 57.8 3.4 4.6 365 86.4 -155.3 3.2 1000
100G 7 356.2 57.5 4.3 5.8 231 86.3 -161.6 4.0 3000
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (6):** Dic-1450, 1452-1455, and SI-4503 from Surface 7 floor fill and Heating Pit 7, and Surface 8 (Heating Pits 15, 20, and 32):

dendrocalibrated mean (Stuiver and Reimer 1987): AD 1066.5 ± 22.5 (2SD; .09 prob. distribution) and AD 1190.5 ± 38.5 (2SD; .80 prob. distribution).
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1600 2 4 Room 110, Floor 1, Surface 7, Heating Pit 3**
36.0 -108.0 13.6 12 1080-1180 14C

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 345.9 | 65.1 | 3.5 | 4.3 | 266 | 74.7 | -147.0 | 2.7 | 1270 | 3000 |
| 50G | 12 | 346.3 | 62.1 | 2.1 | 2.7 | 617 | 77.2 | -158.8 | 1.7 | | 1110 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (6):** See ESO# 1606 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1603 3 4 Room 110, Floor 1, Surface 7, Heating Pit 7**
36.0 -108.0 13.6 13 1155-1195

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 358.5 | 62.3 | 8.5 | 10.9 | 49 | 82.3 | -116.3 | 7.0 | 1280 | 3000 |
| 50G | 8 | 353.5 | 62.9 | 5.0 | 6.4 | 185 | 80.3 | -137.1 | 4.1 | | 1070 |
| 100G | 8 | 353.6 | 62.9 | 5.1 | 6.5 | 179 | 80.4 | -136.3 | 4.2 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (6):** See ESO# 1606 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1604 2 4 Room 110. Floor 1, Surface 7, Heating Pit 8**
36.0 -108.0 13.6 11 1230-1320 14C

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 347.6 | 61.4 | 3.6 | 4.6 | 231 | 78.4 | -159.9 | 3.0 | 1290 | 3000 |
| 50G | 10 | 344.6 | 61.0 | 2.7 | 3.5 | 447 | 76.6 | -166.6 | 2.3 | | 1120 |

**Dominant Ceramics:** Red Mesa B/w. Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (6):** See ESO# 1606 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1605 2 4 Room 110, Floor 1, Surface 7, Heating Pit 10**
36.0 -108.0 13.6 7 1175

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 356.0 | 61.1 | 4.6 | 6.0 | 239 | 83.1 | -133.6 | 3.9 | 1212 | 3000 |
| 50G | 7 | 349.9 | 62.8 | 3.7 | 4.8 | 397 | 78.8 | -148.2 | 3.0 | | 1080 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (6):** See ESO# 1606 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1607 3 4 Room 110, Floor 1, Surface 7, Heating Pit 14**
36.0 -108.0 13.6 11 1145-1185

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 348.0 | 63.8 | 2.4 | 3.0 | 582 | 76.9 | -148.0 | 1.9 | 1213 | 3000 |
| 50G | 8 | 348.3 | 64.3 | 2.2 | 2.7 | 1041 | 76.6 | -145.6 | 1.7 | | 1090 |
| 100G | 6 | 350.9 | 64.8 | 3.6 | 4.4 | 599 | 77.3 | -137.5 | 2.7 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**

**$^{14}$C dates (6):** See ESO# 1606 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1601 2 8 Room 110, Floor 1, Surface 8, Burn 3**
36.0 -108.0 13.6 8
NRM 8 359.8 62.6 8.2 10.5 69 82.0 -108.9 6.7 1211 3000
50G 7 354.0 63.1 4.2 5.3 324 80.3 -134.0 3.4 1070
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated; Toadlena B/w ladle
**Tree ring dates:**
**$^{14}$C dates (4):** Dic-1450, 1453-1454, and SI-4503 from Surface 8 (Heating Pits 15, 20 (2 samples), and 32): dendrocalibrated mean (Stuiver and Reimer 1987): AD 1069.5 ± 31.5 (2SD; .23 prob. distribution) and AD 1189 ± 40 (2SD; .63 prob. distribution).
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1613 2 6 Room 110, Floor 1, Surface 8, Heating Pit 15**
36.0 -108.0 13.6 8 1120-1160
NRM 8 345.2 64.9 2.5 3.1 813 74.5 -149.1 1.9 1215 3000
100G 8 344.2 62.3 3.3 4.2 420 75.7 -160.9 2.7 1110
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (1):** Dic-1454 from Heating Pit 15, dendrocalibrated (Stuiver and Reimer 1987): AD 1088 ± 55 (2SD); .45 prob. distribution) and AD 1202.5 ± 55.5 (2SD; .55 prob. distribution).
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1612 2 4 Room 110, Floor 1, Surface 8, Heating Pit 16**
36.0 -108.0 13.6 8 1080-1180
NRM 6 346.6 68.2 2.3 2.8 1681 71.9 -135.8 1.6 1214 1085
150G 8 344.6 67.9 5.1 6.1 234 71.5 -139.8 3.6 3000
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates (4):**
**$^{14}$C dates:** See ESO# 1601 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1617 2 4 Room 110, Floor 1, Surface 8, Heating Pit 23**
36.0 -108.0 13.6 8 905-995 14C
NRM 8 342.5 65.0 3.7 4.6 383 73.0 -152.6 2.8 1216 3000
50G 8 343.6 64.3 3.0 3.7 575 74.1 -153.6 2.3 1100
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (4):** See ESO# 1601 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1618 2 4 Room 110, Floor 1, Surface 8, Heating Pit 25**
36.0 -108.0 13.6 10 1100-1140
NRM 10 342.4 63.7 4.8 6.1 159 73.8 -157.3 3.8 1217 3000
100G 7 343.4 65.1 2.6 3.2 906 73.4 -150.8 2.0 1090

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (4):** See ESO# 1601 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1619 2 4 Room 110, Floor 1, Surface 8, Heating Pit 28**
36.0 -108.0 13.6 8 1100-1140

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 349.7 | 60.1 | 7.7 | 10.2 | 68 | 80.5 | -162.9 | 6.8 | 1218 | 3000 |
| 150G | 8 | 349.2 | 63.0 | 4.1 | 5.2 | 276 | 78.2 | -148.9 | 3.3 | | 1090 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (4):** See ESO# 1601 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1660 2 5 Room 110, Floor 2, Firepit 1 (last burn)**
36.0 -108.0 13.6 14 1040-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 13 | 343.7 | 59.7 | 2.2 | 2.9 | 477 | 76.4 | -173.4 | 1.9 | 1300 | 3000 |
| 150G | 7 | 342.8 | 60.9 | 1.5 | 1.9 | 2262 | 75.4 | -168.8 | 1.3 | | 1140 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1661 2 5 Room 110, Floor 2, Firepit 1 (earlier burn)**
36.0 -108.0 13.6 10 1040-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 347.2 | 61.6 | 3.4 | 4.4 | 292 | 78.1 | -159.6 | 2.8 | 1310 | 3000 |
| 100G | 8 | 344.6 | 61.9 | 2.3 | 2.9 | 854 | 76.2 | -162.5 | 1.9 | | 1120 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1662 2 5 Room 110, Floor 2, Firepit 2**
36.0 -108.0 13.6 14 1040-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 13 | 348.4 | 62.0 | 2.1 | 2.7 | 569 | 78.5 | -155.2 | 1.7 | 1320 | 3000 |
| 200G | 13 | 347.2 | 63.0 | 1.9 | 2.5 | 691 | 77.1 | -153.3 | 1.6 | | 1100 |

**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid AD 1000s)

**1663 2 5 Room 110, Floor 3 (initial use of room), Burn 1**
36.0 -108.0 13.6 13 970-1130

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 345.2 | 62.9 | 1.9 | 2.4 | 798 | 76.0 | -157.1 | 1.5 | 1330 | 3000 |
| 50G | 11 | 348.9 | 61.9 | 2.6 | 3.4 | 431 | 78.9 | -154.6 | 2.2 | | 1100 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded,

neck indented corrugated
**Tree ring dates (1):** Intramural inside North Wall: AD 1021r
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1624 2 6 Room 112, Floor 1, Burn 1**
36.0 -108.0 13.6 13 1090-1150

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 13 | 342.1 | 59.9 | 5.8 | 7.7 | 67 | 75.2 | -173.7 | 5.1 | 1340 | 3000 |
| 200G | 9 | 345.0 | 60.4 | 3.4 | 4.4 | 316 | 77.1 | -168.9 | 2.9 | | 1130 |

**Dominant Ceramics:** Gallup B/w, Nava B/w, Black Mesa/Sosi B/w, White Mt. Redware, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (last use of floor)(early AD 1100s)

**1656 2 5 Room 138, Floor 1, Burn 1**
36.0 -108.0 13.6 12

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 342.9 | 62.0 | 2.2 | 2.9 | 550 | 75.0 | -163.7 | 1.9 | 1350 | 3000 |
| 50G | 6 | 346.1 | 61.9 | 0.8 | 1.1 | 9034 | 77.2 | -160.3 | 0.7 | | 1110 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1664 4 6 Room 138, Floor 2, Heating Pit 2**
36.0 -108.0 13.6 10 1000

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 353.2 | 60.0 | 4.1 | 5.4 | 181 | 82.8 | -153.5 | 3.6 | 1360 | 3000 |
| 100G | 6 | 354.9 | 61.7 | 3.8 | 4.9 | 455 | 82.1 | -136.2 | 3.1 | | 3000 |
| 150G | 6 | 355.3 | 60.4 | 3.4 | 4.4 | 529 | 83.5 | -141.1 | 2.9 | | 3000 |
| 150G | 8 | 356.3 | 60.1 | 2.6 | 3.4 | 603 | 84.2 | -136.9 | 2.3 | | 1020 |

**Comments:** Sp
**Dominant Ceramics:** Red Mesa B/w, plain gray, neck indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1472 1 6 Room 139, Floor 1, Burn around Other Pit 7**
36.0 -108.0 13.6 11 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 345.9 | 59.1 | 1.8 | 2.4 | 810 | 78.2 | -174.4 | 1.6 | 1370 | 1130 |

**Comments:** u, 100G of 2 cubes gave 1.2 degree change in decl
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, McElmo B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1620 13 10 Room 139, Floor 2, Burn 1**

36.0 -108.0 13.6 12 1030-1070

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 356.8 | 60.8 | 1.8 | 2.4 | 781 | 83.7 | -130.3 | 1.6 | 1380 | 3000 |
| 50G | 8 | 357.8 | 59.8 | 1.7 | 2.2 | 1394 | 85.9 | -128.0 | 1.5 | | 3000 |
| 100G | 8 | 357.6 | 59.7 | 1.4 | 1.9 | 2014 | 85.1 | -129.3 | 1.2 | | 3000 |
| 150G | 8 | 357.2 | 59.2 | 0.8 | 1.1 | 5551 | 85.4 | -136.2 | 0.7 | | 3000 |
| 200G | 8 | 356.6 | 59.6 | 0.7 | 1.0 | 7419 | 84.8 | -138.5 | 0.6 | | 1020 |
| 400G | 8 | 355.8 | 61.0 | 1.4 | 1.8 | 2290 | 83.2 | -135.3 | 1.2 | | 3000 |
| 600G | 8 | 354.8 | 56.7 | 4.6 | 6.4 | 160 | 85.7 | -179.3 | 4.4 | | 3000 |
| NRM-50G | 8 | 348.8 | 63.4 | 13.9 | 17.6 | 26 | 77.7 | -148.2 | 11.2 | | 3000 |
| 50-100G | 8 | 358.5 | 60.2 | 4.1 | 5.4 | 240 | 84.8 | -120.1 | 3.6 | | 3000 |
| 100-150G8 | | 1.2 | 62.9 | 7.6 | 9.7 | 82 | 81.6 | -102.1 | 6.2 | | 3000 |
| 150-200G8 | | 1.0 | 57.3 | 5.4 | 7.5 | 118 | 87.9 | -84.8 | 5.1 | | 3000 |
| 200-400G8 | | 357.7 | 57.7 | 1.9 | 2.6 | 996 | 87.1 | -145.9 | 1.8 | | 3000 |
| 400-600G8 | | 358.5 | 70.2 | 11.6 | 13.4 | 52 | 71.8 | -110.7 | 7.8 | | 3000 |

**Comments:** lines NRM-50G to 400-600G are lost vector analysis,
**Comments:** magnetism lost between the two AF levels
**Comments:** time for 200-400G is approx. 1000 where as that for
**Comments:** 50-100G is approx. 1020
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** Mean of Dic-1451, Dic-1489, and SI-4009 from Heating Pits 4 and 6, dendrocalibrated (Stuiver and Reimer 1987): AD 1090 ± 7(2SD); .96 prob. distribution).
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1479 3 5 Room 139, Floor 2, Heating Pit 1**

36.0 -108.0 13.6 14

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 14 | 356.0 | 63.2 | 6.2 | 7.8 | 65 | 80.8 | -126.3 | 5.0 | 1390 | 3000 |
| 50G | 8 | 2.1 | 60.3 | 3.3 | 4.4 | 364 | 84.5 | -91.2 | 2.9 | | 3000 |
| 100G | 8 | 0.5 | 60.0 | 2.1 | 2.8 | 924 | 85.1 | -103.3 | 1.8 | | 1020 |

**COMMENTS:** Sp
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1484 3 5 Room 139, Floor 2, Heating Pit 2**

36.0 -108.0 13.6 14

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 14 | 2.1 | 60.4 | 1.9 | 2.5 | 590 | 84.4 | -92.0 | 1.6 | 1400 | 3000 |
| 100G | 9 | 355.8 | 60.1 | 1.8 | 2.3 | 1123 | 84.0 | -139.7 | 1.5 | | 1020 |
| 150G | 9 | 356.8 | 60.6 | 1.7 | 2.2 | 1300 | 83.9 | -130.7 | 1.4 | | 3000 |

**COMMENTS:** sp
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1487 2 5 Room 139, Floor 2, Heating Pit 3**

36.0 -108.0 13.6 9

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 355.6 | 64.7 | 1.6 | 2.0 | 2061 | 78.9 | -124.1 | 1.2 | 1410 | 1080 |
| 50G | 6 | 5.0 | 60.3 | 6.0 | 7.9 | 167 | 83.5 | -72.9 | 5.2 | | 3000 |

**Comments:** U, Sp, uncertain curve assignment
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1488 3 5 Room 139, Floor 2, Heating Pit 4**

36.0 -108.0 13.6 18

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 18 | 358.0 | 60.9 | 1.6 | 2.1 | 625 | 83.8 | -121.9 | 1.4 | 1420 | 3000 |
| 50G | 9 | 0.7 | 60.7 | 1.8 | 2.3 | 1170 | 84.3 | -103.1 | 1.5 | | 1030 |
| 100G | 9 | 1.8 | 60.7 | 2.1 | 2.7 | 825 | 84.1 | -94.8 | 1.8 | | 3000 |

**COMMENTS:** Sp
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1482 3 5 Room 139, Floor 2, Heating Pit 5**

36.0 -108.0 13.6 13

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 13 | 353.7 | 59.9 | 2.8 | 3.7 | 282 | 83.2 | -152.2 | 2.5 | 1430 | 3000 |
| 100G | 8 | 359.5 | 61.8 | 1.3 | 1.7 | 2517 | 83.2 | -110.9 | 1.1 | | 1040 |
| 150G | 9 | 359.4 | 61.7 | 1.8 | 2.3 | 1217 | 83.1 | -111.5 | 1.5 | | 3000 |

**COMMENTS:** Sp
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1481 4 4 Room 139, Floor 2, Heating Pit 8**

36.0 -108.0 13.6 11 1010

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 339.2 | 63.3 | 8.0 | 10.1 | 52 | 71.9 | -162.4 | 6.4 | 1440 | 3000 |
| 100G | 9 | 355.3 | 58.4 | 3.5 | 4.7 | 260 | 85.2 | -157.0 | 3.2 | | 3000 |
| 150G | 9 | 356.6 | 59.2 | 3.2 | 4.2 | 331 | 85.2 | -141.1 | 2.8 | | 1010 |
| 200G | 9 | 358.5 | 60.5 | 3.1 | 4.0 | 381 | 84.8 | -119.8 | 2.6 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1485 4 5 Room 139, Floor 2, Heating Pit 9**

36.0 -108.0 13.6 10

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 1.7 | 62.9 | 3.3 | 4.2 | 374 | 81.6 | -99.7 | 2.7 | 1450 | 3000 |
| 100G | 8 | 358.6 | 59.8 | 3.2 | 4.3 | 387 | 85.2 | -120.7 | 2.8 | | 3000 |
| 150G | 8 | 358.9 | 57.9 | 2.3 | 3.2 | 665 | 87.3 | -125.8 | 2.2 | | 990 |
| 200G | 8 | 359.1 | 58.9 | 2.9 | 3.9 | 450 | 86.3 | -118.6 | 2.6 | | 3000 |

**COMMENTS:** Sp

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1483 3 5 Room 139, Floor 2, Heating Pit 10**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 12 | | | | | | | | |
| NRM | 12 | 8.3 | 64.1 | 5.6 | 7.1 | 97 | 78.4 | -78.2 | 4.4 | 1460 | 3000 |
| 100G | 9 | 6.5 | 59.2 | 3.2 | 4.3 | 324 | 83.5 | -58.1 | 2.9 | | 1960 |
| 150G | 10 | 7.7 | 61.4 | 4.7 | 6.1 | 151 | 81.2 | -67.8 | 3.9 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)
(AM date clearly bad)

**1426 2 4 Room 139, Floor 2, Heating Pit 13**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 13 | 1000 | | | | | | | |
| NRM | 13 | 355.0 | 55.7 | 5.0 | 7.0 | 73 | 85.9 | 166.9 | 4.9 | 1470 | 3000 |
| 50G | 13 | 359.1 | 55.8 | 4.7 | 6.6 | 82 | 89.2 | -175.2 | 4.6 | | 970 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1478 1 5 Room 139, Floor 2, Posthole 1 (unburned mortar)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 14 | | | | | | | | |
| NRM | 13 | 249.1 | 76.3 | 29.2 | 31.5 | 7 | 23.7 | -134.5 | 17.0 | 1480 | 3000 |

**Comments:** 100G of 5 cubes gave 39.1 degree change in declination
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1480 1 5 Room 139, Floor 2, Posthole 4 (unburned mortar)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 12 | | | | | | | | |
| NRM | 12 | 358.6 | 70.2 | 39.4 | 45.7 | 4 | 71.8 | -110.6 | 26.5 | 1490 | 3000 |

**Comments:** 100G of 4 cubes gave 1.1 degree change in declination
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1620 above
**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1506 1 8 Room 142, Floor 1, East Wall Foundation (unburned)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 16 | | | | | | | | |
| NRM | 16 | 333.5 | 55.2 | 15.4 | 21.7 | 7 | 68.6 | 169.2 | 15.2 | 1005 | 3000 |

**Comments:** 100G of 5 cubes gave 35.2 degree change in declination
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded,
neck indented corrugated, indented corrugated

**Tree ring dates (2):** AD 1004 v (pole in floor fill), AD 1016vv (roof support post in Posthole 3)
**$^{14}$C dates:**
**Period/Phase:** Construction: Pueblo II/Early Bonito Phase (AD 1000s)

**1493 3 8 Room 142, Floor 1, Burn 1**

36.0 -108.0 13.6 14 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 14 | 349.1 | 59.3 | 2.4 | 3.2 | 339 | 80.5 | -169.1 | 2.2 | 1510 | 3000 |
| 50G | 8 | 344.0 | 61.1 | 2.0 | 2.6 | 1083 | 76.2 | -166.8 | 1.7 | | 3000 |
| 100G | 8 | 344.2 | 60.8 | 1.6 | 2.1 | 1620 | 76.4 | -167.8 | 1.4 | | 1120 |

**Dominant Ceramics:** Last use: Gallup B/w, Chaco-McElmo B/w, McElmo B/w, indented corrugated; Chaco-McElmo B/w canteen, Crumbled House B/w olla
**Tree ring dates (2):** Construction: AD 1004v (pole fragment in floor fill), AD 1016vv (roof support post in Posthole 3)
**$^{14}$C dates:**
**Period/Phase:** Last use: Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1496 2 8 Room 142, Floor 1, Burn 2**

36.0 -108.0 13.6 11 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 353.3 | 64.2 | 3.2 | 4.0 | 336 | 78.8 | -132.9 | 2.5 | 1520 | 3000 |
| 50G | 9 | 347.0 | 60.6 | 2.5 | 3.3 | 567 | 78.5 | -165.2 | 2.2 | | 1120 |

**Dominant Ceramics:** Last use: Gallup B/w, Chaco-McElmo B/w, McElmo B/w, indented corrugated; Chaco-McElmo B/w canteen, Crumbled House B/w olla
**Tree ring dates (2):** construction: AD 1004v (pole fragment in floor fill), AD 1016vv (roof support post in Posthole 3)
**$^{14}$C dates:**
**Period/Phase:** Last use: Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1495 3 8 Room 142, Floor 1, Burn 3**

36.0 -108.0 13.6 15 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 15 | 352.3 | 59.2 | 2.7 | 3.6 | 257 | 82.7 | -162.5 | 2.4 | 1002 | 3000 |
| 50G | 10 | 347.3 | 62.0 | 2.5 | 3.2 | 542 | 77.9 | -157.5 | 2.1 | | 3000 |
| 100G | 10 | 346.9 | 61.5 | 2.3 | 3.0 | 604 | 77.9 | -160.9 | 2.0 | | 1110 |

**Dominant Ceramics:** Last Use: Gallup B/w, Chaco-McElmo B/w, McElmo B/w, indented corrugated; Chaco-McElmo B/w canteen, Crumbled House B/w olla
**Tree ring dates (2):** Construction: AD 1004v (pole fragment in floor fill), AD 1016vv (roof support post in Posthole 3)
**$^{14}$C dates:**
**Period/Phase:** Last Use: Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1494 6 8 Room 142, Floor 1, Burn 4**

36.0 -108.0 13.6 14 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 14 | 344.5 | 61.3 | 1.3 | 1.7 | 1305 | 76.4 | -165.1 | 1.1 | 1001 | 3000 |
| 50G | 6 | 343.9 | 62.1 | 2.3 | 2.9 | 1285 | 75.7 | -162.4 | 1.9 | | 3000 |
| 100G | 6 | 343.9 | 61.9 | 2.4 | 3.1 | 1150 | 75.8 | -163.1 | 2.0 | | 3000 |
| 150G | 7 | 343.5 | 61.9 | 1.9 | 2.5 | 1413 | 75.4 | -163.5 | 1.6 | | 1120 |
| 200G | 8 | 343.7 | 61.8 | 1.9 | 2.4 | 1234 | 75.6 | -166.8 | 1.6 | | 3000 |
| 400G | 8 | 343.5 | 62.3 | 1.8 | 2.3 | 1372 | 75.3 | -161.7 | 1.5 | | 3000 |

**Dominant Ceramics:** Last use: Gallup B/w, Chaco-McElmo B/w, McElmo B/w, indented corrugated; Chaco-McElmo B/w canteen, Crumbled House B/w olla

**Tree ring dates (2):** Construction: AD 1004v (pole fragment in floor fill), AD 1016vv (roof support post in Posthole 3)

**$^{14}C$ dates:**

**Period/Phase:** Last Use: Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1497 3 7 Room 142, Floor 2, Burn 1**

36.0 -108.0 13.6 16 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 16 | 344.4 | 63.2 | 3.6 | 4.5 | 166 | 75.3 | -156.8 | 2.9 | 1003 | 3000 |
| 50G | 8 | 345.0 | 62.3 | 2.3 | 2.9 | 862 | 76.2 | -160.0 | 1.9 | | 1110 |
| 100G | 9 | 343.4 | 62.9 | 3.4 | 4.3 | 355 | 74.9 | -159.7 | 2.7 | | 3000 |

**Dominant Ceramics:** Last use: Gallup B/w, Chaco-McElmo B/w, McElmo B/w, indented corrugated

**Tree ring dates (2):** Construction: AD 1004v (pole fragment in floor fill), AD 1016vv (roof support post in Posthole 3)

**$^{14}C$ dates:**

**Period/Phase:** Last use: Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1498 3 7 Room 142, Floor 2, Burn 2**

36.0 -108.0 13.6 12 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 347.3 | 58.7 | 3.1 | 4.2 | 239 | 79.4 | -175.1 | 2.8 | 1004 | 3000 |
| 50G | 9 | 348.2 | 60.1 | 2.9 | 3.8 | 419 | 79.5 | -166.2 | 2.5 | | 1130 |
| 100G | 9 | 346.3 | 60.2 | 3.6 | 4.8 | 267 | 78.2 | -168.4 | 3.2 | | 3000 |

**Dominant Ceramics:** Last use: Gallup B/w, Chaco-McElmo B/w, McElmo B/w, indented corrugated

**Tree ring dates (2):** Construction: AD 1004v (pole fragment in floor fill), AD 1016vv (roof support post in Posthole 3)

**$^{14}C$ dates:**

**Period/Phase:** Last use: Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1588 2 5 Room 142, Floor 2/3, Burn 1**

36.0 -108.0 13.6 9 1060-1140

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 353.4 | 54.0 | 5.0 | 7.1 | 103 | 84.4 | 148.5 | 5.1 | 1940 | 3000 |
| 50G | 9 | 348.8 | 54.5 | 6.0 | 8.5 | 74 | 80.9 | 159.3 | 6.0 | | 2500 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, neck indented corrugated

**Tree ring dates:**

**$^{14}C$ dates:**

**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1594 6 6 Room 142, Floor 3, Heating Pit 1**

36.0 -108.0 13.6 16 1050

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 15 | 0.9 | 62.4 | 2.9 | 3.7 | 256 | 82.3 | -102.9 | 2.4 | 1530 | 3000 |
| 50G | 6 | 2.6 | 64.1 | 2.7 | 3.4 | 990 | 79.9 | -97.6 | 2.1 | | 3000 |
| 100G | 6 | 2.5 | 63.6 | 2.5 | 3.2 | 1130 | 80.7 | -96.9 | 2.0 | | 3000 |
| 150G | 5 | 2.5 | 60.5 | 3.1 | 4.1 | 803 | 84.1 | -89.3 | 2.7 | | 3000 |
| 50G | 9 | 360.0 | 62.7 | 3.6 | 4.5 | 315 | 81.9 | -108.2 | 2.9 | | 3000 |
| 100G | 9 | 0.0 | 62.2 | 3.5 | 4.5 | 319 | 82.5 | -107.8 | 2.9 | | 1050 |

**COMMENTS** Sp

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded

**Tree ring dates:**

**$^{14}$C dates (3):** Mean of SI-4011 a,b,c from Heating Pit 1, dendro-calibrated (Stuiver and Reimer 1987): AD 949 ± 71 (2SD)

**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1609 3 6 Room 142, Floor 4, Heating Pit 1**

36.0 -108.0 13.6 11 990-1070

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 358.8 | 58.2 | 2.8 | 3.8 | 352 | 86.9 | -125.7 | 2.6 | 1540 | 3000 |
| 50G | 7 | 355.1 | 55.5 | 4.6 | 6.5 | 178 | 86.1 | 163.8 | 4.5 | | 3000 |
| 50G | 10 | 355.0 | 57.7 | 4.1 | 5.5 | 166 | 85.4 | -165.9 | 3.8 | | 1020 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, indented corrugated

**Tree ring dates:**

**$^{14}$C dates (3):** Mean of SI-4011 a,b,c from Heating Pit 1, dendrocalibrated (Stuiver and Reimer 1987): AD 949 ± 71 (2SD)

**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1621 3 8 Room 142, Floor 4, Heating 2**

36.0 -108.0 13.6 8 970-1030

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 8.9 | 60.7 | 4.1 | 5.4 | 292 | 81.0 | -60.0 | 3.5 | 1550 | 3000 |
| 50G | 7 | 7.8 | 61.1 | 4.7 | 6.2 | 225 | 81.4 | -65.9 | 4.0 | | 1960 |
| 100G | 7 | 6.5 | 61.2 | 4.8 | 6.3 | 219 | 82.0 | -71.1 | 4.1 | | 3000 |

**Comments:** could have modern component

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, indented corugated

**Tree ring dates:**

**$^{14}$C dates (3):** Mean of SI-4011a,b,c from Heating Pit 1, dendrocalibrated (Stuiver and Reimer 1987): AD 949 ± 71 (2SD)

**Period/Phase:** Pueblo II/Early Bonito Phase (early AD 1000s)

**1623 2 5 Room 142, Floor 9, Heating Pit 1 (under West Room Wall)**

36.0 -108.0 13.6 15 900-1000

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 15 | 2.1 | 55.7 | 3.3 | 4.6 | 145 | 88.3 | -26.8 | 3.2 | 1560 | 970 |
| 100G | 10 | 4.5 | 54.1 | 4.8 | 6.8 | 100 | 86.1 | 1.7 | 4.8 | | 3000 |

**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, neck indented corrugated

**Tree ring dates:**

**14C dates:**
**Period/Phase:** Mid Pueblo II/Early Bonito Phase (late AD 900s)

**1596 1 6 Room 142, Floating Floor 3, Heating Pit 1**
36.0 -108.0 13.6 8 950
NRM 7 2.8 60.5 6.1 8.1 131 84.1 -87.4 5.3 1570 1020
**Comments:** SP, 100G of 4 cubes gave 6.3 degree change in decl
**Dominant Ceramics:** Red Mesa B/w, plain gray, narrow neckbanded, neck indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Mid Pueblo II/Early Bonito Phase (late AD 900s)

**1593 2 6 Room 143, Level 11 fill (Layer 2 above Floor 1), Burn 1**
36.0 -108.0 13.6 16 1290-1250
NRM 15 346.8 58.2 2.9 3.9 206 79.1 -178.9 2.7 1580 3000
50G 16 348.0 58.9 2.7 3.6 230 79.9 -173.5 2.4 1160
**Dominant Ceramics:** Gallup B/w, Toadlena B/w, Chaco-McElmo B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated; Crumbled House B/w olla
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1654 2 5 Room 143, Floor 1, Burn 3**
36.0 -108.0 13.6 14 1170-1210
NRM 14 348.8 59.8 1.8 2.4 647 80.1 -166.3 1.6 1590 3000
200G 8 348.7 58.9 1.9 2.5 1072 80.4 -172.0 1.7 1160
**Dominant Ceramics:** Almost none on floor. A multitude of cermaics in fill above (see ESO# 1593 above).
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1650 2 5 Room 143, Floor 1, Burn 1 and Heating Pit 1**
36.0 -108.0 13.6 16 1170-1210
NRM 16 344.8 59.8 1.8 2.4 533 77.2 -171.9 1.6 1600 3000
100G 7 345.2 60.4 1.8 2.3 1535 77.3 -168.6 1.5 1130
**Dominant Ceramics:** Almost none on floor. A multitude of ceramics in fill above (see ESO# 1593 above).
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1651 2 5 Room 143, Floor 1, Heating Pit 2**
36.0 -108.0 13.6 11 1170-1210
NRM 11 355.3 65.9 5.8 7.2 110 77.3 -122.3 4.4 1610 3000
150G 8 348.7 61.6 1.5 1.9 2058 79.0 -156.8 1.2 1110
**Dominant Ceramics:** Almost none on floor. A multitude of cermaics

in fill above (see ESO# 1593 above).
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1652   3   5 Room 143, Floor 1, Heating Pit 3**
```
 36.0 -108.0  13.6 11    1170-1210
NRM    10 348.0  63.3  3.4  4.3    311  77.3 -150.1  2.7 1620   3000
200G    3 347.6  60.4  1.3  1.7  12778  78.9 -165.1  1.1        3000
150G    7 346.6  61.3  1.2  1.5   3855  77.8 -162.2  1.0        1110
```
**Dominant Ceramics:** Almost none on floor. A multitude of ceramics in fill above (see ESO# 1593 above).
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1677   2   4 Room 143, Floor 2, Heating Pit 3**
```
 36.0 -108.0  13.6  7    1075-1125
NRM     7   8.2  60.4  6.0  7.9    135  81.6  -60.4  5.2 1630   3000
100G    7 356.1  60.6  4.4  5.7    258  83.6 -135.4  3.8        1100
```
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/phase:** Late Pueblo II/Classic Bonito Phase (mid/late AD 1000s)

**1682   2   4 Room 143, Floor 2, Grid 13, Floor Burn 1**
```
 36.0 -108.0  13.6 12    1170-1210
NRM    12 335.1  61.2  3.8  4.9    184  69.8 -172.3  3.2 1640   3000
100G    9 344.4  57.4  3.7  5.1    218  77.4  176.0  3.5        1130
```
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid/late AD 1000s)

**1678   2   4 Room 143, Floor 5, Burn 1**
```
 36.0 -108.0  13.6 13    1070-1130
NRM    13 335.1  68.4  3.2  3.8    344  66.4 -148.8  2.2 1650   3000
150G    9 337.1  61.7  2.4  3.1    661  71.1 -169.5  2.0        1130
```
**Dominant Ceramics:** Gallup B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (mid/late AD 1000s)

1423   2   6 Room 145, burn directly under Floor 1 in Layer 9
```
 36.0 -108.0  13.6 13    1075
NRM    12 345.1  62.5  1.8  2.3    840  76.2 -158.8  1.5 1660  3000
50G     5 349.2  62.5  1.2  1.5   6000  78.6 -151.1  1.0       1090
```
**Dominant Ceramics:** Red Mesa B/w, Newcomb B/w, San Juan Redware, plain gray, narrow neckbanded, neck indented corrugated

**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Mid Pueblo II/Early Bonito Phase (early AD 1000s) or just prior to Floor 1 construction in early AD 1100s.

**1448 3 4 Room 145, unburned West Wall foundation clay**

36.0 -108.0 13.6 15 1125-1205

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 14 | 8.8 | 62.2 | 11.4 | 14.7 | 19 | 79.9 | -68.8 | 9.4 | 1670 | 1960 |
| 50G | 15 | 18.8 | 58.5 | 13.0 | 17.6 | 11 | 74.8 | -35.8 | 11.9 | | 3000 |
| 100G | 15 | 7.2 | 46.3 | 14.2 | 22.1 | 6 | 79.2 | 35.7 | 17.2 | | 3000 |

**Dominant Ceramics:** None in direct association
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/late Early or Classic Bonito Phase (AD 1000s)

**1512 2 7 Room 146, Floor 1, Burn 1**

36.0 -108.0 13.6 15 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 15 | 345.2 | 62.8 | 3.6 | 4.6 | 172 | 76.0 | -157.4 | 2.9 | 1680 | 3000 |
| 50G | 10 | 348.4 | 62.6 | 2.4 | 3.1 | 592 | 78.1 | -152.5 | 2.0 | | 1090 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w canteen, Crumbled House B/w olla, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (3):** SI-4008a,b and SI-4010 from Firepit 1 and Heating Pit 1, dendrocalibrated (Stuiver and Reimer 1987): AD 999.5 ± 23.5 (1SD); .86 prob. distribution)(no 2SD prob. distribution).
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1590 3 5 Room 146, Floor 3, Firepit 1**

36.0 -108.0 13.6 8 1000

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 6 | 355.9 | 62.4 | 4.4 | 5.6 | 345 | 81.7 | -128.9 | 3.6 | 1690 | 1050 |
| 50G | 6 | 358.6 | 62.4 | 6.0 | 7.7 | 186 | 82.2 | -115.4 | 4.9 | | 3000 |
| 100G | 6 | 0.9 | 62.3 | 7.9 | 10.1 | 108 | 82.4 | -103.0 | 6.5 | | 3000 |

**Comments:** Sp
**Dominant Ceramics:** Red Mesa B/w, Forestdale Smudged, plain gray, narrow neckbanded
**Tree ring dates (3):**
**$^{14}$C dates:** See ESO# 1512 above
**Period/Phase:** Mid Pueblo II/Early Bonito Phase (early AD 1000s)

**1589 2 6 Room 146, Floor 3, Heating Pit 1**

36.0 -108.0 13.6 11 1000

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 1.4 | 62.4 | 3.6 | 4.7 | 260 | 82.2 | -100.3 | 3.0 | 1700 | 3000 |
| 50G | 11 | 3.3 | 61.2 | 3.3 | 4.3 | 268 | 83.2 | -87.0 | 2.8 | | 1030 |

**Comments:** Sp
**Dominant Ceramics:** Red Mesa B/w, Forestdale Smudged, plain gray, narrow neckbanded
**Tree ring dates:**
**$^{14}$C dates (3):** See ESO# 1512 above
**Period/Phase:** Mid Pueblo II/Early Bonito Phase (early AD 1000s)

**1628 2 6 Room 147, Floor 1, Firepit 1 (Burn 2, initial burn)**

36.0 -108.0 13.6 7 1170-1210

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 349.7 | 59.4 | 6.0 | 8.0 | 131 | 80.8 | 167.4 | 5.3 | 1720 | 3000 |
| 100G | 6 | 346.0 | 59.6 | 2.8 | 3.8 | 710 | 78.2 | -171.8 | 2.5 | | 1130 |

**Dominant Ceramics:** Gallup B/w, McElmo B/w, Forestdale Smudged, indented corrugated; Mancos B/w bowl, Crumbled House B/w olla
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s or later)

**1627 2 7 Room 147, Floor 1, Firepit 1 (Burn 1, later burn)**

36.0 -108.0 13.6 9 1170-1210

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 359.1 | 59.4 | 2.4 | 3.2 | 597 | 85.8 | -116.9 | 2.1 | 1710 | 3000 |
| 50G | 8 | 356.7 | 58.4 | 2.3 | 3.1 | 687 | 86.0 | -148.0 | 2.1 | | 1000 |

**Comments:** archaeomagnetic date is AD 1340 or 1080
**Dominant Ceramics:** Gallup B/w, McElmo B/w, Forestdale Smudged, indented corrugated; Mancos B/w bowl, Crumbled House B/w olla
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s or later)

**1626 2 6 Room 147, Floor 1, Heating Pit 1**

36.0 -108.0 13.6 10 1170-1210

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 345.0 | 62.7 | 1.6 | 2.0 | 1451 | 76.0 | -158.2 | 1.3 | 1730 | 3000 |
| 100G | 8 | 346.3 | 60.0 | 1.0 | 1.3 | 3912 | 78.2 | -169.4 | 0.9 | | 1130 |

**Dominant Ceramics:** Gallup B/w, McElmo B/w, Forestdale Smudged, indented corrugated; Mancos B/w bowl, Crumbled House B/w olla
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s or later)

**1625 2 6 Room 147, Floor 1, Heating Pit 2 (latest burn)**

36.0 -108.0 13.6 11 1170-1210

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 350.2 | 60.5 | 2.2 | 2.8 | 667 | 80.6 | -159.6 | 1.9 | 1740 | 3000 |
| 50G | 7 | 348.4 | 60.6 | 2.4 | 3.1 | 862 | 79.4 | -162.7 | 2.1 | | 1120 |

**Dominant Ceramics:** Gallup B/w, McElmo B/w, Forestdale Smudged, indented corrugated; Mancos B/w, Crumbled House B/w olla
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s or later)

**1675 2 6 Room 147, Floor 1, Heating Pit 2 (2nd to earliest burn)**

36.0 -108.0 13.6 6 1160-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 6 | 341.3 | 59.6 | 3.2 | 4.2 | 570 | 74.7 | -175.6 | 2.8 | 1750 | 3000 |

100G    6 341.5  58.9  2.6  3.5    810  74.9 -178.2  2.4        1130

**Dominant Ceramics:** Gallup B/w, McElmo B/w, Forestdale Smudged, indented corrugated; Mancos B/w bowl, Crumbled House B/w olla

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s or later)

**1674   1   9 Room 147, Floor 1, Heating Pit 4**

36.0 -108.0  13.6  6    1160-1200

NRM     5 353.3  55.0  2.8  4.0    750  84.5  158.8  2.8 1760   1210

**Comments:** (burned adobe seal of other Pit 4, overlapped by

**Comments:** Heating Pit 2 construction)

**Comments:** 100G of 3 cubes gave 1.6 degree change in declination

**Dominant Ceramics:** Gallup B/w, McElmo B/w, Forestdale Smudged, indented corrugated; Mancos B/w bowl, Crumbled House B/w olla

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s or later)

**1673   2  11 Room 229, South Door, Burned sill**

36.0 -108.0  13.6  8    1140-1200

NRM     6 345.5  59.0  3.2  4.3    540  84.3 -155.8  2.9 1770   3000

150G    8 350.2  62.1  3.9  5.1    290  79.5 -150.3  3.3        1090

**Dominant Ceramics:** Gallup B/w, Puerco B/w, Toadlena B/w, indented corrugated; Escavada B/w bowl

**Tree ring dates:**

**$^{14}$C dates (5):** Dic-1759 and SI-4594 from a north wall intramural beam, dendrocalibrated (Stuiver and Reimer 1987): Mean AD 1105 ± 88 (2SD). Dendrocalibrated (Stuiver and Reimer 1987) Layer 6 floor fill brush: Dic-1488 and SI-4505b = AD 1087 ± 57 (2SD; .52 prob. distribution) and AD 1187.5 ± 56.5 (2SD); .46 prob. distribution). Also Dic-1488 and SI-4505a,b = AD 1214 ± 62 (2SD); .90 prob. distribution).

**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1658   2   5 Room 229, Floor 1, Burns 1 and 2 (in SE corner)**

36.0 -108.0  13.6  9    1120-1180

NRM     8 347.1  58.8  3.4  4.6    324  79.3 -174.9  3.1 1780   3000

150G    8 343.5  59.3  3.1  4.2    392  76.4 -175.6  2.8        1130

**Dominant Ceramics:** Gallup B/w, Puerco B/w, Toadlena B/w indented corrugated; Escavada B/w bowl

**Tree ring dates:**

**$^{14}$C dates (5):** See ESO# 1673 above

**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1659   2   5 Room 229, Floor 1, Burn 3 (in center of room)**

36.0 -108.0  13.6 13    1120-1180

NRM 12 350.5 60.5 2.2 2.9 536 80.8 -158.7 1.9 1790 3000
50G 7 348.4 60.5 1.9 2.6 1294 79.5 -163.3 1.7 1120
**Dominant Ceramics:** Gallup B/w, Puerco B/w, Toadlena B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates (5):** See ESO# 1673 above
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1679 3 4 Room 236, Floor 4, Burn 1 (next to Other Pit 3)**
36.0 -108.0 13.6 11 1080-1120
NRM 10 351.7 63.7 7.6 9.6 64 78.8 -139.5 6.1 1800 3000
150G 9 350.7 62.9 5.4 6.9 137 79.1 -145.5 4.4 3000
150G 10 351.1 63.3 5.0 6.3 148 78.9 -143.0 4.0 1080
**Dominant Ceramics:** Gallup B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1681 2 4 Room 236, Floor 4, Burns 2 and 3**
36.0 -108.0 13.6 12 1070-1130
NRM 12 357.5 70.3 5.3 6.2 149 71.5 -112.6 3.6 1810 3000
200G 10 347.6 64.3 2.9 3.6 450 76.3 -146.9 2.3 1090
**Dominant Ceramics:** Gallup B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1680 2 4 Room 236, Floor 5, Heating Pit 1**
36.0 -108.0 13.6 9 1070-1130
NRM 9 330.2 63.5 7.9 9.9 68 65.8 -166.7 6.3 1820 3000
150G 8 349.2 62.9 6.4 8.1 116 78.2 -149.1 5.2 1090
**Dominant Ceramics:** Gallup B/w, plain gray, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1581 1 11 Plaza Feature 1, Room 3, Floor 1, Burn 1 (next to FP 1)**
36.0 -108.0 13.6 12 1120
NRM 10 349.3 61.9 1.2 1.5 2375 79.1 -153.6 1.0 1830 1110
**Comments:** next to Firepit 1
**Comments:** 100G of 3 cubes gave 2.4 degree change in declination
**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated
**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4): AD 1130rB - 1132rB. All room firepit charcoal.
**$^{14}$C dates (3):** Dic-1449 and SI-4504a,b from Layer 4 floor fill brush, dendrocalibrated mean (Stuiver and Reimer 1987): AD 1242 ± 37 (2SD); .96 prob. distribution). Unacceptable date.

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

1582 2 8 Plaza Feature 1, Room 3, Floor 1, Burn 2 (next to FP 2)

36.0 -108.0 13.6 9 1130

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 346.1 | 62.2 | 2.9 | 3.7 | 476 | 76.9 | -158.4 | 2.4 | 1840 | 1110 |
| 50G | 9 | 352.0 | 58.5 | 5.0 | 6.7 | 130 | 82.9 | -168.4 | 4.5 | | 3000 |

**Comments:** next to Firepit 2

**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated

**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4): AD 1130rB - 1132rB. All room firepit charcoal.

**$^{14}$C dates (3):** See ESO# 1581 above

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1501 3 8 Plaza Feature 1, Room 3, Floor 1, Heating Pit 1,**

36.0 -108.0 13.6 10 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 345.6 | 58.8 | 4.3 | 5.8 | 155 | 78.1 | -176.6 | 3.9 | 1850 | 3000 |
| 50G | 8 | 349.5 | 60.5 | 2.4 | 3.2 | 700 | 80.2 | -160.8 | 2.1 | | 1110 |
| 100G | 8 | 350.2 | 60.9 | 2.9 | 3.7 | 514 | 80.6 | -157.0 | 2.4 | | 3000 |

**Comments:** (overlies Firepit 1)

**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated

**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4): AD 1130rB - 1132rB. All room firepit charcoal.

**$^{14}$C dates (3):** See ESO# 1581 above

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1508 4 8 Plaza Feature 1, Room 3, Floor 1, Firepit 1**

36.0 -108.0 13.6 10 1170-1220

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 351.6 | 56.1 | 5.1 | 7.1 | 98 | 83.2 | 170.1 | 4.9 | 1860 | 3000 |
| 50G | 8 | 346.9 | 55.5 | 4.9 | 6.9 | 132 | 79.4 | 166.1 | 4.8 | | 3000 |
| 100G | 8 | 346.7 | 56.6 | 2.8 | 3.9 | 428 | 79.2 | 172.1 | 2.7 | | 3000 |
| 150G | 8 | 345.9 | 57.7 | 2.5 | 3.4 | 560 | 78.6 | 178.0 | 2.3 | | 1130 |

**Comments:** (last replastering)

**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black-Mesa/Sosi B/w, McElmo B/w, indented corrugated

**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4): AD 1130rB - 1132rB. All room firepit charcoal.

**$^{14}$C dates (3):** See ESO# 1581 above

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1509 3 8 Plaza Feature 1, Room 3, Floor 1, Firepit 1**

36.0 -108.0 13.6 9 1195

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 347.4 | 57.4 | 2.2 | 3.1 | 609 | 79.8 | 177.3 | 2.1 | 1870 | 3000 |
| 100G | 7 | 344.8 | 58.0 | 2.0 | 2.7 | 1066 | 77.7 | 178.9 | 1.8 | | 3000 |
| 150G | 7 | 344.9 | 58.3 | 1.7 | 2.3 | 1515 | 77.7 | -179.6 | 1.6 | | 1140 |

**Comments:** (earlier plaster)
**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated
**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4): AD 1130rB - 1132rB. All room firepit charcoal.
**$^{14}$C dates (3):** See ESO# 1581 above
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1507 3 8 Plaza Feature 1, Room 3, Floor 1, Firepit 2**

36.0 -108.0 13.6 9 1170-1220

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 351.3 | 61.0 | 2.6 | 3.4 | 537 | 80.9 | -153.4 | 2.2 | 1880 | 3000 |
| 50G | 6 | 349.3 | 60.6 | 1.9 | 2.5 | 1718 | 80.0 | -160.7 | 1.6 | | 3000 |
| 100G | 6 | 349.5 | 61.1 | 1.7 | 2.3 | 2036 | 79.8 | -157.8 | 1.5 | | 1110 |

**Comments:** (last replastering)
**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated
**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4): AD 1130rB - 1132rB. All room firepit charcoal.
**$^{14}$C dates (3):** See ESO# 1581 above
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1511 5 8 Plaza Feature 1, Room 3, Floor 1, Firepit 3**

36.0 -108.0 13.6 11 1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 345.1 | 65.2 | 2.6 | 3.2 | 549 | 74.2 | -147.8 | 2.0 | 1890 | 3000 |
| 50G | 8 | 348.5 | 63.4 | 2.3 | 2.9 | 932 | 77.5 | -148.5 | 1.8 | | 3000 |
| 100G | 8 | 345.7 | 63.6 | 2.2 | 2.8 | 970 | 75.8 | -153.2 | 1.8 | | 3000 |
| 150G | 8 | 347.2 | 62.9 | 2.0 | 2.5 | 1188 | 77.2 | -153.6 | 1.6 | | 1100 |
| 200G | 8 | 347.6 | 64.3 | 3.1 | 3.9 | 515 | 76.2 | -146.8 | 2.4 | | 3000 |

**Comments:** (last remodeling, last replastering)
**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated
**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4): AD 1130rB - 1132rB. All room firepit charcoal.
**$^{14}$C dates (3):** See ESO# 1581 above
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1510 4 8 Plaza Feature 1, Room 3, Floor 1, Firepit 3**

36.0 -108.0 13.6 13 1190-1210

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 13 | 346.3 | 60.8 | 4.9 | 6.3 | 101 | 77.8 | -165.0 | 4.2 | 1900 | 3000 |
| 50G | 12 | 341.4 | 60.5 | 2.6 | 3.4 | 284 | 74.5 | -171.7 | 2.2 | | 3000 |
| 100G | 12 | 341.1 | 61.2 | 2.7 | 3.6 | 352 | 74.1 | -168.8 | 2.3 | | 3000 |
| 150G | 12 | 340.8 | 62.0 | 2.3 | 3.0 | 520 | 73.6 | -165.8 | 1.9 | | 1120 |

**Comments:** (early use of firepit floor)
**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated

**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4); AD 1130rB - 1132rB. All room firepit charcoal.
**$^{14}$C dates (3):** See ESO# 1581 above
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1614 2 8 Plaza Feature 1, Room 3, Floor 1, Firepit 3,**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 10 | | 1110-1150 | | | | | | |
| NRM | 10 | 351.2 | 61.3 | 3.2 | 4.2 | 311 | 80.7 | -152.1 | 2.7 | 1910 | 3000 |
| 150G | 7 | 346.2 | 61.1 | 0.7 | 1.0 | 9295 | 77.7 | -163.8 | 0.6 | | 1120 |

**Comments:** (last remodeling)
**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated
**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4): AD 1130rB - 1132rB. All room firepit charcoal.
**$^{14}$C dates (3):** See ESO# 1581 above
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1615 3 8 Plaza Feature 1, Room 3, Floor 1, Firepit 3**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 10 | | 1000-1140 | | | | | | |
| NRM | 9 | 346.5 | 60.5 | 1.6 | 2.1 | 1449 | 78.2 | -166.4 | 1.4 | 1920 | 3000 |
| 100G | 8 | 346.1 | 61.0 | 1.7 | 2.2 | 1521 | 77.6 | -164.4 | 1.4 | | 3000 |
| 150G | 8 | 346.3 | 60.4 | 1.6 | 2.2 | 1530 | 78.0 | -167.0 | 1.4 | | 1130 |

**Comments:** (initial construction)
**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, McElmo B/w, indented corrugated
**Tree ring dates (46):** AD 803vv - 1132rB. Cutting dates (4): AD 1130rB - 1132rB. All room firepit charcoal.
**$^{14}$C dates (3):** See ESO# 1581 above
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1586 1 8 Plaza Feature 1, Room 4, Floor 1, fill above Surface 1, (Layer 3), Heating Pit 2**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 12 | | 1185-1215 | | | | | | |
| NRM | 10 | 358.3 | 62.4 | 5.3 | 6.8 | 123 | 82.2 | -117.2 | 4.4 | 1930 | 1050 |

**Comments:** fill above Surface 1, (Layer 3), Heating Pit 2
**Comments:** Sp, 100G of 4 cubes gave 3.7 degree change in decl
**Dominant Ceramics:** Red Mesa B/w (intrusive), Gallup B/w, Puerco B/w, Chaco-McElmo B/w, Black Mesa/Sosi B/w, McElmo B/w, White Mountain Redwares, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1591 2 6 Plaza Feature 1, Room 4, Surface 1, Burn 1**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 17 | | 1175-1235 | | | | | | |
| NRM | 14 | 357.2 | 56.8 | 2.9 | 4.0 | 212 | 87.4 | -165.5 | 2.7 | 1006 | 3000 |
| 100G | 10 | 351.7 | 61.7 | 3.9 | 5.1 | 216 | 80.6 | -148.4 | 3.3 | | 1160 |

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chuska B/w, Toadlena B/w, Chaco-McElmo B/w, White Mt. Redware, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Classic Bonito Phase (early AD 1100s)

**1587 3 7 Plaza Feature 1, Room 4, Surface 2, Heating Pit 1**
36.0 -108.0 13.6 7 1175-1225

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 6 | 353.3 | 64.2 | 4.3 | 5.4 | 399 | 78.9 | -133.0 | 3.4 | 1950 | 1080 |
| 50G | 7 | 354.6 | 62.4 | 6.5 | 8.3 | 129 | 81.2 | -134.3 | 5.3 | | 3000 |
| 100G | 7 | 354.6 | 61.5 | 6.2 | 8.1 | 133 | 82.2 | -138.3 | 5.2 | | 3000 |

**Comments:** Incorrectly listed as from Surface 1 in Windes 1987
**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chuska B/w, Toadlena B/w, Chaco-McElmo B/w, White Mt. Redware, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Classic Bonito Phase (early AD 1100s)

**1602 5 5 Kiva 10, Test Trench 1, Surface 1, Burn 1 (Heating Pit 1)**
36.0 -108.0 13.6 13 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 331.6 | 51.9 | 7.0 | 10.2 | 66 | 66.4 | 166.8 | 7.5 | 1960 | 3000 |
| 50G | 7 | 332.2 | 50.8 | 7.4 | 11.0 | 56 | 66.5 | 159.1 | 8.1 | | 2500 |
| 100G | 7 | 331.9 | 50.7 | 8.0 | 11.8 | 48 | 66.3 | 159.0 | 8.8 | | 3000 |
| 150G | 8 | 326.5 | 53.9 | 12.3 | 17.5 | 21 | 62.7 | -191.2 | 12.5 | | 3000 |
| 200G | 8 | 326.8 | 54.7 | 13.4 | 19.0 | 18 | 63.1 | -189.8 | 13.5 | | 3000 |

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, McElmo B/w, Nava B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1500 4 6 Kiva 15, Floor 1, Firepit 1 (Firepit 2 remodeled)**
36.0 -108.0 13.6 14 1140-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 14 | 347.3 | 63.1 | 3.8 | 4.9 | 167 | 77.1 | -152.3 | 3.1 | 1970 | 1090 |
| 50G | 8 | 349.5 | 60.9 | 4.7 | 6.2 | 189 | 79.9 | -158.6 | 4.0 | | 3000 |
| 100G | 8 | 348.5 | 60.9 | 5.5 | 7.2 | 140 | 79.3 | -160.6 | 4.7 | | 3000 |
| 150G | 8 | 348.8 | 61.7 | 5.8 | 7.5 | 130 | 78.9 | -155.9 | 4.9 | | 3000 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, San Juan McElmo B/w bowl, Black Mesa B/w bowl, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/early Pueblo III. Classic or Late Bonito Phase (AD 1080-1120)

**1502 3 5 Kiva 15, Floor 1, Firepit 2 (initial use)**
36.0 -108.0 13.6 13 1145-1205

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 346.5 | 61.5 | 4.1 | 5.3 | 163 | 77.7 | -161.3 | 3.4 | 1980 | 3000 |
| 50G | 12 | 344.5 | 60.4 | 3.1 | 4.1 | 257 | 76.8 | -169.3 | 2.7 | | 1130 |
| 100G | 8 | 353.1 | 64.5 | 9.0 | 11.2 | 64 | 78.4 | -132.4 | 7.0 | | 3000 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, San Juan McElmo B/w bowl, Black Mesa B/w bowl, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1583 2 5 Kiva 15, Floor 1, Firepit 2 (use of FP 1 and FP 2)**
36.0 -108.0 13.6 10 1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 348.0 | 57.5 | 2.1 | 2.9 | 668 | 80.2 | 178.0 | 2.0 | 1990 | 3000 |
| 50G | 10 | 348.3 | 56.9 | 2.3 | 3.2 | 489 | 80.5 | 174.3 | 2.2 | | 1160 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, San Juan McElmo B/w bowl, Black Mesa B/w bowl, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**1490 3 5 East Ruin, Kiva 14 (Room 6), Floor 1, Firepit 1 (latest)**
36.0 -108.0 13.6 12 1175

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 330.5 | 59.5 | 2.9 | 3.8 | 292 | 66.5 | -177.3 | 2.5 | 2000 | 3000 |
| 50G | 9 | 336.7 | 62.3 | 2.1 | 2.7 | 854 | 70.6 | -167.6 | 1.8 | | 1120 |
| 100G | 9 | 335.5 | 62.3 | 2.5 | 3.3 | 603 | 69.8 | -168.5 | 2.1 | | 3000 |

**Comments:** (Firepit 1 replastered)
**Dominant Ceramics:** Escavada B/w, Gallup B/w, Chaco B/w, Chaco-McElmo B/w, Mancos B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1499 3 6 East Ruin, Kiva 14 (Room 6), Floor 1, Firepit 2 (under FP 1)**
36.0 -108.0 13.6 12 1150

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 343.9 | 60.0 | 1.8 | 2.4 | 745 | 76.5 | -171.8 | 1.6 | 2010 | 3000 |
| 50G | 8 | 344.5 | 60.1 | 2.0 | 2.6 | 1043 | 76.9 | -170.8 | 1.7 | | 3000 |
| 100G | 7 | 343.3 | 59.9 | 1.3 | 1.8 | 2615 | 76.1 | -172.8 | 1.2 | | 1130 |

**Comments:** (Initial construction of Firepit 1)
**Dominant Ceramics:** Escavada B/w, Gallup B/w, Chaco B/w, Chaco-McElmo B/w, Mancos B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1491 8 9 Plaza 1, Grid 75, Floor 1, Firepit 3 (on top of fill of Kiva 14—not the Kiva 14 of East Ruin)**
36.0 -108.0 13.6 18 1250-1450

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 18 | 347.7 | 58.3 | 4.4 | 6.0 | 73 | 79.8 | -177.1 | 4.1 | 2020 | 3000 |
| 50G | 11 | 354.4 | 61.4 | 4.9 | 6.3 | 124 | 82.2 | -139.8 | 4.1 | | 3000 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 100G | 11 | 355.6 | 62.3 | 5.1 | 6.5 | 121 | 81.7 | -130.3 | 4.2 | | 3000 |
| 150G | 11 | 357.3 | 62.2 | 5.6 | 7.2 | 99 | 82.2 | -122.6 | 4.6 | | 3000 |
| NRM | 8 | 350.5 | 58.5 | 6.0 | 8.2 | 102 | 81.8 | -172.3 | 5.5 | | 3000 |
| 50G | 9 | 350.7 | 61.2 | 3.9 | 5.1 | 242 | 80.4 | -153.9 | 3.3 | | 3000 |
| 100G | 9 | 351.0 | 62.4 | 3.8 | 4.8 | 280 | 79.6 | -146.9 | 3.1 | | 3000 |
| 150G | 9 | 351.6 | 61.9 | 3.4 | 4.4 | 333 | 80.3 | -147.5 | 2.8 | | 1160 |

**Comments:** on top of fill of Kiva 14--not the Kiva 14 of East Ruin
**Comments:** second group of data (NRM-150G) are selected
**Comments:** sets, could be 1070
**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Chuska B/w, Black Mesa/Sosi B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo III or later/Mesa Verde Phase? (post early AD 1100s)

**1457 3 5 Plaza 1, Grid 279 (SW Quad), Floor 1, Burn 1**
36.0 -108.0 13.6 17 1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 17 | 359.2 | 61.4 | 5.2 | 6.7 | 68 | 83.5 | -113.1 | 4.4 | 2030 | 3000 |
| 50G | 12 | 352.5 | 59.3 | 3.4 | 4.5 | 210 | 82.8 | -161.0 | 3.0 | | 3000 |
| 100G | 16 | 350.1 | 59.2 | 2.3 | 3.1 | 318 | 81.2 | -167.8 | 2.1 | | 1170 |

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Black Mesa/Sosi B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1616 1 9 Plaza 2, Grid 201, Layer 2, Other Pit 2 (firepit)**
36.0 -108.0 13.6 12 1170-1230

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 356.5 | 60.8 | 7.2 | 9.4 | 51 | 83.6 | -131.7 | 6.2 | 2040 | 1040 |

**Comments:** Sp
**Comments:** 100G of 4 cubes gave 0.7 degree change in declination
**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Chuska B/w, Toadlena B/w, McElmo B/w, White Mt. Redware, indented corrugated
**Tree ring dates (12):** AD 1018vv - AD 1056v (firepit fuel taken from abandoned house roofs)
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1505 3 6 Plaza 2, Grid 201, Surface 1, Other Pit 2 (bottom of firepit)**
36.0 -108.0 13.6 15 1150-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 15 | 353.9 | 61.0 | 1.8 | 2.3 | 649 | 82.3 | -144.2 | 1.5 | 2050 | 3000 |
| 50G | 8 | 349.2 | 60.4 | 1.9 | 2.5 | 1154 | 80.0 | -162.6 | 1.6 | | 3000 |
| 100G | 8 | 348.8 | 60.1 | 1.6 | 2.2 | 1488 | 79.9 | -164.8 | 1.4 | | 1120 |

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Chuska B/w, Toadlena B/w, McElmo B/w, White Mt. Redware, indented corrugated

**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1653 3 5 Plaza 2, Floor 5, Heating Pit 1 (SW Grid 201)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | 1130-1170 | | | | | | | |
| NRM | 7 | 348.4 | 65.2 | 8.0 | 9.8 | 100 | 75.8 | -141.7 | 6.1 | 2060 | 3000 |
| 50G | 7 | 348.1 | 64.3 | 7.1 | 8.8 | 121 | 76.5 | -145.7 | 5.5 | | 1090 |
| 100G | 8 | 351.5 | 60.9 | 8.5 | 11.1 | 59 | 81.1 | -153.3 | 7.2 | | 3000 |

**Dominant Ceramics:** Gallup B/w, Chaco B/w, Chaco-McElmo B/w, Tsegi Orangeware, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1655 2 5 Plaza 2, Floor 5C, Heating Pit 1 (NE Grid 201)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 10 | 1130-1170 | | | | | | | |
| NRM | 10 | 337.4 | 66.2 | 10.5 | 12.8 | 39 | 69.2 | -153.8 | 7.8 | 2070 | 3000 |
| 50G | 9 | 338.5 | 60.0 | 5.5 | 7.7 | 117 | 72.5 | -175.1 | 4.8 | | 1130 |

**Dominant Ceramics:** Gallup B/w, Chaco B/w, Chaco-McElmo B/w, Tesgi Orangeware, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1657 2 5 Plaza 2, Floor 8, Heating Pit 1 (SW Grid 201**)

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 15 | 1050-1150 | | | | | | | |
| NRM | 15 | 346.6 | 58.5 | 4.4 | 5.9 | 93 | 79.9 | -177.2 | 4.0 | 2080 | 1160 |
| 200G | 11 | 340.2 | 54.2 | 4.2 | 6.0 | 116 | 73.8 | 163.3 | 4.3 | | 3000 |

**Dominant Ceramics:** Gallup B/w, Chaco B/w, Chuska B/w, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II\Classic Bonito Phase (AD 1050-1100)

**1671 3 5 Plaza 2, Floor 9, Heating Pit 1 (NW Grid 201)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 13 | 1050-1150 | | | | | | | |
| NRM | 12 | 1.1 | 62.7 | 5.8 | 7.4 | 85 | 81.8 | -102.2 | 4.7 | 2090 | 3000 |
| 50G | 8 | 348.7 | 61.2 | 9.4 | 12.3 | 49 | 79.3 | -159.0 | 8.0 | | 1110 |
| 100G | 8 | 349.3 | 58.0 | 9.0 | 12.2 | 45 | 81.1 | -177.1 | 8.3 | | 3000 |

**Dominant Ceramics:** Gallup B/w, Puerco B/w, Forestdale Smudged, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (AD 1050-1100)

**1737 2 4 Plaza 2, Test Trench 1, Floor 14, Heating Pit 1 (Grid 201)**

36.0 -108.0 13.6 8 1100-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 11 | 354.9 | 58.3 | 8.4 | 11.3 | 37 | 84.9 | -160.1 | 7.6 | 2100 | 3000 |
| 150G | 10 | 347.0 | 56.8 | 3.4 | 4.7 | 219 | 79.5 | 173.3 | 3.3 | | 1150 |

**Dominant Ceramics:** None on floor. Gallup B/w above and below
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Late Pueblo II/Classic Bonito Phase (AD 1050-1100)

**THE SOUTH GAP COMMUNITY AREA, CHACO CANYON**

***PUEBLO BONITO (29SJ 387, Bc 253, LA 225, NA 2306), South Gap Community area***

**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Judd 1964; Lekson 1984; Windes and Ford 1992, 1996, Windes 2003

**1827 2 4 Room 85, North Wall, 1st story burned wall plaster**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 350.1 | 61.5 | 1.5 | 2.0 | 1848 | 79.9 | -154.0 | 1.3 | 2110 | 3000 |
| 150G | 8 | 350.6 | 61.2 | 1.4 | 1.8 | 2176 | 80.4 | -154.0 | 1.2 | | 1100 |

**Dominant Ceramics:** Unknown. Suspect Gallup B/w and Chaco-McElmo B/w
**Tree ring dates:** Dates from construction, not subsequent fire.
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III?/Late Bonito Phase?

**1826 4 4 Room 108/109, SE Wall, 1st story burned wall plaster**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 345.4 | 60.7 | 1.4 | 1.8 | 2127 | 77.3 | -166.7 | 1.2 | 2120 | 3000 |
| 50G | 8 | 344.3 | 60.9 | 1.4 | 1.8 | 2272 | 76.4 | -167.3 | 1.2 | | 1130 |
| 200G | 8 | 342.6 | 61.9 | 1.5 | 1.9 | 2062 | 74.9 | -164.8 | 1.2 | | 3000 |
| 400G | 8 | 341.0 | 62.4 | 1.8 | 2.3 | 1362 | 73.6 | -164.3 | 1.5 | | 3000 |

**Dominant Ceramics:** Unknown
**Tree ring dates:** Dates from construction, not subsequent fire.
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III?/Late Bonito Phase? (early AD 1100s?)

**1684 2 4 Room 215, Floor 5, Firepit 2 (cut by south room wall)**
36.0 -108.0 13.6 8 1150-1190

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 339.2 | 57.8 | 2.5 | 3.4 | 690 | 73.3 | 176.8 | 2.3 | 2150 | 3000 |
| 200G | 8 | 345.8 | 57.2 | 3.6 | 4.9 | 275 | 78.5 | 175.5 | 3.3 | | 1140 |

**Dominant Ceramics:** Unknown
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1688 3 4 Room 220, Floor 3, Firepit 1**
36.0 -108.0 13.6 10 1125-1175

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 349.8 | 65.1 | 1.6 | 2.0 | 1808 | 76.5 | -139.1 | 1.2 | 2130 | 3000 |
| 200G | 9 | 346.1 | 62.9 | 2.0 | 2.5 | 1021 | 76.6 | -155.6 | 1.6 | | 3000 |

```
200G    7 346.2  61.8  1.2  1.5   3724  77.2 -160.5  1.0        1110
```
**Dominant Ceramics:** Unknown
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1683 2 6 Room 221, Floor 1, Firepit 4**

```
 36.0 -108.0  13.6  9    1170-1210
NRM     8 344.8  67.8  6.1  7.3    160  71.6 -139.8  4.4 2140   3000
150G    8 342.6  61.7  5.8  7.5    130  75.0 -165.6  4.9        1120
```
**Dominant Ceramics:**
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1828 2 5 Room 298, West Wall, 2nd story burned wall plaster**

```
 36.0 -108.0  13.6  8
NRM     8 356.8  60.7  0.6  0.8  10017  83.8 -130.6  0.6 2160   3000
150G    8 355.8  60.5  0.5  0.7  16452  83.6 -137.7  0.4        1030
```
**Dominant Ceramics:** Red Mesa B/w, Gallup B/w, Chaco-McElmo B/w, neck banded, indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III?/Late Bonito Phase? (early AD 1100s?)

**1731 2 4 Northeast Foundation Complex, Firepit 1 (large oven in post-occupational fill)**

```
 36.0 -108.0  13.6  8    1170-1230
NRM     8 310.7  48.4 15.8 24.1     10  48.5  167.4 18.4 2180   3000
50G     8 313.8  49.5 16.8 25.3      9  57.3  167.2 19.0        2500
```
**Dominant Ceramics:** Unknown
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo III/Mesa Verde Phase? (AD 1200s?)

**1735 2 4 Northeast Foundation Complex, Firepit 2 (large oven in post-occupational fill)**

```
 36.0 -108.0  13.6  8    1170-1230
NRM     7 212.9  73.9 17.6 19.5     32   9.7 -124.0 10.8 2170   3000
150G    7 236.0  71.0 18.2 20.9     26  13.1 -136.9 12.0        2500
```
**Dominant Ceramics:** Unknown
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo III/Mesa Verde Phase? (AD 1200s)

**18 4 7 Kiva L, Floor 1 (uppermost), central firepit**

```
 36.0 -107.9  13.6  9    1061-1047   TR
NRM     9 353.8  53.8  4.7  6.5    129  85.0  168.4  4.6 2190   3000
150G    7 356.7  55.5  3.8  5.3    262  87.4  163.3  3.7         990
```

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 150G | 9 | 346.5 | 61.6 | 3.5 | 4.6 | 305 | 77.6 | -160.7 | 3.0 | | 3000 |
| 150G | 7 | 352.2 | 61.3 | 5.2 | 6.7 | 193 | 81.7 | -145.2 | 4.4 | | 3000 |

**Comments:** AF 1 and 2 done with single axes system
**Comments:** AF 3 has 2 cubes deleted
**Dominant Ceramics:** Unknown
**Tree ring dates (4):** AD 1011c, 1047c, 1061r, 1083+(Tentative) from roof and pilaster logs
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Classic Bonito Phase (AD 1050-1100)

***PUEBLO DEL ARROYO (29SJ 1947, LA 965), South Gap Community area***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Judd 1959; Lekson 1984; Windes, Ford, and Ford 1994

**1474 5 4 Room 3, Floor 1, Firepit in NW corner**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 351.3 | 63.8 | 2.7 | 3.3 | 695 | 78.5 | -104.2 | 2.1 | 2200 | 3000 |
| 50G | 8 | 354.9 | 64.8 | 2.1 | 2.6 | 1223 | 78.6 | -126.0 | 1.6 | | 3000 |
| 100G | 8 | 353.4 | 63.8 | 2.7 | 3.4 | 683 | 79.3 | -133.6 | 2.1 | | 1090 |
| 150G | 8 | 353.0 | 63.9 | 2.6 | 3.3 | 718 | 79.1 | -134.7 | 2.1 | | 3000 |
| 200G | 8 | 352.1 | 64.7 | 4.1 | 5.1 | 307 | 77.8 | -134.6 | 3.2 | | 3000 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, indented corrugated
**Tree ring dates (1):** AD 1109r from roof primary in Room 1.
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (post AD 1109)

***KIN KLETSO (29SJ 393, Bc 248, LA 2464), South Gap Community area***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Vivian and Mathews 1965

**1422 2 6 Kiva D, lower floor firepit**
36.0 -108.0 13.6 10 1178 TR

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 347.3 | 62.3 | 2.9 | 3.7 | 412 | 77.7 | -156.3 | 2.4 | 2210 | 1110 |
| 100G | 10 | 342.7 | 62.5 | 4.5 | 5.8 | 173 | 74.7 | -162.2 | 3.7 | | 3000 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, indented corrugated
**Tree ring dates (21):** AD 1047vv - AD 1178+v. Dates in AD 1120s thought to date primary construction of site (Lekson 1984)
**$^{14}$C dates (1):** AMS (CAMS-8188) from site corn kernel: dendro-calibrated (Stuiver & Reimer 1987): AD 1045.5 ± 150.5 (2SD).
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1120-1140)

***Bc 53 (29SJ 396, LA 40396), Casa Rinconada area, South Gap Community***
**Quad, County, and State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Roberts 1940, University of New Mexico Field Schools Notes 1940-41

**1665 2 6 Kiva A, uppermost floor, Firepit 1**
36.0 -108.0 13.6 12 1140-1200

NRM 11 354.1 61.1 3.6 4.7 227 82.3 -143.1 3.0 2220 3000
50G 10 352.3 60.2 4.2 5.6 175 82.1 -155.5 3.7 1180
**Dominant Ceramics:** Unknown association with room fills of
Escavada/Puerco B/w, Gallup B/w, McElmo/Chaco-McElmo B/w,
Forestdale Smudged, Wingate B/r, indented corrugated
**Tree ring dates (1):** Unknown site provenience: AD 1117r (Tentative)
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1666 2 8 Kiva A, uppermost floor, Firepit 2**
36.0 -108.0 13.6 11 1140-1200
NRM 11 356.7 63.9 3.9 4.8 226 80.1 -121.5 3.0 2230 1070
100G 8 353.6 63.2 5.2 6.5 179 80.1 -135.4 4.2 3000
**Comments:** Sp, U, uncertain curve assignment
**Dominant Ceramics:** Unknown association with room fills of
Escavada/Puerco B/w, Gallup B/w, McElmo/Chaco-McElmo B/w,
Forestdale Smudged, Wingate B/r, indented corrugated
**Tree ring dates (1):** Unknown site provenience: AD 1117r (Tentative)
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1629 2 8 Kiva C, uppermost floor, firepit**
36.0 -108.0 13.6 11 1120-1180
NRM 10 355.4 62.2 1.7 2.2 1198 81.8 -131.8 1.4 2240 3000
50G 7 355.5 62.1 1.3 1.7 2921 81.9 -131.8 1.1 1080
**Comments:** Sp,
**Dominant Ceramics:** Unknown association with room fills of
Escavada/Puerco B/w, Gallup B/w, McElmo/Chaco-McElmo B/w,
Forestdale Smudged, Wingate B/r, indented corrugated
**Tree ring dates (1):** Unknown site provenience: AD 1117r (Tentative)
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1631 2 9 Kiva D, uppermost floor, Firepit 1**
36.0 -108.0 13.6 11 1130-1170
NRM 11 353.0 66.5 2.3 2.7 754 76.0 -127.5 1.7 2250 3000
150G 7 352.2 66.0 2.3 2.8 1250 76.4 -130.4 1.7 1090
**Comments:** Sp
**Dominant Ceramics:** Unknown association with room fills of
Escavada/Puerco B/w, Gallup B/w, McElmo/Chaco-McElmo B/w,
Forestdale Smudged, Wingate B/r, indented corrugated
**Tree ring dates (4):** Unknown site provenience: AD 1117r (Tentative)
Dates of 1095+=v, 1100+vv, and 1101=v from lintels in kiva D
ventillator.
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1632 2 9 Kiva D, uppermost floor, Firepit 2**
36.0 -108.0 13.6 9 1130-1170

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 355.9 | 65.7 | 4.5 | 5.5 | 234 | 77.8 | -121.0 | 3.4 | 2260 | 3000 |
| 50G | 8 | 350.2 | 63.8 | 2.6 | 3.3 | 721 | 78.0 | -143.3 | 2.1 | | 1090 |

**Dominant Ceramics:** Unknown association with room fills of Escavada/Puerco B/w, Gallup B/w, McElmo/Chaco-McElmo B/w, Forestdale Smudged, Wingate B/r, indented corrugated

**Tree ring dates (1):** Unknown site provenience: AD 1117r (Tentative) Dates of 1095+=v, 1100+vv, and 1101=v from lintels in kiva D ventillator.

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**Bc 57 (29SJ 397, LA 40397), Casa Rinconada area, South Gap Community**

**Quad, County, and State:** Pueblo Bonito, NM, San Juan County, NM

**Reference:** University of New Mexico Field Notes 1941-1942

**1670 4 6 Kiva A, uppermost floor, firepit**

36.0 -108.0 13.6 10 1400-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 352.5 | 63.9 | 4.2 | 5.3 | 208 | 78.8 | -136.3 | 3.4 | 2270 | 3000 |
| 50G | 5 | 343.8 | 65.5 | 4.3 | 5.3 | 548 | 73.3 | -148.9 | 3.3 | | 3000 |
| 100G | 5 | 344.1 | 65.3 | 4.6 | 5.7 | 476 | 73.6 | -149.0 | 3.5 | | 3000 |
| 50G | 10 | 347.1 | 64.8 | 2.8 | 3.4 | 512 | 75.6 | -146.1 | 2.1 | | 1090 |

**Dominant Ceramics:** Unknown

**Tree ring dates:** New: Tree-ring (2): Dates of 1057vv outside wall of Kiva C and 1057vv from an unknown provenience. Fifty-three others failed to date.

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1669 5 6 Kiva B, uppermost floor, Firepit 4**

36.0 -108.0 13.6 14 1140-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 100G | 10 | 346.3 | 63.3 | 3.8 | 4.9 | 247 | 76.4 | -153.3 | 3.1 | 2280 | 3000 |
| NRM | 14 | 345.2 | 67.5 | 3.1 | 3.7 | 319 | 72.1 | -140.0 | 2.2 | | 3000 |
| 50G | 6 | 346.4 | 63.0 | 4.8 | 6.1 | 301 | 76.6 | -154.7 | 3.9 | | 3000 |
| 100G | 8 | 347.6 | 63.6 | 3.4 | 4.3 | 423 | 76.9 | -149.9 | 2.7 | | 1100 |
| 150G | 6 | 344.2 | 63.4 | 4.7 | 6.0 | 311 | 75.1 | -156.6 | 3.8 | | 3000 |

**Dominant Ceramics:** Unknown

**Tree ring dates:** New: Tree-ring (2): Dates of 1057vv outside wall of Kiva C and 1057vv from an unknown provenience. Fifty-three others failed to date.

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1667 2 7 Kiva C, upper floor, Firepit 1**

36.0 -108.0 13.6 9 1140-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 6.1 | 62.5 | 6.1 | 7.8 | 107 | 80.9 | -78.7 | 5.0 | 2290 | 3000 |
| 200G | 9 | 355.7 | 62.1 | 5.0 | 6.5 | 153 | 81.9 | -130.7 | 4.2 | | 1060 |

**Comments:** Sp

**Dominant Ceramics:** Unknown

**Tree ring dates:** New: Tree-ring (2): Dates of 1057vv outside wall of

Kiva C and 1057vv from an unknown provenience. Fifty-three others failed to date.

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1668 4 7 Kiva C, upper floor, Firepit 4**

```
 36.0 -108.0  13.6 10    1140-1200
NRM    10   3.9  64.7  8.0 10.0     61  79.0  -93.9  6.2 2300   3000
50G     9 354.4  63.5  7.4  9.3     77  80.0 -131.3  5.9        1070
100G    9 360.0  62.8  6.8  8.7     88  81.7 -108.2  5.5        3000
150G    9   0.7  62.0  6.9  8.9     81  82.7 -104.2  5.7        3000
```

**Comments:** Sp

**Dominant Ceramics:** Unknown

**Tree ring dates:** New: Tree-ring (2): Dates of 1057vv outside wall of Kiva C and 1057vv from an unknown provenience. Fifty-three others failed to date.

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

***Bc 58 (29SJ 398, LA 40398), Casa Rinconada area, South Gap Community***

**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM

**Reference:** University of New Mexico Field School Notes 1947, 1950

**1630 2 5 Kiva A, firepit**

```
 36.0 -108.0  13.6 10    1110-1190
NRM    10 349.0  58.5  1.8  2.4    879  80.7 -174.6  1.6 2310   3000
150G    7 350.0  59.3  1.6  2.1   1815  81.1 -167.8  1.4        1120
```

**Dominant Ceramics:** Gallup B/w, McElmo/Chaco-McElmo B/w, White Mountain Redwares, indented corrugated

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**Bc 192, LIZARD HOUSE (29SJ 1912, LA 41912), South Gap Community**

**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM

**Reference:** Maxon 1963

**1402 1 6 29SJ 1912, Kiva C, uppermost floor, firepit**

```
 36.0 -108.0  13.6  3
NRM     3 355.2  47.7 17.7 27.3     36  81.7  102.8 20.9 2320   3000
```

**Comments:** 100G of 2 cubes gave 15.2 degree change in declination

**Dominant Ceramics:** Gallup B/w, Puerco B/w, Chaco-McElmo B/w, indented corrugated

**Tree ring dates (1):** from NE side of Kiva C: AD 1104vv

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

***Bc 362, VOLL'S SITE (29SJ 827, LA 41827), South Gap Community***

**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Voll 1964

**1477 3 5 Kiva 3, Firepit 1 (last used)**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 9 | 1100-1104 | | TR | | | | |
| NRM | 8 | 359.8 | 54.1 | 3.4 | 4.8 | 259 | 88.6 | 78.4 | 3.4 | 2330 | 3000 |
| 50G | 9 | 355.5 | 58.0 | 4.3 | 5.9 | 169 | 85.5 | -160.1 | 4.0 | | 1010 |
| 100G | 9 | 357.2 | 57.1 | 4.1 | 5.7 | 175 | 87.2 | -159.7 | 3.9 | | 3000 |

**Dominant Ceramics:** Gallup B/w, Chaco B/w, Chaco-McElmo B/w, Toadlena B/w, Black Mesa B/w, indented corrugated
**Tree ring dates (8):** Kiva 3 roofing: AD 1061r - 1109c
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1476 2 5 Kiva 3, Firepit 2 (earlier firepit under Firepit 1)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 10 | 1070-1104 | | TR | | | | | |
| NRM | 10 | 354.4 | 55.4 | 3.9 | 5.5 | 158 | 85.4 | 163.4 | 3.9 | 107 | 3000 |
| 50G | 8 | 352.6 | 56.3 | 3.3 | 4.6 | 304 | 84.0 | 172.7 | 3.2 | | 1030 |

**Dominant Ceramics:** Gallup B/w, Chaco B/w, Chaco-McElmo B/w, Toadlena B/w, Black Mesa B/w, indented corrugated
**Tree ring dates (8):** Kiva 3 roofing: AD 1061r - AD 1109c
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

***ARROYO HEARTHS in CHACO CANYON, Fajada and South Gap areas***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Hall 1975, 1977, 1983

**688 1 8 Gallo Wash bank near Una Vida, Hearth 1 (29SJ 670; LA 40670)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 35.9 | -108.0 | 13.6 | 8 | 650-780 | | | | | | | |
| NRM | 8 | 5.6 | 46.2 | 2.6 | 4.0 | 308 | 80.4 | 41.0 | 3.2 | 2340 | 850 |

**Comments:** 50G of 2 cubes gave some change in direction
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates (1):** Teledyne Isotopes (I-7090): BP 1390 ± 90
**Period/Phase:** Basketmaker?

**689 1 8 Gallo Wash tributary bank between Una Vida and Hungo Pavi across from ditch 29SJ 1692 (LA 41692), Hearth 7**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 35.9 | -108.0 | 13.6 | 8 | -950 | | 14C | | | | | |
| NRM | 8 | 350.1 | 54.2 | 5.8 | 8.3 | 89 | 81.8 | 156.6 | 5.9 | 2350 | -950 |

**Comments:** 50G of 2 cubes gave some change in direction
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates (1):** Teledyne Isotopes (I-7171): BP 2900 ± 330
**Period/Phase:** Archaic?

**690 1 8 Chaco Wash bank near Chetro Ketl fields, Hearth 9**
(29SJ 905, LA 40905)

```
 35.9 -108.0  13.6  8   -2165          14C
NRM     8 360.0  61.5  4.9  6.4    180  83.2 -108.1  4.1 2360  -2165
```

**Comments:** 50G of 3 cubes gave some change in direction
**Dominant Ceramics:**
**Tree ring dates:**
**$^{14}$C dates (1):** Teledyne Isotopes (I-7173): BP 4115 ± 500
**Period/Phase:** Archaic?

***CHETRO KETL FIELD (29SJ 1680, LA 41680), Sediments, South Gap Community?***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Loose and Lyons 1976, Nichols 1975

**1114 4 7 Test Trench 1, 35 cm below surface (Sediment 1)**

```
 36.0 -108.0  13.6  8
NRM     8 350.4  57.4  6.1  8.3     96  82.0  179.9  5.7 2370   3000
50G     8 350.1  57.9  6.3  8.5     93  81.7 -177.3  5.8        3000
100G    8 349.9  57.9  6.2  8.4     95  81.5 -177.5  5.7        2500
150G    8 349.3  56.0  5.9  5.2     95  81.3  168.6  5.7        3000
```

**Comments:** Demagnetized at 25, 50, 75, 100, 125, 150, 200, and 400 gauss.
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown (archeomagnetic pole position near AD 1250 on 1970s VGP curve)

**1115 1 6 Test Trench 1, 101 cm below surface (Sediment 2)**

```
 36.0 -108.0  13.6  8
NRM     8 350.9  56.2 13.9 19.3     18  82.6  170.8 13.4 2380   3000
```

**Comments:** 100G of 3 cubes gave 0.1 degree change in declination. Demagnetized at 25, 50, 75, 100, 125, 150, 200, and 400 gauss.
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**1117 2 7 Test Trench 2, 35 cm below surface (Sediment 4)**

```
 36.0 -108.0  13.6  8
NRM     8 347.8  53.3  6.7  9.7     65  79.7  153.6  6.9 2390   3000
50G     8 348.2  53.1  7.1 10.2     58  80.1  152.1  7.3        2500
```

**Comments:** Demagnetized at 25, 50, 75, 100, 125, 150, 200, and 400 gauss.
**Dominant Ceramics:** AD 925-950 ceramics directly under this clay deposit
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**1116 3 6 Test Trench 3, 14” below surface (Sediment 3)**

36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 342.2 | 53.7 | 5.4 | 7.8 | 100 | 75.3 | 160.2 | 5.6 | 2400 | 3000 |
| 100G | 8 | 342.0 | 53.2 | 5.5 | 7.9 | 96 | 75.1 | 158.5 | 5.7 | | 2500 |
| 150G | 8 | 341.9 | 53.0 | 5.7 | 8.2 | 89 | 74.9 | 157.9 | 5.9 | | 3000 |

**Comments:** Demagnetized at 25, 50, 75, 100, 125, 150, 200, and 400 gauss.
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

***WASH SEDIMENTS TESTS, South Gap area***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** DuBois 1973 field collection notes

**861 1 5 BLOCK FROM UNBURNED UPPER CHACO WASH SEDIMENTS NEAR PUEBLO BONITO**

36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 267.9 | -41.4 | 35.6 | 58.3 | 2 | -15.3 | 143.4 | 47.8 | 2410 | 3000 |

**Comments:** cubes taken in July 1973 from unoriented block in lab
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**862 1 5 BLOCK FROM UNBURNED LOWER CHACO WASH SEDIMENTS NEAR PUEBLO BONITO**

36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 213.9 | 60.9 | 22.3 | 29.1 | 9 | -6.2 | -132.7 | 19.0 | 2420 | 3000 |

**Comments:** cubes taken in July 1973 from unoriented block in lab
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**MEANDER SCAR, 300 m SSE of Chetro Ketl, Chetro Ketl field area**
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Nichols 1975

**1118 5 7 Meander Test Trench 1, 6” below surface (Sediment 5)**

36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 15.6 | 57.2 | 3.8 | 5.2 | 293 | 77.4 | -30.8 | 3.5 | 2450 | 3000 |
| 50G | 7 | 17.2 | 55.9 | 2.9 | 3.7 | 4955 | 76.1 | -29.2 | 2.7 | | 2500 |
| 100G | 7 | 16.7 | 56.4 | 3.0 | 4.2 | 438 | 76.5 | -27.2 | 2.9 | | 3000 |
| 150G | 7 | 18.4 | 55.7 | 3.0 | 4.2 | 421 | 75.2 | -24.4 | 2.9 | | 3000 |
| 200G | 7 | 18.4 | 55.2 | 2.8 | 4.0 | 472 | 75.1 | -22.5 | 2.8 | | 2500 |

**Comments:** Demagnetized at 25, 50, 100, 150, 200, 400, and 800 gauss
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown (pole position on VGP curve approx. AD 1850)

**1119 3 5 Meander Test Trench 1, 9” below present (Sediment 6)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 8 | 15.0 | 61.5 | 3.7 | 4.8 | 320 | 76.7 | -52.6 | 3.1 | 2460 | 3000 |
| 50G | 8 | 20.0 | 59.3 | 4.4 | 5.9 | 197 | 73.7 | -38.7 | 4.0 | | 2500 |
| 100G | 8 | 21.5 | 58.9 | 4.7 | 6.3 | 175 | 72.7 | -36.8 | 4.2 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1118 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**1120 3 5 Meander Test Trench 1, 12” below surface (Sediment 7)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 7 | 5.5 | 63.6 | 4.3 | 5.5 | 306 | 79.9 | -85.4 | 3.5 | 2470 | 3000 |
| 50G | 7 | 4.5 | 62.3 | 3.4 | 4.4 | 451 | 81.7 | -84.6 | 2.8 | | 2500 |
| 100G | 7 | 3.6 | 62.6 | 3.7 | 4.8 | 394 | 81.6 | -89.7 | 3.0 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1118 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**1121 3 6 Meander Test Trench 1, 15” below surface (Sediment 8)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 5 | 16.7 | 59.7 | 2.7 | 3.5 | 1062 | 76.2 | -42.1 | 2.3 | 2480 | 3000 |
| 50G | 5 | 17.7 | 59.2 | 2.1 | 2.8 | 1646 | 75.5 | -39.3 | 1.9 | | 2500 |
| 100G | 6 | 20.2 | 58.7 | 3.6 | 4.9 | 419 | 73.7 | -36.9 | 3.3 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1118 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown (pole position on VGP curve approx. AD 1600

**1122 4 5 Meander Test Trench 1, 19” below surface (Sediment 9)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 8 | 11.5 | 58.2 | 5.2 | 7.0 | 137 | 80.4 | -39.2 | 4.7 | 2490 | 3000 |
| 50G | 8 | 12.4 | 58.7 | 5.2 | 7.0 | 140 | 79.6 | -41.2 | 4.7 | | 2500 |
| 100G | 8 | 9.7 | 56.9 | 6.3 | 8.6 | 88 | 82.1 | -32.0 | 5.9 | | 3000 |
| 150G | 8 | 13.8 | 55.3 | 5.7 | 8.0 | 98 | 78.8 | -21.0 | 5.6 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1118 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**1123 4 5 Meander Test Trench 1, 23” below surface (Sediment 10)**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 13.9 | 65.1 | 4.6 | 5.6 | 252 | 74.8 | -69.4 | 3.5 | 2500 | 3000 |
| 25G | 8 | 12.6 | 63.6 | 4.8 | 6.1 | 207 | 76.8 | -65.0 | 3.9 | | 2500 |
| 50G | 8 | 14.9 | 62.8 | 5.7 | 7.3 | 142 | 76.0 | -58.4 | 4.7 | | 3000 |
| 100G | 8 | 16.5 | 64.4 | 5.5 | 6.9 | 165 | 74.0 | -62.7 | 4.4 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1118 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**1124 5 6 Meander Test Trecnh 1, 27” below surface (Sediment 11)**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 17.7 | 52.8 | 4.3 | 6.2 | 184 | 75.2 | -12.8 | 4.5 | 2510 | 3000 |
| 25G | 7 | 15.7 | 50.8 | 3.7 | 5.6 | 216 | 76.2 | -3.5 | 4.1 | | 2500 |
| 50G | 7 | 16.2 | 49.3 | 3.9 | 5.8 | 190 | 75.2 | 0.5 | 4.4 | | 3000 |
| 100G | 7 | 17.0 | 49.9 | 3.7 | 5.5 | 217 | 74.9 | -2.3 | 4.1 | | 3000 |
| 150G | 7 | 16.7 | 48.7 | 3.9 | 5.9 | 185 | 74.7 | 1.7 | 4.5 | | 3000 |

**Comments:** Demagnetized at 25, 50, 100, 150, 200, and 400 gauss
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown (pole position on VGP curve approx. AD 1550

**1125 3 5 Meander Test Trench 2, 6” below surface (Sediment 12)**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 356.9 | 66.7 | 6.3 | 7.7 | 170 | 76.6 | -116.9 | 4.6 | 2520 | 3000 |
| 50G | 8 | 3.2 | 66.2 | 8.3 | 10.1 | 82 | 77.2 | -98.3 | 6.2 | | 2500 |
| 100G | 8 | 4.5 | 64.2 | 8.2 | 10.3 | 75 | 79.5 | 90.5 | 6.5 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1124 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**1126 4 5 Meander Test Trench 2, 9” below surface (Sediment 13)**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 2.1 | 58.2 | 6.7 | 9.0 | 84 | 86.6 | -78.5 | 6.1 | 2530 | 3000 |
| 50G | 8 | 3.7 | 56.4 | 6.4 | 8.9 | 82 | 86.8 | -36.6 | 6.1 | | 2500 |
| 100G | 8 | 4.5 | 54.5 | 6.2 | 8.8 | 80 | 86.2 | -3.7 | 6.2 | | 3000 |
| 150G | 8 | 3.5 | 53.0 | 6.2 | 9.0 | 74 | 86.2 | 20.6 | 6.5 | | 3000 |

Comments: Demagnetized at same levels as ESO# 1124 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**1127 4 6 Meander Test Trench 2, 12" below surface (Sediment 14)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 8 | 12.6 | 53.5 | 5.7 | 8.2 | 90 | 79.8 | -10.8 | 5.9 | 2540 | 3000 |
| 50G | 8 | 10.9 | 53.3 | 5.2 | 7.5 | 108 | 80.8 | -7.6 | 5.4 | | 2500 |
| 100G | 8 | 12.7 | 51.6 | 5.1 | 7.5 | 103 | 78.8 | -2.1 | 5.5 | | 3000 |
| 150G | 8 | 12.8 | 50.4 | 5.0 | 7.5 | 100 | 78.3 | 2.7 | 5.6 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1124 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown (pole position on VGP curve approx. AD 1700)

**1128 4 6 Meander Test Trench 2, 15" below surface (Sediment 15)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 6 | 3.8 | 62.9 | 3.0 | 3.8 | 779 | 81.2 | -90.0 | 2.4 | 2550 | 3000 |
| 50G | 6 | 6.3 | 62.3 | 2.8 | 3.6 | 826 | 81.0 | -77.4 | 2.3 | | 2500 |
| 100G | 6 | 8.6 | 61.1 | 2.7 | 3.6 | 826 | 80.9 | -63.3 | 2.3 | | 3000 |
| 150G | 6 | 10.4 | 59.5 | 3.1 | 4.1 | 604 | 80.8 | -49.0 | 2.7 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1124 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown (pole position on VGP curve approx. AD 1650)

**1129 5 6 Meander Test Trench 2, 19" below surface (Sediment 16)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 8 | 2.0 | 65.0 | 3.3 | 4.1 | 468 | 78.9 | -101.0 | 2.6 | 2560 | 3000 |
| 50G | 8 | 8.4 | 63.6 | 3.3 | 4.1 | 454 | 78.8 | -76.1 | 2.6 | | 2500 |
| 100G | 8 | 9.3 | 62.3 | 3.5 | 4.5 | 373 | 79.6 | -67.9 | 2.9 | | 3000 |
| 150G | 8 | 9.9 | 61.4 | 3.4 | 4.4 | 384 | 80.0 | -61.7 | 2.8 | | 3000 |
| 400G | 2 | 17.4 | 59.4 | 2.5 | 3.4 | 12336 | 75.7 | -40.4 | 2.2 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1124 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown (pole position on VGP curve approx. AD 1625)

**1130 4 5 Meander Trench 2, 23" below surface (Sediment 17)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 36.0 | -108.0 | 13.6 | 8 | | | | | | | | |
| NRM | 7 | 349.3 | 67.2 | 4.5 | 5.4 | 350 | 74.0 | -133.8 | 3.2 | 2570 | 3000 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50G | 7 | 1.7 | 66.9 | 3.9 | 4.7 | 449 | 76.4 | -103.2 | 2.9 | | 2500 |
| 100G | 7 | 6.4 | 64.5 | 4.3 | 5.4 | 320 | 78.6 | -84.9 | 3.4 | | 3000 |
| 150G | 7 | 8.5 | 63.3 | 4.2 | 5.3 | 324 | 79.1 | -74.3 | 3.4 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1124 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown

**1131 3 6 Meander Test Trench 2, 27" below surface (Sediment 18)**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 11.5 | 61.5 | 4.5 | 5.8 | 219 | 79.0 | -58.1 | 3.8 | 2580 | 3000 |
| 50G | 8 | 11.9 | 59.6 | 4.2 | 5.6 | 223 | 79.7 | -47.2 | 3.7 | | 2500 |
| 100G | 8 | 12.1 | 58.5 | 4.1 | 5.5 | 222 | 79.9 | -40.1 | 3.7 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1124
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown (pole position on VGP curve approx. AD 1600)

**1132 3 6 Meander Test Trench 2, 31" below surface (Sediment 19)**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 19.8 | 58.2 | 3.4 | 4.6 | 317 | 74.0 | -34.3 | 3.1 | 2590 | 3000 |
| 50G | 8 | 20.7 | 56.2 | 2.8 | 3.9 | 417 | 73.4 | -26.7 | 2.7 | | 2500 |
| 100G | 8 | 20.6 | 55.7 | 2.9 | 4.0 | 393 | 73.3 | -24.9 | 2.8 | | 3000 |

**Comments:** Demagnetized at same levels as ESO# 1124 above
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Unknown (pole position on VGP curve approx. AD 1550)

## MISCELLANEOUS AREAS in or near CHACO CANYON

***CANAL SEDIMENTS FROM CANAL 29SJ 1761 (LA 41761), near Peñasco Blanco, Chaco Canyon***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Lagasse, Gillespie, and Eggert 1984; Nichols 1975

**1133 1 4 Canal sediments, 4" below surface (Sediment 20)**
36.0 -108.0 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 300.9 | 81.0 | 33.7 | 35.0 | 10 | 43.3 | -129.0 | 18.1 | 2591 | 3000 |

**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Classic Bonito Phase (AD 1000s)

**1134 1 4 Canal sediments, 4" below surface of windblown sand**

**(Sediment 21)**
36.0 -108.0 13.6 8
NRM 8 307.5 65.2 28.7 35.5 7 50.0 -164.9 21.9 2592 3000
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Classic Bonito Phase (AD 1000s)

**1135 1 4 Canal sediments, 10" below surface (Sediment 22)**
36.0 -108.0 13.6 8
NRM 8 5.7 70.1 17.1 20.4 23 71.5 -97.3 11.8 2593 3000
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Classic Bonito Phase (AD 1000s)

**1136 1 4 Canal sediments, 10" below surface (Sediment 23)**
36.0 -108.0 13.6 8
NRM 7 329.0 70.6 15.9 18.4 33 61.6 -146.7 10.6 2594 3000
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Classic Bonito Phase (AD 1100s)

**1137 1 4 Canal sediments, 24" below surface (Sediment 24)**
36.0 -108.0 13.6 8
NRM 7 265.2 61.4 18.5 24.0 16 20.3 -159.6 15.6 2595 3000
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Classic Bonito Phase (AD 1000s)

**1138 1 4 Canal sediments, 24" below surface (Sediment 25)**
36.0 -108.0 13.6 8
NRM 8 222.0 84.7 37.7 38.2 9 27.9 -115.9 19.3 2600 3000
**Dominant Ceramics:** None found
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Pueblo II/Classic Bonito Phase (AD 1000s)

***CANAL SEDIMENTS FROM CANAL 29SJ 1765 (LA 41765) near Peñasco Blanco, Chaco Canyon***
**Quad, County, State:** Pueblo Bonito, NM, San Juan County, NM
**Reference:** Lagasse, Gillespie, and Eggert 1984 (Figure 8)

**1738 16 7 Canal A-10, Test Pit 1, Layer 8, unburned gray clay ponding deposit 15-17 mm thick**
36.0 -108.0 13.6 8
NRM 14 332.7 42.7 2.4 3.9 159 64.0 144.0 3.2 3000

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 100G | 4 | 329.1 | 42.7 | 9.4 | 15.2 | 56 | 61.3 | 147.6 | 12.3 | | 2500 |
| 900G | 4 | 328.9 | 41.4 | 9.1 | 14.9 | 58 | 60.7 | 146.8 | 12.2 | | 3000 |
| 3200G | 4 | 327.2 | 40.8 | 9.5 | 15.7 | 51 | 59.0 | 147.1 | 12.9 | | 3000 |

**Comments:** 4 cubes (#5, 11, 13-14) demagnetized at 25G to 3200G in 15 steps (roughly in 100G steps). Note very consistent results.

**Dominant Ceramics:** None found (AD 1000s masonry canal wall)

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Late Pueblo II/Classic Bonito Phase (late AD 1000s)

**LA 15845, LAKE VALLEY near NM Highway 371 and La Vida Mission, NM**

**Quad, County, State:** La Vida Mission, NM, San Juan County, NM

**Reference:** Wiseman 1982

**1808 3 5 Pithouse (Feature 10), central hearth**

36.1 -108.2 13.6 10

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 10.5 | 47.8 | 3.6 | 5.5 | 133 | 78.6 | 17.9 | 4.2 | 2610 | 3000 |
| 100G | 10 | 12.1 | 45.8 | 7.2 | 11.2 | 31 | 76.5 | 19.1 | 8.8 | | 3000 |
| 100G | 8 | 11.6 | 44.1 | 2.4 | 3.9 | 322 | 75.8 | 24.4 | 3.1 | | 860 |

**Dominant Ceramics:** Whitemound B/w, Tallohogan Red, plain gray, Lino Gray, Lino Fugitive Red, a Lino Gray seed “bowl”

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Pueblo I/Whitemound Phase (AD 800s)

**LAKE VALLEY near NM Highway 371, La Vida Mission, and Becenti Lake, NM**

**Quad, County, State:** La Vida Mission, NM, San Juan County, NM
Antelope Lookout Mesa, NM, San Juan County, NM

**Reference:** Doleman 1979

**1467 3 8 LA 14704, Pithouse (Feature 3), North Warming Pit**

36.1 -108.2 13.7 7 700-800

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 167.1 | 80.7 | 76.3 | 79.3 | 3 | 18.3 | -104.0 | 41.2 | | 3000 |
| 50G | 7 | 218.3 | 76.4 | 60.0 | 64.7 | 4 | 14.8 | -124.4 | 34.9 | | 3000 |
| 100G | 7 | 10.8 | 51.7 | 7.8 | 11.5 | 52 | 80.3 | 1.8 | 8.4 | | 690 |

**Dominant Ceramics:** from pithouse & Room 2 floors: La Plata B/w bowl, 2 Whitemound B/w bowls, Crozier B/w bowl, Kiatuthlanna B/w seed jar, 31 Lino Gray jars, 4 Bennett Gray jars, 1 Chapin Gray olla, Kana’a Banded jar, brownware jar

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Pueblo I/White Mound Phase (AD 700s/800s)

**1486 3 6 LA 14705, Pithouse, Central Hearth**

36.1 -108.2 13.8 10 800

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 8.7 | 42.2 | 3.1 | 5.0 | 142 | 76.1 | 36.7 | 4.1 | | 3000 |
| 50G | 10 | 5.5 | 44.9 | 3.6 | 5.6 | 118 | 79.3 | 44.4 | 4.5 | | 750 |
| 100G | 10 | 8.4 | 44.7 | 3.9 | 6.3 | 96 | 77.9 | 33.2 | 5.0 | | 3000 |

**Dominant Ceramics:** La Plata B/w, Lino B/g, Whitemound B/w, Kiatuthlanna B/w, Abajo R/o, Tallahogan Red, plain gray, Lino Gray, Lino Fugitive Red

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Pueblo I/White Mound Phase (AD 700s)

**1450 1 5 LA 14695, Pithouse (Feature 22), Hearth (Feature 36)**

35.5 -108.2 13.6 9 750

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 6.1 | 55.0 | 5.4 | 7.7 | 106 | 85.0 | -20.5 | 5.4 | | 710 |

**Comments:** 100G of 3 cubes gave 16.4 degrees declination change

**Dominant Ceramics:** La Plata B/w, Lino B/g, Whitemound B/w, plain gray, Lino Gray, Obelisk Gray

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Basketmaker III/La Plata Phase (AD 600s?)

***PIERRE'S COMMUNITY, SITE 27, 24 km north of CHACO CANYON, NM***

**Quad, County, State:** Pueblo Bonito, NW, NM, San Juan County, NM

**Reference:** Powers et al. 1983, Windes 1980

**1732 2 6 Hearth in side of main valley arroyo**

36.0 -108.0 13.6 10 1025-1135 14C

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 7.1 | 62.8 | 7.0 | 8.9 | 74 | 80.3 | -76.1 | 5.7 | 2650 | 3000 |
| 150G | 7 | 358.1 | 61.3 | 1.8 | 2.4 | 1548 | 83.6 | -120.5 | 1.5 | | 1040 |

**Dominant Ceramics:** None directly associated

**Tree ring dates:**

**$^{14}$C dates (1):** from piñon charcoal in pit (Dic-1448): dendro- cali-brated (Stuiver & Reimer 1987): AD 1143.5 ± 108.5 (2SD)

**Period/Phase:** Late Pueblo II-early Pueblo III/Classic or Late Bonito Phase (AD 1050-1150)

***CANADA ALEMITA WASH SITES, Pueblo Pintado Community region, Chaco Canyon***

**Quad, County, State:** Fire Rock Well, NM, San Juan County, NM

**Reference:** Simmons 1982

**1837 2 6 LA 17360, Room 2, Floor 1, firepit (Feature 3)**

36.0 -107.7 13.5 13 1100-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 326.6 | 62.0 | 3.7 | 4.8 | 249 | 63.5 | -171.7 | 3.1 | 2660 | 3000 |
| 50G | 10 | 338.9 | 62.2 | 3.1 | 3.9 | 366 | 72.2 | -166.3 | 2.5 | | 1130 |

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Socorro B/w, Toadlena B/w, Sosi B/w, Black Mesa B/w, Mogollon Brownware, Cibola & Chuska indented corrugated

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1838 2 5 LA 17360, Structure 3 (kiva), Floor 1, hearth (Feature 7)**
36.0 -107.7 13.5 9 1150-1200
NRM 8 338.4 62.3 2.2 2.8 953 71.8 -166.5 1.8 2670 3000
100G 9 342.1 61.2 0.8 1.1 5458 74.8 -167.7 0.7 1120
**Dominant Ceramics:** McElmo B/w, Chaco-McElmo B/w, Socorro B/w, Gallup B/w, Tusayan Polychrome, indented corrugated
**Tree ring dates (7):** AD 748+vv - 961vv (firewood? in kiva)
**$^{14}$C dates:**
**Period/Phase:** Pueblo III/Late Bonito Phase or McElmo Phase (AD 1100s)

**1830 1 6 LA 18080, Room 1, hearth (Feature 5)**
36.0 -107.7 13.5 9 1100-1200
NRM 9 344.4 61.8 1.9 2.5 1008 76.1 -162.7 1.6 2680 1120
**Comments:** 100G of 4 cubes gave 1.3 degree change in declination
**Dominant Ceramics:** McElmo B/w, Chaco-McElmo B/w, Socorro B/w, Sosi B/w, Tusayan B/r, Tsegi Orangeware, White Mt. Redware, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1831 1 7 LA 18080, Room 3, hearth (Feature 7)**
36.0 -107.7 13.5 9 1100-1200
NRM 9 345.3 58.8 2.2 3.1 589 77.9 -176.3 2.1 2690 1140
**Comments:** 100G of 4 cubes gave 1.3 degree change in declination
**Dominant Ceramics:** McElmo B/w, Chaco-McElmo B/w, Socorro B/w, Sosi B/w, Tusayan B/r, Tsegi Orangeware, White Mt. Redware, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1832 1 7 LA 18080, Plaza, large slab-lined oven (Feature 8)**
36.0 -107.7 13.5 9
NRM 9 350.0 56.2 7.3 10.1 55 81.9 170.6 7.0 2700 3000
**Comments:** 100G of 4 cubes gave 1.6 degree change in declination
**Dominant Ceramics:** McElmo B/w, Chaco-McElmo B/w, Socorro B/w, Sosi B/w, Tusayan B/r, Tsegi Orangeware, White Mt. Redware, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1852 2 5 LA 18080, Kiva 1, firepit (last use) (Feature 15)**
36.0 -107.7 13.6 15

NRM 15 350.0 59.5 2.4 3.2 330 81.1 -165.9 2.1 2710 3000
100G 15 348.9 59.1 1.7 2.3 600 80.5 -170.1 1.6 1160

**Dominant Ceramics:** Chaco-McElmo B/w, Socorro B/w, Gallup B/w, Tsegi Orangeware, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1896 3 6 LA 18091, Feature 9 (burned bell-shaped pit containing burned corn)**

36.0 -107.7 13.6 10
NRM 10 348.5 71.5 7.3 8.4 104 66.3 -125.2 4.8 2720 3000
50G 8 338.6 65.8 3.3 4.0 512 70.1 -153.6 2.5 3000
100G 9 342.9 64.5 2.5 3.1 711 73.5 -153.3 1.9 400

**Dominant Ceramics:** None at site.
**Tree ring dates:**
**$^{14}$C dates (4):** (Features 7-9: UGa-4179, 4181, 4183-4184) mean from dendrocalibrated burned corn (Stuiver & Reimer 1987): 911.5 ± 86.5 BC (2SD)
**Period/Phase:** Archaic/En Medio Phase (800 BC - AD 400)

**1897 3 5 LA 18091, Feature 7 (large burned bell-shaped pit filled with burned corn)**

36.0 -107.7 13.6 10
NRM 10 359.3 60.4 5.0 6.5 128 84.6 -113.5 4.3 2730 3000
50G 8 359.2 60.4 1.9 2.5 1165 84.7 -114.1 1.6 3000
100G 8 359.1 60.2 1.8 2.4 1273 84.9 -115.6 1.6 400

**Dominant Ceramics:** None at site
**Tree ring dates:**
**$^{14}$C dates (2):** Dendrocalibrated (Stuiver & Reimer 1987) burned corn from Feature 7 (UGa-4179 & UGa-4181): 1165 ± 365 BC (2SD)
**Period/Phase:** Archaic/En Medio Phase (800 BC - AD 400)

***BIS SA'ANI SMALL-HOUSE COMMUNITY SITES on the Escavada Wash***

**Quad, County, State:** Sargent Ranch, NM, San Juan County, NM
**Reference:** Breternitz, Doyel, and Marshall 1982

**1912 2 5 LA 17302 (NM-G-63-16), Extramural Area, Feature 1 (slab-lined firepit)**

36.1 -107.8 13.6 8
NRM 7 22.3 65.5 19.3 23.7 18 69.9 -59.9 14.6 2740 3000
50G 8 9.3 65.9 14.3 17.5 28 76.1 -81.1 10.7 2500

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Puerco B/r, Wingate B/r, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

**1916 3 5 LA 17302 (NM-G-63-16), Feature 2 (large, deep, bell-shaped pit)**

36.1 -107.8 13.6 10
NRM 10 351.7 57.0 2.0 2.8 625 83.2 177.2 1.9 2750 3000
150G 9 354.1 59.3 2.3 3.0 648 83.9 -155.6 2.0 3000
200G 9 353.8 59.7 1.9 2.5 926 83.4 -153.3 1.7 1030

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Puerco B/r, Wingate B/r, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1903 2 5 LA 17305 (NM-G-63-20), Structure 1 (kiva), Feature 2 (hearth)**

36.1 -107.8 13.6 12
NRM 10 353.8 61.9 4.8 6.2 149 81.5 -140.0 4.0 2760 3000
50G 9 350.9 60.6 4.9 6.4 153 81.0 -157.1 4.2 1110

**Dominant Ceramics:** Puerco B/w, Chaco-McElmo B/w, and Cibola, Chuska, & San Juan indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1911 2 6 LA 17308 (NM-G-63-23), Structure 2 (room), Feature 10 (hearth)**

36.1 -107.8 13.6 8
NRM 8 355.6 54.0 3.6 5.2 224 86.1 139.3 3.7 2770 3000
50G 7 347.8 58.6 3.3 4.5 406 79.9 -176.0 3.0 1160

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Chuska B/w, Nava B/w, Puerco B/r, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1910 3 6 LA 17308 (NM-G-63-23), Structure 3 (room), Floor 2, Feature 13 (hearth)**

36.1 -107.8 13.6 10
NRM 10 357.2 55.2 5.0 7.0 98 87.7 154.4 4.9 2780 3000
50G 9 347.6 58.6 4.3 5.8 177 79.7 -175.9 3.9 1160
100G 9 347.6 57.8 4.3 5.9 167 79.9 179.1 4.0 3000

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Chuska B/w, Nava B/w, Puerco B/r, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1901 3 6 LA 17308 (NM-G-63-23), Structure 5 (room),**

**Feature 6 (hearth)**

36.1 -107.8 13.6 12

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 299.4 | 48.0 | 7.2 | 11.1 | 27 | 39.3 | 172.6 | 8.5 | 2790 | 3000 |
| 50G | 10 | 336.9 | 56.3 | 2.2 | 3.0 | 523 | 71.4 | 171.4 | 2.1 | | 3000 |
| 100G | 10 | 342.1 | 56.5 | 1.4 | 2.0 | 1211 | 75.6 | 171.2 | 1.4 | | 1130 |

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Chuska B/w, Nava B/w, Puerco B/r, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1906 2 6 LA 17311 (NM-G-63-26), Structure 1 (room), Floor 2, Feature 8 (firepit)**

36.1 -107.8 13.6 10

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 335.0 | 64.7 | 4.5 | 5.6 | 190 | 68.6 | -160.7 | 3.5 | 2800 | 3000 |
| 100G | 7 | 338.4 | 60.9 | 2.5 | 3.2 | 817 | 72.3 | -171.9 | 2.1 | | 1130 |

Dominant Ceramics: Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Nava B/w, Mancos B/w, White Mt. Redware, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1905 3 6 LA 17312 (NM-G-63-27), Structure 1 (shallow pitstructure), Feature 3 (hearth)**

36.1 -107.8 13.6 12

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 352.0 | 63.7 | 3.2 | 4.1 | 471 | 79.0 | -138.6 | 2.6 | 2810 | 3000 |
| 50G | 9 | 349.5 | 61.3 | 4.3 | 5.6 | 199 | 79.7 | -156.7 | 3.7 | | 1100 |
| 100G | 9 | 347.6 | 59.7 | 4.8 | 6.3 | 152 | 79.3 | -169.4 | 4.2 | | 3000 |

**Comments:** Alternative pole position: AD 1130 ± 37
**Dominant Ceramics:** Puerco B/w, Chaco-McElmo B/w, Nava B/w, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1140)

**1902 2 5 LA 17314 (NM-G-63-29), Structure 3 (kiva), Feature 1 (hearth, last replaster)**

36.1 -107.8 13.6 12

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 349.6 | 64.5 | 7.0 | 8.7 | 65 | 77.1 | -141.6 | 5.4 | 2820 | 3000 |
| 100G | 11 | 346.2 | 62.5 | 6.1 | 7.8 | 83 | 76.9 | -157.6 | 5.0 | | 1110 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, White Mt. Redware, Cibola & Chuska indented corrugated
**Tree ring dates:**
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1914 2 6 LA 17319 (NM-G-63-34), Structure 5 (kiva), Feature 4 (hearth)**

36.1 -107.8 13.6 10

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 338.0 | 60.5 | 3.4 | 4.5 | 273 | 72.1 | -173.5 | 2.9 | 2830 | 3000 |
| 150G | 10 | 340.0 | 60.7 | 2.8 | 3.7 | 403 | 73.5 | -171.7 | 2.4 | | 1130 |

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Chuska B/w, Puerco B/r, Citadel Polychrome, Cibola & Chuska indented corrugated

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

***BIS SA'ANI PUEBLO (29SJ 2375, LA 17286-17287), Bis sa'ani Community, on the Escavada Wash***

**Quad, County, State:** Sargent Ranch, NM, San Juan County, NM

**Reference:** Breternitz, Doyel, and Marshall 1982

**1908 2 5 West House (LA 17287), Room 8, hearth**

36.1 -107.8 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 335.2 | 55.6 | 8.9 | 12.4 | 42 | 70.0 | 169.6 | 8.7 | 2840 | 3000 |
| 50G | 8 | 352.1 | 52.7 | 10.1 | 14.7 | 28 | 82.9 | 141.0 | 10.6 | | 1200 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, Nava B/w, Mancos B/w, Chaco Corrugated

**Tree ring dates (1):** from associated kiva vent lintel: AD 1055rLG

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1913 2 5 West House (LA 17287), Room 10, informal hearth**

36.1 -107.8 13.6 10

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 10 | 346.1 | 56.7 | 3.5 | 4.8 | 214 | 78.8 | 172.3 | 3.3 | 2850 | 3000 |
| 50G | 10 | 348.2 | 56.3 | 3.1 | 4.3 | 264 | 80.5 | 170.6 | 3.0 | | 1160 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, Nava B/w, Mancos B/w, Chaco Corrugated

**Tree ring dates (1):** from associated kiva vent lintel: AD 1055rLG

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1907 2 6 South House (LA 17286), Kiva, Floor 1, Firepit 1 (later liner?)**

36.1 -107.8 13.6 9

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 329.5 | 53.0 | 3.3 | 4.8 | 226 | 64.9 | 165.4 | 3.4 | 2860 | 3000 |
| 50G | 8 | 339.9 | 58.6 | 2.1 | 2.9 | 827 | 73.8 | 179.8 | 1.9 | | 1130 |

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Mancos B/w, McElmo B/w, Nava B/w, Sosi B/w, Puerco B/r, Chaco Corrugated, Blue Shale Corrugated

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1915 2 6 South House (LA 17286), Kiva, Floor 1, Firepit 1 (earlier liner?)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.1 | -107.8 | 13.6 | 9 | | | | | | | |
| NRM | 9 | 329.1 | 47.6 | 3.7 | 5.6 | 142 | 63.0 | 155.2 | 4.3 | 2870 | 3000 |
| 50G | 8 | 334.6 | 57.4 | 2.1 | 2.9 | 800 | 69.7 | 175.3 | 2.0 | | 1130 |

**Dominant Ceramics:** Puerco B/w, Gallup B/w, Chaco-McElmo B/w, Mancos B/w, McElmo B/w, Nava B/w, Sosi B/w, Puerco B/w, Chaco Corrugated, Blue Shale Corrugated

**Tree ring dates:**

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1833 2 6 Rabbit House (LA 17286), Room 4, Level 3, South Hearth**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.1 | -107.8 | 13.6 | 10 | 1100-1200 | | | | | | |
| NRM | 10 | 353.0 | 58.6 | 6.1 | 8.2 | 77 | 83.5 | -165.2 | 5.5 | 2880 | 3000 |
| 50G | 9 | 350.5 | 58.6 | 6.4 | 8.7 | 79 | 81.8 | -171.5 | 5.8 | | 1180 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, Chaco Corrugated, Blue Shale Corrugated

**Tree ring dates (1):** from associated East Kiva roof fall: AD 1132+vv

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1851 2 6 Rabbit House (LA 17286), Room 4, Level 7, Pit 3B (hearth)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.1 | -107.8 | 13.6 | 10 | | | | | | | |
| NRM | 10 | 341.0 | 59.4 | 2.4 | 3.2 | 505 | 74.6 | -176.5 | 2.2 | 2890 | 3000 |
| 50G | 10 | 340.0 | 59.2 | 2.4 | 3.1 | 529 | 73.8 | -177.9 | 2.1 | | 1130 |

**Dominant Ceramics:** Gallup B/w, Chaco-McElmo B/w, Chaco Corrugated, Blue Shale Corrugated

**Tree ring dates (1):** from associated East Kiva roof fall: AD 1132+vv

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1835 3 7 Casa Quemada (LA 17286), Room 2, Pit 2 (hearth)**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 36.1 | -107.8 | 13.6 | 8 | 1100-1200 | | | | | | |
| NRM | 8 | 340.7 | 58.4 | 2.1 | 2.8 | 868 | 74.4 | 179.0 | 1.9 | 2900 | 3000 |
| 50G | 3 | 345.2 | 59.1 | 0.9 | 1.2 | 22543 | 77.8 | -175.8 | 0.8 | | 1140 |
| 50G | 8 | 343.1 | 57.3 | 1.6 | 2.2 | 1337 | 76.4 | 174.7 | 1.5 | | 3000 |

**Dominant Ceramics:** Puerco B/w, Chaco-McElmo B/w, Mancos B/w, McElmo B/w, Nava B/w, Socorro B/w, Wingate B/r, Chaco Corrugated, Blue Shale Corrugated

**Tree ring dates (6):** from Casa Quemada rooms: AD 1126vv-1133r
(8): from adjacent Casa Hormiga rooms: AD 1126vv-1139r

**$^{14}$C dates:**

**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1834 3 7 Casa Quemada (LA 17286), Room 5, Metate Rest 3 (lower hearth)**

36.1 -107.8 13.6 10 1100-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 7 | 355.2 | 59.1 | 2.6 | 3.5 | 670 | 84.6 | -151.4 | 2.3 | 2910 | 3000 |
| 50G | 7 | 353.6 | 59.6 | 2.3 | 3.1 | 874 | 83.3 | -154.8 | 2.0 | | 3000 |
| 150G | 7 | 353.3 | 59.7 | 2.2 | 3.0 | 944 | 83.1 | -155.3 | 2.0 | | 1130 |

**Dominant Ceramics:** Puerco B/w, Chaco-McElmo B/w, Mancos B/w, McElmo B/w, Nava B/w, Socorro B/w, Wingate B/r, Chaco Corrugated, Blue Shale Corrugated
**Tree ring dates (6):** from Casa Quemada rooms: AD 1126vv-1133r
(8): from adjacent Casa Hormiga rooms: AD 1126vv-1139r
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1836 2 7 Casa Quemada (LA 17286), Room 6, Floor 1, Feature 1 (hearth)**

36.1 -107.8 13.6 8 1100-1200

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 350.1 | 61.4 | 2.3 | 3.0 | 799 | 80.0 | -155.0 | 2.0 | 2920 | 3000 |
| 50G | 7 | 342.2 | 59.4 | 0.7 | 1.0 | 8537 | 75.4 | -176.2 | 0.7 | | 1140 |

**Dominant Ceramics:** Puerco B/w, Chaco-McElmo B/w, Mancos B/w, McElmo B/w, Nava B/w, Socorro B/w, Wingate B/r, Chaco Corrugated, Blue Shale Corrugated
**Tree ring dates (6):** from Casa Quemada rooms: AD 1126vv-1133r
(8): from adjacent Casa Hormiga rooms: AD 1126vv-1139r
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1850 2 7 Casa Quemada (LA 17286), Room 11, Floor 1, hearth**

36.1 -107.8 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 349.0 | 58.7 | 3.3 | 4.4 | 353 | 80.7 | -173.3 | 3.0 | 2930 | 3000 |
| 150G | 8 | 346.6 | 59.0 | 2.0 | 2.7 | 952 | 78.8 | -174.5 | 1.8 | | 1150 |

**Dominant Ceramics:** Puerco B/w, Chaco-McElmo B/w, Mancos B/w, McElmo B/w, Nava B/w, Socorro B/w, Wingate B/r, Chaco Corrugated, Blue Shale Corrugated
**Tree ring dates (6):** from Casa Quemada rooms: AD 1126vv-1133r
(8): from adjacent Casa Hormiga rooms: AD 1126vv-1139r
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (AD 1100-1150)

**1849 2 7 Casa Quemada, Room 16, Floor 1, Feature 2 (hearth)**

36.1 -107.8 13.6 8

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 8 | 341.7 | 59.4 | 6.1 | 8.1 | 107 | 75.0 | -176.3 | 5.4 | 2940 | 3000 |
| 100G | 8 | 346.7 | 58.8 | 4.8 | 6.4 | 165 | 79.0 | -175.9 | 4.3 | | 1150 |

**Dominant Ceramics:** Puerco B/w, Chaco-McElmo B/w, Mancos B/w, McElmo B/w, Socorro B/w, Nava B/w, Wingate B/r, Chaco Corrugated, Blue Shale Corrugated
**Tree ring dates (6):** from Casa Quemada rooms: AD 1126vv-1133r

(8): from adjacent Casa Hormiga rooms: AD 1126vv-1139r
**$^{14}$C dates:**
**Period/Phase:** Early Pueblo III/Late Bonito Phase (early AD 1100s)

***MESA PUEBLO (LA 73470) near Whitehorse and Hospah, NM***
**Quad, County, State:** Whitehorse, NM, McKinley County, NM
**Reference:** Coleman 1988

**1503 4 6 Room 10 (kiva), Floor 1, firepit**
36.0 -108.0 13.6 12 1250-1350

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 12 | 6.9 | 62.1 | 5.2 | 6.7 | 101 | 82.6 | -64.9 | 4.3 | 2960 | 3000 |
| 50G | 10 | 355.8 | 62.0 | 5.4 | 7.0 | 116 | 83.9 | -137.8 | 4.5 | | 3000 |
| 100G | 8 | 352.7 | 60.4 | 3.5 | 4.7 | 326 | 83.5 | -165.1 | 3.1 | | 1200 |
| 150G | 10 | 356.4 | 61.5 | 4.2 | 5.4 | 188 | 84.7 | -137.2 | 3.5 | | 3000 |

**Dominant Ceramics:** Mesa Verde B/w, St. Johns Polychrome, indented corrugated
**Tree ring dates (4):** AD 1082vv, 1115vv (2) from Room 12 firepit. AD 1270v (tentative) from Room 25.
**$^{14}$C dates:**
**Period/Phase:** Pueblo III/Mesa Verde Phase (AD 1200s)

**1504 2 6 Kiva X, Floor 1, firepit**
36.0 -108.0 13.6 9

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NRM | 9 | 344.7 | 61.0 | 3.3 | 4.4 | 329 | 77.7 | -174.0 | 2.8 | 2970 | 3000 |
| 50G | 9 | 351.7 | 61.3 | 2.5 | 3.3 | 573 | 80.9 | -150.6 | 2.2 | | 1180 |

**Dominant Ceramics:** Mesa Verde B/w, St. Johns Polychrome, indented corrugated
**Tree ring dates (4):** AD 1082vv, 1115vv (2) from Room 12 firepit. AD 1270v (tentative) from Room 25.
**$^{14}$C dates:**
**Period/Phase:** Pueblo III/Mesa Verde Phase (AD 1200s)

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**APPENDIX 5. Northeastern New Mexico and Adjacent Areas (File App5NENM)**

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 156   2   2 ALBUQUERQUE, NM, LA-1, ARMIJO SHELTER
 35.4 -106.8  13.2  8
NRM      8 346.9  74.3 13.0 14.4     50  63.4 -121.2  7.9        2500
NRM      8  37.3  54.9  6.9  9.7     67  59.8  -28.0  6.8        3000
  COMMENTS: east wall 1st trench, square 98N-105E
  COMMENTS: 150G of 2 cubes gave 3.5 deg. change in decl

 157   3   1 ALBUQUERQUE, NM, LA-2, ARMIJO SHELTER
 35.4 -106.8  13.2  8   -5000 to -4000
NRM      7   7.3  56.5  3.4  4.7    340  83.9  -35.1  3.3        3000
150G     7   7.3  56.9  2.7  3.7    559  83.8  -38.2  2.6       -4500
150G     7  13.8  51.5  3.3  4.8    292  78.1   -4.8  3.5        3000
  COMMENTS: square 99N-101E-south wall, age is B.C.

 158   3   1 ALBUQUERQUE, NM, LA-3, ARMIJO SHELTER
 35.4 -106.8  13.2  7   -2000 to -1500
NRM      7  22.0  57.9  5.7  7.8    131  72.2  -33.6  5.3        3000
150G     7 356.0  59.5  4.0  5.4    284  84.1 -138.3  3.6       -1750
150G     7   4.3  55.2  5.5  7.7    124  86.5  -23.6  5.4        3000
  COMMENTS: square 100N-97E-west wall

 159   1   2 ALBUQUERQUE, NM, LA-4, ARMIJO SHELTER
   35.4 -106.8  13.2  7   -8000 to -5000
  NRM     6  15.9  54.3  5.4  7.6    153  77.0  -19.0  5.4     -7500
  COMMENTS: Square 99N-101E-south wall
  COMMENTS: 100G of 2 cubes gave 5.0 deg. change in decl

  11   3   1 ALBUQUERQUE, NM, LA3125, PH 1
 35.2 -106.7  13.1 10     500-700
NRM     10   6.1  57.6  2.2  3.0    565  84.3  -50.3  2.0        3000
100G    10   3.4  58.5  1.7  2.3    987  85.2  -73.4  1.5         630
100C    10   7.8  54.4  2.6  3.7    345  83.6  -16.5  2.6        3000
  COMMENTS: 150G on 2 cubes gave <2 deg. change in decl

 941   1   4 ARROYO HONDO, NM
 35.5 -105.9  12.9  8
NRM      8  11.8  65.8  7.0  8.6    110  74.8  -74.7  5.3        3000
  COMMENTS: Feature 12-D-3-5, kiva hearth
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: changes in direction
  COMMENTS: arch date- 14th century, Coalition Period

 942   1   4 ARROYO HONDO, NM
 35.5 -105.9  12.9  8
NRM      7 121.2  13.2  1.5  3.0    423 -20.6  -40.8  2.9        3000
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  COMMENTS: N.W. corner wall of room 12-9-8
  COMMENTS: 50G to 3200G of 3 cubes gave large changes
  COMMENTS: in direction, to northern hemispere pole
  COMMENTS: arch date- 14th century, Coalition Period

 936   3   1 ARROYO HONDO, NM, 12-K-15-1, HEARTH IN PLAZA K
 35.5 -105.9  12.9  8
NRM     8 354.6  60.4  2.0  2.7   1002  82.3 -137.6  1.8        3000
100G    6 355.2  59.8  2.1  2.7   1370  83.6 -140.6  1.8        1330
150G    6   0.0  61.7  6.0  7.7    180  82.6  106.1  5.0        3000
  COMMENTS: arch date- 14th century, Coalition Period

 938   2   1 ARROYO HONDO, NM, FEATURE 12-14-6, KIVA
 35.5 -105.9  12.9  8
NRM     8 355.5  63.7  5.3  6.6    176  79.6 -123.6  4.2        3000
150G    7 352.0  59.1  3.8  5.1    309  82.3 -158.7  3.4        1340
  COMMENTS: arch date- 14th century, Coalition Period

 935   2   0 ARROYO HONDO, NM, FEATURE 12-3-13-2, HEARTH
 35.5 -105.9  12.9  8
NRM     8 345.9  56.7  4.7  6.5    153  78.5  177.1  4.5        3000
100G    8 359.7  59.2  5.1  6.8    149  85.5 -108.8  4.5        1390

 937   1   3 ARROYO HONDO, NM, FEATURE 12-5-6, HEARTH
 35.5 -105.9  12.9  8
NRM     8 355.8  70.1 15.5 18.0     29  71.2 -113.6 10.4        3000
  COMMENTS: 50G to 150G of 2 cubes gave some
  COMMENTS: change in direction
  COMMENTS: arch date- 14th century, Coalition Period

 939   1   3 ARROYO HONDO, NM, FEATURE 12-G-5-7-1, KIVA
 35.5 -105.9  12.9  8
NRM     7   3.2  62.2  5.2  6.7    197  81.7  -89.6  4.3        1380
  COMMENTS: 50G to 800G of 3 cubes gave large
  COMMENTS: changes in direction
  COMMENTS: arch date- 14th century, Coalition Period

 943   2   2 ARROYO HONDO, NM, HEARTH 12-15-N-3
 35.5 -105.9  12.9  8
NRM     8 359.6  59.3  2.3  3.1    737  85.4 -109.6  2.0        3000
100G    8 358.3  58.2  2.3  3.1    720  86.4 -127.0  2.1        1300
  COMMENTS: uncertain curve assignment
  COMMENTS: arch date- 14th century, Coalition Period

 940   1   3 ARROYO HONDO, NM, WALL, FEATURE 12-18-15
 35.5 -105.9  12.9  8
NRM     8   0.7  57.8 26.0 35.4      6  87.0  -96.1 24.0        1300
  COMMENTS: 50G to 150G of 4 cubes gave large
  COMMENTS: changes in direction
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  COMMENTS: Arch date- 14th century, COalition Period

 614   1   2 BANDELIER NAT'L MONUMENT, NM
 35.6 -106.3  12.8  8
NRM      8 347.9  60.2  2.3  3.0    775  79.0 -162.3  2.0        1140
  COMMENTS: younger hearth in kiva
  COMMENTS: 100G of 2 cubes gave 1.1 deg. change in decl

1281   2   1 BANDELIER NAT'L MONUMENT, NM, LA-12119
 35.7 -106.3  13.0  9
NRM      8 352.9  57.4  5.0  6.8    143  83.9 -171.9  4.6        1200
100G     9 356.9  61.1  7.3  9.5     70  83.1 -126.2  6.2        3000
  COMMENTS: hearth 1, room 11

1282   1   1 BANDELIER NAT'L MONUMENT, NM, LA-12119
 35.7 -106.3  13.0 10    1272
NRM     10 354.4  63.1  2.4  3.0    634  80.2 -130.3  1.9        1350
  COMMENTS: 100G of 2 cubes gave 1.4 deg. change in decl

1283   1   2 BANDELIER NAT'L MONUMENT, NM, LA-12119
 35.7 -106.3  13.0 10    1275
NRM     10  15.6  77.3 44.4 47.5      5  58.5  -94.1 25.4        3000
  COMMENTS: room 11, hearth 2
  COMMENTS: 100G of 4 cubes gave 1.5 deg. change in decl

1284   1   2 BANDELIER NAT'L MONUMENT, NM, LA-12119
 35.7 -106.3  13.0  8    1275-1300
NRM      8 347.2  67.4 35.8 43.0      6  72.7 -134.9 25.8        1340
  COMMENTS: hearth 1, room 21
  COMMENTS: 100G of 4 cubes gave 1.5 deg. change in decl.

1285   2   1 BANDELIER NAT'L MONUMENT, NM, LA-12119
 35.7 -106.3  13.0  8    1275-1300
NRM      8 338.8  59.7  4.2  5.6    221  72.7 -173.6  3.7        1340
150G     8 337.0  60.6  4.6  6.1    193  71.2 -171.0  4.0        3000
  COMMENTS: room 2, hearth 1, U ubcertain curve assig.

1286   2   1 BANDELIER NAT'L MONUMENT, NM, LA-12119
 35.7 -106.3  13.0 10    1275
NRM     10 355.0  58.3  6.2  8.3     75  84.9 -154.7  5.6        3000
100G    10 354.4  61.8  6.5  8.4     80  81.6 -135.3  5.4        1340
  COMMENTS: hearth 3, room 14

1287   1   2 BANDELIER NAT'L MONUMENT, NM, LA-12119
 35.7 -106.3  13.0  8    1275
NRM      7 347.7  58.9  2.9  3.9    538  79.5 -170.5  2.6        1340
  COMMENTS: hearth 4, room 14
  COMMENTS: 100G of 2 cubes gave 2.2 deg. change in decl
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1288   1   2 BANDELIER NAT'L MONUMENT, NM, LA-12119
 35.7 -106.3  13.0  8    1275
NRM      7 348.3  52.0 11.5 16.8     25  79.8  149.2 12.3          3000
  COMMENTS: hearth 1, room 14
  COMMENTS: 100G of 4 cubes gave 4.5 deg. change in decl

1289   1   2 BANDELIER NAT'L MONUMENT, NM, LA-12121
 35.7 -106.3  13.0  8    1275
NRM      7 346.4  54.5 11.2 15.9     30  78.9  164.4 11.3          1340
  COMMENTS: hearth 1, room 2, U, uncertain curve assign.
  COMMENTS: 100G of 4 cubes gave 13.6 deg. change in decl

1442   1   3 BANDELIER NAT'L MONUMENT, NM, LA13086
 35.7 -106.3  13.0  8    1425-1490
NRM      7 346.5  57.2 10.2 14.0     40  79.0  178.4  9.6          1340
  COMMENTS: arch date glaze BC PIV, room 4, hearth B
  COMMENTS: 50G to 400G of 4 cubes gave some
  COMMENTS: change in direction, U

1443   1   3 BANDELIER NAT'L MONUMENT, NM, LA13086
 35.7 -106.3  13.0  7
NRM      7 287.4  69.8 37.3 43.4      7  37.9 -152.0 25.3          3000
  COMMENTS: arch date PIII
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

1444   1   3 BANDELIER NAT'L MONUMENT, NM, LA13086
 35.7 -106.3  13.0  8
NRM      7 349.7  60.9  1.9  2.5   1340  79.9 -155.3  1.6          1340
  COMMENTS: feature C, arch date PIII
  COMMENTS: 50G to 400G of 3 cubes gave some
  COMMENTS: change in direction, U

 615   1   2 BANDELIER NAT'L MONUMNET, NM
 35.6 -106.3  12.8  8
NRM      8 343.2  60.8  0.7  0.9   8486  75.5 -165.8  0.6          1120
  COMMENTS: older hearth in kiva
  COMMENTS: 150G of 2 cubes gave 0.8 deg. change in decl

1179   2   1 BANDELIER NAT`L MONUMENT, NM, LA12119
 35.7 -106.3  13.1  8    1275-1300
NRM      8 355.6  66.3 20.4 24.8     14  76.6 -119.1 15.1          3000
100G     8 350.3  59.7  5.1  6.7    154  80.9 -160.6  4.5          1340
  COMMENTS: R2, H1

1186   2   0 BANDELIER NAT`L MONUMENT, NM, LA12119
 35.7 -106.3  13.1  9    1275
NRM      8 349.0  60.7  3.7  6.9    297  79.6 -158.2  3.2          1340
150G     8 346.8  61.3  4.7  6.1    197  77.8 -159.2  4.0          3000
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1180   1   3 BANDELIER NAT`L MONUMENT, NM, LA12119, H1
 35.7 -106.3  13.1  8
NRM     8 326.4  61.2 14.3 18.7     22  63.2 -171.7 12.2        3000
  COMMENTS: 50G to 400G of 4 cubes gave some
  COMMENTS: changes in direction
  COMMENTS: kiva 3

1185   2   1 BANDELIER NAT`L MONUMENT, NM, LA12119, H1
 35.7 -106.3  13.1  8    1275-1300
NRM     6 347.2  61.5  2.6  3.4    929  77.9 -157.7  2.2        1340
100G    7 348.5  62.5  4.5  5.8    269  78.0 -150.2  3.7        3000
  COMMENTS: Kiva 2

1181   2   1 BANDELIER NAT`L MONUMENT, NM, LA12119, H1 R18
 35.7 -106.3  13.1  8    1275
NRM     8 343.5  62.0  5.0  6.4    182  75.3 -160.6  4.1        3000
100G    8 342.8  60.9  4.7  6.2    189  75.3 -166.0  4.0        1340
  COMMENTS: time could be 1130

1182   1   2 BANDELIER NAT`L MONUMENT, NM, LA12121, H1 R6
 35.7 -106.3  13.1  8    1275
NRM     8 356.5  56.4 21.8 30.2      8  86.9 -171.0 20.9        1240
  COMMENTS: 50G to 400G of 4 cubes gave some
  COMMENTS: change in direction

1184   1   2 BANDELIER NAT`L MONUMENT, NM, LA12121, RM. 5
 35.7 -106.3  13.1  8    1275
NRM     7 346.6  61.1  7.0  9.2    103  77.8 -160.4  6.0        1340
  COMMENTS: 50G to 200G of 3 cubes gave large change
  COMMENTS: in direction, time could be 1110

1183   1   2 BANDELIER NAT`L MONUMENT, NM, LA12121, RM. 7
 35.7 -106.3  13.1  8    1275
NRM     8 343.1  62.2  1.6  2.1   1686  74.9 -160.0  1.3        1340
  COMMENTS: 50G to 400G of 2 cubes gave little change
  COMMENTS: in direction, time could be 1110

1139   2   1 BANDELIER NAT`L MONUMENT, NM, LA12122
 35.7 -106.3  13.1  8
NRM     8 358.4  63.3  3.0  3.8    521  80.9 -113.4  2.4        3000
100G    8 356.9  64.5  4.6  5.7    245  79.1 -117.8  3.5        1360
  COMMENTS: fire pit 1

1140   2   1 BANDELIER NAT`L MONUMENT, NM, LA12123
 35.7 -106.3  13.1  7
NRM     7 351.4  60.2 13.0 17.2     29  81.4 -155.7 11.4        3000
50G     7 354.7  59.0 15.2 20.3     21  84.1 -150.5 13.6        1320
  COMMENTS: fire pit 1 room
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1141   2   1 BANDELIER NAT`L MONUMENT, NM, LA12124
 35.7 -106.3  13.1  7
NRM      7 356.7  55.7 12.7 17.7     25  87.1  172.8 12.4          3000
50G      7 355.8  55.0 15.4 21.8     16  86.6  161.8 15.3          1240
  COMMENTS: fire pit 2

1562   6   0 BANDELIER NAT`L. MONUMENT, NM
 35.8 -106.3  13.0  7    1275-1375
NRM      7 359.2  62.9  3.4  4.3    492  80.6 -109.8  2.7          3000
50G      7 357.6  61.3  2.7  3.5    688  82.4 -119.8  2.3          3000
100G     7 358.0  61.2  3.1  4.0    543  82.6 -117.7  2.6          3000
150G     7 358.0  61.2  2.8  3.7    646  82.5 -117.8  2.4          1370
200G     7 355.4  62.3  3.4  4.3    475  80.7 -127.4  2.8          3000
400G     7 353.6  61.0  2.4  3.2    858  81.3 -139.8  2.1          3000

1563   4   1 BANDELIER NAT`L. MONUMENT, NM, LA MESA FINE
 35.8 -106.3  13.0  8    1275-1375
NRM      5   7.5  60.4  3.9  5.1    525  81.4  -65.5  3.3          3000
50G      4   5.8  59.8  4.7  6.2    493  82.7  -69.0  4.1          3000
100G     5   6.0  60.4  3.5  4.6    629  82.1  -71.3  3.1          1380
150G     5   6.5  60.8  4.1  5.4    470  81.5  -71.4  3.5          3000
  COMMENTS: U, uncertain curve assignment, modern?

1578   1   0 BANDELIER NAT`L. MONUMENT, NM, LA16097
 35.8 -106.3  13.0  7    1425-1550
NRM      6 272.1  55.2  6.2  8.7    121  21.4 -166.9  6.1          3000

1547   2   1 BASKETMAKER MESA, NM, ENM 3353B
 35.5 -107.2  13.3 10     850-900
NRM      9   3.0  57.6  8.1 11.1     48  86.4  -67.3  7.5          3000
50G     10 359.7  55.5  7.0  9.9     50  89.4 -133.0  6.9           970
  COMMENTS: pit house floor

1178   3   0 BENT'S OLD FORT, CO, F-24
 38.1 -103.4  12.3 10
NRM     10  12.5  63.9  2.5  3.2    582  78.1  -56.2  2.0          3000
150G    10  11.8  63.6  2.8  3.6    454  78.7  -55.9  2.3          1830
200G    10   8.7  64.0  3.3  4.1    345  80.0  -66.0  2.6          3000

1814   2   0 BERNALILLO, NM, FEATURE 2, KIVA
 35.3 -106.6  13.0  8    1450
NRM      8 355.7  57.2  2.2  3.0    744  85.7 -160.0  2.0          3000
50G      8 358.1  57.9  2.2  3.0    752  86.4 -131.1  2.0          1420

1812   2   0 BERNALILLO, NM, FEATURE 3, EAST HEARTH
 35.3 -106.6  13.0 10    1450
NRM     10   3.9  59.6  1.5  2.0   1284  84.0  -76.8  1.3          3000
100G    10   4.3  60.3  1.4  1.9   1555  83.2  -78.6  1.2          1390
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1813   2   0 BERNALILLO, NM, FEATURE 3, SOUTH HEARTH
 35.3 -106.6  13.0 10    1450
NRM    10   4.9  58.0  2.5  3.4    435  84.8  -58.8  2.3        3000
50G     9   4.6  59.7  2.6  3.4    522  83.6  -73.8  2.3        1390

1798   2   1 CERRILLOS, NM, MINE SITE
 35.5 -106.1  13.6 12    1400-1500
NRM    11  70.8  51.3 10.2 15.1     18  32.3  -34.7 11.1        3000
50G     9  60.7  58.6 14.6 19.6     16  42.6  -39.8 13.2        2500
  COMMENTS: AS-5, feature 265, firepit

1950   1   2 CHAMISAL, NM, SIMS
 35.2 -106.7  12.0 12
NRM     9 358.5  60.3  2.1  2.8    784  83.7 -117.4  1.8        1370
  COMMENTS: 50G to 150G of 4 cubes gave 1.6
  COMMENTS: deg. change in decl.

 710   1   1 CHIMNEY ROCK, CO
 37.2 -107.3  13.6  8
NRM     7   5.5  71.9 40.8 46.3      6  70.0  -98.5 26.3        3000
  COMMENTS: Hearth 5AA92, feat. 16, central hearth

 711   2   0 CHIMNEY ROCK, CO, FEAT. 11 5AA88, ROOM 2
 37.2 -107.3  13.6  8    1077
NRM     8 346.4  62.3  6.2  7.9    120  77.8 -166.3  5.1        3000
150     8 345.1  62.1  3.8  4.8    317  77.1 -164.1  3.1        1120

 341   2   0 CIMARRON, NM, PEDREGOSO SITE, NP-1
 36.7 -105.3  12.8  8     750
NRM     7   0.9  59.5  3.2  4.3    456  86.3  -94.2  2.8        3000
100G    8   3.8  52.3  3.4  4.8    253  85.1   33.8  3.5         730

 342   3   0 CIMARRON, NM, PEDREGOSO SITE, NP-12
 36.7 -105.3  12.8  8    1600-1650
NRM     8   9.6  64.1 10.4 13.0     47  78.4  -69.9  8.2        3000
NRM     8   5.6  59.3  5.7  7.6    121  84.5  -54.5  5.1        1625
100G    8   8.7  60.8  7.4  9.6     78  81.6  -55.1  6.3        3000

 123   1   2 COCHITI, NM, LA 591
 35.6 -106.3  13.2  8    1700-1750
NRM     6   4.7  57.2  1.5  2.0   2395  85.3  -44.7  1.4        1715
  COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl
  COMMENTS: uncertain curve assignment

 124   1   2 COCHITI, NM, LA 591-9-2
 35.6 -106.3  13.2  7    1700-1750
NRM     7   4.8  56.1  3.0  4.1    446  85.6  -30.4  2.9        1715
  COMMENTS: 150G of 2 cubes gave 1.2 deg. change in decl
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  COMMENTS: uncertain curve assignment

  79   2   1 COCHITI, NM, LA 70, FEAT. 161, LOWER FLOOR
 35.6 -106.3  13.2  8    1350-1400
NRM     8 359.4  59.4  2.7  3.6    537  85.4 -112.0  2.4         1390
150G    8   3.3  59.4  3.4  4.6    329  84.7  -77.9  3.1         3000
  COMMENTS: AF results fall further along the curve

  78   3   1 COCHITI, NM, LA 70, FEAT. 161, UPPER FLOOR
 35.6 -106.3  13.2  8    1350-1400
NRM     7 359.8  56.9  2.6  3.5    615  88.1 -111.1  2.4         1450
NRM     7   5.3  59.8  2.7  3.6    634  83.4  -68.5  2.4         3000
150G    7   6.9  58.3  3.8  5.2    299  83.6  -50.1  3.5         3000
  COMMENTS:U uncertain curve assignment to AF results

  73   1   1 COCHITI, NM, LA 70, FEAT. 166, FLOOR LEVEL 3
 35.7 -106.3  13.2  9    1350-1400
NRM     9   5.5  53.9  5.5  7.9     84  85.3   -3.4  5.6         3000
  COMMENTS: 150G of 2 cubes gave 0.5 deg. change in decl.

  74   3   2 COCHITI, NM, LA 70, FEAT. 166, FLOOR LEVEL 4
 35.6 -106.3  13.2  8    1350-1400
NRM     7   6.0  54.3  1.8  3.6   1046  85.0   -9.1  1.9         3000
NRM     7   7.2  56.1  2.0  2.8    995  84.1  -28.7  1.9         3000
150G    7   2.6  58.1  2.1  2.8   1016  86.2  -74.0  1.9         1410
  COMMENTS: Feat. 166 had 5 hearths at 6 floor levels
  COMMENTS: TR associated was 1364

  75   3   1 COCHITI, NM, LA 70, FEAT. 166, FLOOR LEVEL 5
 35.6 -106.3  13.2  9    1350-1400
NRM     9   5.5  51.9  3.0  3.9    600  84.4   16.2  2.1         3000
NRM     9   8.0  54.8  2.5  3.5    429  83.5  -16.2  2.5         3000
150G    9   4.6  59.0  3.1  4.1    354  84.5  -66.5  2.7         1390
  COMMENTS: under hearth of floor level 3

  83   1   2 COCHITI, NM, LA 70, FEATURE 165-13
 35.6 -106.3  13.2 13
NRM     8   0.3  59.0  2.7  3.6    517  85.8 -103.1  2.4         1410
  COMMENTS: structure has multi floors superposed, upper
  COMMENTS: AF to 800G gave some change in direction

  77   3   0 COCHITI, NM, LA 70, FEATURE 167
 35.6 -106.3  13.2  8    1350-1400
NRM     7   4.2  55.6  1.9  3.6   1085  86.6  -26.5  1.8         3000
NRM     7   6.6  58.2  2.1  2.8   1027  83.8  -50.3  1.9         3000
150G    8   3.3  61.8  4.8  6.2    193  82.2  -88.3  3.4         1380

  76   3   1 COCHITI, NM, LA 70, FEATURE 179
 35.6 -106.3  13.2  8    1350-1400
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NRM      7  10.2  51.0  2.0  2.9    798  80.7    5.5  2.1        3000
NRM      7  13.3  55.0  1.7  2.4   1230  79.2  -19.8  1.7        3000
150G     7   3.1  57.0  2.3  3.2    764  86.8  -56.0  2.2        1420
  COMMENTS: hearth associated with floor level 2

  82   3   2 COCHITI, NM, LA 70, FEATURE 193-3
 35.6 -106.3  13.2  8    1600
NRM      7   9.1  59.3  3.6  4.9    347  81.5  -51.1  3.2        3000
NRM      7  12.7  61.5  2.9  3.8    607  77.9  -55.7  2.5        1600
150G     7   5.6  63.3  3.0  3.8    635  79.8  -83.2  2.4        3000
  COMMENTS: Spanish style corner feature
  COMMENTS: U uncertain curve assignment

  86   3   1 COCHITI, NM, LA 70, KIVA FEATURE 186-146
 35.6 -106.3  13.2 21
NRM     20   0.8  53.5  1.5  2.1    464  88.3   50.5  1.5        3000
NRM      7   7.7  53.3  2.2  3.1    719  83.4   -3.1  2.3        3000
150G     8   5.2  54.7  2.5  3.5    721  85.7  -12.8  2.5        1450
  COMMENTS: multi layered and collared hearth (reheated?)

1113   2   1 COCHITI, NM, LA12522
 35.6 -106.3  13.0  6
NRM      5 352.8  58.5  2.7  3.7    962  83.2 -161.9  2.5        3000
50G      5 345.3  60.0  0.5  0.7  27060  77.3 -167.2  0.5        1140
  COMMENTS: central hearth in pithouse or kiva

  27   4   1 COCHITI, NM, LA6455 AREA A, KIVA 52 SOUTH
 35.6 -106.3  13.2 10    1469-1497     TR
NRM      9 357.5  58.6  2.9  3.9    376  85.8 -133.6  2.7        1400
100G     7 354.7  62.2  5.0  6.5    211  81.1 -132.1  4.2        3000
150G     7 356.1  62.5  5.7  7.3    168  81.2 -125.1  4.7        3000
200G     7 353.1  63.2  7.0  8.8    117  79.5 -134.3  5.6        3000
  COMMENTS: Remodeled

  26   2   0 COCHITI, NM, LA6455, AREA B, KIVA 31
 35.6 -106.3  13.2 10    1400
NRM     10   2.8  55.8  3.2  4.5    242  87.6  -35.3  3.1        3000
NRM      8 358.9  59.8  2.9  3.4    595  84.9 -115.7  2.3        1380

  24   4   0 COCHITI, NM, LA6462 NO.30, N.MOUND, KIVA 45
 35.6 -106.3  13.2 10    1278-1280      TR
NRM     10 353.9  59.4  3.6  4.8    227  83.4 -150.7  3.2        3000
NRM      6 343.9  58.8  2.5  3.3    897  76.7 -174.3  2.2        3000
NRM      9 351.6  59.5  3.0  4.0      .  81.9 -158.3  2.6        3000
100G     6 347.4  60.5  1.9  2.5   1724  78.6 -161.7  1.6        1150

  25   3   0 COCHITI, NM, LA6462 NO.30, N.MOUND, KIVA 45
 35.6 -106.3  13.2 10    1280
NRM     10 351.2  58.1  2.4  3.2    484  82.3 -169.3  2.2        3000
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NRM    10 349.3  60.3  3.1  4.0    332  79.9 -159.1  2.7         3000
100G   10 349.8  60.1  3.3  4.4    275  80.4 -159.2  2.9         1160

  30   5   0 COCHITI, NM, LA70, ROOM 126
 35.6 -106.3  13.2  6    1000
NRM     6 352.6  55.0  2.2  3.1    932  84.0  165.2  2.2         3000
NRM     6 351.8  56.0  2.1  2.9   1131  83.3  174.3  2.0         3000
100G    6 358.5  56.6  2.1  2.9   1087  88.0 -143.4  2.0          990
150G    6 359.4  56.3  2.7  3.7    674  88.7 -127.1  2.6         3000
200G    6 359.9  58.1  2.6  3.5    786  86.8 -107.7  2.4         3000

  29   4   0 COCHITI, NM, LA70, ROOM 129
 35.6 -106.3  13.2 10    1691-1790   TR
NRM     7  13.2  59.9  1.3  1.7   3232  78.4  -46.8  1.1         1750
NRM     7  18.2  61.1  5.5  7.2    168  74.4  -46.7  4.7         3000
NRM     9  13.7  61.0  2.8  3.7    454  77.6  -51.6  2.4         3000
100G    7  17.2  61.6  6.2  8.1    135  74.9  -49.8  5.2         3000

  28   4   0 COCHITI, NM, LA70, ROOM 20
 35.6 -106.3  13.2 11    1300-1350
NRM    10   1.6  59.7  3.3  4.3    281  84.9  -92.5  2.9         3000
NRM     5   0.7  61.3  4.8  6.2    357  83.2 -101.9  4.1         3000
100G    5   0.5  61.6  4.5  5.8    410  82.8 -103.4  3.8         1380
150G    5 359.9  61.7  4.5  5.8    416  82.7 -106.9  3.8         3000

 543   2   1 CORONADO MOMUMENT, BERNELLEO, NM, SITE B
 35.3 -106.6  13.1  8
NRM     8   9.6  58.9  3.9  5.3    248  81.2  -49.3  3.5          560
150G    8  10.3  57.9  5.9  8.0    106  81.1  -41.1  5.4         3000
  COMMENTS: pithouse hearth

 546   2   2 CORONADO MONUMENT, BERNELLEO, NM
 35.3 -106.6  13.1  8
NRM     8   8.9  65.1  3.4  4.2    449  76.4  -79.9  2.6         1960
150G    8  16.8  55.4  5.5  7.8    105  76.4  -24.3  5.4         3000
  COMMENTS: U uncertain curve assignment
  COMMENTS: pithouse hearth

 544   1   1 CORONADO MONUMENT, BERNELLEO, NM, SITE B
 35.3 -106.6  13.1  8
NRM     8   2.1  68.1 22.1 26.3     13  74.1 -101.9 15.7         3000
  COMMENTS: spanish colonial hearth

 545   2   1 CORONADO MONUMENT, BERNELLEO, NM, SITE B
 35.3 -106.6  13.1  8
NRM     8 353.1  61.3  2.5  3.3    678  81.1 -141.4  2.1         3000
150G    8 352.1  60.3  2.4  3.2    689  81.5 -150.4  2.1         1080
  COMMENTS: kiva, rectangular hearth
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1990   1   1 CORRALES (NORTH OF), NM, STRUCTURE 14, PITHOUSE
 35.3 -106.6  11.9  6     700
NRM     3   9.5  52.0  3.1  4.6   1350  81.9    0.2  3.4          690
  COMMENTS: on the west bank of the Rio Grande

1396   1   2 CUBA, NM, CHACO SITE #1 LA14320
 36.0 -107.0  13.3  8    1050-1200
NRM     8 342.9  59.8  1.1  1.5   3283  75.9 -172.6  1.0         1130
  COMMENTS: 50G to 400G of 2 cubes gave little
  COMMENTS: change in direction

1397   3   0 CUBA, NM, CHACO SITE #1 LA14320
 36.0 -107.0  13.3  9    1050-1200
NRM     7 344.5  59.4  4.7  6.3    210  77.1 -173.4  4.2         3000
50G     8 344.1  60.2  5.1  6.7    156  76.5 -169.7  4.4         1130
100G    8 346.0  60.2  4.6  6.1    193  77.9 -167.7  4.9         3000

1399   2   0 CUBA, NM, F-CENTRAL HEARTH LA12760, CN
 36.0 -107.0  13.3  8    1100-1300
NRM     8 352.3  63.8  3.5  4.4    403  78.9 -136.4  2.8         3000
50G     7 352.0  62.3  1.6  2.1   2087  80.2 -143.4  1.3         1070

1400   3   0 CUBA, NM, F-HEARTH LA14324 GALLINA SITE 2
 36.0 -107.0  13.3  8
NRM     8 347.0  59.1  3.2  4.2    382  79.1 -172.6  2.8         3000
50G     7 345.2  59.7  2.2  2.9    974  77.5 -171.0  1.9         3000
100G    7 344.8  59.9  2.1  2.7   1117  77.2 -170.5  1.8         1135

1398   2   1 CUBA, NM, GALLINA SITE #1 LA14323
 36.0 -107.0  13.3  9    1100-1300
NRM     9 346.0  62.0  2.8  3.6    498  77.0 -158.9  2.3         3000
50G     9 344.8  60.8  2.8  3.7    445  76.8 -166.3  2.4         1120
  COMMENTS: F-burned floor by hearth

1545   2   0 ENM 881, NM, FEATURE OOIT002
 35.5 -107.2  13.3  9     900-1000
NRM     8  11.2  60.3  8.9 11.7     53  79.5  -53.9  7.7         3000
50G     7  11.4  58.1  6.4  8.7    105  80.4  -40.6  5.9         2500

 518   2   0 FOLSOM SITE, NM, SITE 29, CX-1
 36.8 -104.0  12.4  6   -8000
NRM     6 357.2  57.7  4.7  6.4    236  87.3 -159.0  4.4        -7700
150G    6 355.5  52.1  5.0  7.3    157  84.5  118.9  5.4         3000

 519   1   1 FOLSOM SITE, NM, SITE FED-70-1
 36.8 -104.0  12.4 11   -8000
NRM    11  29.1  66.3 20.5 25.0     10  65.7  -52.6 15.2         3000
  COMMENTS: 400G of 4 cubes gave 0.3 deg. change in decl
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 520   3   0 FOLSOM SITE, NM, SITE FED-70-1
 36.8 -104.0  12.4  9   -8000
NRM      9 353.7  64.7  5.9  7.3    130  79.1 -127.5  4.5        -7750
100G     7 352.2  80.4  7.3  9.6     92  82.5 -154.6  6.3         3000
150G     9 351.3  58.5  6.7  9.0     73  82.7 -171.8  6.1         3000

 521   2   0 FOLSOM SITE, NM, SITE FED-70-6
 36.8 -104.0  12.4  8   -8000
NRM      8 345.2  70.0  7.7  9.0    114  70.0 -130.1  5.2         3000
150G     8 352.1  66.7  8.1  9.8     88  76.3 -126.4  5.9        -7800

 522   1   1 FOLSOM SITE, NM, SITE FED-70-6
 36.8 -104.0  12.4  7   -8000
NRM      7 353.7  59.5  7.8 10.4     77  83.9 -156.7  6.9        -7700
  COMMENTS: 150G of 2 cubes gave 1.7 deg. change in decl

 523   1   1 FOLSOM SITE, NM, SITE FED-70-6
 36.8 -104.0  12.4  8   -8000
NRM      7 347.8  68.7  4.6  5.4    354  72.5 -129.4  3.2        -7800
  COMMENTS: 200G of 2 cubes gave 0.2 deg. change in decl

  92   1   1 FT. BERGWIN, NM, HOSPITAL, TA-8-H, ROOM 1
 36.2 -105.6  13.3  8    1853-1860
NRM      8  18.7  61.4  1.6  2.0   1788  74.2  -45.2  1.3         1860
  COMMENTS: (65-911)

  93   1   2 FT. BERGWIN, NM, HOSPITAL, TA-8-H, ROOM 7
 36.2 -105.6  13.3  8    1853-1860
NRM      6  12.1  63.0  2.2  2.8   1401  77.6  -61.4  1.8         1860
  COMMENTS: 150G of 2 cubes gave 0.1 deg. change in decl
  COMMENTS: (65-912)

 125   3   0 GRAN QUIVARA, NM, MOUND 7
 34.3 -106.2  12.8  8    1500-1600
NRM      8 359.7  57.2  9.1 12.4     43  86.4 -109.9  8.5         3000
NRM      8 358.9  54.1  9.2 13.1     36  89.1 -174.0  9.3         1500
150G     8   3.3  52.8  7.6 10.9     50  87.1    2.4  7.9         3000

  87   1   1 JEMEZ, NM, HEARTH NEAR WATER PIPE
 35.8 -107.3  13.3  8
NRM      8 358.4  50.9 13.7 20.3     15  85.6   90.3 15.0         3000
  COMMENTS: 150G of 2 cubes gave 3.2 deg. change in decl

  88   1   1 JEMEZ, NM, SLAB LINED HEARTH OUT FROM PIT
 35.8 -107.3  13.3  8    1600-1700
NRM      8 338.8  58.1 27.1 36.8      6  72.9  179.1 35.0         3000
  COMMENTS: 150G of 2 cubes gave 3.9 deg. change in decl

1516   3   0 LAS VEGAS, NM, TINSLEY (RANCH) SITE
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 35.6 -105.2  12.6  8    1100
NRM      8 340.0  62.0  4.8  6.2    190  72.9 -163.0  4.0          3000
50G      8 344.3  59.5  2.2  3.0    787  76.8 -169.5  2.0          3000
100G     8 345.3  59.9  1.8  2.3   1284  77.4 -166.9  1.5          1120

1303   2   0 LEONE BLUFFS, CO, TC:C9:8
 37.1 -104.6  12.7  8    1100
NRM      8  38.1  74.2  5.3  5.8    299  56.5  -71.2  3.2          3000
100G     8 357.1  61.1  3.6  4.7    323  84.5 -127.5  3.1          1020

1304   3   0 LEONE BLUFFS, CO, TC:C9:8
 37.1 -104.6  12.7  9    1100
NRM      8 358.1  66.0  7.0  8.5    114  78.7 -110.9  5.2          3000
50G      7 359.7  65.9  6.9  8.4    138  78.9 -105.7  5.1          2500
100G     7   3.9  65.1  6.6  8.2    144  79.6  -89.8  5.1          3000

1302   2   1 LEONE BLUFFS, CO, TC:C9:8 F-1-75
 37.1 -104.6  12.7  9    1150-1200
NRM      7 347.7  67.0  3.3  4.0    622  74.6 -135.9  2.4          1080
50G      8 351.9  66.2  5.8  7.1    164  77.1 -129.4  4.3          3000
  COMMENTS: "Trinidad"

1305   3   1 LEONE BLUFFS, CO, TC:C9:8 F-51
 37.1 -104.6  12.7  8    1000
NRM      8  10.8  78.0 27.1 28.8     14  59.5  -96.3 15.3          3000
NRM      7  10.0  67.7  7.2  8.6    138  74.6  -80.1  5.2          3000
50G      7 357.8  63.6  3.9  4.9    389  81.7 -115.4  3.1          1090
  COMMENTS: U uncertain curve assignment

1301   2   0 LEONE BLUFFS, CO, TC:C9:8 F-53
 37.1 -104.6  12.7  8    1100
NRM      8 357.0  49.5  1.9  2.9    659  82.8   96.7  2.2          3000
100G     8 357.7  57.9  1.6  2.2   1424  87.7 -154.3  1.5           980

 792   2   0 LINDRITH, NM
 36.2 -107.1  13.4  9
NRM      8 352.9  63.5  2.8  3.5    631  79.6 -135.9  2.2          3000
50G      9 350.8  60.3  2.3  3.0    681  81.2 -159.1  2.0          1060

 793   1   2 LINDRITH, NM
 36.2 -107.1  13.4  8
NRM      8 343.7  63.0  1.5  1.9   2176  75.1 -158.4  1.2          1110
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction

 789   1   1 LINDRITH, NM, ROOM 1, STRUC. C
 36.2 -107.1  13.4  8    1180
NRM      8 351.5  61.5  1.9  2.5   1176  80.9 -150.1  1.6          1060
  COMMENTS: 150G of 2 cubes gave little change in direction
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1070   2   0 LLAVES, NM, LA 12059 (LG 84)
 36.4 -106.9  13.4  8    1200
NRM      8 347.5  62.2  1.5  1.9   2125  78.0 -156.3  1.2         3000
100G     8 346.3  62.0  1.1  1.4   3637  77.5 -159.5  0.9         1110

1069   4   1 LLAVES, NM, LA 12063 (LG 231)
 36.4 -106.8  13.3  8    1230-1240 TR
NRM      7 353.3  60.4  2.7  3.6    649  82.8 -151.3  2.4         3000
150G     8 351.9  59.6  2.8  3.7    501  82.5 -161.9  2.5         3000
200G     8 351.2  60.1  2.8  3.6    532  81.7 -160.0  2.4         1190
400G     7 353.8  60.0  3.3  4.4    437  83.4 -151.7  2.9         3000
  COMMENTS: central hearth-unit house LL-1

1072   2   1 LLAVES, NM, LA 12066 (LG-124N)
 36.4 -106.8  13.2  9    1230-1250   TR
NRM      9 343.1  62.5  5.6  7.1    129  75.1 -161.5  4.6         3000
150G     6 346.1  61.6  2.5  3.3   1002  77.6 -161.7  2.1         1115
  COMMENTS: circular hearth of unit house

1073   2   1 LLAVES, NM, LA 12069 (FS-22)
 36.4 -106.8  13.3  8    1240        TR
NRM      8 354.3  55.9  8.4 11.6     48  85.4  165.6  8.1         1220
100G     8   0.2  56.6  9.2 12.8     41  89.2  -95.7  8.8         3000
  COMMENTS: circular hearth of unit house

1071   3   1 LLAVES, NM, LA 12073 (LG 390)
 36.4 -106.8  13.4  9    1240       TR
NRM      8   2.2  60.2  6.0  7.9     99  85.0  -87.5  5.2         3000
100G     9 355.7  61.5  5.0  6.5    150  83.0 -133.6  4.2         1200
200G     9 347.0  62.4  6.5  8.3     95  77.6 -156.5  5.3         3000
  COMMENTS: bin from east wall

1080   2   1 LLAVES, NM, LA-12055 (LG 52)
 36.4 -106.8  13.3  9    1245        TR
NRM      8 351.4  59.6  5.0  6.7    157  82.2 -163.5  4.4         3000
150G     7 350.4  58.6  3.3  4.4    409  81.9 -172.8  3.0         1180
  COMMENTS: circular hearth

1079   4   1 LLAVES, NM, LA-12071 (LG-368-TOWER)
 36.4 -106.8  13.3  8    1220-1230   TR
NRM      7 330.6  61.9  3.8  5.0    357  66.6 -171.1  3.2         3000
100G     6 345.5  62.2  3.9  5.1    423  76.8 -159.9  3.3         3000
150G     6 343.5  62.7  3.9  5.0    450  75.3 -160.2  3.2         3000
200G     6 344.1  61.9  3.6  4.7    499  76.1 -163.2  3.0         1115
  COMMENTS: burned partition of circular tower

1081   3   1 LLAVES, NM, LA-12072 (LG 325B)
 36.4 -106.8  13.3  9    1240        TR
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NRM      7 353.0  63.5  6.6  8.3    132  79.9 -136.0  5.3            3000
100G     7 356.2  60.5  7.2  9.4     96  84.1 -135.6  6.2            1200
200G     7 357.1  60.1  9.2 12.1     58  84.9 -132.0  8.0            3000
  COMMENTS: slab-lined hearth

1074   3   1 LLAVES, NM, LA12054 (LG-77-U)
 36.4 -106.8  13.4  9    1240        TR
NRM      9 343.2  60.0  4.8  6.3    152  76.2 -173.0  4.2            3000
100G     7 351.4  61.0  3.7  4.8    376  81.2 -153.8  3.1            3000
200G     9 351.3  58.6  2.5  3.4    513  82.5 -170.3  2.3            1190
  COMMENTS: burned circular hearth of unit house

1075   4   1 LLAVES, NM, LA12054  (LG77-P)
 36.4 -106.8  13.4  9    1000-1300
NRM      9 345.6  58.3  4.4  6.0    164  78.3 -179.6  9.0            3000
100G     4 345.0  59.5  2.8  3.8   1350  77.6 -173.6  2.5            3000
100G     5 344.0  59.1  2.4  3.2   1264  77.0 -176.3  2.2            1140
100G     8 343.3  59.5  1.8  2.4   1184  76.3 -174.6  1.6            3000
  COMMENTS: burned circular hearth of pithouse

1076   3   1 LLAVES, NM, LA12056 (LG-42)
 36.4 -106.8  13.4  8    1000-1300
NRM      8   0.6  58.3  6.6  8.9     85  87.4  -96.7  6.0            3000
100G     8 355.8  57.1  3.5  4.8    279  86.4 -174.4  3.3            3000
150G     8 354.6  57.2  3.0  4.2    380  85.4 -175.3  2.8            1210
  COMMENTS: slab lined hearth of unit house

1077   3   1 LLAVES, NM, LA12062  (FS-28)
 36.4 -106.8  13.3  8    1230-1260   TR
NRM      7 349.3  59.7  2.5  3.4    733  80.7 -167.3  2.2            3000
150G     8 347.2  60.1  2.3  3.0    771  79.0 -168.2  2.0            1150
400G     8 349.2  61.4  3.1  4.0    462  79.8 -157.9  2.6            3000
  COMMENTS: hearth of unit house

1078   3   1 LLAVES, NM, LA12070 (LG-368)
 36.4 -106.8  13.3  8    1250        TR
NRM      7 346.3  66.4  7.1  8.6    133  74.0 -141.5  5.3            3000
100G     8 352.5  60.7  4.6  6.0    202  82.1 -151.9  3.9            1180
150G     8 353.6  60.8  3.5  4.6    343  82.6 -147.5  3.9            3000
  COMMENTS: slab and cobble lined hearth, unit house

 901   3   0 LLAVES, NM, SITE 124N
 36.4 -106.8  13.2  3
NRM      3 347.9  63.3  3.9  5.0   1523  77.4 -149.5  3.2            3000
100G     3 349.2  62.6  4.3  5.5   1223  78.7 -149.9  3.5            1080
150G     3 349.9  62.3  4.4  5.6   1179  79.4 -149.6  3.6            3000

1739   1   2 LOS ALAMOS SCIENTIFIC LABORATORY, NM
 35.9 -106.3  13.0  8    1250-1300
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NRM     8 252.2  70.2 15.2 17.6     30  19.3 -142.5 10.2         3000
  COMMENTS: LA 4718, kiva component 2, firepit
  COMMENTS: 100G of 4 cubes gave 0.4 deg. change in decl

1856   2   1 LOS HUERTAS, NM, near Zia Pueblo-Placitas, SITE AL515
 35.3 -106.4  13.0 11   1700-1800
NRM    11  15.5  64.2  7.3  9.1     65  74.2  -63.5  5.7         3000
100G    8  13.7  61.8  3.6  4.6    343  76.9  -56.4  3.0         1750
  COMMENTS: house, Feature 1, Horno

1853   2   2 LOS RANCHOS DE ALBEQUERQUE, NM
 35.2 -106.7  13.0 10    1350-1375
NRM    10   4.4  53.5  4.1  5.9    132  86.2   -0.6  4.2         3000
50G    10   4.0  54.4  4.7  6.6    107  86.7  -13.7  4.7          950
  COMMENTS: area A, grid 13E, feat. 17, hearth A
  COMMENTS: Chamisal LA22765

1890   2   0 LOS RANCHOS DE ALBUQUERQUE, NM
 35.2 -106.7  12.9 12
NRM    11   7.8  61.3  5.4  7.0    102  80.6  -69.2  4.6         3000
300G   11   8.1  62.2  5.7  7.3     96  79.6  -72.4  4.7          600

1892   2   0 LOS RANCHOS DE ALBUQUERQUE, NM
 35.2 -106.7  12.9 10
NRM     9   9.1  57.7  2.9  4.0    358  82.0  -42.9  2.7         3000
50G     8  12.9  55.7  1.5  2.0   1533  79.5  -26.3  1.4          500

1893   2   1 LOS RANCHOS DE ALBUQUERQUE, NM
 35.2 -106.7  12.9 13
NRM    13   5.6  59.4  3.8  5.0    154  83.3  -67.3  3.3          610
50G     9   6.8  58.8  6.6  8.9     75  83.1  -57.2  6.0         3000
  COMMENTS: U, uncertain curve assignment

1894   3   0 LOS RANCHOS DE ALBUQUERQUE, NM
 35.2 -106.7  12.9 11
NRM    11   3.2  57.5  4.0  5.5    148  86.1  -65.7  3.8         3000
50G     9   0.2  59.4  4.0  5.3    212  85.0 -105.2  3.5         1390
100G    9 359.7  60.3  4.3  5.7    188  84.0 -108.9  3.8         3000

1895   4   0 LOS RANCHOS DE ALBUQUERQUE, NM
 35.2 -106.7  12.9  8
NRM     8  16.2  60.6 13.9 18.3     22  75.8  -48.2 12.0         3000
50G     8  14.5  61.9 12.7 16.3     29  76.3  -56.2 10.5         3000
100G    8  13.8  61.0 12.1 15.8     30  77.3  -53.1 10.3         3000
150G    8  13.4  60.1 11.4 15.1     32  78.0  -49.3 10.0          550

1917   3   0 LOS RANCHOS DE ALBUQUERQUE, NM
 35.2 -106.7  12.9 10
NRM    10   2.2  63.7  6.8  8.6     81  79.7  -98.0  5.4         3000
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100G   10  13.2  64.2  8.9 11.1      49  75.4  -67.9  7.0          3000
150G   10  13.1  63.5  8.7 11.0      49  76.0  -65.4  7.0          1960

1918   2   0 LOS RANCHOS DE ALBUQUERQUE, NM
 35.2 -106.7  12.9 12
NRM    12  34.3  75.0  6.9  7.6     110  55.8  -78.4  4.2          3000
50G    12  11.3  62.6  2.6  3.4     411  77.7  -65.2  2.1          1960

1740   2   1 LOS RANCHOS DEL ALBUQUERQUE, NM
 35.2 -106.7  13.0  8    1350-1450
NRM     8   2.2  58.5  5.0  6.7     151  85.6  -83.8  4.5          3000
100G    8   5.5  60.0  3.4  4.4     358  82.8  -71.1  2.9          1390
  COMMENTS: Chamisal 1, hearth

 944   2   1 NAMBE FALLS, NM
 35.8 -105.9  12.9  8    1250-1350
NRM     8   0.5  55.8  1.5  2.1    1481  89.3  -69.2  1.4          3000
50G     6   0.7  59.4  2.2  3.0    1151  85.8  -99.0  2.0          1310
  COMMENTS: X-29-SF-10, Feature 191 hearth

 903   2   0 NAMBE FALLS, NM, FEATURE 123, X29-SF-10
 35.8 -105.9  12.9  9    1200-1400
NRM     9 349.5  65.5  3.3  4.0     435  75.8 -136.1  2.5          3000
100G    7 348.2  62.7  2.5  3.2     902  77.7 -149.5  2.0          1340

 905   1   3 NAMBE FALLS, NM, FEATURE 151, X-29-SF-18
 35.8 -105.9  12.9  8     850-1125
NRM     8 340.9  60.5  1.9  2.5    1104  74.1 -169.4  1.7          1130
  COMMENTS: hearth in pithouse
  COMMENTS: 50G to 150G of 2 cubes gave little
  COMMENTS: change in direction

 904   1   3 NAMBE FALLS, NM, FEATURE 170, X-29-SF-10
 35.8 -105.9  12.9  8    1200-1400
NRM     8 347.2  60.6  2.2  2.8     887  78.4 -161.7  1.9          1120
  COMMENTS: deep hearth in room 7
  COMMENTS: 50G to 150G of 2 cubes gave little
  COMMENTS: change in direction

 906   2   1 NAMBE FALLS, NM, X-29-SF-10
 35.8 -105.9  12.9  8    1200-1400
NRM     8 353.5  59.3  2.0  2.6    1011  83.3 -154.1  1.7          3000
100G    6 352.7  59.6  1.9  2.5    1689  82.6 -155.0  1.6          1190
  COMMENTS: burned wall west of Room 11

 736   2   0 NAVAJO RESERVOIR, NM
 36.9 -107.5  13.7  9
NRM     8 352.8  65.4 12.1 14.9      37  78.1 -131.9  9.2          3000
150G    8   0.5  58.8  2.5  3.3     617  87.3  -98.7  2.2          1430
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1891   4   1 NORTH PASTURE, NM, T6N, R10W, SEC. 7
 34.0 -107.0  12.8 11
NRM    11 353.8  55.8  8.2 11.4     34  84.8   43.8  8.0         3000
50G     8 351.2  58.5  2.5  3.3    610  81.2 -157.9  2.2         3000
100G    7 349.4  58.6  1.8  2.4   1442  80.0 -161.7  1.6         1160
150G    8 350.3  58.7  1.9  2.6   1033  80.5 -159.4  1.7         3000
  COMMENTS: U, uncertain curve assignment

 339   2   0 OTERO, CO, ANTELOPE ROCK SHELTER
 37.9 -103.5  12.3  8    1000-1350
NRM     7 317.9  72.5 17.0 19.2     32  56.3 -143.5 10.8         3000
NRM     7  31.6  70.4 18.9 21.8     24  62.9  -61.8 12.6         2500

 340   2   0 OTERO, CO, ANTELOPE ROCK SHELTER
 37.9 -103.5  12.3  8    1250
NRM     7   9.5  55.6 10.7 15.0     34  82.2   -3.2 10.5         3000
NRM     5   9.5  55.6  6.6  8.8    172  86.0   -3.2  5.9         1270

 338   2   1 OTERO, CO, WILLIAMS-HAROOMON SITE
 38.0 -103.5  12.3  8    1000-1350
NRM     8  80.5  58.2  5.9  7.9    108  29.2  -41.9  5.4         3000
100G    8  10.7  68.0  7.8  9.3    100  74.9  -77.0  5.6         2500
  COMMENTS: modern

1561   3   0 PECOS NAT`L. MON., NM, PITHOUSE 1, LA14154
 35.7 -105.7  12.8 11
NRM     9 349.7  62.0 10.5 13.5     36  79.0 -148.7  8.7         3000
100G    8 353.4  54.1  6.9  9.8     64  84.5  156.6  7.0         1220
150G    8 352.0  53.5  6.8  9.8     63  83.2  153.3  7.0         3000

1560   3   0 PECOS NAT`L. MON., NM, PITHOUSE 1, SITE 200
 35.7 -105.7  12.8 11
NRM    10   7.6  52.8  3.5  5.1    166  83.0    9.2  3.8          900
100G   10   4.6  50.6  4.0  6.0    119  84.2   31.6  4.5         3000
150G   10   6.5  51.0  4.3  6.4    106  83.3   18.7  4.7         3000

 141   1   2 PECOS, NM, Pe-2
 35.7 -105.7  13.0  8    1620-1790
NRM     7   7.9  49.0  4.0  6.1    170  81.2   23.4  4.6         3000
  COMMENTS: several periods of reuse and reconstruction
  COMMENTS: 150G of 2 cubes gave 11.7 deg. change in decl

 142   5   1 PECOS, NM, Pe-1
 35.7 -105.7  13.0 10    1620-1790
NRM     9  12.1  59.9  3.4  4.5    306  79.3  -47.6  2.9         3000
NRM     6  14.3  59.1  2.8  3.8    711  77.9  -60.4  2.5         3000
150G    6  14.2  60.5  1.9  2.5   1673  77.5  -67.3  1.6         3000
200G    8  12.7  61.2  1.7  2.2   1494  78.1  -73.2  1.4         1700
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200G    8  14.9  60.9  1.6  2.0   1746  76.9  -68.3  1.3        3000
  COMMENTS: modern?

 143   4   1 PECOS, NM, Pe-3
 35.7 -105.7  13.0  8    1620-1790
NRM     8 356.6  63.4 10.5 13.2     45  80.4 -120.1  8.4        3000
NRM     8   7.9  60.4  7.1  9.3     83  81.6  -60.9  6.1        1700
NRM     5 357.4  62.2  5.4  7.0    291  82.0 -119.4  4.5        3000
NRM     8   7.1  65.7  6.9  8.5    114  76.7  -84.4  5.2        3000
  COMMENTS: NRM measured at different times, poor results

 144   2   1 PECOS, NM, Pe-4
 35.7 -105.7  13.0  8    1620-1790
NRM     7   4.4  58.2  2.1  2.8   1023  85.2  -59.7  1.9        1700
NRM     7   4.1  59.1  3.2  4.2    456  84.8  -69.1  2.8        3000
  COMMENTS: 150G of 2 cubes gave 3.9 deg. change in decl

 145   2   2 PECOS, NM, Pe-5
 35.7 -105.7  13.0  8    1620-1790
NRM     8   1.6  55.8  1.9  2.6    900  88.5  -43.8  1.8        3000
NRM     8   1.6  56.2  1.6  2.2   1299  88.4  -54.6  1.5        1700
  COMMENTS: 150G of 2 cubes gave 0.8 deg. change in decl
  COMMENTS: repeat measurements of NRM

 146   3   0 PECOS, NM, Pe-6
 35.7 -105.7  13.0  8    1620-1790
NRM     7 359.9  56.8  2.2  3.0    829  88.4 -107.4  2.1        3000
NRM     7 359.9  57.7  1.8  2.5   1262  87.3 -106.9  1.7        3000
150G    7   0.8  57.8  1.3  1.7   2602  87.2  -92.2  1.2        1700

 147   4   1 PECOS, NM, Pe-7
 35.7 -105.7  13.0  8
NRM     6 349.2  58.0  2.1  2.9   1176  80.9 -173.6  2.0        1170
NRM     7 346.9  59.7  3.5  4.6    387  78.6 -166.6  3.1        3000
150G    8   1.2  62.7  7.6  9.8     80  81.5  -99.7  6.2        3000
200G    7 359.5  60.8  4.8  6.3    218  83.9 -109.1  4.1        3000
  COMMENTS: Lightning ruin across river

 148   2   0 PECOS, NM, Pe-8
 35.7 -105.7  13.0  8
NRM     8 350.2  60.7 10.0 13.1     42  80.3 -154.7  8.6        3000
NRM     8 348.2  57.8  7.7 10.5     61  80.2 -176.2  7.2        1160

 149   2   0 PECOS, NM, Pe-9
 35.7 -105.7  13.0  8
NRM     8   6.3  54.3  7.8 11.1     50  84.8   -7.6  7.9        3000
NRM     8   6.4  55.8  7.8 10.9     55  84.8  -25.2  7.6        1650

 150   2   1 PECOS, NM, Pe-10
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 35.7 -105.7  13.0  7
NRM     7   8.8  58.8 10.6 14.2     41  82.0  -47.4  9.6        3000
NRM     7   6.2  61.2  7.5  9.7     92  81.9  -71.2  6.3        1700
  COMMENTS: 150G of 2 cubes gave 2.0 deg. change in decl

 465   2   0 PECOS, NM, F 16, HEARTH
 35.7 -105.7  13.0  8    1650-1680
NRM     8 357.2  71.4  7.6  8.7    126  69.5 -110.1  5.0        3000
150G    8 359.5  66.2  7.6  9.3     96  77.2 -107.2  5.7        2500

 464   1   2 PECOS, NM, FIREPLACE IN SE CORNER, ROOM 2
 35.7 -105.7  13.0  8    1660
NRM     8   1.0  60.4  1.3  1.8   2300  84.3  -97.9  1.2        1660
  COMMENTS: 150G of 2 cubes gave 0.5deg. change in decl.
  COMMENTS: Convento Anrey

 960   1   2 PECOS, NM, ROOM 28, HEARTH, N.E. CORNER
 35.7 -105.7  13.0  8
NRM     8   5.0  58.5  2.8  3.7    482  84.8  -58.6  2.5        1680
  COMMENTS: 50G to 200G of 2 cubes gave large
  COMMENTS: changes in direction

 959   2   0 PECOS, NM, ROOM 28, N.E. CORNER FLOOR
 35.7 -105.7  13.0  8
NRM     6   6.6  57.9  3.9  5.3    348  84.0  -45.9  3.6        3000
100G    6   8.3  58.0  3.8  5.2    361  82.7  -42.7  3.5        1700

 962   1   4 PECOS, NM, ROOM 3, SOUTH PUEBLO
 35.7 -105.7  13.0  7
NRM     6 323.5  54.3  3.9  5.5    290  60.3  173.4  3.9        3000
  COMMENTS: Hearth in SW corner of room
  COMMENTS: 50G to 150G of 4 cubes gave some
  COMMENTS: change in direction
  COMMENTS: uncertain curve assignment

 958   2   1 PECOS, NM, ROOM 48
 35.7 -105.7  13.0  7
NRM     7 343.9  54.3  2.1  3.0    823  76.8  165.1  2.1        3000
150G    7   2.4  56.1  2.5  3.4    650  87.8  -42.0  2.4        1650
  COMMENTS: wall in SW corner of room

 963   1   3 PECOS, NM, ROOM 48, S.W. CORNER
 35.7 -105.7  13.0  8
NRM     8 351.4  60.2  2.9  3.9    473  81.3 -154.5  2.6        1060
  COMMENTS: 50G to 200G of 2 cubes gave large
  COMMENTS: change in direction
  COMMENTS: uncertain curve assignment

 961   1   2 PECOS, NM, ROOM C-3, RECTANGULAR HEARTH
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 35.7 -105.7  13.0  8
NRM      8   0.8  59.1  1.1  1.5   2977  85.7  -96.9  1.0        1700
  COMMENTS: 50G to 200G of 2 cubes gave little
  COMMENTS: change in direction

 345   4   0 PICURIS MISSION, NM
 36.1 -105.8  12.9  8    1680
NRM      8   8.7  56.1 14.3 19.9     17  83.0  -22.9 13.9        3000
NRM      8  11.3  54.9  8.7 12.3     42  80.8  -14.9  8.6        1700
100G     8   7.3  51.8  7.2 10.5     53  83.0   13.6  7.7        3000
150G     8   5.9  53.1  6.4  9.2     71  84.6    9.3  6.6        3000

 346   2   0 PICURIS MISSION, NM
 36.1 -105.8  12.9  8    1680
NRM      8  13.2  57.3  5.7  7.7    110  79.3  -29.3  5.3        3000
150G     8   4.8  58.4  4.1  5.5    222  85.1  -55.7  3.7        1680

  89   1   2 POT CREEK PUEBLO, NM, TA-1, UNIT 3, ROOM 2
 36.2 -105.6  13.3  8    1275-1325
NRM      8 357.7  64.4  7.7  9.6     87  79.8  -14.5  6.0        3000
  COMMENTS: burnt post hole, (65-908)
  COMMENTS: 150G of 2 cubes gave 3 deg. change in decl

  90   3   2 POT CREEK PUEBLO, NM, TA-1, UNIT 3, ROOM 1
 36.2 -105.6  13.3  8    1300
NRM      8 351.8  58.0  6.9  9.4     76  83.1 -172.6  6.4        3000
NRM      7   0.8  57.1  3.6  5.0    316  88.4  -83.7  3.4        1260
150G     7   4.9  57.9  3.4  4.6    374  85.4  -48.6  3.1        3000
  COMMENTS: burnt post hole, (65-910)
  COMMENTS: uncertain curve assignment

  91   3   1 POT CREEK PUEBLO, NM, TA-1, UNIT 3, ROOM 2
 36.2 -105.6  13.3  6    1275-1350
NRM      6 355.6  53.4  2.3  3.3    804  85.7  133.5  2.4        3000
NRM      6   0.4  57.5  2.8  3.8    659  88.0  -95.8  2.6        3000
150G     6 358.3  57.2  2.5  3.5    787  87.9 -144.7  2.4        1290
  COMMENTS: (65-909)

1904   2   0 RANCHOS DE TAOS, USGS 7.5
 36.3 -105.5  12.9 12
NRM     11 352.2  66.9  5.1  6.2    148  75.6 -126.2  3.8        3000
50G      9 347.9  62.5  2.3  2.9    751  78.1 -152.4  1.9        1090

 693   7   1 RIO HONDO, NM
 35.5 -105.9  12.9 10
NRM     10 326.9  43.2 12.1 19.5     10  59.8  153.4 15.7        3000
150G    10 346.4  56.0  5.2  7.2     94  79.0  173.6  5.0        3000
200G     8 353.1  58.0  1.3  1.8   2142  83.6 -163.6  1.2        1200
400G    10 350.1  59.5  3.2  4.3    284  80.8 -161.6  2.9        3000
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800G     2 353.7  58.5  6.2  8.4   1928  83.8 -157.8  5.7         3000
1600G    2 356.7  61.0 11.8 15.4    620  83.0 -126.4 10.0         3000
3200G    2 358.0  59.6 23.0 30.5    154  84.8 -122.8 20.3         3000
  COMMENTS: room 12-15-6, wall and floor (see 694)

 694   4   1 RIO HONDO, NM
 35.5 -105.9  12.9  8
NRM      8  28.3  34.6  7.0 12.1     29  60.1   10.0 10.6         3000
150G     8 340.5  63.9  4.4  5.5    258  72.1 -155.5  3.5         3000
200G     8 342.9  63.9  3.7  4.6    363  73.6 -152.7  2.9         3000
400G     8 349.6  63.0  3.0  3.8    520  78.0 -144.1  2.4         1340
  COMMENTS: Hearth 12-15-6-4, same room as 693

 698   3   1 RIO HONDO, NM
 35.5 -105.9  12.9  8
NRM      8 356.9  59.4  2.5  3.3    646  84.7 -132.2  2.2         1320
100G     6   2.1  59.1  4.4  5.9    288  85.3  -85.5  4.0         3000
150G     8   3.4  59.7  4.2  5.5    227  84.3  -78.9  3.7         3000
  COMMENTS: hearth 12-15A-8-6, 2’ below set 699

 702   1   0 RIO HONDO, NM, HEARTH 12-11-5-5-1
 35.5 -105.9  12.9  9
NRM      9 353.9  60.5  2.5  3.3    565  82.3 -142.9  2.2         1340

 703   3   1 RIO HONDO, NM, HEARTH 12-11-8-3-4
 35.5 -105.9  12.9  8
NRM      8 352.3  61.7  5.1  6.6    169  80.5 -142.4  4.3         3000
100G     5 358.4  59.8  2.5  3.3   1207  84.7 -119.2  2.2         1380
150G     8 350.6  64.0  6.7  8.4    113  77.5 -137.7  5.2         3000
  COMMENTS: see 704

 704   2   1 RIO HONDO, NM, HEARTH 12-11-8-3-8
 35.5 -105.9  12.9  8
NRM      7   5.0  65.5  8.5 10.5     89  77.2  -90.6  6.4         3000
100G     7   3.9  61.0  8.5 11.1     70  82.8  -82.5  7.3         1380
  COMMENTS: same room as 703

 699   2   0 RIO HONDO, NM, HEARTH 12-15A-7-4i (SEE 698)
 35.5 -105.9  12.9  9
NRM      9 354.6  60.0  2.1  2.8    747  83.2 -143.2  1.9         3000
150G     6 356.9  60.0  2.8  3.7    740  84.1 -129.1  2.5         1320

 695   3   0 RIO HONDO, NM, HEARTH 12-16-1-8
 35.5 -105.9  12.9  8
NRM      8 357.8  60.5 12.3 16.2     28  83.7 -121.3 10.6         3000
100G     5 354.2  61.7  4.4  5.7    438  81.4 -135.6  3.7         1350
150G     5 352.5  61.1  4.9  6.4    334  81.1 -145.0  4.2         3000

 697   2   0 RIO HONDO, NM, HEARTH 12-16-17-3
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 35.5 -105.9  12.9  8
NRM      8 350.9  63.9  4.3  5.4    263  77.8 -137.4  3.4         3000
150G     8 358.4  61.9  2.4  3.1    777  82.2 -114.6  2.0         1360

 700   4   0 RIO HONDO, NM, HEARTH 12-16-34-4
 35.5 -105.9  12.9  9
NRM      9 357.6  70.7 11.9 13.7     43  70.5 -110.0  7.9         3000
100G     6 353.0  63.2  3.2  4.0    683  79.4 -134.0  2.6         3000
150G     7 354.3  63.0  2.8  3.6    706  80.1 -130.4  2.3         3000
200G     7 354.0  63.7  2.7  3.4    809  79.2 -129.0  2.1         1350

 696   2   1 RIO HONDO, NM, HEARTH 12-16-36-5
 35.5 -105.9  12.9 10
NRM     10 354.2  60.2  1.4  1.9   1474  82.7 -143.2  1.3         1340
150G     3 353.0  60.5  4.3  5.7   1099  81.9 -146.6  3.7         3000
  COMMENTS: 150G of 3 cubes gave little change in direction

 692   2   0 RIO HONDO, NM, HEARTH 12-20-6-9
 35.5 -105.9  12.9  8
NRM      8 343.4  64.2  8.7 10.9     67  73.5 -150.5  6.8         3000
100G     8 350.2  63.5  4.4  5.6    245  77.9 -140.7  3.5         1340

 691   1   2 RIO HONDO, NM, HEARTH 12-C-2-3-1
 35.5 -105.9  12.9  8
 NRM      8 355.4  59.5  2.2  3.0    796  84.0 -141.3  2.0        1320
   COMMENTS: slab lined in kiva
   COMMENTS: 150G of 2 cubes gave litle change in direction

 701   3   0 RIO HONDO, NM, ROOM 12-16-24, FLOOR
 35.5 -105.9  12.9  8
NRM      7 357.6  61.0  4.7  6.2    224  83.2 -121.1  4.0         1370
100G     8   2.7  60.9  6.9  9.0     90  83.2  -88.9  5.9         3000
150G     8   2.5  61.2  7.3  9.5     81  82.9  -90.8  6.2         3000

 705   3   0 RIO HONDO, NM, ROOM 12-18-7, WALL ROOM
 35.5 -105.9  12.8  8
150G     2 352.5  59.5  4.1  5.5   4702  82.4 -154.8  3.6         3000
100G     4 352.1  59.1  1.2  1.6   7419  82.4 -158.8  1.1         3000
150G     6 352.3  59.1  1.1  1.5   4398  82.5 -157.6  1.0         1330

 706   3   0 RIO HONDO, NM, ROOM 12-9-6, WALL
 35.5 -105.9  12.9  8    1345-1400
NRM      8 358.7  57.7  1.8  2.5   1055  87.0 -124.9  1.7         3000
100G     4 358.5  58.3  1.2  1.6   7654  86.3 -124.2  1.1         3000
150G     6 358.8  59.3  1.7  2.2   2013  85.3 -116.8  1.5         1390

1148   2   1 RIO PUERCO PROJECT
 35.5 -107.2  12.9  7    1266
NRM      6 354.5  58.0  5.9  8.0    152  84.6 -159.4  5.5         3000
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50G      6 347.2  59.7  8.0 10.6     91  78.7 -166.8  7.0          1140
  COMMENTS: “D” shaped room on Guadalule mesa

1149   3   1 RIO PUERCO PROJECT
 35.5 -107.2  12.9  8    1100-1200
NRM      7 350.5  56.0  3.5  4.9    320  82.3  173.0  3.4          3000
50G      7 349.8  55.9  3.2  4.4    387  81.7  172.6  3.1          3000
100G     7 349.1  56.1  2.1  3.0    868  81.1  173.7  2.1          1175
  COMMENTS: “D” shaped room

1155   1   1 RIO PUERCO PROJECT
 35.5 -107.2  12.9  8
NRM      8   7.3  54.7  8.7 12.3     42  84.1  -16.2  8.7           680
  COMMENTS: 150G of 3 cubes gave 1.2 deg. change in decl

1147   1   2 RIO PUERCO PROJECT, ACROSS FROM 1146
 35.5 -107.2  12.9  8
NRM      7 354.3  50.2  3.9  5.8    196  83.4  120.9  4.3          3000
  COMMENTS: SCP pollen profile
  COMMENTS: 100G of 4 cubes gave 20.7 deg. change in decl

1146   1   3 RIO PUERCO PROJECT, ENM (DW 669)
 35.5 -107.2  12.9  8    1300
NRM      8  15.0  49.8 11.7 17.5     19  76.5   -0.1 13.2          3000
  COMMENTS: test trench by P2
  COMMENTS: 50G to200G of 4 cubes gave some
  COMMENTS: change in direction

1145   1   1 RIO PUERCO PROJECT, ENM 3353, TEST TRENCH #1
 35.5 -107.2  12.9  8     900-950
NRM      5   4.9  56.8  4.8  6.7    279  85.6  -44.4  4.6           640
  COMMENTS: 100G of 4 cubes gave 10.5 deg. change in decl

1741   2   2 RIO PUERCO VALLEY, NM
 34.7 -106.9  13.0 11    1350-1400
NRM     11 358.0  59.9  4.5  5.9    135  83.7 -121.2  3.9          3000
100G     9   0.7  59.3  3.7  4.9    245  84.5 -101.6  3.3          1390
  COMMENTS: 416 fire hearth of
  COMMENTS: room 2 (duck unit) pottery mound

1144   2   1 RIO PUERCO VALLEY, NM, GUADALUPE RUIN
 35.5 -107.2  12.9  8    1266
NRM      8 354.8  64.5  8.3 10.4     74  78.5 -125.4  6.5          3000
50G      7 352.0  62.4  5.6  7.2    172  79.7 -141.6  4.6          1340
  COMMENTS: ENM 838, room 8, feature 4

1546   1   2 RIO PUERCO VALLEY, NM, GUADALUPE RUIN
 35.5 -107.2  13.3 12    1100-1200
NRM     10 306.6  55.4  8.9 12.5     31  47.2  179.7  8.8          3000
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  COMMENTS: ENM 838, feature room 1 (kiva), N. wall
  COMMENTS: 100G of 4 cubes gave 4.1 deg. change in decl.

1695   2   1 RIO PUERCO VALLEY, NM, GUADALUPE RUIN
 35.4 -106.9  13.2 10    1200
NRM     9 343.3  64.6 14.2 17.6     23  73.3 -150.2 11.0        3000
150G    9 355.6  58.8 10.6 14.3     30  84.6 -145.5  9.6        1210
  COMMENTS: ENMU 838

1696   3   1 RIO PUERCO VALLEY, NM, W. OF MESA PRIETA
 35.4 -106.9  13.2 10
NRM     9  27.4  74.9 19.5 21.4     20  58.5  -82.2 11.8        3000
50G    10 354.6  59.4  5.7  7.6     91  83.6 -146.4  5.1        3000
100G    9   0.1  59.4  3.2  4.3    328  85.2 -105.6  2.8        1390
  COMMENTS: ENM 3352A

1983   2   0 RIO RANCHO PROJ., ALBUQUERQUE, NM, CAS 38(18)
 35.3 -106.6  11.9  16
NRM    16   3.4  59.5  4.1  5.5    105  84.2  -79.9  3.6        3000
100G    8   5.5  54.3  2.1  2.9    716  85.5  -12 5  2.1         680

1984   2   0 RIO RANCHO PROJ., ALBUQUERQUE, NM, CAS 39(18)
 35.3 -106.6  11.9  20
NRM    20  14.7  54.5  2.9  4.1    126  78.0  -19.6  2.9        3000
100G   10   5.8  50.5  1.6  2.4    739  83.7   21.7  1.8         720

1829   3   1 ROWE, NM, ROWE PUEBLO LA108
 35.6 -105.7  12.7 17    1250-1400
NRM    16   4.5  61.0  2.7  3.5    261  82.7  -78.3  2.3        3000
50G    16   2.2  60.1  2.8  3.7    229  84.4  -88.6  2.4        3000
200G   15   0.1  61.8  2.1  2.7    498  82.6 -104.9  1.7        1380
  COMMENTS: room 11, level 4A, floor 1, F3H1 1st story

 343   3   0 SAGE BRUSH PUEBLO, NM
 36.4 -105.6  12.9  8    1250-1300
NRM     8 335.6  65.9  7.9  9.7     88  68.6 -154.6  5.9        3000
NRM     8 339.3  61.3  8.2 10.6     65  73.0 -168.7  6.9        1130
150G    8 344.1  64.5 11.6 14.5     39  74.5 -150.5  9.0        3000

 344   3   1 SAGE BRUSH PUEBLO, NM
 36.4 -105.6  12.9  8    1200
NRM     8 333.0  63.9  2.4  3.0    860  67.8 -162.7  1.9        1120
NRM     8 335.0  62.6  3.5  4.5    367  69.5 -166.2  2.9        3000
150G    8 333.5  64.1  4.4  5.6    254  68.0 -161.8  3.5        3000
  COMMENTS: Uncertain curve assignment

1584   2   1 SAN YSIDRO, NM, LA13197
 35.5 -106.9  13.2  8    1250
NRM     7 353.8  59.0  1.6  2.2   1682  83.5 -154.0  1.5        3000
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50G      8 352.1  57.8  1.3  1.8   2093  83.0 -169.2  1.2         1190
  COMMENTS: 7.5 USGS quad. T15N, R1E, sec. 30 NWSENE

1585   2   2 SAN YSIDRO, NM, LA13197
 35.5 -106.9  13.2  9    1250
NRM      9 353.1  62.1  2.3  3.0    711  80.5 -139.0  1.9         3000
50G      9 354.7  60.0  2.1  2.8    769  83.2 -142.9  1.9         1340
  COMMENTS: Sante Fe B\W, MCELMO B\W
  COMMENTS: indented corr. smeared indent

 537   1   1 SANTA FE, NM, ROOM 100, WALL, PUEBLO ALAMO
 35.8 -105.9  12.9 11    1061-1284      TR
NRM     11 348.9  59.2  0.6  0.8   6761  80.3 -167.0  0.6         1160
  COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl

 536   2   0 SANTA FE, NM, ROOM 3, HEARTH, PUEBLO ALAMO
 35.8 -105.9  12.9  8    1061-1284      TR
NRM      8 357.7  58.9  2.8  3.7    487  85.8 -130.8  2.5         3000
150G     8 355.4  59.0  2.5  3.3    620  84.6 -146.7  2.2         1210

1782   2   0 SANTA ROSA, NM, CAS 10
 35.1 -104.7  12.3 15    1750-1810
NRM     13  17.6  56.7 12.1 16.6     14  75.7  -28.7 11.5         3000
100G    13   8.0  56.1  9.1 12.7     23  83.4  -30.9  8.8         1800

1783   2   0 SANTA ROSA, NM, CAS 11
 35.1 -104.7  12.3 15    1750-1800
NRM     13  38.5  64.0 15.5 19.5     12  59.2  -46.6 12.3         2500
100G     8  44.1  59.2 14.0 18.7     21  55.0  -36.1 12.5         3000

1784   2   0 SANTA ROSA, NM, CAS 12
 35.1 -104.7  12.3 12    1760-1770
NRM     12  21.4  64.2  3.2  4.0    299  70.6  -55.0  2.5         3000
200G    10  19.2  61.4  2.4  3.1    559  73.4  -46.8  2.0         1850

1785   2   0 SANTA ROSA, NM, CAS 15
 35.1 -104.7  12.3 14
NRM     13  14.3  66.1  1.6  2.0   1177  73.0  -70.8  1.2         3000
50G     12  15.5  64.3  1.5  1.9   1298  73.9  -62.6  1.2         1850

1786   1   0 SANTA ROSA, NM, CAS 16
 35.1 -104.7  12.3 13
NRM     13 352.9  61.2 34.4 44.8      3  80.9 -140.3 29.2         3000

1787   2   0 SANTA ROSA, NM, CAS 17
 35.1 -104.7  12.3 15    1800-1810
NRM     14  11.1  61.3  4.3  5.6    119  78.7  -58.1  3.7         1830
50G      9  12.7  62.4  5.1  6.5    154  77.0  -59.9  4.2         3000
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1788   3   0 SANTA ROSA, NM, CAS 18
 35.1 -104.7  12.3 16
NRM    16  10.7  64.2  3.6  4.5    172  76.5  -71.4  2.8        3000
50G     5  10.1  62.1  4.8  6.1    378  78.6  -64.4  3.9        3000
100G    5   8.7  61.8  3.6  4.6    664  79.6  -66.6  3.0        1800

1789   1   0 SANTA ROSA, NM, CAS 19
 35.1 -104.7  12.3 16    1786-1815
NRM    15  40.3  52.3 17.6 25.6      5  56.7  -22.6 18.7        3000

1790   2   1 SANTA ROSA, NM, CAS 20
 35.1 -104.7  12.3 16    1790-1815
NRM    13  77.3  48.0  3.2  4.9    124  25.9  -33.2  3.7        3000
100G   10  13.0  56.5  4.6  6.3    124  79.3  -29.3  4.4        1800
  COMMENTS: U uncertain curve assignment

1791   2   0 SANTA ROSA, NM, CAS 21
 35.1 -104.7  12.3 16    1786-1856
NRM    16  36.5  60.8 10.0 13.0     20  60.9  -39.0  8.5        3000
100G   11   8.4  56.7  6.5  9.0     55  82.9  -34.7  6.2        1800

1792   2   0 SANTA ROSA, NM, CAS 22
 35.1 -104.7  12.3 12    1780-1800
NRM    12  21.2  58.3  7.4 10.0     42  72.7  -33.8  6.8        3000
100G    8  16.7  58.6  7.9 10.7     60  76.1  -37.4  7.2        1800

1793   2   0 SANTA ROSA, NM, CAS 23
 35.1 -104.7  12.3 12    1760-1780
NRM    11  12.3  54.9 15.3 21.6     10  79.9  -19.9 15.3        3000
200G   10  11.6  64.0 10.8 13.6     33  76.3  -68.6  8.6        1780

1794   2   0 SANTA ROSA, NM, CAS 24
 35.1 -104.7  12.3 12
NRM    11   8.3  62.9 14.9 19.0     15  78.8  -72.7 12.1        3000
200G   12  17.9  61.2  6.7  8.7     60  74.4  -47.4  5.7        1800

1795   3   0 SANTA ROSA, NM, CAS 25
 35.1 -104.7  12.3 13    1800-1830
NRM    13   6.0  63.4  5.2  6.6    101  79.1  -81.7  4.2        3000
50G    13  15.1  62.6  5.1  6.6     99  75.4  -56.8  4.2        3000
75G     9   9.9  61.1  6.1  8.0    100  79.5  -60.4  5.2        1800

1796   2   0 SANTA ROSA, NM, CAS 26
 35.1 -104.7  12.3 12    1820-1850
NRM    12  17.5  59.3  6.2  8.2     63  75.3  -39.9  5.5        3000
200G   12  14.1  60.2  2.7  3.6    331  77.4  -47.3  2.4        1820

1797   2   0 SANTA ROSA, NM, CAS 27
 35.1 -104.7  12.3 12    1780-1790
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NRM     12  22.6  64.1  6.5  8.2      72  69.9  -53.6  5.1         3000
50G      9  20.5  63.1  5.0  6.4     162  71.7  -52.2  4.1         1790

1799   1   1 SANTA ROSA, NM, CAS 28
 35.1 -104.7  13.0 12    1763-1770
NRM     11  44.4  67.0 60.0 72.4       2  54.7  -54.7 43.7         3000
  COMMENTS: 100G of 4 cubes gave 34.5 deg. change in decl

1816   2   0 SANTA ROSA, NM, CAS 29, PIT 48, SITE 48
 35.1 -104.7  12.3 14    1820-1830
NRM     14   9.4  63.6  5.4  6.8      87  77.6  -72.1  4.3         3000
50G     11   7.9  59.6  2.3  3.0     526  81.8  -57.3  2.0         1770

1817   2   0 SANTA ROSA, NM, CAS 30, SITE 48, PIT 64
 35.1 -104.7  12.3 14    1780
NRM     12  23.3  61.1  3.2  4.2     248  70.6  -43.1  2.8         3000
50G     11  11.9  61.7  2.5  3.2     487  77.9  -58.3  2.1         1800

1818   2   0 SANTA ROSA, NM, CAS 31, SITE 48, PIT 65
 35.1 -104.7  12.3 14    1780
NRM     14  22.4  61.3  5.5  7.2      73  71.1  -44.4  4.7         3000
50G     12  17.4  65.0  4.6  5.7     152  72.3  -62.4  3.5         1850

1819   2   0 SANTA ROSA, NM, CAS 32, SITE 48, PIT 63
 35.1 -104.7  12.3 14
NRM     14 349.5  67.1  6.6  8.0      69  73.4 -128.8  4.8         3000
100G     8   9.5  64.8  6.2  7.7     136  76.4  -76.0  4.8         1800

1779   1   1 SANTA ROSA, NM, CAS 7
 35.1 -104.7  12.3 15
NRM     15 249.9  11.1  0.8  1.6     565 -12.9 -178.2  1.6         3000
  COMMENTS: 100G of 4 cubes gave 10.6 deg. change in decl

1780   1   1 SANTA ROSA, NM, CAS 8
 35.1 -104.7  12.3 12
NRM     12 241.8  20.3 24.8 47.4       2 -16.0 -169.1 45.2         3000
  COMMENTS: 100G of 4 cubes gave 30.8 deg. change in decl

1781   2   0 SANTA ROSA, NM, CAS 9
 35.1 -104.7  12.3 15    1750-1760
NRM     14 359.8  67.2  6.1  7.3      82  75.2 -105.1  4.4         3000
50G     11   5.3  65.4  5.7  7.0     113  77.0  -88.8  4.3         1750

1564   3   1 SANTA ROSA, NM, NMK:14:3:48(CAS)
 35.1 -104.7  12.3 17    1865
NRM     14   6.7  61.6  3.7  4.8     162  80.8  -72.7  3.1         3000
50G      9  12.3  61.4  3.1  4.0     389  77.9  -56.3  2.6         3000
100G     9  13.3  61.6  2.3  3.0     685  77.2  -55.1  2.0         1860
  COMMENTS: stage stop site
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1565   3   1 SANTA ROSA, NM, NMK:14:3:48(CAS)
 35.1 -104.7  12.3 17    1865
NRM    17   9.1  66.3  2.8  3.4    290  74.9  -81.1  2.1        3000
100G    9  11.7  64.3  2.9  3.6    535  75.8  -69.5  2.2        1865
150G    9  12.6  64.8  3.2  4.0    436  75.0  -69.4  2.5        3000
  COMMENTS: stage stop site 6

1566   4   2 SANTA ROSA, NM, NMK:14:3:48(CAS)
 35.1 -104.7  12.3 17   -1000
NRM    17   9.0  75.1 14.2 15.6     19  62.5  -95.6  8.5        3000
100G   10   8.7  62.5  3.9  5.0    232  79.0  -69.6  3.2        3000
150G   10   9.0  63.9  4.0  5.0    238  77.5  -74.2  3.1        1960
200G   11   8.7  63.0  4.8  6.1    140  78.1  -73.3  3.9        3000
  COMMENTS: stage stop site
  COMMENTS: U uncertain curve assignment

1567   3   1 SANTA ROSA, NM, NMK:14:3:48(CAS)
 35.1 -104.7  12.3 15    1875
NRM    14  12.8  62.7  3.1  4.0    246  76.7  -61.0  2.5        3000
50G     9  11.5  62.0  1.9  2.5   1030  77.9  -60.6  1.6        3000
100G    9  10.9  61.2  1.7  2.3   1220  78.9  -58.3  1.5        1875
  COMMENTS: stage stop site

1568   6   1 SANTA ROSA, NM, NMK:14:3:48(CAS)
 35.1 -104.7  12.3 13    1875
NRM    13  16.8  65.0  3.0  3.8    315  72.7  -63.3  2.3        3000
50G     9  14.8  63.0  3.1  3.9    429  75.3  -58.9  2.5        3000
100G    9  15.9  62.9  3.0  3.8    452  74.8  -56.5  2.4        1870
150G    9  15.1  62.8  3.4  4.3    355  75.2  -57.5  2.7        3000
200G    9  15.3  62.6  3.1  4.0    411  75.3  -56.3  2.5        3000
400G    9  19.9  64.0  3.0  3.7    488  71.6  -55.9  2.3        3000
  COMMENTS: stage stop site

1577   3   0 SANTA ROSA, NM, SITE 48, HEARTH 1
 35.1 -104.7  12.3 16    1800
NRM    16  18.9  64.8  1.5  1.9   1017  71.7  -59.7  1.2        3000
50G    10  18.0  62.3  2.1  2.7    773  73.7  -51.8  1.7        1820
100G   10  18.3  62.2  2.3  2.9    664  73.6  -50.9  1.9        3000

1820   1   0 SANTA ROSA, NM, SITE 48, HORNO 99
 35.1 -104.7  12.3 12    1780-1820
NRM    10  29.9  50.7 18.1 26.9      7  64.8  -14.9 19.9        3000

 280   3   0 SEPAWE, NM, NO. 1, ROOM A57
 36.2 -106.2  13.0  8
NRM     7 349.3  62.1  6.0  7.7    150  79.1 -151.9  4.9        1110
NRM     8 348.7  60.9  7.4  9.7     77  79.5 -159.8  6.3        3000
150G    8 352.0  61.0  8.0 10.4     67  81.5 -150.7  6.8        3000
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 281   1   0 SEPAWE, NM, NO. 2
 36.2 -106.2  13.0  6
NRM     6  33.9  38.6 39.2 65.9      2  57.3    0.5 55.5        3000

 282   1   0 SEPAWE, NM, NO. 3
 36.2 -106.2  13.0  8    1400
NRM     8  36.1  72.3 34.0 38.4      8  58.1  -69.5 21.7        3000

 283   1   0 SEPAWE, NM, NO. 4, KIVA 9
 36.2 -106.2  13.0  8
NRM     7 359.7  60.6  3.3  4.3    457  84.6 -108.6  2.8        1390

 284   1   0 SEPAWE, NM, NO. 5
 36.2 -106.2  13.0  8
NRM     8   2.4  58.6 11.7 15.8     28  86.4  -75.6 10.6        1410

 285   3   0 SEPAWE, NM, NO. 6
 36.2 -106.2  13.0  8
NRM     8   7.6  62.0 14.1 18.2     23  80.9  -68.9 11.7        3000
NRM     8   7.1  64.0 15.8 19.9     21  79.1  -79.0 12.5        2500
150G    8  10.7  65.3 16.2 20.0     21  76.3  -74.0 12.3        3000

 262   2   0 SEPAWE, NM, SF-1, UNIV. OF NEW MEXICO
 36.3 -106.5  13.2  8    1420-1440
NRM     8  31.9  66.1 34.6 42.3      6  63.7  -53.9 25.9        3000
NRM     7  33.7  66.0 20.0 24.2     18  62.6  -53.0 14.8        2500

 263   2   0 SEPAWE, NM, SF-2
 36.3 -106.5  13.2  8    1500
NRM     8  11.7  67.3  8.7 10.5     92  73.9  -78.6  6.3        2500
NRM     8   2.8  63.8  9.8 12.3     52  80.6  -94.1  7.8        3000

 264   2   0 SEPAWE, NM, SF-3
 36.3 -106.5  13.2  8    1500
NRM     8  81.9  48.6 24.2 36.8      5  23.0  -37.2 28.0        3000
NRM     7  20.5  31.9 17.8 31.6      6  63.7   24.5 28.1        2500

1898   2   0 SOCORRO, NM, USGS 7.5’ R1E, T3S, SEC. 31
 34.0 -106.9  12.8  9
NRM     9   6.2  51.3  6.6  9.7     53  84.4    2.5  7.1        3000
50G     9   7.1  50.2  7.0 10.5     44  83.2    8.1  7.8         700

1899   5   0 SOCORRO, NM, USGS 7.5’, R1E, T3S, SEC. 31
 34.0 -106.9  12.8  7
NRM     7   2.5  55.4  2.1  2.9    879  87.2  -60.6  2.0        3000
50G     8   1.9  54.6  1.9  2.7   1016  88.0  -53.7  1.9        1460
100G    7   2.8  54.9  2.2  3.1    777  87.3  -50.5  2.2        3000
150G    7   5.0  56.0  2.9  4.0    462  85.2  -50.0  2.8        3000
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200G     7   4.1  55.6  2.3  3.3    697  86.0  -50.6  2.3         3000

1900   3   0 SOCORRO, NM, USGS 7.5’, R1E, T3S, SEC. 31
 34.0 -106.9  12.8  9
NRM      9   3.9  52.2  3.7  5.5    168  86.5    1.5  4.0         3000
50G      7 348.7  51.7  4.4  6.5    162  80.4   10.1  4.8          700
100G     7 349.3  51.9  4.8  7.0    140  81.0   10.6  5.1         3000

1306   2   0 SOPRIS, CO, TC:C9:20 F-31
 37.1 -104.6  12.7  9    1200
NRM      9 345.6  59.6  2.5  3.4    524  78.3 -173.4  2.3         3000
50G      7 341.8  61.3  1.5  2.0   2156  75.0 -168.1  1.3         1130

1307   2   0 SOPRIS, CO, TC:C9:20B
 37.1 -104.6  12.7  9    1350
NRM      8 353.1  59.0  8.4 11.3     55  83.9 -166.0  7.5         1330
50G      9   5.1  61.2 11.4 14.9     29  83.5  -69.3  9.7         3000

 160   2   1 TAOS, NM
 36.3 -105.6  13.3  8    1849-1890
NRM      6   6.0  53.0 12.1 17.5     29  84.4   11.2 12.6         3000
NRM      8   0.0  50.9 10.1 14.9     26  85.3   74.2 11.1         2500
  COMMENTS: historic site

 161   2   1 TAOS, NM
 36.3 -105.6  13.3  8    1000-1150
NRM      8 340.4  55.9  4.2  5.9    182  74.2  170.8  4.1         3000
NRM      8 343.8  56.7  5.6  7.7    110  77.0  173.7  5.3         1140
  COMMENTS: 150G of 2 cubes gave 2.4 deg. change in decl

 162   2   1 TAOS, NM, LA 9204
 36.3 -105.6  13.3  8     850-1050
NRM      7 357.5  60.7  7.5  9.8     90  84.2 -124.5  6.4         3000
NRM      7 350.1  63.3  9.2 11.7     67  78.6 -143.8  7.4         1080
  COMMENTS: 150G of 2 cubes gave 1.0 deg. change in decl

 164   1   0 TAOS, NM, LA 9204, Taos-5-
 36.3 -105.6  13.3  7    1050
NRM      7 351.3  61.3  8.6 11.1     71  80.9 -150.4  7.2         3000

 166   1   1 TAOS, NM, LA 9205, Taos-7
 36.3 -105.6  13.2  7
NRM      7 357.3  55.0  6.5  9.2     87  87.7  146.5  6.5         1250
  COMMENTS: 150G of 2 cubes gave 1.6 deg. change in decl

 163   3   0 TAOS, NM, LA 9208, Taos-4
 36.3 -105.6  13.3  8     900-1000
NRM      8  10.8  57.7  5.1  6.9    140  81.1  -31.9  4.7         3000
NRM      8   9.8  57.5  5.3  7.3    125  82.0  -31.5  5.0         3000
```

```
150G    8   9.4  56.5  4.8  6.7    144  82.4  -23.9  4.6         2500

 168   2   0 TAOS, NM, LA 9208, Taos-9
 36.3 -105.6  13.3  7     950-1000
NRM     7 334.3  53.0  7.9 11.5     54  68.8  164.7  8.3         3000
150G    7 343.5  59.2  6.2  8.3    120  76.5 -174.6  5.5         2500

 165   1   1 TAOS, NM, LA9204?, Taos-6
 36.3 -105.6  13.2  7     975-1025
NRM     7 341.8  58.1  4.3  5.8    235  75.4  179.4  3.9         1140
  COMMENTS: 100G of 2 cubes gave 7.2 deg. change in decl

 167   1   1 TAOS, NM, LA9206?, Taos-8
 36.3 -105.6  13.2  7     950-1050
NRM     7 345.3  63.2  3.4  4.4    476  76.1 -154.0  2.8         1100
  COMMENTS: 150G of 2 cubes gave 0.6 deg. change in decl

1697   2   2 TAPIA ARROYO, NM, ENM 887
 35.4 -106.9  13.2 16
NRM    16 354.2  64.6  3.8  4.7    158  78.1 -126.4  2.9         1080
50G    13 344.3  63.5  5.4  6.8     95  74.6 -153.3  4.3         3000
  COMMENTS: south of Guadalupe ghost town
  COMMENTS: uncertain curve assignment

1432   3   0 TRINIDAD, CO, SOPRIS, TC:C9:20 F-77
 37.1 -104.6  12.7  8
NRM     8 350.7  57.5  4.3  5.8    194  82.5  176.3  4.0         3000
50G     8 355.7  60.0  6.0  8.0    112  84.9 -144.5  5.3         3000
100G    8 356.0  61.1  4.8  6.3    184  84.0 -134.6  4.1         1325

1430   3   0 TRINIDAD, CO, SOPRIS, TC:C9:20 F-79
 37.1 -104.6  12.7  8
NRM     8 350.6  59.1  2.0  2.7    960  82.2 -171.4  1.8         3000
50G     8 355.0  60.1  1.9  2.5   1104  84.5 -147.8  1.7         3000
100G    8 356.1  61.0  1.7  2.2   1436  84.2 -134.7  1.5         1325

1433   3   1 TRINIDAD, CO, SOPRIS, TC:C9:20 F-90
 37.1 -104.6  12.7  8
NRM     7   4.0  50.1  1.9  2.8    815  83.0   46.1  2.1         3000
50G     8 359.5  58.3  4.3  5.8    201  88.0 -117.0  3.9         1460
100G    8 357.8  59.0  5.0  6.7    152  86.8 -136.4  4.5         3000
  COMMENTS: uncertain curve assignment

1971   2   1 TWO DEAD JUNIPER VILLAGE, NM, CAS 34(11)
 35.0 -106.4 12.8  12    1200-1300
NRM    11 224.9  67.8  4.4  5.2    214   4.4 -133.0  3.1         3000
100G    7 343.4  59.8  2.1  2.8   1052  75.8 -168.2  1.9         1130
  COMMENTS: basin shaped hearth in pithouse 2
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1972   3   1 TWO DEAD JUNIPER VILLAGE, NM, CAS 35(11)
 35.0 -106.4 12.8  15    1200-1300
NRM    14   3.6  64.8  2.3  2.9    490  78.0  -94.5  1.8        3000
100G   11 351.9  59.5  3.0  4.0    300  81.7 -154.5  2.6        3000
150G   11 351.8  61.8  2.8  3.6    392  79.8 -142.2  2.3        1340
  COMMENTS: pit hearth in pithouse 4

1973   3   1 TWO DEAD JUNIPER VILLAGE, NM, CAS 36(11)
 35.0 -106.4 12.8  15    1200-1300
NRM    15 350.9  63.1  1.9  2.4    649  78.2 -139.7  1.5        3000
100G    7 348.1  60.2  1.3  1.7   2936  78.8 -159.9  1.1        3000
150G    8 347.7  59.7  1.1  1.5   3267  78.8 -162.9  1.0        1115
  COMMENTS: pit hearth in pithouse 3

1974   2   1 TWO DEAD JUNIPER VILLAGE, NM, CAS 37(11)
 35.0 -106.4 12.8  20    1200-1300
NRM    20 348.4  54.9  9.4 13.2     13  80.5  169.5  9.3        3000
100G    8 346.4  61.3  2.1  2.8    950  77.1 -157.5  1.8        1110
  COMMENTS: pit hearth, kiva floor

1815   2   1 WEST MAIN, RIO GRANDE VALLEY, NM
 35.2 -106.7  13.0 11    -200-  200
NRM    11   9.1  65.8 12.7 15.6     24  75.5  -81.8  9.5        3000
100G    8 357.2  55.3  3.6  5.1    241  87.6 -179.5  3.6         200
  COMMENTS: uncertain curve assignment

1858   2   1 Zia Pueblo, SITE AL 55-1, FEATURE 1, PITHOUSE
 35.5 -106.7  13.1 10    800
NRM    10   6.2  49.9  1.7  2.5    672  83.0   24.4  1.9        3000
50G    10   6.0  46.3  1.2  1.9   1080  80.6   38.7  1.5         860
  COMMENTS: central firepit

1857   1   3 Zia Pueblo, SITE AL 55-1, FEATURE 2, PITHOUSE
 35.5 -106.7  13.1  9    800
NRM     8  10.1  44.8  1.4  2.2   1024  77.4   27.1  1.7         860
  COMMENTS: central firepit
  COMMENTS: 50G to 600G of 4 cubes gave 2.6 deg
  COMMENTS: change in decl

1859   3   1 Zia Pueblo, SITE AL 55-1, FEATURE 4, PITHOUSE
 35.5 -106.7  13.1 10
NRM     9   6.5  50.9  1.2  1.7   1588  83.3   17.1  1.3        3000
50G     7   6.3  50.2  1.5  2.3   1254  83.0   22.3  1.7        3000
100G    7   6.2  50.4  1.5  2.3   1271  83.3   21.4  1.7         900
  COMMENTS: central fire pit

1855   3   2 Zia Pueblo, SITE Joe and Mathew, AL 55-2
 35.5 -106.7  13.1  9    800
NRM     9   7.4  56.5  3.1  4.4    293  83.8  -33.5  3.0        3000
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100G    9   3.1  57.2  1.1  1.6   2277  86.6  -61.3  1.1          690
200G    9   2.6  57.2  1.4  1.9   1581  86.9  -66.4  1.3         3000
  COMMENTS: rectang. firepit in S.E. corner of pit room
  COMMENTS: uncertain curve assignment

1854   2   0 Zia Pueblo, SITE Joe and Mathew, AL 55-2, FEATURE 5
 35.5 -106.7  13.0 11    800
NRM    10   8.8  46.8  2.7  4.2    224  79.2   26.9  3.2         3000
150G   11   6.0  47.8  1.3  2.0    875  81.6   34.5  1.5          870
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**APPENDIX 6. Southern New Mexico and Adjacent Areas**

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1800   2   0 ANGUS, NM, LA2315-45-44, FEATURE S
 33.4 -105.7  12.3  8    1100-1350
NRM      8 355.4  59.4  3.2  4.2    388  82.3 -132.6  2.8        3000
50G      8 355.6  57.2  2.6  3.5    528  84.3 -143.2  2.4        1330

1801   2   0 ANGUS, NM, LA2315-45-44, FEATURE S
 33.4 -105.7  12.3 10    1100-1350
NRM      8 345.5  58.4  1.8  2.5   1103  77.0 -165.3  1.7        3000
100G     8 344.3  57.3  1.7  2.3   1193  76.5 -171.7  1.6        1130

1436   3   0 BERRENDA CREEK #1, NM, LA12992, FEATURE 5
 32.8 -107.7  12.6  9    1000-1100
NRM      9 319.3  66.1 22.1 27.0     11  55.9 -158.2 16.5        3000
50G      9 314.6  69.3 25.3 29.7     10  52.0 -152.0 17.4        3000
100G     9 341.5  70.4 30.1  348      8  64.5 -132.5 20.2        2500

1437   3   0 BERRENDA CREEK #1, NM, LA12992, FEATURE 7
 32.8 -107.7  12.6  8    1000-1100
NRM      6 329.4  45.1  5.6  8.9     93  62.8  157.2  7.0        3000
50G      6 342.9  53.3  2.8  4.1    525  75.7  171.4  2.9        3000
100G     6 344.9  55.0  2.7  3.8    628  77.2 -180.0  2.7        1140

1439   1   1 BERRENDA CREEK, NM, LA12992, FEATURE 4
 32.8 -107.7  12.6  3    1000-1100
NRM      3 344.7  56.9 12.7 17.4    107  76.7 -172.9 12.0        3000
  COMMENTS: 100G of 2 cubes gave 1.0 deg. change in decl

1438   1   2 BERRENDA CREEK, NM, LA12992, FEATURE 6
 32.8 -107.7  12.6  3    1000-1100
NRM      2 346.0  58.6 16.9 22.7    269  76.9 -163.6 15.3        3000
  COMMENTS: 50G to 400G of 3 cubes gave some
  COMMENTS: change in direction

 666   2   2 BLACK BLUFF, NM, EAST WALL IN ROOM 1
 32.7 -108.6  12.7  8
NRM      8   0.4  57.6  7.5 10.2     65  84.4 -105.7  7.0        3000
NRM      7   4.8  60.1  2.3  3.1    894  80.8  -85.1  2.0        2500
  COMMENTS: 150G gave some change in decl
  COMMENTS: uncertain curve assignment

 668   1   1 BURRO CIENEGA #40, NM, HEARTH IN PITROOM
 32.4 -108.4  12.6  8     520-740   C14
NRM      6   4.7  48.8  3.0  4.5    384  84.9   18.5  3.4         700
  COMMENTS: 50G of 2 cubes gave 2.8 deg. change in decl

  94   1   1 CLIFF, NM, EAST SIDE OF RIVER, NW PH 5
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 32.9 -108.6  13.0  9     900
NRM     9   3.5  49.4  1.5  2.3    880  86.0   21.8  1.7         930
  COMMENTS: 150G of 2 cubes gave 1.2 deg. change in decl

 667   1   1 DARK THUNDER, NM
 32.7 -108.8  12.7  8
NRM     7 359.8  54.8  8.7 11.8     53  87.5 -112.7  8.3        3000
  COMMENTS: 50G of 2 cubes gave 4.2 deg. change in decl

 337   3   1 EL PASO, TX, EPAS-13, FEATURE 2
 32.0 -106.2  12.0  8    1200-1450
NRM     8 355.6  52.0  3.0  4.3    305  86.2  174.6  3.2        3000
NRM     8 354.1  53.0  2.3  3.3    549  84.8 -176.7  2.4        3000
150G    8 354.7  53.4  1.7  2.5    984  85.2 -171.5  1.8        1210
  COMMENTS: Sherman hog ranch

 335   2   2 EL PASO, TX, EPAS-13, FEATURE 6
 32.0 -106.2  12.0  8    1200-1450
NRM     8 351.1  53.2  3.0  4.4    312  82.3  179.1  3.1        1180
NRM     8 350.4  51.0  2.9  4.3    308  81.9  164.4  3.2        3000
  COMMENTS: Sherman hog ranch
  COMMENTS: 150G of 2 cubes gave 0.5 deg. change in decl

 336   2   0 EL PASO, TX, EPAS-13, SHERMAN HOG RANCH
 32.0 -106.2  12.0  8    1200-1450
NRM     6   8.9  52.8 10.9 15.8     35  82.4  -29.2 11.5        2500
100G    7  87.7  55.0 15.2 21.4     17  19.6  -46.5 15.1        3000

 231   3   0 EL PASO, TX, EPAS-2
 31.8 -106.5  12.0  8    1250-1350
NRM     8 352.0  57.6  2.8  3.8    448  80.8 -149.7  2.6        3000
NRM     7 353.1  57.6  1.5  2.0   1888  81.4 -145.7  1.4        3000
150G    7 352.2  54.9  1.9  2.6   1054  82.6 -165.1  1.9        1190

 232   3   0 EL PASO, TX, EPAS-2
 31.8 -106.5  12.0  8    1300
NRM     8 357.9  58.0  4.4  6.0    222  82.9 -119.6  4.1        3000
NRM     8   2.3  56.9  3.2  4.4    341  84.0  -89.0  3.0        3000
100G    7 357.7  52.8  3.2  4.6    333  87.5 -156.7  3.3        1300

233    2   1 EL PASO, TX, EPAS-3
 31.8 -106.5  12.0  8
NRM     8 354.5  56.8  3.2  4.5    384  82.8 -144.0  3.1        3000
NRM     7 356.2  55.7  2.7  3.8    522  84.6 -141.0  2.7        1320
  COMMENTS: 150G of 2 cubes gave little change in dir

 234   3   0 EL PASO, TX, EPAS-4
 31.8 -106.5  12.0  8
NRM     8 353.3  57.7  1.6  2.2   1395  81.4 -144.4  1.5        3000
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NRM      8 354.7  55.3  1.5  2.2   1340  84.1 -152.7  1.5         3000
150G     8 353.3  55.0  1.9  2.7    866  83.3 -160.9  1.9         1320

 235   1   1 EL PASO, TX, EPAS-5
 31.8 -106.5  12.0  8
NRM      8 354.9  55.4  1.9  2.7    854  84.0 -150.9  1.9         1330
  COMMENTS: 150G of 2 cubes gave 0.2 deg. change in decl.

 236   3   0 EL PASO, TX, EPAS-6
 31.8 -106.5  12.0  8
NRM      6 350.9  54.7  3.2  4.5    436  81.7 -169.5  3.2         1180
NRM      7 356.8  53.5  3.6  5.1    268  86.5 -155.2  3.7         3000
150G     6 354.7  54.0  3.9  5.6    284  84.8 -163.8  4.0         3000

 116   3   1 FT. FILLMORE, NM, 8697-10-13, FEATURE 10
 32.3 -106.8  12.6  8    1851-1861
NRM      7  10.6  60.6  1.6  2.1   1888  77.4  -67.5  1.4         1855
NRM      6  10.1  60.1  1.9  2.5    160  78.1  -66.9  1.7         3000
100G     6  11.2  60.4  2.0  2.7   1469  77.3  -65.6  1.7         3000
  COMMENTS: building A

 115   1   2 FT. FILLMORE, NM, 8697-11-12, FEATURE 11
 32.3 -106.8  12.6  8    1851-1861
NRM      7  15.4  58.0  1.1  1.5   3556  76.0  -47.9  1.0         1855
  COMMENTS: AF to 200G of 2 cubes gave little change in dir
  COMMENTS: building A

 114   4   1 FT. FILLMORE, NM, 8697-14-10, FEATURE 14
 32.3 -106.8  12.6  8    1851-1861
NRM      8  10.0  54.3  5.3  7.5    108  81.3  -36.4  5.4         3000
NRM      6  13.5  55.3  3.7  5.2    336  78.3  -38.1  3.6         1855
NRM      7  14.8  52.1  3.6  5.3    247  77.5  -22.7  3.9         3000
150G     8  11.5  49.3  5.7  8.6     74  80.0   -7.7  6.5         3000
  COMMENTS: bUILDING A

 113   1   2 FT. FILLMORE, NM, 8697-4-11, FEATURE 4
 32.3 -106.8  12.6  8    1851-1861
NRM      6  19.3  58.4  1.7  2.4   1776  73.0  -45.8  1.6         1855
  COMMENTS: 150G of 2 cubes gave 0.7 deg. change in decl
  COMMENTS: building A

 117   1   2 FT. FILLMORE, NM, 8697-7-12, FEATURE 7
 32.3 -106.8  12.6  7    1851-1861
NRM      7  13.1  59.6  1.9  2.5   1324  76.7  -58.3  1.7         1855
  COMMENTS: AF to 200G of 2 cubes gave little change in dir
  COMMENTS: building A

 687   3   0 GALLITA SPRINGS, NM, FEAT. 13
 33.9 -108.3  13.1  8
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NRM      7 355.3  56.5  3.8  5.3    272  85.0 -156.8  3.7          3000
100G     7 350.4  57.4  3.3  4.6    377  81.2 -167.7  3.1          1170
150G     6 348.6  58.1  3.9  5.2    356  79.7 -167.2  3.6          3000

 686   1   1 GALLITA SPRINGS, NM, FEAT. 21
 33.9 -108.3  13.1  8
NRM      7 344.2  55.9  2.6  3.6    591  76.9  177.2  2.5          1140
  COMMENTS: 150G of 2 cubes gave little change in direction

1434   2   0 HATCH, NM, PLACITAS ARROYO PA8 60E 137N
 32.6 -107.2  12.5  8     800
NRM      8 351.7  55.6 15.5 21.7     14  82.3 -167.3 15.2          2500
100G     8 354.7  58.0 19.4 26.3     11  82.6 -141.3 17.9          3000

1435   4   0 HATCH, NM, PLACITAS ARROYO PA8 70E\145N
 32.6 -107.2  12.5  8     800
NRM      8 358.8  77.8 45.3 48.2      6  56.0 -108.0 25.7          3000
100G     6   0.0  59.7  4.7  6.2    265  82.0 -107.0  4.1          2500
150G     7   1.0  61.3  5.9  7.7    148  80.2 -102.9  5.0          3000
200G     7   2.1  61.4  6.2  8.0    136  79.9  -98.3  5.2          3000

 204   2   1 HOT WELLS, TX, EPAS 3-6FL
 32.0 -106.1  12.5  9
NRM      9 355.3  58.0  2.9  3.9    381  82.4 -134.8  2.6          3000
NRM      9 355.9  56.9  1.5  2.0   1338  83.6 -136.5  1.4          1350
  COMMENTS: 150G of 2 cubes gave little change in dir

 205   2   1 HOT WELLS, TX, EPAS, SITE 1, ROOM 21
 32.0 -106.1  12.5  8
NRM      7 356.6  56.7  1.5  2.0   1900  84.0 -133.2  1.4          3000
NRM      7 356.6  56.0  0.9  1.3   4657  84.7 -136.9  0.9          1320
  COMMENTS: 150G of 2 cubed gave 4.2 deg. change in decl

 206   1   1 HOT WELLS, TX, EPAS, SITE 2, ROOM 7
 32.0 -106.1  12.5  8
NRM      8 352.4  55.3  1.8  2.5    983  82.6 -162.8  1.8          1340
  COMMENTS: 150G of 2 cubes gave 1.9 deg. change in decl
  COMMENTS: U uncertain curve assignment

 118   1   1 HOT WELLS, TX, ROOM 17
 32.0 -106.1  12.5  7    1250-1400
NRM      7 355.0  54.5  2.7  3.9    486  84.9 -158.2  2.7          1320
  COMMENTS: 150G of 2 cubes gave 0.8 deg. change in decl

 119   1   1 HOT WELLS, TX, ROOM 3-1
 32.0 -106.1  12.5  8    1250-1350
NRM      8 352.5  55.8  1.8  2.6    957  82.4 -158.7  1.8          1330
  COMMENTS: 150G of 2 cubes gave 1.4 deg. change in decl
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 121   3   0 HOT WELLS, TX, ROOM 3-2
 32.0 -106.1  12.5  8    1250-1350
NRM     8 354.7  55.7  1.8  2.6    945  83.9  150.6  1.8        1330
NRM     8 356.7  54.7  2.0  2.8    778  85.8 -145.6  2.0        3000
150G    8 357.0  54.8  2.5  3.6    480  85.9 -142.0  2.5        3000

 122   3   0 HOT WELLS, TX, ROOM 3-3
 32.0 -106.1  12.5  7    1250-1350
NRM     7 356.9  58.4 10.9 14.7     38  82.5 -124.8 10.0        3000
NRM     5 355.5  54.8 10.7 15.1     52  85.0 -153.5 10.7        3000
100G    5 355.8  54.5 12.1 17.2     40  85.3 -154.2 12.2        1320

 120   3   0 HOT WELLS, TX, ROOM 3-5
 32.0 -106.1  12.5  8    1250-1400
NRM     7 353.3  51.7  1.2  1.7   2261  84.4  169.4  1.3        1320
NRM     8 354.0  52.5  1.7  2.5    912  84.8  177.2  1.8        3000
150G    8 355.9  52.6  2.0  2.9    695  86.3 -175.5  2.1        3000

 228   2   1 LAS CRUCES, NM, EPAS-45, NO. 1
 32.3 -107.9  12.2  8     650-850
NRM     8   3.5  59.6  4.4  5.9    200  81.4  -90.0  3.9        3000
NRM     8   2.1  57.2  3.0  4.1    395  84.2  -90.8  2.8        1390
  COMMENTS: 150G of 2 cubes gave little change in dir

 229   2   1 LAS CRUCES, NM, EPAS-45, NO. 2
 32.3 -107.9  12.2  8
NRM     8 359.6  56.7  4.5  6.2    170  85.0 -111.6  4.3        1380
NRM     8   3.6  56.9  4.3  5.9    187  84.1  -79.1  4.1        3000
  COMMENTS: 150G of 2 cubes gave little change in dir

1891   4   1 NORTH PASTURE, NM, T6N, R10W, SEC. 7
 34.0 -107.0  12.8 11
NRM    11 353.8  55.8  8.2 11.4     34  84.8   43.8  8.0        3000
50G     8 351.2  58.5  2.5  3.3    610  81.2 -157.9  2.2        3000
100G    7 349.4  58.6  1.8  2.4   1442  80.0 -161.7  1.6        1160
150G    8 350.3  58.7  1.9  2.6   1033  80.5 -159.4  1.7        3000
  COMMENTS: U uncertain curve assignment

 230   2   0 OROGRANDE, NM
 32.3 -107.9  12.2  8
NRM     8  39.6  53.6 13.1 18.8     26  57.0  -32.0 13.5        2500
NRM     7  43.9  57.2 14.9 20.4      2  54.0  -39.2 14.0        3000

 664   2   0 RIVERSIDE, NM, FEATURE 11, HEARTH
 32.9 -108.6  12.7  8
NRM     8 347.3  61.8  2.7  3.4    621  75.8 -149.7  2.2        3000
150G    8 348.5  60.3  2.4  3.2    690  77.6 -153.0  2.1        1100

 665   3   0 RIVERSIDE, NM, HEARTH BELOW FEATURE 1
```

```
 32.9 -108.6  12.7  8
NRM      8 347.3  60.1  2.7  3.6    560  77.1 -156.4  2.3         3000
NRM      7 346.0  60.6  1.6  2.0   2028  75.9 -156.6  1.3         3000
150G     7 345.7  58.5  1.7  2.3   1482  76.9 -165.8  1.6         1120

1898   2   0 SOCORRO, NM, USGS 7.5' R1E, T3S, SEC. 31
 34.0 -106.9  12.8  9
NRM      9   6.2  51.3  6.6  9.7     53  84.4    2.5  7.1         3000
50G      9   7.1  50.2  7.0 10.5     44  83.2    8.1  7.8          700

1899   5   0 SOCORRO, NM, USGS 7.5', R1E, T3S, SEC. 31
 34.0 -106.9  12.8  7
NRM      7   2.5  55.4  2.1  2.9    879  87.2  -60.6  2.0         3000
50G      8   1.9  54.6  1.9  2.7   1016  88.0  -53.7  1.9          970
100G     7   2.8  54.9  2.2  3.1    777  87.3  -50.5  2.2         3000
150G     7   5.0  56.0  2.9  4.0    462  85.2  -50.0  2.8         3000
200G     7   4.1  55.6  2.3  3.3    697  86.0  -50.6  2.3         3000
  COMMENTS: U uncertain curve assignment

1900   3   0 SOCORRO, NM, USGS 7.5', R1E, T3S, SEC. 31
 34.0 -106.9  12.8  9
NRM      9   3.9  52.2  3.7  5.5    168  86.5    1.5  4.0         3000
50G      7 348.7  51.7  4.4  6.5    162  80.4   10.1  4.8          700
100G     7 349.3  51.9  4.8  7.0    140  81.0   10.6  5.1         3000

 207   2   1 WHIPTAIL SITE, AZ, BB:10:3
 32.0 -106.1  13.3  8    1300
NRM      8 352.2  57.3  4.8  6.6    151  81.3 -151.0  4.5         3000
NRM      8 355.7  55.9  3.9  5.4    219  84.3 -143.5  3.8         1310
  COMMENTS: 150G of 2 cubes gave little change in dir

 661   1   1 WINN CANYON, NM, FLOOR IN ROOM 4
 32.9 -108.6  12.7  8
NRM      6  22.1  71.5 23.1 26.4     21  62.2  -82.0 15.1         3000
  COMMENTS: 100G of 2 cubes gave 0.9 deg. change in decl.

 663   2   0 WINN CANYON, NM, HEARTH IN ROOM 2
 32.9 -108.6  12.7  9
NRM      9 345.5  53.4  5.6  8.0     81  77.9  170.3  5.8         3000
150G     8 359.3  57.6  2.7  3.8    469  84.7 -114.7  2.6         1370

 662   2   0 WINN CANYON, NM, HEARTH IN ROOM 4
 32.9 -108.6  12.7  9
NRM      9 358.2  59.6 12.4 16.5     23  82.4 -119.1 11.0         2500
100G     9   6.2  64.3 14.5 18.1     22  76.0  -90.5 11.3         3000
```

**APPENDIX 7. The Western Midcontinent**

```
 306   1   1 AR, 3-BE-174, 314 G1
 36.3  -94.5   7.4  8
NRM     8   2.5  56.2 10.6 14.7     30  87.9  -19.2 10.2        3000
  COMMENTS: 150G of 2 cubes gave 4.9 deg. change in decl

 307   1   0 AR, 3-BE-174, G2
 36.3  -94.5   7.4  8
NRM     7  18.4  53.9 15.9 22.7     15  74.9   -2.9 16.2        3000

 308   1   1 AR, 3-BE-174, G3
 36.3  -94.5   7.4  8    1000-1250
NRM     7 342.3  57.9  4.2  5.6    247  75.8 -170.1  3.8        1200
  COMMENTS: last NRM is recalculation

1300   1   1 ASPERMONT, TX
 33.2 -100.0  10.1  7    1700
NRM     5  26.2  63.0 10.1 12.9     88  66.9  -46.6  8.2        3000
  COMMENTS: 100G of 4 cubes gave 3.6 deg. change in decl

 269   4   0 BECKHAM CO., OK, EDWARDS SITE
 35.3  -99.7  10.3  8    1300-1600
NRM     8  44.4  85.3 26.9 27.1     17  41.6  -91.0 13.7        3000
NRM     8   1.0  84.1               39  47.0  -99.4  9.0        3000
50G     8   1.3  79.6               35  55.4  -98.9  9.4        3000
100G    8   0.1  76.9               28  60.2  -99.8 10.6        2500

 270   4   0 BECKHAM CO., OK, EDWARDS SITE
 35.3  -99.7  10.3  8    1300-1600
NRM     8   7.6  76.9 14.3 15.3     46  59.9  -93.3  8.2        3000
NRM     8 337.8  76.6               44  57.9 -117.5  8.5        3000
50G     8 347.0  72.4               36  66.0 -116.9  9.4        3000
100G    8 353.0  70.4               37  70.1 -111.6  9.2        2500

1647   2   1 BLESSINGAME SITE, OK, 34 PU 74
 34.6  -95.3   7.8  9
NRM     9 347.8  56.2  1.9  2.7    783  79.9 -169.7  1.8        3000
100G    9 347.6  55.9  1.9  2.6    805  79.8 -171.6  1.8        1235
  COMMENTS: burned floor, 3.5 miles N of Clayton

1648   2   1 BLESSINGAME SITE, OK, 34 PU 74
 34.6  -95.3   7.8 10
NRM    10 348.7  56.3  3.3  4.5    238  80.6 -168.2  3.1        3000
100G   10 350.4  56.6  3.5  4.8    211  81.8 -164.2  3.3        1250
  COMMENTS: 3.5 miles N-NW of Clayton, hearth

1646   2   1 BLESSINGAME SITE, OK, 34 PU 78
 34.6  -95.3   7.8 11     950-1400
```

```
NRM      5 359.9  57.4  3.5  4.8    544  86.6  -96.9  3.3         1420
100G    11 351.1  58.3  4.7  6.3    114  81.6 -151.0  4.3         3000
  COMMENTS:  3.5 mi. N-NW of Clayton

 356   1   0 BLUE CREEK, TX, SARE-146
 35.4 -101.4  10.9  8    1150-1200
NRM      8  10.9  35.4 20.9 21.4     27  49.1  -99.6 10.9         3000

1142   1   2 BRYSON SITE, OK, HEARTH 1
 36.9  -97.0   8.9  8    1690-1720
NRM      8   6.4  63.9  2.6  3.3    731  80.0  -70.0  2.0         1700
  COMMENTS: 50G to 400G of 2 cubes gave some
  COMMENTS: change in direction

1003   1   4 CHAN-YA-TA, IA, FEAT. 9 , 13-BV-1
 42.8  -95.3   7.8 10     900-1050
NRM      9 334.2  73.6  3.7  4.1    512  67.0 -129.7  2.3         3000
  COMMENTS: house SW corner
  COMMENTS: 50G to 200G of 4 cubes gave little
  COMMENTS: change in direction
  COMMENTS: uncertain curve assignment

 872   3   1 CHEROKEE SEWER SITE, IA, 13-CK-405
 42.8  -95.6   7.9  8   -6000
NRM      8   1.3  64.8 12.8 15.9     33  85.9  -83.5  9.9         3000
50G      8 354.4  55.1 10.8 15.2     28  81.6  117.4 10.7         3000
100G     8 356.9  54.6 10.4 14.7     29  81.9  102.9 10.4         2500
  COMMENTS: unprepared hearth in horizon 2

 871   1   2 CHEROKEE SEWER SITE, IA, 13-CK-405, LEVEL 2
 42.8  -95.6   7.9  8   -6000
NRM      8   8.9  71.0  5.3  6.1    249  76.1  -74.2  3.5        -6000
  COMMENTS: 50G and 100G of 2 cubes gave some
  COMMENTS: change in direction

1002   1   2 COFFEY SITE, KS, FEAT. 14, LOC.1-14PO-1
 39.5  -96.6   8.7  8   -7000
NRM      8 358.1  59.4  3.2  4.3    371  88.4 -160.5  2.9        -7200
  COMMENTS: 50G to 200G of 3 cubes gave little
  COMMENTS: change in direction

1064   1   3 COW KILLER SITE, KS
 38.5  -95.7   8.2  8
NRM      8   5.3  65.7 23.2 28.5     11  79.8  -75.4 17.5         3000
  COMMENTS: feature 17, hearth. 14-OS-347
  COMMENTS: 50G to 400G of 5 cubes gave large
  COMMENTS: changes in direction

1065   1   3 COW KILLER SITE, KS
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```
 38.5  -95.7   8.2  8
NRM     8 354.8  59.6  7.4  9.9     72  85.5 -158.4  6.6         3000
  COMMENTS: feature 28, bottom of hearth 14-OS-347
  COMMENTS: 50G to 400G of 4 cubes gave some
  COMMENTS: change in direction

 179   1   0 CROSSCUT, TX, LEWIS
 32.0  -99.1   9.8 14
NRM    13  17.2  84.0 11.3 11.5     51  43.3  -94.3  5.8         3000

 376   3   1 DAVIS SITE, TX, F-110.6
 31.4  -95.1   5.6  8     500-1000
NRM     7 349.1  70.8  7.5  8.6    148  65.1 -109.9  5.0         3000
150G    7  27.9  67.2  2.9  3.6    797  62.2  -54.8  2.1         2500
150G    8 316.3  72.7  3.6  4.1    586  50.2 -129.9  2.3         3000
  COMMENTS: Uncertain curve assignment

 377   2   1 DAVIS SITE, TX, F:111:1
 31.4  -95.1   5.6  8     500-1000
NRM     8 350.3  56.8  3.4  4.6    357  80.0 -145.4  3.2         1140
150G    8 354.3  65.4  4.8  5.9    234  73.3 -108.8  3.6         3000
  COMMENTS: Uncertain curve assignment

 526   1   3 DAVIS SITE, TX, SITE 41CE19
 31.4  -95.1   5.6  8     760-920        C14
NRM     8 343.5  53.0  1.3  1.9   1712  75.9 -172.0  1.3         3000
  COMMENTS: unit 10, feat. 125-1, hearth 1
  COMMENTS: 150G of 2 cubes gave 3.9 deg. change in decl
  COMMENTS: uncertain curve assignment

 525   1   2 DAVIS SITE, TX, SITE 41CE19, FEAT. 125
 31.4  -95.1   5.6  8    1100-1300
NRM     8 337.3  63.8  2.9  3.6    584  67.5 -140.1  2.3         3000
  COMMENTS: 150G of 2 cubes gave 0.6 deg. change in decl
  COMMENTS: subfeature 1, uncertain curve assignment

1157   2   1 DESHAZO SITE, NACOGDOCHES, TX
 31.5  -94.7   7.5  8    1700
NRM     6   0.4  52.9  1.7  2.5   1385  88.0  -85.6  1.8         3000
100G    8   4.8  52.8  3.2  4.7    269  85.5  -30.3  3.4         1700
  COMMENTS: Hearth F1-130 41-NA-27

1158   2   1 DESHAZO SITE, NACOGDOCHES, TX
 31.5  -94.7   7.5  8    1700
NRM     5   5.8  56.6  6.1  8.4    174  82.6  -56.3  5.8         2500
50G     7  21.2  58.8 15.2 20.4     20  71.0  -35.5 13.7         3000
  COMMENTS: 41-NA-27 hearth F1-119

1159   2   2 DESHAZO SITE, NACOGDOCHES, TX
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 31.5  -94.7   7.5  8    1700
NRM     8 357.0  57.1  2.5  3.4    554  83.8 -115.2  2.4        3000
50G     8 355.4  55.4  2.8  3.9    406  84.1 -134.0  2.8        2500
  COMMENTS: possible clay dump. 41-NA-27
  COMMENTS: uncertain curve assignment

1156   2   0 DESHAZO SITE, NACOGDOCHES, TX, 41-NA-27 F1-126
 31.5  -94.7   7.5  8    1700
NRM     8 357.7  54.6  2.5  3.6    474  85.9 -121.4  2.5        3000
50G     8   5.1  54.2  3.1  4.4    318  84.7  -43.8  3.1        1700

1044   1   2 DORMA TURNER, TX, FIRED CLAY KILN
 32.5  -98.8   9.4  8    1700
NRM     8  12.7  64.9 10.1 12.6     52  72.7  -68.4  7.8        3000
  COMMENTS: 100G to 400G of 2 cubes gave little
  COMMENTS: change in direction

 617   3   1 FORT WASHITA, OK, BR-70
 34.0  -96.8   8.5  8    1842-1861
NRM     7   3.6  77.6 11.6 12.4     84  57.7  -94.1  6.6        3000
50G     7  13.4  65.7 10.2 12.6     62  72.9  -64.9  7.7        3000
100G    7  10.5  65.0  9.8 12.2     65  74.7  -68.5  7.5        2500
  COMMENTS: double fireplace in S. barracks

 618   1   2 FORT WASHITA, OK, BR-70
 34.0  -96.8   8.5  8    1832-1930
NRM     6  15.3  60.2  2.8  3.7    738  75.9  -41.8  2.5        1850
  COMMENTS: fired floor in South barracks
  COMMENTS: 150G of 2 cubes gave 1.1 deg. change in decl

 873   1   3 GLENWOOD, IA, 13-MI-145
 41.0  -95.8   8.4  8    1000-1300
NRM     8 352.6  69.8  2.9  3.4    782  76.4 -114.7  2.0        1380
  COMMENTS: 50G and 100G of 2 cubes gave little
  COMMENTS: change in direction
  COMMENTS: Uncertain curve assignment

1704   3   1 HILLSDALE, KS, NEBO HILL HOUSE
 38.7  -94.8   7.7  5
NRM     4 341.4  61.6  6.5  8.5    276  75.4 -165.1  5.5        2500
50G     5 347.0  56.0  8.9 12.3     81  79.5  167.6  8.6        3000
100G    5 348.9  55.3  9.3 13.1     70  80.7  160.4  9.2        3000
  COMMENTS: site 14MM27, burned clay house wall

1703   2   1 HILLSDALE, KS, SITE 14MM509
 38.7  -94.8   7.7  8
NRM     8 350.7  62.3 15.0 19.2     21  81.5 -146.9 12.3        3000
50G     8 340.1  58.6 11.9 16.1     27  74.6 -176.3 10.8        2500
  COMMENTS: feature 2, baked hearth
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 438   2   2 IA, 13-ML-124
 41.1  -96.0   8.8 10    1215
NRM    10 356.2  68.6  4.4  5.2    250  78.9 -108.4  3.1        3000
150G    9   2.0  65.9  4.1  5.0    286  82.7  -85.7  3.0        1400
  COMMENTS: C14  735+or-95 BP
  COMMENTS: uncertain curve assignment

 439   2   2 IA, 13-ML-124
 41.1  -96.0   8.8  9     430
NRM     9 355.2  66.8  3.3  4.0    449  81.0 -116.3  2.4        3000
150G    9 354.8  67.5  4.8  5.8    222  80.1 -115.7  3.5         300
  COMMENTS: C14 1520+or-100 BP
  COMMENTS: uncertain curve assignment

1154   1   2 IDABEL, OK, MC-205 HEARTH 1
 33.8  -94.6   7.4 10     500
NRM    10 348.2  62.5 14.2 18.2     18  76.4 -133.6 11.6        3000
  COMMENTS: 50G to 400G of 3 cubes gave large
  COMMENTS: changes in direction

1153   2   0 IDABEL, OK, MC-205 HEARTH 2
 33.8  -94.6   7.4 10    -500-1
NRM     7   7.0  62.7  5.2  6.7    201  78.4  -68.8  4.3        3000
100G    8   8.1  60.9  4.8  6.3    184  79.7  -58.7  4.1        2500

 927   1   4 LAKE MEREDITH, TX
 35.4 -101.8  11.1  8    1100-1400
NRM     8  12.7  63.7  5.9  7.4    143  76.2  -61.4  4.7        3000
  COMMENTS: Alibates Ruin, site 28, room 7-floor
  COMMENTS: Site has been left open since 1938
  COMMENTS: 50G to 800G of 3 cubes gave large
  COMMENTS: changes in direction

 973   1   3 LANGLEY QUARRY, OK
 36.5  -95.1   7.9  9
NRM     9   3.9  45.3  1.2  1.8   1265  79.8   65.1  1.4         855
  COMMENTS: bottom of middle strata
  COMMENTS: 50G to 150G of 2 cubes gave large
  COMMENTS: changes in direction

 999   1   3 LANGLEY QUARRY, OK
 36.5  -95.1   7.9  8
NRM     8 359.1  60.5  2.4  3.1    723  85.0 -103.2  2.1        1400
  COMMENTS: river sed., bottom of upper strata
  COMMENTS: 50G to 150G of 2 cubes gave some
  COMMENTS: change in direction

 972   1   2 LANGLEY QUARRY, OK, LOWER SILT STRATA
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```
 36.5  -95.1   7.9  8     970
NRM     8   3.2  53.4  1.1  1.6   2298  86.4   37.4  1.2          980
  COMMENTS: 50G to 150G of 2 cubes gave little
  COMMENTS: change in direction

 971   1   2 LANGLEY QUARRY, OK, TOP OF MIDDLE SILT LAYER
 36.5  -95.1   7.9  8
NRM     8   0.4  53.7  1.3  1.9   1607  87.7   76.1  1.4         1000
  COMMENTS: 50G to 150G of 2 cubes gave little
  COMMENTS: change in direction

 974   1   2 LANGLEY QUARRY, OK, TOP OF UPPER SILT STRATA
 36.5  -95.1   7.9  8
NRM     8  14.5  64.4  1.9  2.4   1344  75.5  -51.4  1.5         1970
  COMMENTS: 50G to 150G of 2 cubes gave some
  COMMENTS: change in direction

1046   1   2 LESTER BUSH SITE, TX, KILN
 32.2  -99.1   9.5  8    1700
NRM     8  10.9  61.5  2.2  2.9    876  76.7  -62.0  1.9         1800
  COMMENTS: 100G to 1600G of 2 cubes gave little
  COMMENTS: change in direction

1000   1   2 MCCLURE SITE, KS, FEAT. 6, 14-GR-51
 37.8  -96.4   8.7  8
NRM     8 353.1  60.1  8.8 11.6     53  83.7 -153.0  7.7         3000
  COMMENTS: 50G to 400G of 4 cubes gave some
  COMMENTS: change in direction

1066   1   2 MILLER JONES, CO, I-94
 39.9 -102.1  11.8  9   -8000
NRM     9 341.8  60.5  1.7  3.4    243  76.1 -179.3  3.3        -8000
  COMMENTS: 50G to 800G of 4 cubes gave some
  COMMENTS: changes in direction

1068   1   2 MILLER JONES SITE, CO, HEARTH N1012-E996
 39.9 -102.1  11.8  8   -8000
NRM     6 332.2  65.9 13.0 15.9     49  68.5 -160.3  9.7         3000
  COMMENTS: 50G to 200G of 5 cubes gave some
  COMMENTS: change in direction

1067   1   2 MILLER JONES SITE, CO, HEARTH N1012-E998
 39.9 -102.1  11.8  8   -8000
NRM     8 356.0  66.9 11.2 13.5     47  80.0 -117.0  8.2         3000
  COMMENTS: 50G to 800G of 4 cubes gave some
  COMMENTS: change in direction

 275   2   0 MURRAY, NB, 25CC 28, X-6803, FEATURE 46
 41.1  -96.0   8.8  8    1000
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NRM      8 356.8  60.6  3.4  4.4    368  87.6 -173.6  3.0         1040
NRM      8 358.4  61.6  5.0  6.4    179  88.0 -131.2  4.2         3000

 274   1   1 MURRAY, NB, L-14, FEATURE 239
 41.1  -96.0   8.8  9    1000
NRM      9 353.9  58.7  2.3  3.1    623  85.1  156.1  2.1         1050
  COMMENTS: 150G of 3 cubes gave 0.1 deg.change in decl

 914   1   1 NORMAN, OK, HEATING EXPER
 35.5  -97.6   9.2  8
NRM      8  38.0  70.7 23.0 26.5     14  57.5  -56.3 15.3         3000
  COMMENTS: Hearth 1 prefiring rim

 916   1   3 NORMAN, OK, HEATING EXPER
 35.5  -97.6   9.2  8
NRM      7 357.0  48.1  8.3 12.6     40  66.2 -104.1  9.7         3000
  COMMENTS: hearth 2 prefiring bottom
  COMMENTS: 25G to 75G of 3 cubes gave some
  COMMENTS: change in direction

 917   1   3 NORMAN, OK, HEATING EXPER
 35.5  -97.6   9.2  8
NRM      8  18.0  64.1 10.2 12.8     48  73.0  -50.2  8.1         3000
  COMMENTS: hearth 2 prefiring rim
  COMMENTS: 25G to 75G of 3 cubes gave
  COMMENTS: some change in direction

 918   4   5 NORMAN, OK, HEATING EXPER
 35.5  -97.6   9.2  6
NRM      5   7.5  63.3  3.3  4.2    837  79.0  -68.4  2.6         3000
50G      3  10.0  62.1  1.2  1.5  16513  79.0  -56.1  1.0         1974
100G     3  11.2  63.8  1.2  1.5  16644  76.9  -60.7  1.0         3000
150G     3  11.2  64.3  2.2  2.8   5053  76.5  -62.3  1.7         3000
  COMMENTS: hearth 2, post firing-disturbed
  COMMENTS: (N) fire interface
  COMMENTS: 50G to 150G of 3 cubes gave little
  COMMENTS: change in direction.  USC&GS 1965 Dec and Inc map data
  COMMENTS: for Norman, OK calc pole at lat 76.6 long -69.5

 919   1   2 NORMAN, OK, HEATING EXPER
 35.5  -97.6   9.2  4
NRM      4  14.7  64.7  3.6  4.5   1093  74.3  -57.4  2.8         1974
  COMMENTS: post firing-disturbed (S) fire interface
  COMMENTS: hearth 2

 920   1   3 NORMAN, OK, HEATING EXPER
 35.5  -97.6   9.2  9
NRM      9   8.9  64.5  4.1  5.2    257  77.2  -68.6  3.2         1974
  COMMENTS: hearth 2, post firing, bottom fire interface
```

```
  COMMENTS: 25G to 100G of 3 cubes gave large
  COMMENTS: changes in direction

 921   1   3 NORMAN, OK, HEATING EXPER
 35.5  -97.6   9.2  7
NRM     6   8.6  65.1  2.6  3.2   1149  76.7  -71.4  2.0        1974
  COMMENTS: hearth 2, post firing
  COMMENTS: specimen contained foreign rock fragments
  COMMENTS: implanted before firing

 922   1   3 NORMAN, OK, HEATING EXPER
 35.5  -97.6   9.2  8
NRM     8  16.6  64.6  1.8  2.2   1571  73.4  -54.0  1.4        1974
  COMMENTS: hearth 2, post firing rim-fire interface
  COMMENTS: 50G to 200G of 2 cubes gave little
  COMMENTS: change in direction

 923   1   3 NORMAN, OK, HEATING EXPER
 35.5  -97.6   9.2  8
NRM     8   9.4  62.9  1.9  2.5   1231  78.6  -61.3  1.6        1974
  COMMENTS: hearth 2, post firing-behind rim interface
  COMMENTS: 50G to 200G of 2 cubes gave some
  COMMENTS: change in direction

 915   1   1 NORMAN, OK, HEATING EXPER.
 35.5  -97.6   9.2  8
NRM     8   5.1  53.1 13.3 19.2     17  61.5  -88.7 13.9        3000
  COMMENTS: hearth 1 prefiring bottom

 328   2   2 NORMAN, OK, TEST HEARTH, FIRED IN 1969
 35.5  -97.6   9.2  8    1969
NRM     7   9.9  65.8  1.9  2.3   1842  75.5  -70.3  1.4        1969
NRM     8   6.9  65.8  2.8  3.4    687  76.4  -77.6  2.1        3000
  COMMENTS: NRM meas. on astatic, 2nd NRM meas. on spinner
  COMMENTS: after firing

 329   1   1 NORMAN, OK, TEST HEARTH, FIRED IN 1969
 35.5  -97.6   9.2  8    1969
NRM     6  18.7  61.0  5.5  7.2    203  74.1  -37.6  4.7        3000
  COMMENTS: second set measurements after firing

 327   3   3 NORMAN, OK, TEST HEARTH, UNFIRED
 35.5  -97.6   9.2  8    1969
NRM     8 342.9  68.3 43.1 51.2      4  69.9 -129.8 30.4        3000
NRM     7 356.7  55.4 21.8 30.5      9  87.3 -177.1 21.4        2500
NRM     8 344.5  63.0 36.7 46.7      4  75.2 -146.0 29.7        3000
  COMMENTS: 2nd NRM meas. on astatic, 3rd NRM on spinner
  COMMENTS: artifical hearth prepared and fired in 1969
  COMMENTS: prefiring sample set
```

```
1579   2   0 PARIS MOUND, OK, CREMATORY PIT
 35.2  -94.8   7.4 10     950
NRM      9 354.3  60.2  6.2  8.2     92  82.5 -130.1  5.4         3000
100G     9 346.9  59.4  5.0  6.7    136  78.5 -155.3  4.4         2500

1580   1   2 PARIS MOUND, OK, PIT FLOOR
 35.2  -94.8   7.4  9    1150
NRM      8 349.7  76.7 26.3 28.3     14  59.8 -103.5 15.2         3000
  COMMENTS: 50G to 200G of 4 cubes gave large
  COMMENTS: changes in direction

1449   1   0 PARRIS MOUND (SHORT), OK, 34-SQ-12
 35.2  -94.8   7.5  9    1000
NRM      9 352.9  62.2  8.1 10.5     60  80.1 -126.2  6.7         3000

 619   1   2 PAT BOYD PLACE, OK, HOUSE 1 FIREPIT
 34.0  -95.5   7.8  8    1000-1300
NRM      7 354.8  56.8  4.2  5.7    234  84.6 -145.7  4.0         1350
  COMMENTS: C14 date is 1310
  COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl

1919   6   0 PAULS VALLEY, OK
 34.8  -97.3   9.0  8    1100-1450
NRM      8 351.9  55.6  3.4  4.8    272  83.2   21.0  3.4         3000
100G     8 354.2  55.7  3.6  5.0    250  85.0 -169.2  3.5         3000
150G     8 353.4  55.4  3.6  5.0    247  84.5 -173.0  3.5         3000
200G     8 353.3  55.7  3.5  4.9    264  84.4 -170.1  3.4         1280
400G     8 350.3  58.4  4.7  6.3    168  81.1 -155.2  4.3         3000
600G     8 350.5  58.6  3.8  5.1    261  81.2 -153.5  3.4         3000

1920   2   0 PAULS VALLEY, OK
 34.8  -97.3   9.0  8    1100-1450
NRM      8 358.9  54.1  2.1  2.9    704  89.1  162.6  2.1         3000
50G      8 354.8  54.0  1.9  2.7    831  85.7  170.1  1.9         1300

1921   2   0 PAULS VALLEY, OK
 34.8  -97.3   9.0  8
NRM      7 352.9  74.4 11.0 12.1     83  63.6 -105.1  6.7         3000
100G     7 349.5  66.5 10.2 12.4     65  73.8 -122.6  7.5         2500

 212   3   1 PAULS VALLEY, OK, GV 22, CURRIE SITE
 34.7  -97.2   9.0  8    1100           C14
NRM      7 347.5  60.0  1.4  1.9   2310  78.4 -151.1  1.3         3000
NRM      8 350.0  55.1  2.4  3.4    528  81.8 -178.0  2.4         3000
150G     8 347.4  55.2  1.0  1.4   3129  79.7 -177.7  1.0         1230
  COMMENTS: C14 average of 4 dates

1047   2   0 PHANTOM HILL, TX, SOUTHERN MOST KILN
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```
 32.7  -99.6   9.8  8    1700
NRM      8  13.6  62.4  1.5  1.9   2056  74.7  -59.6  1.2         3000
150G     6  14.0  62.2  1.3  1.7   3984  74.7  -58.2  1.1         1800

1290   2   0 ROWDEN, TX, MOLLY BRIGHTWELL LAND
 32.4  -99.6   9.7  8    1900
NRM      8  13.3  61.4  1.7  2.2   1568  75.4  -57.2  1.4         3000
100G     8  12.2  61.7  1.4  1.8   2382  75.7  -60.4  1.1         1900

1701   0   1 SALINE CO, KS
 40.0  -95.0   9.0
  COMMENTS: blocks, no data available at this time

1702   0   1 SALINE CO, KS
 40.0  -95.0   9.0
  COMMENTS: blocks, no data available at this time

1045   1   2 SALYES LEASE SITE, TX, SOUTHERN MOST KILN
 32.5  -99.7   9.8  8    1700
NRM      6   6.7  63.4  7.4  9.4    127  76.6  -78.9  6.0         3000
  COMMENTS: 100G to 400G of 2 cubes gave little
  COMMENTS: change in direction

 451   6   0 SAYRE, OK, BK-14, ROGER MILLS COUNTY
 35.3  -99.7  10.3  8
NRM      8  17.0  45.4 10.0 15.7     21  73.3   15.6 12.3         3000
150G     8  13.9  47.3 13.1 20.2     14  76.4   16.7 15.6         3000
200G     8   6.2  46.1 11.1 17.4     18  80.5   44.7 13.6         3000
300G     8 352.3  44.1 12.6 20.2     13  78.5  117.5 16.1         3000
400G     7 355.0  59.5  3.6  4.8    365  83.6 -136.4  3.2         1380
500G     8   0.0  64.1  6.6  8.3    115  79.4  -99.6  5.2         3000

1048   1   2 SHIRLEY CREEK, TX, NORTHERN MOST KILN
 32.9  -99.1   9.6  8    1700
NRM      7   9.2  64.5  2.1  2.6   1384  74.8  -74.1  1.6         1800
  COMMENTS: 100G to 1600G of 2 cubes gave little
  COMMENTS: change in direction

 925   2   3 SILVERTON, TX, DEADMANS SITE
 34.4 -101.6  10.9  7
NRM      6 343.3  58.8  4.0  5.4    339  75.7 -165.5  3.6         3000
50G      6 341.7  58.9  3.2  4.3    538  74.5 -166.5  2.9         1190
  COMMENTS: N 155-160 E 20-25, shelter 41-SW-23-area 2
  COMMENTS: 50G to 400G of 3 cubes gave large
  COMMENTS: change in direction

 924   1   3 SILVERTON, TX, MACKENZIE RIVER PROJECT
 34.4 -101.6  10.9  8
NRM      7   3.9  59.7 19.3 25.7     14  83.1  -76.0 17.1         3000
```

```
  COMMENTS: deadmans site 41-SW-23-area 1, feature 3
  COMMENTS: 50G to 800G of 4 cubes gave large
  COMMENTS: change in direction

 926   1   3 SILVERTON, TX, MACKENZIE RIVER PROJECT
 34.4 -101.6  10.9  8
NRM     8  10.1  59.3  7.5 10.0     70  80.2  -50.0  6.7        3000
  COMMENTS: county line site 41-B1-33, W OF W5-12-N75-80
  COMMENTS: 50G to 400G of 2 cubes gave large
  COMMENTS: changes in direction

1952   1   2 SPIRO MOUND, ST. PARK
 35.3  -94.6   7.4  8
NRM     6 346.6  60.5  2.4  3.2   1042  77.9 -150.3  2.1        1160
  COMMENTS: 50G to 400G of 4 cubes gave 4.8 deg.
  COMMENTS: change in decl.

 998   1   2 TULLAHASSEE, OK, WHITE ASH RIVER SEDIMENTS
 35.8  -95.4   7.9  8
NRM     8   5.3  54.5  2.2  3.2    604  85.5   12.7  2.3         750
  COMMENTS: 50G to 100G of 2 cubes gave little
  COMMENTS: change in direction

 888   2   1 TWO SISTERS, OK, 34-TX-32
 36.6 -101.5  11.1  9    1150-1450
NRM     9 355.3  59.5  1.9  2.5    921  84.8 -145.2  2.3        3000
100G    9 354.9  59.6  1.4  1.9   1660  84.7 -145.9  1.3        1350
  COMMENTS: central hearth, room 1, structure B

 788   3   0 TWO SISTERS, OK, HEARTH IN ROOM 1
 36.6 -101.5  11.1  8    1150-1450
NRM     8 359.3  61.5  3.8  5.0    297  83.9 -106.1  3.2        3000
50G     8   0.4  58.8  3.7  5.0    273  87.0  -95.3  3.4        1420
100G    8 359.2  58.6  4.7  6.3    170  87.2 -114.0  4.3        3000

887    3   1 TWO SISTERS, OK, TX-32 SOUTH WALL OF STRUC B
 36.6 -101.5  11.1  9    1150-1450
NRM     9   2.5  55.5  3.5  5.0    226  87.9    2.6  3.4        3000
50G     9   1.3  54.6  2.5  3.6    417  88.1   42.6  2.5        1440
100G    9   2.4  55.1  3.3  4.7    246  87.8   14.0  3.3        3000
  COMMENTS: taken as blocks and cubes collected in lab

1742   3   2 UNCAS SITE, OK, 34 KA172 HEARTH
 36.8  -96.9   8.8  8    1000-1500
NRM     8   1.0  62.9  4.0  5.0    299  82.4  -91.3  3.2        3000
150G    4 357.0  60.8  4.3  5.6    626  84.5 -120.7  3.7        1390
400G    4 358.7  63.2  4.7  6.0    591  82.1 -103.7  3.8        3000
  COMMENTS: note a 2 degree shift of wall
  COMMENTS: in 1743 could move the date
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```
1743   2   0 UNCAS SITE, OK, 34 KA172 HEARTH
 36.8  -96.9   8.8  9    1000-1500
NRM      9 349.3  59.2  2.2  2.9    719  81.0 -162.3  1.9        3000
50G      8 348.9  59.0  2.6  3.4    583  80.8 -165.0  2.3        1240

1744   1   1 UNCAS SITE, OK, 34 KA172 ROOF\WALL
 36.8  -96.9   8.8  8    1000-1500
NRM      7 354.1  59.7  6.0  8.0    130  84.1 -146.3  5.3        3000
  COMMENTS: 100G of 4 cubes gave 0.1 deg. change in decl

 399   3   1 W.W.YOUNG SITE, KS, 23DL4
 39.2  -94.7   7.6  9     850-1300   C14
NRM      9 323.7  49.9  4.3  6.5    114  59.3  170.6  4.8        3000
NRM      8 346.2  69.9  3.9  4.5    448  72.7 -123.0  2.6        3000
150G     8 353.1  66.2  4.2  5.1    323  79.3 -120.1  3.1        1130
  COMMENTS: uncertain curve assignment

 203   1   0 WICHITA MTNS. (ROCK CORE)
 34.7  -98.7  10.1 10
NRM      8 250.7   1.8  2.4  4.7    139 -15.2 -176.7  4.7        3000

1001   1   3 WITTE SITE, KS, F-1-HEARTH IN HOUSE
 38.9  -96.8   8.8  8    1100-1300
NRM      8  27.9  70.9  3.9  4.5    459  65.3  -57.2  2.6        3000
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction
  COMMENTS: Uncertain curve assignment

 830   2   0 ZIMMS SITE, OK, ROOM 72, FIRED FLOOR
 35.5  -99.5  10.2  8    1250-1350
NRM      8   0.0  58.1  2.7  3.6    515  87.0  -98.8  2.4        3000
100G     8 359.7  57.6  2.0  2.9    850  87.5 -104.6  1.9        1420
```

NOTES

Norman, Oklahoma, location 35.23, -97.43. Archaeomagnetic pole using 1965 USG&GS data of dec 9.1 and inc 65.0 is Lat 76.4, Long -70.1. The same data base gives the north magnetic dip pole as Lat 75.5 and Long -99.5. The south magnetic dip pole is Lat 66.5 and Long E139.5. The earth’s “best fit” dipole field has an axis with a north pole at Lat 78.5 and Long -69. It is symmetrical with an axis inclined at 11.5 degrees to the axis of rotation.

**APPENDIX 8. The Northeastern Midcontinent**

```
 306   1   1 AR, 3-BE-174, 314 G1
 36.3  -94.5   7.4  8
NRM     8   2.5  56.2 10.6 14.7     30  87.9  -19.2 10.2        3000
  COMMENTS: 150G of 2 cubes gave 4.9 deg. change in decl

 307   1   0 AR, 3-BE-174, G2
 36.3  -94.5   7.4  8
NRM     7  18.4  53.9 15.9 22.7     15  74.9   -2.9 16.2        3000

 308   1   1 AR, 3-BE-174, G3
 36.3  -94.5   7.4  8    1000-1250
NRM     7 342.3  57.9  4.2  5.6    247  75.8 -170.1  3.8        1200
  COMMENTS: last NRM is recalculation

 728   1   1 ARLEDGE MOUND, OH
 39.5  -81.3  -3.7  8
NRM     8   4.0  70.8  0.9  1.0   8749  74.2  -72.9  0.6        1900
  COMMENTS: 150G of 2 cubes gave little change in direction

1867   2   0 BORROW PITS, 11-2-650, FEATURE 240
 38.5  -90.2   4.7 12
NRM    12 329.7  61.7  3.8  4.9    186  66.7 -159.6  3.2        3000
150G    9 336.8  59.9  2.7  3.6    474  72.1 -165.4  2.4        1190

 729   2   0 C.HASKIN FURNACE, OH
 39.5  -83.1  -1.9  8    1640           C14
NRM     8   2.9  69.3  2.6  3.0    961  76.4  -75.7  1.8        3000
150G    8   2.2  66.4  1.6  2.0   2164  80.5  -74.4  1.2        1800

 621   1   0 CAHOKIA, IL
 38.7  -90.1   4.6  3
NRM     3 334.2  58.6 46.2 62.2     10  70.0 -170.1 41.9        3000

 650   1   2 CAHOKIA, IL
 38.7  -90.1   4.6  4
NRM     4 334.7  57.7  1.9  2.5   2829  70.2 -173.1  1.7        1200
  COMMENTS: 150G of 2 cubes gave 0.2 deg. change in decl
  COMMENTS: uncertain curve assignment

 651   1   0 CAHOKIA, IL
 38.7  -90.1   4.6  4
NRM     4 340.7  62.5 14.1 18.0     64  74.6 -154.3 11.5        3000

 797   2   0 CAHOKIA, IL
 38.7  -90.1   4.6  4
NRM     3 349.3  50.2  7.0 10.4    252  78.3  141.6  7.8        3000
150G    3 348.7  48.5  8.0 12.1    180  76.9  138.6  9.2        2500
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```
 634   1   1 CAHOKIA, IL, FEAT. 140, HEARTH
 38.7  -90.1   4.6  8
NRM     8 353.0  60.9 11.4 15.0     33  83.8 -147.0  9.8        3000
  COMMENTS: 100G of 3 cubes gave 16.0 deg. change in decl

 718   2   0 CAHOKIA, IL, HEARTH 322
 38.6  -90.2   4.6  8    1200-1300
NRM     8 352.1  66.1  4.7  5.7    256  78.6 -117.7  3.5        3000
100G    8 350.6  61.6  2.9  3.8    512  81.7 -146.6  2.5        1140

 795   1   1 CAHOKIA, IL, HOUSE 2?
 38.7  -90.1   4.6  1
NRM     1 292.8  50.2  323  482      0  35.5 -166.3  360        3000
  COMMENTS: set too small in size

 620   1   0 CAHOKIA, IL, HOUSE 4
 38.7  -90.1   4.6  4
NRM     4 335.0  54.5 11.1 15.8     69  69.7  177.3 11.2        3000

 623   1   0 CAHOKIA, IL, HOUSE 4
 38.7  -90.1   4.6  4
NRM     4 342.4  61.0  4.6  6.0    548  76.2 -160.2  3.9        1180

 625   1   1 CAHOKIA, IL, HOUSE 4
 38.7  -90.1   4.6  4
NRM     3 336.5  59.6  0.8  2.3   6533  71.8 -167.2  1.5        1190
  COMMENTS: uncertain curve assignment

 796   1   1 CAHOKIA, IL, HOUSE 4
 38.7  -90.1   4.6  2
NRM     2 308.9  63.0 58.2 74.0     30  51.9 -154.5 47.1        3000
  COMMENTS: Set too small in size

 719   2   0 CAHOKIA, IL, MONKS MOUND
 38.7  -90.1   4.6  8
NRM     8 356.9  61.2 17.6 23.0     15  85.7 -122.6 15.0        3000
150G    8 334.9  57.4  2.1  2.8    835  70.4 -174.0  1.9        1210

 273   1   1 CAHOKIA MOUND, IL
 38.6  -90.2   4.6  8    1250
NRM     8 351.8  60.3  2.0  2.7   1007  83.2 -154.8  1.7        1265
  COMMENTS: 150G of 2 cubes gave 0.2 deg. change in decl

 272   1   1 CAHOKIA MOUND, IL, FEAT. 104
 38.6  -90.2   4.6  8    1050
NRM     8 344.0  59.4  2.8  3.8    481  77.6 -167.7  2.5        1190
  COMMENTS: 150G of 2 cubes gave 1.2 deg. change in decl
```

```
 794   2   0 CAHOKIA,IL
 38.7  -90.1   4.6  3
NRM      3 339.1  56.1  4.0  5.6   1007  73.5  179.1  3.9         3000
150G     3 339.7  55.5  3.8  5.3   1123  73.7  176.9  3.7         3000

 626   1   2 CARTER'S GROVE, VA, BRICK KILN
 37.2  -76.7  -7.6  9    1744-1756
NRM      8  27.4  73.6  7.6  8.4    140  61.6  -47.3  4.7         3000
  COMMENTS: 50G of 2 cubes gave 0.2 deg. change in decl
  COMMENTS: uncertain curve assignment

 627   1   2 CARTER'S GROVE, VA, BRICK KILN
 37.2  -76.7  -7.6  8    1744-1756
NRM      8 352.2  72.0  5.0  5.7    294  69.5  -88.8  3.2         3000
  COMMENTS: 100G of 2 cubes gave 0.7 deg. change in decl
  COMMENTS: uncertain curve assignment

1980   3   2 CHARLES CITY COUNTY, VA
 37.3  -77.2  -6.1  6
NRM      6   1.4  65.3  7.0  8.6    159  80.0  -71.9  5.3         3000
50G      6 354.8  62.0  2.3  3.0   1242  82.9 -109.3  1.9         1395
100G     6   3.8  53.7  7.5 10.8     76  85.6   56.9  7.7         3000
  COMMENTS: north side of Eppes Creek
  COMMENTS: uncertain curve assignment

1966   1   3 CHARLOTTESVILLE, VA, MONTICELLO SMOKEHOUSE
 38.1  -81.5 -5.4  8
NRM      7 345.2  66.8  9.3 11.3     79  74.5 -120.0  6.8         3000
  COMMENTS: burned clay in smokehouse firepit
  COMMENTS: 50G to 400G of 4 cubes gave 2.1 deg
  COMMENTS: change in decl

1753   2   0 COLUMBIA, IL
 38.6  -90.2   4.8  8
NRM      6 337.9  50.5  7.0 10.4     76  70.5  164.5  7.7         3000
200G     8 342.2  64.6  8.3 10.3     75  74.7 -143.5  6.4         2500

1756   1   1 COLUMBIA, IL, BURNED FLOOR
 38.6  -90.2   4.8  8    1285-1435
NRM      8  24.5  71.1 27.9 32.0     10  66.5  -54.2 18.4         3000
  COMMENTS: 100G of 4 cubes gave 0.8 deg. changhe in decl

1745   2   0 COLUMBIA, IL, BURNED HOUSE FLOOR
 38.6  -90.1   4.8  6    1270-1420
NRM      4 356.8  58.7  3.4  4.6    886  87.4 -160.2  3.1         1335
50G      6   7.0  58.6  7.7 10.4     92  84.5   -9.6  7.0         3000

1751   3   0 COLUMBIA, IL, BURNT FLOOR
 38.6  -90.2   4.8  8    1245-1395     C14
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```
NRM      8 347.1  56.0  1.9  2.6    922  79.6  172.3  1.8           3000
150G     8 348.2  55.3  1.5  2.2   1335  80.2  167.0  1.5           3000
600G     8 347.5  54.8  1.2  1.7   2101  79.5  165.6  1.2           1230

1754   2   0 COLUMBIA, IL, BURNT FLOOR
 38.6  -90.2   4.8 10    1010-1230     C14
NRM      9 298.8  71.6 18.6 21.2     19  46.7 -135.2 12.1           3000
150G    10 330.5  71.3  7.5  8.6     98  63.9 -129.0  4.9           2500

1749   3   1 COLUMBIA, IL, BURNT FLOOR, S-650-157
 38.5  -90.2   4.8  8     930-1080     C14
NRM      8 324.2  65.8  8.8 10.8     71  62.5 -148.2  6.6           3000
150G     6 356.5  65.6  2.5  3.1   1275  80.4 -104.5  1.9           2500
200G     6   0.2  64.7  3.3  4.2    671  81.9  -89.1  2.6           3000
  COMMENTS: Uncertain curve assignment

1748   2   0 COLUMBIA, IL, BURNT HEARTH, S-650-157
 38.6  -90.2   4.8 10
NRM     10 343.8  60.0  4.9  6.4    129  77.4 -164.8  4.3           3000
100G    10 346.2  59.8  3.9  5.2    200  79.2 -164.6  3.4           1190

1747   3   0 COLUMBIA, IL, BURNT HOUSE FLOOR, S-63-236
 38.5  -90.2   4.8  8     980-1160     C14
NRM      8   3.5  60.6 16.6 21.8     16  85.9  -50.4 14.3           3000
150G     8 345.4  60.8 14.0 18.3     22  78.4 -159.2 12.0           3000
400G     8 351.8  60.2 12.5 16.5     27  83.1 -154.6 10.9           2500

1746   2   1 COLUMBIA, IL, HEARTH #48, STRUCTURE #1
 38.6  -90.0   4.8  8
NRM      8 352.1  75.3  7.0  7.6    177  65.9  -99.0  4.2           3000
50G      8 356.7  75.2  6.1  6.7    230  66.5  -93.8  3.7           2500
  COMMENTS: Uncertain curve assignment

1752   1   0 COLUMBIA, IL, MO-722-95, BURNT LENSE
 38.5  -90.2   4.8  6
NRM      4  46.1  58.7 46.7 62.8      6  54.6  -16.5 42.3           3000

1761   4   0 COLUMBIA, IL, S-458-2
 38.6  -90.1   4.8 10    1320
NRM      9 348.8  61.0  5.0  6.5    149  80.8 -154.6  4.2           3000
50G      9 353.3  59.7  3.3  4.4    308  84.4 -157.0  2.9           1350
200G     9 351.7  59.6  3.5  4.7    273  83.4 -161.4  3.1           3000
800G    10   1.4  57.8  4.0  5.4    174  88.9    6.3  3.7           3000

1750   2   0 COLUMBIA, IL, S-47-716
 38.5  -90.2   4.8  8
NRM      7 255.7  53.4 16.2 23.3     14  10.8 -145.1 16.7           3000
100G     8 324.6  64.2 12.5 15.7     33  63.0 -152.8  9.8           2500
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1759   2   0 COLUMBIA, IL, S-47-820, BURNT STRUCTURE
 38.5  -90.2   4.8 10
NRM      9 354.6  56.3 11.2 15.5      24  85.5  160.5 10.7         2500
150G     9 350.3  54.1 11.8 16.8      20  31.3  156.7 12.0         3000

1757   2   0 COLUMBIA, IL, S-47-887, BURNT HEARTH
 38.5  -90.2   4.8  7
NRM      7 343.2  53.0 14.4 20.8      17  75.6  165.0 15.0         3000
50G      7 346.6  51.3 11.3 16.6      25  77.3  153.1 12.2         2500

1758   1   1 COLUMBIA, IL, S-63-2
 38.6  -90.2   4.8  8    1228-1378
NRM      7 347.8  56.9  3.0  4.1    465  80.4  176.7  2.8         1230
  COMMENTS: 100G of 4 cubes gave 0.1 deg. change in decl

1760   1   1 COLUMBIA, IL, S-63-2, BURNT STRUCTURE
 38.6  -90.2   4.8  8    1228-1378     C14
NRM      7  64.9  80.3 45.8 47.7       7  44.2  -66.0 24.8         3000
  COMMENTS: 100G of 4 cubes gave 0.1 deg. change in decl

1755   3   0 COLUMBIA, IL, S-63-3, BURNT HOUSE
 38.6  -90.2   4.8  8    1156-1306     C14
NRM      6 301.1  77.8 46.2 49.2       8  47.1 -120.3 26.2         3000
150G     7   1.5  70.3 11.5 13.3      62  74.1  -86.9  7.7         2500
400G     8 356.1  69.9 11.6 13.5      50  74.6  -98.9  7.9         3000

1762   2   0 COLUMBIA, IL, S-650-106, BURNT FILL
 38.5  -90.2   4.8  6     900
NRM      6  14.4  59.6  9.0 12.0      71  78.7  -14.7  8.0         3000
150G     6   5.2  58.7  8.1 10.9      84  85.8  -14.5  7.4         2500

1763   4   0 COLUMBIA, IL, S-650-19
 38.5  -90.2   4.8 12    1075-1225
NRM     12 353.1  64.6  7.0  8.7      65  80.5 -120.5  5.4         3000
150G     6 354.5  62.0  2.7  3.5     899  83.7 -129.4  2.2         3000
200G     6 354.4  61.4  2.1  2.7    1424  84.1 -135.5  1.8         1100
400G     6 358.1  60.0  2.8  3.8     720  87.2 -120.5  2.5         3000

 810   4   0 EATON SITE, NY
 42.8  -78.3  -8.4 12    1600
NRM     12   9.7  78.8  5.0  5.3     239  64.0  -70.1  2.8         3000
50G      6 357.5  64.4 14.8 18.5      35  86.2 -105.0 11.6         3000
100G     6 356.6  65.6  9.3 11.5      91  84.5 -103.0  7.1         3000
150G     5 354.6  68.0  5.9  7.1     331  81.0 -100.3  4.2         2500

1355   3   1 EDWIN HARNESS MOUND, OH, 33-RO-22 F-22
 39.3  -82.9  -1.8  8
NRM      7 353.8  54.6  2.0  2.8     944  83.6  148.7  2.0         3000
100G     7 354.5  55.0  2.1  2.9     850  84.2  148.4  2.1         2500
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150G    7 354.0  55.1  2.1  3.0    808  84.0  151.4  2.1         3000
 COMMENTS: uncertain curve assignment

1356   3   1 EDWIN HARNESS MOUND, OH, 33-RO-22 F-3
 39.3  -82.9  -1.8  8
NRM     8 355.7  55.2  4.0  5.7    194  85.1  142.1  4.0         3000
100G    8 355.9  57.0  1.8  2.5   1036  86.3  160.1  1.7         3000
150G    8 355.8  57.6  1.6  2.2   1340  86.5  169.9  1.5         2500
 COMMENTS: uncertain curve assignment

1358   3   1 EDWIN HARNESS MOUND, OH, 33-RO-22 F-31
 39.3  -82.9  -1.8  9
NRM     9 356.8  61.2  2.2  2.8    777  86.2 -120.5  1.8         3000
50G     6 355.0  61.3  4.0  5.2    397  85.2 -132.3  3.4         3000
100G    8 355.2  59.2  1.5  2.0   1786  86.3 -161.1  1.3         2500
 COMMENTS: uncertain curve assignment

1357   4   1 EDWIN HARNESS MOUND, OH, 33-RO-22 F-6
 39.3  -82.9  -1.8  8
NRM     8 345.6  62.3 18.6 23.9     14  78.4 -146.7 15.3         3000
50G     6 356.6  52.5  5.9  8.6    116  83.2  122.3  6.2         3000
100G    6 355.6  54.3  3.7  5.3    315  84.3  136.8  3.8         2500
150G    7 354.3  57.0  4.7  6.4    190  85.2  168.5  4.4         3000
 COMMENTS: uncertain curve assignment

 392   3   0 EVELAND SITE, IL, A
 40.4  -90.2   4.3  8    1140
NRM     7 331.1  58.0  3.0  4.0    483  67.8 -175.4  2.7         3000
NRM     8 337.8  65.5  4.0  5.0    322  72.6 -148.2  3.1         3000
150G    7 340.0  67.1  2.6  3.2    841  73.1 -139.7  1.9         1150

 393   2   1 EVELAND SITE, IL, B
 40.4  -90.2   4.3  8    1100
NRM     8 344.1  63.6  6.7  8.4    110  77.4 -152.8  5.3         3000
NRM     7 335.0  66.9  3.6  4.3    529  70.2 -144.3  2.6         1150
  COMMENTS: Uncertain curve assignment

1868   1   1 FLORENCE ST. IL, FEATURE F134, 11-S-458
 38.5  -90.1   4.7 10
NRM     8 306.5  60.0 15.3 20.3     18  48.4 -159.2 13.4         3000
  COMMENTS: 50G of 4 cubes gave 7.9 deg. change in decl.

 811   2   1 FT. STANWYX, ROME, NY
 43.2  -75.5 -11.7  8    1777
NRM     8 357.5  73.7  3.8  4.8    543  73.5  -79.9  2.4         3000
150G    8   2.7  71.0  2.3  2.7   1323  77.7  -68.2  1.5         1780
  COMMENTS: uncertain curve assignment

 315   4   2 GRAHAM CAVE, MO, FEAT. 1, SQ 115N-97W
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 38.9  -91.3   5.5  8
NRM     7 355.0  64.7  5.6  7.0    195  81.5 -115.2  4.3        3000
NRM     7 355.1  65.7  4.8  6.0    275  80.3 -111.2  3.6       -6850
150G    7 348.0  63.5  7.2  9.1    110  79.2 -142.7  5.8        3000
150G    7 359.6  63.4  8.7 11.0     76  84.0  -94.3  7.0        3000
  COMMENTS: NRM meas. with spinner, 2nd NRM with astatic
  COMMENTS: DD 51.5-55 in

 314   2   1 GRAHAM CAVE, MO, FEAT. 2, SQ 123N-100W
 38.9  -91.3   5.5  9   -6370 to -7370     C14
NRM     9 341.2  64.2  3.8  4.8    293  74.5 -148.3  3.0        3000
150G    9 338.4  62.6  4.1  5.3    232  73.1 -156.9  3.4       -7050
  COMMENTS: DD 25-35 in

1394   2   0 HERMITAGE, TN, F-KILN #1, AREA C
 36.2  -86.6   2.3  8    1817-1890
NRM     7   6.6  65.6  0.4  0.5  33825  77.4  -65.8  0.3        3000
100G    6   5.2  66.1  0.8  0.9  13943  77.2  -70.9  0.6        1890

1395   1   2 HERMITAGE, TN, F-KILN #2, AREA C
 36.2  -86.6   2.3  8    1817-1890
NRM     8   8.8  65.3  2.9  3.6    628  77.0  -59.2  2.2        1890
  COMMENTS: 50G to 400G of 3 cubes gave some
  COMMENTS: change in direction

1704   3   1 HILLSDALE, KS, NEBO HILL HOUSE
 38.7  -94.8   7.7  5
NRM     4 341.4  61.6  6.5  8.5    276  75.4 -165.1  5.5        2500
50G     5 347.0  56.0  8.9 12.3     81  79.5  167.6  8.6        3000
100G    5 348.9  55.3  9.3 13.1     70  80.7  160.4  9.2        3000
  COMMENTS: site 14MM27, burned clay house wall

1703   2   1 HILLSDALE, KS, SITE 14MM509
 38.7  -94.8   7.7  8
NRM     8 350.7  62.3 15.0 19.2     21  81.5 -146.9 12.3        3000
50G     8 340.1  58.6 11.9 16.1     27  74.6 -176.3 10.8        2500
  COMMENTS: feature 2, baked hearth

 646   2   1 INDIAN HILL, NY
 42.6  -76.7 -10.0  8    1550
NRM     8 359.0  68.4 11.8 14.0     46  80.9  -80.6  8.3        2500
150G    8 352.4  75.2 23.7 25.9     16  69.9  -87.0 14.1        3000
  COMMENTS: feature 3, F10 N 50 W, large hearth

 801   1   0 INDIAN HILL, NY
 42.6  -76.7 -10.0  1    1500
NRM     1  22.2  68.9  518  611      0  72.2  -27.6  360        3000

 805   1   0 INDIAN HILL, NY
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 42.6  -76.7 -10.0  2    1500
NRM      2  16.4  80.3 57.5 59.9     66  60.4  -66.1 31.2         3000

 806   1   2 INDIAN HILL, NY
 42.6  -76.7 -10.0  8    1500
NRM      8 332.3  77.1  8.5  9.1    131  62.4 -101.3  4.9         3000
  COMMENTS: 100G to 200G of 2 cubes gave some change
  COMMENTS: in direction

 807   3   0 INDIAN HILL, NY
 42.6  -76.7 -10.0 10    1500
NRM      9 332.0  76.6  7.9  8.5    127  62.9 -103.0  4.6         3000
200G     7 343.0  65.1  7.9  9.8    101  77.1 -140.4  6.0         3000
400G     7 347.9  64.7  7.2  8.9    120  80.5 -137.3  5.5         2500

 808   3   1 INDIAN HILL, NY
 42.6  -76.7 -10.0  8    1500
NRM      7 350.2  70.9  3.2  3.7    826  75.8 -100.0  2.1         3000
100G     6 348.4  65.5  4.5  5.5    394  80.4 -130.6  3.4         3000
150G     7 351.1  65.0  3.9  4.8    407  82.3 -128.9  3.0         1400
  COMMENTS: uncertain curve assignment

 644   1   2 INDIAN HILL, NY, FEAT. 1, F10, N 10 W, HEARTH
 42.6  -76.7 -10.0 10    1550
NRM      9 350.1  71.5  4.4  5.1    320  75.0  -98.4  2.9         3000
  COMMENTS: 150G of 2 cubes gave 19.9 deg. change in decl
  COMMENTS: uncertain curve assignment

 645   2   1 INDIAN HILL, NY, FEAT. 205, N 35 E
 42.6  -76.7 -10.0  8    1550
NRM      7 357.3  71.2  5.0  5.8    336  76.7  -83.4  3.3         2500
150G     8   5.7  66.3 12.8 15.7     35  82.7  -45.6  9.5         3000
  COMMENTS: uncertain curve assignment, modern?

 647   2   0 INDIAN HILL, NY, FEATURE 1, F10, N 10 W
 42.6  -76.7 -10.0  8    1550
NRM      8 354.0  72.2  8.5  9.6    106  74.8  -89.1  5.4         3000
150G     8   1.8  68.3  9.9 11.7     64  81.1  -69.4  7.0         2500

 648   2   1 INDIAN HILL, NY, FEATURE 1, F10, N 10 W
 42.6  -76.7 -10.0  8    1550
NRM      8 354.3  69.9  2.8  3.3    853  78.2  -93.5  1.9         3000
150G     8 356.8  66.2  2.3  2.8   1018  83.0  -94.1  1.7         2500
  COMMENTS: uncertain curve assignment

 643   1   0 INDIAN HILL, NY, PROBABLE HEARTH
 42.6  -76.7 -10.0 10    1550
NRM      8  15.1  77.0 14.8 15.9     43  65.9  -61.3  8.5         3000
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 720   2   1 KOSTER SITE, IL
 39.3  -90.6   4.9  8
NRM      7  30.7  76.2  4.3  4.6    589  59.6  -64.1  2.5        3000
100G     8 359.1  72.0  5.2  5.9    271  72.3  -92.2  3.4       -3500
  COMMENTS: uncertain curve assignment

 722   2   0 KOSTER SITE, IL, HEARTH 1554, LEVEL C
 39.3  -90.6   4.9 10
NRM     10  26.0  60.2 11.4 15.0     25  70.0  -15.3  9.9        3000
100G    10  21.6  60.1 11.7 15.4     24  73.5  -13.4 10.2        2000

 721   3   1 KOSTER SITE, IL, HEARTH 1634B
 39.3  -90.6   4.9  9   -4000 to -3000
NRM      9  14.7  64.0  4.2  5.3    243  77.4  -36.2  3.3        3000
100G     8   5.6  58.4  2.7  3.6    515  85.7    0.3  2.4       -3500
150G     9   5.5  59.4  3.3  4.4    303  85.7  -15.0  3.0        3000
  COMMENTS: uncertain curve assignment

 635   2   0 LILBORN, MO, FEAT. 37
 36.6  -89.6   4.5  8    1173-1450
NRM      7 348.5  60.1  0.5  0.6  21473  80.0 -149.7  0.4        3000
150G     8 346.4  58.0  0.6  0.8  11486  79.0 -164.7  0.5        1190

 395   1   1 MONK'S MOUND, IL, (CAHOKIA) A
 38.7  -90.1   4.6  8
NRM      8 346.0  55.3  2.1  3.0    703  78.5  170.0  2.1        1220
  COMMENTS: 150G of 2 cubes gave 1.3 deg. change in decl.

 396   3   0 MONK'S MOUND, IL, (CAHOKIA) B
 38.7  -90.1   4.6  9
NRM      8 338.4  54.2  2.4  3.4    535  72.3  173.6  2.4        3000
NRM      9 342.0  59.1  4.0  5.4    207  76.0 -169.6  3.6        3000
150G     9 338.9  59.2  4.2  5.6    189  73.7 -168.8  3.8        1200

1985   2   1 MONTICELLO, VA, BALDRUP SITE
 37.1  -76.6  -8.5  8
NRM      8 344.6  64.0 11.9 15.0     36  74.7 -119.6  9.4        2500
100G     8 254.6  65.3  5.2  6.4    196  17.5 -119.8  4.0        3000
  COMMENTS: uncertain curve assignment

 394   2   0 MYER-DICKSON SITE, IL, FV-33
 40.4  -90.2   4.3  8    1200        C14
NRM      8  16.0  66.4  5.6  6.8    180  75.8  -42.4  4.1        3000
150G     8 356.4  68.9  2.8  3.3    802  77.8 -100.7  2.0        1400

 453   2   0 NEIL FLURRY SITE, MO, 23 BU 69, STRUC. 8
 36.6  -90.7   5.3  7
NRM      7 352.9  56.4  1.2  1.7   2627  84.3 -175.3  1.2        1280
NRM      7 350.7  57.5  1.4  1.9   2225  82.5 -166.6  1.3        3000
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1061   1   1 NEW YORK, SAMPLE EK2
 42.6  -74.8  11.9  8
NRM     8 352.1  51.0 21.4 31.7      7  77.4  137.6 23.5        3000
  COMMENTS: 400G of 4 cubes gave 78.7 deg. change in decl

1051   1   2 NEW YORK, SAMPLE NAME 025
 42.6  -74.8  11.9 10
NRM     8  16.6  59.0  3.8  5.1    265  77.2   22.4  3.4        3000
  COMMENTS: 400G of 2 cubes gave 0.9 deg. change in decl
  COMMENTS: uncertain curve assignment

1053   1   1 NEW YORK, SAMPLE NAME 26-2
 42.6  -74.8  11.9 10
NRM    10 332.5  59.3 15.3 20.4     14  69.3 -162.4 13.6        3000
  COMMENTS: 200G of 4 cubes gave 50.3 deg. change in decl

1054   1   1 NEW YORK, SAMPLE NAME 26-2
 42.6  -74.8  11.9  4
NRM     4 353.6  45.9 31.0 48.5      7  73.9  126.0 37.9        3000
  COMMENTS: 200G of 3 cubes gave 90.4 deg. change in decl

1059   1   2 NEW YORK, SAMPLE NAME EKI
 42.6  -74.8  11.9 12
NRM    11  22.2  61.6  3.9  5.0    200  73.7    7.2  3.2        3000
  COMMENTS: 200G of 4 cubes gave 6.4 deg. change in decl
  COMMENTS:uncertain curve assignment

1060   1   2 NEW YORK, SAMPLE NAME EKI
 42.6  -74.8  11.9  2
NRM     2  22.2  45.3 11.6 18.3    301  66.0   49.2 14.4        3000
  COMMENTS: only 2 cubes collected
  COMMENTS: 200G of 2 cubes gave 9.1 deg. change in decl

1050   1   2 NEW YORK, SAMPLE NAME EN
 42.6  -74.8  11.9  9
NRM     8 357.0  59.5 14.0 18.7     21  86.8  151.0 12.4        3000
  COMMENTS: 50G to 200G of 3 cubes gave large
  COMMENTS: changes in direction

1055   1   2 NEW YORK, SAMPLE NAME KI
 42.6  -74.8  11.9  3
NRM     2   5.8  58.2  3.4  4.7   6242  84.3   53.7  3.2        3000
  COMMENTS: 200G of 2 cubes gave 49.2 deg. change in decl
  COMMENTS: uncertain curve assignment

1056   1   1 NEW YORK, SAMPLE NAME KI
 42.6  -74.8  11.9 12
NRM    12  14.3  49.9  3.8  5.6    106  73.5   56.7  4.2        3000
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  COMMENTS: 200G of 3 cubes gave 29.8 deg. change in decl

1057   2   1 NEW YORK, SAMPLE NAME KI
 42.6  -74.8  11.9  8
NRM      8  22.4  50.7  7.4 11.0     47  69.0   40.0  8.2        2500
200G     2  38.8  11.1  3.3  6.6   1475  39.5   51.2  6.5        3000
  COMMENTS: 200G of 3 cubes gave 14.7 deg. change in decl

1058   1   1 NEW YORK, SAMPLE NAME KI
 42.6  -74.8  11.9 12
NRM     11  21.3  47.5  8.2 12.7     23  67.8   47.5  9.8        3000
  COMMENTS: 200G of 4 cubes gave 47.4 deg. change in decl

1049   1   2 NEW YORK, SAMPLE NAME KUR
 42.6  -74.8  11.9  8
NRM      8 349.8  73.6 19.8 22.1     21  71.9  -91.6 12.3        3000
  COMMENTS: 50G to 400G of 3 cubes gave large
  COMMENTS: changes in direction

1052   1   1 NEW YORK, SAMPLE NAME O26
 42.6  -74.8  11.9  8
NRM      8   9.9  62.4  8.8 11.3     60  82.7    3.2  7.2        3000
  COMMENTS: 200G of 3 cubes gave 10.9 deg. change in decl

1062   1   1 NEW YORK, SAMPLE NAME STR
 42.6  -74.8  11.9 10
NRM     10  46.6  71.4 34.8 39.8      6  57.6  -25.5 22.7        3000
  COMMENTS: 200G of 4 cubes gave 14.9 deg. change in decl

1063   1   1 NEW YORK, SAMPLE NAME STR
 42.6  -74.8  11.9 11
NRM     11 341.5  57.2 10.9 15.0     21  75.1 -177.4 10.3        3000
  COMMENTS: 400G of 4 cubes gave 32.8 deg. change in decl

 870   2   0 OLIN SITE, IL, MSV 279
 38.9  -90.1   4.5  8    1150-1450
NRM      8 340.0  64.2  3.1  3.9    512  73.7 -147.9  2.5        3000
150G     8 343.9  59.1  1.7  2.2   1364  77.6 -170.6  1.5        1200

1390   2   0 ORENDORF, IL, 11FV1284 F-1977 IN STRUCTRE 149
 40.5  -90.0   3.5  9    1225-1275
NRM      9 350.0  63.6  7.0  8.9     86  81.3 -144.0  5.6        3000
50G      9 354.1  63.9  7.1  8.9     86  83.3 -128.3  5.6        2500

1388   2   1 ORENDORF, IL, 11FV1284 F-2019 IN STRUCTURE 159
 40.5  -90.0   3.5  8    1225-1275
NRM      8 336.2  72.9 21.8 24.4     17  66.6 -122.2 13.7        3000
100G     8 334.7  71.7 22.2 25.5     15  67.1 -127.2 14.6        2500
  COMMENTS: decl corrected by -90 degrees
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1389   3   0 ORENDORF, IL, 11FV1284 F-STRUCTURE 153
 40.5  -90.0   3.5  8    1225-1275
NRM      8 355.1  65.5  6.9  8.5    114  82.0 -114.5  5.2         3000
50G      8 341.7  64.7  4.3  5.3    284  75.4 -149.1  3.3         3000
100G     8 343.4  64.0  3.1  3.9    521  76.8 -151.2  2.4         1185

1393   2   0 ORENDORF, IL, 11FV1284 F-STRUCTURE 154
 40.5  -90.0   3.5  9
NRM      9   7.8  60.7 18.5 24.3     11  84.0  -14.1 15.9         3000
50G      9  13.6  62.8 26.3 33.5      7  79.3  -24.8 21.4         2500

1391   2   0 ORENDORF, IL, 11FV1284 F-STRUCTURE 158
 40.5  -90.0   3.5  8    1225-1275
NRM      8 348.2  65.5 25.6 31.5      9  78.9 -135.8 19.4         3000
50G      8 333.6  65.5 34.4 42.4      6  69.8 -150.4 26.1         2500

1392   2   0 ORENDORF, IL, 11FV1284 STRUCTURE 150
 40.5  -90.0   3.5  8    1225-1275
NRM      7 325.7  57.1  6.9  9.5     87  63.4 -174.8  6.5         3000
50G      7 326.9  57.3  6.4  8.8    102  64.4 -175.0  6.0         2500

1012   1   3 ORENDORF, IL
 40.5  -89.9   4.0  8    1150-1225
NRM      7 301.9  71.7  8.7  9.9    115  49.8 -136.4  5.7         3000
  COMMENTS: feature 1000 assoc. with structure 94
  COMMENTS: 50G to 200G of 4 cubes gave large
  COMMENTS: changes in direction

1013   1   4 ORENDORF, IL, FEATURE 508
 40.5  -89.9   4.0  8    1150-1225
NRM      8 322.6  66.7  4.9  6.0    234  62.4 -148.8  3.6         1160
  COMMENTS: central hearth assoc. with structure 96
  COMMENTS: 50G to 400G of 4m cubes gave some
  COMMENTS: changes in direction
  COMMENTS: Uncertain curve assignment

 725   2   0 ORENDORF, IL, FV 1284
 40.5  -89.9   4.0  8    1150-1250
NRM      8 350.0  59.9  1.8  2.4   1260  82.4 -174.1  1.6         3000
150G     8 349.9  59.7  1.5  2.0   1808  82.3 -176.6  1.3         1250

 726   2   0 ORENDORF, IL, HEARTH 29
 40.5  -89.9   4.0  8    1150-1250
NRM      7 351.5  60.1  2.9  3.9    563  83.6 -172.3  2.5         3000
150G     8 349.5  59.5  3.6  4.8    303  82.0 -177.8  3.2         1250

1004   1   2 ORENDORF, IL,  HOUSE 10-FLOOR
 40.5  -89.9   4.0  8    1150-1225
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NRM      8 353.0  61.3  2.1  2.7    985  84.4 -158.0  1.8         1270
  COMMENTS: 50G to 400G of 2 cubes gave little
  COMMENTS: change in direction

1005   1   2 ORENDORF, IL, HOUSE 56, S.E. CORNER FLOOR
 40.5  -89.9   4.0  8    1150-1225
NRM      8 333.6  65.2  7.8  9.6     87  69.9 -151.3  6.0         3000
  COMMENTS: 50G to 800G of 4 cubes gave little
  COMMENTS: change in direction

 727   2   0 ORENDORF, IL, STRUCTURE 10
 40.5  -89.9   4.0  7    1150-1250
NRM      6 350.9  61.0  3.1  4.0    656  83.0 -164.4  2.6         3000
150G     6 348.6  60.6  2.7  3.5    834  81.3 -169.0  2.3         1250

1011   1   2 ORENDORF, IL, STRUCTURE 102
 40.5  -89.9   4.0  9    1150-1225
NRM      9 355.4  66.3  5.5  6.7    158  81.1 -110.1  4.1         3000
  COMMENTS: 50G to 400G of 4 cubes gave little
  COMMENTS: change in direction

 724   2   0 ORENDORF, IL, STRUCTURE 2
 40.5  -89.9   4.0  8    1150-1250
NRM      8 355.4  67.5  6.8  8.1    131  79.6 -106.5  4.9         3000
150G     8 354.3  66.3  6.5  7.9    135  80.8 -114.1  4.8         2500

1014   1   3 ORENDORF, IL, STRUCTURE 43
 40.5  -89.9   4.0  8    1150-1225
NRM      8 348.4  61.2  3.0  3.9    483  81.2 -164.6  2.5         1250
  COMMENTS: floor north side
  COMMENTS: 50G to 200G of 3 cubes gave little
  COMMENTS: change in direction

1007   1   2 ORENDORF, IL, STRUCTURE 44
 40.5  -89.9   4.0  8    1150-1225
NRM      8 341.1  57.7  1.8  2.4   1102  75.3  177.8  1.7         1210
  COMMENTS: 50G to 400G of 4 cubes gave little
  COMMENTS: change in direction

1009   1   3 ORENDORF, IL, STRUCTURE 47
 40.5  -89.9   4.0  8    1150-1225
NRM      8 327.9  68.7  2.2  2.6   1268  65.2 -141.2  1.6         3000
  COMMENTS: 50G to 800G of 3 cubes gave little
  COMMENTS: change in direction
  COMMENTS: uncertain curve assignment

1008   2   0 ORENDORF, IL, STRUCTURE 48
 40.5  -89.9   4.0  8    1150-1225
NRM      8 353.6  59.8  2.4  3.1    713  85.1 -175.6  2.1         3000
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150G    8 353.2  59.0  1.9  2.5   1087  84.8  173.7  1.7        1290

1006   1   3 ORENDORF, IL, STRUCTURE 66, 11-FV-1284
 40.5  -89.9   4.0  8    1150-1225
NRM     7   9.1  76.6 11.6 12.4     82  65.4  -80.5  6.7        3000
  COMMENTS: S.E. corner
  COMMENTS: 50G to 800G of 4 cubes gave some
  COMMENTS: change in direction

1010   1   3 ORENDORF, IL, STRUCTURE 81
 40.5  -89.9   4.0  8    1150-1225
NRM     7 343.2  60.1  1.0  1.3   5149  77.3 -172.4  0.8        1200
  COMMENTS: north central floor
  COMMENTS: 50G to 400G of 3 cubes gave little
  COMMENTS: change in direction

1861   2   0 ORENDORF SITE, FULTON CO., IL
 40.5  -89.9   4.0  8
NRM     8   4.2  61.6  4.0  5.1    277  86.2  -36.8  3.3        3000
50G     8 359.6  63.2  4.0  5.0    304  85.8  -93.6  3.2        1410

1862   2   0 ORENDORF SITE, FULTON CO., IL
 40.5  -89.9   4.0  8
NRM     8   8.9  64.9 10.1 12.5     52  80.9  -47.8  7.8        3000
50G     8 357.1  64.1  5.2  6.5    185  84.3 -110.6  4.1        2500

1387   3   1 ORENDORF-NORTH FIELD, 11F584 F-4
 40.5  -90.0   3.5  8    1200
NRM     8 333.7  78.1 32.0 34.0     10  59.7 -109.9 18.0        3000
50G     8 358.2  78.8 32.9 34.8     10  62.1  -91.4 18.3        2500
100G    8 348.6  79.7 34.0 35.6     10  59.9  -97.7 18.6        3000
  COMMENTS: decl corrected by +90 degrees

 723   1   0 PEISKER SITE, IL
 39.3  -90.6   4.9  8     100-
NRM     7 354.7  56.3  4.4  6.2    201  85.2  152.6  4.3        3000

1888   2   0 RANGE 11-2-685, FEATURE 6, HEARTH
 38.6  -90.0   4.7  8
NRM     7 358.2  57.7  6.1  8.4    113  88.6  170.5  5.7        3000
50G     7 358.4  57.9  6.6  8.9    101  88.8  179.6  6.1        2500

1879   2   0 RANGE 11-S-47
 38.5  -90.2   4.7  9
NRM     8 355.5  56.1  8.9 12.3     42  85.9  153.8  8.6        2500
50G     8 351.5  49.8  8.4 12.6     35  79.5  133.8  9.5        3000

1863   2   0 RANGE 11-S-47, FEATURE 1014
 38.5  -90.2   4.7  8
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NRM      8 339.0  54.7  5.5  7.7    104  72.9  175.3  5.5          2500
50G      8 333.3  53.7  6.5  9.3     70  68.2  176.8  6.7          3000

1866   2   0 RANGE 11-S-47, FEATURE 1083
 38.5  -90.2   4.7 12
NRM     12 358.3  64.7  1.7  2.1   1101  81.8  -98.4  1.3          3000
150G    10 357.2  65.3  1.4  1.7   2127  80.9 -102.2  1.0          1395

1865   2   0 RANGE 11-S-47, FEATURE 1084
 38.5  -90.2   4.7  8
NRM      8 357.2  64.8  3.7  4.6    369  81.5 -103.3  2.9          3000
150G     8 358.8  64.0  2.6  3.3    709  82.8  -97.0  2.1          1400

1870   3   0 RANGE 11-S-47, FEATURE 1179
 38.5  -90.2   4.7  8
NRM      7 146.2  64.9  9.0 11.2     77   0.5  -67.9  6.9          2500
50G      8 329.0  59.0 12.9 17.3     24  66.1 -167.8 11.6          3000
150G     8 335.7  60.2 12.4 16.4     27  71.2 -164.4 10.8          3000

1869   2   0 RANGE 11-S-47, FEATURE 1188
 38.5  -90.2   4.7  8
NRM      8 157.1  59.7  8.2 10.9     59  -8.2  -72.9  7.3          3000
100G     8 160.0  60.3  6.9  9.1     86  -8.3  -75.1  6.0          2500

1871   2   0 RANGE 11-S-47, FEATURE 1256
 38.5  -90.2   4.7 10
NRM      8 309.4  66.4  8.8 10.7     73  52.7 -147.4  6.5          2500
150G     6 310.0  68.4 13.8 16.4     49  53.1 -142.7  9.7          3000

1872   2   0 RANGE 11-S-47, FEATURE 1257
 38.5  -90.2   4.7  8
NRM      7 332.6  40.8  4.3  7.1    106  62.2  154.7  5.9          3000
100G     7 339.9  42.0  4.3  7.0    113  67.7  145.7  5.7          2500

1876   3   0 RANGE 11-S-47, FEATURE 1582
 38.5  -90.2   4.7  4
NRM      4 337.3  66.0  5.9  7.2    437  71.0 -142.0  4.4          3000
50G      4 343.4  65.0  6.3  7.8    359  75.2 -139.9  4.9          2500
100G     4 344.7  65.5  6.9  8.5    308  75.6 -135.8  5.2          3000

1874   2   0 RANGE 11-S-47, FEATURE 1583
 38.5  -90.2   4.7  6
NRM      6 351.3  66.9  5.6  6.7    273  77.3 -116.8  4.1          3000
50G      6 356.4  65.5  5.1  6.2    306  80.4 -104.9  3.8          1390

1873   2   0 RANGE 11-S-47, FEATURE 1584
 38.5  -90.2   4.7  8
NRM      6 343.9  66.2  8.5 10.4    114  74.6 -133.9  6.3          3000
100G     8 343.8  65.3  7.2  8.9    103  75.3 -138.3  5.5          2500
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1875   2   0 RANGE 11-S-47, FEATURE 1587
 38.5  -90.2   4.7  8
NRM      8   2.1  60.1  2.2  2.9    861  87.0  -58.2  1.9         3000
100G     8   2.2  61.4  1.9  2.4   1231  85.7  -68.1  1.6         1415

1877   6   0 RANGE 11-S-47, FEATURE 1618
 38.5  -90.2   4.7  5
NRM      5 353.5  62.8  6.2  7.9    231  82.5 -128.3  5.0         3000
50G      5 356.0  61.0  5.5  7.1    270  85.3 -129.1  4.7         3000
100G     4 354.9  60.2  2.9  3.8   1334  85.3 -144.8  2.5         3000
150G     4 354.7  60.5  2.4  3.1   2030  85.0 -142.5  2.0         1350
200G     5 354.7  66.1  5.7  6.9    326  79.4 -109.7  4.2         3000
400G     5 358.3  59.8  7.2  9.5    147  87.5 -121.3  6.3         3000

1881   2   0 RANGE 11-S-47, FEATURE 1800
 38.5  -90.2   4.7  8
NRM      8 316.6  68.0 15.9 18.9     25  57.3 -143.9 11.3         3000
50G      7 330.9  60.3  9.2 12.1     59  67.6 -163.8  7.9         2500

1878   1   1 RANGE 11-S-47, FEATURE 1944
 38.5  -90.2   4.7  1
NRM      1 188.4  50.5  325  360      0 -80.0 -136.1  360         3000
  COMMENTS: one cube set

1880   1   1 RANGE 11-S-47, FEATURE 2098
 38.5  -90.2   4.7  3
NRM      3  21.1  59.6 15.7 20.8     80  73.7  -13.7 13.8         3000
  COMMENTS: three cube set

1882   2   1 RANGE 11-S-47, FEATURE 2558
 38.5  -90.2   4.7  3
NRM      2  47.8   4.3  181  360     36  30.1   30.9  360         3000
50G      3  13.5  61.1 22.2 28.9     44  79.1  -24.1 18.8         2500
  COMMENTS: three cube set

1883   2   0 RANGE 11-S-47, FEATURE 3172
 38.5  -90.2   4.7  6
NRM      5  57.0  68.5 11.7 13.8     89  48.8  -38.2  8.2         3000
200G     6  16.3  65.5  7.9  9.8    125  75.0  -43.4  6.0         2500

1885   2   0 RANGE 11-S-47, FEATURE 3196
 38.5  -90.2   4.7  4
NRM      4 335.5  50.6 16.8 24.9     26  68.7  167.5 18.5         3000
50G      4 342.9  55.5 17.3 24.2     30  76.2  174.9 17.0         2500

1884   2   0 RANGE 11-S-47, FEATURE 3278
 38.5  -90.2   4.7  8
NRM      7  25.2  67.1 15.8 19.1     28  68.9  -40.7 11.5         3000
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100G    7 355.7  60.2 10.7 14.1     43  85.8 -140.9  9.3         2500

1886   3   0 RANGE 11-S-47, FEATURE 3332
 38.5  -90.2   4.7  8
NRM     5 344.7  69.5 13.2 15.5     73  72.0 -120.9  9.0         3000
100G    7 345.4  67.3  7.7  9.2    119  74.5 -127.4  5.6         3000
100G    5 352.7  65.5  3.6  4.4    793  79.4 -118.0  2.7         1385

1887   2   0 RANGE 11-S-47, FEATURE 3446
 38.5  -90.2   4.7  8
NRM     8  33.5  77.3 46.9 50.2      5  56.7  -65.7 26.9         3000
100G    7 348.3  57.1  3.4  4.7    351  80.8  178.4  3.2         1240

1889   4   0 RANGE 11-S-47, FEATURE 3949
 38.5  -90.2   4.7  5
NRM     5  11.5  46.3 16.9 26.3     15  75.5   45.1 20.5         3000
50G     5  13.3  56.4 14.0 19.4     34  79.3    4.1 13.4         3000
100G    5  13.2  58.9 13.9 18.9     39  79.7  -11.0 12.5         2500
150G    5   9.3  57.6 15.8 21.6     28  82.7   -1.0 14.7         3000

1864   2   0 RANGE 11-S-47, FEATURE 495
 38.5  -90.2   4.7  8
NRM     7 332.7  64.6  6.8  8.4    133  68.5 -149.6  5.3         2500
50G     8 326.3  62.1 11.9 15.3     33  64.3 -158.5  9.9         3000

1947   7   0 RANGE 11-S-695, MUDHOUSE FEAT. 26 S-695-26
 38.5  -90.2   4.7 10
NRM    10 358.1  57.4  5.3  7.3     95  88.4  160.9  5.0         3000
50G    10 350.1  61.2  4.5  5.9    161  81.6 -150.5  3.8         3000
100G   10 352.9  61.9  4.0  5.1    213  82.9 -137.1  3.3         1375
150G   10 351.8  62.4  4.3  5.6    185  81.9 -137.0  3.6         3000
200G   10 351.5  62.6  4.7  6.0    158  81.6 -136.8  3.9         2500
400G   10 342.8  64.9 10.9 13.5     35  74.9 -141.1  8.4         3000
800G    9 327.6  63.9 15.8 19.9     18  65.1 -153.1 12.5         3000

1938   6   0 RANGE 11-S47, FEAT. 4283 S-47-4283
 38.5  -90.2   4.7 10
NRM     8 336.1  47.8  6.9 10.5     48  68.1  161.1  8.1         3000
50G    10 343.7  52.2  5.9  8.6     61  75.6  161.3  6.3         3000
100G    9 335.6  48.5  5.7  8.6     62  68.0  163.0  6.6         2500
150G   10 335.0  49.5  8.8 13.2     25  67.9  165.7  9.9         3000
200G    9 329.5  47.1  6.6 10.2     44  62.7  167.0  7.9         3000
400G    9 317.2  33.9  8.3 14.6     17  48.0  163.8 12.8         3000

1939   5   0 RANGE 11-S47, FEAT. 4457 S-47-4457
 38.5  -90.2   4.7  7
NRM     5  64.4  68.8 20.6 24.3     29  44.4  -39.6 14.3         3000
50G     5   9.0  54.9  6.1  8.6    160  82.2   20.4  6.1         3000
100G    5 359.6  56.5  6.6  9.1    150  88.6  102.6  6.3         2500
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150G     6 356.5  58.3  9.7 13.1      58  87.2 -169.3  8.9          3000
200G     7 353.0  54.6  9.0 12.7      46  83.5  150.6  9.0          3000

1940   1    0 RANGE 11-S47, FEAT. 4515 S-47-4515
 38.5  -90.2   4.7  6
NRM      6 336.8  54.7 22.1 31.2      10  71.2  177.1 22.1          3000

1941   3    0 RANGE 11-S47, FEAT. 4747 S-47-4747
 38.5  -90.2   4.7  4
NRM      4   0.7  34.5 13.3 23.3      22  70.5   87.7 20.3          3000
50G      4  45.3  30.1  8.2 14.8      49  84.6   16.3 13.3          2500
100G     4  39.6  17.7  4.2  8.1     140  43.9   28.8  7.8          3000

1942   1    0 RANGE 11-S47, FEAT. 4987 S-47-4987
 38.5  -90.2   4.7  3
NRM      3 349.4  48.3 14.2 21.7      57  77.3  136.5 16.6          3000

1922   5    0 RANGE 11-S47, FEAT. 5004 S-47-5004
 38.5  -90.2   4.7  8
NRM      8 353.1  59.2 17.9 23.9      13  84.5 -162.0 15.9          3000
50G      8 347.5  60.3 19.3 25.4      12  80.0 -160.4 16.7          3000
100G     8 349.5  60.7 19.4 25.4      12  81.4 -155.4 16.6          2500
150G     8 349.2  60.5 19.2 25.2      12  81.2 -157.3 16.6          3000
200G     8 349.9  61.2 19.8 25.8      12  81.4 -150.4 16.8          3000

1945   1    0 RANGE 11-S47, FEAT. 5066 S-47-5066
 38.5  -90.2   4.7  2
NRM      2 325.8  35.8  242  360      74  54.9  157.6  360          3000

1943   1    0 RANGE 11-S47, FEAT. 5110 S-47-5110
 38.5  -90.2   4.7  1
NRM      1 315.3  38.1  252  360       0  48.2  168.9  360          3000

1944   1    0 RANGE 11-S47, FEAT. 5119 S-47-5119
 38.5  -90.2   4.7  3
NRM      3 359.2  47.8 26.7 41.0      16  80.3   94.1 31.4          3000

1925   3    0 RANGE 11-S47, FEAT. 5167 S-47-5167
 38.5  -90.2   4.7  8
NRM      8  16.7  62.4 10.4 13.3      43  76.4  -28.3  8.5          3000
50G      8  11.9  59.8  9.3 12.4      46  80.6  -17.4  8.2          3000
100G     8  10.1  59.0  8.9 12.0      49  82.1  -12.5  8.0          2500

1946   5    0 RANGE 11-S47, FEAT. 5201 S-47-5201
 38.5  -90.2   4.7  7
NRM      7 328.5  67.2 14.4 17.3      34  64.9 -142.6 10.4          3000
50G      7 327.4  60.9  9.9 12.9      52  65.0 -162.0  8.5          2500
100G     7 326.7  62.9 13.4 17.1      32  64.6 -156.1 10.9          3000
150G     7 328.0  61.9 12.7 16.4      34  65.5 -159.0 10.6          3000
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200G     7 320.2  57.4 14.1 19.3      22  59.0 -168.5 13.2        3000

1924   1   0 RANGE 11-S47, FEAT. 5229 S-47-5229
 38.5  -90.2   4.7  4
NRM     4 319.0  46.5 10.6 16.5      52  54.3  174.8 12.9        3000

1930   1   0 RANGE 11-S47, FEAT. 5230 S-47-5230
 38.5  -90.2   4.7  3
NRM     3 282.8  62.5 23.1 29.6      43  33.8 -148.1 18.9        3000

1949   2   0 RANGE 11-S47, FEAT. 5276 S-47-5276
 38.5  -90.2   4.7  6
NRM     3   6.6  48.6  3.8  5.8     784  79.5   56.3  4.4        2500
50G     6 349.0  53.5 31.3 45.0       5  80.1  156.4 32.3        3000

1948   1   0 RANGE 11-S47, FEAT. 5314 S-47-5314
 38.5  -90.2   4.7  5
NRM     5 336.1  51.1 13.4 19.8      28  69.4  168.2 14.6        3000

1927   1   0 RANGE 11-S47, FEAT. 5356 S-47-5356
 38.5  -90.2   4.7  2
NRM     2 265.4  49.7  319  360     381  15.2 -153.1  360        3000

1928   1   0 RANGE 11-S47, FEAT. 5356 S-47-5356
 38.5  -90.2   4.7  2
NRM     2 340.4  64.7  360  360      67  73.5 -144.3  360        3000

1933   5   0 RANGE 11-S47, FEAT. 5394 S-47-5394
 38.5  -90.2   4.7  6
NRM     6 312.2  55.0 22.2 31.3      10  52.2 -169.4 22.0        3000
50G     5 330.0  63.9 12.0 15.1      66  66.8 -152.8  9.5        2500
100G    6 319.3  59.6 14.1 18.7      30  58.8 -163.5 12.4        3000
150G    6 316.5  52.3 10.8 15.7      35  54.5 -175.7 11.4        3000
200G    6 314.1  51.6 16.7 24.6      15  52.4 -175.4 18.0        3000

1932   3   0 RANGE 11-S47, FEAT. 5400 S-47-5400
 38.5  -90.2   4.7  8
NRM     7 351.5  69.8  6.6  7.7     180  73.8 -108.5  4.5        3000
50G     8 320.9  68.4 13.9 16.4      33  59.9 -141.4  9.7        3000
100G    8 335.1  65.4 10.0 12.4      54  69.8 -145.6  7.6        2500

1929   1   0 RANGE 11-S47, FEAT. 5402 S-47-5268
 38.5  -90.2   4.7  4
NRM     4  50.1  63.8 19.1 24.1      38  52.7  -27.5 15.2        3000

1936   1   0 RANGE 11-S47, FEAT. 5475 S-47-5475
 38.5  -90.2   4.7  4
NRM     4   3.5  27.5 16.8 30.8      12  65.9   81.5 28.2        3000
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1931   3   0 RANGE 11-S47, FEAT. 5483 S-47-5483
 38.5  -90.2   4.7 10
NRM      9  16.1  55.1  7.1 10.1     54  76.9    7.6  7.1        3000
50G     10 346.9  67.4  8.8 10.6     59  75.0 -124.3  6.3        2500
100G    10 337.5  66.2 11.5 14.0     33  70.9 -140.9  8.6        3000

1934   1   0 RANGE 11-S47, FEAT. 5608 S-47-5608
 38.5  -90.2   4.7  3
NRM      3 328.7  66.2 25.4 31.0     44  65.9 -145.9 18.9        3000

1935   1   0 RANGE 11-S47, FEAT. 5623 S-47-5623
 38.5  -90.2   4.7  2
NRM      2 339.7  54.4  357  360     93  73.4  173.8  360        3000

1937   1   0 RANGE 11-S47, FEAT. 5768 S-47-5768
 38.5  -90.2   4.7  5
NRM      5 356.7  52.5 19.4 28.2     15  84.0  117.1 20.5        3000

1923   1   0 RANGE 11-S47, FEAT. 5780 S-47-5780
 38.5  -90.2   4.7  1
NRM      1 320.4  46.2  296  360      0  55.3  173.5  360        3000

1926   1   0 RANGE 11-S47, FEAT. 5781 S-47-5781
 38.5  -90.2   4.7  5
NRM      5 330.0  59.6 11.6 15.4     57  66.9 -165.8 10.2        3000

 311   3   1 RODGERS SHELTER, MO
 38.0 -93.0   6.6  8   -5000
NRM      8 354.9  48.1  2.6  4.0    322  80.2  113.8  3.1        3000
150G     8 356.0  44.0  1.9  3.1    507  77.3  103.7  2.5       -5000
150G     8 360.0  45.6  2.5  4.0    311  79.1   87.2  3.1        3000
  COMMENTS: Site 311 and 312 maybe same age or 312 older

 312   3   0 RODGERS SHELTER, MO
 38.0  -93.0   6.6  9   -5000
NRM      9 355.6  46.1  9.0 14.0     23  78.9  107.4 10.9        2500
150G     8 351.5  42.6  8.8 14.2     24  74.9  117.9 11.5        3000
150G     9 357.4  41.5  8.5 14.0     21  75.7   96.8 11.5        3000

 313   3   0 RODGERS SHELTER, MO
 38.0  -93.0   6.6  7   -5000
NRM      7   5.5  49.7  7.8 11.7     48  81.3   54.1  8.8        3000
150G     7  10.0  47.9  6.6 10.1     61  77.7   41.3  7.8        2500
150G     7  14.8  45.4  5.7  9.0     74  73.3   34.3  7.1        3000

 325   3   0 ROGERS SHELTER, MO
 38.0  -93.0   6.6  8   -5040 to -5540
NRM      8 343.5  50.9  4.0  5.9    163  75.0  156.4  4.4        3000
150G     8 346.1  47.6  3.4  5.2    194  75.2  142.2  4.0        3000
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```
150G    8 342.7  48.4  3.3  5.1    205  73.3  151.2  3.9        -5290

 326   3   0 ROGERS SHELTER, MO
 38.0  -93.0   6.6  8   -5040 to -5540
NRM     8 359.8  61.3  7.9 10.3     70  85.6  -94.9  6.7         3000
150G    7 357.1  57.7  5.7  7.8    130  87.7 -173.6  5.3         2500
150G    7 358.7  52.1  5.4  7.9    111  84.6   99.1  5.8         3000

1701   0   1 SALINE CO, KS
 40.0  -95.0   9.0
  COMMENTS: blocks, no data available at this time

1702   0   1 SALINE CO, KS
 40.0  -95.0   9.0
  COMMENTS: blocks, no data available at this time

 632   2   1 SNODGRASS, MO, PIT 61
 36.6  -90.7   5.3 10    1364        C14
NRM    10   7.7  67.9  4.6  5.5    219  74.6  -72.0  3.3         2500
150G    5   0.9  63.9  5.4  6.8    326  81.0  -86.3  4.2         3000
  COMMENTS: Uncertain curve assignment, modern?

 452   2   0 SNODGRASS, MO, STRUC. F-44
 36.6  -90.7   5.3  8
NRM     8 349.5  63.5  2.6  3.3    707  78.4 -130.5  2.1         3000
150G    8 355.5  60.5  3.0  4.0    452  84.0 -124.7  2.6         1385

 636   2   0 SNODGRASS, MO, STRUCTURE 27, BURNED FLOOR
 36.6  -90.7   5.3  6    1364        C14
NRM     6 353.6  60.8  1.6  2.1   2482  82.8 -132.1  1.3         1380
150     4 351.5  58.4  3.5  4.9    847  82.8 -157.1  3.2         3000

 637   3   0 SNODGRASS, MO, STRUCTURE 28, BURNED FLOOR
 36.6  -90.7   5.3  8    1364        C14
NRM     8 357.8  63.8  2.9  3.7    550  81.9 -101.7  2.4         3000
NRM     7 359.4  59.6  2.2  2.3    947  86.1  -97.1  2.0         3000
150G    8 356.9  60.8  2.8  3.7    534  84.2 -114.5  2.4         1390

 629   2   0 SNODGRASS, MO, STRUCTURE 39, BURNED FLOOR
 36.6  -90.7   5.3  8    1364        C14
NRM     8 356.4  58.4  0.9  1.2   5048  86.2 -138.2  0.8         3000
150G    8 355.3  57.5  0.7  0.9   7987  86.0 -157.8  0.6         1340

 631   1   1 SNODGRASS, MO, STRUCTURE 39, BURNED FLOOR
 36.6  -90.7   5.3  8    1364        C14
NRM     8 358.0  61.1  1.5  1.9   1296  84.2 -105.0  1.3         1400
  COMMENTS: 150G of 2 cubes gave 1.7 deg. change in decl

 630   1   1 SNODGRASS, MO, STRUCTURE 50, BURNED FLOOR
```

```
 36.6  -90.7   5.3  6    1364         C14
NRM     5 356.5  59.8  1.2  1.6   5090  85.1 -123.5  1.1        1390
  COMMENTS: 150G of 2 cubes gave no change in decl

 638   1   1 SNODGRASS, MO, STRUCTURE 58, BURNED FLOOR
 36.6  -90.7   5.3  8    1364         C14
NRM     8 352.9  59.1  0.9  1.2   4702  83.5 -147.8  0.8        1360
  COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl

 639   1   1 SNODGRASS, MO, STRUCTURE 64, HEARTH
 36.6  -90.7   5.3  8    1364         C14
NRM     8 353.5  58.6  0.3  0.4  34623  84.2 -150.5  0.3        1360
  COMMENTS: 150G of 2 cubes gave 0.2 deg. change in decl

 633   2   0 SNODGRASS, MO, STRUCTURE 70, BURNED FLOOR
 36.6  -90.7   5.3  8    1364         C14
NRM     7 356.6  61.5  1.9  2.5   1406  83.4 -112.6  1.6        3000
150G    7 352.7  59.4  2.4  3.4    827  83.2 -146.0  2.1        1360

 227   2   1 SNODGRASS, MO, TURNER SNODGRASS SITE
 36.5  -90.5   5.3 10
NRM    10 350.1  60.3  1.6  2.1   1278  81.0 -146.3  1.4        3000
NRM     9 353.6  59.0  1.0  1.3   3454  84.1 -146.3  1.0        1100
  COMMENTS: 23-BU-21-B-STR.3

 649   1   0 SNODGRASS, MO., SITE 23BU21B, STRUCTURE 67
 36.6  -90.7   5.3  2
NRM     2 322.8  75.2 11.2 12.2   1416  55.7 -120.7  6.6        3000

 390   2   1 SNODGRASS SITE, MO, 23-B-21-B A
 36.6  -90.7   5.3  8    1320        C14
NRM     8 357.1  56.8  1.5  2.0   1560  87.6 -161.7  1.4        3000
NRM     8 355.5  59.7  1.3  1.7   2275  84.7 -131.1  1.2        1350
  COMMENTS: 150G of 2 cubes gave 0.1 deg. change in decl

 391   3   0 SNODGRASS SITE, MO, 23-BU-21 B
 36.6  -90.7   5.3  8    1320        C14
NRM     8 357.7  57.1  3.0  4.1    382  87.9 -148.1  2.8        3000
NRM     8 355.0  56.0  2.2  3.1    646  86.0  179.8  2.2        3000
150G    8 355.7  56.5  2.4  3.4    564  86.5 -172.3  2.3        1340

 389   2   1 SNODGRASS SITE, MO, 23-BU-21-B B
 36.6  -90.7   5.3  8    1320        C14
NRM     8 351.3  58.1  1.6  2.1   1465  82.8 -161.0  1.4        3000
NRM     8 352.2  57.5  1.4  2.0   1711  83.6 -164.3  1.3        1360
  COMMENTS: 150G of 2 cubes gave 0.9 deg. change in decl

 388   2   1 SNODGRASS SITE, MO, 23-BU-21B A
 36.6  -90.7   5.3  8    1320        C14
```

```
NRM      8 352.0  56.9  3.5  4.8    276  83.5 -170.9  3.3          3000
NRM      8 353.0  58.7  3.2  4.3    370  83.8 -150.7  2.9          1360
  COMMENTS: 150G of 4 cubes gave 1.9 deg. change in decl

 869   3   0 SOLTO SITE, MO, 23-SC-12
 38.8  -90.5   4.9  8    -500
NRM      8  10.0  63.6  2.3  2.9    916  80.2  -44.7  1.8          3000
50G      8   3.8  60.1  1.4  1.9   1921  86.0  -43.8  1.3          3000
100G     8   3.9  61.2  1.2  1.6   3014  85.0  -55.4  1.0          -500

 735   2   0 TURNER SITE, MO, STRUCTURE 23
 36.3  -90.6   5.3  8
NRM      8 354.7  59.4  1.4  1.9   1887  84.3 -136.1  1.3          3000
150G     8 353.5  55.5  1.0  1.4   3236  84.8  178.4  1.0          1290

 734   2   0 TURNER SITE, MO, STRUCTURE 33
 36.3  -90.6   5.3  8
NRM      7 355.4  62.2  2.9  3.7    648  82.0 -115.4  2.8          3000
150G     7 353.4  58.4  1.0  1.3   4678  84.0 -150.1  0.9          1360

 733   2   0 TURNER SITE, MO, STRUCTURE 41
 36.3  -90.6   5.3  8
NRM      8 354.8  57.0  2.6  3.6    500  85.6 -161.4  2.5          3000
150G     7 351.4  56.3  2.2  3.0    846  83.1 -173.3  2.1          1265

 800   1   0 UNDERWOOD SITE, NY
 42.7  -76.6 -10.0  1    1300
NRM      1 345.2  67.5  501  601      0  77.3 -124.1  360          3000

 397   2   0 UTZ SITE, MO, 23-SA2-B A
 39.3  -93.3   6.8  8    1600
NRM      7 346.2  59.7  2.3  3.0    907  79.4 -171.9  2.0          3000
150G     6 359.5  65.3  1.7  2.1   2568  81.9  -95.7  1.3          1400

 398   1   0 UTZ SITE, MO, 23-SA2-C B
 39.3  -93.3   6.8  9    1600
NRM      8 338.1  43.1  6.6 10.6     43  66.7  145.6  8.5          3000

 399   3   1 W.W.YOUNG SITE, KS, 23DL4
 39.2  -94.7   7.6  9     850-1300   C14
NRM      9 323.7  49.9  4.3  6.5    114  59.3  170.6  4.8          3000
NRM      8 346.2  69.9  3.9  4.5    448  72.7 -123.0  2.6          3000
150G     8 353.1  66.2  4.2  5.1    323  79.3 -120.1  3.1          1130
  COMMENTS: uncertain curve assignment

 562   1   0 WASHINGTON C HOUSE, OH, HASKIN FURNACE SITE
 39.9  -83.0  -2.0  8
NRM      8  22.8  76.9 30.4 32.7     11  61.7  -62.8 17.6          3000
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 561   1   0 WASHINGTON C. HOUSE, OH, ARLEDGE MOUND SITE
 39.9  -83.0  -2.0  8
NRM     8 287.6  38.9 13.2 22.2     10  27.1 -166.1 18.6        3000

 812   2   0 WHITE SITE, NY
 42.6  -75.4 -11.0  5    1000
NRM     5   2.8  63.1  8.7 11.0    120  87.2  -30.6  7.0        3000
150G    5   0.4  61.2 10.0 12.9     85  89.6   59.4  8.4        2500

 813   3   0 WHITE SITE, NY
 42.6  -75.4 -11.0  4    1000
NRM     4 356.1  63.8  7.1  8.9    268  86.0 -118.3  5.6        3000
50G     4   0.3  58.6 11.7 15.7     76  86.7  100.5 10.6        3000
100G    4 357.8  57.5  7.1  9.7    193  85.3  126.3  6.6        2500

1909   4   0 WILLIAMSBURG, VA, PUBLIC HOSPITAL SITE
 37.4  -76.6  -7.2  8    1781
NRM     8   2.8  70.2  5.3  6.1    247  73.0  -71.0  3.5        3000
50G     8   3.3  70.1  4.9  5.6    286  73.2  -69.8  3.3        3000
100G    8   3.0  69.6  4.7  5.5    294  74.0  -70.1  3.2        1780
150G    8   3.7  68.9  4.7  5.5    295  74.8  -67.9  3.2        3000

1015   1   3 WORTHY-MERRIGAN, IL, FEATURE 1222
 39.1  -90.4   5.0  8    1000
NRM     8 344.4  51.2  8.9 13.2     33  75.5  155.1  9.7        3000
  COMMENTS: hearth assoc. with house (F) 1006.
  COMMENTS: 50G to 8700G of 4 cubes gave little
  COMMENTS: change in direction

 640   1   1 Z3CR 149, MO, FEAT. 12, LEVEL 17, POT SHELTER
 38.1  -91.2   4.9  7   -3000
NRM     7   8.5  70.5  6.6  7.6    189  72.5  -74.8  4.4       -3000
  COMMENTS: 50G of 2 cubes gave 0.6 deg. change in decl
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**APPENDIX 9. The Southeastern Midcontinent**

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 306   1   1 AR, 3-BE-174, 314 G1
 36.3  -94.5   7.4  8
NRM     8   2.5  56.2 10.6 14.7     30  87.9  -19.2 10.2        3000
  COMMENTS: 150G of 2 cubes gave 4.9 deg. change in decl

 307   1   0 AR, 3-BE-174, G2
 36.3  -94.5   7.4  8
NRM     7  18.4  53.9 15.9 22.7     15  74.9   -2.9 16.2        3000

 308   1   1 AR, 3-BE-174, G3
 36.3  -94.5   7.4  8    1000-1250
NRM     7 342.3  57.9  4.2  5.6    247  75.8 -170.1  3.8        1200
  COMMENTS: last NRM is recalculation

 992   2   0 BANKS FIVE, TN, FEAT. 29, 40-CF-111
 35.4  -86.3   2.0  8     325-465
NRM     7   6.5  59.0  1.8  2.4   1447  83.2  -38.6  1.6        3000
150G    8   3.8  57.2  1.8  2.4   1125  86.2  -35.3  1.7         450

 993   2   0 BANKS FIVE, TN, FEAT. 64, 40-CF-111
 35.4  -86.3   2.0  8     445-605
NRM     8   3.2  57.5  3.3  4.5    328  86.2  -44.2  3.1         450
100G    8 355.6  60.1   .    .       .  83.4 -116.9  2.7        3000

 378   3   1 BAYOU SEL, AR, 3-6L-27
 34.2  -93.0   6.7  9
NRM     9   2.0  54.5  1.3  1.9   1712  88.2  -29.7  1.3        3000
NRM     7   7.3  58.7  2.2  2.9    944  82.2  -46.7  2.0        3000
150G    9   6.0  57.8  1.1  1.5   2389  83.5  -45.7  1.1        2500
  COMMENTS: Uncertain curve assignment, modern?

 379   4   0 BAYOU SEL, AR, 3-CL-27 A
 34.2  -93.0   6.7  9    1200
NRM     9   1.1  57.0  2.2  3.0    618  86.5  -78.6  2.1        3000
NRM     8   0.3  56.8  2.3  3.2    639  86.8  -89.2  2.2        3000
NRM     9 360.0  56.9  2.5  3.4    482  86.7  -93.6  2.3        3000
150G    6   0.6  56.9  3.4  4.7    425  86.7  -85.3  3.3        1415

 380   2   0 BAYOU SEL, AR, 3-CL-27 B
 34.2  -93.0   6.7 10     900-1000
NRM    10 346.8  63.9  9.8 12.4     40  74.8 -130.7  7.8        2500
NRM    10   1.3  64.3 11.8 14.7     28  78.1  -88.6  9.2        3000

 991   2   1 CHOTA, TN, FEAT. 139, 40-MR-2
 35.6  -84.1  -0.1  8    1720-1760
NRM     8   6.8  63.4  1.4  1.8   2446  79.3  -57.4  1.1        3000
100G    8   4.2  63.2  1.5  1.9   2107  80.4  -66.0  1.2        1740
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  COMMENTS: earlier part of house than set 990

 990   1   2 CHOTA, TN, FEAT. 140, 40-MR-2
 35.6  -84.1  -0.1  8    1700-1760
NRM     8   2.3  64.1  2.0  2.5   1217  79.6  -75.3  1.6         1750
  COMMENTS: 50G to 800G of 2 cubes gave little
  COMMENTS: change in direction

 731   1   1 CHUCALISSA SITE, TN, HOUSE 14-15
 35.1  -90.1   5.1  8    1450-1550
NRM     8   0.2  56.3  7.3 10.1     64  88.2  -85.8  7.0         3000
  COMMENTS: 150G of 3 cubes gave a large change in direction

 732   2   0 CHUCALISSA SITE, TN, STRUCTURE 41
 35.1  -90.1   5.1  8    1450-1550
NRM     8   7.0  57.2  6.7  9.2     78  83.7  -27.3  6.3         3000
100G    7   1.4  55.0  2.4  3.4    654  88.8  -22.6  2.4         1440

 730   1   2 CHUCALISSA SITE, TN, T.D.FULLER ST. PARK
 35.1  -90.1   5.1  8    1450-1550
NRM     8 357.8  57.8  6.2  8.5     93  86.2 -117.1  5.8         3000
  COMMENTS: structure 43, Gerald Smith
  COMMENTS: 150G of 3 cubes gave some change in direction

1157   2   1 DESHAZO SITE, NACOGDOCHES, TX
 31.5  -94.7   7.5  8    1700
NRM     6   0.4  52.9  1.7  2.5   1385  88.0  -85.6  1.8         3000
100G    8   4.8  52.8  3.2  4.7    269  85.5  -30.3  3.4         1700
  COMMENTS: Hearth F1-130 41-NA-27

1158   2   1 DESHAZO SITE, NACOGDOCHES, TX
 31.5  -94.7   7.5  8    1700
NRM     5   5.8  56.6  6.1  8.4    174  82.6  -56.3  5.8         2500
50G     7  21.2  58.8 15.2 20.4     20  71.0  -35.5 13.7         3000
  COMMENTS: 41-NA-27 hearth F1-119

1159   2   2 DESHAZO SITE, NACOGDOCHES, TX
 31.5  -94.7   7.5  8    1700
NRM     8 357.0  57.1  2.5  3.4    554  83.8 -115.2  2.4         3000
50G     8 355.4  55.4  2.8  3.9    406  84.1 -134.0  2.8         2500
  COMMENTS: possible clay dump. 41-NA-27
  COMMENTS: uncertain curve assignment

1156   2   0 DESHAZO SITE, NACOGDOCHES, TX, 41-NA-27 F1-126
 31.5  -94.7   7.5  8    1700
NRM     8 357.7  54.6  2.5  3.6    474  85.9 -121.4  2.5         3000
50G     8   5.1  54.2  3.1  4.4    318  84.7  -43.8  3.1         1700

 322   3   0 DEWITT, AR, DUMOND SITE
```

```
 34.2  -91.3   6.0  6    1200
NRM     6   5.6  60.9  4.2  5.5    343  81.1  -63.1  3.6         2000
NRM     6  10.3  54.4  4.1  5.9    260  81.5   -9.0  4.2         3000
150G    6 359.9  56.7  3.3  4.5    468  86.9  -92.9  3.1         1420

 323   4   1 DEWITT, AR, DUMOND SITE
 34.2  -91.3   6.0  6    1200
NRM     6   8.0  55.3  4.1  5.8    275  83.3  -17.3  4.1         3000
NRM     6   9.4  52.9  4.3  6.2    226  82.1    1.6  4.5         3000
150G    6   6.4  52.3  3.9  5.7    266  84.5   11.0  4.1         3000
150G   12   3.3  54.5  2.8  3.9    243  87.1  -19.0  2.8         1450
  COMMENTS: 2nd 150G is combined set, 322 and 323

1844   2   1 DORSEY MOORE SITE, UNIV. OF W. FLA.
 34.3  -88.4   3.9 12   -3500 to -3000
NRM    12 348.9  59.7  6.0  8.0     68  79.2 -139.7  5.3        -3250
50G     8 352.9  62.3  6.9  8.9     96  79.2 -116.9  5.7         3000
  COMMENTS: feature 58, 22IT576

 271   3   0 DUMOUND SITE, AR
 34.2  -91.3   6.0  8    1000-1100
NRM     8 335.8  63.4 11.7 14.8     36  68.6 -143.9  9.4         3000
NRM     8 348.0  58.3  9.4 12.6     43  79.3 -151.5  8.5         3000
150G    7 349.7  57.1  5.8  8.0    122  81.0 -155.8  5.5         2500

 928   2   2 FL, SAN JUAN DE ASPALAGA, 8-JE-1, BURNED FLOOR
 30.7  -84.0   1.1  9    1634-1704
NRM     7  23.0  71.0 11.1 12.7     70  60.4  -57.3  7.3         3000
50G     7  36.3  68.5 11.4 13.6     58  56.1  -43.2  8.0         2500
  COMMENTS: 50G to 400G of 3 cubes gave large
  COMMENTS: changes in direction

 929   1   3 FL, TURKEY ROOST MISSION, SAN PABLO DE PATALI
 30.8  -84.2   1.3  8    1634-1704
NRM     8   7.7  52.5  4.4  6.4    143  83.0  -15.3  4.6         3000
  COMMENTS: 8-LE-157, SQ.27E-21N, burned floor
  COMMENTS: 50G to 800G of 3 cubes gave large
  COMMENTS: changes in direction

1955   6   0 FOUNTAIN CREEK, COLUMBIA, TN, MU423
 35.5  -86.9   2.5  8
NRM     8  52.2  80.4 27.0 28.1     15  45.3  -65.8 14.6         3000
50G     7 325.8  78.6 15.7 16.6     48  52.2 -106.9  8.8         3000
100G    7 352.4  73.3 10.1 11.3     93  65.9  -96.5  6.3         3000
150G    7   5.3  66.4 10.3 12.5     64  76.0  -72.4  7.6         2500
200G    7   2.2  65.8  9.1 11.2     78  77.4  -80.3  6.9         3000
400G    8 358.9  54.9 11.9 16.8     23  89.1  129.2 11.9         3000

1954   1   0 FOUNTAIN CREEK, COLUMBIA, TN, MU423-16
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 35.5  -86.9   2.5  4
NRM     4 340.1  66.2 45.3 55.2      8  70.4 -129.1 33.7        3000

1956   2   0 FOUNTAIN CREEK, COLUMBIA, TN, MU423-17
 35.5  -86.9   2.5  8
NRM     7 352.7  67.8 18.0 21.6     23  73.8 -103.5 12.9        3000
100G    7  12.7  59.6  5.7  7.6    145  78.9  -26.8  5.0        2500

1957   2   0 FOUNTAIN CREEK, COLUMBIA, TN, MU423-19
 35.5  -86.9   2.5  4
NRM     4   1.3  73.8 30.4 33.8     25  65.7  -85.4 18.8        3000
400G    4  24.6  64.0 26.9 33.8     20  68.9  -33.4 21.2        2500

1953   5   0 FOUNTAIN CREEK, COLUMBIA, TN, MU423-4
 35.5  -86.9   2.5  8
NRM     7 206.8  80.3 27.0 28.1     18  18.4  -95.7 14.6        3000
50G     7  21.5  87.2 33.1 33.2     14  40.7  -84.2 16.7        3000
100G    6   9.0  73.8 15.7 17.5     49  65.0  -76.1  9.7        2500
150G    6   4.7  76.6 10.9 11.8    113  60.8  -82.8  6.3        3000
200G    8 341.1  73.9 32.9 36.5      8  62.6 -107.6 20.3        3000

1809   2   1 FULTON, MS, DORSEY MOORE SITE
 34.3  -88.4   3.9 11   -3500 to -3000
150G    7 357.3  58.6  4.5  6.1    216  84.6 -110.7  4.1        3000
200G    7 356.7  60.2  4.3  5.7    260  82.7 -108.2  3.7       -3250
  COMMENTS: 22IT576 114\104, feature 50

1810   2   1 FULTON, MS, DORSEY MOORE SITE
 34.3  -88.4   3.9 11   -3500 to -3000
NRM    10  20.9  41.3  5.9  9.7     38  69.0   26.3  8.0        3000
50G     9  14.7  47.0  4.4  6.8     96  76.0   23.5  5.3       -3250
  COMMENTS: Feature 53, 22IT576 114\104

 324   2   0 GREENVILLE, MS
 33.4  -91.0   5.8  7    1340-1540   C14
NRM     7 358.1  54.4  1.5  2.2   1530  87.8 -135.9  1.5        1430
NRM     7 358.0  53.5  1.5  2.2   1486  88.3 -158.9  1.6        3000

 381   2   0 HAZEL SITE, AR, 3 PO6 A
 35.5  -90.5   5.3  8    1350-1400
NRM     7   6.0  50.2  5.6  8.4     93  83.2   39.7  6.3        2500
NRM     7 355.8  50.8  7.0 10.5     62  84.7  132.2  7.8        3000

 384   2   0 HAZEL SITE, AR, 3 PO6 A, F-69-696-73
 35.5  -90.5   5.3  8    1200-1350
NRM     7 351.9  57.2  1.9  2.5   1193  83.1 -158.5  1.7        3000
150G    7 355.3  58.6  2.6  3.5    646  84.7 -133.6  2.4        1350

 382   4   0 HAZEL SITE, AR, 3 PO6 B, F-69-600-512
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 35.5  -90.5   5.3  8    1350-1400
NRM     7 356.8  60.6  2.3  3.0    963  83.5 -111.9  1.9        3000
NRM     7 353.3  62.4  2.7  3.4    759  80.3 -120.7  2.2        3000
NRM     6 352.7  61.8  2.2  2.8   1371  80.7 -125.3  1.8        3000
150G    7 355.6  62.0  2.5  3.5    853  81.5 -112.8  2.1        1390

 385   3   0 HAZEL SITE, AR, 3 PO6 B, F-69-696-75
 35.5  -90.5   5.3  8    1000-1150
NRM     8   1.6  55.2  3.3  4.7    285  88.7  -11.7  3.3        3000
NRM     8 354.2  50.2  3.8  5.7    170  83.4  137.9  4.3        3000
150G    7 359.8  51.3  3.4  5.0    274  86.4   92.1  3.7        1010

 383   3   0 HAZEL SITE, AR, 3 PO6 C. F-69-600-514
 35.5  -90.5   5.3  8    1350-1400
NRM     7 354.1  59.2  2.7  3.6    641  83.6 -135.1  2.4        3000
NRM     6 356.0  59.0  1.8  2.4   1810  84.6 -125.5  1.6        3000
150G    6 358.1  60.3  1.4  1.8   3062  84.1 -104.7  1.2        1400

 386   1   1 HAZEL SITE, AR, 3 PO6 C,F-69-696-78
 35.5  -90.5   5.3  8
NRM     7 339.0  57.8  3.1  4.2    448  73.0 -164.1  2.9        1190
  COMMENTS: 150G of 2 cubes gave 1.4 deg. change in decl

 387   3   0 HAZEL SITE, AR, 3 PO6 D, F-69-696-80
 35.5  -90.5   5.3  9
NRM     9   3.4  63.5  5.4  6.8    144  80.1  -76.3  4.3        2500
NRM     9   1.2  62.8  6.5  8.3     96  81.2  -84.8  5.3        3000
150G    9   6.5  60.6  6.4  8.4     89  82.1  -52.8  5.5        3000

1394   2   0 HERMITAGE, TN, F-KILN #1, AREA C
 36.2  -86.6   2.3  8    1817-1890
NRM     7   6.6  65.6  0.4  0.5  33825  77.4  -65.8  0.3        3000
100G    6   5.2  66.1  0.8  0.9  13943  77.2  -70.9  0.6        1890

1395   1   2 HERMITAGE, TN, F-KILN #2, AREA C
 36.2  -86.6   2.3  8    1817-1890
NRM     8   8.8  65.3  2.9  3.6    628  77.0  -59.2  2.2        1890
  COMMENTS: 50G to 400G of 3 cubes gave some
  COMMENTS: change in direction

1154   1   2 IDABEL, OK, MC-205 HEARTH 1
 33.8  -94.6   7.4 10     500
NRM    10 348.2  62.5 14.2 18.2     18  76.4 -133.6 11.6        3000
  COMMENTS: 50G to 400G of 3 cubes gave large
  COMMENTS: changes in direction

1153   2   0 IDABEL, OK, MC-205 HEARTH 2
 33.8  -94.6   7.4 10    -500-1
NRM     7   7.0  62.7  5.2  6.7    201  78.4  -68.8  4.3        3000
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100G    8   8.1  60.9  4.8  6.3    184  79.7  -58.7  4.1         2500

1959   2   0 JAMES WHITE SITE, TN
 36.0  -83.9  -0.5  8    1852
NRM     8  18.9  59.4 13.6 18.1     22  74.5  -15.6 12.1         3000
400G    7  18.3  66.2  7.8  9.5    110  71.5  -42.9  5.8         2500

1960   2   0 JAMES WHITE SITE KN68-10-12 KNOXVILLE, TN
 36.0  -83.9  -0.5  9    1852
NRM     8  13.3  63.3  8.4 10.6     69  76.6  -39.2  6.7         3000
100G    7  13.4  68.2  4.7  5.6    331  71.9  -56.1  3.3         1860

1961   2   0 JAMES WHITE SITE KN68-12 KNOXVILLE, TN
 36.0  -83.9  -0.5  8    1852
NRM     7 357.4  63.3 16.2 20.5     23  80.9  -95.4 13.0         3000
100G    8   9.7  66.0  7.7  9.5     93  75.7  -56.8  5.8         2500

1152   2   0 KNOXVILLE, TN, F.246 ROSE ISLAND
 35.6  -84.2   0.0  8
NRM     8 352.5  51.3  8.0 11.8     42  82.8  157.8  8.7         3000
150G    8 355.5  52.5  5.7  8.4     84  85.4  153.5  6.1         2500

1151   2   0 KNOXVILLE, TN, F.256 40MR23
 35.6  -84.2   0.0  9
NRM     9 341.1  62.0  6.6  8.5     90  73.6 -140.7  5.5         3000
150G    9 356.3  60.9  7.4  9.7     67  83.0 -107.5  6.4         2500

 635   2   0 LILBORN, MO, FEAT. 37
 36.6  -89.6   4.5  8    1173-1450
NRM     7 348.5  60.1  0.5  0.6  21473  80.0 -149.7  0.4         3000
150G    8 346.4  58.0  0.6  0.8  11486  79.0 -164.7  0.5         1190

 994   1   3 MARKLEY SITE, FL, 8-LE-213
 30.5  -84.3   1.5  8    1440-1480
NRM     8 347.8  51.0  5.1  7.5    101  79.5 -164.6  5.5         3000
  COMMENTS: structure 2, level 4, floor
  COMMENTS: 50G to 150G of 2 cubes gave some
  COMMENTS: change in direction

 995   1   3 MARKLEY SITE, FL, 8-LE-213
 30.5  -84.3   1.5  8    1500-1550
NRM     7 351.3  47.8  4.1  6.2    160  82.2  175.7  4.8         3000
  COMMENTS: structure 2, level 1
  COMMENTS: 50G to 800G of 3 cubes gave little
  COMMENTS: change in direction

 996   2   3 MARKLEY SITE, FL, 8-LE-213
 30.5  -84.3   1.5  8    1480-1520
NRM     7 357.6  51.2  4.6  6.7    148  87.5 -140.4  5.0         3000
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NRM     8 356.4  51.7  4.3  6.2    147  86.4 -142.8  4.6        2500
  COMMENTS: structure 2 floor level 2
  COMMENTS: 50G to 800G of 4 cubes gave little
  COMMENTS: change in direction

 997   1   4 MARKLEY SITE, FL, 8-LE-213
 30.5  -84.3   1.5  8    1460-1500
NRM     6 352.4  48.4  2.8  4.3    419  83.3  178.1  3.3        1290
  COMMENTS: structure 2, level 3 floor
  COMMENTS: 50G to 800G of 4 cubes gave little
  COMMENTS: change in direction
  COMMENTS: uncertain curve assignment

1775   3   1 MOUNDVILLE STATE PARK, MOUNDVILLE, AL
 33.0  -88.4   4.3 12    1100-1250
NRM    11 345.0  56.1  4.4  6.1    115  77.1 -157.6  4.3        3000
50G     7 347.9  55.2  3.9  5.4    251  79.6 -160.0  3.8        3000
150G    6 351.9  55.3  2.4  3.3    829  82.7 -153.4  2.3        1110
  COMMENTS: feature 9, test unit A, hearth house floor

1776   2   1 MOUNDVILLE STATE PARK, MOUNDVILLE, AL
 33.0  -88.4   4.3 12    1260
NRM    10 359.4  59.7  4.4  5.9    155  82.5  -91.7  3.9        1400
100G    9 357.8  58.4  4.4  5.9    165  83.7 -104.4  4.0        3000
  COMMENTS: feature 1, test unit B (basin firepit)

1777   2   1 MOUNDVILLE STATE PARK, MOUNDVILLE, AL
 33.0  -88.4   4.3  8    1100-1250
NRM     8 349.4  66.0 12.4 15.2     37  72.7 -112.7  9.3        3000
150G    8 346.4  58.9  5.1  6.8    149  77.2 -143.1  4.6        2500
  COMMENTS: feature 10, test unit A\D (basin firepit)

1778   2   1 MOUNDVILLE STATE PARK, MOUNDVILLE, AL
 33.0  -88.4   4.3  8    1100-1250
NRM     8 343.5  65.8  5.0  6.1    219  70.6 -123.1  3.8        3000
200G    8 345.3  56.6  1.5  2.1   1416  77.3 -155.1  1.5        1170
  COMMENTS: feature 24, test unit A  (basin firepit)

 453   2   0 NEIL FLURRY SITE, MO, 23 BU 69, STRUC. 8
 36.6  -90.7   5.3  7
NRM     7 352.9  56.4  1.2  1.7   2627  84.3 -175.3  1.2        1280
NRM     7 350.7  57.5  1.4  1.9   2225  82.5 -166.6  1.3        3000

1579   2   0 PARIS MOUND, OK, CREMATORY PIT
 35.2  -94.8   7.4 10     950
NRM     9 354.3  60.2  6.2  8.2     92  82.5 -130.1  5.4        3000
100G    9 346.9  59.4  5.0  6.7    136  78.5 -155.3  4.4        2500

1580   1   2 PARIS MOUND, OK, PIT FLOOR
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 35.2  -94.8   7.4  9    1150
NRM      8 349.7  76.7 26.3 28.3      14  59.8 -103.5 15.2         3000
   COMMENTS: 50G to 200G of 4 cubes gave large
   COMMENTS: changes in direction

1449   1   0 PARRIS MOUND (SHORT), OK, 34-SQ-12
 35.2  -94.8   7.5  9    1000
NRM      9 352.9  62.2  8.1 10.5      60  80.1 -126.2  6.7         3000

 980   1   2 ROSE ISLAND, TN, FEAT. 115, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6000
NRM      8 345.6  59.9  5.2  6.8     151  77.6 -145.4  4.5        -6350
   COMMENTS: 50G to 150G of 3 cubes gave some
   COMMENTS: change in direction

 982   2   0 ROSE ISLAND, TN, FEAT. 121, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6000
NRM      8 350.1  60.0  7.7 10.2      68  80.6 -136.9  6.8         3000
50G      8 349.6  61.2  8.2 10.6      65  79.5 -131.5  6.9         2000

 981   2   0 ROSE ISLAND, TN, FEAT. 125, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6000
NRM      7 328.2  60.5  2.5  3.2     813  64.6 -151.1  2.1         3000
50G      8 331.2  61.2  2.8  3.6     547  66.7 -148.8  2.4        -6450

 983   1   2 ROSE ISLAND, TN, FEAT. 135, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6000
NRM      8 327.5  57.5  4.8  6.6     154  64.0 -158.8  4.5        -6400
   COMMENTS: 50G to 150G of 3 cubes gave little
   COMMENTS: change in direction

 985   2   0 ROSE ISLAND, TN, FEAT. 142, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6000
NRM      8 338.6  56.7  2.7  3.8     454  72.8 -162.3  2.6         3000
50G      8 339.8  57.5  2.7  3.7     482  73.6 -159.3  2.5        -6350

 988   1   2 ROSE ISLAND, TN, FEAT. 174, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6000
NRM      8 346.3  65.2  5.9  7.3     153  74.5 -121.2  4.5        -6500
   COMMENTS: 50G to 150G of 3 cubes gave little
   COMMENTS: change in direction

 989   4   0 ROSE ISLAND, TN, FEAT. 188, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6000
NRM      8 349.9  61.4  6.7  8.7      96  79.6 -129.6  5.7         3000
50G      8 355.7  62.4   .    .      374  81.2 -105.0  2.9        -6550
100G     8 346.0  64.5   .    .      153  75.0 -124.5  4.5         3000
150G     8 355.6  61.0   .    .      143  82.7 -110.9  4.7         3000
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 977   1   2 ROSE ISLAND, TN, FEAT. 44, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6500
NRM     8 334.0  62.6  8.2 10.5     69  68.5 -143.4  6.7         3000
  COMMENTS: 50G to 800G of  3 cubes gave some
  COMMENTS: change in dirction

 979   2   0 ROSE ISLAND, TN, FEAT. 78, 40-MR-44
 35.6  -84.2   0.0  8
NRM     8 335.3  62.4  5.3  6.8    163  69.4 -143.4  4.3         3000
50G     8 335.5  63.3  4.9  6.3    195  69.2 -140.3  4.0        -6300

 978   2   0 ROSE ISLAND, TN, FEAT. 79, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6000
NRM     8 357.1  56.2  4.9  6.8    137  87.4 -147.7  4.8        -6600
50G     8 357.1  59.7  6.8  9.1     86  84.5 -107.7  6.0         3000

 984   1   2 ROSE ISLAND, TN, FEAT. 94, 40-MR-44
 35.6  -84.2   0.0  8   -7000 to -6000
NRM     8 327.8  62.5  4.6  5.8    222  64.1 -145.7  3.7        -6450
  COMMENTS: 50G to 800G of 3 cubes gave little
  COMMENTS: change in direction

 976   1   2 SLAUGHTER SITE, MS, FEAT. 4, HEARTH, 22-LA-513
 34.2  -89.4   4.6  8
NRM     7 359.0  57.1  4.2  5.8    230  86.4 -102.6  4.0         3000
  COMMENTS: 100G of 3 cubes gave 0.7 deg. change in decl
  COMMENTS: 800G of 3 cubes gave 13.3 deg. change in decl

 975   1   1 SLAUGHTER SITE, MS, FEAT. 4A, 22-LA-513
 34.2  -89.4   4.6  8     300-700
NRM     7   3.7  53.2  5.3  7.7    120  86.9    7.3  5.5         3000
  COMMENTS: 150G of 3 cubes gave 0.2 deg. change in decl

1967   1   3 SMITHVILLE, TN, SAMUEL D. SMITH
 36.0  -85.8  0.5   3    1880-1915
NRM     3   5.7  24.3 103 192.6      1  66.2   80.3  180         3000
  COMMENTS: 50G to 400G of 3 cubes gave large
  COMMENTS: changes in decl
  COMMENTS: John Washington Dunn kiln site

1968   5   1 SMITHVILLE, TN, SAMUEL D. SMITH
 36.0  -85.8  0.5   5    1880-1915
NRM     5  32.0  48.7 38.1 57.9      4  62.5    8.3 43.9         3000
50G     5  31.5  42.9 36.6 59.1      4  60.9   17.6 47.7         3000
100G    5  33.0  36.9 38.7 66.1      3  57.4   23.3 56.5         3000
150G    5  33.7  34.1 41.2 72.0      2  55.7   25.3 63.0         2500
200G    5  43.0  42.1 39.1 63.7      3  51.4    9.5 51.8         3000
  COMMENTS: John Washington Dunn kiln site, 5 cube set
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1969   5   1 SMITHVILLE, TN, SAMUEL D. SMITH
 36.0  -85.8  0.5   5    1880-1915
NRM      5  40.4  60.3 71.7 94.6      3  58.3  -17.8 62.3         3000
50G      5  40.1  60.2 74.8 98.6      2  58.5  -17.7 65.1         3000
100G    4   9.4  40.4 36.0 59.6      4  74.7   59.4 49.4         3000
150G    4   7.9  39.2 36.0 60.2      4  74.6   65.4 50.4         2500
200G    4   6.1  38.1 36.6 61.8      4  74.5   72.3 52.2         3000
  COMMENTS: John Washington Dunn Kiln Site, 5 cube set

1970   5   1 SMITHVILLE, TN, SAMUEL D. SMITH
 36.0  -85.8  0.5   3    1880-1915
NRM      3 357.7  42.4 40.4 65.7      6  78.4  104.6 53.3         3000
50G      3 355.7  40.0 39.0 64.9      6  76.3  111.0 53.9         3000
100G     3 355.0  38.0 39.1 66.2      6  74.7  112.2 56.0         2500
150G     3 353.5  35.9 40.1 69.1      5  73.0  115.4 59.5         3000
200G     3 352.2  36.1 40.9 70.3      5  72.7  119.5 60.5         3000
  COMMENTS: John Washington Dunn kiln site, 3 cube set

 632   2   1 SNODGRASS, MO, PIT 61
 36.6  -90.7   5.3 10    1364         C14
NRM     10   7.7  67.9  4.6  5.5    219  74.6  -72.0  3.3         2500
150G     5   0.9  63.9  5.4  6.8    326  81.0  -86.3  4.2         3000
  COMMENTS: Uncertain curve assignment, modern?

 452   2   0 SNODGRASS, MO, STRUC. F-44
 36.6  -90.7   5.3  8
NRM      8 349.5  63.5  2.6  3.3    707  78.4 -130.5  2.1         3000
150G     8 355.5  60.5  3.0  4.0    452  84.0 -124.7  2.6         1385

 636   2   0 SNODGRASS, MO, STRUCTURE 27, BURNED FLOOR
 36.6  -90.7   5.3  6    1364         C14
NRM      6 353.6  60.8  1.6  2.1   2482  82.8 -132.1  1.3         1380
150      4 351.5  58.4  3.5  4.9    847  82.8 -157.1  3.2         3000

 637   3   0 SNODGRASS, MO, STRUCTURE 28, BURNED FLOOR
 36.6  -90.7   5.3  8    1364         C14
NRM      8 357.8  63.8  2.9  3.7    550  81.9 -101.7  2.4         3000
NRM      7 359.4  59.6  2.2  2.3    947  86.1  -97.1  2.0         3000
150G     8 356.9  60.8  2.8  3.7    534  84.2 -114.5  2.4         1390

 629   2   0 SNODGRASS, MO, STRUCTURE 39, BURNED FLOOR
 36.6  -90.7   5.3  8    1364         C14
NRM      8 356.4  58.4  0.9  1.2   5048  86.2 -138.2  0.8         3000
150G     8 355.3  57.5  0.7  0.9   7987  86.0 -157.8  0.6         1340

 631   1   1 SNODGRASS, MO, STRUCTURE 39, BURNED FLOOR
 36.6  -90.7   5.3  8    1364         C14
NRM      8 358.0  61.1  1.5  1.9   1296  84.2 -105.0  1.3         1400
  COMMENTS: 150G of 2 cubes gave 1.7 deg. change in decl
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630 1 1 SNODGRASS, MO, STRUCTURE 50, BURNED FLOOR
36.6 -90.7 5.3 6 1364 C14
NRM 5 356.5 59.8 1.2 1.6 5090 85.1 -123.5 1.1 1390
COMMENTS: 150G of 2 cubes gave no change in decl

638 1 1 SNODGRASS, MO, STRUCTURE 58, BURNED FLOOR
36.6 -90.7 5.3 8 1364 C14
NRM 8 352.9 59.1 0.9 1.2 4702 83.5 -147.8 0.8 1360
COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl

639 1 1 SNODGRASS, MO, STRUCTURE 64, HEARTH
36.6 -90.7 5.3 8 1364 C14
NRM 8 353.5 58.6 0.3 0.4 34623 84.2 -150.5 0.3 1360
COMMENTS: 150G of 2 cubes gave 0.2 deg. change in decl

633 2 0 SNODGRASS, MO, STRUCTURE 70, BURNED FLOOR
36.6 -90.7 5.3 8 1364 C14
NRM 7 356.6 61.5 1.9 2.5 1406 83.4 -112.6 1.6 3000
150G 7 352.7 59.4 2.4 3.4 827 83.2 -146.0 2.1 1360

227 2 1 SNODGRASS, MO, TURNER SNODGRASS SITE
36.5 -90.5 5.3 10
NRM 10 350.1 60.3 1.6 2.1 1278 81.0 -146.3 1.4 3000
NRM 9 353.6 59.0 1.0 1.3 3454 84.1 -146.3 1.0 1100
COMMENTS: 23-BU-21-B-STR.3

649 1 0 SNODGRASS, MO., SITE 23BU21B, STRUCTURE 67
36.6 -90.7 5.3 2
NRM 2 322.8 75.2 11.2 12.2 1416 55.7 -120.7 6.6 3000

390 2 1 SNODGRASS SITE, MO, 23-B-21-B A
36.6 -90.7 5.3 8 1320 C14
NRM 8 357.1 56.8 1.5 2.0 1560 87.6 -161.7 1.4 3000
NRM 8 355.5 59.7 1.3 1.7 2275 84.7 -131.1 1.2 1350
COMMENTS: 150G of 2 cubes gave 0.1 deg. change in decl

391 3 0 SNODGRASS SITE, MO, 23-BU-21 B
36.6 -90.7 5.3 8 1320 C14
NRM 8 357.7 57.1 3.0 4.1 382 87.9 -148.1 2.8 3000
NRM 8 355.0 56.0 2.2 3.1 646 86.0 179.8 2.2 3000
150G 8 355.7 56.5 2.4 3.4 564 86.5 -172.3 2.3 1340

389 2 1 SNODGRASS SITE, MO, 23-BU-21-B B
36.6 -90.7 5.3 8 1320 C14
NRM 8 351.3 58.1 1.6 2.1 1465 82.8 -161.0 1.4 3000
NRM 8 352.2 57.5 1.4 2.0 1711 83.6 -164.3 1.3 1360
COMMENTS: 150G of 2 cubes gave 0.9 deg. change in decl

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 388   2   1 SNODGRASS SITE, MO, 23-BU-21B A
 36.6  -90.7   5.3  8    1320        C14
NRM      8 352.0  56.9  3.5  4.8    276  83.5 -170.9  3.3        3000
NRM      8 353.0  58.7  3.2  4.3    370  83.8 -150.7  2.9        1360
  COMMENTS: 150G of 4 cubes gave 1.9 deg. change in decl

1952   1   2 SPIRO MOUND, OK, ST. PARK
 35.3  -94.6   7.4  8
NRM      6 346.6  60.5  2.4  3.2   1042  77.9 -150.3  2.1        1160
  COMMENTS: 50G to 400G of 4 cubes gave 4.8 deg.
  COMMENTS: change in decl.

1254   1   1 TELICO PROJECT, 30 ACRE ISLAND, F-171
 35.6  -84.2   0.0  6   -6300
NRM      4 337.0  56.3 10.4 14.5     85  71.4 -163.5 10.0        3000
  COMMENTS: 100G of 3 cubes gave 1.1 deg. change in decl

1255   2   0 TELICO PROJECT, 30 ACRE ISLAND, F-176
 35.6  -84.2   0.0  9   -6400
NRM      7 346.0  59.1  3.7  4.9    340  78.1 -148.7  3.3       -6350
100G     9 358.4  57.6  6.8  9.3     67  87.0 -109.9  6.4        3000

1253   2   0 TELICO PROJECT, 30 ACRE ISLAND, F-182
 35.6  -84.2   0.0  9   -6700
NRM      9 346.9  62.2  4.5  5.8    194  77.3 -132.3  3.7       -6800
150G     9 348.2  63.9  5.2  6.6    155  76.6 -122.6  4.1        3000

1174   2   0 TELICO PROJECT, 40MR23 F-243
 35.6  -84.2   0.0  9
NRM      8 336.5  56.6  5.3  7.3    121  71.0 -162.5  5.1        3000
400G     9 335.5  54.6  4.9  7.0    110  70.0 -168.3  4.9        2500

1171   2   0 TELICO PROJECT, 40MR23 F-253 L-12
 35.6  -84.2   0.0  9
NRM      8 346.0  61.7  4.6  6.0    204  77.0 -136.3  3.9        3000
200G     9 344.8  61.8  4.7  6.1    173  76.2 -137.5  3.9        1150

1173   2   0 TELICO PROJECT, 40MR23 F-289
 35.6  -84.2   0.0  8
NRM      7 347.2  53.3  4.3  6.2    186  79.4  179.9  4.4        3000
150G     8 343.3  55.1  4.5  6.3    157  76.4 -169.4  4.4        2500

1172   1   2 TELICO PROJECT, 40MR23 F-306
 35.6  -84.2   0.0  9
NRM      7 349.5  58.0 10.2 13.9     42  81.1 -150.8  9.4        3000
  COMMENTS: 50G to 1600G of 3 cubes gave large
  COMMENTS: changes in direction

1166   2   0 TELICO PROJECT, 40MR23 F-326
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 35.6  -84.2   0.0  8
NRM     7 350.3  54.7  3.1  4.4    380  82.1 -174.6  3.1         3000
150G    7 350.8  53.8  3.0  4.3    383  82.4  179.1  3.1         1250

1167   2   0 TELICO PROJECT, 40MR23 F-327
 35.6  -84.2   0.0 11
NRM    10 347.6  61.4  4.6  6.0    156  78.2 -135.0  3.9         3000
200G   10 347.3  60.8  4.3  5.7    171  78.3 -138.1  3.7         1145

1176   1   1 TELICO PROJECT, 40MR23 F-367
 35.6  -84.2   0.0  8
NRM     7 347.2  64.6  8.6 10.7     82  75.5 -121.7  6.7         3000
  COMMENTS: 150G of 4 cubes gave 0.5 deg. change in decl

1175   1   1 TELICO PROJECT, 40MR23 F-369
 35.6  -84.2   0.0 11
NRM    11 348.9  61.0  4.1  5.3    175  79.2 -134.0  3.5         1140
  COMMENTS: 100G of 4 cubes gave 0.9 deg. change in decl

1170   3   0 TELICO PROJECT, 40MR23 F-382
 35.6  -84.2   0.0  9
NRM     7 345.9  59.4  3.3  4.4    424  78.0 -147.6  2.9         3000
100G    6 350.0  59.6  3.0  4.0    640  80.8 -140.0  2.7         1130
100G    8 346.9  60.0  3.2  4.3    390  78.4 -142.8  2.8         3000

1168   2   1 TELICO PROJECT, 40MR23 F-397
 35.6  -84.2   0.0  9
NRM     8 336.3  58.1  2.6  3.6    524  70.9 -157.5  2.4         1170
200G    9 334.1  59.6  3.6  4.8    263  69.1 -153.2  3.2         3000
  COMMENTS: uncertain curve assignment

1169   2   0 TELICO PROJECT, 40MR23 F-398
 35.6  -84.2   0.0  8
NRM     7 349.0  59.2  3.1  4.1    478  80.3 -144.4  2.8         1130
200G    8 349.9  60.2  4.4  5.8    210  80.3 -136.2  3.8         3000

1270   2   0 TELICO PROJECT, BLOCKHOUSE, PROV. NO. 639
 35.6  -84.2   0.0  8    1860-1866
NRM     8   5.1  64.9  2.6  3.3    752  78.2  -67.1  2.0         3000
100G    8   7.6  65.0  1.8  2.3   1548  77.3  -59.8  1.4         1865

1364   1   1 TELICO PROJECT, CALLOWAY ISLAND, 40MR41
 35.6  -84.2   0.0  8
NRM     8 347.1  51.9  3.8  5.6    184  78.9  173.3  4.1         3000
  COMMENTS: 100G of 3 cubes gave 1.9 deg. change in decl

1378   1   2 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-106
 35.6  -84.2   0.0  8
NRM     8 350.8  57.2  3.1  4.3    354  82.3 -154.8  2.9         1365
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 COMMENTS: 50G to 400G of 3 cubes gave little
  COMMENTS: change in direction

1382   1   2 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-112
 35.6  -84.2   0.0  8
NRM      7 347.3  54.1  3.8  5.4    247  79.6 -175.9  3.9        1230
  COMMENTS: 50G to 400G of 4 cubes gave little
  COMMENTS: change in direction

1376   3   0 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-115
 35.6  -84.2   0.0  8
NRM      8 354.1  60.1  4.3  5.7    215  82.9 -122.7  3.8        1385
50G      8 353.7  59.0  4.6  6.2    181  83.5 -132.7  4.1        3000
100G     8 354.3  58.9  4.7  6.3    171  84.0 -131.0  4.2        3000

1377   3   0 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-122
 35.6  -84.2   0.0  8
NRM      8 345.7  54.5  4.0  5.7    189  78.3 -172.6  4.0        3500
50G      8 345.0  53.7  4.0  5.8    182  77.6 -176.2  4.1        3000
100G     8 344.8  53.3  3.8  5.5    195  77.4 -177.8  4.0        2000

1383   1   1 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-134
 35.6  -84.2   0.0  8
NRM      8 268.7  77.9 11.6 12.3     73  31.8 -111.9  6.5        3000
  COMMENTS: 100G of 4 cubes gave 98.6 deg. change in decl

1380   1   2 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-147
 35.6  -84.2   0.0  8
NRM      8 349.6  52.7  4.7  6.8    126  81.1  173.6  5.0        3000
  COMMENTS: 50G to 400G of 4 cubes gave little
  COMMENTS: change in direction

1374   1   1 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-27
 35.6  -84.2   0.0  8
NRM      8   6.7  57.7 10.2 13.9     35  84.0  -22.8  9.5        3000
  COMMENTS: 100G of 3 cubes gave 3.7 deg. change in decl

1368   1   2 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-38
 35.6  -84.2   0.0  8
NRM      8 344.2  73.1 26.3 29.4     12  64.7 -103.5 16.5        3000
  COMMENTS: 50G to 400G of 4 cubes gave some
  COMMENTS: change in direction

1370   2   0 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-39
 35.6  -84.2   0.0  8
NRM      8 350.0  55.2  3.4  4.7    278  81.9 -170.0  3.3        3000
50G      8 352.4  54.0  3.7  5.3    213  83.7  178.7  3.8        1270

1373   2   0 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-40
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 35.6  -84.2   0.0  9
NRM     9 347.6  53.4  2.2  3.1    534  79.7 -180.0  2.2        3000
50G     9 347.2  52.9  2.4  3.5    406  79.2 -178.0  2.6        1225

1369   1   1 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-48
 35.6  -84.2   0.0  8
NRM     8 336.8  53.6  8.6 12.3     41  71.0 -171.8  8.8        3000
  COMMENTS: 100G of 3 cubes gave 1.0 deg. change in decl

1379   1   1 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-5
 35.6  -84.2   0.0  8
NRM     8   1.3  57.1  7.3 10.1     65  87.6  -57.9  6.9        3000
  COMMENTS: 100G of 4 cubes gave 0.7 deg. change in decl

1381   1   1 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-6
 35.6  -84.2   0.0  9
NRM     9  49.7  61.7  9.6 12.4     42  51.4  -20.6  8.0        3000
  COMMENTS: 100G of 4 cubes gave 0.2 deg. change in decl

1367   1   1 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-64
 35.6  -84.2   0.0  8
NRM     7 347.1  48.1  5.7  8.7     84  77.3  158.8  6.6        3000
  COMMENTS: 100G of 3 cubes gave 0.9 deg. change in decl

1372   1   2 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-82
 35.6  -84.2   0.0  8
NRM     8 342.7  42.9  2.0  3.3    434  71.7  154.9  2.7        3000
  COMMENTS: 100G of 2 cubes gave 0.7 deg. change in decl
  COMMENTS: uncertain curve assignment

1375   1   2 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-83
 35.6  -84.2   0.0  8
NRM     8 345.4  48.3  1.8  2.7    721  76.2  162.6  2.1        3000
  COMMENTS: 100G of 2 cubes gave 0.4 deg. change in decl
  COMMENTS: uncertain curve assignment

1365   1   1 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-88
 35.6  -84.2   0.0  8
NRM     8   1.5  40.6 21.4 35.4      5  77.5   89.5 29.2        3000
  COMMENTS: 100G of 4 cubes gave 5.3 deg. change in decl

1371   1   1 TELICO PROJECT, CALLOWAY ISLAND, 40MR41 F-90
 35.6  -84.2   0.0  8
NRM     8 345.3  46.2  4.3  6.7    113  75.1  157.0  5.2        3000
  COMMENTS: 100G of 3 cubes gave 3.9 deg. change in decl

1274   3   0 TELICO PROJECT, EOFF, F-116
 35.5  -86.2   2.7  8     100-500
NRM     7   5.9  58.2  7.0  9.5     90  84.3  -33.6  6.4        3000
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100G    7   7.0  59.9  5.4  7.2    163  82.4  -42.2  4.7          3000
150G    7   7.6  58.1  4.8  6.5    192  83.1  -27.2  4.4          2500

1276   2   0 TELICO PROJECT, EOFF, F-117
 35.5  -86.2   2.7  8     100-500
NRM     8  21.4  69.4 13.1 15.3     39  66.8  -52.4  8.9          2000
50G     8  15.7  68.7 15.6 18.5     27  70.2  -54.8 10.9          3000

1273   4   0 TELICO PROJECT, EOFF, F-19
 35.5  -86.2   2.7  8     100-500
NRM     8   4.8  56.5  5.2  7.3    123  85.8  -20.1  5.0          3000
150G    8   6.4  57.2  3.0  4.1    395  84.3  -22.3  2.8          3000
200G    8   5.7  55.7  2.5  3.6    496  85.3   -6.3  2.5           450
400G    7  14.1  58.2  3.2  4.3    433  78.3  -17.2  2.9          3000

1280   2   0 TELICO PROJECT, EOFF, F-32
 35.5  -86.2   2.7  8     100-500
NRM     8   5.1  59.8  4.8  6.4    170  83.5  -49.6  4.3          3000
100G    8   0.2  59.5  4.6  6.1    189  85.2  -82.4  4.0          2500

1272   1   1 TELICO PROJECT, EOFF, F-33
 35.5  -86.2   2.7  8
NRM     8  27.2  62.6  9.0 11.5     58  67.5  -26.7  7.3          3000
  COMMENTS: 150G of 3 cubes gave 1.9 deg. change in decl.

1278   2   0 TELICO PROJECT, EOFF, F-34
 35.5  -86.2   2.7  8     400-500
NRM     6   3.5  58.1  4.2  5.7    302  85.7  -46.9  3.9          3000
150G    6   2.8  55.4  1.0  1.4   4715  87.7   -2.4  1.0           475

1277   2   1 TELICO PROJECT, EOFF, F-75-27
 35.5  -86.2   2.7  8     900-1100
NRM     8 347.1  65.4  9.8 12.1     56  74.6 -120.8  7.5          3000
100G    8 337.4  57.6  4.0  5.4    227  71.8 -159.3  3.7          1180
  COMMENTS: uncertain curve assignment

1279   2   0 TELICO PROJECT, EOFF, F-75-7
 35.5  -86.2   2.7  8     900-1100
NRM     8  82.0  85.5 29.1 29.4     15  36.2  -75.2 14.8          2500
100G    8 338.2  79.3 35.2 36.9      9  54.2  -97.2 19.4          3000

1275   2   0 TELICO PROJECT, EOFF, F-92
 35.5  -86.2   2.7  8     400-500
NRM     8   6.4  60.4  7.0  9.2     84  82.3  -47.7  6.1          3000
100G    7   7.2  58.2  3.7  5.1    312  83.4  -29.0  3.4           475

1271   2   0 TELICO PROJECT, EOFF, F-93
 35.5  -86.2   2.7  8     400-500
NRM     8 353.4  58.3  7.0  9.4     77  83.6 -140.4  6.4          3000
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150G    7  13.0  60.5  4.9  6.5    202  78.3  -28.0  4.3        2500

1366   1   2 TELICO PROJECT, FORT LOUDON, 40MR1
 35.6  -84.6   0.0  8    1756-1760
NRM     8 344.0  53.0  2.2  3.2    582  76.7 -178.3  2.3        3000
  COMMENTS: F-structure VB-2
  COMMENTS: uncertain curve assignment

1384   1   1 TELICO PROJECT, FORT LOUDOUN, 40MR1 F-184
 35.6  -84.2   0.0  8    1756-1760
NRM     7  22.7  73.2 10.7 11.9     83  62.3  -58.8  6.7        3000
  COMMENTS: 100G of 4 cubes gave 3.6 deg. change in decl

1269   2   1 TELICO PROJECT, HIWASSEE ISLAND STRUCTURE
 35.6  -84.2   0.0  8    1200
NRM     8 347.9  51.4  4.7  6.8    122  79.4  169.7  5.0        3000
100G    7 346.4  51.9  3.2  4.7    306  78.3  174.4  3.5        1220
  COMMENTS: Tellico blockhouse

1361   1   1 TELICO PROJECT, HOWARD SITE, 40MR66 F-19
 35.6  -84.2   0.0  7
NRM     5 358.6  54.2  6.1  8.6    156  88.6  149.1  6.2        3000
  COMMENTS: 100G of 4 cubes gave 1.8 deg. change in decl

1360   1   2 TELICO PROJECT, HOWARD SITE, 40MR66 F-35
 35.6  -84.2   0.0  7
NRM     5 354.7  70.7  4.3  4.9    723  70.2  -93.2  2.8        3000
  COMMENTS: uncertain curve assignment
  COMMENTS: 100G of 4 cubes gave 4.5 deg. change in decl

1359   2   1 TELICO PROJECT, HOWARD SITE, 40MR66 F-37
 35.6  -84.2   0.0  8
NRM     7 350.6  62.0  4.2  5.4    305  75.5 -125.2  3.5        2500
50G     7 350.7  59.5  5.7  7.6    143  81.3 -138.5  5.1        3000
  COMMENTS: uncertain curve assignment

1363   1   1 TELICO PROJECT, HOWARD SITE, 40MR66 F-60
 35.6  -84.2   0.0  8
NRM     7 344.0  52.0  6.2  9.0     84  76.5  177.6  6.6        3000
  COMMENTS: 100G of 4 cubes gave 4.5 deg. change in decl

1362   1   1 TELICO PROJECT, HOWARD SITE, 40MR66 F-70
 35.6  -84.2   0.0  8
NRM     8 253.3  30.2 36.1 65.0      2  -3.5 -151.3 58.5        3000
  COMMENTS: 100G of 4 cubes gave 15.8 deg. change in decl

1195   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, 400EKU
 35.6  -84.2   0.0  6   -6400 to -6300
NRM     6 341.4  59.0 11.2 15.0     45  74.7 -152.7 10.1        3000
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  COMMENTS: 150G of 3 cubes gave 0.5 deg. change in decl

1227   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-133
 35.6  -84.2   0.0  8
NRM      8 339.1  47.3  5.4  8.4      75  71.0  169.7  6.5         3000
  COMMENTS: 100G of 3 cubes gave 0.6 deg. change in decl

1228   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-150
 35.6  -84.2   0.0  8
NRM      7 347.5  60.8  4.2  5.5     278  78.4 -138.1  3.6        -7300
  COMMENTS: 100G of 3 cubes gave 0.4 deg. change in decl

1223   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-225
 35.6  -84.2   0.0  9
NRM      8   8.9  57.5  3.5  4.7     294  82.4  -16.7  3.2         3000
200G     9  10.5  55.7  2.5  3.5     444  81.5   -1.3  2.4        -7500

1217   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-255
 35.6  -84.2   0.0  8   -8000 to -7500
NRM      8   4.0  56.4  4.1  5.7     198  86.5  -18.0  3.9        -7700
50G      8   0.1  54.7  4.8  6.8     133  89.6   85.0  4.8         3000

1216   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-257
 35.6  -84.2   0.0  9   -8000 to -7500
NRM      7   3.0  59.7  2.9  3.8     575  84.6  -59.4  2.5         3000
150G     6   7.0  60.8  3.9  5.1     409  81.7  -45.2  3.3        -7600

1191   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-259
 35.6  -84.2   0.0  8   -6600
NRM      6 344.6  55.1  4.7  6.7     205  77.5 -169.4  4.7         3000
200G     7 346.9  55.3  4.7  6.6     169  79.4 -169.1  4.7        -6700

1192   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-260
 35.6  -84.2   0.0  8   -6500
NRM      8 340.0  62.0  6.7  8.7      99  72.8 -141.6  5.6         3000
100G     8 339.1  59.6  5.6  7.4     127  72.9 -151.6  4.9        -6800

1226   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-271
 35.6  -84.2   0.0  7
NRM      7 333.2  56.7  8.6 11.8      55  68.4 -161.9  8.2         3000
150G     7 331.5  58.8  9.8 13.1      48  67.1 -155.8  8.8        -6400

1219   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-279
 35.6  -84.2   0.0  9   -6700
NRM      8 345.7  55.8  7.2 10.0      64  78.4 -166.3  7.0        -6700
  COMMENTS: 100G of 4 cubes gave 1.2 deg. change in decl

1215   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-340
 35.6  -84.2   0.0  9
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NRM      9 349.2  58.7  2.8  3.8    408  80.6 -146.6  2.6        -7130
  COMMENTS: 100G of 2 cubes gave 0.5 deg. change in decl

1252   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-354
 35.6  -84.2   0.0  9
NRM      9 357.6  57.7  1.9  2.5    891  86.7 -118.1  1.7         3000
100G     9   0.4  57.1  3.0  4.1    333  87.8  -74.9  2.8        -7700

1213   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-358
 35.6  -84.2   0.0  8
NRM      6  22.2  52.8  4.4  6.4    210  71.6    6.3  4.6        -7500
  COMMENTS: 100G of 4 cubes gave 2.7 deg. change in decl

1214   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-358
 35.6  -84.2   0.0  9
NRM      8   7.2  56.0  7.2 10.1     63  84.1   -5.0  7.0         3000
  COMMENTS: 100G of 4 cubes gave 10.5 deg. change in decl

1196   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-361
 35.6  -84.2   0.0  9   -5500
NRM      9   7.0  55.7  9.4 13.2     32  84.3   -2.9  9.2         3000
  COMMENTS: 150G of 4 cubes gave 1.5 deg. change in decl

1197   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-361
 35.6  -84.2   0.0  8   -5500
NRM      8  14.7  48.1 18.7 28.7      7  76.0   29.4 21.9         3000
  COMMENTS: 150G of 4 cubes gave 4.4 deg. change in decl

1194   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-399
 35.6  -84.2   0.0 10   -6400 to -6300
NRM     10 344.2  47.1  6.1  9.5     44  74.7  161.7  7.3         3000
  COMMENTS: 150G of 4 cubes gave 0.7 deg. change in decl

1193   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-416
 35.6  -84.2   0.0  9   -6400
NRM      9 345.2  50.2  3.5  5.3    170  76.8  169.5  4.0         3000
400G     9 343.8  54.0  2.1  3.0    584  76.7 -173.9  2.1        -6700

1198   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-437
 35.6  -84.2   0.0 10   -4500
NRM      8 352.5  57.6  5.8  7.9    107  83.4 -148.0  5.4        -4500
  COMMENTS: 100G of 4 cubes gave 1.5 deg. change in decl

1199   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-437
 35.6  -84.2   0.0  8   -6700
NRM      8 338.2  58.1  3.4  4.6    318  72.4 -157.3  3.1         3000
150G     8 338.2  57.3  3.5  4.8    291  72.4 -160.1  3.3        -6350

1200   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-444
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 35.6  -84.2   0.0  8   -6700
NRM     8 319.3  60.9 21.7 28.4     10  58.0 -150.4 18.6         3000
  COMMENTS: 100G of 4 cubes gave 1.1 deg. change in decl

1201   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-446
 35.6  -84.2   0.0  9   -6700
NRM     9 342.0  55.8  5.8  8.1     85  75.4 -165.9  5.6        -6700
  COMMENTS: 100G of 3 cubes gave 0.1 deg. change in decl

1204   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-447
 35.6  -84.2   0.0  8   -6700
NRM     8 336.0  53.5  4.0  5.8    178  70.3 -171.6  4.2         3000
150G    8 334.4  52.3  3.8  5.5    192  68.8 -173.9  4.0        -6750

1203   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-449
 35.6  -84.2   0.0 10   -6700
NRM     9 332.5  57.6  3.6  4.9    241  67.9 -159.1  3.3        -6750
  COMMENTS: 100G of 3 cubes gave 0.1 deg. change in decl

1202   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-450
 35.6  -84.2   0.0  8   -6700
NRM     7 348.1  50.4  3.1  4.6    317  79.1  165.1  3.4        -6650
  COMMENTS: 100G of 3 cubes gave 0.4 deg. change in decl

1205   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-452
 35.6  -84.2   0.0  8   -6700
NRM     8 342.0  61.5  3.7  4.8    319  74.4 -141.7  3.1        -6800
  COMMENTS: 100G of 2 cubes gave 2.6 deg. change in decl

1206   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-456
 35.6  -84.2   0.0  9
NRM     8 345.8  60.4  4.4  5.8    214  77.5 -142.7  3.8        -6850
  COMMENTS: 100G of 3 cubes gave 3.4 deg. change in decl

1208   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-459
 35.6  -84.2   0.0  8   -7000
NRM     8 333.2  61.5  6.4  8.3    108  68.1 -147.4  5.4        -7000
  COMMENTS: 100G of 3 cubes gave 2.5 deg. change in decl

1207   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-465
 35.6  -84.2   0.0  9   -6700
NRM     9 346.3  54.6  4.3  6.0    146  78.8 -172.5  4.3        -6900
  COMMENTS: 100G of 3 cubes gave 1.9 deg. change in decl

1209   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-467-B
 35.6  -84.2   0.0  7
NRM     6 342.7  59.8  6.1  8.0    159  75.5 -148.5  5.3        -6850
  COMMENTS: 100G of 3 cubes gave 0.0 deg. change in decl
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1210   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-468
 35.6  -84.2   0.0  3
NRM      2 333.8  56.6  4.2  5.8   3869  68.9 -162.3  4.0         -6950
  COMMENTS: 100G of 2 cubes 1.0 deg. change in decl

1212   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-471
 35.6  -84.2   0.0  8
NRM      8 345.6  58.3  6.5  8.8     89  78.1 -153.4  5.9          3000
150G     7 346.6  59.4  5.6  7.4    150  78.5 -146.7  4.9         -6850

1218   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-486
 35.6  -84.2   0.0  8
NRM      8 344.0  56.8  5.1  7.0    133  77.0 -161.7  4.8          3000
50G      8 342.6  56.6  4.9  6.7    143  75.9 -162.6  4.6         -6900

1221   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-488
 35.6  -84.2   0.0  7
NRM      6 351.1  60.4  6.8  9.0    128  81.0 -132.3  5.9         -6850
  COMMENTS: 100G of 4 cubes gave 0.5 deg. change in decl

1220   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-497
 35.6  -84.2   0.0  9   -7500 to -7000
NRM      9 345.7  55.0  6.3  8.9     68  78.4 -170.6  6.3          3000
150G     8 341.8  54.5  5.5  7.8    101  75.2 -170.9  5.6         -7100

1224   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-502
 35.6  -84.2   0.0  8
NRM      7 341.1  59.2  5.7  7.7    140  74.5 -152.0  5.1         -7050
  COMMENTS: 100G of 4 cubes gave 0.9 deg. change in decl

1225   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-510
 35.6  -84.2   0.0  8
NRM      7 343.2  56.6  2.4  3.4    666  76.4 -162.8  2.3          3000
150G     7 341.8  56.4  2.5  3.5    614  75.3 -163.4  2.4         -7100

1229   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-515
 35.6  -84.2   0.0  8
NRM      8 342.4  60.9  3.3  4.3    384  74.9 -144.2  2.8         -7300
  COMMENTS: 100G of 2 cubes gave 2.1 deg. change in decl

1231   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-52
 35.6  -84.2   0.0  8
NRM      8 351.9  58.4  3.3  4.5    337  82.6 -143.4  3.0         -7250
  COMMENTS: 100G of 2 cubes gave 0.4 deg. change in decl

1230   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-524
 35.6  -84.2   0.0  8
NRM      7 357.1  58.1  6.1  8.2    118  86.0 -119.3  5.6         -7200
  COMMENTS: 100G of 3 cubes gave 0.5 deg. change in decl
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1232   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-534
 35.6  -84.2   0.0  8
NRM      8   0.6  57.3  5.3  7.3    124  87.7  -71.7  5.0         3000
150G     8   1.2  56.6  4.7  6.4    156  88.2  -53.2  4.5        -7200

1235   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-535
 35.6  -84.2   0.0  9
NRM      8 355.1  54.3  3.9  5.5    202  85.9 -176.8  3.9        -7250
  COMMENTS: 100G of 3 cubes gave 1.7 deg. change in decl

1236   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-536A
 35.6  -84.2   0.0  8   -8000 to -7500
NRM      8 349.8  61.3  3.6  4.7    334  79.6 -130.4  3.0         3000
200G     8 348.1  60.5  2.8  3.6    542  79.0 -138.5  2.4        -7300

1238   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-539
 35.6  -84.2   0.0  8
NRM      8 348.8  52.3  3.4  5.0    236  80.3  172.6  3.6        -7350
150G     8 348.5  53.1  3.9  5.6    187  80.4  177.3  4.1         3000

1241   3   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-547
 35.6  -84.2   0.0  8
NRM      7 353.4  53.4  2.2  3.1    712  84.3  170.9  2.3         3000
100G     5 354.1  52.4  3.7  5.3    389  84.5  159.2  3.9        -7400
150G     8 351.5  68.9 35.7 42.0      6  72.1 -101.4 24.8         3000

1234   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-548
 35.6  -84.2   0.0  8
NRM      8 354.0  60.0  2.9  3.8    507  82.4 -120.3  2.5         3000
100G     8 354.4  60.6  3.4  4.5    358  82.6 -118.7  2.9        -7250

1233   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-550
 35.6  -84.2   0.0  8
NRM      8 354.7  55.1  3.4  4.8    267  85.7 -172.4  3.4         3000
100G     8 354.2  54.7  2.5  3.6    477  85.3 -177.6  2.5        -7250

1239   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-553
 35.6  -84.2   0.0  8
NRM      7 340.7  50.3  2.6  4.0    421  73.3  175.6  2.9         3000
150G     8 342.6  50.7  2.3  3.5    460  74.9  174.5  2.6        -7250

1237   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-553A
 35.6  -84.2   0.0  8
NRM      7 353.7  54.1  4.8  6.8    157  84.7  177.2  4.8        -7350
  COMMENTS: 100G of 3 cubes gave 1.7 deg. change in decl

1245   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-555
 35.6  -84.2   0.0  8
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NRM      8 348.7  53.3  3.2  4.6    282  80.5  178.6  3.3         -7350
  COMMENTS: 100G of 2 cubes gave 1.1 deg. change in decl

1246   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-558
 35.6  -84.2   0.0  9
NRM      9 347.1  58.8  4.1  5.5    197  79.1 -149.5  3.7         -7300
  COMMENTS: 100G of 2 cubes gave 1.0 deg. change in decl

1240   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-561
 35.6  -84.2   0.0  8
NRM      7   1.1  55.8  2.1  3.0    850  88.8  -32.3  2.1          3000
150G     8   2.0  54.8  1.8  2.5    990  88.3   16.2  1.8         -7200

1242   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-562
 35.6  -84.2   0.0  8
NRM      7 340.6  53.8  5.3  7.5    126  74.0 -173.0  5.4          3000
  COMMENTS: 100G of 3 cubes gave 0.7 deg. change in decl

1243   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-566
 35.6  -84.2   0.0  8
NRM      7 354.6  53.2  4.2  6.0    193  85.2  165.3  4.4         -7400
  COMMENTS: 100G of 3 cubes gave 0.1 deg. change in decl

1244   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-567
 35.6  -84.2   0.0  8
NRM      7 354.1  57.6  2.3  3.2    783  84.6 -143.4  2.2         -7250
  COMMENTS: 100G of 2 cubes gave 0.4 deg. change in decl

1250   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-571
 35.6  -84.2   0.0  8
NRM      8 352.3  49.1  3.3  5.1    211  81.4  147.1  3.8          3000
100G     8 351.7  47.6  3.2  4.9    220  80.1  143.5  3.7         -7400

1251   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-574
 35.6  -84.2   0.0  9
NRM      8   0.4  54.5  3.4  4.8    261  89.3   66.0  3.4         -7450
  COMMENTS: 100G of 3 cubes gave 2.0 deg. change in decl

1247   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-575
 35.6  -84.2   0.0  9
NRM      9  12.2  53.9  2.1  3.0    564  80.0    8.8  2.2         -7500
  COMMENTS: 100G of 2 cubes gave 2.4 deg. change in decl

1248   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-577
 35.6  -84.2   0.0  9
NRM      8 351.7  56.8  2.1  2.9    763  83.1 -156.5  2.0         -7400
  COMMENTS: 100G of 2 cubes gave 1.6 deg. change in decl

1249   2   0 TELICO PROJECT, ICEHOUSE BOTTOM, F-582
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 35.6  -84.2   0.0  8
NRM      7   2.3  56.8  4.0  5.5    251  87.4  -37.8  3.8         3000
200G     7   3.5  56.2  3.2  4.4    394  86.9  -18.1  3.0        -7700

1222   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F-694
 35.6  -84.2   0.0  8   -7500-  0
NRM      8 346.5  61.8  5.7  7.3    138  77.2 -134.8  4.7        -7050
  COMMENTS: 100G of 3 cubes gave 3.2 deg. change in decl

1211   1   1 TELICO PROJECT, ICEHOUSE BOTTOM, F467A
 35.6  -84.2   0.0  8   -7000
NRM      8 335.9  52.1  4.9  7.2    113  69.9 -175.6  5.2        -6950
  COMMENTS: 100G of 3 cubes gave 0.6 deg. change 0.6 decl

1981   3   2 TELICO PROJECT, TN
 35.5  -84.1   0.0  9
NRM      9 323.5  56.5  2.2  3.0    616  60.7 -160.1  2.1         2500
50G      5 322.3  55.0  3.5  4.9    485  59.5 -162.8  3.5         3000
100G     5 321.7  54.0  3.9  5.5    377  58.8 -164.6  3.9         3000
  COMMENTS: on the Little Tenn. River, 45 mi S of Knoxville
  COMMENTS: uncertain curve assignment

1982   3   2 TELICO PROJECT, TN
 35.5  -84.1   0.0  9
NRM      7 324.1  57.1  3.6  5.0    313  61.3 -159.0  3.4         3000
50G      8 322.1  53.3  3.3  4.7    268  59.0 -166.0  3.4         2500
100G     8 320.3  51.0  3.7  5.5    187  56.9 -169.0  4.1         3000
  COMMENTS: on the Little Tenn. River, 45 mi S of Knoxvill
  COMMENTS: uncertain curve assignment

1385   3   1 TELICO PROJECT, TOMOTLEY, 40MR5 F-393
 35.6  -84.2   0.0  8    1750-1765
NRM      8   0.3  66.8  3.4  4.1    492  76.2  -83.3  2.5         3000
50G      8   2.5  68.9 11.8 14.0     46  73.1  -78.9  8.2         3000
100G     8   0.7  66.3  3.7  4.5    414  76.8  -82.2  2.7         1750
  COMMENTS: uncertain curve assignment

1386   1   2 TELICO PROJECT, TOMOTLEY, 40MR5 F-403
 35.6  -84.2   0.0  1
NRM      9   6.8  66.7  3.2  3.9    474  75.4  -66.3  2.4         3000
  COMMENTS: 100G of 3 cubes gave 2.5 deg. change in decl.
  COMMENTS: uncertain curve assignment

1518   2   0 TELICO PROJECT, TOQUA, 40MR6 CHEROKEE F-1009
 35.6  -84.2   0.0  6    1730-1760
NRM      6 321.8  54.7  5.8  8.2    134  59.0 -163.6  5.8         3000
200G     6 324.6  53.1  4.9  7.1    172  60.9 -167.7  5.1         2000

1517   2   0 TELICO PROJECT, TOQUA, 40MR6 CHEROKEE F-1106
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 35.6  -84.2   0.0  8    1730-1760
NRM     8   5.4  67.6 17.1 20.4     21  74.6  -71.2 12.2        3000
400G    7 358.0  68.2 19.6 23.3     20  74.2  -88.9 13.8        2500

1328   2   1 TELICO PROJECT, TOQUA, 40MR6 F-100
 35.6  -84.2   0.0  8
NRM     6 355.9  58.1  3.6  4.9    408  85.4 -128.5  3.3        3000
NRM     8 355.7  58.2  2.7  3.7    503  85.2 -129.0  2.5        1350
  COMMENTS: amag date +-15 yrs

1346   2   0 TELICO PROJECT, TOQUA, 40MR6 F-106
 35.6  -84.2   0.0  8
NRM     4 357.6  53.6  1.5  2.1   3654  87.6  149.3  1.9        1320
400G    8 344.3  56.8  5.3  7.3    121  77.3 -161.7  5.1        3500

1348   2   0 TELICO PROJECT, TOQUA, 40MR6 F-109
 35.6  -84.2   0.0  9
NRM     9 354.5  59.0  2.8  3.7    425  84.0 -128.6  2.5        3000
100G    8 355.0  58.7  3.7  5.0    270  84.4 -128.8  3.4        1380

1350   2   0 TELICO PROJECT, TOQUA, 40MR6 F-110
 35.6  -84.2   0.0  8
NRM     8 346.7  58.2  2.7  3.6    512  78.9 -152.9  2.5        3000
100G    8 349.8  56.0  1.8  2.5    984  81.7 -161.7  1.8        1250

1325   1   1 TELICO PROJECT, TOQUA, 40MR6 F-117
 35.6  -84.2   0.0  9
NRM     9 352.9  57.9  2.1  2.9    705  83.6 -144.3  1.9        1360
  COMMENTS: 100G of 2 cubes gave 5.3 deg. change in decl

1330   1   1 TELICO PROJECT, TOQUA, 40MR6 F-123
 35.6  -84.2   0.0  8    1700-1750
NRM     8 357.8  75.2 31.1 34.0     10  63.4  -86.5 18.6        3000
  COMMENTS: 100G of 4 cubes gave 37.4 deg. change in decl

1345   2   0 TELICO PROJECT, TOQUA, 40MR6 F-124
 35.6  -84.2   0.0  8
NRM     8 354.4  57.2  4.3  5.9    190  85.0 -146.4  4.0        3000
100G    7 352.5  57.3  1.7  2.4   1406  83.6 -151.2  1.6        1360

1324   2   0 TELICO PROJECT, TOQUA, 40MR6 F-134
 35.6  -84.2   0.0  8
NRM     8 355.8  60.4  3.4  4.5    345  83.4 -112.6  3.0        1385
50G     8 354.2  59.5  3.6  4.8    302  83.5 -126.6  3.2        3000

1354   2   0 TELICO PROJECT, TOQUA, 40MR6 F-143
 35.6  -84.2   0.0  8
NRM     7 354.8  55.4  2.0  2.9    912  85.8 -168.5  2.0        3000
150G    7 355.5  55.7  2.0  2.7    989  86.3 -163.5  1.9        1335
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1322   2   0 TELICO PROJECT, TOQUA, 40MR6 F-145
 35.6  -84.2   0.0  8
NRM     8 352.3  57.9  1.8  2.4   1130  83.2 -146.6  1.6         3000
100G    8 351.7  57.1  0.9  1.2   4218  83.0 -154.2  0.9         1360

1351   2   0 TELICO PROJECT, TOQUA, 40MR6 F-146
 35.6  -84.2   0.0  9
NRM     9 356.6  57.7  2.7  3.7    411  86.3 -130.4  2.5         3000
50G     8 357.1  57.4  2.9  4.0    413  86.6 -126.2  2.7         1345

1353   1   1 TELICO PROJECT, TOQUA, 40MR6 F-147
 35.6  -84.2   0.0  9
NRM     7 348.9  57.9  2.0  2.7   1084  80.7 -152.6  1.8         1130
  COMMENTS: 100G of 4 cubes gave 4.8 deg. change in decl

1352   1   1 TELICO PROJECT, TOQUA, 40MR6 F-148
 35.6  -84.2   0.0  8
NRM     8 349.6  55.7  1.1  1.6   2446  81.5 -166.7  1.1         1250
  COMMENTS: 100G of 2 cubes gave 3.1 deg. change in decl.

1323   2   0 TELICO PROJECT, TOQUA, 40MR6 F-153
 35.6  -84.2   0.0  8
NRM     8 351.7  61.6  6.5  8.4    104  80.4 -123.7  5.5         3000
100G    6 352.2  56.5  1.8  2.5   1523  83.5 -161.2  1.7         1360

1320   1   1 TELICO PROJECT, TOQUA, 40MR6 F-154
 35.6  -84.2   0.0  9
NRM     8 355.4  57.1  2.9  4.0    402  85.7 -142.9  2.8         1345
  COMMENTS: 100G of 3 cubes gave 3.8 deg. change in decl

1326   2   0 TELICO PROJECT, TOQUA, 40MR6 F-156
 35.6  -84.2   0.0  8
NRM     8 354.9  62.5  4.3  5.6    244  80.8 -108.0  3.6         3000
50G     8 353.3  60.2  2.2  2.9    832  82.3 -125.8  1.9         1380

1321   2   0 TELICO PROJECT, TOQUA, 40MR6 F-157
 35.6  -84.2   0.0  8
NRM     8 350.8  63.1  4.8  6.1    206  78.6 -119.4  3.9         3000
50G     7 350.6  59.7  3.1  4.1    497  81.1 -137.4  2.7         1370

1327   2   1 TELICO PROJECT, TOQUA, 40MR6 F-158
 35.6  -84.2   0.0  8
NRM     8 351.6  55.5  3.0  4.2    358  83.2 -168.1  2.9         3000
100G    8 352.0  55.3  3.0  4.3    344  83.5 -172.1  3.0         1265
  COMMENTS: earlier than 160 and 157

1349   1   2 TELICO PROJECT, TOQUA, 40MR6 F-158
 35.6  -84.2   0.0  8
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NRM      8 339.7  60.0  2.7  3.5    558  73.2 -149.7  2.3        1160
  COMMENTS: 50G to 400G of 3 cubes gave little
  COMMENTS: change in direction

1332   3   0 TELICO PROJECT, TOQUA, 40MR6 F-160
 35.6  -84.2   0.0  8
NRM      8 358.5  58.6  5.7  7.7    116  86.1 -101.7  5.2        3000
50G      8 358.4  58.0  4.9  6.7    151  86.7 -105.9  4.5        2500
100G     8 359.2  59.1  5.7  7.6    119  85.7  -92.6  5.1        3000

1347   1   2 TELICO PROJECT, TOQUA, 40MR6 F-166
 35.6  -84.2   0.0  8
NRM      8 353.7  56.1  2.2  3.0    706  84.8 -161.2  2.1        1280
  COMMENTS: 50G to 400G of 2 cubes gave little
  COMMENTS: change in direction

1331   1   1 TELICO PROJECT, TOQUA, 40MR6 F-176 SEC. 8
 35.6  -84.2   0.0  9
NRM      8 349.4  56.2  1.4  1.9   1777  81.3 -163.1  1.3        1250
  COMMENTS: 100G of 3 cubes gave 3.0 deg. change in decl

1329   2   0 TELICO PROJECT, TOQUA, 40MR6 F-191
 35.6  -84.2   0.0  8
NRM      8 349.4  55.1  2.3  3.2    610  81.4 -170.7  2.2        3000
100G     8 347.0  55.9  2.1  2.9    752  79.5 -165.6  2.0        1240

1768   2   1 TELICO PROJECT, TOQUA, 40MR6 F-193 HEARTH
 35.6  -84.2  -0.1  8
NRM      6 349.0  58.2  2.9  3.9    632  80.7 -150.5  2.7        3000
150G     8 350.8  58.8  2.6  3.5    544  81.7 -143.1  2.4        1370
  COMMENTS: sect. 22, 820L70

1257   2   0 TELICO PROJECT, TOQUA, 40MR6, F-32
 35.6  -84.2   0.0  8
NRM      7 354.4  57.2  2.3  3.2    778  85.0 -146.3  2.2        3000
200G     7 354.8  58.0  1.9  2.5   1217  84.9 -136.4  1.7        1350

1771   2   1 TELICO PROJECT, TOQUA, 40MR6 F-346 HEARTH
 35.6  -84.2  -0.1  8
NRM      6 356.8  36.4  1.3  1.8   2802  87.1 -146.3  1.3        3000
100G     8 355.2  55.5  1.9  2.7    877  86.1 -166.8  1.9        1335
  COMMENTS: sect 42, 1140R10

1764   2   1 TELICO PROJECT, TOQUA, 40MR6 F-374
 35.6  -84.2  -0.1  9
NRM      8 347.4  61.4  3.6  4.6    344  78.0 -134.9  3.0        3000
150G     8 352.1  57.5  2.0  2.7    883  83.2 -150.3  1.9        1100
  COMMENTS: sect 42, 1160R20, basin
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1256   1   1 TELICO PROJECT, TOQUA, 40MR6, F-42
 35.6  -84.2   0.0  8
NRM      7 352.3  60.8  1.6  2.1   2005  81.3 -126.1  1.3         1380
  COMMENTS: 100G of 2 cubes gave 1.6 deg. change in decl

1259   2   0 TELICO PROJECT, TOQUA, 40MR6, F-43
 35.6  -84.2   0.0  8
NRM      8 356.1  56.8  1.3  1.7   2144  86.4 -142.9  1.2         3000
150G     8 356.0  56.1  1.3  1.8   1906  86.6 -154.6  1.3         1340

1769   3   2 TELICO PROJECT, TOQUA, 40MR6 F-459
 35.6  -84.2  -0.1  9
NRM      9  22.2  67.8  4.0  4.8    326  68.0  -44.6  2.9         3000
100G     9  17.0  66.1  3.3  4.0    447  72.1  -45.2  2.4         1850
200G     9  16.0  64.2  3.1  3.9    457  74.1  -39.8  2.4         3000
  COMMENTS: sect. 22, 830L30 and 830L40, mound A, basin
  COMMENTS: uncertain curve assignment

1772   2   1 TELICO PROJECT, TOQUA, 40MR6 F-462 HEARTH
 35.6  -84.2  -0.1  9
NRM      9 343.3  60.3  4.1  5.3    215  75.8 -145.7  3.5         1160
50G      9 344.8  59.3  4.6  6.1    162  77.2 -149.0  4.1         3000
  COMMENTS: sect. 22, 820L80, mound A

1773   3   1 TELICO PROJECT, TOQUA, 40MR6 F-512
 35.6  -84.2  -0.1  8
NRM      8   1.5  55.8  5.0  6.9    132  88.6  -24.8  4.8         3000
150G     8   2.8  56.3  5.0  7.0    132  87.4  -23.8  4.8         2500
400G     8  10.6  58.9  6.2  8.4     98  80.7  -23.0  5.6         3000
  COMMENTS: structure 39, upper hearth

1767   3   1 TELICO PROJECT, TOQUA, 40MR6 F-515 HEARTH
 35.6  -84.2  -0.1  8
NRM      7 358.4  62.9  3.0  3.8    628 -48.4   97.6  2.4         3000
150G     7 358.9  60.8  2.0  2.6   1228  83.8   76.7  1.7          810
400G     7   5.4  60.0  3.0  4.0    529  83.3  121.4  2.6         3000
  COMMENTS: sect.48, 1280L40

1262   2   0 TELICO PROJECT, TOQUA, 40MR6 F-56
 35.6  -84.2   0.0  8
NRM      8 358.3  60.0  1.7  2.2   1451  84.6  -97.7  1.5         1410
200G     8   1.0  59.3  3.1  4.1    412  85.5  -74.7  2.7         3000

1177   2   1 TELICO PROJECT, TOQUA, 40MR6 F-58
 35.6  -84.2   0.0  8    1350-1400
NRM      8 348.6  56.3  3.2  4.4    332  80.7 -163.2  3.0         3000
150G     8 347.1  57.6  2.0  2.7    914  79.4 -156.2  1.8         1175
  COMMENTS: C14 age of 1215 + or - 130
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1261   2   0 TELICO PROJECT, TOQUA, 40MR6 F-62
 35.6  -84.2   0.0  8
NRM      8 358.0  59.1  6.1  8.2    103  85.5 -103.7  5.5         3000
150G     8 353.8  59.8  5.9  7.8    116  83.0 -125.9  5.2         2500

1265   2   0 TELICO PROJECT, TOQUA, 40MR6 F-63
 35.6  -84.2   0.0  9
NRM      8 353.3  55.5  2.8  4.0    398  84.6 -168.0  2.8         3000
100G     8 351.7  56.5  2.5  3.5    529  83.1 -159.8  2.4         1270

1774   2   1 TELICO PROJECT, TOQUA, 40MR6 F-638 HEARTH
 35.6  -84.2  -0.1  9
NRM      8 318.6  56.2  4.7  6.6    148  56.8 -159.7  4.6         2500
150G     9 317.8  59.3  6.4  8.6     82  56.7 -153.5  5.7         3000
  COMMENTS: sect. 60, 1450L170

1264   2   0 TELICO PROJECT, TOQUA, 40MR6 F-64
 35.6  -84.2   0.0  8
NRM      8 352.8  62.6  2.8  3.6    584  79.9 -115.4  2.3         3000
100G     8 351.3  60.2  2.2  2.8    874  81.2 -132.5  1.9         1380

1766   2   1 TELICO PROJECT, TOQUA, 40MR6 F-640 HEARTH
 35.6  -84.2  -0.1  8
NRM      8 353.3  57.0  2.5  3.5    533  84.3 -151.7  2.4         3000
150G     8 357.1  54.6  2.6  3.6    463  87.6  175.0  2.6         1325
  COMMENTS: sect. 22, structure 52, mound A

1765   2   1 TELICO PROJECT, TOQUA, 40MR6 F-643
 35.6  -84.2  -0.1  8
NRM      6 353.0  57.6  2.1  2.9   1160  83.8 -146.8  2.0         1100
50G      7 349.2  57.3  4.6  6.3    196  81.0 -156.3  4.3         3000
  COMMENTS: sect 22, structure 51, mound A

1260   2   0 TELICO PROJECT, TOQUA, 40MR6 F-66
 35.6  -84.2   0.0  9
NRM      8 349.3  53.3  2.7  3.8    404  81.0  177.5  2.8         3000
150G     7 350.2  53.6  1.5  2.1   1604  81.8  178.6  1.5         1250

1258   1   1 TELICO PROJECT, TOQUA, 40MR6, F-67
 35.6  -84.2   0.0  8
NRM      8 352.6  57.4  3.4  4.6    310  83.6 -149.7  3.1         1360
  COMMENTS: 100G of 2 cubes gave 3.4 deg. change in decl.

1263   1   1 TELICO PROJECT, TOQUA, 40MR6, F-68
 35.6  -84.2   0.0  8
NRM      8 356.6  61.0  1.8  2.4   1243  83.1 -105.8  1.6         1400
  COMMENTS: 150G of 2 cubes gave 2.8 deg. change in decl

1334   2   0 TELICO PROJECT, TOQUA, 40MR6 F-68, HEARTH D
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 35.6  -84.2   0.0 10
NRM      9 357.1  55.8  5.1  7.1    110  87.5 -156.7  4.9         3000
100G     9 356.7  57.3  4.2  5.8    171  86.5 -131.8  3.9         1340

1335   1   2 TELICO PROJECT, TOQUA, 40MR6 F-69, HEARTH F
 35.6  -84.2   0.0  8
NRM      9 350.9  52.6  3.3  4.9    215  82.1  170.8  3.5         1250
  COMMENTS: 100G of 3 cubes gave 0.0 deg. change in decl
  COMMENTS: uncertain curve assignment

1770   2   1 TELICO PROJECT, TOQUA, 40MR6 F-811
 35.6  -84.2  -0.1  8
NRM      7 357.0  59.4  2.3  3.1    846  84.3 -110.2  2.1         3000
100G     8 357.9  58.6  1.6  2.2   1445  85.9 -107.5  1.5         1400
  COMMENTS: sect.  41, structure 39, lower hearth

1341   1   2 TELICO PROJECT, TOQUA, 40MR6 F-93
 35.6  -84.2   0.0  8
NRM     TS 5.0  56.8  1.9  2.6    952  85.6 -148.5  1.8        1345
  COMMENTS: 50G to 400G of 3 cubes gave little change in
  Comments: direction

1342   1   1 TELICO PROJECT, TOQUA, 40MR6 F-93, HEARTH F
 35.6  -84.2   0.0 10
NRM     10 351.6  61.3  6.0  7.8     93  80.6 -125.6  5.0         3000
  COMMENTS: 100G of 4 cubes gave 1.7 deg. change in decl

1336   2   0 TELICO PROJECT, TOQUA, 40MR6 F-95
 35.6  -84.2   0.0  9
NRM      9 357.2  58.4  2.6  3.5    480  85.9 -115.9  2.4         3000
50G      8 357.7  58.4  3.0  4.0    423  86.1 -111.0  2.7         1400

1343   1   1 TELICO PROJECT, TOQUA, 40MR6 F-97
 35.6  -84.2   0.0  9
NRM      9 352.8  58.3  2.9  4.0    368  83.4 -141.6  2.7         1360
  COMMENTS: 100G of 2 cubes gave 0.9 deg. change in decl

1337   1   1 TELICO PROJECT, TOQUA, 40MR6 F-98
 35.6  -84.2   0.0  8
NRM      8 353.2  57.4  1.1  1.5   2940  84.1 -147.7  1.0         1355
  COMMENTS: 100G of 2 cubes gave 0.7 deg. change in decl

1339   3   0 TELICO PROJECT, TOQUA, 40MR6, HEARTH 1
 35.6  -84.2   0.0  8
NRM      8 351.4  58.1  1.9  2.5   1061  82.5 -146.8  1.7         3000
50G      9 353.4  58.0  1.4  1.9   1553  83.9 -142.1  1.3         1360
200G     7 352.0  57.7  1.4  1.8   2300  83.1 -148.9  1.3         3000

1340   1   2 TELICO PROJECT, TOQUA, 40MR6 HEARTH A
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 35.6  -84.2   0.0 10
NRM    10 355.0  56.7  1.6  2.2   1037  85.6 -149.6  1.5         1345
  COMMENTS: 50G to 400G of 3 cubes gave little
  COMMENTS: change in direction

1344   2   0 TELICO PROJECT, TOQUA, 40MR6 HEARTH B
 35.6  -84.6   0.0 12
NRM    12 356.8  61.7  2.7  3.5    364  82.4 -101.9  2.3         3000
50G    12 359.1  61.6  3.0  3.8    306  82.8  -89.4  2.5         1410

1333   2   1 TELICO PROJECT, TOQUA, 40MR6 HEARTH C
 35.6  -84.2   0.0  8
NRM     6 352.1  57.6  3.9  5.3    340  83.2 -149.4  3.6         3000
100G    7 352.1  57.1  3.1  4.3    414  83.3 -153.8  3.0         1360
  COMMENTS: 820LA40-830L140, sample 2, sec. 21, struc. 3

1338   2   1 TELICO PROJECT, TOQUA, 40MR6 HEARTH C
 35.6  -84.2   0.0  8
NRM     8 353.5  52.2  1.3  1.9   1525  84.0  160.5  1.4         3000
200G    8 353.2  51.4  1.2  1.8   1681  83.4  155.6  1.4         1300
  COMMENTS: 820L140-830L140, sect 21, struct 3, sample 1

1267   1   2 TELICO PROJECT, TOQUA, 40MR6 SECTION 2
 35.6  -84.2   0.0  8
NRM     8 355.8  55.9  1.4  2.0   1550  86.5 -158.5  1.4         1340
  COMMENTS: 100G to 400G of 2 cubes gave little
  COMMENTS: change in direction

1266   2   0 TELICO PROJECT, TOQUA, 40MR6 SECTION 21
 35.6  -84.2   0.0  8
NRM     8 353.4  57.1  2.1  2.8   8115  84.3 -150.4  1.9         3000
150G    8 353.1  56.7  1.5  2.0   1587  84.2 -155.1  1.4         1360

1268   1   2 TELICO PROJECT, TOQUA, 40MR6 SECTION 21
 35.6  -84.2   0.0  8
NRM     8 357.9  54.9  3.4  4.8    272  88.3 -179.2  3.4         1330
  COMMENTS: 50G to 800G of 2 cubes gave some
  COMMENTS: change in direction

 735   2   0 TURNER SITE, MO, STRUCTURE 23
 36.3  -90.6   5.3  8
NRM     8 354.7  59.4  1.4  1.9   1887  84.3 -136.1  1.3         3000
150G    8 353.5  55.5  1.0  1.4   3236  84.8  178.4  1.0         1290

 734   2   0 TURNER SITE, MO, STRUCTURE 33
 36.3  -90.6   5.3  8
NRM     7 355.4  62.2  2.9  3.7    648  82.0 -115.4  2.8         3000
150G    7 353.4  58.4  1.0  1.3   4678  84.0 -150.1  0.9         1360
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 733   2   0 TURNER SITE, MO, STRUCTURE 41
 36.3  -90.6   5.3  8
NRM      8 354.8  57.0  2.6  3.6    500  85.6 -161.4  2.5         3000
150G     7 351.4  56.3  2.2  3.0    846  83.1 -173.3  2.1         1265

 986   2   1 WADDELLS MILL POND, FL
 30.9  -85.4   2.2  8     200-300
NRM      8   2.2  49.7  1.7  2.6    811  88.1   16.5  1.9         3000
100G     7   1.1  48.9  0.9  1.4   3294  84.1   86.4  1.1          250
  COMMENTS: hearth level 7 area C, 8-JA-65, lower mound

 987   1   3 WADDELLS MILL POND, FL
 30.9  -85.4   2.2  8     300-400
NRM      8 357.9  54.6  4.8  6.8    132  85.5 -107.5  4.8         3000
  COMMENTS: floor level 5 area C, 8-JA-65 upper
  COMMENTS: 50G to 800G of 3 cubes gave little
  COMMENTS: change in direction

1811   3   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 11   -3500 to -3000
NRM     11 331.3  63.3  4.8  6.1    143  65.7 -144.2  3.8         3000
150G     8 337.7  62.3  4.7  6.0    208  70.4 -143.5  3.9         3000
800G     8 351.3  60.4  3.2  4.2    395  80.2 -130.4  2.8        -3250
  COMMENTS: Feature 6, 22IT539

1822   2   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 12   -3500 to -3000
NRM     10 352.4  54.5  3.1  4.4    243  83.7 -169.4  3.1        -3250
100G    10 353.0  55.1  3.4  4.8    209  84.1 -163.2  3.3         3000
  COMMENTS: feat. 6, strat. 9, 22IT539

1823   2   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9  9   -3500 to -3000
NRM      9  11.2  58.7  5.0  6.8    128  79.7  -31.4  4.6         3000
100G     8   2.5  60.2  2.3  3.1    754  82.9  -72.7  2.0        -3250
  COMMENTS: feat. 6, strat. 8, 22IT539

1824   3   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 10   -3500 to -3000
NRM     10   8.3  59.9  7.6 10.1     53  80.8  -45.2  6.7         3000
100G     8   0.5  58.3  4.3  5.8    198  85.3  -83.4  3.9         3000
400G     8   0.1  57.5  3.7  5.1    254  86.1  -86.9  3.5        -3250
  COMMENTS: feature 6, strat. 6, 22IT539

1825   1   2 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 10
NRM      8  60.5  49.0 73.0  111      1  39.3  -11.1 83.7         3000
  COMMENTS: feature 108, 22IT539
  COMMENTS: 50G of 4 cubes gave 44.8 deg. change in decl
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1839   2   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 12   -3500 to -3000
NRM    11   0.9  53.5  2.1  3.0    465  89.2   22.2  2.1        -3250
100G    8   0.2  52.6  3.1  4.5    289  88.9   84.9  3.3         3000
  COMMENTS: feature 111, G 7-14-80, 22IT539

1840   3   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 12   -3500 to -3000
NRM    11   5.7  58.7  2.6  3.4    388  83.2  -48.3  2.3         3000
150G    8   0.3  57.4  2.7  3.7    477  86.3  -85.4  2.5         3000
200G    8 359.9  59.4  2.3  3.2    638  86.2  -89.9  2.2        -3250
  COMMENTS: feature 73, strat. 9, 22IT539

1841   2   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 12   -7500 to -4000
NRM    11   9.1  52.4  3.6  5.3    142  82.3    8.6  3.8         3000
100G    8   5.5  48.2  2.9  4.5    262  83.1   47.6  3.4        -7450
  COMMENTS: feature 95, strat. 5, 22IT539

1842   2   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 12   -3500 to -3000
NRM    10 358.5  48.9 13.4 20.2     11  85.4  108.4 15.3         2500
50G     7 356.4  45.7 19.6 30.7      7  82.1  116.1 24.1         3000
  COMMENTS: feature 121, 22IT539

1843   2   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 11   -3500 to -3000
NRM     9  12.2  52.0  8.2 12.0     36  79.7    7.7  8.8         3000
50G     8  11.6  56.9 11.4 15.8     27  80.1  -20.8 10.8        -3000
  COMMENTS: feature 119

1845   3   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 12   -3500 to -3000
NRM    12   2.4  53.0  2.1  3.0    392  87.9   20.6  2.2         3000
100G    8 359.1  51.0  2.1  3.1    598  87.3  107.2  2.3         3000
150G    8 359.8  48.3  1.6  2.4    929  85.0   93.4  1.8        -3250
  COMMENTS: feature 120, strat. 16, 22IT539

1846   3   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 12   -3500 to -3000
NRM    12   3.4  54.7  4.8  6.8     83  87.0  -17.8  4.8         3000
150G    8 356.8  49.7  3.8  5.7    166  85.3  127.8  4.3         3000
200G    8 356.8  48.6  3.4  5.1    204  84.5  122.4  3.9        -3250
  COMMENTS: feature 120, strat. 19, 22IT539

1847   2   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 12   -3500 to -3000
NRM    12 358.9  45.5  1.5  2.3    575  82.6   99.1  1.8        -3250
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50G      8 357.6  44.4  2.5  4.0    311  81.5  106.5  3.1         3000
  COMMENTS: feature 120, strat. 22, 22IT539

1848   3   1 WALNUT MOUND, UNIV. OF W. FLORIDA
 34.3  -88.4   3.9 12   -3500 to -3000
NRM    11   4.2  55.3  2.4  3.3    387  86.3  -24.1  2.3         3000
100G    7   2.6  51.9  1.3  1.9   1808  87.2   40.3  1.4         3000
200G    6   2.5  50.0  0.6  0.9  10931  85.9   60.7  0.6        -3250
  COMMENTS: feature 120, strat. 123, 22IT539

1821   4   1 WALNUT MOUND, UNIV.OF W. FLORIDA
 34.3  -88.4   3.9 12   -3500 to -3000
NRM    12 353.7  54.9  4.2  5.9    110  84.7 -164.7  4.2         3000
200G    8 351.1  56.9  2.5  3.4    550  82.1 -151.8  2.4         3000
400G    8 349.7  56.1  2.3  3.2    618  81.3 -160.1  2.2        -3250
600G    7 351.4  57.6  2.8  3.9    526  82.0 -146.1  2.6         3000
  COMMENTS: feat. 6, 22IT539, strat. 7
```

**APPENDIX 10. Mesoamerica**

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 573   4   0 ACAPULCO, MEX., FIRED CLAY FLOOR
 16.4  -92.7   7.0 11    -400 to -100
NRM     7   6.2  29.0  3.1  5.6    141  83.9    5.0  5.1        3000
100G    8   5.4  26.1  4.1  7.5     65  84.2   23.6  6.9        3000
150G    8   6.2  26.0  4.1  7.6     67  83.4   20.7  7.0        3000
50G     7   4.9  28.6  3.1  5.6    144  85.1   10.5  5.1        2500

1023   1   2 ALTA VISTA, MEX., STR 1, SE UNIT 74-2
 23.5 -104.0  10.0  6     300
NRM     5   9.4  34.3  0.9  1.6   3037  80.1   12.4  1.4         300
  COMMENTS: 50G to 400G of 3 cubes gave little
  COMMENTS: change in direction

1021   1   3 ALTA VISTA, MEX., STR 1-A, UNIT 74-7
 23.5 -104.0  10.0  8     200-500
NRM     8  20.8  26.8 26.0 47.8      3  68.3    7.7 44.0        3000
  COMMENTS: plastered wall
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

1026   1   3 ALTA VISTA, MEX., STR 2
 23.5 -104.0  10.0  8     300-500
NRM     8 346.8  25.5  3.1  5.8    107  73.9  129.3  5.4        3000
  COMMENTS: room 0, unit 74-70, grid G5
  COMMENTS: 50G to 400G of 4 cubes gave little
  COMMENTS: change in direction

1027   1   3 ALTA VISTA, MEX., STR 2, ROOM 0
 23.5 -104.0  10.0  8     300-400
NRM     8 351.4  28.1  1.4  2.6    540  78.2  120.9  2.4         350
  COMMENTS: unit 74-70, grid G5. Lime plaster wall
  COMMENTS: 50G to 400G of 3 cubes gave little
  COMMENTS: change in direction

1022   0   2 ALTA VISTA, MEX., STR 74-17, UNIT 1-A
 23.5 -104.0  10.0  0
  COMMENTS: sample collected as blocks in the field, unable
  COMMENTS: to cube, no data available at this time

1024   1   2 ALTA VISTA, MEX., STR. 3, UNIT 87
 23.5 -104.0  10.0  8     200-900
NRM     8   7.6  14.5 41.2 80.4      1  72.3   50.3 78.5        3000
  COMMENTS: 50G to 150G of 4 cubes gave large
  COMMENTS: changes in direction

1025   1   3 ALTA VISTA, MEX., STR. 3, UNIT. 74-92
 23.5 -104.0  10.0  8     300-500
```

```
NRM     8   4.0  31.0  4.3  7.7     65  82.2   46.1  6.9         3000
  COMMENTS: double hearth, room 2
  COMMENTS: 50G to 400G of 4 cubes gave little
  COMMENTS: change in direction

 409   3   0 BRAWBEHL, MEX., FEAT 69-21
 16.9  -96.3   8.0  8    -150-150
NRM     8  52.5  42.6  5.5  8.9     60  40.6  -24.6  7.2         3000
NRM     8  56.7  36.1  4.8  8.3     61  36.3  -19.1  7.1         3000
NRM     8  26.3  43.4  6.5 10.4     45  64.1  -29.8  8.3         2500

 408   3   0 BRAWBEHL, MEX., FEAT 69-27
 16.9  -96.3   8.0  8    -150-150
NRM     6 357.3  36.0  1.9  3.3    542  86.0 -135.8  2.9          100
NRM     8   0.3  38.6  3.6  6.1    117  85.1  -92.5  5.2         3000
50G     8   2.3  35.7  4.0  6.8     90  86.4  -59.4  5.9         3000

1519   3   1 CACAXTLA, MEX. TLAXCALA
 19.2  -98.3   8.6  8     800-900
NRM     8 356.6  24.6  1.9  3.5    287  82.9  109.2  3.3         3000
50G     7 357.1  24.0  0.6  1.1   3465  82.8  104.6  1.0         3000
100G    7 357.1  22.9  0.5  0.9   4730  82.2  103.1  0.9          850
  COMMENTS: burned wall-SW corner

1521   2   1 CACAXTLA, MEX. TLAXCALA
 19.2  -98.3   8.6  8     800-900
NRM     8 359.4  26.3  1.6  2.9    435  84.6   87.7  2.7         3000
50G     8 358.9  22.1  0.8  1.5   1608  82.2   89.7  1.4          850
  COMMENTS: burned wall-corner

1523   4   0 CACAXTLA, MEX. TLAXCALA
 19.2  -98.3   8.6  8     800-900
NRM     8   3.9  75.7 39.4 47.9      7  46.2  -95.8 23.3         3000
100G    8 357.5  23.4  0.7  1.3   1959  82.6  100.9  1.3         3000
150G    8 357.3  22.8  0.6  1.2   2408  82.2  101.6  1.1          850
200G    8 357.2  22.8  0.7  1.3   2068  82.2  102.0  1.2         3000

1524   4   0 CACAXTLA, MEX. TLAXCALA
 19.2  -98.3   8.6  8     800-900
NRM     8 332.7  22.6  8.2 15.4     15  62.7  159.9 14.6         3000
150G    8 353.2  21.5  0.9  1.7   1206  79.6  121.6  1.6          850
200G    8 353.6  21.3  0.9  1.7   1221  79.8  119.4  1.6         3000
400G    8 354.6  21.4  0.8  1.5   1453  80.3  115.1  1.5         3000

1522   3   0 CACAXTLA, MEX. TLAXCALA, ADOBE WALL
 19.2  -98.3   8.6  8     800-900
NRM     8 354.3  26.0  1.3  2.4    619  87.2  127.4  2.2         3000
50G     8 356.4  23.4  1.0  1.9   1017  82.1  108.5  1.7         3000
100G    8 356.6  23.2  0.9  1.7   1153  82.1  106.6  1.6          850
```

```
1520   3   0 CACAXTLA, MEX. TLAXCALA, BURNED WALL
 19.2  -98.3   8.6  8     800-900
NRM      8 355.2  23.3  0.5  0.9   4553  81.5  115.7  0.8        3000
50G      6 355.1  22.5  0.5  1.0   4909  81.1  114.4  1.0        3000
50G      8 355.3  22.5  0.4  0.8   5853  81.2  113.3  0.7         850

 599   1   2 CALIPAN, MEX.
 18.3  -97.2   8.5  8     900-1500
NRM      8   3.4  53.0  5.5  8.0     94  74.4  -86.4  5.7        3000
  COMMENTS: 50G to 150G of 2 cubes gave
  COMMENTS: 5.4 deg. change in decl

 744   1   1 CERRO ATZOMPA, MEX.
 17.0  -96.7   8.2  8     400-700
NRM      8 354.9  34.4  1.9  3.4    350  84.8 -164.1  3.0         600
  COMMENTS: 150G of 2 cubes gave some change in direction

 608   1   0 CERRO ATZOMPA, MEX., FIRED WALL ON PATIO
 17.0  -96.7   8.2  8     600
NRM      8 344.0   6.2 21.9 43.6      3  69.0  133.6 43.4        3000

1017   1   2 CERRO DELGADO, MEX., CAVE 4, ROOM 2
 18.7  -98.8   8.7  8    1000-1550
NRM      8 350.3  35.7  2.9  5.0    169  80.8  179.4  4.3        3000
  COMMENTS: 50G to 200G of 4 cubes gave large
  COMMENTS: changes in direction

1530   3   0 CERRO SAN GREGORIO, MEX., T-81, HORRO 1
 19.3  -98.3   8.7  8    1200-1300
NRM      7 355.3  37.0  1.0  1.6   1859  85.4 -169.9  1.4        3000
100G     8 356.3  38.4  1.1  1.9   1174  85.8 -153.6  1.6        3000
150G     8 356.5  38.2  1.0  1.6   1615  86.0 -153.4  1.4        1250

1531   5   0 CERRO SAN GREGORIO, MEX., T-81, KILN
 19.3  -98.3   8.7  8    1200-1500
NRM      8 358.1  37.9  3.0  5.1    167  87.3 -138.8  4.3        3000
100G     8 357.6  39.5  1.4  2.3    824  86.1 -133.1  1.9        3000
150G     8 357.6  39.8  1.0  1.7   1464  86.0 -132.0  1.4        1350
200G     8 358.0  40.1  1.1  1.8   1392  86.0 -125.4  1.5        3000
400G     8 357.7  41.1  1.3  2.1    996  85.2 -124.6  1.8        3000

1532   5   0 CERRO SAN GREGORIO, MEX., T-81, KILN
 19.3  -98.3   8.7  8    -200-200
NRM      8 357.5  37.5  1.1  1.8   1332  87.1 -151.0  1.5        3000
100G     8 358.1  38.6  0.7  1.1   3512  86.9 -133.9  0.9        3000
150G     8 358.0  38.5  0.6  1.0   4374  86.9 -135.8  0.8           1
200G     7 357.9  38.6  0.7  1.2   3561  86.8 -136.6  1.0        3000
200G     8 357.9  38.5  0.6  1.0   3940  86.9 -137.2  0.9        3000
```

1533   3   0 CERRO SAN GREGORIO, MEX., T-81, KILN
 19.3  -98.3   8.7  8    1200-1500
NRM      8   3.9  34.0  1.4  2.5    656  86.3    0.5  2.2          3000
100G     8   2.1  33.1  0.5  0.9   4723  87.7   23.4  0.8          1350
150G     8   2.2  32.9  0.6  1.1   3451  87.6   24.5  0.9          3000

1534   5   0 CERRO SAN GREGORIO, MEX., T-81, KILN
 19.3  -98.3   8.7  8    1000-1500
NRM      8 359.1  40.2  0.9  1.5   2012  86.3 -111.1  1.2          3000
50G      8 357.1  37.7  0.4  0.7   7662  86.7 -152.9  0.6          1250
100G     6 357.2  37.7  0.6  1.0   6104  86.8 -152.0  0.9          3000
150G     6 357.1  37.5  0.6  1.0   6653  86.7 -155.3  0.8          3000
200G     6 357.4  37.7  0.6  1.1   5307  86.9 -150.6  0.9          3000

 596   3   1 CERRO ZAPOTECAS, MEX.
 19.0  -98.3   8.6  8     600-900
NRM      8   0.7  30.4  1.2  2.1    829  87.3   66.9  1.9          3000
100G     5   1.4  33.9  0.8  1.3    435  88.6    8.9  1.2           750
150G     7   1.1  34.0  0.5  0.9   5466  88.8   11.0  0.8          3000
  COMMENTS: mound 2, excav A, bottom of level 6

 595   1   2 CERRO ZAPOTELCAS, MEX.
 19.0  -98.3   8.6  8     600-900
NRM      8  11.5  39.0  4.3  7.2     86  78.8  -26.2  6.0          3000
  COMMENTS: Mound 2, excav. A, bottom of level 5
  COMMENTS: Arch date is "Late Classic"

 570   1   0 CHACHI, MEX., FIRED ADOBE WALL
 16.4  -92.7   7.0  8     800-1000
NRM      8 356.3  10.9  1.0  1.9    855  78.5  105.9  1.9           900

 571   4   0 CHACHI, MEX., FIRED FLOOR
 16.4  -92.7   7.0  9     800-1000
NRM      9 351.9  19.4  3.4  6.5     70  79.8  139.4  6.2          3000
150G     2   0.2  23.6  1.5  2.9   8389  85.9   84.4  2.7          3000
200G     2 356.8  24.8  0.7  1.3  40329  85.4  129.9  1.2           900
400G     2   3.7  35.7  1.8  3.1   8525  85.2  -46.9  2.7          3000

 572   3   0 CHACHI, MEX., FIRED FLOOR
 16.4  -92.7   7.0  8    -600 to -400
NRM      2   5.8  42.0  1.3  2.1  21845  80.5  -59.0  1.7          -500
100G     8 354.7  36.5  4.0  6.8     90  83.6 -144.5  5.9          3000
800G     3   5.0  54.1 10.6 15.1    133  71.2  -79.7 10.7          3000

 575   3   0 CHACHI, MEX., FIRED FLOOR
 16.4  -92.7   7.0  7     800-1000
NRM      7   4.1  33.0  5.6  9.8     50  85.7  -25.5  8.6          3000
150G     7   1.5  26.5  4.5  8.3     77  87.2   55.9  7.7          2500

```
100G    7   2.2  30.1  6.7 12.1     32  87.9    2.9 10.9        3000

 743   2   0 CHALCATZINGO, MEX.
 18.7  -98.8   8.7  8    -800
NRM     8   5.6  41.2  2.7  4.4    233  82.7  -52.6  3.6        3000
100G    8   4.8  41.8  2.1  3.4    404  83.0  -60.1  2.8        -800

1020   0   2 CHALCATZINGO, MEX., F-2, FIREPIT
 18.7  -98.8   8.7  0
  COMMENTS: sample collected as blocks in field, unable
  COMMENTS: to cube, no data available at this time

1018   1   2 CHALCATZINGO, MEX., F-4, STONED LINED KILN
 18.7  -98.8   8.7  8     600-1000
NRM     8 351.6  20.0  1.3  2.5    557  78.3  126.6  2.4         800
  COMMENTS: 50G to 200G of 3 cubes gave some
  COMMENTS: change in direction

1019   0   2 CHALCATZINGO, MEX., F-7, ROCK LINED KILN
 18.7  -98.8   8.7  0
  COMMENTS: Sample collected as blocks in field, unable
  COMMENTS: to cube, no data available at this time

1016   1   3 CHALCATZINGO, MEX., HORNO 1
 18.7  -98.9   8.7  8    1000-1550
NRM     9   2.4  33.9  0.9  1.6   1387  87.7   -6.3  1.4        3000
  COMMENTS: rock lined hearth
  COMMENTS: 50G to 600G of 2 cubes gave little
  COMMENTS: change in direction

 400   2   0 CHOLULA, MEX.
 19.0  -98.3   8.6  8    1325-1519
NRM     8 358.8  38.0  6.9 11.6     39  87.4 -124.1  9.8        2500
NRM     7   4.5  36.9  5.9 10.1     50  85.5  -29.6  8.7        3000

 597   1   1 CHOLULA, MEX.
 19.0  -98.3   8.6  8    1325-1500
NRM     8 359.3  19.7  0.9  1.7   1119  81.1   86.4  1.7        1410
  COMMENTS: 150G of 2 cubes gave 0.8 deg. change in decl

 302   5   0 CHOLULA, MEX., ACOSTA'S TRENCH 19
 19.0  -98.3   8.6  7    1325-1519
NRM     5 347.9  33.3  2.7  4.7    337  78.5  169.5  4.2        3000
NRM     4 349.1  29.6  2.4  4.4    540  79.1  156.5  4.0        3000
150G    3 344.4  31.0  1.2  2.2   3995  75.0  165.5  2.0        3000
400G    5 348.9  29.6  1.8  3.2    709  79.0  156.9  2.9        1230
150G    5 344.3  30.4  1.8  3.3    669  74.8  164.2  3.0        3000

 303   1   1 CHOLULA, MEX., ACOSTA`S OVEN
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```
 19.0  -98.3   8.6  8    1550-1650
NRM     8 352.2  36.3  1.0  1.7   1362  82.5 -178.1  1.0         1550
  COMMENTS: 150G of 2 cubes gave 0.1 deg. change in decl

 304   1   1 CHOLULA, MEX., ACOSTA`S OVEN
 19.0  -98.3   8.6  8    1550-1650
NRM     8 352.0  36.3  0.7  1.2   2803  82.4 -178.1  1.0         1550
  COMMENTS: 150G of 2 cubes gave 1.8 deg. change in decl

 301   1   1 CHOLULA, MEX., UA-1
 19.0  -98.3   8.6  8
NRM     6  14.7  22.7  3.7  7.0    104  74.1   16.4  6.6         3000
  COMMENTS: 150G of 2 cubes gave 26.4 deg. change in decl

 305   3   0 CHOLULA, MEX., UA-1, OVEN
 19.0  -98.3   8.6  8    1550-1650
NRM     7 352.4  36.4  2.0  3.4    439  82.8 -177.3  2.9         3000
NRM     7 353.6  36.3  2.1  3.6    374  83.9 -176.5  3.1         3000
150G    8 348.1  35.9  1.2  2.0   1049  78.8  178.1  1.7         1550

 300   4   0 CHOLULA, MEX., UA-1, POT SHERD BASE
 19.0  -98.3   8.6  6    1550-1650
NRM     6   3.8  24.6  2.9  5.4    176  82.9   50.5  5.1         3000
NRM     6   3.5  24.3  2.9  5.4    178  82.9   52.7  5.0         3000
150G    6 351.2  33.7  1.3  2.3   1119  81.7  169.2  2.0         1550
200G    3 351.9  33.1  2.8  5.0    794  82.3  165.9  4.4         3000

1163   1   3 COMITAN, CHIAPAS, MEX., CONETA
 15.4  -91.8   6.5  8    1575
NRM     8   6.2  37.7  4.0  6.8     94  81.8  -46.9  5.7         3000
  COMMENTS: excavation unit #24 (primitive church) TR-95
  COMMENTS: 50G to400G of 4 cubes gave large
  COMMENTS: changes in direction

1164   1   3 COMITAN, CHIAPAS, MEX., CONETA
 15.4  -91.8   6.5  8    1680
NRM     8   1.4  41.9 10.5 17.0     17  81.1  -83.3 13.9         3000
  COMMENTS: excavation unit #23 (domestic home) TR-95
  COMMENTS: 50G to 400G of 3 cubes gave large
  COMMENTS: changes in direction

1165   1   3 COMITAN, CHIAPAS, MEX., CONETA
 15.4  -91.8   6.5  8    1680
NRM     8   1.3  54.5  9.6 13.7     34  70.4  -88.5  9.7         3000
  COMMENTS: excavation unit #25 TR-95
  COMMENTS: 50G to 400G of 3 cubes gave large
  COMMENTS: changes in direction

 616   1   0 CUICUILCO, MEX., LAVA
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 19.4  -99.2   8.8 14
NRM    14 355.0  41.4  4.0  6.5     56  83.6 -145.3  5.3        3000

1041   1   2 DAINI, MEX., BURNED ADOBE WALL
 20.0  -99.3   8.9  9
NRM     9 336.9  40.6  5.1  8.4     56  68.3 -176.7  6.9        3000
  COMMENTS: 50G to 800G of 4 cubes gave little
  COMMENTS: change in direction

 776   1   2 EL PARTON, GUAT. EP-1-1-4, 1074
 15.1  -90.2   6.5  8    -200-200
NRM     8 358.2  23.6  0.7  1.4   1781  86.7  122.6  1.3           1
  COMMENTS: 100G and 150G of 2 cubes gave litle
  COMMENTS: change in direction

1043   1   3 EL TESORO, MEX.
 20.1  -99.3  10.0  6
NRM     6 359.3  36.9  2.1  3.6    469  89.2 -152.7  3.1        1600
  COMMENTS: arch date is colonial
  COMMENTS: 50G to 200G of 3 cubes gave little
  COMMENTS: change in direction

1042   0   2 EL TESORO, MEX., HORNO COLONIAL PIEDRA
 20.1  -99.3  10.6  0
  COMMENTS: sample collected as blocks in field, unable
  COMMENTS: to cube, no data available at this time

 485   3   0 EL TRAPICHE, EL SALVADOR, MOUND E-3-1
 13.3  -89.5   6.3  8    -300-100
NRM     8  12.9  38.4  3.8  6.4    107  75.2  -35.3  5.4        3000
100G    8 358.5  37.2  1.8  3.1    428  82.4 -100.1  2.7        3000
150G    8 358.2  37.2  1.8  3.1    450  82.3 -102.1  2.6        -100

 486   1   1 EL TRAPICHE, EL SALVADOR, MOUND E-3-1
 13.3  -89.5   6.3  8   -1100 to -900
NRM     6   6.8  48.7  4.2  6.4    188  72.5  -69.4  4.9        3000
  COMMENTS: 150G of 2 cubes gave 0.3 deg. change in decl

 747   2   0 FABRICA SAN JOSE, MEX., FEAT 16
 17.3  -96.8   8.2  8    -500 to -300
NRM     8   8.3  24.2  3.2  6.0    100  80.8   22.2  5.6        3000
100G    8   7.6  20.8  3.8  7.1     67  80.1   33.8  6.8        2500

 751   1   2 FABRICA SAN JOSE, MEX., FEAT 42
 17.3  -96.8   8.2  8    -600 to -400
NRM     8   6.1  22.5  1.6  2.9    399  81.9   35.7  2.8        -200
  COMMENTS: 150G of 2 cubes gave little
  COMMENTS: change in direction
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```
 752   2   0 FABRICA SAN JOSE, MEX., FEAT 42
 17.3  -96.8   8.2  9    -850 to -500
NRM      9   7.0  38.0  3.1  5.2    138  82.3  -39.5  4.4         3000
100G     9   8.4  35.1  3.3  5.6    112  81.8  -22.5  4.9         2500

 762   1   1 FABRICA SAN JOSE, MEX., FEAT 48
 17.3  -96.8   8.2  8    -850 to -500
NRM      6   8.1  36.3  2.1  3.6    462  81.8  -28.5  3.1         -675
  COMMENTS: 150G of 2 cubes gave a large change in direction

 753   1   1 FABRICA SAN JOSE, MEX., FEAT 51
 17.3  -96.8   8.2  8    -600 to -400
NRM      8   5.1  18.9  4.9  9.4     39  80.9   49.2  9.0         3000
  COMMENTS: 150G of 2 cubes gave a lage change in direction

 750   2   0 FABRICA SAN JOSE, MEX., FEAT 53
 17.3  -96.8   8.2  8    -600 to -400
NRM      8   5.6  30.2  2.3  4.1    223  84.5    3.7  3.7         3000
100G     8   6.2  27.7  1.9  3.5    293  83.5   15.8  3.2         -600

 763   4   0 FABRICA SAN JOSE, MEX., FEAT 55
 17.3  -96.8   8.2  8    -750 to -500
NRM      7   7.3  24.8  2.0  3.8    297  81.8   23.6  3.5         3000
100G     8   5.5  25.3  2.8  5.3    129  83.4   29.6  4.9         3000
150G     8   5.9  24.2  2.3  4.2    199  82.6   31.3  3.9         3000
200G     8   8.3  22.1  2.1  4.0    217  80.1   28.1  3.8         -675

 746   1   1 FABRICA SAN JOSE, MEX., FEAT 57
 17.3  -96.8   8.2  8    -500 to -300
NRM      8   3.4  30.5  4.5  8.2     58  86.6    8.1  7.3         3000
  COMMENTS: 50G of 2 cubes gave a large change in direction

 756   2   0 FABRICA SAN JOSE, MEX., FEAT 58
 17.3  -96.8   8.2  8    -750 to -500
NRM      7   1.3  45.4  3.5  5.5    198  80.3  -89.7  4.3         3000
100G     7   2.1  37.4  2.7  4.5    248  85.9  -68.3  3.8         -625

 757   1   1 FABRICA SAN JOSE, MEX., FEAT 58
 17.3  -96.8   8.2  8    -400 to -300
NRM      8   4.7  37.0  4.2  7.1     84  84.4  -44.4  6.1         3000
  COMMENTS: 100G of 2 cubes gave some change in direction

 759   2   0 FABRICA SAN JOSE, MEX., FEAT 59
 17.3  -96.8   8.2  8    -850 to -500
NRM      8   8.5  39.2  4.2  7.0     90  80.3  -39.6  5.9         3000
100G     7   4.1  32.2  2.9  5.1    177  86.1   -9.9  4.6         2500

 758   2   0 FABRICA SAN JOSE, MEX., FEAT 61
 17.3  -96.8   8.2  8    -750 to -500
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NRM      8   7.8  30.2  1.5  2.8    501  82.5    0.4  2.5         3000
100G     7   7.6  26.7  0.9  1.6   1639  82.1   15.9  1.5         -625

 760   2   0 FABRICA SAN JOSE, MEX., FEAT 62
 17.3  -96.8   8.2  8    -600 to -400
NRM      8   7.1  36.7  3.8  6.5    102  82.6  -32.8  5.5         3000
100G     8   7.1  29.7  4.6  8.4     55  83.0    3.7  7.6         2500

 761   2   0 FABRICA SAN JOSE, MEX., FEAT 64
 17.3  -96.8   8.2  8    -600 to -400
NRM      8   2.9  26.0  2.9 26.0    192  85.5   44.8  4.0         3000
100G     7   3.8  24.5  1.9  3.6    318  84.2   43.8  3.4         -500

 780   2   0 FABRICA  SAN JOSE, MEX., FEAT 69
 17.3  -96.8   8.2  8    -950 to -500
NRM      6   4.2  33.8  3.5  6.1    157  85.9  -24.6  5.4         2500
50G      8   5.5  33.1 12.0 21.1     10  84.7  -16.0 18.6         3000

 444   1   0 FORT MITLA, MEX.
 16.9  -96.3   8.0  8
NRM      7   1.4  32.7  0.9  1.7   1692  88.4  -39.1  1.5         1500

 458   2   0 GUAT., LOT 01
 14.7  -90.5   6.5  7       0-300
NRM      7 358.4  25.1  1.1  2.1    980  87.8  136.4  1.9         3000
150G     6 354.1  25.5  0.8  1.5   2459  84.1  167.7  1.4          150

 539   1   1 HUAPALCALCO, MEX., FEAT 30, ROOM 2, HEARTH
 20.1  -98.4   8.7  8     600-900
NRM      8 358.8  24.2  1.1  2.1    829  82.5   90.4  1.9          750
  COMMENTS: 150G of 2 cubes gave 0.8 deg. change in decl

 538   3   0 HUAPALCALCO, MEX., FEAT 30, ROOM 8, HEARTH
 20.1  -98.4   8.7  8     600-900
NRM      7   2.1  28.6  2.8  5.1    169  85.1   56.6  4.7         3000
100G     7   1.3  26.2  3.0  5.5    143  83.6   70.6  5.1         2500
150G     7   1.4  26.0  3.4  6.3    108  83.5   69.7  5.8         3000

 563   3   0 HUAPALCALCO, MEX., FEAT 30, WALL 1
 20.1  -98.4   8.7  9     600-900
NRM      8 359.7  25.0  0.7  1.2   2366  83.0   83.8  1.1         3000
100G     7   0.0  24.8  0.7  1.3   2447  82.9   81.3  1.2          750
150G     8 359.9  25.1  0.6  1.2   2633  83.1   82.5  1.1         3000

 567   2   1 HUITZO, MEX., HVIT, OVEN
 17.3  -96.8   8.2  9    1500-1940
NRM      9   7.8  41.2  0.9  1.5   1675  80.3  -49.0  1.3         2500
150G     2   6.1  40.2  4.5  7.5   1621  82.0  -52.0  6.2         3000
  COMMENTS: Possibly modern
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1033   1   2 IXTEPETE, MEX., STR 1, 1ST BUILDING STAGE
 20.6 -103.4   9.5  8     700-900
NRM      8 356.6  25.0  2.1  3.8    242  81.9  100.7  3.6          800
  COMMENTS: 50G to 200G of 4 cubes gave little
  COMMENTS: change in direction

 470   3   0 KAMINALIUYU, GUAT., AREA 46-23-103, FEAT. 238
 14.7  -90.5   6.5  8     500-800
NRM      8 354.7  32.6  0.7  1.2   2577  84.0 -148.9  1.1         3000
NRM      5 355.8  30.9  0.5  0.9   9425  85.5 -154.5  0.8          650
100G     5 355.7  31.2  0.8  1.4   3961  85.3 -153.0  1.2         3000

 469   2   1 KAMINALIUYU, GUAT., AREA 46-32-133
 14.7  -90.5   6.5 10     600-900
NRM      9 358.9   8.7  0.3  0.6   6690  79.6   95.6  0.6         3000
NRM      8 359.4   8.3  0.3  0.6  10223  79.5   92.8  0.5          750
  COMMENTS: Amatle 2, feat. Websters Mound

 279   3   0 KAMINALJUYU, GUAT.
 14.7  -90.5   6.5  7
NRM      7 342.9  33.9  1.9  3.4    425  73.2 -164.8  2.9         2500
NRM      5 350.8  23.9  1.8  3.4    585  80.8  166.9  3.2         3000
150G     5 356.9  25.2  5.2  9.6     74  86.7  153.5  8.9         3000

 587   2   1 KAMINALJUYU, GUAT.
 14.7  -90.5   6.5  8    -200-200
NRM      8 358.3  29.4  1.7  3.1    384  88.0 -147.9  2.8         3000
100G     8 358.7  28.2  1.7  3.1    394  88.7 -166.8  2.8            1
  COMMENTS: 46-33-358, level 5 in test pit

 772   1   2 KAMINALJUYU, GUAT.
 14.7  -90.5   6.5  8     450-550
NRM      7 358.6  32.3  0.4  0.8   8118  86.9 -115.8  0.7          500
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction

 773   4   0 KAMINALJUYU, GUAT.
 14.7  -90.5   6.5 12     400-900
NRM     12 341.2  27.2  1.8  3.3    211  71.8 -179.0  3.0         3000
50G      5 346.8  26.4  1.0  1.9   1977  77.1  177.7  1.7         3000
100G     6 353.2  25.5  1.1  2.1   1157  83.3  169.1  2.0         3000
150G     6 353.7  25.4  1.0  1.8   1670  83.8  167.6  1.6          650

 774   2   0 KAMINALJUYU, GUAT.
 14.7  -90.5   6.5  8     550-900
NRM      8   2.8  28.7  0.9  1.7   1318  87.2  -13.6  1.5         3000
50G      8 359.1  26.9  0.6  1.1   3164  89.0  152.2  1.0          725
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 775   2   0 KAMINALJUYU, GUAT.
 14.7  -90.5   6.5  8     550-650
NRM      7 353.0  18.8  0.9  1.8   1222  81.5  144.0  1.7        3000
100G     7   0.2  19.2  0.9  1.7   1413  85.2   86.6  1.6         600

 777   2   0 KAMINALJUYU, GUAT.
 14.7  -90.5   6.5  8     400-800
NRM      8   9.2  42.8  1.9  3.1    498  76.7  -51.5  2.5        3000
100G     8   8.0  35.9  0.7  1.2   2687  80.7  -35.8  1.1         600

 778   2   0 KAMINALJUYU, GUAT.
 14.7  -90.5   6.5  8     400-550
NRM      7   5.9  36.7  0.5  0.8   7101  81.9  -46.7  0.7        3000
100G     7   4.8  34.3  0.3  0.5  22713  83.8  -42.8  0.4         475

 579   1   1 KAMINALJUYU, GUAT., 46-23-103, FEAT. 246A
 14.7  -90.5   6.5  8
NRM      7 316.3  32.8  3.2  5.7    147  48.0 -170.0  5.0        3000
  COMMENTS: duplicate set

 580   1   2 KAMINALJUYU, GUAT., 46-23-103, FEAT. 246B
 14.7  -90.5   6.5  6     300
NRM      6   8.2  22.1  0.8  1.6   1993  81.4   20.5  1.5        3000
  COMMENTS: +90 deg added to decl
  COMMENTS: duplicate set, same as 476

 581   1   2 KAMINALJUYU, GUAT., 46-23-103, FEAT. 247
 14.7  -90.5   6.5  1     300
NRM      1  24.7  35.5  241  417      0  65.9  -15.8  360        3000
  COMMENTS: +90 deg added to decl
  COMMENTS: duplicate set, same as 478

 582   1   1 KAMINALJUYU, GUAT., 46-23-103, FEAT. 261A
 14.7  -90.5   6.5  8     100-400
NRM      8 309.0  33.9  4.0  7.1     81  41.2 -168.5  6.2        3000
  COMMENTS: duplicate set, same as 480

 472   7   1 KAMINALJUYU, GUAT., AREA 46-23-103
 14.7  -90.5   6.5  9     600
NRM      8 347.7  14.6  1.2  2.4    568  75.9  149.7  2.3        3000
25G      7 348.1  15.0  1.2  2.4    671  76.4  149.5  2.3        3000
50G      7 357.6  14.1  1.0  1.7   1309  82.1  107.3  1.7        3000
75G      7 358.0  13.1  0.8  1.5   1663  81.7  103.6  1.5        3000
100G     7 358.1  13.9  0.8  1.5   1658  82.1  103.1  1.5        3000
125G     7 358.2  13.0  0.7  1.4   1951  81.7  102.1  1.4        3000
150G     8 359.0  13.8  0.6  1.3   1884  82.2   96.9  1.3         600
  COMMENTS: gradual change in decl

 473   7   1 KAMINALJUYU, GUAT., AREA 46-23-103
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 14.7  -90.5   6.5  8     600
NRM      8 329.1  24.7  1.7  3.1    359  60.0 -180.0  3.0          3000
50G      7 354.0  30.4  0.8  1.5      .  84.0 -163.7  1.3           600
25G      6 331.3  25.5  2.2  4.1    310  62.2 -179.5  3.8          3000
75G      5 355.2  30.2  1.0  1.8   2195  85.0 -162.0  1.6          3000
100G     8 357.0  33.4  1.7  2.3      .  85.5 -128.8  2.6          3000
125G     5 355.6  31.5  1.7  3.0    845  85.1 -150.9  2.6          3000
150G     8 358.0  34.0  2.2  4.0      .  85.7 -117.3  3.5          3000
  COMMENTS: gradual change in decl

 476   8   1 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 246B
 14.7  -90.5   6.5  8     300
NRM      7 263.3  32.1  1.2  2.1   1096  -1.9 -162.0  1.8          3000
25G      6 267.7  28.8  2.6  4.7    252   1.7 -165.1  4.2          3000
50G      8 321.6  40.3  4.9  8.1     69  52.8 -161.7  6.7          3000
75G      5 342.6  39.3  2.3  3.8    576  71.9 -153.4  3.2          3000
100G     7 349.9  39.3  2.5  4.1    311  77.8 -140.9  3.4          3000
125G     5 352.7  37.3  1.7  3.0    913  80.7 -138.0  2.5           300
150G     7 354.2  37.6  2.2  3.7    366  81.6 -130.9  3.2          3000
200G     7 356.9  36.9  1.9  3.3    468  83.4 -116.8  2.8          3000
  COMMENTS: same as 580

 478   7   1 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 247
 14.7  -90.5   6.5  9     250-400
NRM      8 275.6  27.2  1.7  3.2    359   8.9 -167.8  2.9          3000
25G      5 274.5  23.3  1.5  2.8    827   7.4 -169.8  2.7          3000
75G      5 329.8  34.3  3.8  6.6    175  60.9 -168.1  5.8          3000
100G     8 342.7  34.7  2.4  4.2    230  72.9 -163.2  3.7          3000
125G     6 344.8  33.3  2.0  3.6    449  75.1 -165.0  3.2           310
150G     8 349.5  35.3  2.3  3.9    265  78.9 -153.3  3.4          3000
200G     8 349.9  32.6  2.2  3.9    265  79.9 -161.6  3.4          3000
  COMMENTS: same as 581

 471   5   1 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 255
 14.7  -90.5   6.5  9     400-550
NRM      9 300.7  34.8  6.5 11.3     29  33.3 -167.0  9.8          3000
50G      9 335.5  34.5  4.3  7.4     65  66.2 -166.8  6.4          3000
100G     9 350.5  34.5  2.1  3.7    258  80.0 -153.9  3.2          3000
150G     9 353.7  33.4  1.9  3.3    299  83.0 -149.2  3.0          3000
200G     9 354.8  34.1  1.9  3.4    308  83.6 -141.0  2.9           475
  COMMENTS: Gradual change in decl

 480   7   0 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 261A
 14.7  -90.5   6.5  9     100-400
NRM      9 305.9  38.8  2.5  4.2    215  38.4 -164.0  3.5          3000
25G      7 313.1  33.3  2.7  4.7    218  45.0 -169.3  4.1          3000
50G      8 344.1  31.7  1.3  2.4    588  74.5 -169.1  2.1          3000
75G      7 348.6  30.5  1.1  1.9   1241  78.9 -170.1  1.7          3000
100G     9 351.5  30.4  0.8  1.4   1667  81.6 -168.0  1.3          3000
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150G     9 352.9  29.5  0.6  1.2   2356  83.1 -170.4  1.1          250
125G     7 352.3  29.7  0.8  1.5   2011  82.5 -170.2  1.3         3000

 482   4   0 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 278
 14.7  -90.5   6.5  8     200-300
NRM      8 352.0  30.2  0.5  0.9   4893  82.2 -168.0  0.8         3000
50G      5 355.1  27.1  0.7  1.4   3789  85.2  175.8  1.2         3000
100G     5 355.1  26.8  0.6  1.2   5041  85.2  173.9  1.1         3000
150G     5 355.2  27.1  0.5  1.0   7530  85.3  176.1  0.9          250

 481   6   0 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 279
 14.7  -90.5   6.5  7     300-600
NRM      7 344.2  24.7  1.5  2.8    531  74.6  175.0  2.6         3000
25G      5 346.2  22.0  1.6  3.0    750  76.1  167.4  2.8         3000
50G      7 355.4  27.1  1.1  1.9   1157  85.6  175.6  1.8         3000
75G      4 356.4  27.9  0.5  0.9  12483  86.5 -178.0  0.8          450
125G     5 357.6  28.0  0.8  1.5   3305  87.6 -175.3  1.3         3000
150G     7 357.3  28.8  0.7  1.3   2804  87.3 -165.8  1.1         3000

 483   3   0 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 280
 14.7  -90.5   6.5  8     500-600
NRM      6 355.2  29.9  0.5  0.9   6899  85.1 -163.5  0.8         3000
100G     3 354.5  30.4  0.6  1.0  18559  84.5 -162.6  0.9         3000
150G     5 355.1  30.5  0.4  0.8  11984  85.0 -159.8  0.7           55

 474   2   0 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 30
 14.7  -90.5   6.5  8     300-600
NRM      7 354.5  28.4  0.3  0.6  11135  84.6 -175.3  0.6         3000
150G     5 357.0  27.9  0.6  1.1   6070  87.1 -177.2  1.0          475

 479   3   0 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 36
 14.7  -90.5   6.5  8     300-600
NRM      7 357.5  19.9  0.2  0.5  17722  84.9  118.8  0.5         3000
100G     6 358.3  15.5  1.0  2.0   1226  83.0  103.6  1.9         3000
150G     8 358.5  15.5  0.9  1.8   1047  83.0  102.2  1.7          450

 477   1   1 KAMINALJUYU, GUAT., AREA 46-23-103, FEAT 68
 14.7  -90.5   6.5  9     300-600
NRM      9 356.5  30.5  0.2  0.3  34521  86.2 -153.2  0.3          475
  COMMENTS: 150G of 2 cubes gave 0.4deg. change in decl.

 475   4   1 KAMINALJUYU, GUAT., AREA 46-32-204, FEAT 1
 14.7  -90.5   6.5  8     600-900
NRM      7  59.6 -32.3 12.7 22.5     10  23.0   26.2 10.1         3000
100G     7  19.4   1.4  5.9 11.8     27  66.2   33.9 11.8         3000
150G     7   9.5  13.5  4.5  8.8     50  77.7   38.5  8.7         3000
200G     6  10.4  15.8  3.2  6.2    125  77.9   31.6  6.0         2500
  COMMENTS: LAT.01:EXT.1
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 277   8   2 KAMINALJUYU, GUAT., FEAT 2
 14.7  -90.5   6.5  8
NRM      8 324.1  33.8 29.4 51.6      3  55.5 -169.2 45.3        3000
NRM      8 329.9  30.2 31.1 55.9      2  61.0 -173.5 50.3        3000
25G      8 325.3  28.7 31.2 56.7      2  56.5 -174.9 51.6        3000
50G      8 348.4  49.9 76.6  115      1  70.8 -122.2 86.0        2500
75G      8   2.5  64.2 75.5 94.6      1  58.7  -87.2 59.2        3000
100G     8   7.4  70.8 65.9 75.9      1  49.2  -84.0 43.7        3000
125G     8  44.5  82.3 68.9 70.7      1  25.2  -78.8 36.3        3000
150G     8 289.5  57.4 85.1  117      1  24.2 -145.1 79.7        3000
  COMMENTS: mound B-III-1, zone 46, area 22, sector 131
  COMMENTS: Sq. in 2/4, level 9, elev. 500-550

 583   3   2 KAMINALJUYU, GUAT., FEAT 273, FIRED WALL
 14.7  -90.5   6.5 11     200-300
NRM      8   2.6  12.3  1.2  2.4    550  81.1   72.4  2.4        3000
NRM     11   1.6  12.6  0.8  1.6    608  81.5   78.8  1.6         250
200G     2   2.1  12.6  1.5  3.0   6991  81.5   75.3  3.0        3000
  COMMENTS: 50G to 400G of 2 cubes gave
  COMMENTS: 2.1 deg. change in decl

 278   5   1 KAMINALJUYU, GUAT., LOT 41, ZONE 46
 14.7  -90.5   6.5  8
NRM      8 355.9  42.7  4.8  7.7     79  79.2 -110.9  6.3        3000
NRM      8 351.1  38.4  4.2  7.1     86  79.1 -140.0  6.0        3000
50G      8 359.0  38.7  4.4  7.5     79  82.8  -98.1  6.3        2500
100G     8 356.8  38.1  4.7  8.0     68  82.6 -114.7  6.8        3000
150G     8 356.5  37.5  5.3  9.1     53  82.9 -117.9  7.7        3000
 COMMENTS: test pit, area 22, sector 079

 276   4   1 KAMINALJUYU, GUAT., LOT 48, ZONE 26
 14.7  -90.5   6.5  8
NRM      7   1.2  36.7  4.1  7.0    102  84.2  -79.8  6.0        3000
NRM      7   0.9  34.5  4.2  7.2     92  85.6  -78.8  6.3        3000
100G     7 359.2  32.3  4.5  8.0     74  87.1 -105.7  7.1        2500
150G     7 359.0  32.2  4.4  7.9     76  87.0 -109.2  7.0        3000
  COMMENTS: area 22, sector 110, test pit

 584   1   2 KAMINALJUYU, GUAT., PALANGANA
 14.7  -90.5   6.5  8     300-600
NRM      8 358.5  32.4  1.2  2.2    820  86.8 -117.6  1.9         450
  COMMENTS: G. Espinosa's excavation
  COMMENTS: 150G of 2 cubes gave 1.3 deg. change nin decl

 585   3   1 KAMINALJUYU, GUAT., PALANGANA
 14.7  -90.5   6.5  8     300-600
NRM      7 353.8  22.7  1.1  2.1    943  83.3  154.4  2.0        3000
100G     6 356.7  27.3  1.1  2.1   1228  86.8  175.5  1.9        3000
150G     8 356.9  27.4  0.9  1.7   1288  87.0  177.1  1.5         450
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  COMMENTS: G. Espinosa's excavation

 586   5   1 KAMINALJUYU, GUAT., PALANGANA
 14.7  -90.5   6.5  8     300-600
NRM      8 358.8  16.7  2.1  4.0    202  83.7  100.1  3.9         3000
50G      8   2.3  18.1  2.0  3.9    223  84.1   66.3  3.7          450
100G     8   2.0  19.5  2.1  4.0    212  85.0   66.4  3.8         3000
150G     8   1.4  22.9  2.7  5.2    131  86.9   62.6  4.9         3000
200G     8 359.9  20.2  2.2  4.1    238  85.7   91.3  3.9         3000
  COMMENTS: G. Espinosa's excavation

1538   2   0 LA LOMA, MEX., T-78, KILN ALD 2450
 19.4  -98.1   8.5  8    1200-1500
NRM      8   0.9  35.2  0.8  1.3   2273  89.1  -10.8  1.2         3000
50G      8   2.1  32.9  0.4  0.7   7567  87.6   28.8  0.6         1350

 781   2   0 LAGUNA ZOPE, MEX., OVEN IN PIT
 16.4  -95.0   7.7  8    -700 to -300
NRM      8 358.3  32.1  0.5  0.9   4346  88.1 -152.0  0.8         3000
50G      8 358.7  30.7  0.5  1.0   4053  88.8 -177.6  0.9         -500

 318   1   1 LAMBITYECO, MEX.
 16.9  -96.3   8.0  8     700-800
NRM      7   1.0  15.2  0.7  1.3   2348  80.8   77.5  1.2          840
  COMMENTS: 150G of 2 cubes gave 0.4 deg. change in decl

 319   1   1 LAMBITYECO, MEX.
 16.9  -96.3   8.0  8     900
NRM      7 348.9  27.7  1.7  3.1    441  79.1  163.8  2.9         1230
  COMMENTS: 150G of 2 cubes gave 0.8 deg. change in decl

 320   5   0 LAMBITYECO, MEX.
 16.9  -96.3   8.0  8     900
NRM      8 343.7  35.9  3.9  6.6     94  74.2 -172.9  5.7         3000
NRM      7 344.7  37.9  3.1  5.2    191  74.9 -167.7  4.4         3000
NRM      8 342.3  31.3  3.5  6.3     98  73.1  176.2  5.6         3000
150G     7 345.1  32.4  2.9  5.1    181  75.8  178.7  4.5         3000
400G     3 347.6  29.6  1.8  3.2   1765  78.0  170.6  2.9         1220

 321   1   1 LAMBITYECO, MEX.
 16.9  -96.3   8.0  8     900
NRM      7 348.3  29.8  1.6  3.0    512  78.7  170.7  2.7         1220
  COMMENTS: 150G of 2 cubes gave 3.8 deg. change in decl

 406   3   0 LAMBITYECO, MEX.
 16.9  -96.3   8.0  8     900
NRM      8 349.4  31.9  2.7  4.8    168  79.8  177.4  4.3         3000
NRM      8 349.8  27.0  2.3  4.2    211  79.9  160.3  3.8         3000
100G     8 352.5  27.1  2.0  3.7    274  82.3  155.3  3.4         1000
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 407   3   0 LAMBITYECO, MEX.
 16.9  -96.3   8.0  8     800
NRM      8 348.0  32.6  2.1  3.8    273  78.5  179.6  3.4         3000
NRM      8 347.8  29.4  2.0  3.7    274  78.3  169.7  3.4         3000
50G      8 348.3  30.4  2.2  3.9    247  78.7  172.7  3.5         1000

 783   2   0 MANZANILLO, MEX.
 19.0  -98.2   8.6  8     300-500
NRM      7 359.8  38.5  1.8  3.1    541  87.3 -101.4  2.6         3000
100G     7 359.6  36.4  1.8  3.0    534  88.7 -116.3  2.6          400

 784   1   2 MANZANILLO, MEX.
 19.0  -98.2   8.6  8
NRM      8   2.8  39.0  0.6  1.0   4528  86.0  -57.6  0.8         3000
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction

  81   0   4 MEXICO and GUATEMALA AREAS
 12.0  -90.0
  COMMENTS: Kaminaljuyu, collected with Gustros Espinoza
  COMMENTS: Chiapas, sample specimens collected
  COMMENTS: Teotihuacan, sample specimens collected
  COMMENTS: samples good, no data available at this time

 410   3   0 MIRADOR, MEX.
 16.6  -93.5   7.3  8     200-400
NRM      8   7.1  38.9  3.1  5.2    162  81.4  -43.2  4.4         2500
100G     8   1.0  37.6  8.5 14.4     21  85.4  -84.0 12.2         3000
150G     8   2.8  40.6 12.5 20.6     12  82.9  -75.3 17.0         3000

 405   1   0 MONTE ALBAN, MEX.
 17.1  -96.8   8.0  8     800-900
NRM      8 343.3  56.6 24.6 34.0      7  65.0 -129.5 23.5         3000

 609   2   0 MONTE ALBAN, MEX.
 17.0  -96.7   8.2  8
NRM      8 336.7  28.5  7.1 13.0     23  67.5  172.0 11.8         3000
50G      8 342.1  23.7  6.0 11.3     28  72.1  160.8 10.6         2500

 610   1   0 MONTE ALBAN, MEX.
 17.0  -96.7   8.2  8    1168
NRM      8 290.1  13.2  8.8 17.3     12  21.1  174.0 16.9         3000

 745   1   1 MONTE ALBAN, MEX.
 17.0  -96.7   8.2  9    -150-150
NRM      9 349.8  26.7  7.8 14.3     16  79.8  158.4 13.2         3000
  COMMENTS: 100G of 2 cubes gave a large change in direction
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 782   2   1 MONTE ALBAN, MEX.
 17.0  -96.7   8.2  8
NRM      8  10.0  46.8  1.2  1.8   1591  75.9  -59.6  1.4         3000
100G     7  10.3  43.9  1.0  1.5   2428  77.1  -50.5  1.2         2500
  COMMENTS: uncertain curve assignment, modern?

 863   1   0 MONTE ALBAN, MEX.
 17.0  -96.7   8.2  8
NRM      8 341.4  55.9 13.1 18.3     20  64.5 -133.3 12.7         3000

 864   1   0 MONTE ALBAN, MEX.
 17.0  -96.7   8.2  4
NRM      3 359.7  36.8 10.8 18.5     62  86.5 -102.0 15.8         3000

 865   1   0 MONTE ALBAN, MEX.
 17.0  -96.7   8.2  8
NRM      8 357.6  51.6 13.8 20.3     15  74.6 -104.3 14.9         3000

 866   3   1 MONTE ALBAN, MEX.
 17.0  -96.7   8.2 10
NRM      8 357.0  33.0  1.8  3.2    394  87.0 -167.6  2.8         3000
50G      8 358.0  31.2  2.9  5.1    167  66.1 -101.4  6.6         3000
100G     7 355.7  33.1  2.0  3.5    392  64.6 -106.3  3.1         2500
  COMMENTS: uncertain curve assignment

 867   1   0 MONTE ALBAN, MEX.
 17.0  -96.7   8.2  6
NRM      5 342.8  64.5 28.4 35.5     13  57.4 -118.9 22.1         3000

1038   1   2 MONTE ALBAN, MEX., BURNED BELL SHAPED PIT
 17.0  -96.7   8.2  9    -500
NRM      7   0.1  43.6  9.4 15.1     26  81.5  -96.3 12.1         3000
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

1161   1   3 MONTE ALBAN, MEX., F-62
 17.0  -96.8   8.2  8
NRM      8 349.7  38.0 13.5 22.9      9  79.4 -161.2 19.4         3000
  COMMENTS: excavations of ‘72,’73
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

1039   1   2 MONTE ALBAN, MEX., F-77
 17.0  -96.7   8.2  8    -500
NRM      5  10.8  34.5  1.1  1.9   2186  79.6  -19.0  1.6         -500
  COMMENTS: 50G to 400G of 4 cubes gave some
  COMMENTS: changes in direction

1160   1   3 MONTE ALBAN, MEX., F-80
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 17.0  -96.8   8.2  8
NRM     6   3.0  35.1  5.3  9.2     71  86.3  -46.6  8.0         3000
  COMMENTS: excavations of '72,'73
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

1162   1   2 MONTE ALBAN, MEX., F-81
 17.0  -96.8   8.2  8
NRM     8 356.1  36.1  2.3  4.0    259  85.2 -146.8  3.4         3000
  COMMENTS: 50G to 400G of 2 cubes gave little
  COMMENTS: change in direction

1040   1   2 MONTE ALBAN, MEX., F-71
 17.0  -96.7   8.2  8    -500
NRM     7 353.9  30.4  6.4 11.5     35  84.1  167.8 10.3         3000
  COMMENTS: 50G to 400G of 4 cubes gave some
  COMMENTS: change in direction

 565   1   0 MONTE ALBAN, MEX., FIRED FLOOR IN MOUND 88
 17.0  -96.7   8.2  8
NRM     8 358.0  32.7 17.8 31.5      5  88.0 -163.3 27.8         3000

 566   1   0 MONTE ALBAN, MEX., FIRED FLOOR IN MOUND 88
 17.0  -96.7   8.2  6
NRM     6  19.9  19.3 13.8 26.4      8  69.4   10.7 25.3         3000

 541   1   1 MONTE ALBAN, MEX., MOUND 88, FLOOR
 17.0  -96.7   8.2 16    -150-700
NRM    14 354.8  30.4  1.6  2.9    230  84.8  166.7  2.6          275
  COMMENTS: 150G of 3 cubes gave no change in decl

 542   1   1 MONTE ALBAN, MEX., MOUND. 88, FLOOR
 17.0  -96.7   8.2  6
NRM     6 356.0  27.0  9.6 17.6     18  85.2  138.8 16.2         3000
  COMMENTS: mostly weak

 441   3   1 NECHISTLAN, CHACHUAPAN, MEX., N-205 K
 16.9  -96.3   8.0  8    1560
NRM     8   2.2  33.9  1.2  2.1    905  87.3  -45.4  1.8         3000
100G    6   3.3  33.8  2.1  3.7    423  86.5  -34.1  3.3         3000
150G    8   2.6  32.4  2.0  3.6    299  87.4  -23.2  3.2         1550
  COMMENTS: Livc, la iglesia vieja

 443   1   0 NECHISTLAN, CRUZ VERDE, MEX., N-428-A.
 16.9  -96.3   8.0  8
NRM     6 283.0  45.6  8.4 13.1     43  18.9 -162.8 10.3         3000

 442   1   0 NECHISTLAN, YUCUITA, MEX., N-217-H
 16.9  -96.3   8.0  9    1200
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NRM      8   4.1  34.9  4.1  7.2     80  85.4  -37.2  6.2        3000

 764   1   0 OCOZOCOAUT A, MEX., MONTICULO
 16.8  -93.4   7.2  6
NRM      6   0.3  26.7  7.1 13.0     32  87.3   79.9 12.0        3000

 765   2   0 OCOZOCOAUT A, MEX., MONTICULO 18
 16.8  -93.4   7.2  8    -600 to -400
NRM      8   8.3  29.3  4.3  7.8     62  82.0    3.6  7.1        2500
100G     8   6.2  46.4  6.3  9.8     53  77.7  -66.8  7.7        3000

1643   2   1 PALACIO QUEMADO, TULA, MEX.
 20.0  -99.3   8.9  8    1165
NRM      7 343.6  35.2  0.6  1.0   5314  74.6  171.5  0.8        3000
100G     8 343.4  33.7  0.5  0.8   5875  74.2  168.0  0.7        1165
  COMMENTS: column burn #3, burned wall

1644   2   1 PALACIO QUEMADO, TULA, MEX.
 20.0  -99.3   8.9  6    1165
NRM      5 344.7  35.5  1.1  1.8   2358  75.6  171.7  1.6        3000
50G      5 344.6  34.4  0.8  1.5   3539  75.4  169.1  1.3        1165
  COMMENTS: burned wall burnt column #2

1645   7   1 PALACIO QUEMADO, TULA, MEX.
 20.0  -99.3   8.9  4    1165
NRM      4 343.8  35.9  1.8  3.2   1124  74.8  173.0  2.7        3000
50G      4 343.4  35.1  1.9  3.2   1078  74.4  171.3  2.8        3000
100G     4 343.3  35.0  1.9  3.2   1079  74.3  171.0  2.8        1165
150G     4 343.2  35.0  1.9  3.3   1049  74.2  171.1  2.8        3000
200G     4 343.2  34.7  2.0  3.4    939  74.2  170.3  3.0        3000
400G     4 343.0  34.3  2.0  3.4    948  74.0  169.4  3.0        3000
800G     4 342.7  34.6  2.1  3.7    816  73.7  170.3  3.2        3000
  COMMENTS: burned wall burnt column #1

 611   1   0 PALACIO QUEMADO, TULA, MEX., POSTHOLE
 20.0  -99.3   8.7  8    1168
NRM      8 345.0  34.4  0.8  1.4   2019  75.8  169.4  1.2        1165

 612   1   0 PALACIO QUEMADO, TULA, MEX., POSTHOLE
 20.0  -99.3   8.7  8    1168
NRM      8 347.3  36.1  0.8  1.3   2370  78.0  173.5  1.1        1165

 613   1   0 PALACIO QUEMADO, TULA, MEX., POSTHOLE
 20.0  -99.3   8.7  9    1168
NRM      7 346.4  35.7  1.7  2.9    597  77.2  172.5  2.5        1165

 785   2   0 PALACIO QUEMADO, TULA, MEX., POSTHOLE
 20.0  -99.3   8.7  9    1156
NRM      9 342.2  42.4  2.6  4.2    232  72.9 -170.6  3.4        3000
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100G    9 347.1  36.5  1.2  2.0    865  77.9  174.4  1.8         1156

 574   2   1 PANTEON OF CHACHI, MEX.
 16.4  -92.7   7.0  8    -400 to -1
NRM     8   6.7  28.8  1.2  2.2    699  81.3   37.3  2.1         3000
100G    8 359.2  18.2  1.1  2.2    679  82.9   94.0  2.1         -200
  COMMENTS: fired floor or hearth

 568   4   0 PANTEON OF CHACHI, MEX., FIRED FLOOR IN MD
 16.4  -92.7   7.0 10    -400 to -100
NRM    10   9.5  15.9  1.9  3.6    191  77.6   38.0  3.5         -200
150G    8   1.5  21.7  3.2  6.1     94  84.7   70.9  5.7         3000
400G    3 353.9  23.8  3.9  7.2    334  82.9  144.0  6.8         3000
1600G   3   4.7  23.2 17.8 33.4     16  83.7   40.5 31.4         3000

 569   2   0 PANTEON OF CHACHI, MEX., FIRED FLOOR IN MD
 16.4  -92.7   7.0  8    -400
NRM     8 356.3  17.9  0.8  1.6   1293  81.9  114.3  1.5         -400
100G    2 357.4  18.1  4.5  8.8    878  82.4  107.5  8.4         3000

1544   2   0 PATLATELPA, MEX., T-318 FEAT. HORNO KILN
 19.3  -98.2   8.7  8    -800 to -1000
NRM     8   4.1  39.2  0.7  1.2   3137  85.2  -46.6  1.0         3000
50G     8   4.7  36.9  0.6  1.0   4542  85.4  -26.2  0.8         -900

 588   1   0 PURRON CAVE, MEX.
 18.3  -97.2   8.5  8
NRM     8   4.7  34.7 11.9 20.7     10  85.4  -18.2 18.0         3000

 589   1   0 PURRON CAVE, MEX.
 18.3  -97.2   8.5  8
NRM     8   1.3  31.8  9.3 16.6     15  88.3   34.2 14.8         3000

 590   1   0 PURRON CAVE, MEX.
 18.3  -97.2   8.5  8
NRM     6   6.7  48.5  6.7 10.2     75  77.2  -69.7  7.8         3000

 591   1   0 PURRON CAVE, MEX.
 18.3  -97.2   8.5  5
NRM     4 352.5  49.3 12.7 19.2     41  76.3 -125.5 14.5         3000

 592   1   0 PURRON CAVE, MEX.
 18.3  -97.2   8.5  8
NRM     7 357.4  35.9  5.7  9.9     51  87.1 -133.3  8.5         3000

 593   1   1 PURRON CAVE, MEX.
 18.3  -97.2   8.5  8
NRM     7   5.2  37.3  1.2  2.1   1120  84.5  -35.9  1.8         3000
  COMMENTS: uncertain curve assignment
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 594   1   0 PURRON CAVE, MEX.
 18.3  -97.2   8.5  7
NRM     7  11.0  36.2 21.0 36.0      5  79.4  -18.9 31.0        3000

 600   1   1 PURRON CAVE, MEX.
 18.3  -97.2   8.5  8
NRM     8   0.3  39.6  7.0 11.7     34  85.8  -93.2  9.7        3000
  COMMENTS: 50G of 2 cubes gave 1.4 deg. change in decl

 601   1   0 PURRON CAVE, MEX.
 18.3  -97.2   8.5  8
NRM     8 354.4  24.8  3.6  6.7     79  82.4  129.1  6.3        3000

 602   1   0 PURRON CAVE, MEX.
 18.3  -97.2   8.5  8
NRM     7 357.2  35.8  8.0 13.8     27  86.9 -156.2 11.9        3000

 603   1   0 PURRON CAVE, MEX.
 18.3  -97.2   8.5  8
NRM     6  48.0  36.0 16.1 27.7      9  44.7  -17.5 23.8        3000

1526   3   1 QUACHILCO, MEX., TS218, FEAT 53
 18.3  -97.3   8.3  8
NRM     8   4.1  36.3  2.3  3.9    280  85.7  -34.8  3.3        3000
100G    8   4.4  37.3  1.0  1.7   1482  85.1  -40.5  1.1        3000
150G    7   5.0  37.4  0.6  1.1   4520  84.6  -38.2  0.9        2500
  COMMENTS: arch date is late Sta. Maria phase

1525   4   1 QUACHILCO, MEX., TS218, FEAT 62
 18.3  -97.3   8.3  8
NRM     8   2.6  34.1  5.8 10.1     40  87.5  -18.2  8.8        3000
100G    8 358.0  31.9  5.3  9.4     45  87.9  146.6  8.4        3000
150G    8 356.2  31.9  5.6 10.0     39  86.3  158.4  8.9        3000
200G    8 354.0  31.2  5.2  9.3     45  84.1  160.3  8.3        2500
  COMMENTS: age is Venta Salada phase

1028   1   3 QUEMADA, MEX., LA
 22.5 -103.0   9.8  8     700-1200
NRM     8 358.2  26.0  2.2  4.0    220  81.0   88.1  3.7         950
  COMMENTS: hall of columns-floor entrance
  COMMENTS: 50G to 200G of 3 cubes gave little
  COMMENTS: change in direction

1029   1   3 QUEMADA, MEX., LA
 22.5 -103.0   9.8  8     700-1200
NRM     8 359.7  24.2  1.7  3.3    331  80.2   78.8  3.1         950
  COMMENTS: hall of columns-SW column mud plaster
  COMMENTS: 50G to 400G of 3 cubes gave little
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  COMMENTS: change in direction

1030   1   3 QUEMADA, MEX., LA
 22.5 -103.0   9.8  8    1300
NRM     7 341.1   8.6  3.5  7.0     77  64.2  125.0  6.9        3000
  COMMENTS: 2nd terrace, S. Room-S. Wall
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

1031   1   2 QUEMADA, MEX., LA
 22.5 -103.0   9.8  8
NRM     8  19.2  -6.9 14.6 29.0      5  58.0   38.7 28.9        3000
  COMMENTS: 50G to 400G of 3 cubes gave some
  COMMENTS: change in direction

1032   1   3 QUEMADA, MEX., LA
 22.5 -103.0   9.8  9
NRM     9 359.1  26.3  0.3  0.5  11336  81.4   82.7  0.5         950
  COMMENTS: courtyard, 2nd plaza-west wall above banquette
  COMMENTS: 50G to 400G of 3 cubes gave some
  COMMENTS: changes in direction

 578   2   1 RANCHO LOS ALVAREZ, MEX.
 14.8  -92.5   7.1  7   -1500 to -800
NRM     7  10.6  28.1  3.3  6.1    118  79.7   -4.8  5.6        3000
100G    7  10.2  29.2  3.6  6.5    107  80.1   -8.5  5.9        2500
  COMMENTS: arch date is B.C. 1300 to 800 or modern

 577   1   2 RANCHO LOS ALVAREZ, MEX., OVEN
 14.8  -92.5   7.1  7   -1500 to -800
NRM     6   4.5  38.2  0.6  1.0   5728  82.1  -60.6  0.9        1800
  COMMENTS: arch date is 1300-800 B.C. or modern
  COMMENTS: uncertain curve assignment, modern?

1540   1   1 RESCUATE COYOACAN, MEX. CITY, 7H
 19.4  -99.2   8.5  8     200
NRM     7 357.0  53.7 16.1 23.1     14  73.6 -123.1 16.5        3000
  COMMENTS: 100G of 4 cubes gave 29.1 deg. change in decl.

1542   2   0 RESCUATE COYOACAN, MEX. CITY, 7H, FEAT. 4Z
 19.4  -99.2   8.5  8     200
NRM     8   3.9  37.1  5.0  8.5     59  86.1  -29.3  7.3        3000
50G     8 356.9  33.0  3.0  5.3    142  86.7  145.5  4.7        2500

1541   1   1 RESCUATE COYOACAN, MEX. CITY, 7H, FEAT. 5D
 19.4  -99.2   8.5  8     200
NRM     8   2.5  49.4  8.2 12.4     36  78.9  -87.8  9.3        3000
  COMMENTS: 100G of 4 cubes gave 4.5 deg. change in decl.
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1543   4   1 RESCUATE COYOACAN, MEX. CITY, 7H, FEAT. 8K
 19.4  -99.2   8.5  8     200
NRM      7 355.8  38.5  3.3  5.6    164  85.5 -158.2  4.7         3000
NRM      6 356.9  37.0  2.8  4.8    272  86.8 -165.0  4.1         3000
100G     7 352.5  32.0  1.3  2.3    899  82.6  156.2  2.0          200
150G     7 352.5  32.7  1.4  2.5    751  82.7  159.4  2.2         3000
  COMMENTS: hearth 1

1539   1   1 RESCUATE COYOACAN, MEX. CITY, 7H, HEARTH
 19.4  -99.2   8.5  8     200
NRM      7 357.0  39.5  3.9  6.5    125  85.9 -141.5  5.4         3000
  COMMENTS: 100G of 4 cubes gave 5.6 deg. change in decl.

 604   4   1 SALT SITE I, MEX., OVEN
 18.3  -97.3   8.5  8     600-1550
NRM      7   2.3  43.0  2.6  4.2    316  83.0  -79.8  3.4         3000
NRM      8   5.5  45.1  4.5  7.1     98  80.3  -67.1  5.6         3000
100G     7   5.6  42.0  3.3  5.4    187  82.1  -56.9  4.4         2500
150G     7   6.4  42.1  3.7  6.0    152  81.5  -83.8  4.9         3000
  COMMENTS: 2.1 miles past Axasco on road to Petlanco

 766   2   0 SAN ANDREAS, EL SALVADOR
 13.8  -89.4   6.1  8     600-900
NRM      7   3.3   8.9  0.6  1.3   2352  80.1   70.8  1.2         3000
100G     8   0.0   9.1  0.8  1.5   1413  80.8   90.8  1.5          750

 767   2   0 SAN ANDREAS, EL SALVADOR
 13.8  -89.4   6.1  8     600-900
NRM      8   4.2   8.8  1.2  2.4    533  79.8   66.3  2.4         3000
100G     8 358.3   6.3  1.4  2.8    403  79.2   99.9  2.8          750

1633   2   1 SAN ANDRES, MEX., SITE 78
 18.4  -98.0   8.6  8
NRM      7 333.1  51.0  6.8 10.0     68  62.3 -154.1  7.4         3000
150G     7   0.4  45.3  2.8  4.4    308  81.5  -95.5  3.4         2500
  COMMENTS: 30 KM E of Apizaco, hearth wall hogan #1

1634   3   1 SAN ANDRES, MEX., SITE 78
 18.4  -98.0   8.6  8
NRM      8  50.7  15.5 11.9 23.1      7  39.7   -3.0 22.4         3000
100G     8  24.2  22.2  6.0 11.4     27  65.6    4.8 10.8         3000
500G     8  13.8  25.0  2.0  3.7    353  75.7   11.6  3.5         2500
  COMMENTS: kiln (horno) horno #1

1635   2   1 SAN FELIPE, MEX., 40 KM S OF PUEBLA
 18.0  -98.0   8.5  8
NRM      8  18.7  50.6 18.8 27.9      8  68.5  -49.7 20.7         3000
150G     8   8.5  27.7  0.7  1.2   2392  81.2   13.0  1.1         2500
  COMMENTS: oval kiln oven #1
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1636   2   1 SAN FELIPE, MEX., 40 KM S OF PUEBLA
 18.0  -98.0   8.5  9
NRM      9   9.5  47.8  0.5  0.7   8097  76.0  -61.1  0.6          2500
100G     8  11.3  47.2  0.9  1.4   2571  75.3  -55.2  1.1          3000
  COMMENTS: horno #4, kiln

1637   2   1 SAN FELIPE, MEX., 40 KM S OF PUEBLA
 18.0  -98.0   8.5  9
NRM      9   7.2  26.9  0.5  1.0   3122  82.1   19.5  0.9          3000
50G      9   7.9  26.4  0.6  1.0   3010  81.4   19.1  0.9          2500
  COMMENTS: horno #3, kiln

1638   2   1 SAN FELIPE, MEX., 40 KM S OF PUEBLA
 18.0  -98.0   8.5  8
NRM      8   8.6  27.7  0.8  1.5   1561  81.1   12.4  1.4          3000
100G     8   9.7  26.0  0.6  1.1   2819  79.7   15.4  1.0          2500
  COMMENTS: horno #2, kiln

1639   2   1 SAN FELIPE, MEX., 40 KM S OF PUEBLA
 18.0  -98.0   8.5  8
NRM      7   5.8  43.9  0.6  0.9   7265  80.6  -64.0  0.7          3000
50G      8   7.2  44.6  0.4  0.6  11724  79.4  -60.1  0.5          2500
  COMMENTS: horno #5, kiln

 484   4   0 TAZMAL, EL SALVADOR
 13.3  -89.5   6.3  8     600-900
NRM      7   7.3  47.8  5.4  8.2     92  73.0  -67.2  6.3          3000
150G     6   1.7  21.0  3.0  5.8    150  87.0   53.3  5.5          3000
100G     6   3.6  24.2  2.5  4.7    231  86.4    9.9  4.4          3000
NRM      6   7.0  28.6  2.3  4.1    316  82.9  -16.4  3.8           750

 787   1   4 TAZUMAL, EL SALVADOR
 14.0  -89.7   6.5  8     300-500
NRM      7 357.6  25.0  0.3  0.6  10610  87.5  159.2  0.6           400
  COMMENTS: Oriented blocks collected in the field and
  COMMENTS: cubes collected in the labrotory
  COMMENTS: 100G and 200G of 2 cubes gave little
  COMMENTS: change in direction

 769   1   3 TEHUACAN, MEX., FEAT 1, SITE 170
 18.3  -97.3   8.5  8    1200
NRM      8 319.1  54.5  1.7  2.4   1101  50.2 -154.2  1.7          3000
  COMMENTS: 100G to 3200G of 2 cubes gave little
  COMMENTS: change in direction
  COMMENTS: uncertain curve assignment

 902   3   2 TEHUACAN VALLEY, MEX.
 18.3  -97.2   9.6  9
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NRM     9  10.6  40.3  3.9  6.5     92  79.0  -34.1  5.4          3000
100G    8   4.2  39.5  2.3  3.9    295  84.3  -54.1  3.2          2500
150G    8   4.8  38.4  3.0  5.0    172  84.4  -44.3  4.2          3000
  COMMENTS: hearth, room 1, structure 37, site 65
  COMMENTS: uncertain curve assignment

 737   2   0 TENANGO, MEX.
 19.1  -99.6   8.8  8    1400
NRM     8 356.2  26.9  1.6  3.0    406  83.9  117.7  2.8          3000
100G    7 357.7  24.7  1.2  2.3    808  83.5  100.9  2.1          1400

 738   1   1 TENANGO, MEX.
 19.1  -99.6   8.8  7    1400
NRM     7 357.7  34.0  7.1 12.5     32  87.8  159.0 10.9          3000
  COMMENTS: 150G of 2 cubes gave a large change in direction

 739   1   1 TENANGO, MEX.
 19.1  -99.6   8.8  8    1400
NRM     8   6.6   2.9 12.2 24.5      6  71.2   59.4 24.5          3000
  COMMENTS: possibly fallen roof material

 741   2   0 TENANGO, MEX.
 19.1  -99.6   8.8  8     900-1400
NRM     7   8.7  34.9  5.1  8.9     63  81.7  -11.7  7.7          3000
100G    7   9.5  36.1  6.7 11.5     38  81.0  -16.9  9.9          2500

 742   1   1 TENANGO, MEX.
 19.1  -99.6   8.8  7    1400
NRM     6 351.5  34.8  4.7  8.1     92  82.0  172.5  7.0          3000
  COMMENTS: 150G of 2 cubes gave a large change in dir

 740   1   1 TENANGO, MEX., PROBABLE ROOF FALL
 19.1  -99.6   8.8  8    1400
NRM     8   1.0  29.4  8.9 16.1     15  86.5   64.5 14.6          3000
  COMMENTS: 150G of 2 cubes gave a large change in dir

 316   2   1 TEOTIHUACAN, MEX.
 19.7  -98.8   8.7  9
NRM     9 320.0  12.3 36.9 72.4      2  48.9  157.6 71.2          2500
NRM     9 316.3  10.6 37.5 74.1      2  45.1  158.6 73.1          3000
  COMMENTS: NRM meas on astatic, 2nd NRM on spinner

 317   4   1 TEOTIHUACAN, MEX.
 19.7  -98.8   8.7 12
NRM     9   7.0  46.9  2.5  3.8    299  79.4  -63.1  3.0          3000
NRM    11   2.0  48.5  4.5  6.9     77  80.1  -88.5  5.2          3000
NRM     9   6.5  47.4  3.1  4.8    197  79.4  -66.3  3.7          3000
150G    8 357.6  38.5  1.1  1.9   1216  87.0 -146.4  1.6          1080
  COMMENTS: last NRM and 150G are most recent meas
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 786   1   5 TEOTIHUACAN, MEX., POSTHOLE IN VIKING GROUP
 19.7  -98.8   8.7  8
NRM     8   2.1  41.0  2.3  3.8    311  85.7  -72.6  3.1        3000
  COMMENTS: 3 cubes and several large blocks
  COMMENTS: were collected in the field, cubes were then
  COMMENTS: collected from the blocks in labratory
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction, modern?

 564   1   1 TEOTIHUACAN, MEX., ROOM 7 OF PALACIO 3
 19.7  -98.8   8.7  8     300-600
NRM     8   2.4  42.7  2.3  3.7    336  84.5  -75.9  3.0         450
  COMMENTS: South of Plaza a de los Jaguaes

 540   1   1 TEOTIHUACAN, MEX., VIKING GROUP POSTHOLES
 19.7  -98.8   8.7  9
NRM     9   3.9  40.2  2.4  4.0    240  85.2  -50.9  3.3        3000
  COMMENTS: 150G of 2 cubes gave 0.2 deg. change in decl

 401   1   0 TIERRAS LARGAS, MEX., B-74, AREA B, FEAT 123
 17.1  -96.8   8.0  8
NRM     8 221.2  44.7 18.1 28.8      7 -31.0 -140.3 22.8        3000

 402   1   0 TIERRAS LARGAS, MEX., B-74, AREA B, FEAT 133
 17.1  -96.8   8.0  7    1000
NRM     6 342.9  46.6 14.9 23.2     15  70.9 -149.4 18.0        3000

 403   1   0 TIERRAS LARGAS, MEX., B-74, AREA C, FEAT 149
 17.1  -96.8   8.0  8    -900 to -400
NRM     7  88.3  46.2 53.0 82.7      2   9.2  -32.9 64.6        3000

 411   1   0 TIERRAS LARGAS, MEX., B-74, AREA E, FEAT 172
 17.1  -96.8   8.0  8    -150 to 150
NRM     8 355.4  46.2 18.2 28.4      7  78.8 -118.3 22.2        3000

 413   1   0 TIERRAS LARGAS, MEX., B-74, AREA F, FEAT 167
 17.1  -96.8   8.0  8    1000-1600
NRM     7 355.8  35.5  3.1  5.3    176  85.3 -153.2  4.6        3000

 412   1   0 TIERRAS LARGAS, MEX., B-74, AREA F, FEAT 168
 17.1  -96.8   8.0  8    -800 to -400
NRM     8   3.2  65.1 42.5 52.6      4  59.9  -92.4 32.6        3000

 414   1   0 TIERRAS LARGAS, MEX., B-74, AREA I, FEAT 186
 17.1  -96.8   8.0  8    -350 to -150
NRM     7 341.4  46.3  6.8 10.6     54  69.9 -151.9  8.3        3000

 404   1   0 TIERRAS LARGAS, MEX., B-74, FEAT 95
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 17.1  -96.8   8.0  8     750
NRM     7   9.8  51.7 12.6 18.5     21  72.4  -68.3 13.6        3000

 527   2   3 TIERRAS LARGAS, MEX., SITE B-74, AREA A
 17.1  -96.8   8.0  8     700-1200
NRM     8 355.4  15.3  1.1  2.1    705  79.7  109.4  2.1         950
NRM     5 354.6  14.7  1.6  3.1    653  79.0  112.8  3.0        3000
  COMMENTS: feat 11
  COMMENTS: 150G of 2 cubes gave 0.9 deg. change in decl
  COMMENTS: cubes cut in lab from oriented block

 528   1   3 TIERRAS LARGAS, MEX., SITE B-74, AREA A
 17.1  -96.8   8.0  8    -300 to -250
NRM     8   6.2  12.7  1.2  2.3    604  77.7   52.8  2.3        -275
  COMMENTS: feat 9
  COMMENTS: 150G of 2 cubes gave 0.2 deg. change in decl
  COMMENTS: cubes cut in lab from oriented block

 530   1   3 TIERRAS LARGAS, MEX., SITE B-74, AREA A
 17.1  -96.8   8.0  7
NRM     5   7.4  27.9  0.9  1.7    360  82.5    9.9  1.5        3000
  COMMENTS: feat 7
  COMMENTS: 150G of 2 cubes gave 6.1 deg. change in decl
  COMMENTS: cubes cut in lab from oriented block

 531   1   3 TIERRAS LARGAS, MEX., SITE B-74, AREA A
 17.1  -96.8   8.0  7    -500 to -250
NRM     7   4.8  26.1  1.9  3.4    360  84.3   28.3  3.2        -375
  COMMENTS: feat 10
  COMMENTS: 150G of 2 cubes gave 1.6 deg. change in decl
  COMMENTS: cubes cut in lab from oriented block

 532   1   3 TIERRAS LARGAS, MEX., SITE B-74, AREA A
 17.1  -96.8   8.0  9   -1000
NRM     8 357.9  45.0  0.8  1.3   2761  80.3 -108.3  1.1       -1000
  COMMENTS: feat 1
  COMMENTS: 150G of 2 cubes gave 0.6 deg. change in decl.
  COMMENTS: cubes cut in lab from oriented block

 529   1   3 TIERRAS LARGAS, MEX., SITE B-74, HEARTH 1
 17.1  -96.8   8.0  8     700-1200
NRM     8 354.8  16.9  1.0  2.0    854  80.2  114.9  1.9         950
  COMMENTS: feat 2
  COMMENTS: 150G of 2 cubes gave 1.0 deg. change in dec
  COMMENTS: cubes cut in lab from oriented block

  80   0   2 TIKAL, GUAT., EAST PLAZA PALACE AND TEMPLE 4
 12.0  -90.0
  COMMENTS: specimens collected Mesoamerican proj. 1965
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  COMMENTS: no data available at this time

 748   2   0 TOMALTAPEC, MEX., FEATURE 20
 17.0  -96.7   8.2  8    -150-150
NRM      8   3.2  44.6  4.4  7.0    101  80.3  -79.2  5.6         3000
100G     8 359.8  36.0  3.9  6.7     94  87.1 -101.0  5.7         2500

 749   3   0 TOMALTEPEC, MEX.
 17.0  -96.7   8.2  8    -150-150
NRM      8   0.2  39.2  1.8  2.9    507  84.8  -94.2  2.5         3000
100G     8 358.9  36.4  1.9  3.3    388  86.6 -114.2  2.8         3000
150G     8 357.9  36.6  1.6  2.7    589  86.1 -126.3  2.3            1

 754   2   0 TOMALTEPEC, MEX.
 17.0  -96.7   8.2  8    -150-150
NRM      6 359.4  35.1  1.1  1.9   1594  87.6 -109.5  1.7         3000
100G     6 358.9  33.8  1.0  1.7   1923  88.2 -130.9  1.5            1

 755   1   0 TOMALTEPEC, MEX.
 17.0  -96.7   8.2  7    -150-150
NRM      7   7.1  32.9  6.3 11.0     39  83.1  -15.7  9.7         3000

 415   2   0 TULA, MEX.
 20.0  -99.3   8.7  8    1156
NRM      8 322.4  50.5  3.5  5.2    206  54.5 -163.2  3.9         3000
50G      6 345.5  36.4  2.1  3.7    454  76.4  174.3  3.1         1150

 440   1   0 TULA, MEX.
 20.0  -99.3   8.7  8    1156
NRM      8 345.5  30.4  0.9  1.6   1453  75.8  158.2  1.5         1160

 868   2   0 TULA, MEX.
 20.0  -99.3   8.7  9    1168
NRM      9 350.7  33.0  1.5  2.7    458  81.0  159.8  2.4         3000
50G      7 347.2  35.2  1.9  3.3    451  77.9  170.5  2.8         1170

 487   3   1 TULA, MEX., SITE T6-70
 20.0  -99.3   8.7  8     800-1000
NRM      8  15.8  58.4  9.3 12.5     44  66.6  -67.2  8.5         2500
100G     8   3.2  32.7 12.8 22.7      9  86.3   26.3 20.1         3000
50G      8   8.0  37.2 11.6 19.7     12  82.5  -16.5 16.8         3000
  COMMENTS: test pit 1, ext. 27, feat 7, level 4

 488   3   1 TULA, MEX., SITE TU-70
 20.0  -99.3   8.7  8     800
NRM      8 346.4  40.8  1.4  2.3    841  76.9 -172.0  1.9         3000
100G     6 348.1  35.3  1.7  2.9    696  78.7  170.3  2.5         3000
150G     8 347.9  35.7  1.3  2.2    850  78.6  171.5  1.9          800
  COMMENTS: test pit 1, ext. 26, level 3, dot 11
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 598   1   1 TULA, MEX., TULA 70, UNIT 3, FEAT 3, SQ 213
 20.0  -99.3   8.7  9    1000
NRM      9 344.1  34.6  1.6  2.8    453  74.9  170.2  2.4        1000
  COMMENTS: 150G of 2 cubes gave 0.4 deg. change in decl

 576   6   0 TZUTZUCULI, MEX., FIRED FLOOR
 16.1  -93.8   7.2  8    -600 to -400
NRM      8 330.2  34.9  2.9  5.1    159  61.5 -173.1  4.4        3000
100G     8 352.6  35.7  1.7  3.0    470  82.1 -155.1  2.6        3000
50G      8 339.5  33.7  2.6  4.5    200  70.2 -173.9  3.9        3000
150G     8 358.8  36.6  1.1  1.9   1130  85.6 -108.7  1.6        -500
200G     6   1.4  36.5  1.3  2.2   1580  85.6  -76.8  1.9        3000
400G     6   3.7  37.5  1.2  2.0   2082  84.0  -59.0  1.7        3000

 779   2   0 UTATLAN, GUAT.
 15.0  -91.2   6.7  8    1400-1500
NRM      8 356.2  28.5  3.0  5.4    127  86.3 -178.0  4.9        3000
50G      8 355.4  28.3  0.4  0.7   7784  85.6 -179.5  0.6        1450

1036   1   3 UTATLAN, GUAT., F-2, COMPLEX 2
 15.0  -91.2   6.7  8    1490
NRM      8 353.1  32.9  2.7  4.8    175  82.8 -156.2  4.2        3000
  COMMENTS: lower hearth, NE quad, structure 1
  COMMENTS: 50G to 400G of 4 cubes gave large
  COMMENTS: changes in direction

1037   1   3 UTATLAN, GUAT., F-2, COMPLEX 2
 15.0  -91.2   6.7  6
NRM      6 352.8  28.6  1.4  2.5    891  83.0 -178.3  2.2        1500
  COMMENTS: upper hearth ,NE quad, structure 1
  COMMENTS: 50G to 400G of 4 cubes gave little
  COMMENTS: change in direction

1034   1   3 UTATLAN, GUAT., F-5A, COMPLEX 2
 15.0  -91.2   6.7  9    1520
NRM      9 352.4  24.9  0.6  1.2   2197  82.4  165.1  1.1        1520
  COMMENTS: NE quad, structure 1
  COMMENTS: 50G to 400G of 2 cubes gave little
  COMMENTS: change in direction

1035   1   3 UTATLAN, GUAT., F-5B, COMPLEX 2
 15.0  -91.2   6.7  8    1520
NRM      8 352.3  24.0  1.1  2.0    848  82.1  161.7  1.9        1520
  COMMENTS: N.E. quad, structure 1
  COMMENTS: 50G to 400G of 3 cubes gave little
  COMMENTS: change in direction

 771   1   2 VALLE SAN JUAN, EL SALVADOR
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 13.3  -88.6   5.8  8       1
NRM     8 357.9  27.6  0.9  1.7   1256  87.6 -144.8  1.6            1
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction

 768   2   0 VALLE SAN JUAN, EL SALVADOR, TROCONERA 3
 13.3  -88.6   5.8  8       1
NRM     6 357.5  29.0  0.5  0.9   6899  86.7 -135.8  0.8         3000
100G    7 356.1  28.1  0.4  0.8   7490  85.9 -154.8  0.7            1

 770   1   2 VALLE SAN JUAN, EL SALVADOR, TRONCONERA 1
 13.3  -88.6   5.8  8       1
NRM     8 359.9  29.1  1.3  2.3    722  87.7  -97.9  2.1            1
  COMMENTS: 100G and 150G of 2 cubes gave little
  COMMENTS: change in direction

1640   2   1 YUCUITA, MEX., SAN JUAN YUCUITA
 17.5  -97.2   8.5  8
NRM     8 357.4  33.6  3.5  6.1    109  87.3 -167.1  5.3         2500
150G    8 357.2  33.5  4.7  8.2     60  87.2 -170.0  7.2         3000
  COMMENTS: kiln elemento K12, 100 Km NW Oaxaca

1641   3   1 YUCUITA, MEX., SAN JUAN YUCUITA
 17.5  -97.2   8.5  9
NRM     8 358.6  34.8  2.8  4.8    177  87.9 -137.0  4.2         2500
50G     9   5.6  29.4  6.6 12.0     23  84.4   10.5 10.9         3000
100G    8   2.8  31.2  4.1  7.4     72  87.3    6.1  6.6         3000
  COMMENTS: hearth elemento K45

1642   1   2 YUCUITA, MEX., SAN JUAN YUCUITA
 17.5  -97.2   8.5  8
NRM     8   4.2  43.6  7.1 11.5     37  81.1  -71.8  9.2         3000
  COMMENTS: hearth elemento K38
  COMMENTS: 150G of 4 cubes gave 4.0 deg. change in decl

 605   3   1 ZAPOTAL 1, MEX., MOUND 2, TRENCH 1, LEVEL 1
 18.7  -96.0   7.9  8     600-900
NRM     7 352.1  37.9  5.4  9.1     62  82.2 -165.3  7.7         3000
100G    7 356.0  35.1  3.2  5.6    156  86.2 -175.4  4.9         2500
150G    7 356.8  36.4  4.1  7.1    101  86.6 -158.1  6.0         3000
  COMMENTS: arch date is late Classic

 606   5   1 ZAPOTAL 1, MEX., MOUND 2, TRENCH 1, LEVEL 1
 18.7  -96.0   7.9  8     600-900
NRM     8  11.9  31.5  4.6  8.2     58  79.0    1.0  7.3         3000
NRM     8 360.0  35.4  4.7  8.1     64  89.2  -96.2  7.0         3000
100G    8 359.5  30.1  2.1  3.7    273  87.4   94.4  3.4          750
150G    8 358.7  30.7  2.8  5.0    156  87.5  113.2  4.5         3000
200G    8 358.1  31.4  2.4  4.2    218  87.5  130.3  3.8         3000
```

```
  COMMENTS: arch date is late Classic

 607   1   1 ZAPOTAL 1, MEX., MOUND 2, TRENCH 1, LEVEL 3
 18.7  -96.0   7.9  2     600-900
NRM      2 358.5  47.0 10.2 15.8    417  80.4 -103.8 12.3        3000
  COMMENTS: arch date is late Classic

1527   6   0 ZONA ARCHAE CHOLULA, MEX., PUEBLA, KILN 1
 19.0  -98.3   8.7 10    1000-1200
NRM     10   0.3  41.2  1.1  1.8   1051  85.3  -94.5  1.5        3000
100G     8 358.8  41.3  0.6  1.0   4168  85.2 -111.2  0.9        3000
150G     8 359.4  41.2  0.6  1.0   4194  85.3 -105.3  0.9        3000
200G     8 359.1  41.3  0.6  1.0   4336  85.2 -108.1  0.8        1100
400G     8 359.2  41.9  0.6  1.0   4807  84.8 -106.3  0.8        3000
800G     8 358.4  41.7  0.6  1.0   4782  84.8 -114.4  0.8        3000

1528   3   0 ZONA ARCHAE CHOLULA, MEX., PUEBLA, KILN 2
 19.0 -98.3   8.7  8    1000-1200
NRM      8 346.5  30.9  0.5  1.0   4233  76.9  163.4  0.9        3000
100G     7 346.2  31.1  0.3  0.6  14106  76.7  164.2  0.5        3000
150G     7 346.6  31.2  0.2  0.3  39569  77.1  164.3  0.3        1100

1529   2   0 ZONA ARCHAE CHOLULA, MEX., PUEBLA, KILN 2
 19.0  -98.3   8.7  8    1000-1200
NRM      7 345.6  29.7  1.5  2.7    600  75.9  161.4  2.5        3000
100G     7 345.6  30.9  0.9  1.5   1894  76.1  164.3  1.4        1100
```

**APPENDIX 11. South America**

```
 436   2   0 CAJA MARQUILLA, PERU
-12.2  -76.8   4.5  8     700
NRM      8 357.8 -24.2  1.3  2.5    582  87.8  179.4  2.3         3000
50G      7 359.4 -29.7  1.7  3.1    474  86.1  112.1  2.8          700

 514   2   0 CAJAMARQUILLA, PERU
-12.2  -76.8   4.5 10     700
NRM      9   0.5 -30.3  1.2  2.2    674  85.9   96.5  2.0         3000
100G     8 359.2 -30.9  0.9  1.6   1548  85.5  113.4  1.4          700

 494   3   0 CERRO DE LA VIRGEN, PERU
 -8.0  -79.0   5.5 11    1000-1500
NRM      8 355.3 -16.5  2.9  5.6    104  85.4 -174.5  5.5         3000
100G     8 354.7 -16.1  2.8  5.4    113  84.8 -171.8  5.2         1250
NRM      8 354.0 -11.6  2.3  4.5    154  83.6 -149.6  4.5         3000

 490   2   2 CERRO DE LA VIRGEN, PERU, SITE H-3968
 -8.0  -79.0   5.5  8    1000-1500
NRM      8   0.1 -11.5  6.4 12.7     21  87.8  -76.5 12.5         3000
NRM      8   2.8 -11.6  6.2 12.2     22  86.5  -26.1 12.0         2500
  COMMENTS: unit A, feat 2, room 5, fire pit 3
  COMMENTS: 150G of 2 cubes gave 0.4deg. change in decl.

 491   2   1 CERRO DE LA VIRGEN, PERU, SITE H-3968
 -8.0  -79.0   5.5  8    1000-1500
NRM      8 352.3 -20.9  1.0  1.9    982  81.9  169.9  1.8         3000
150G     8 353.4 -25.7  1.0  1.8   1054  81.5  150.0  1.7         1250
  COMMENTS: unit A, feat 2, room 5, fire pit 3

 496   2   1 CERRO DE LA VIRGEN, PERU, SITE H-3968
 -8.0  -79.0   5.5  6    1000-1500
NRM      6 355.4   4.4  3.7  7.4     83  78.8 -103.6  7.4         2500
100G     6 351.2  -4.3  5.0 10.1     45  79.4 -135.8 10.1         3000
  COMMENTS: unit A, feat 2, room 1, fire pit 1

 435   2   0 CERRO SECHIN, PERU
 -9.5  -78.5   4.5  8   -1000
NRM      7 356.8  -5.0  1.7  3.4    316  79.8  -95.2  3.4         3000
50G      7 358.7 -13.9  2.1  4.1    229  87.2 -105.8  4.0        -1000

 829   2   1 CERRO SECHIN, PERU
 -9.5  -78.5   5.5  8    1000-1200
NRM      8 352.0 -19.3  1.4  2.7    454  82.1 -172.2  2.6         3000
100G     8 349.6 -24.8  0.9  1.6   1403  79.2  171.6  1.5         1100
  COMMENTS: square 2J, cenizade strata 4

 819   2   1 CHAN CHAN, PERU, SITE H-75
```

```
 -8.0  -79.0   5.5  8    1300-1500
NRM     7 354.6  -6.4  1.8  3.6    279  82.8 -127.5  3.6        3000
50G     7 352.1 -13.5  2.0  3.8    261  82.1 -161.1  3.7        1400
  COMMENTS: unit BM, feat 2, room D, hearth 1

 822   1   3 CHAN CHAN, PERU, SITE H-75
 -8.0  -79.0   5.5  8    1200
NRM     6 351.0 -15.8  1.7  3.4    424  81.1 -169.9  3.3        1200
  COMMENTS: unit BJ, feat 2, level 2
  COMMENTS: up to 800G of 3 cubes gave little change
  COMMENTS: in direction

 823   1   3 CHAN CHAN, PERU, SITE H-75
 -8.0  -79.0   5.5  8    1300-1500
NRM     8 340.9  -3.3 10.3 20.6      8  70.0 -151.5 20.6        3000
  COMMENTS: unit 5, feat 14, test pit 2
  COMMENTS: 50G to 100G of 4 cubes gave little
  COMMENTS: change in direction

 828   1   3 CHAN CHAN, PERU, SITE H-75
 -8.0  -79.0   5.5  8    1300-1500
NRM     8 297.9 -32.4 32.6 57.7      2  29.0  175.2 51.1        3000
  COMMENTS: unit BB, feat 6, test pit 8
  COMMENTS: 50G to 400G of 5 cubes gave little
  COMMENTS: change in direction

 432   2   1 CHANCHAN, PERU, FEAT. D-19
 -8.0  -79.0   5.5  8    1400-1450
NRM     8 351.5 -21.5  0.6  1.2   2403  81.0  170.0  1.1        3000
NRM     8 351.6 -22.9  0.6  1.0   3180  80.8  165.0  1.0        1425
  COMMENTS: entrance to rivero

 492   2   1 CHANCHAN, PERU, SITE H-75
 -8.0  -79.0   5.5  9    1450
NRM     9 354.5 -17.1  0.9  1.8    897  84.5 -177.2  1.7        3000
100G    9 352.7 -22.0  0.8  1.5   1291  82.1  164.9  1.4        1450
  COMMENTS: hearth in unit D, structure 3

 508   2   2 CHANCHAN, PERU, SITE H-75
 -8.0  -79.0   5.5  9    1200-1450
NRM     8 356.5 -18.1  1.3  2.6    495  86.3  170.2  2.5        1325
200G    3 356.3 -14.3  9.4 18.4     48  86.2 -158.1 18.0        3000
  COMMENTS: unit AW, feat 2, field spec. 65
  COMMENTS: 150G of 3 cubes gave 0.7 deg. change in decl

 511   3   1 CHANCHAN, PERU, SITE H-75
 -8.0  -79.0   5.5  8    1400-1500
NRM     8 353.0 -17.1  0.6  1.2   2347  83.0 -175.4  1.1        3000
100G    7 351.7 -20.0  0.7  1.4   1961  81.5  174.5  1.4        1450
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200G    2 351.0 -22.3  5.4 10.2    677  80.4  168.4  9.6        3000
  COMMENTS: Velarde hallway, unit J, feature 4

 512   2   1 CHANCHAN, PERU, SITE H-75
 -8.0  -79.0   5.5  9    1200-1450
NRM      7 357.7 -15.3  1.5  2.9    466  87.7 -163.9  2.8        3000
150G     8 356.9 -16.6  1.7  3.3    302  86.9 -177.7  3.2        1325
  COMMENTS: unit AW, feat 4, field spec. 21

 513   2   1 CHANCHAN, PERU, SITE H-75
 -8.0  -79.0   5.5 16    1200-1450
NRM     15 358.6  -8.4  0.9  1.8    478  86.0  -99.3  1.8        3000
100G     8 355.6 -16.3  1.4  2.8    415  85.6 -173.5  2.7        1325
  COMMENTS: unit AW, feat 3, E court, field spec. 38

 489   2   0 CHANCHAN, PERU, SITE H-75, UNIT AT, FEAT. 5
 -8.0  -79.0   5.5  8    1200-1500
NRM      8 352.5 -19.3  0.7  1.3   1853  82.3  176.0  1.3        3000
150G     8 351.6 -21.8  0.6  1.2   2307  81.1  168.5  1.2        1350

 421   2   0 CHANCHAN, PERU, UNIT A, FEAT. 1
 -8.0  -79.0   5.5  8    1200-1400
NRM      8 352.9 -15.4  2.2  4.3    178  82.9 -168.2  4.2        3000
50G      8 354.6 -19.3  1.4  2.6    483  84.4  170.4  2.5        1300

 419   2   0 CHANCHAN, PERU, UNIT D, FEAT. 1
 -8.0  -79.0   5.5  8    1200-1400
NRM      6 349.8 -18.1  1.1  2.1   1100  79.8 -177.1  2.0        1300
50G      8 352.2 -22.6  4.4  8.2     52  81.5  164.1  7.7        3000

 422   2   0 CHANCHAN, PERU, UNIT D, FEAT. 4
 -8.0  -79.0   5.5  8    1200-1400
NRM      8 350.6 -11.1  2.3  4.5    160  80.4 -155.3  4.4        3000
50G      8 355.6 -17.1  1.9  3.7    267  85.5 -178.8  3.5        1300

 434   2   1 CHANCHAN, PERU, UNIT D, FEAT. 4
 -8.0  -79.0   5.5  8    1450
NRM      8 352.8 -18.6  1.4  2.7    442  82.7  178.1  2.6        3000
100G     8 353.1 -19.6  1.9  3.6    259  82.9  173.5  3.5        1450
  COMMENTS: Rivero entrance hallway

 420   2   0 CHANCHAN, PERU, UNIT J, FEAT. 4
 -8.0  -79.0   5.5  8    1200-1400
NRM      7 352.9 -18.7  2.9  5.5    131  82.8  177.5  5.3        3000
50G      8 354.6 -19.4  1.8  3.4    288  84.3  169.9  3.3        1300

 416   1   0 CHANCHAN, PERU, UNIT K, FEAT. 3(F2)
 -8.0  -79.0   5.5  8    1532
NRM      8 348.9 -16.7  4.4  8.6     45  79.0 -172.5  8.3        3000
```

```
 417   2   0 CHANCHAN, PERU, UNIT Q, FEAT. 1
 -8.0  -79.0   5.5  8    1532
NRM      8 349.8 -19.9  1.5  2.8    429  79.7  177.5  2.7        3000
50G      8 350.6 -22.4  1.0  1.9    957  80.0  168.7  1.8        1530

 418   2   0 CHANCHAN, PERU, UNIT S, FEAT. 4, BASIN
 -8.0  -79.0   5.5  8    1200-1400
NRM      8 351.0 -13.6  3.3  6.5     76  81.0 -162.7  6.4        2500
100G     8 356.9 -21.3  4.1  7.7     58  85.7  146.6  7.3        3000

 423   3   0 CHAVIN, PERU
 -9.6  -77.2   4.5 10   -1000
NRM      6 355.9 -14.2  0.5  1.0   4711  85.3 -136.6  1.0        3000
NRM      9 357.0 -14.3  0.7  1.4   1338  86.2 -129.4  1.4        3000
100G     9 357.2 -16.6  0.9  1.8    884  87.1 -145.5  1.7       -1000

 424   1   0 CHAVIN, PERU
 -9.6  -77.2   4.5  8   -1000
NRM      7 352.0   5.8  8.7 17.2     13  75.2 -110.1 17.2        3000

 506   1   1 CHINCHEROS, PERU
 -3.7  -71.3   2.8  8    1537
NRM      8 355.9 -31.2  0.9  1.6   1413  76.2  125.5  1.5        1537
  COMMENTS: 150G of 2 cubes gave 0.1 deg. change in decl

 622   4   0 EL ABRA ROCKSHELTER, COLUMBIA
  4.1  -73.6   0.0  5   -7000
NRM      5 359.5  11.9  2.9  5.6    191  88.0  -88.9  5.5        3000
100G     5 359.9  10.0  2.2  4.3    327  89.1  -77.3  4.2        3000
200G     5 359.6   9.2  2.5  4.9    251  89.4 -110.3  4.8        3000
400G     5   0.0  10.3  2.1  4.1    361  88.9  -71.8  4.0       -7000

 624   1   0 EL ABRA ROCKSHELTER, COLUMBIA
  4.1  -73.6   0.0  1   -7000
NRM      1 351.0  35.5  241  416      0  72.2 -102.4  360        3000

 510   1   2 EL MILAGRO DE SAN JUAN, PERU, SITE 160 506
 -8.0  -79.0   5.5  5    1000-1500
NRM      5 354.5 -12.5  3.5  7.0    126  84.3 -152.4  6.8        3000
  COMMENTS: structure A-6, room 3, firepit 2
  COMMENTS: 150G of 2 cubes gave 0.9 deg. change in decl

 509   1   1 EL MILAGRO DE SAN JUAN, PERU, SITE H-160 506
 -8.0  -79.0   5.5  2    1000-1500
NRM      2   3.3  -6.0  2.9  5.8   1903  84.1  -45.8  5.7        3000
  COMMENTS: structure A-7, room 3, firepit 2

 825   4   1 GALINDO, PERU, SITE K-4646
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```
 -8.0  -79.0   5.5  3     800-900
NRM     3   1.9 -24.6  2.5  4.7    780  84.8   80.6  4.4        3000
50G     3   2.8 -25.2  2.5  4.7    797  84.1   73.8  4.4        3000
100G    3   2.9 -25.2  2.6  4.8    750  84.0   72.5  4.5         850
150G    3   2.8 -25.2  2.7  4.9    721  84.1   73.6  4.6        3000
  COMMENTS: unit C, feat. 7, room K

 433   2   1 LA CUMBRE, PERU, FEAT 2037-1911
 -8.0  -79.0   5.5  8     100-800
NRM     8 358.3 -17.0  1.3  2.5    525  88.2  169.3  2.4        3000
NRM     7 356.0 -21.0  1.1  2.1    930  85.1  155.0  2.0         500
  COMMENTS: arch date also could be several thousand B.C.

 495   1   2 LAS CABRAS, PERU, SITE H-1929, STR 2, ROOM C
 -8.0  -79.0   5.5  9     400-500
NRM     9   4.9  -8.7  0.9  1.7    910  83.9  -25.4  1.7         450
  COMMENTS: 100G-1600G of 3 cubes gave little
  COMMENTS: change in direction

 437   2   0 MINA PERDIDA, PERU
-12.2  -76.8   4.5  8   -1000- to -500
NRM     8 356.1 -16.1  2.0  3.8    222  84.5 -121.2  3.7        3000
100G    7 356.7 -14.1  1.4  2.6    547  84.0 -109.6  2.6        -750

 824   2   1 MOCHE, PERU, SITE H-8000
 -8.0  -79.0   5.5  7     200-600
NRM     7 357.3 -18.5  3.8  7.3     76  86.9  161.8  7.0        3000
100G    7 358.0 -18.4  4.8  9.2     48  87.6  154.7  8.8        2500
  COMMENTS: feat H-8000-A, feature 1

 826   1   3 MOCHE, PERU, SITE H-8000
 -8.0  -79.0   5.5  8    1000-1200
NRM     8 359.8 -21.3  1.3  2.5    558  87.0  105.3  2.3        1100
  COMMENTS: feat. H-8000A, feat 11
  COMMENTS: 50G to 150G of 3 cubes gave little
  COMMENTS: change in direction

 827   2   1 MOCHE, PERU, SITE H-8000
 -8.0  -79.0   5.5  8     200-500
NRM     8 358.3 -15.9  0.9  1.7   1074  88.3 -171.8  1.7        3000
100G    8 357.9 -17.5  0.8  1.6   1236  87.7  165.2  1.6         350
  COMMENTS: H-8000-A, NW edge of sec. 3

 818   2   0 MOCHE, PERU, FEAT. H-8000-J, SITE H-8000
 -8.0  -79.0   5.5  7       1-300
NRM     7 354.8 -13.2  1.5  3.0    414  84.7 -154.8  3.0        3000
100G    7 355.8 -18.5  1.7  3.2    381  85.6  171.0  3.1         150

 820   2   0 MOCHE, PERU, SITE H-8000, FEATURE 1
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```
 -8.0  -79.0   5.5  8     200-600
NRM     8 352.2 -22.8  2.4  4.4    176  81.4  163.7  4.2        3000
50G     8 351.9 -23.9  1.9  3.5    290  80.8  160.9  3.3         400

 821   1   1 MOCHE, PERU, SITE H-8000, FEAT 1
 -8.0  -79.0   5.5  8     200-600
NRM     7 352.5 -15.1  5.7 11.1     32  82.6 -167.0 10.9        3000
  COMMENTS: 50G and 100G of 4 cubes gave some change in dir

 493   2   0 MOCHE VALLEY, GALLINDO, PERU, SITE K-4462
 -8.0  -79.0   5.5  8    -900 to -200
NRM     7   7.7   5.7  0.9  1.7   1200  76.7  -43.5  1.7        3000
100G    8   6.6  -5.8  1.7  3.4    271  81.7  -26.3  3.4        -550

 425   1   0 PACHACAMAC, PERU, ROOM 8, UPPER LEVEL
-12.2  -76.8   4.5  8    1470-1533
NRM     8 354.9 -26.5  0.5  0.8   5129  84.7  172.9  0.8        1500

 497   2   1 QAWA, PERU, SITE AC-335
-13.2  -74.3   4.0  8   -6350
NRM     8 357.0 -29.7  2.3  4.1    220  86.0  152.4  3.7       -6350
100G    8 352.4 -32.3  2.8  5.0    156  55.0  124.4  4.4        3000
  COMMENTS: square S 4E5, zone D

 499   2   1 QAWA, PERU, SITE AC-335
-13.2  -74.3   4.0  8   -6350
NRM     8   6.4   3.6  2.5  5.1    121  73.7  -50.8  5.1       -6350
100G    8   5.3   0.9  3.5  6.9     65  75.4  -52.9  6.9        3000
  COMMENTS: squares S3E5 and S3E6, zone D

 507   1   0 SACSAHUAMAN, PERU
 -3.7  -71.3   2.8  8    1280-1533
NRM     8   1.1 -33.1 20.7 36.5      4  85.5   95.8 32.2        3000

 502   1   2 TIAHUANACO, BOLIVIA, KALASASAYA
-16.7  -68.3   1.1  8    -360-133
NRM     7   0.1 -30.7  0.8  1.5   2038  89.8  -47.4  1.3        -110
  COMMENTS: pit K-9, strata 5
  COMMENTS: 150G of 2 cubes gave 0.1 deg. change in decl

 503   1   1 TIAHUANACO, BOLIVIA, KALASASAYA
-16.7  -68.3   1.1  8     133-374
NRM     8  11.0  44.2 12.5 20.0     13  46.1  -54.0 15.9        3000
  COMMENTS: pit H-9, strata 3

 504   1   1 TIAHUANACO, BOLIVIA, KALASASAYA
-16.7  -68.3   1.1  8     133-374
NRM     8   9.8  28.8 13.8 25.0      7  56.5  -51.0 22.7        3000
  COMMENTS: pit G-9, strata 3
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 505   2   1 TIAHUANACO, BOLIVIA, KHERIKALA, PIT K-10
-16.7  -68.3   1.1  8     374-724
NRM     7   6.3   8.2  2.6  5.1    142  68.3  -51.2  5.1         550
100G    8   6.5  -9.5  4.7  9.4     37  76.5  -39.6  9.3        3000
  COMMENTS: Cimientos

 500   2   0 WICHGANA, PERU, SITE A-518, SW WALL OF PIT 2
-13.1  -74.2   4.0 10    -500
NRM    10   6.7 -24.3  0.7  1.3   1657  83.5  -24.3  1.2        3000
100G    7   6.1 -25.6  0.9  1.6   1644  84.1   20.0  1.5        -500

 501   1   1 WICHGANA, PERU, SITE A518, SW WALL OF PIT 2
-13.1  -74.2   4.0  7   -1000
NRM     6   2.1 -27.5  2.4  4.4    280  87.5   52.7  4.0       -1000
  COMMENTS: 150G of 2 cubes gave 0.5 deg. change in decl

 498   1   1 WICHGANA, PERU, SITE AS-18, PITS 23 AND 30
-13.1  -74.2   4.0  8    -800
NRM     8   6.8 -28.4  0.9  1.7   1310  83.1   33.3  1.5        -800
  COMMENTS: 150G of 2 cubes gave little change in dir
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**APPENDIX 12. Miscellaneous Sites**

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 361   1   1 BARLOW SITE, WY
 44.2 -105.6  14.6  8
NRM     7  14.1  49.4 13.3 20.0     17  72.1   30.9 15.1        3000
  COMMENTS: Date is pre-A.D. 500

 362   1   0 BIG GOOSE CREEK, WY, B
 44.0 -107.5  15.5  8    1550
NRM     8   5.0  62.8 10.4 13.2     44  86.4  -22.7  8.4        3000

 215   1   0 EGYPT, 67-5V
 25.9   32.5  -1.3  3   -8000 to -10000
NRM     3   5.6  30.3 24.4 43.9     11  79.1 -177.2 39.5        3000

 214   1   1 EGYPT, C-T1
 25.9   32.5  -1.3  6   -8000 to -10000
NRM     6   2.8  40.5 10.4 17.2     23  86.2  169.7 14.2        3000
  COMMENTS: 50G of 2 cubes too weak to continue

 216   1   0 EGYPT, E 88-9
 25.9   32.5  -1.3  7   -8000 to -10000
NRM     7 353.0  40.8  8.2 13.5     31  83.1  -78.0 11.1        3000

 213   1   0 EGYPT, E-68-19
 25.9   32.5  -1.3  2   -8000 to -10000
NRM     2 356.1  30.7 22.4 40.1     50  80.1 -125.1  360        3000

 191   1   0 EGYPT, LUXOR
 25.9   32.5  -1.3  8
NRM     8 354.0  33.7  1.8  3.2    398  80.7 -109.6  2.8        3000

 189   1   1 EGYPT, QUENA
 25.9   32.5  -1.3  8
NRM     8 348.0  32.6 18.3 32.4      5  76.2  -91.3 28.7        3000
  COMMENTS: Cubes 1-4 and 5-8 are from different areas

 190   1   1 EGYPT, QUENA, SITE 6-E
 25.9   32.5  -1.3  8
NRM     5   0.4  42.8  2.8  4.5    439  88.9 -166.6  3.7        3000
  COMMENTS: AF at 50G, results too weak to continue

 188   1   0 EGYPT, SITE 14-D, 1-8
 25.9   32.5  -1.3  8   -8000 to -9000
NRM     8 329.1  50.2 21.9 32.7      6  62.4  -39.8 24.4        3000

 185   1   1 EGYPT, SITE 14A, TRENCH 1, 11-18
 25.9   32.5  -1.3  8   -8000 to -9000
NRM     8 331.4  12.4 24.9 48.9      2  56.4  -88.3 48.1        3000
```

```
  COMMENTS: AF at 50G, results too weak to continue

 183   1   1 EGYPT, SITE 2-A, ELKILH 1-8
 25.9   32.5  -1.3  8  -16000 to -20000
NRM     8   3.8  37.6  8.6 14.6     21  84.0  176.1 12.4        3000
  COMMENTS: AF to 500G gave little change in direction

 184   1   1 EGYPT, SITE 24-C, 11-18
 25.9   32.5  -1.3  8  -16000 to -20000
NRM     7 356.0  38.4  1.2  2.0   1304  84.3 -106.0  1.7      -18000
  COMMENTS: AF to 500G gave little change in direction

 180   1   1 EGYPT, SITE 9
 25.9   32.5  -1.3 14  -16000 to -18000
NRM    14 350.8  31.2  7.8 13.9     11  77.5 -102.3 12.4        3000
  COMMENTS: AF at 50G, results too weak to continue

 182   1   1 EGYPT, SITE 9X ISNA
 25.9   32.5  -1.3  8  -11000 to -13000
NRM     8 339.4  47.2 12.0 18.6     16  71.5  -45.2 14.3        3000
  COMMENTS: AF at 200G gave little change in direction

 181   1   1 EGYPT, SITE E-8 ISNA
 25.9   32.5  -1.3  8  -11000 to -13000
NRM     8   0.2  43.7 11.4 18.3     15  89.6 -177.9 14.7        3000
  COMMENTS: AF at 50G, results too weak to continue

 366   1   0 FARSON SITE, WY, B
 42.0 -109.3  15.7  8
NRM     8  17.3  60.9 12.1 15.8     30  77.2  -24.6 10.3        3000

 368   1   1 GARRET-ALLEN QUEALY SITE, WY, D
 41.7 -106.4  14.3  8     500
NRM     6  24.2  53.7  3.7  5.3    315  69.6   -2.8  3.8        3000
  COMMENTS: U, uncertain curve assignment

 367   1   0 GARRETT-ALLEN QUEALY SITE, WY, C
 41.7 -106.4  14.3  8    1550
NRM     7  15.8  66.8 10.8 13.0     60  76.5  -56.9  7.9        3000

1150   1   2 GREYBULL, WY, SECTION 12
 44.6 -107.6  15.9  5
NRM     5   6.1  62.4  9.9 12.7     89  85.6   -8.6  8.2        3000
  COMMENTS: 50G to 400G of 3 cubes gave some
  COMMENTS: change in direction

 931   1   2 KERSEY A, CO, 5-WL-48, FEAT 2, LOCALITY 1
 40.4 -104.5  13.2  8
NRM     8  24.4  68.7  7.4  8.7    116  69.7  -57.6  5.2        3000
```

```
  COMMENTS: 50G to 1600G of 2 cubes gave large
  COMMENTS: changes in direction

 932   3   0 KERSEY A, CO, 5-WL-48, FEAT 3, LOCALITY 1
 40.4 -104.5  13.2  8
NRM      8   8.0  51.4  3.0  4.4    295  79.4   35.2  3.2         910
150G     8 353.5  57.8  4.9  6.6    153  84.6  145.9  4.5        3000
200G     8 350.4  58.7  5.1  6.9    145  82.6  161.0  4.6        3000

 930   3   0 KERSEY A, CO, 5-WL-48, FEAT 8, LOCALITY 1
 40.4 -104.5  13.2  8    0-1000
NRM      8 355.0  63.9  2.5  3.1    803  83.7 -138.4  2.0        3000
50G      6   6.6  59.8  2.7  3.5    822  85.0  -19.4  2.3         720
100G     6   5.3  59.9  3.0  4.0    651  85.9  -20.9  2.6        3000

1187   1   0 MADERA, CA, CA-MAD-176, F-30
 36.9 -120.1  16.6  8    -300-500
NRM      8 338.2  68.5 24.3 28.7     12  68.6 -159.1 17.0        3000

1190   1   2 MADERA, CA, CA-MAD-177, HOUSE PIT 16
 36.9 -120.1  16.9  8    1500-1850
NRM      7  25.6  64.6  4.3  5.4    323  68.8  -65.0  3.4        1850
  COMMENTS: 50G to 200G of 3 cubes gave little
  COMMENTS: change in direction

1189   1   2 MADERA, CA, CA-MAD-177, HOUSE PIT 4
 36.9 -120.1  16.9  8    1850-1860
NRM      7  10.0  59.9  2.6  3.4    728  81.3  -60.0  2.2        1855
  COMMENTS: 50G to 200G of 3 cubes gave little
  COMMENTS: change in direction

1188   1   3 MADERA, CA, CA-MAD-179
 36.9 -120.1  16.9  8    -300-500
NRM      8  15.3  61.4  4.2  5.4    250  77.0  -60.4  3.5         100
  COMMENTS: 50G to 200G of 3 cubes gave large
  COMMENTS: changes in direction
  COMMENTS: U, uncertain curve assignment

 363   1   0 MCLELLAN SITE, WY, A
 44.8 -107.2  15.6  8
NRM      8  18.3  71.2  6.1  7.0    194  74.0  -67.3  4.0        3000

 364   1   0 MCLELLAN SITE, WY, B
 44.8 -107.2  15.6  9
NRM      9  28.0  53.9 13.2 18.9     16  66.2   -0.9 13.5        3000

 365   1   0 RED DESERT SITE, WY, A
 42.2 -108.7  15.6  8
NRM      8   9.0  61.1  5.7  7.5    131  83.3  -21.5  4.9        3000
```

**TABLE 1. – BOUNDS OF GEOGRAPHICAL REGIONS AS DEFINED FOR THIS STUDY**

| Region | Latitude (°) | Longitude (°) | Number of Sites | Figure Number | Appendix Number |
|---|---|---|---|---|---|
| **North America** | >25N | 60–125W | | | |
| **Mesoamerica** | 12–25N | 80–120W | 251 | 10 | 10 |
| **South America** | <12N | 30–85W | 57 | 11 | 11 |
| **Southwest (all)** | 31–39N | 103–113W | 1,117 | | |
| N Arizona | 33.9–39N | 109–113W | 163 | 1 | 1 |
| S Arizona | 31–34.6N | 109–113W | 203 | 2 | 2 |
| NW New Mexico (excluding Chaco Canyon area) | 33.8 39N | 107.4 109W | 125 | 3 | 3 |
| Chaco Canyon area | 35.89–36.11N | 107.69–108.01W | 303 | | 4 |
| NE New Mexico | 33.8–39N | 103–107.59W | 273 | 4 | 5 |
| Santa Fe area | 34.5–36.7N | 104.5–107.2W | | | 5 |
| S New Mexico | 31–34.2N | 103–109W | 50 | 5 | 6 |
| **Midcontinent (all)** | 25–43.6N | 74.5–103W | | | |
| W Midcontinent | 25–43.6N | 94–103W | 90 | 6 | 7 |
| NE Midcontinent | 36.1–43.6N | 74.5–95W | 213 | 7 | 8 |
| SE Midcontinent | 25–37N | 74.5–95W | 300 | 8 | 9 |
| **Mesoamerica** | 12–25N | 88–104W | 251 | 10 | 10 |
| **South America** | 20S–5N | 68–80W | 57 | 11 | 11 |
| **Miscellaneous** | >25N | >6 or <115W | 44 | | 12 |
| N Colorado–Wyoming | 39–45N | 103–110W | | | |
| California | 32.3N | 121.9W | | | |
| South Africa | 30S | 25E | | | |

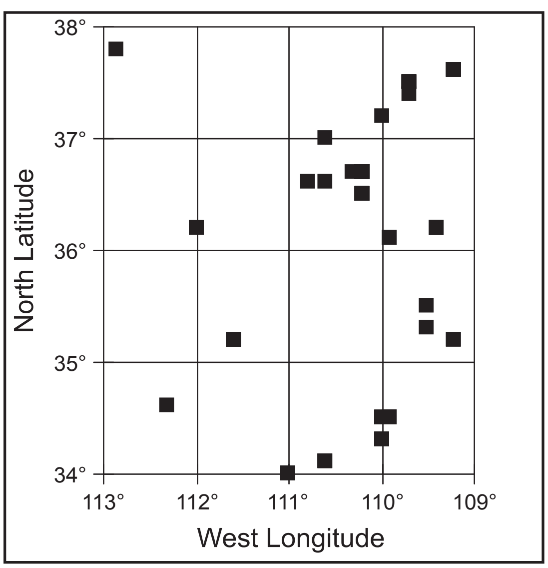



Figure 1. Sample sites (see Appendix 1) in northern Arizona and adjacent areas. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

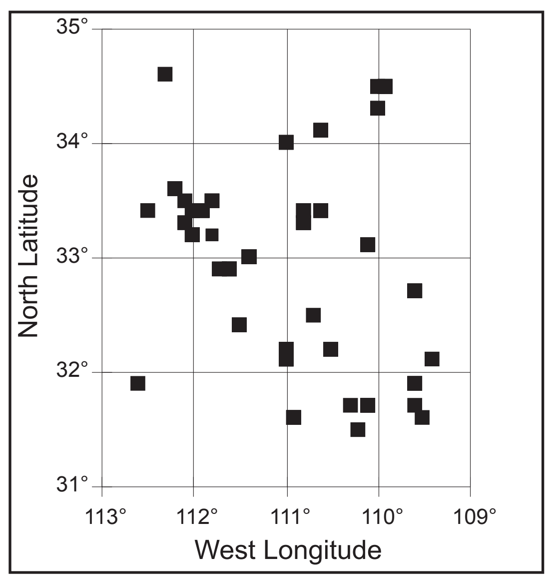



Figure 2. Sample sites (see Appendix 2) in southern Arizona. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

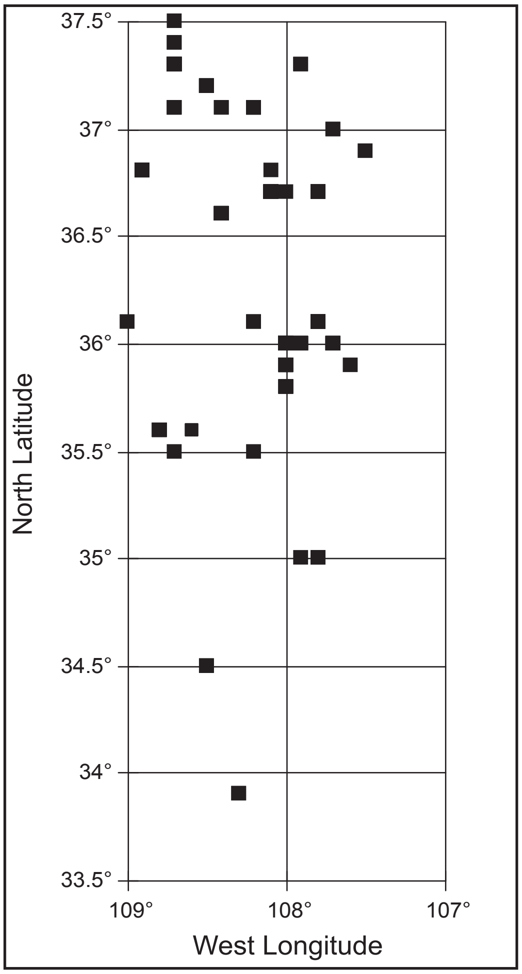



Figure 3. Sample sites (see Appendix 3) in northwestern New Mexico (excluding Chaco Canyon) and adjacent areas. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

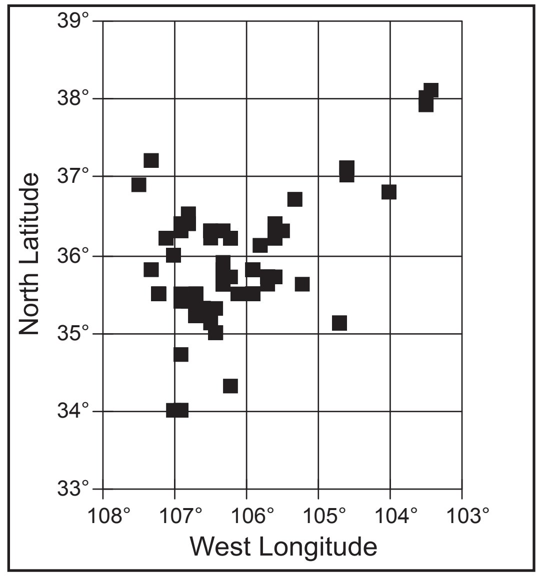



Figure 4. Sample sites (see Appendix 5) in northeastern New Mexico and adjacent areas. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

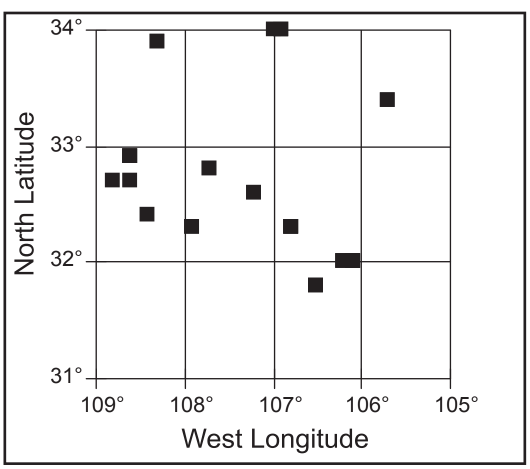



Figure 5. Sample sites (see Appendix 6) in southern New Mexico and adjacent areas. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

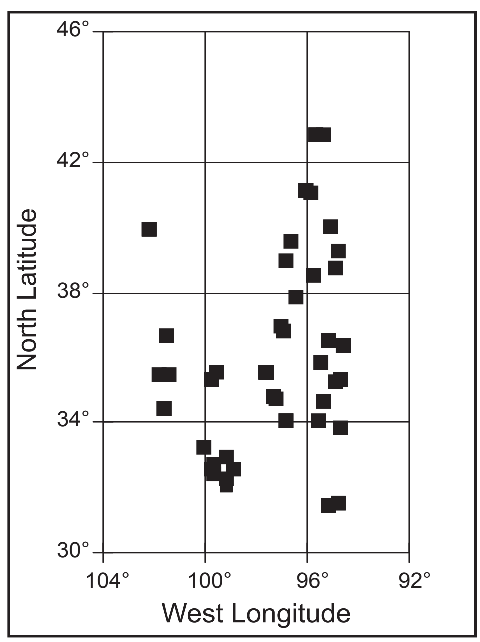



Figure 6. Sample sites (see Appendix 7) in the western Midcontinent. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

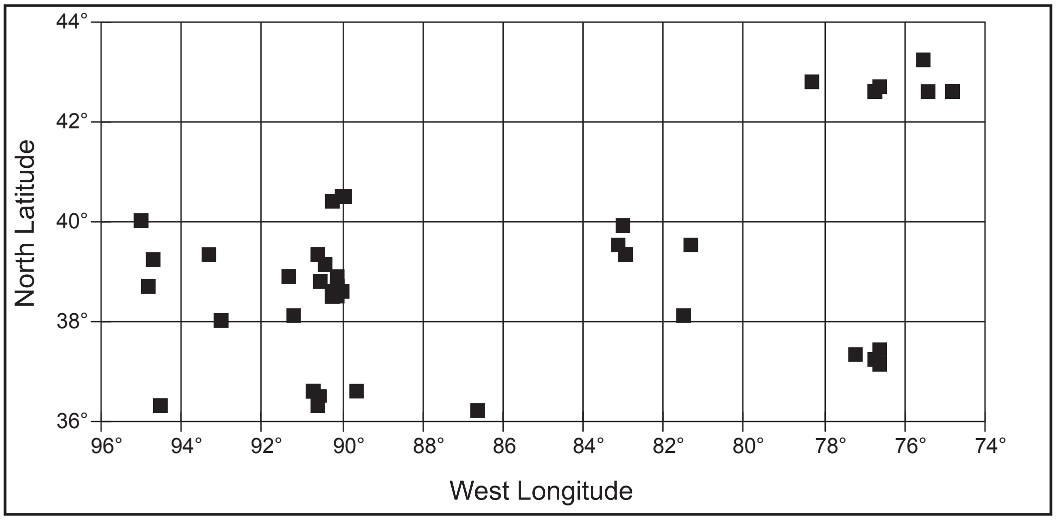



Figure 7. Sample sites (see Appendix 8) in the northeastern Mid-continent. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

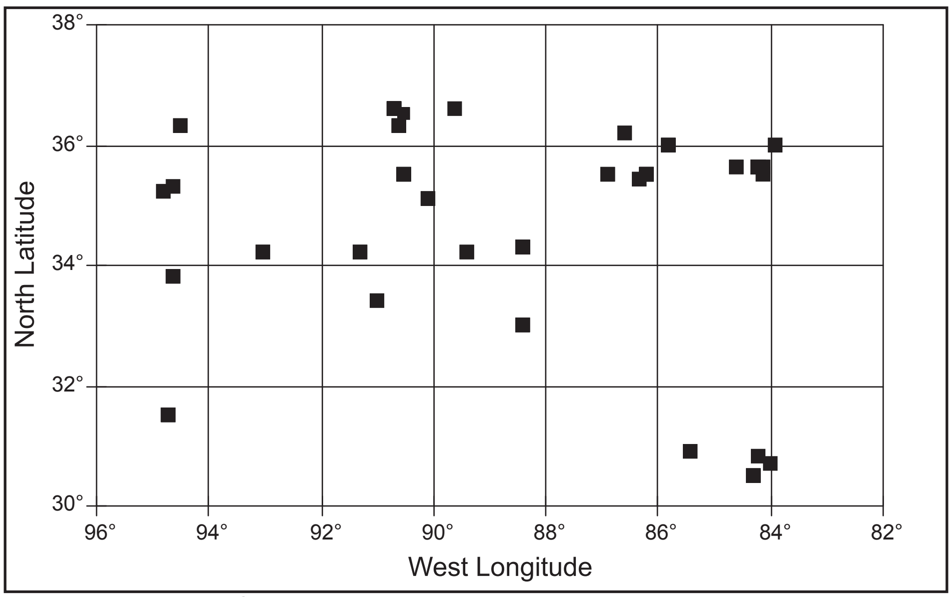



Figure 8. Sample sites (see Appendix 9) in the southeastern Mid-continent. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

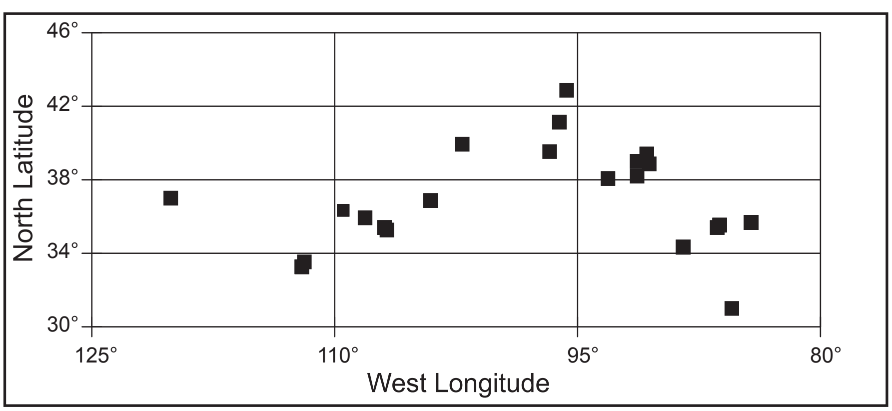



Figure 9. Sample sites (see Appendixes 1–4, 6–9) in North America, <A.D.500. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

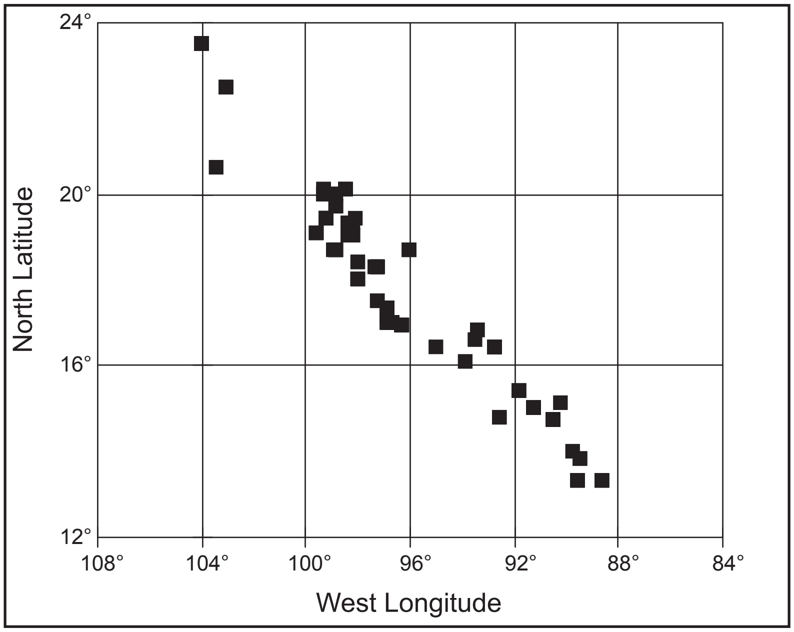



Figure 10. Sample sites (see Appendix 10) in Mesoamerica. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

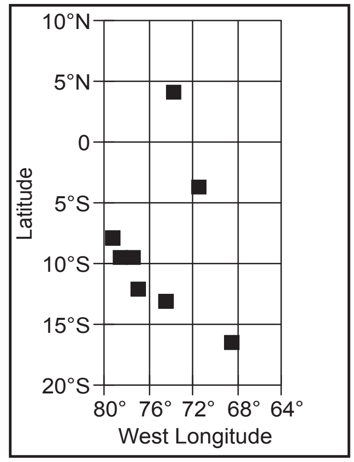



Figure 11. Sample sites (see Appendix 11) in South America. (Each square plotted may represent more than one sample site located at the same latitude and longitude.)

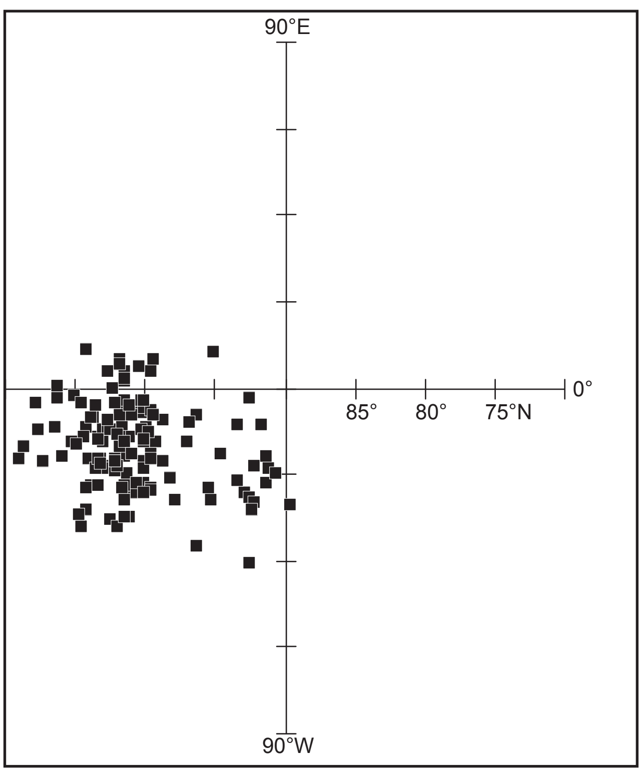



Figure 12. Polar diagram showing archaeomagnetic poles for Chaco Canyon (A.D. 1080–1460).

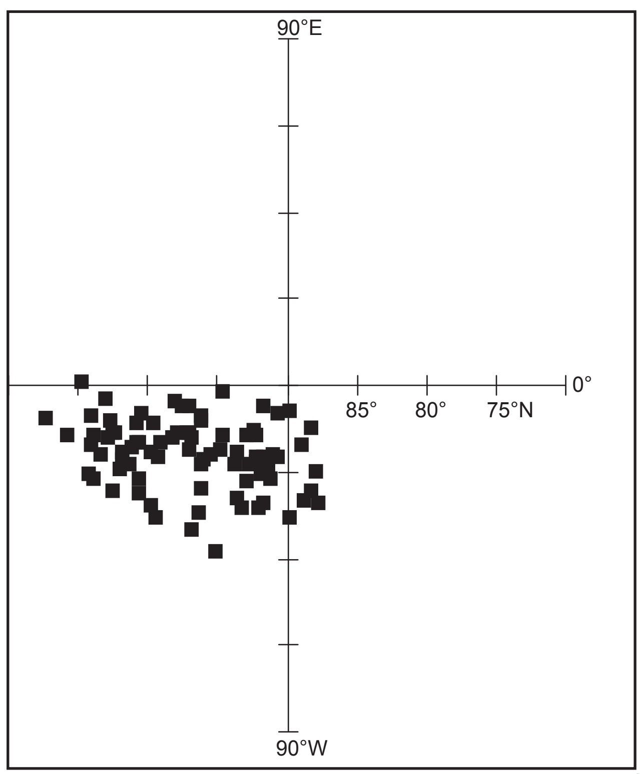



Figure 13. Polar diagram showing archaeomagnetic poles for Santa Fe area (A.D. 1080–1460). See Table 1 for geographic bounds of Santa Fe area.

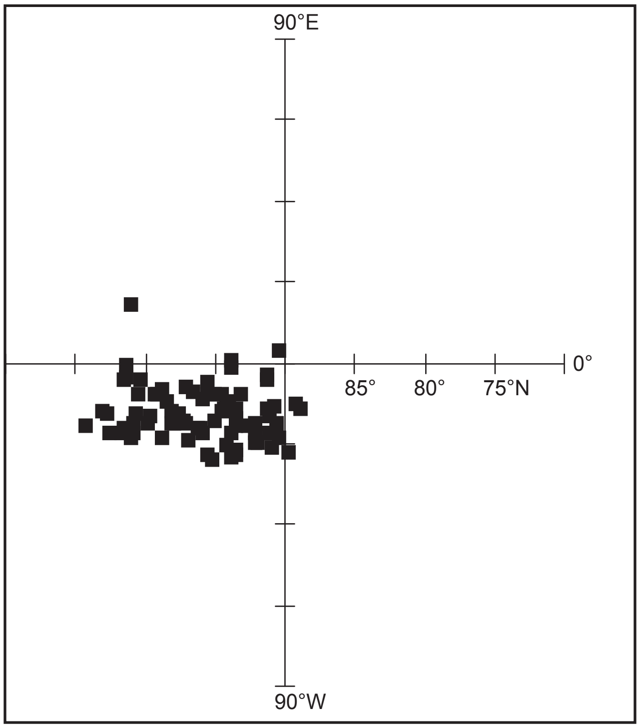



Figure 14. Polar diagram showing archaeomagnetic poles for southern Arizona (A.D. 1080–1460).

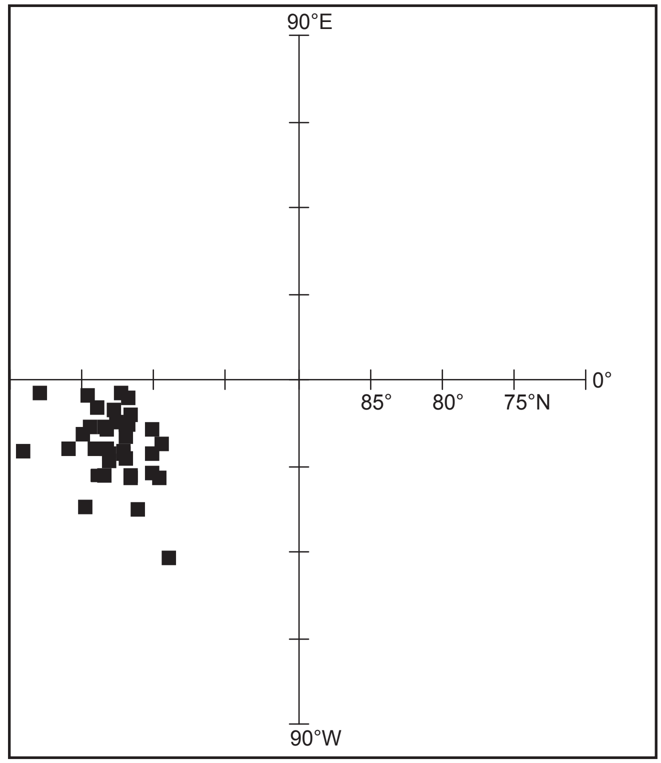



Figure 15. Polar diagram showing archaeomagnetic poles for Chaco Canyon (A.D. 1080–1140), α95 ≤1.99°.

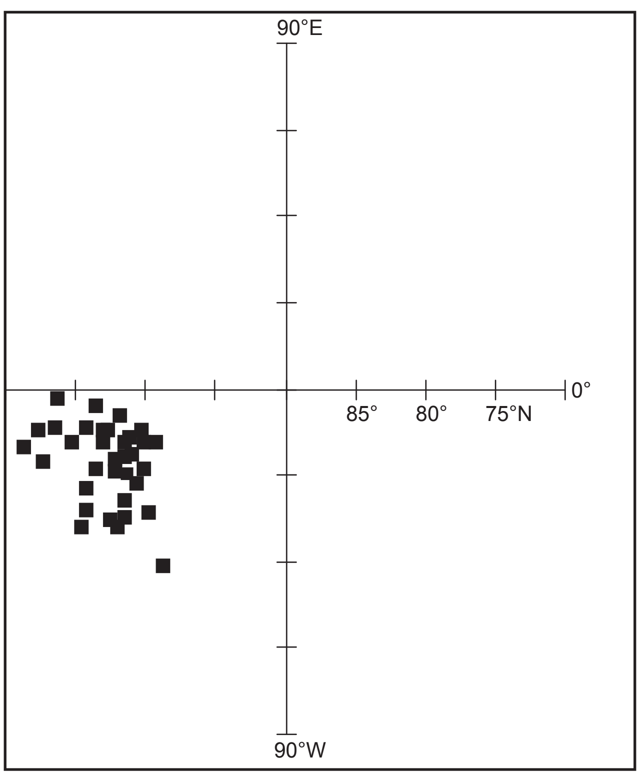



Figure 16. Polar diagram showing archaeomagnetic poles for Chaco Canyon (A.D. 1080–1140), α95 = 2.0°–2.99°.

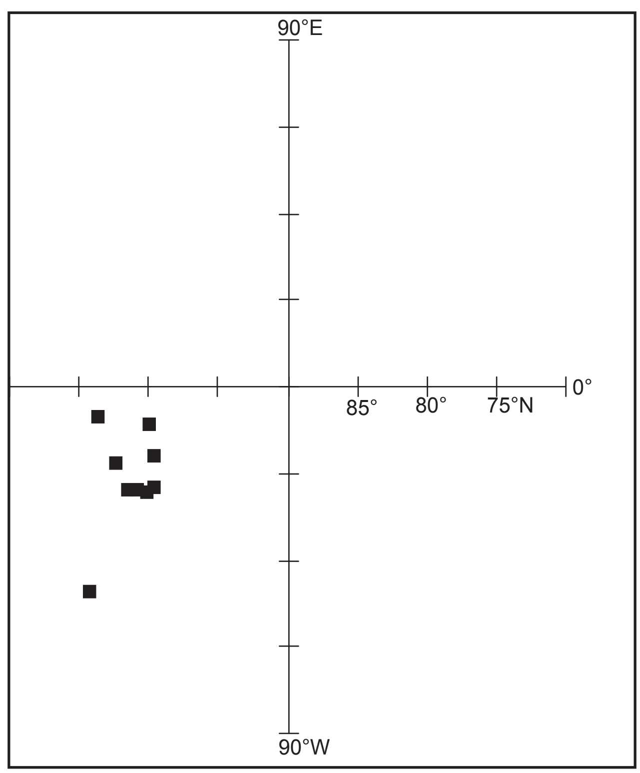



Figure 17. Polar diagram showing archaeomagnetic poles for Chaco Canyon (A.D. 1080–1140), α95 = 3.0°–3.99°.

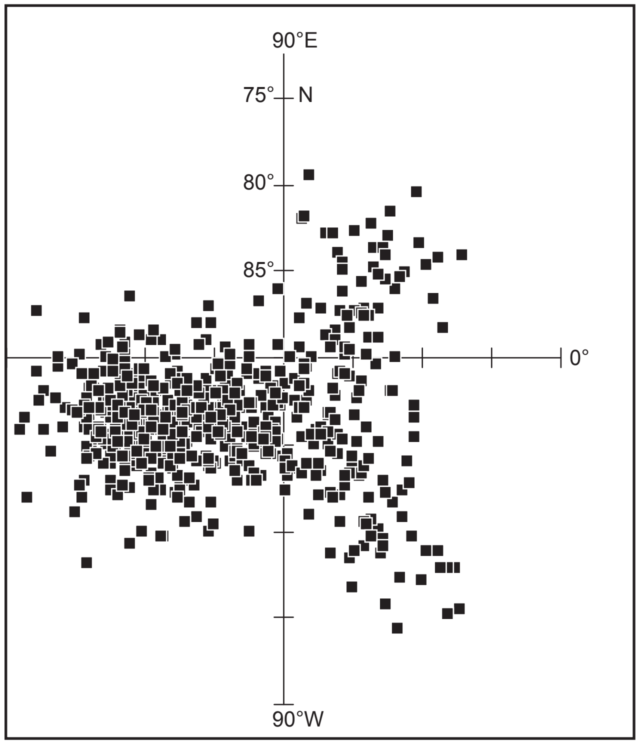



Figure 18. Polar diagram showing archaeomagnetic poles for the Southwest (A.D. 350–1965).

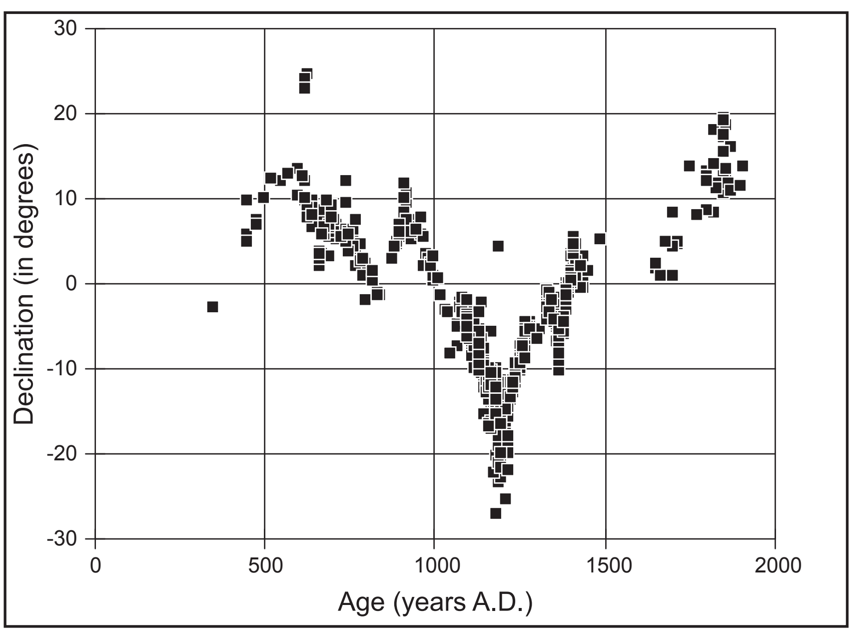



Figure 19. Declination data in the Southwest (A.D. 350–1965). A negative declination is west of true north; positive, east.

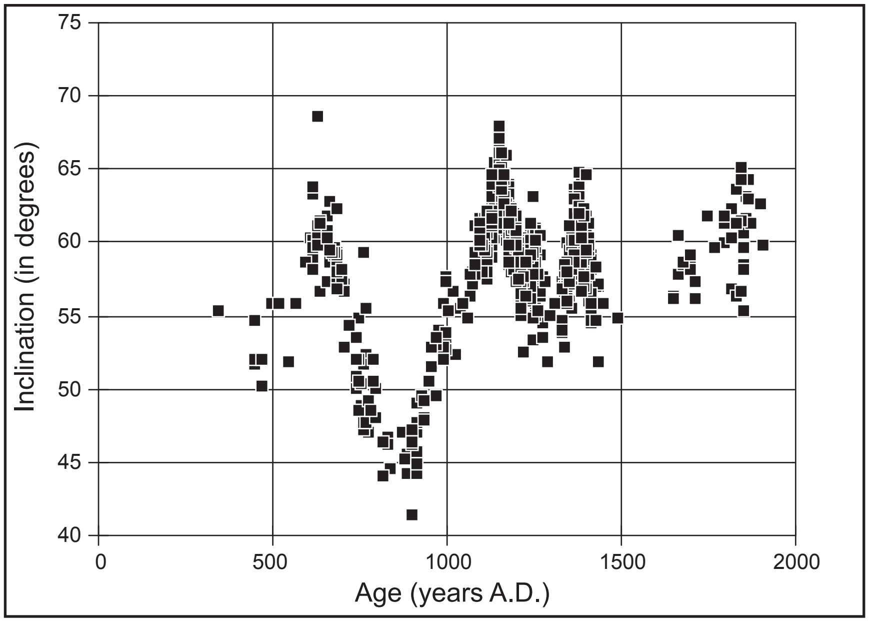



Figure 20. Inclination data in the Southwest (A.D. 350–1965).

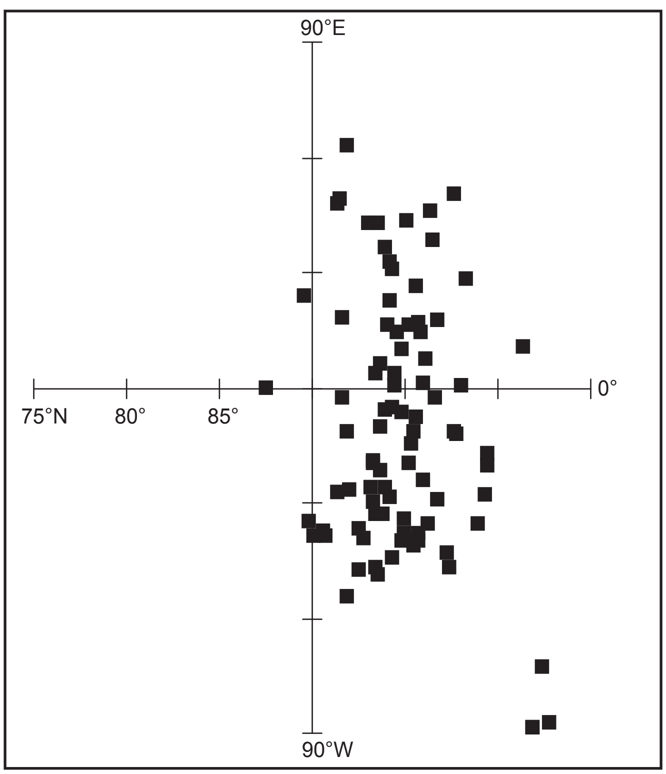



Figure 21. Polar diagram showing archaeomagnetic poles in the Southwest (A.D. 350–850).

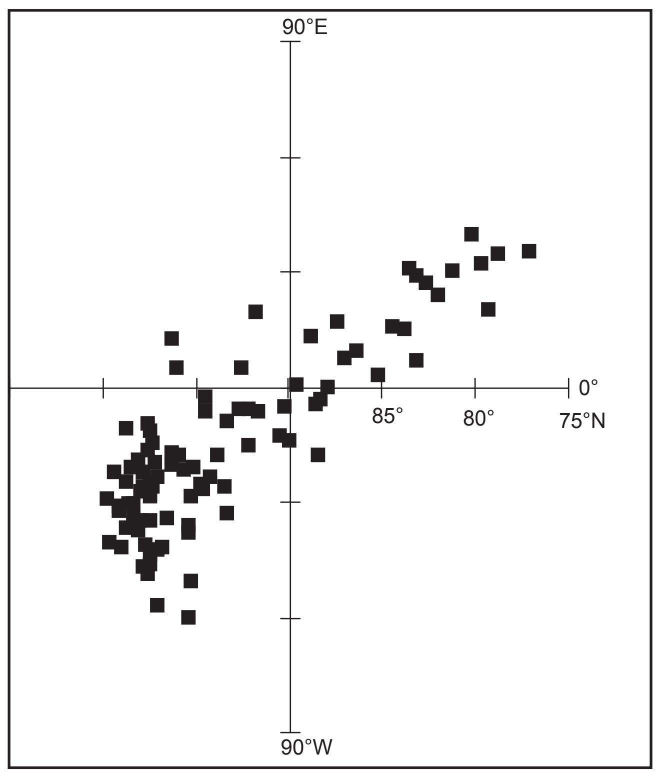



Figure 22. Polar diagram showing archaeomagnetic poles for the Southwest (A.D. 850–1080).

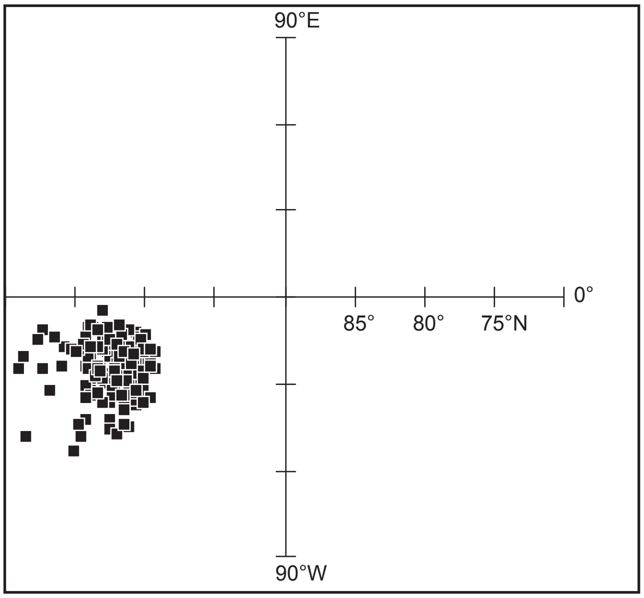



Figure 23. Polar diagram showing archaeomagnetic poles for the Southwest (A.D. 1080–1140).

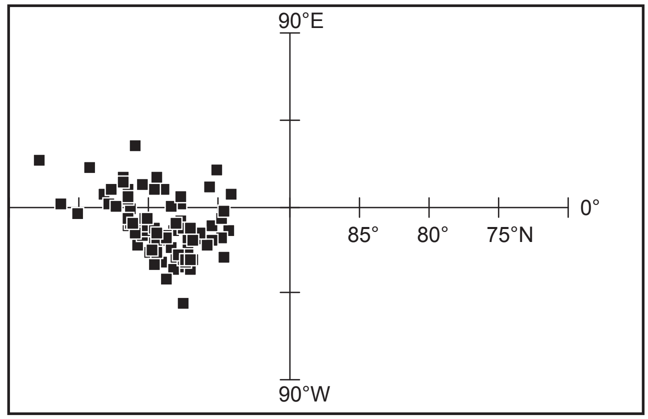



Figure 24. Polar diagram showing archaeomagnetic poles for the Southwest (A.D. 1140–1260).

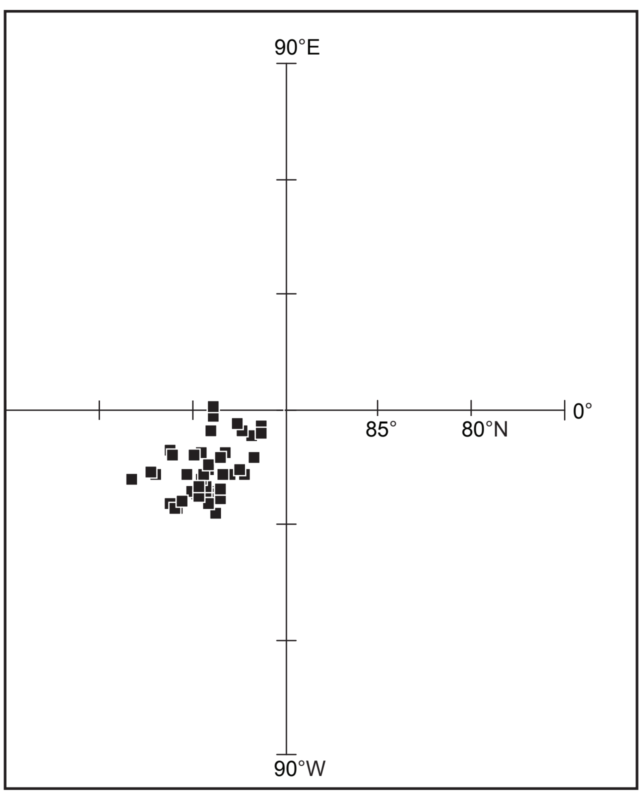



Figure 25. Polar diagram showing archaeomagnetic poles for the Southwest (A.D. 1260–1340).

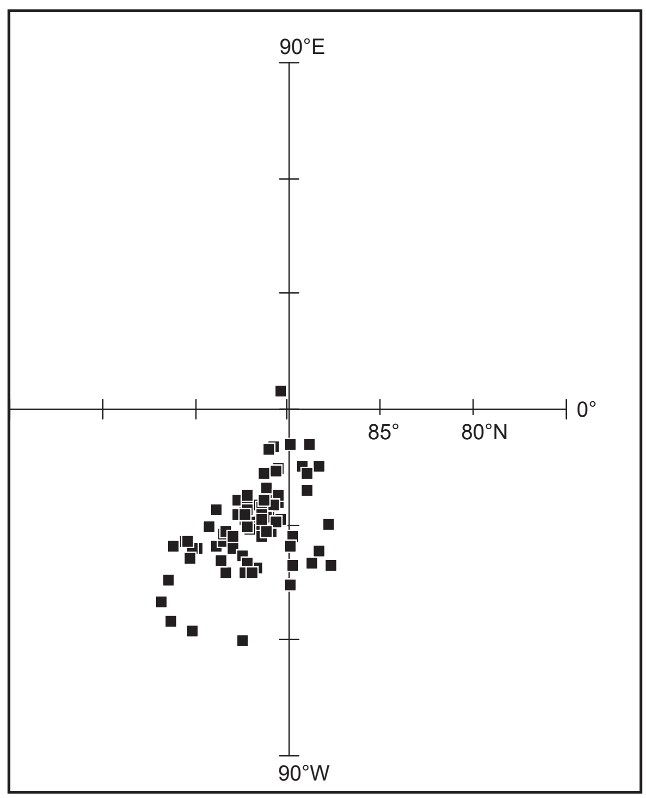



Figure 26. Polar diagram showing archaeomagnetic poles for the Southwest (A.D. 1340–1460).

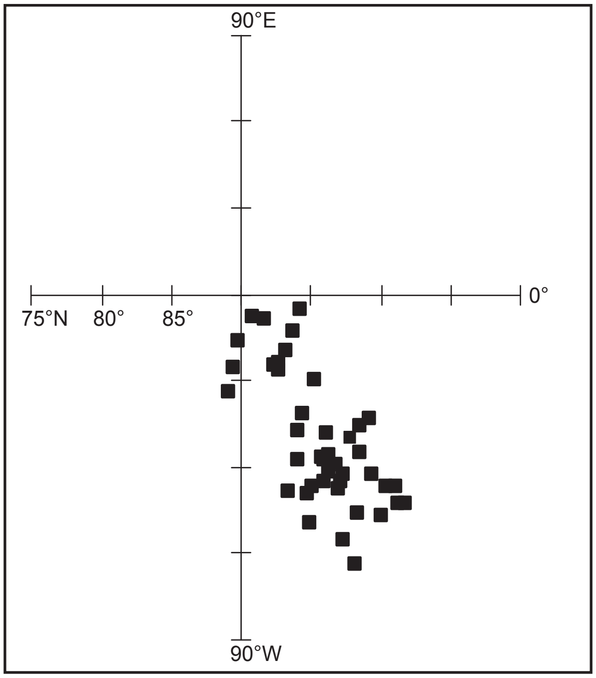



Figure 27. Polar diagram showing archaeomagnetic poles for the Southwest (A.D. 1460–1965).

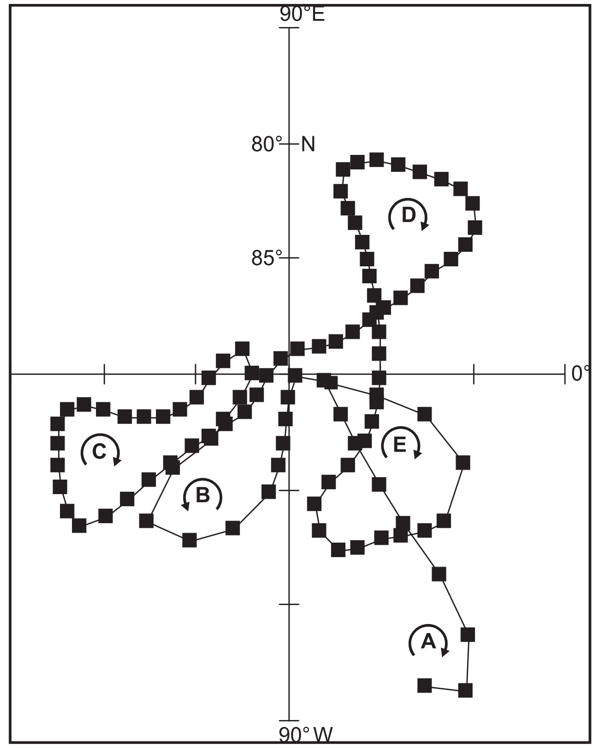



Figure 28. Polar diagram showing average archaeomagnetic poles for the Southwest (A.D. 350–1965).

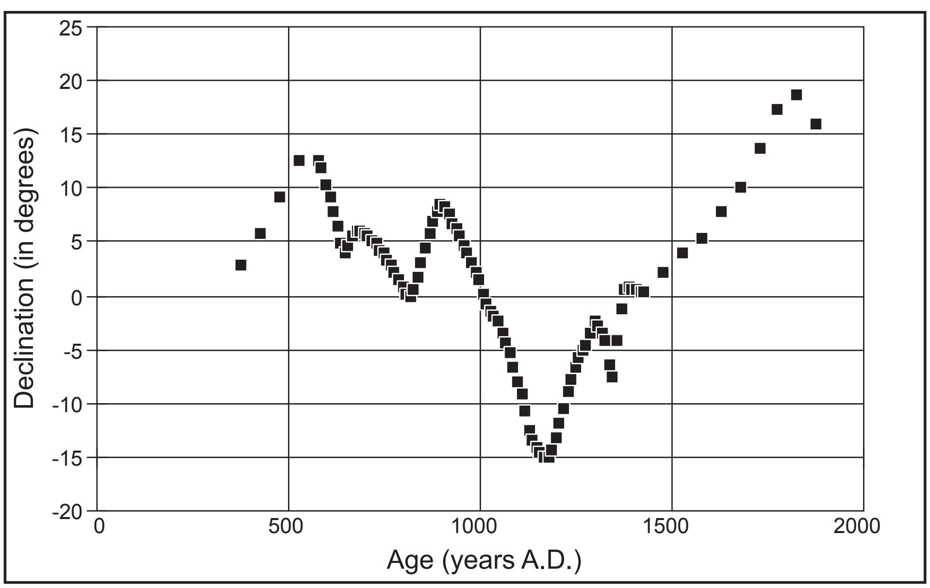



Figure 29. Declination in the Southwest, calculated from average pole positions. A negative declination is west of true north; positive, east.

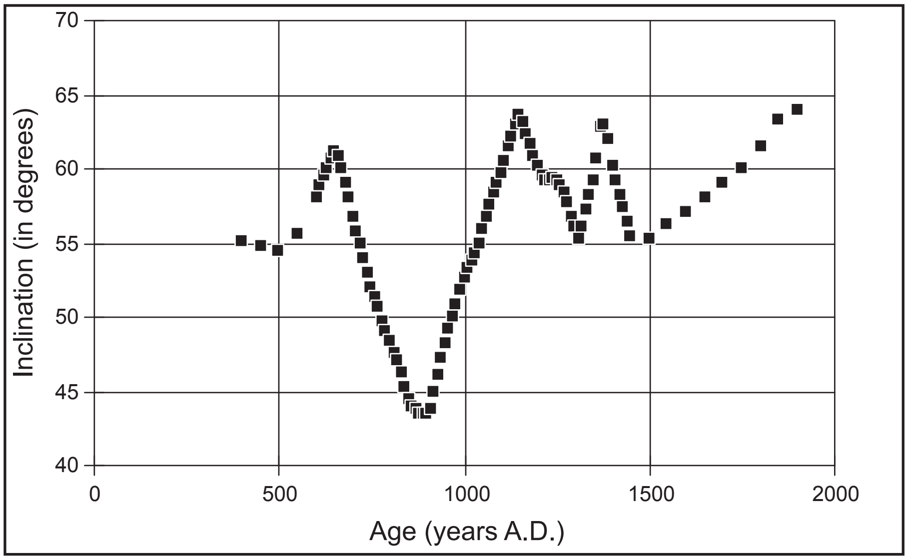



Figure 30. Inclination in the Southwest, calculated from average pole positions.

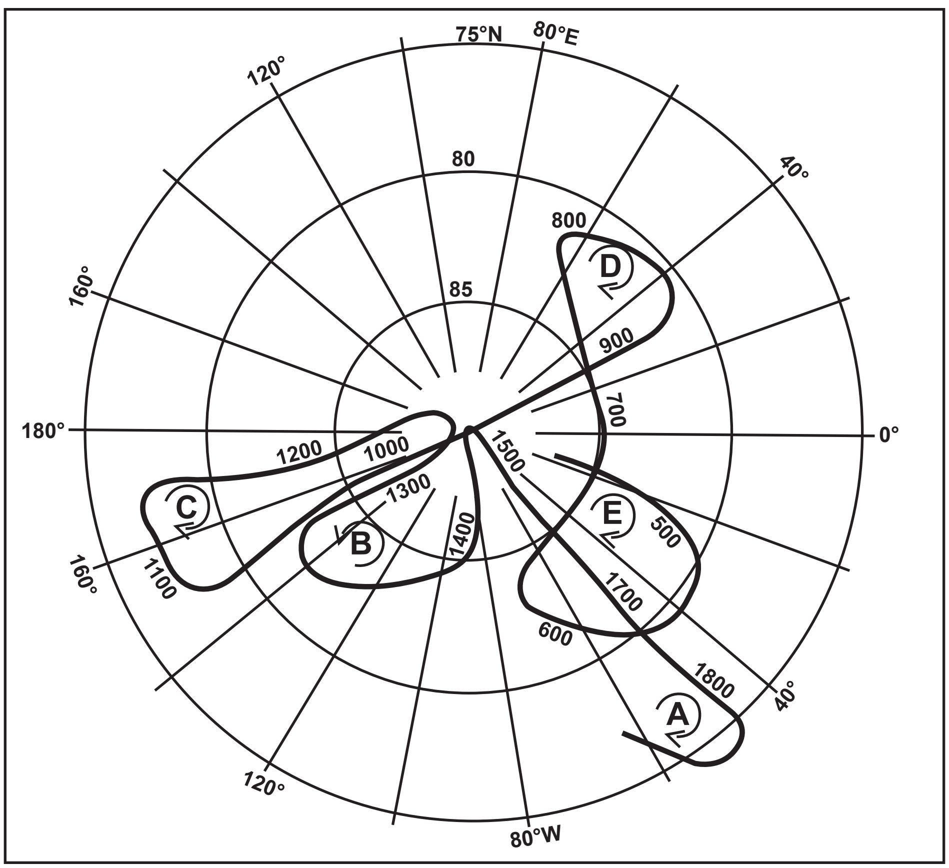



Figure 31. Running-mean average polar curve for the Southwest, A.D. 350–1965 (modified from DuBois, 1989, fig. 13).

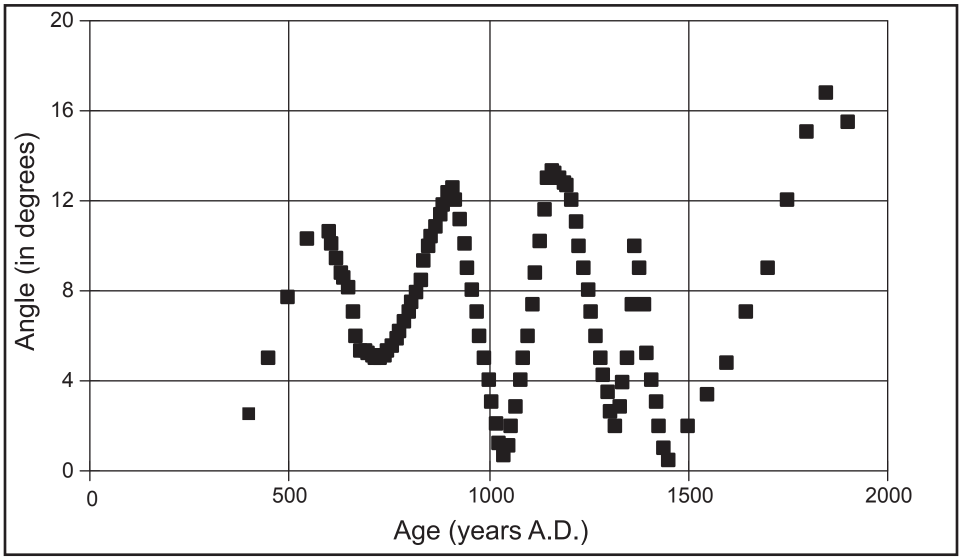



Figure 32. Angle between the archaeomagnetic pole and the axial dipole, the Southwest (United States).

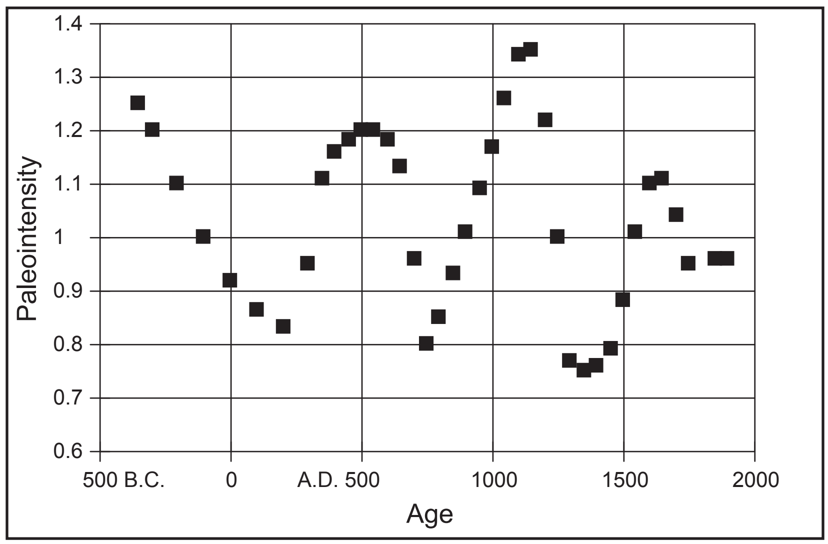



Figure 33. Paleointensity in North America, taking the present-day field as 1 (data from Lee [1975] and Hsue [1978] replotted).

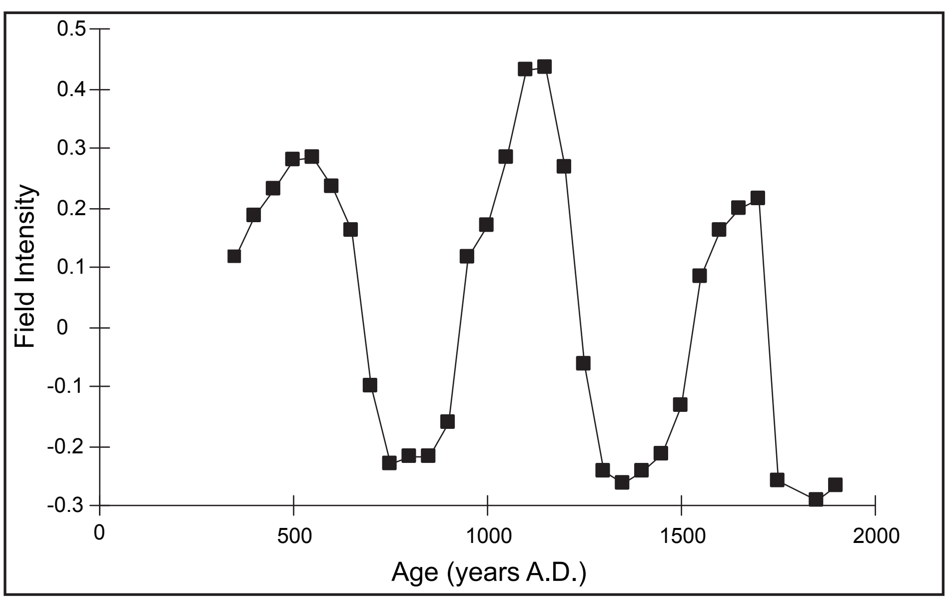



Figure 34. Nonaxial field intensity as a unit of the axial dipole field, the Southwest (United States).

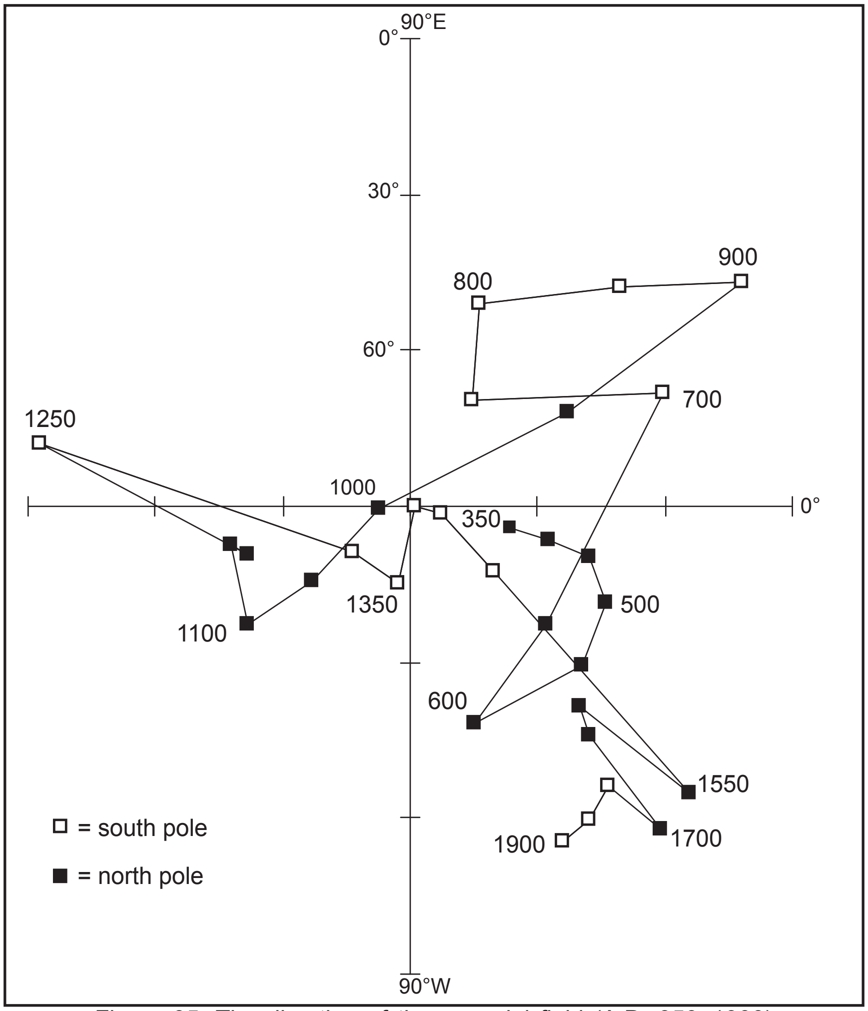



Figure 35. The direction of the nonaxial field (A.D. 350–1900) shown as poles (calculated from archaeomagnetic data), the Southwest (United States). Pole positions are shown at 50-yr intervals.

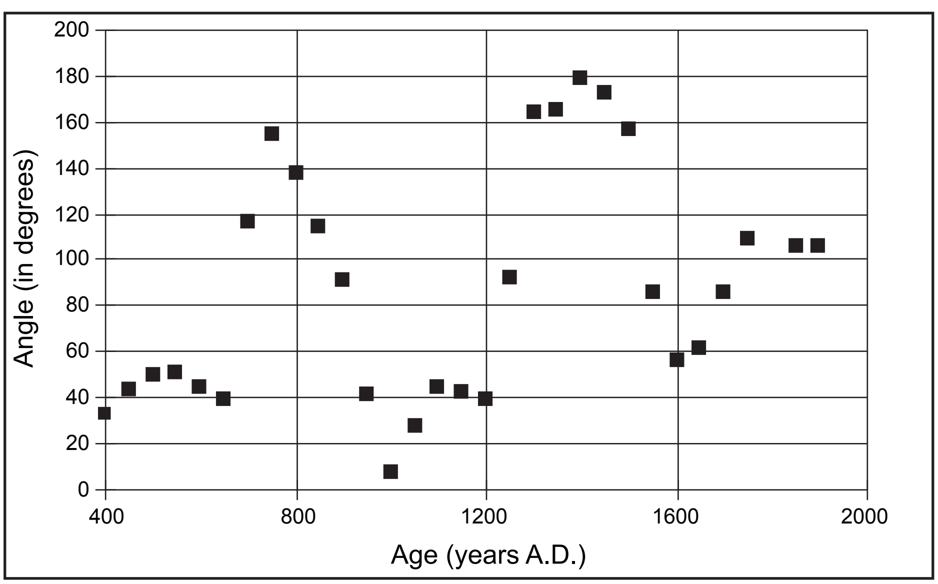



Figure 36. Calculated angles between the nonaxial-field pole and the axial dipole, the Southwest (United States).

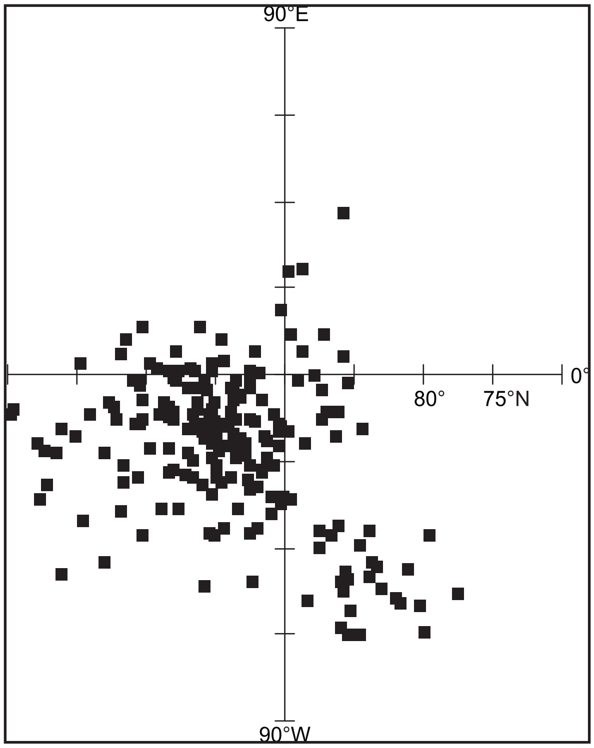
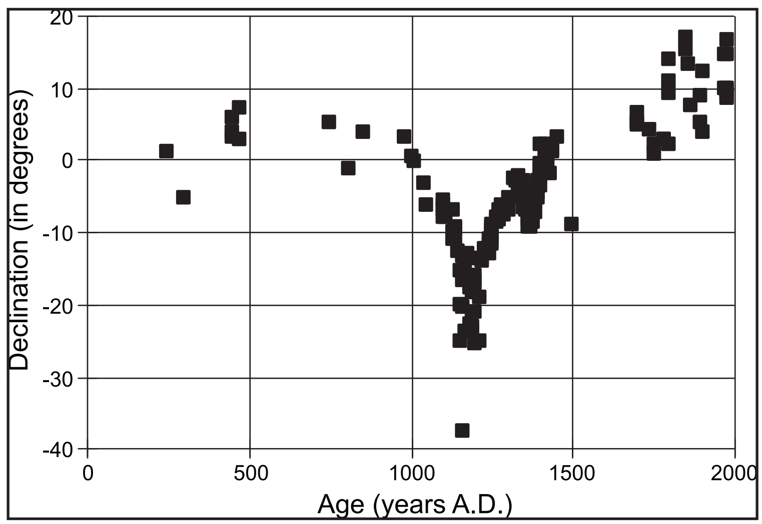



Figure 37. Polar diagram showing archaeomagnetic poles for the Midcontinent (A.D. 250–1975).

Figure 38. Declination in the Midcontinent. A negative declination is west of true north; positive, east.



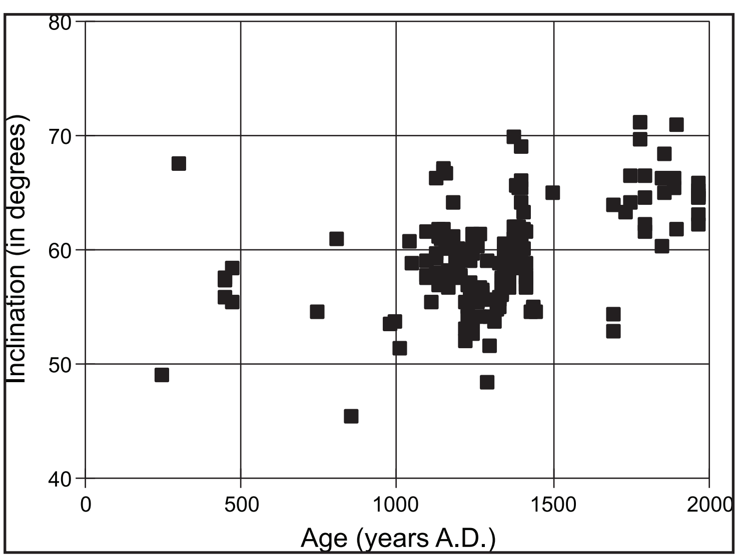




Figure 39. Inclination in the Midcontinent.

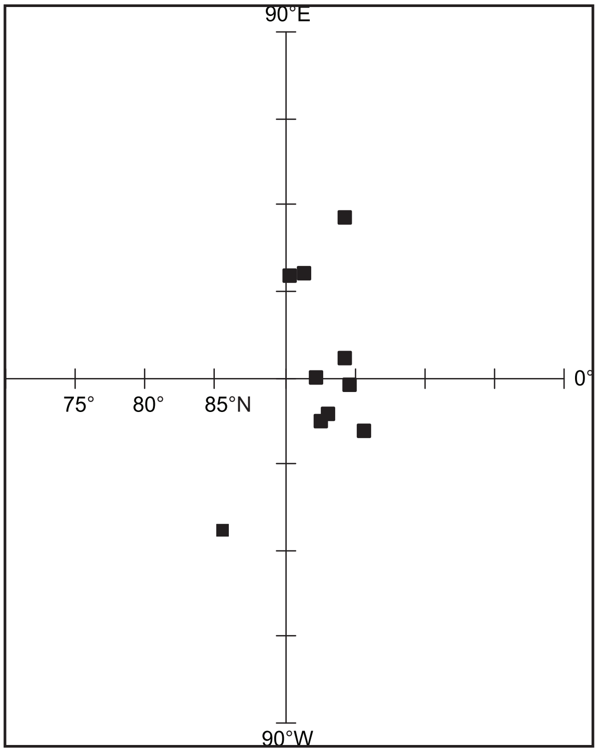


Figure 40. Polar diagram showing archaeomagnetic poles for the Midcontinent (A.D. 250–900).

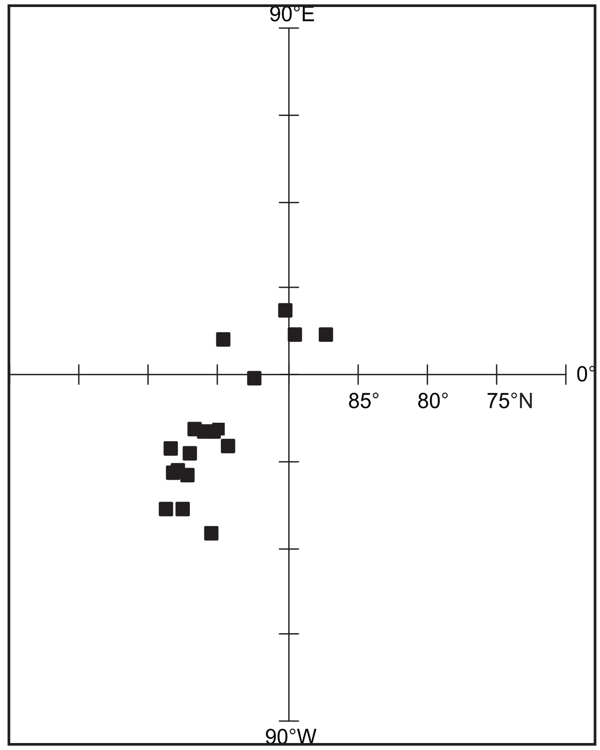


Figure 41. Polar diagram showing archaeomagnetic poles for the Midcontinent (A.D. 900–1150).

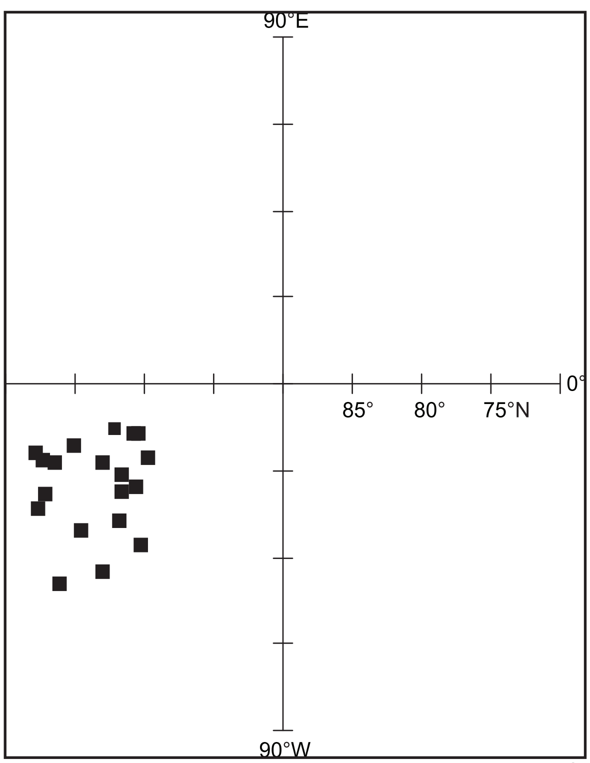


Figure 42. Polar diagram showing archaeomagnetic poles for the Midcontinent (A.D. 1150–1200).

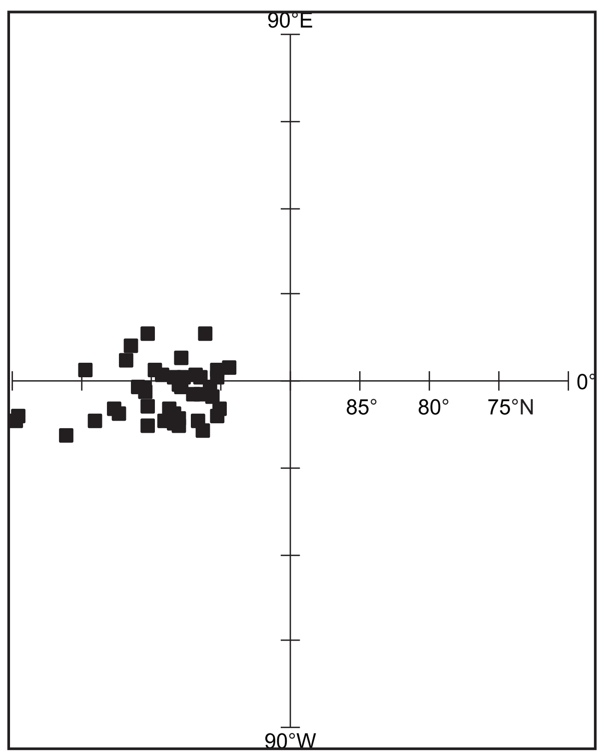


Figure 43. Polar diagram showing archaeomagnetic poles for the Midcontinent (A.D. 1200–1310).

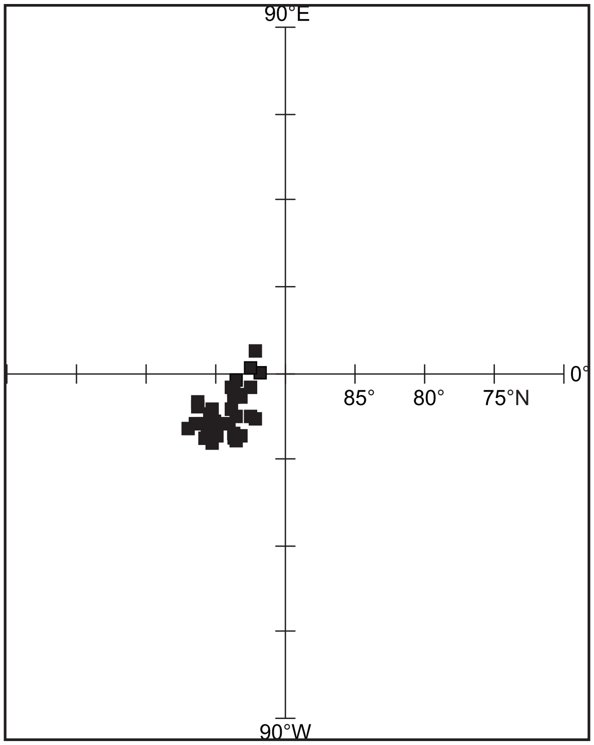



Figure 44. Polar diagram showing archaeomagnetic poles for the Midcontinent (A.D. 1310–1370).

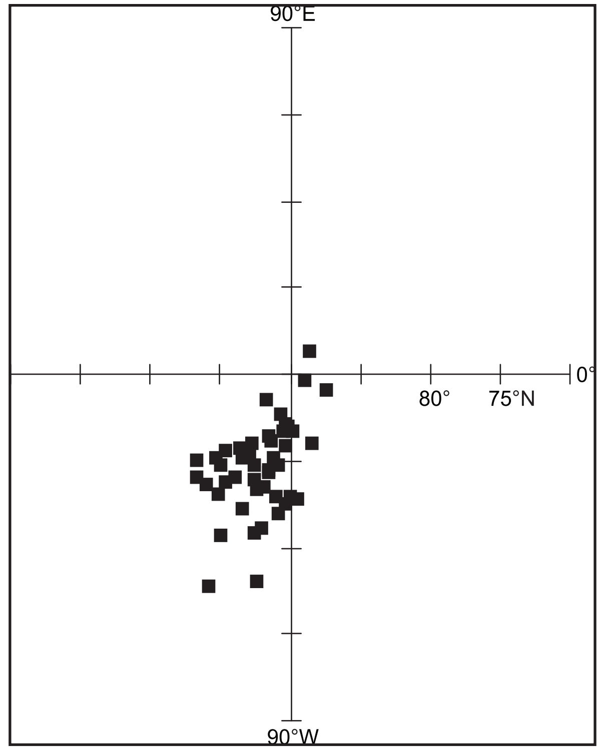



Figure 45. Polar diagram showing archaeomagnetic poles for the Midcontinent (A.D. 1370–1500).

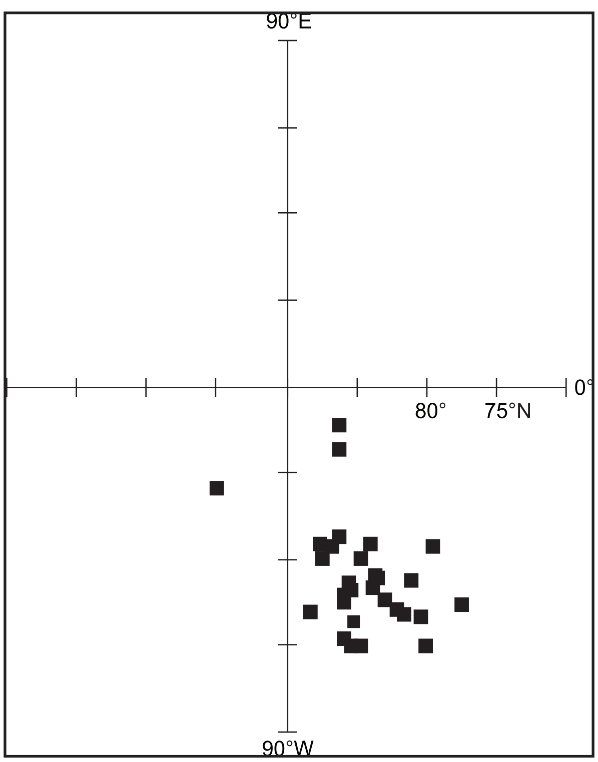



Figure 46. Polar diagram showing archaeomagnetic poles for the Midcontinent (A.D. 1500–1975).

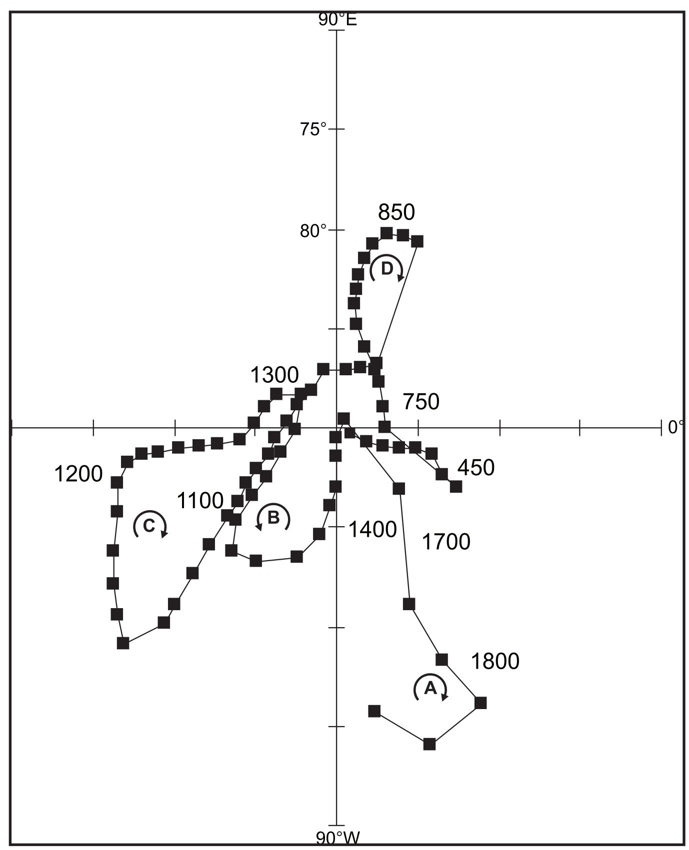



Figure 47. Polar diagram showing average archaeomagnetic poles for the Midcontinent (A.D. 250–1975).

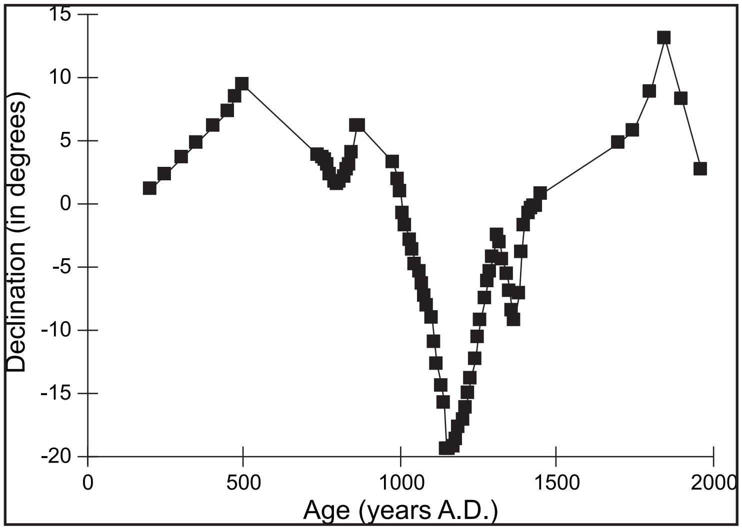



Figure 48. Declination in the Midcontinent, calculated from average pole positions. A negative declination is west of true north; positive, east.

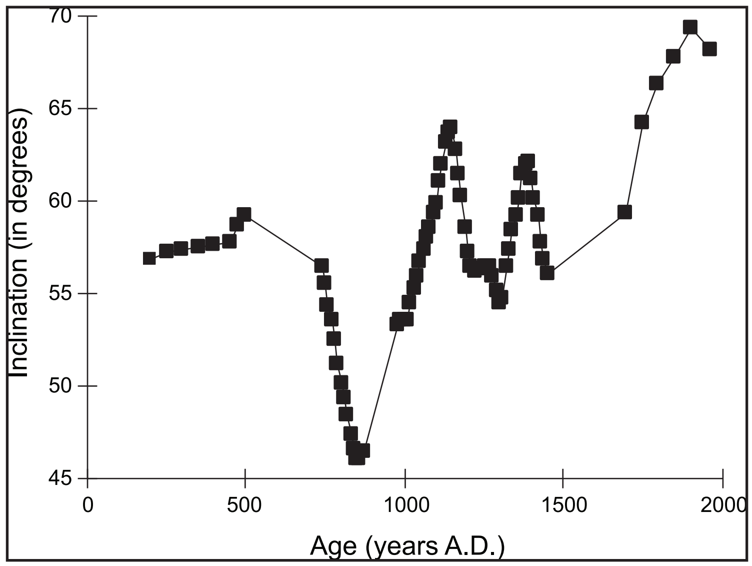



Figure 49. Inclination in the Midcontinent, calculated from average pole positions.

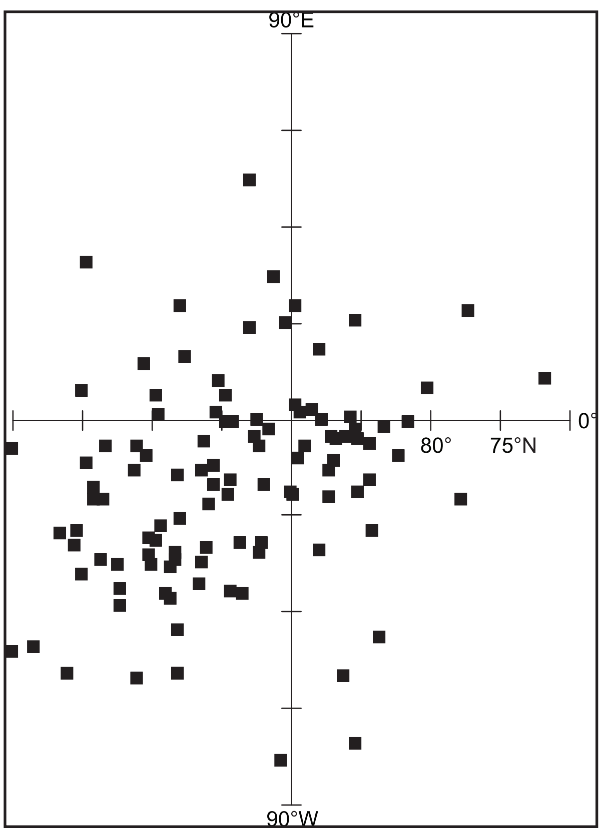



Figure 50. Polar diagram showing archaeomagnetic poles in North America (<A.D.500), α95 ≤ 5.99°.

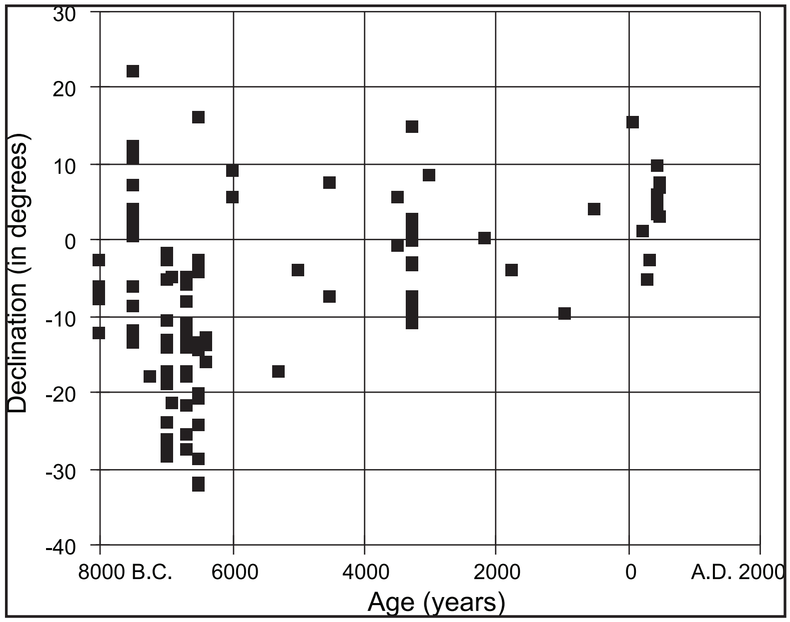



Figure 51. Declination in North America. A negative declination is west of true north; positive, east.

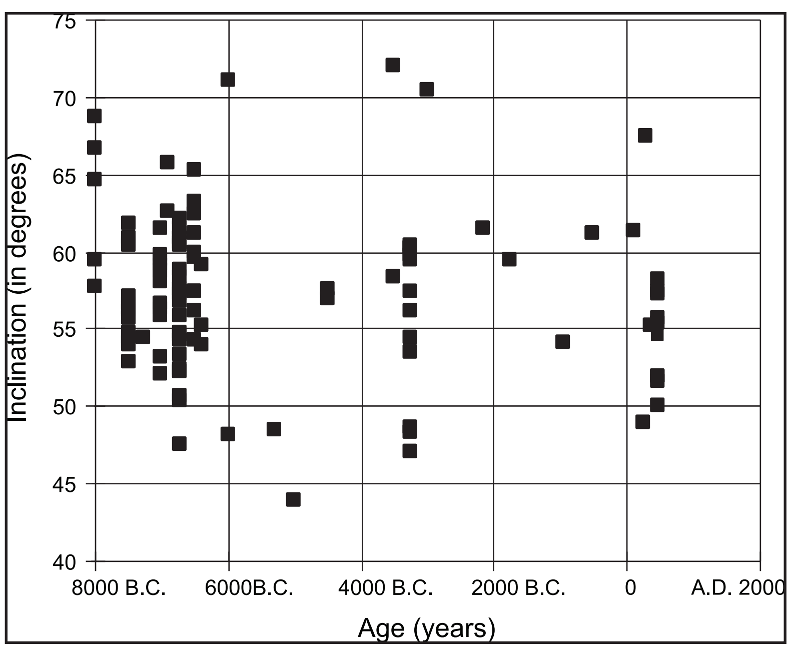



Figure 52. Inclination in North America.

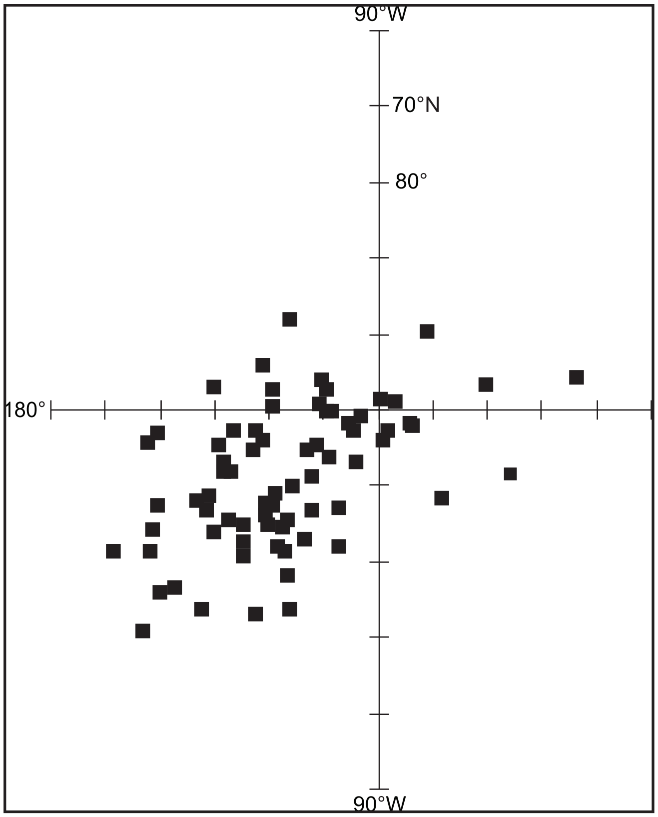



Figure 53. Polar diagram showing archaeomagnetic poles for North America (7800–6300 B.C.).

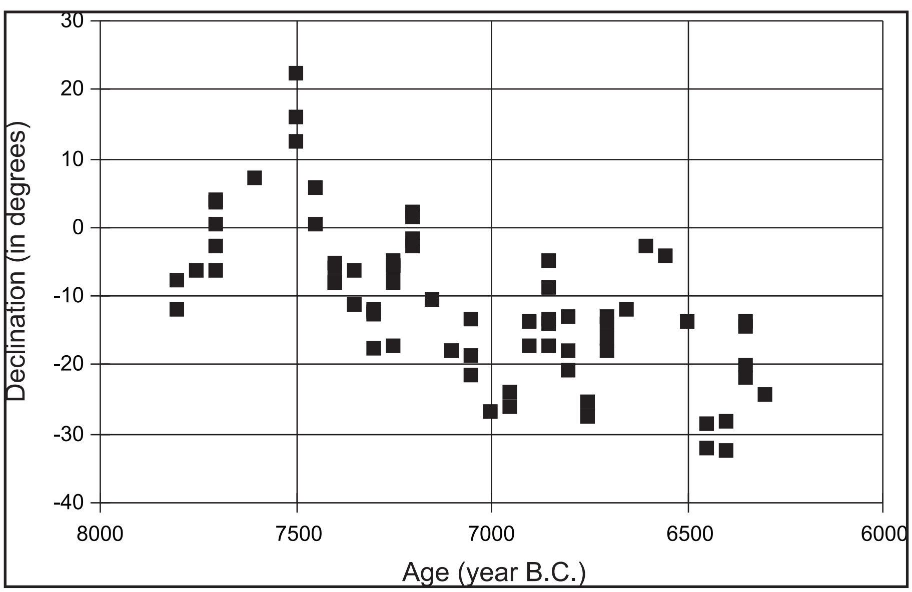



Figure 54. Declination in North America (7800–6300 B.C.). A negative declination is west of true north; positive, east.

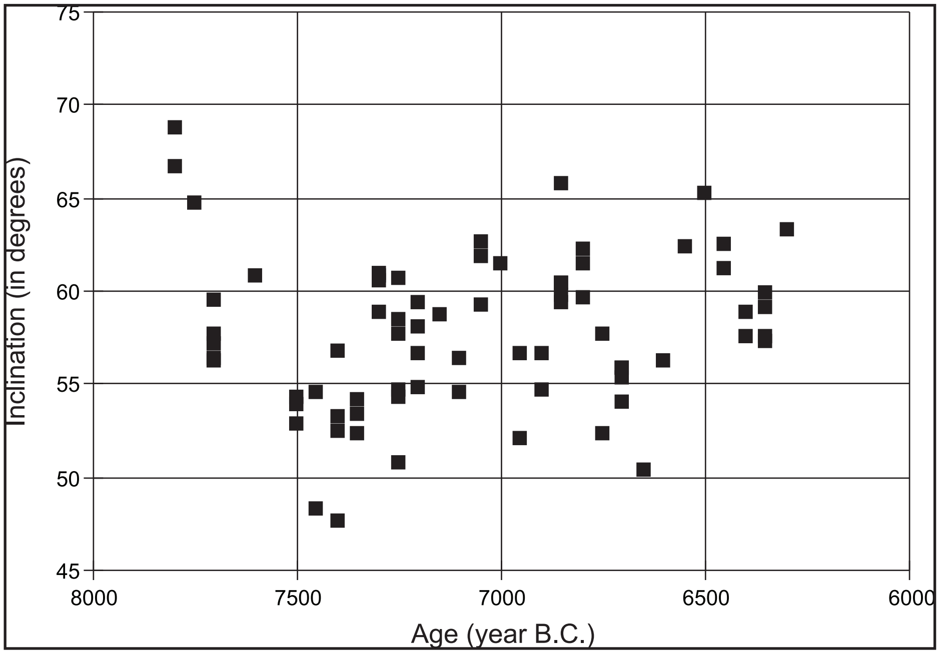


Figure 55. Inclination in North America (7800–6300 B.C.).

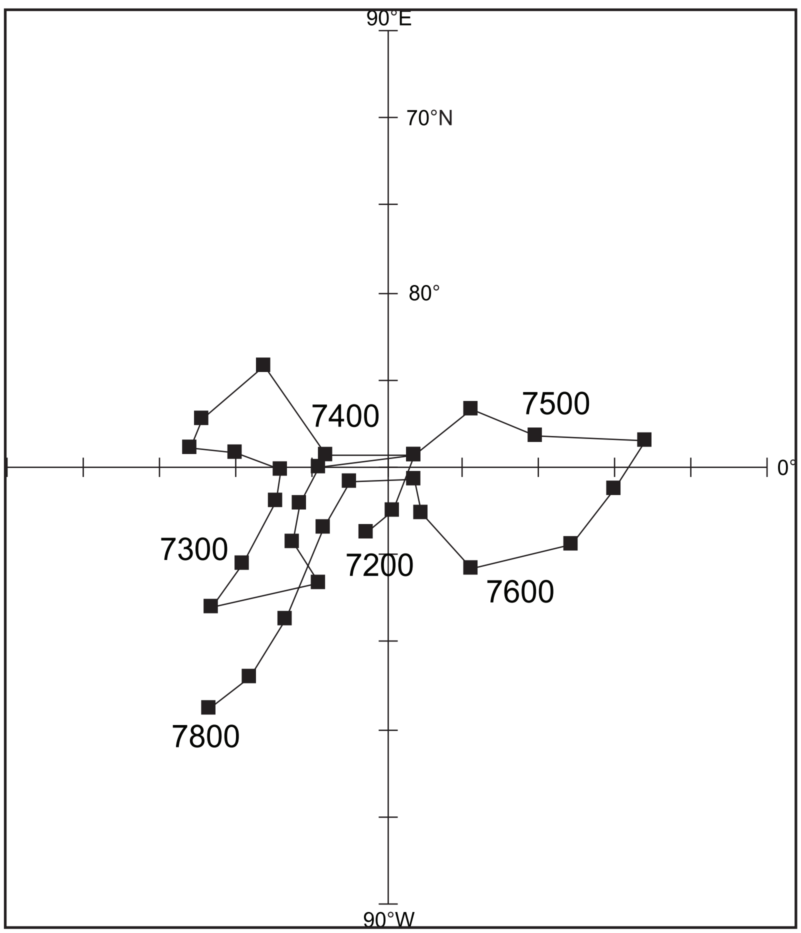


Figure 56. Polar diagram showing average poles for North America (7800–7200 B.C.).

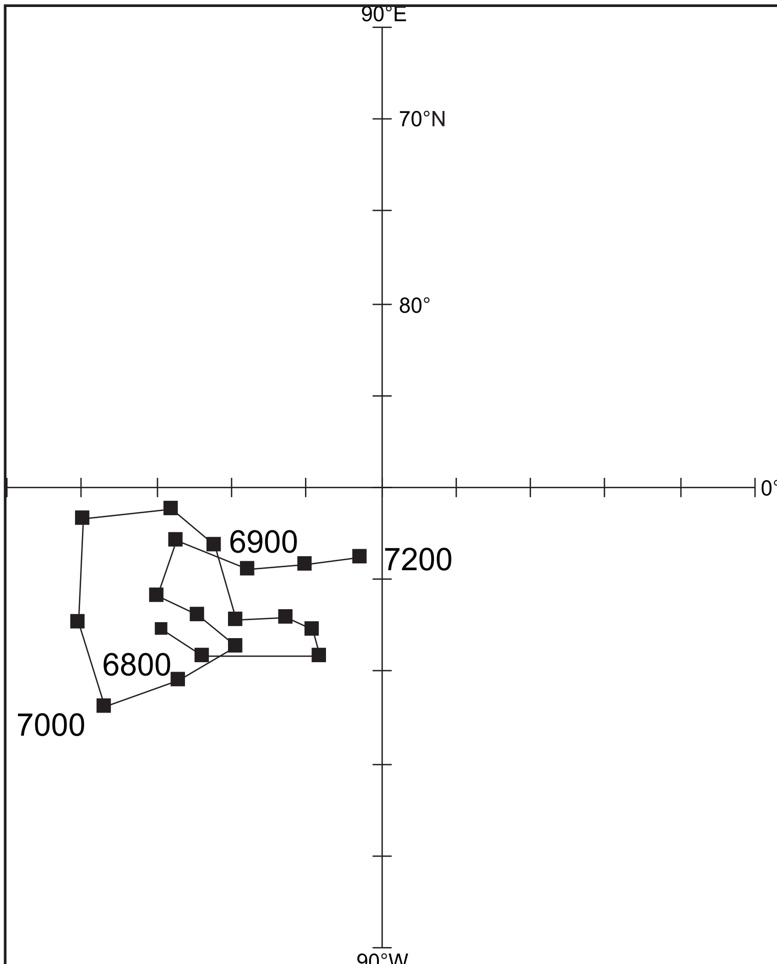



Figure 57. Polar diagram showing average poles for North America (7200–6800 B.C.).

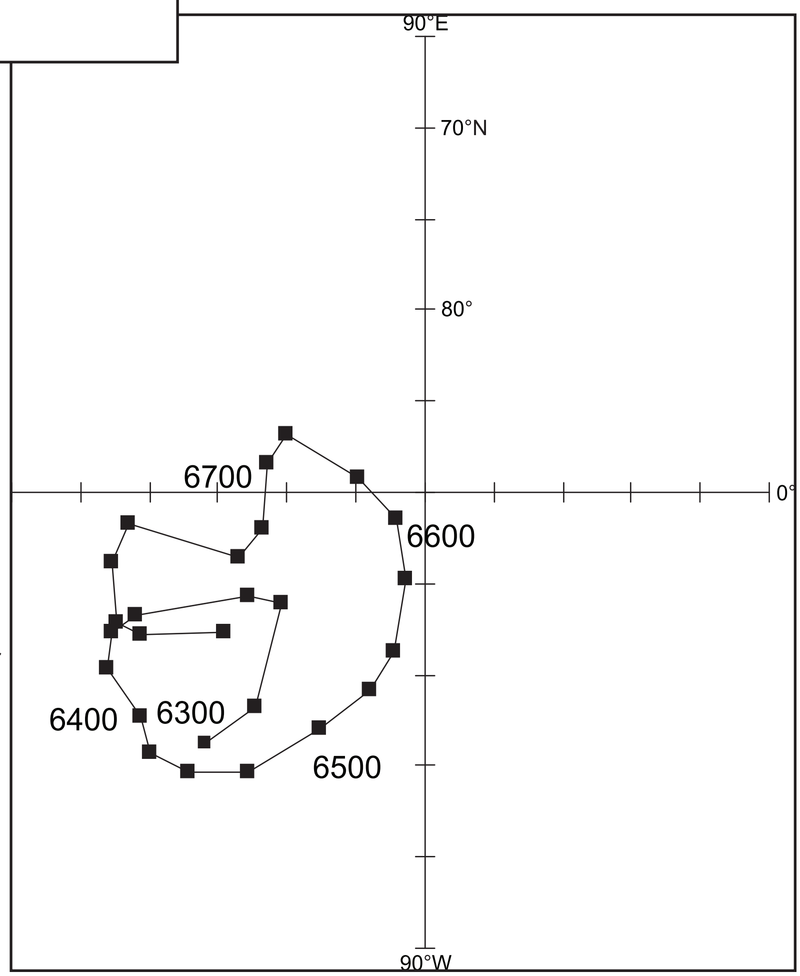



Figure 58. Polar diagram showing average poles for North America (6800–6300 B.C.).

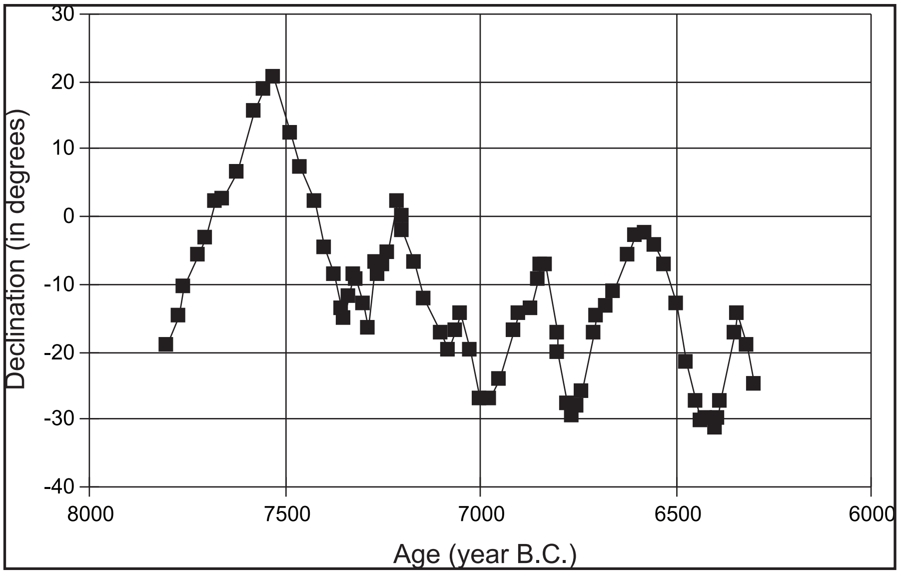



Figure 59. Declination in North America (7800–6300 B.C.). A negative declination is west of true north; positive, east.

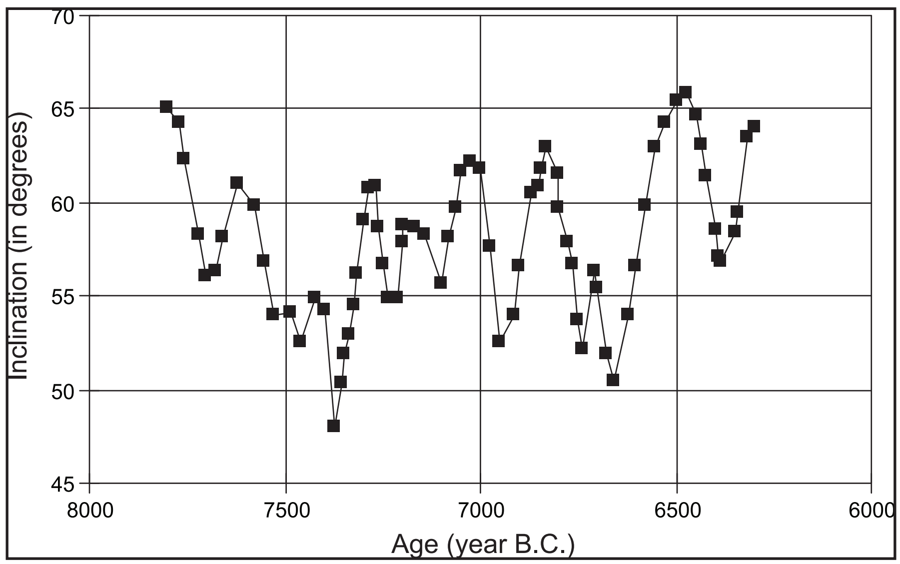



Figure 60. Inclination in North America (7800–6300 B.C.).

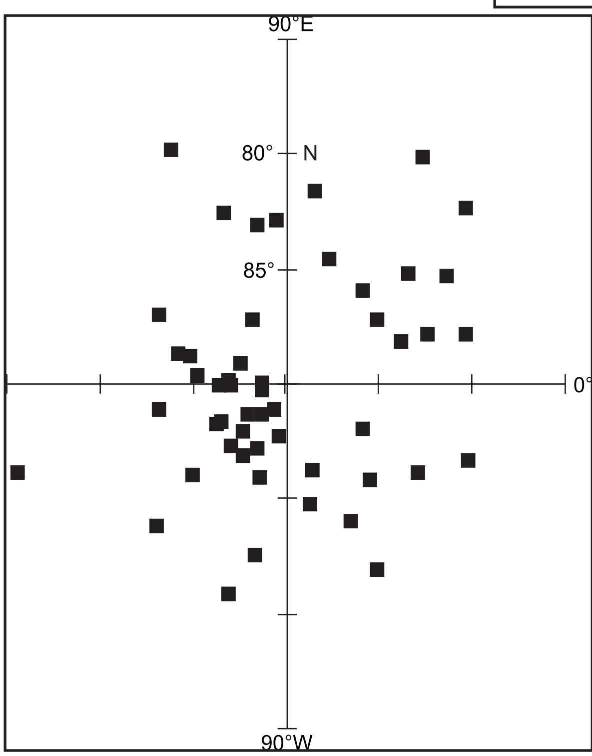



Figure 61. Polar diagram showing archaeomagnetic poles for Mesoamerica (1000 B.C.–A.D. 600).

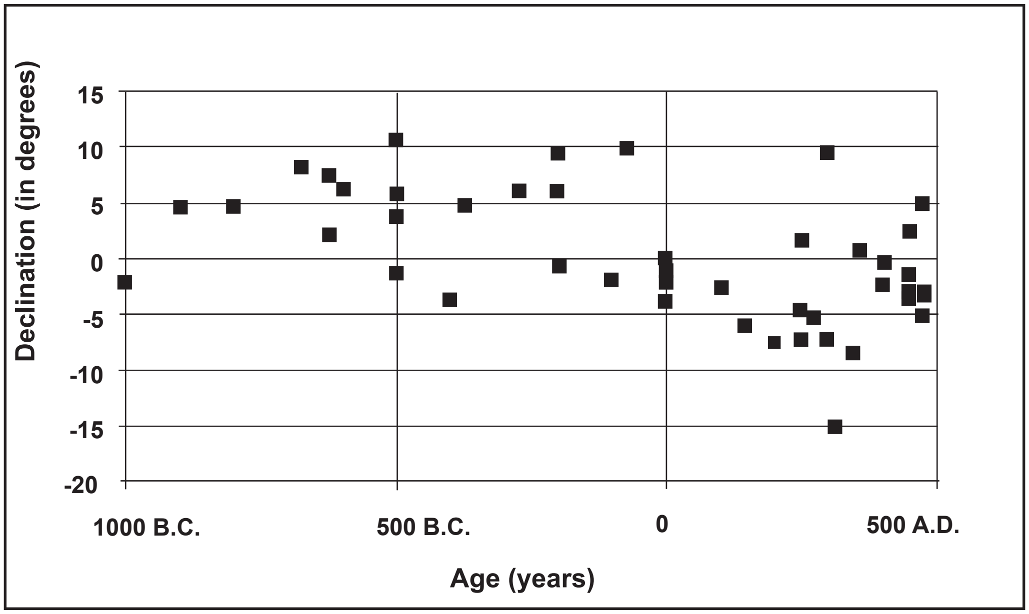



Figure 62. Declination in Mesoamerica (1000 B.C.–A.D. 500). A negative declination is west of true north; positive, east.

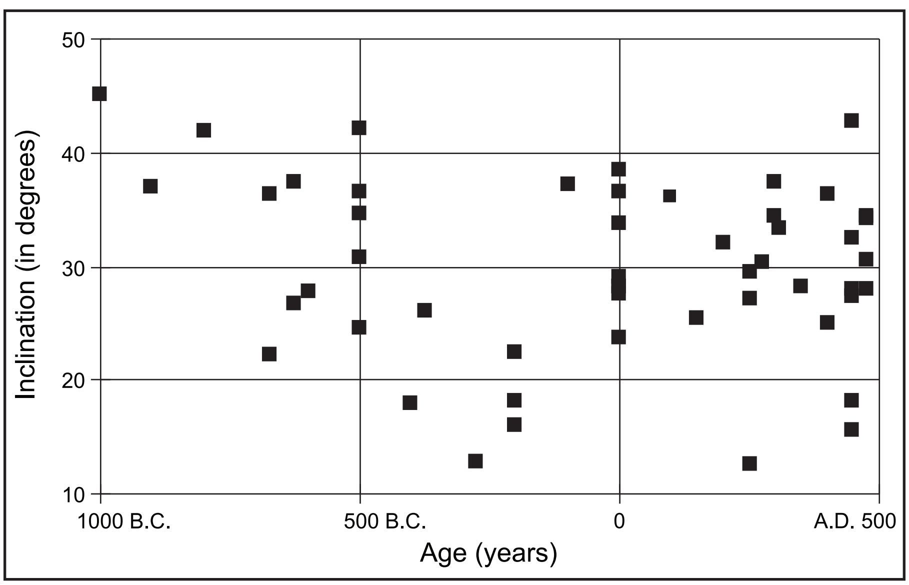



Figure 63. Inclination in Mesoamerica (1000 B.C.–A.D. 500).

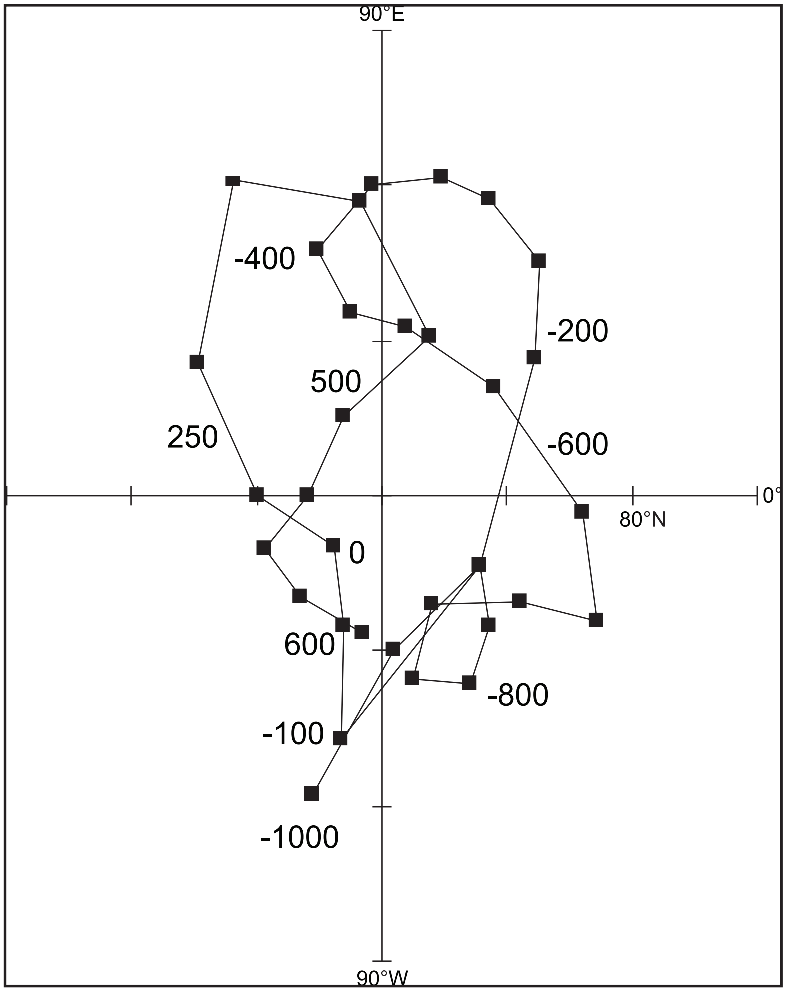



Figure 64. Polar diagram showing average archaeomagnetic poles for Mesoamerica (1000 B.C.–A.D. 600). Years B.C. are shown as negative.

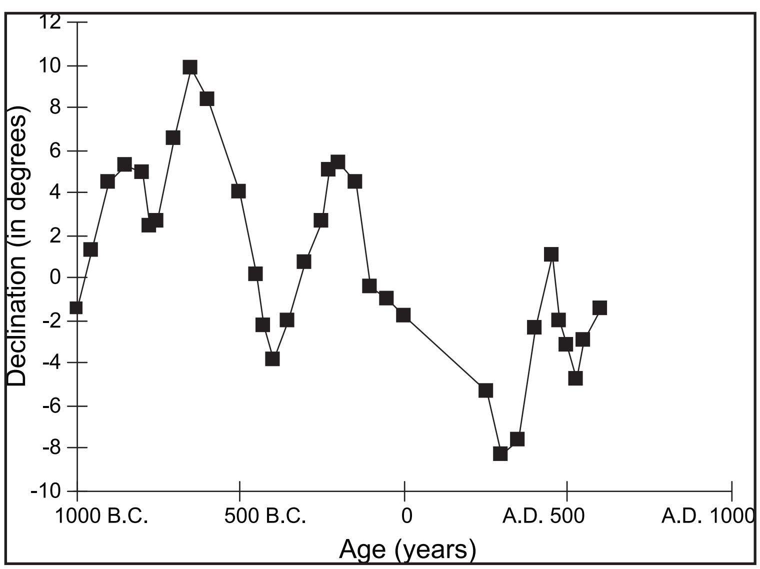



Figure 65. Declination in Mesoamerica (1000 B.C.–A.D. 600), calculated from average pole positions. A negative declination is west of true north; positive, east.

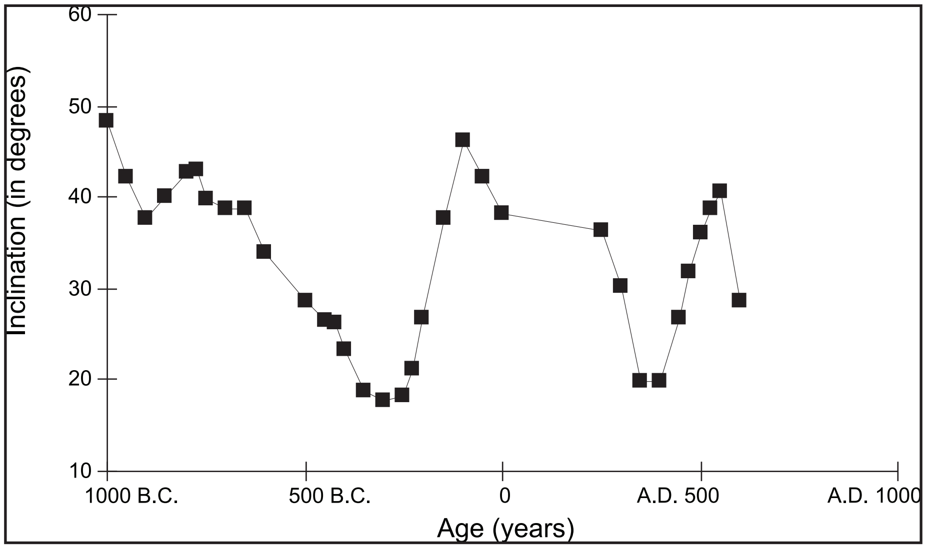



Figure 66. Inclination in Mesoamerica (1000 B.C.–A.D. 600), calculated from average pole positions.

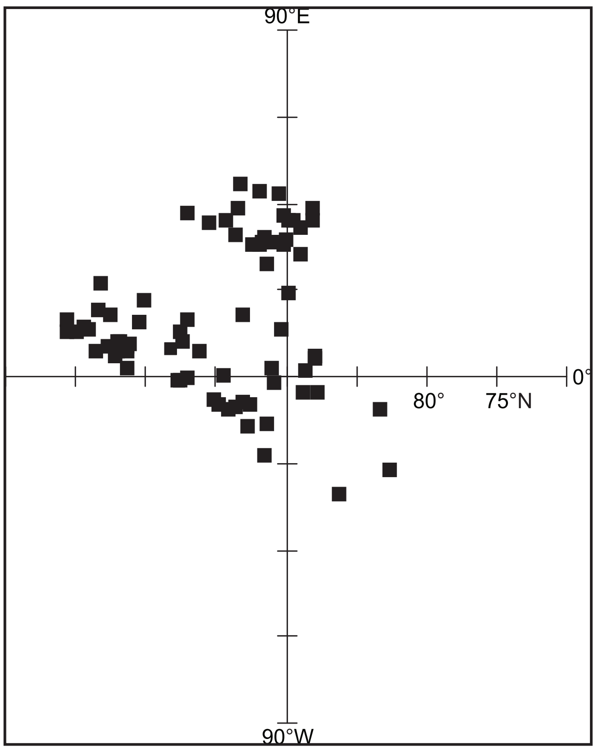



Figure 67. Polar diagram showing archaeomagnetic poles for Mesoamerica (A.D. 500–1800).

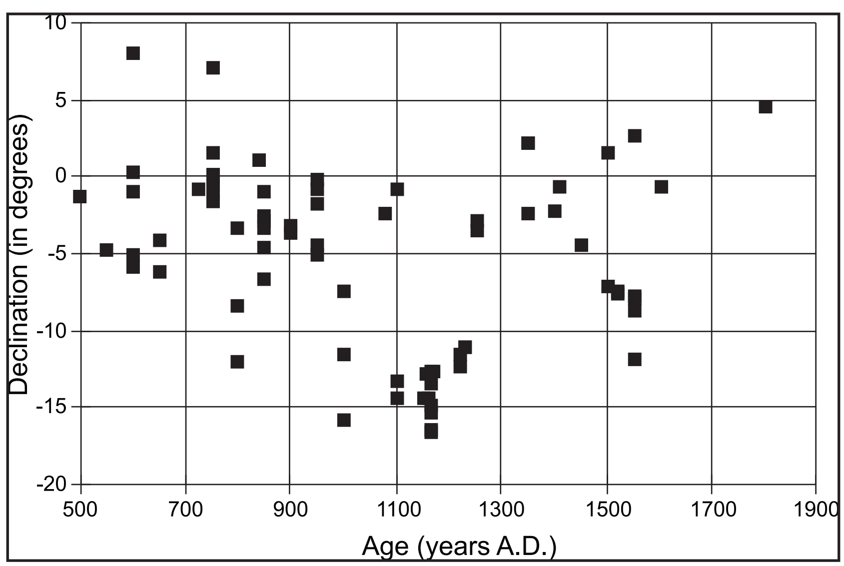



Figure 68. Declination in Mesoamerica (A.D. 500–1800). A negative declination is west of true north; positive, east.

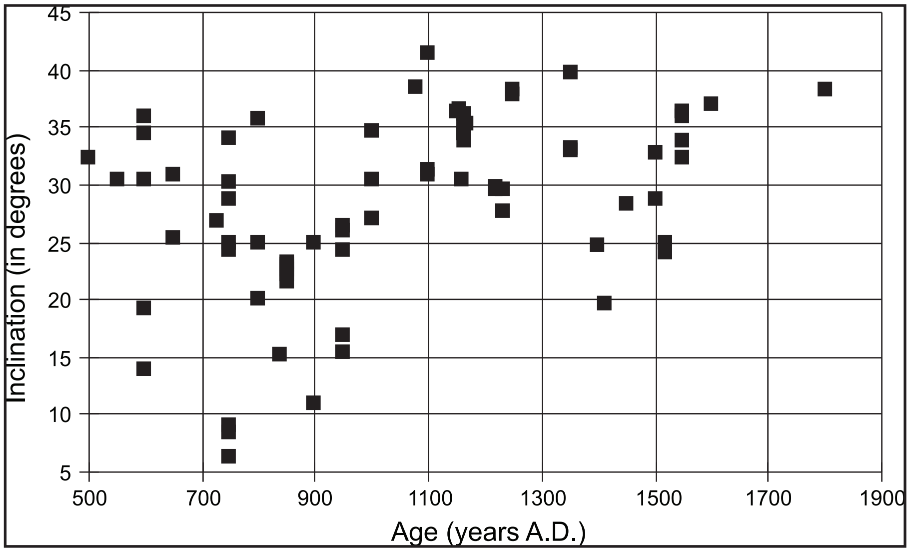



Figure 69. Inclination in Mesoamerica (A.D. 500–1800).

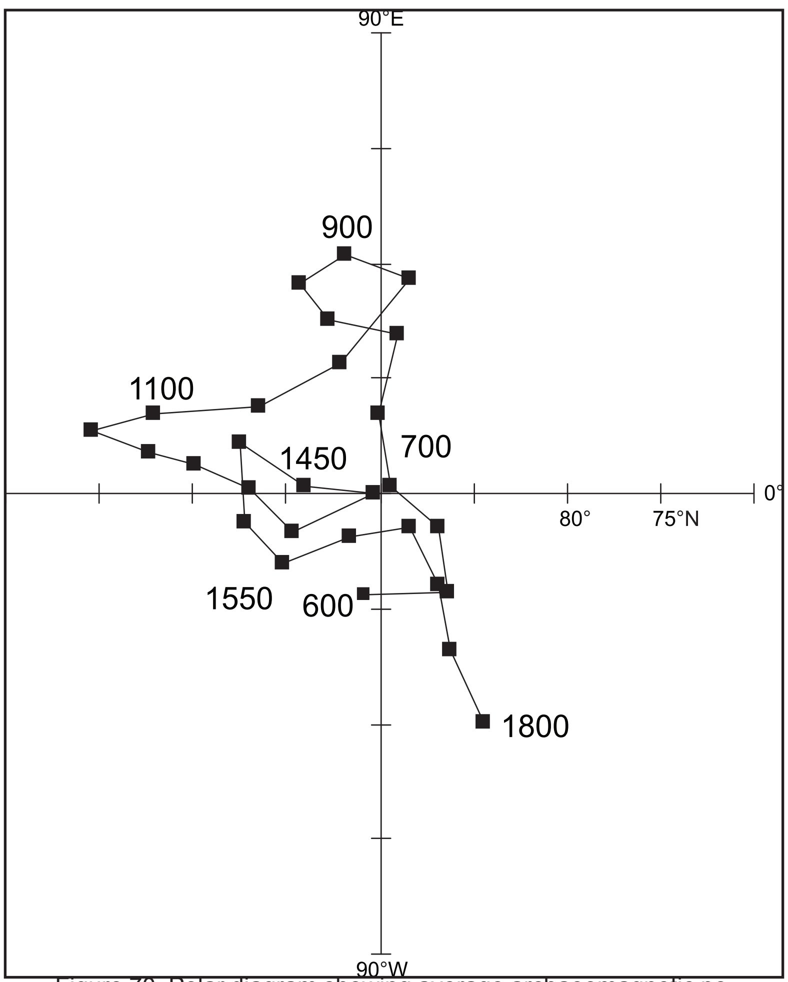



Figure 70. Polar diagram showing average archaeomagnetic polar curve for Mesoamerica (A.D. 600–1800).

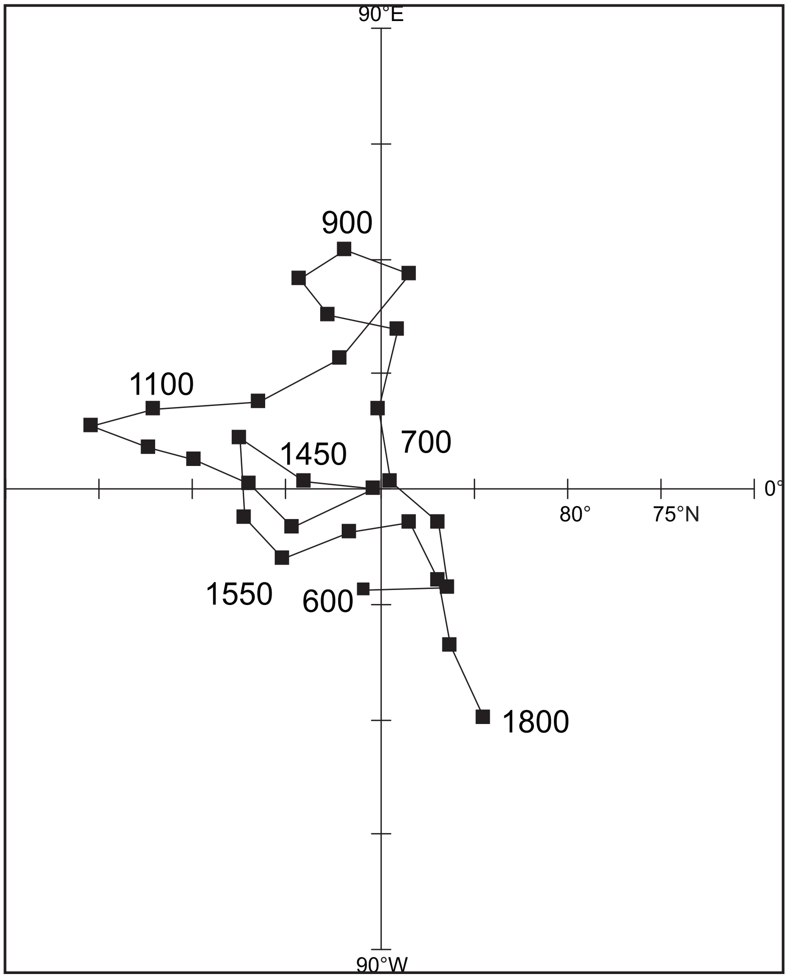



Figure 71. Declination in Mesoamerica (A.D. 600–1800), calculated from average pole positions. A negative declination is west of true north; positive, east.

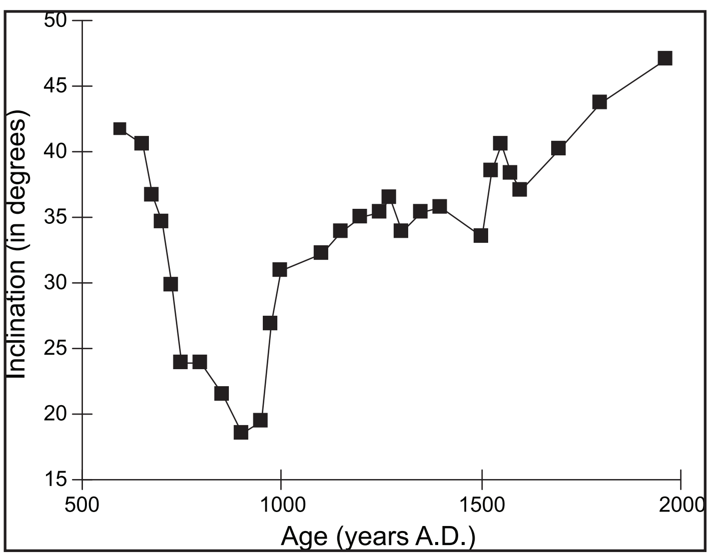



Figure 72. Inclination in Mesoamerica (A.D. 600–1800), calculated from average pole positions.

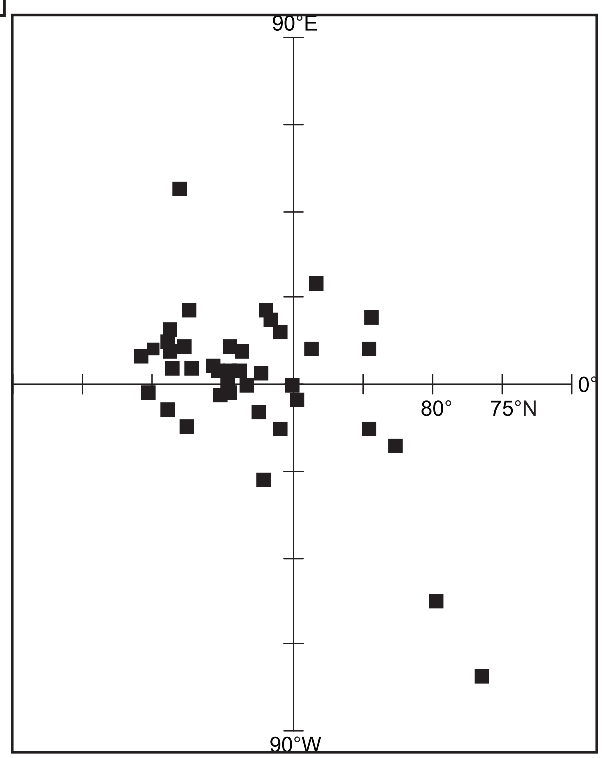



Figure 73. Polar diagram showing archaeomagnetic poles for South America (7000 B.C.–A.D. 1600).

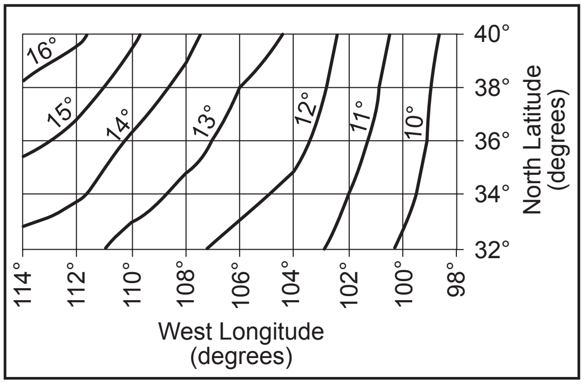



Figure 74. Contour map showing declination in the Southwest, A.D. 1965 (derived from the U.S. Coast and Geodetic Survey's [1965b] isogonic chart).

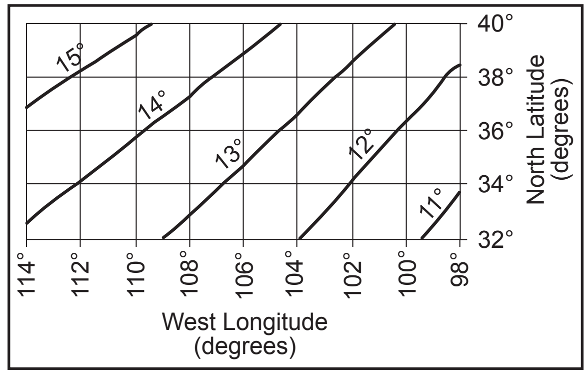



Figure 75. Contour map showing declination in the Southwest, A.D. 1965, calculated from the average polar curve for the Southwest (Fig. 28).

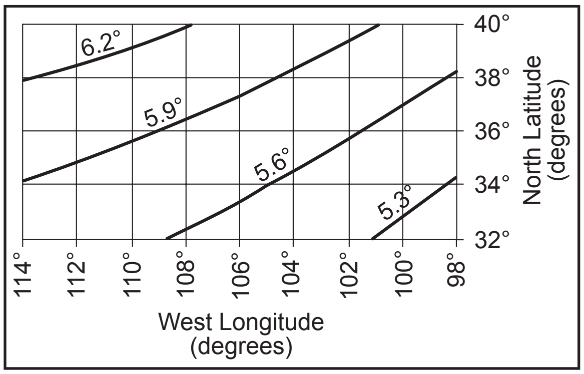



Figure 76. Contour map showing declination in the Southwest, A.D. 1600, calculated from the average polar curve for the Southwest (Fig. 28).

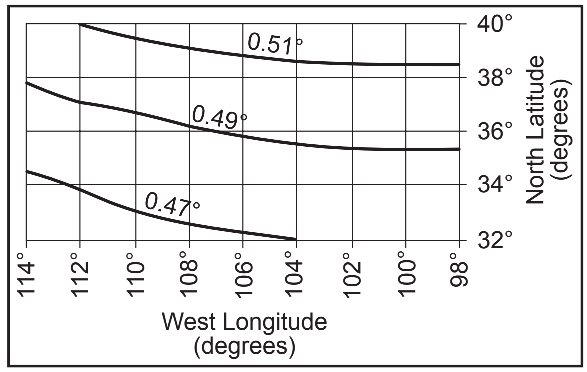



Figure 77. Contour map showing declination in the Southwest, A.D. 1450, calculated from the average polar curve for the Southwest (Fig. 28).

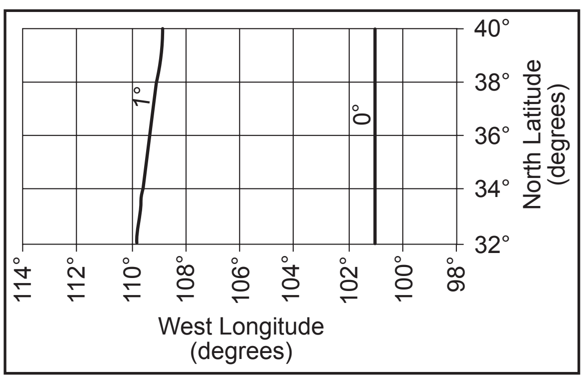



Figure 78. Contour map showing declination in the Southwest, A.D. 1400, calculated from the average polar curve for the Southwest (Fig. 28).

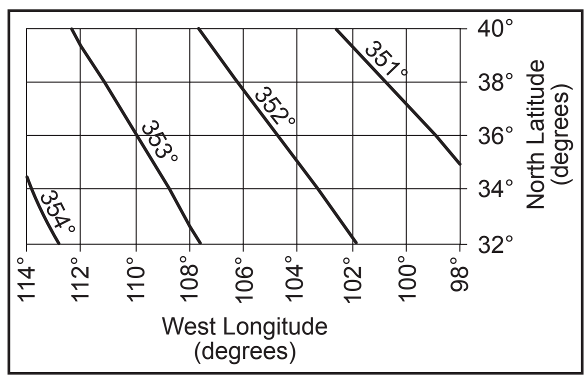



Figure 79. Contour map showing declination in the Southwest, A.D. 1350, calculated from the average polar curve for the Southwest (Fig. 28).

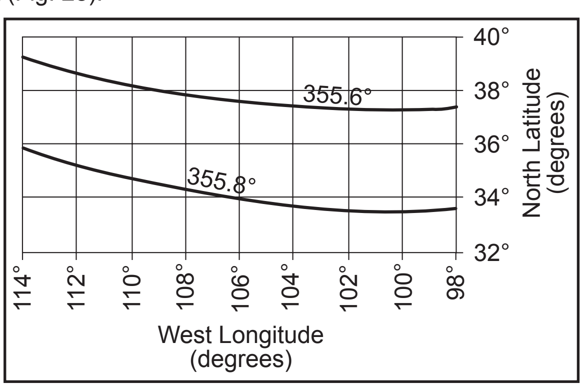



Figure 80. Contour map showing declination in the Southwest, A.D. 1260, calculated from the average polar curve for the Southwest (Fig. 28).

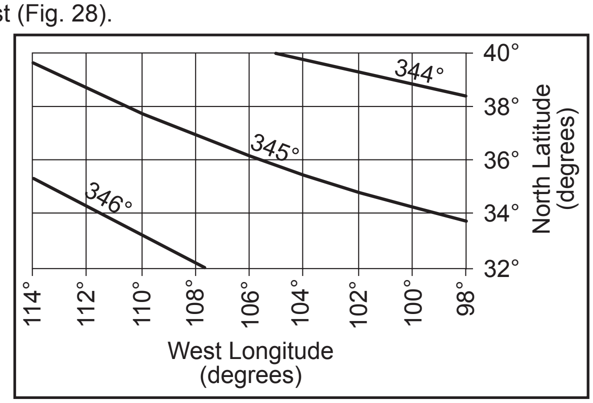



Figure 81. Contour map showing declination in the Southwest, A.D.1130, calculated from the average polar curve for the Southwest (Fig. 28).

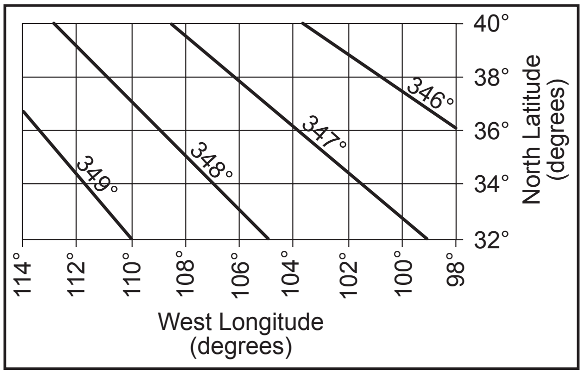



Figure 82. Contour map showing declination in the Southwest, A.D. 1090, calculated from the average polar curve for the Southwest (Fig. 28).

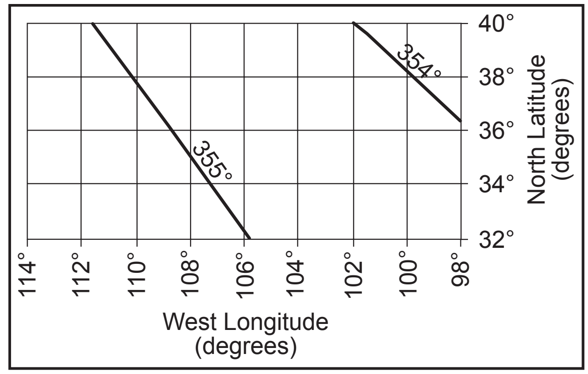



Figure 83. Contour map showing declination in the Southwest, A.D. 1030, calculated from the average polar curve for the Southwest (Fig. 28).

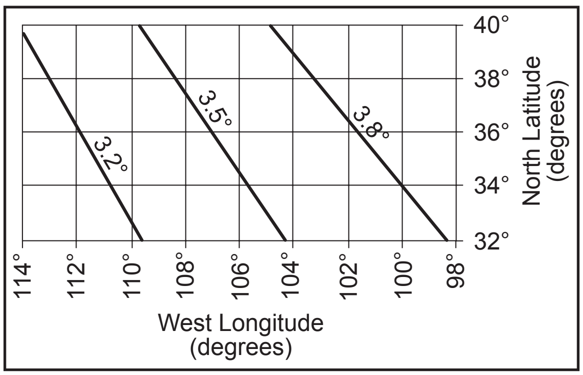



Figure 84. Contour map showing declination in the Southwest, A.D. 960, calculated from the average polar curve for the Southwest (Fig. 28).

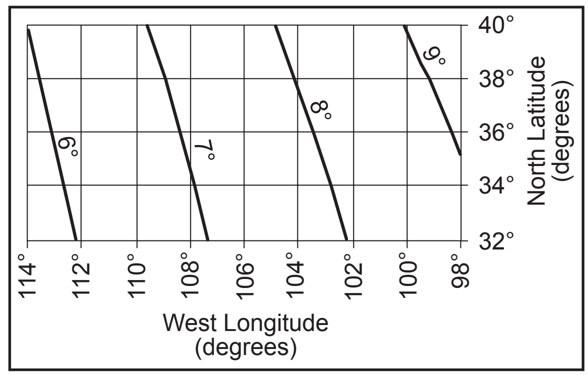



Figure 85. Contour map showing declination in the Southwest, A.D. 860, calculated from the average polar curve for the Southwest (Fig. 28).

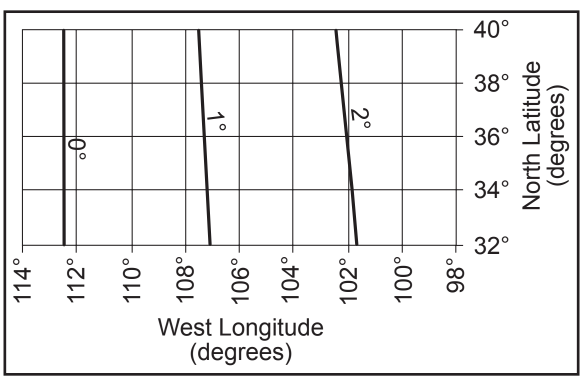



Figure 86. Contour map showing declination in the Southwest, A.D. 800, calculated from the average polar curve for the Southwest (Fig. 28).

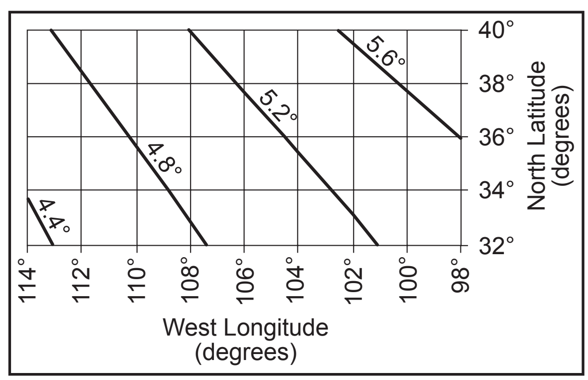



Figure 87. Contour map showing declination in the Southwest, A.D. 700, calculated from the average polar curve for the Southwest (Fig. 28).

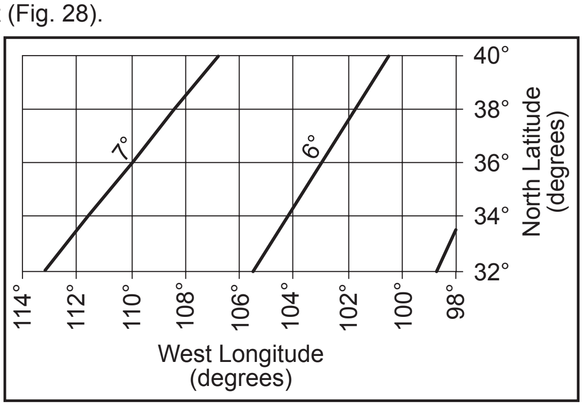



Figure 88. Contour map showing declination in the Southwest, A.D. 620, calculated from the average polar curve for the Southwest (Fig. 28).

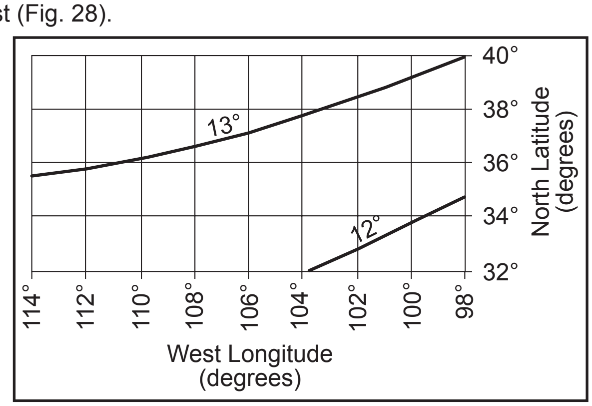



Figure 89. Contour map showing declination in the Southwest, A.D. 550, calculated from the average polar curve for the Southwest (Fig. 28).

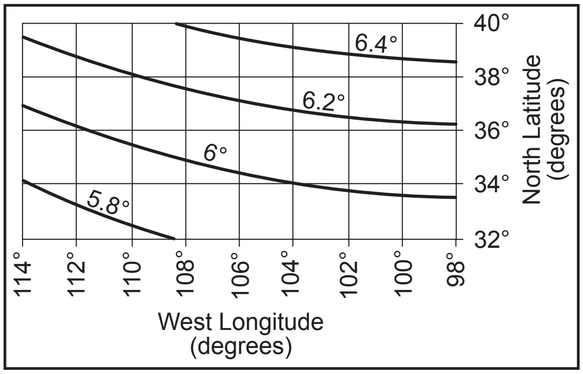



Figure 90. Contour map showing declination in the Southwest, A.D. 400, calculated from the average polar curve for the Southwest (Fig. 28).

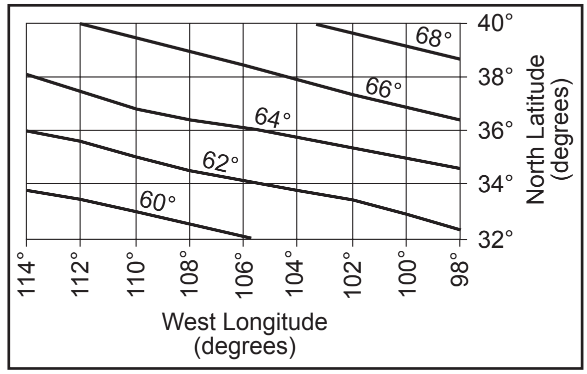



Figure 91. Contour map showing inclination in the Southwest, A.D. 1965, derived from the U.S. Coast and Geodetic Survey's (1965a) isoclinic chart.

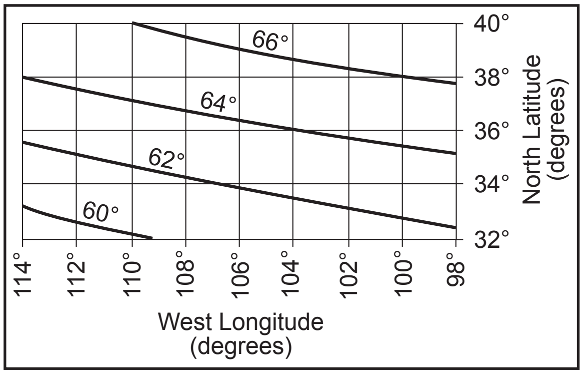



Figure 92. Contour map showing inclination in the Southwest, A.D. 1965, calculated from the average polar curve for the Southwest (Fig. 28).

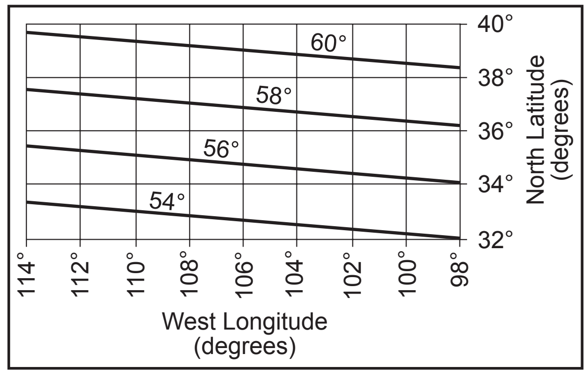



Figure 93. Contour map showing inclination in the Southwest, A.D. 1600, calculated from the average polar curve for the Southwest (Fig. 28).

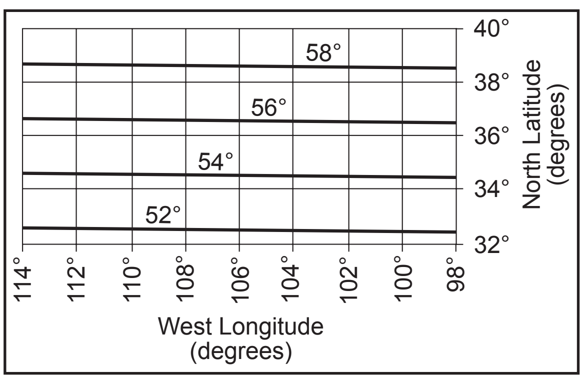



Figure 94. Contour map showing inclination in the Southwest, A.D. 1450, calculated from the average polar curve for the Southwest (Fig. 28).

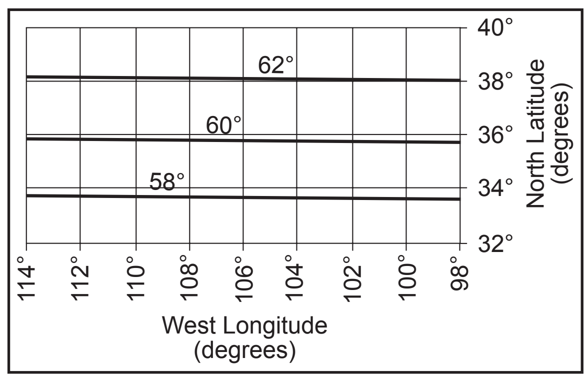



Figure 95. Contour map showing inclination in the Southwest, A.D. 1400, calculated from the average polar curve for the Southwest (Fig. 28).

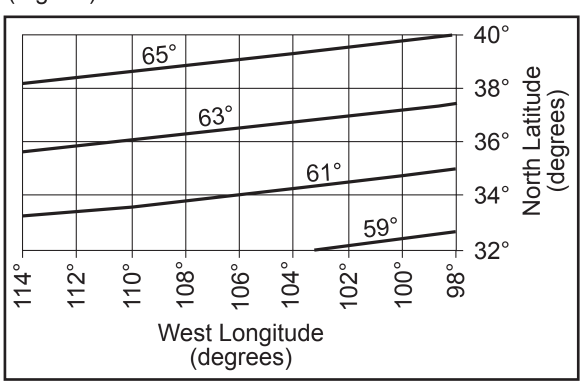



Figure 96. Contour map showing inclination in the Southwest, A.D. 1350, calculated from the average polar curve for the Southwest (Fig. 28).

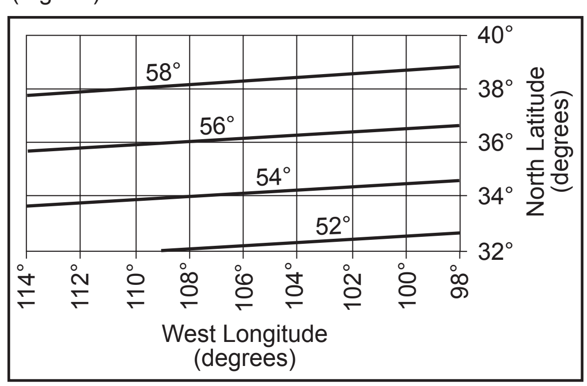



Figure 97. Contour map showing inclination in the Southwest, A.D. 1260, calculated from the average polar curve for the Southwest (Fig. 28).

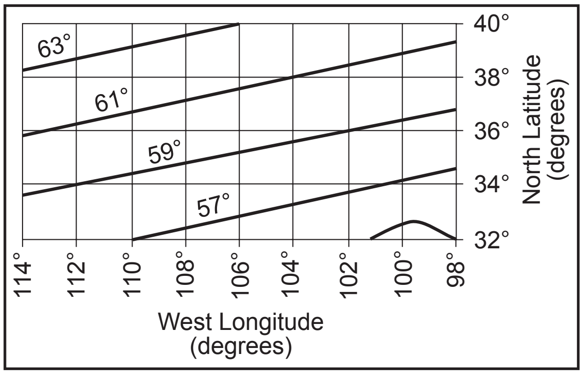



Figure 98. Contour map showing inclination in the Southwest, A.D. 1130, calculated from the average polar curve for the Southwest (Fig. 28).

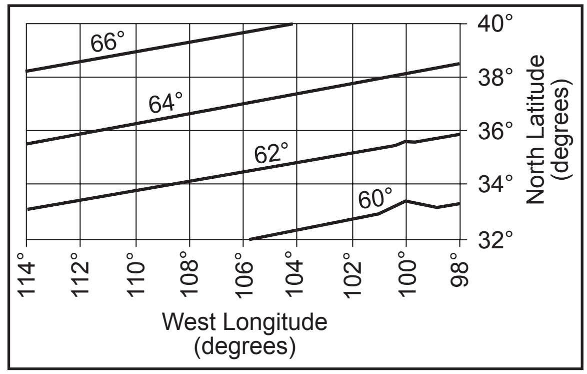



Figure 99. Contour map showing inclination in the Southwest, A.D. 1090, calculated from the average polar curve for the Southwest (Fig. 28).

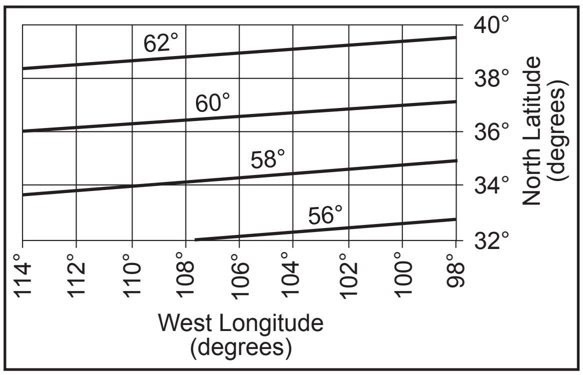



Figure 100. Contour map showing inclination in the Southwest, A.D. 1030, calculated from the average polar curve for the Southwest (Fig. 28).

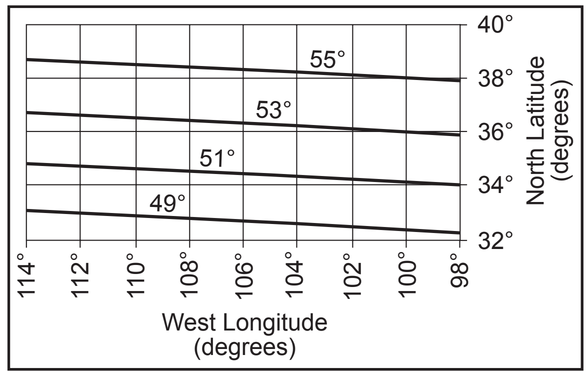



Figure 101. Contour map showing inclination in the Southwest, A.D. 960, calculated from the average polar curve for the Southwest (Fig. 28).

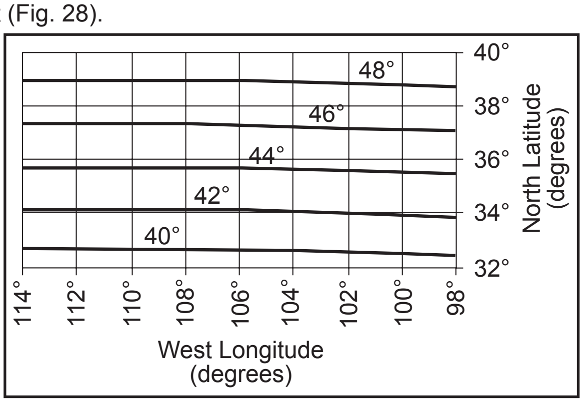



Figure 102. Contour map showing inclination in the Southwest, A.D. 860, calculated from the average polar curve for the Southwest (Fig. 28).

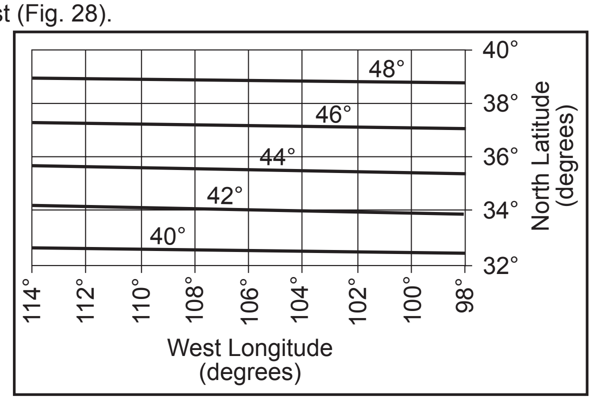



Figure 103. Contour map showing inclination in the Southwest, A.D. 800, calculated from the average polar curve for the Southwest (Fig. 28).

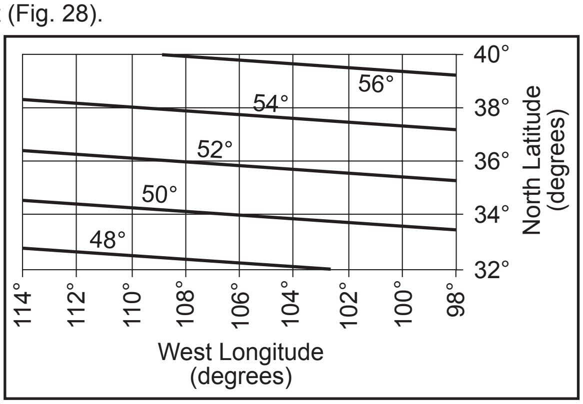



Figure 104. Contour map showing inclination in the Southwest, A.D. 700, calculated from the average polar curve for the Southwest (Fig. 28).

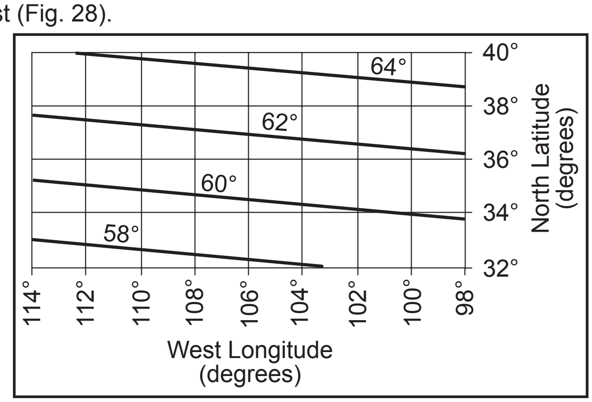



Figure 105. Contour map showing inclination in the Southwest, A.D. 620, calculated from the average polar curve for the Southwest (Fig. 28).

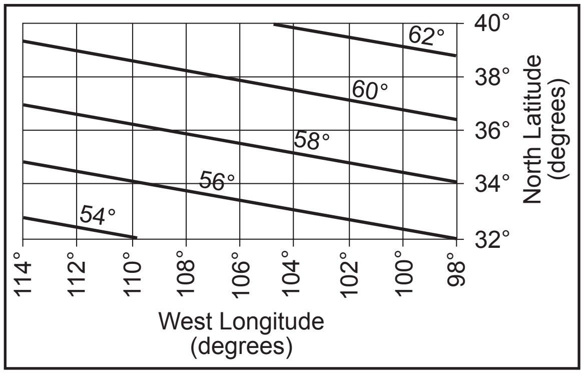



Figure 106. Contour map showing inclination in the Southwest, A.D. 550, calculated from the average polar curve for the Southwest (Fig. 28).

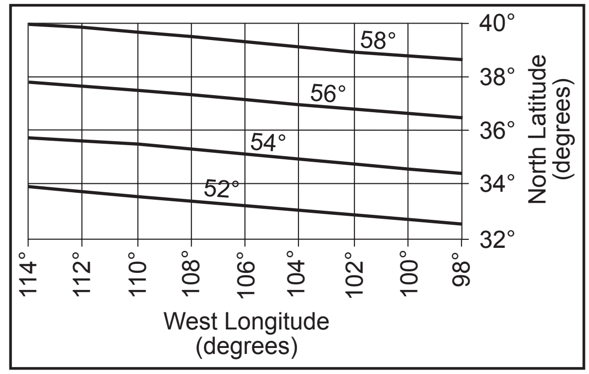



Figure 107. Contour map showing inclination in the Southwest, A.D. 400, calculated from the average polar curve for the Southwest (Fig. 28).

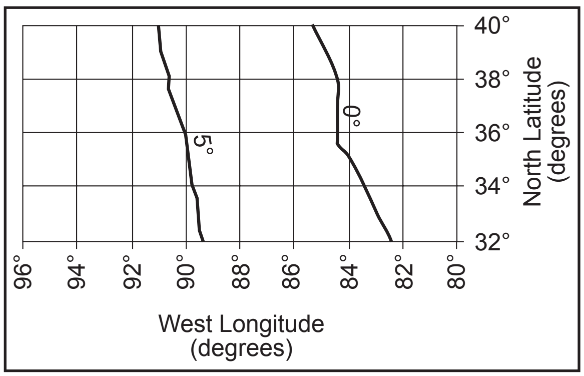



Figure 108. Contour map showing declination in the Midcontinent, A.D. 1965, derived from the U. S. Coast and Geodetic Survey's (1965b) isogonic chart.

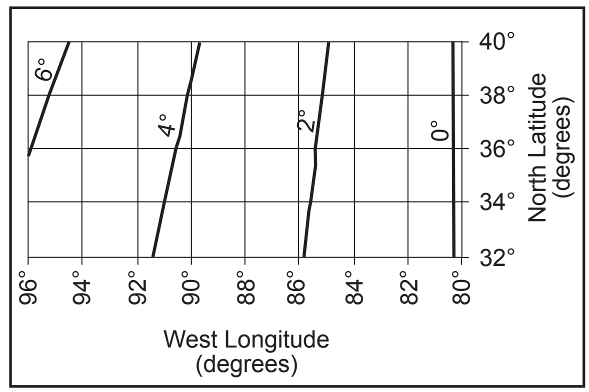



Figure 109. Contour map showing declination in the Midcontinent, A.D. 1965, calculated from the average polar curve for the Midcontinent (Fig. 47).

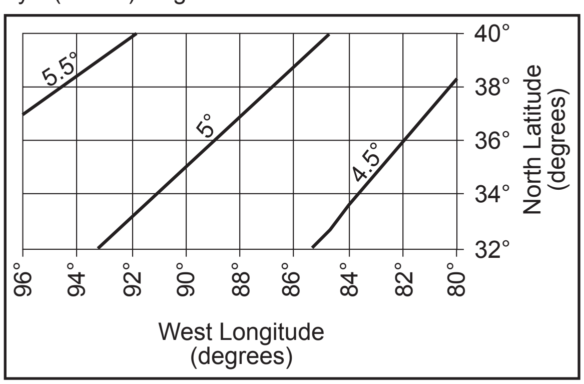



Figure 110. Contour map showing declination in the Midcontinent, A.D. 1700, calculated from the average polar curve for the Midcontinent (Fig. 47).

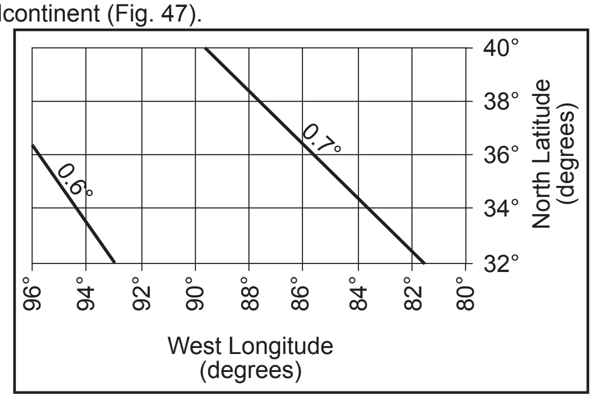



Figure 111. Contour map showing declination in the Midcontinent, A.D. 1450, calculated from the average polar curve for the Midcontinent (Fig. 47).

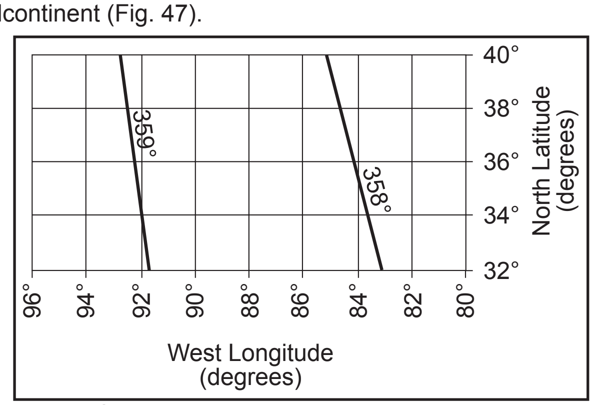



Figure 112. Contour map showing declination in the Midcontinent, A.D. 1400, calculated from the average polar curve for the Midcontinent (Fig. 47).

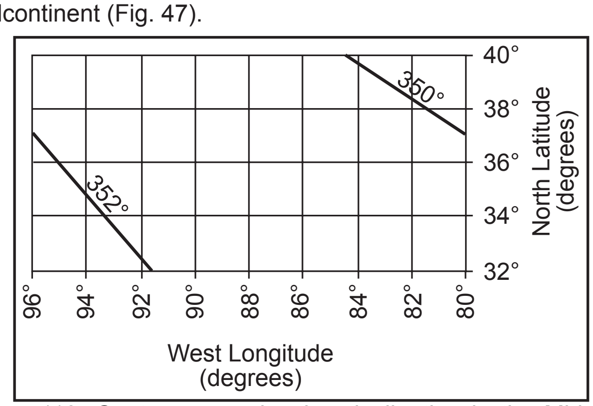



Figure 113. Contour map showing declination in the Midcontinent, A.D. 1370, calculated from the average polar curve for the Midcontinent (Fig. 47).

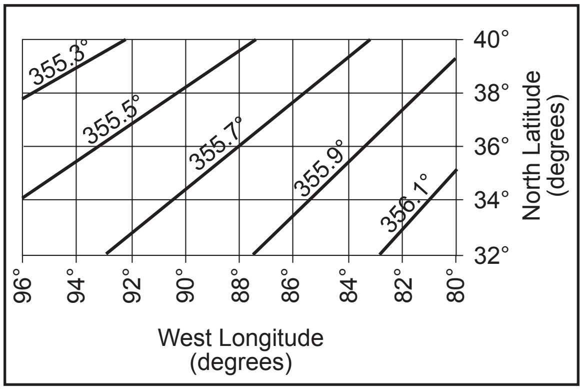



Figure 114. Contour map showing declination in the Midcontinent, A.D. 1300, calculated from the average polar curve for the Midcontinent (Fig. 47).

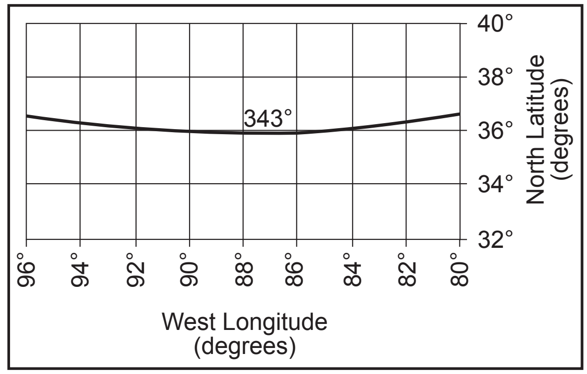



Figure 115. Contour map showing declination in the Midcontinent, A.D. 1200, calculated from the average polar curve for the Midcontinent (Fig. 47).

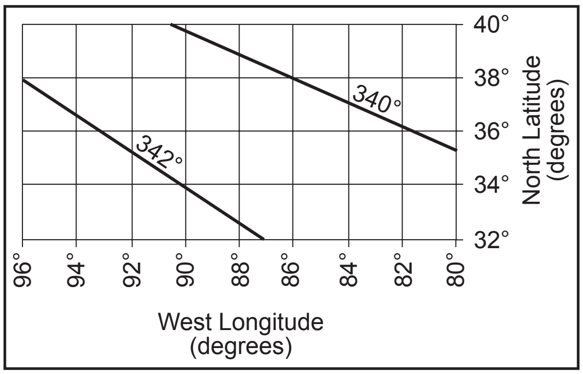



Figure 116. Contour map showing declination in the Midcontinent, A.D. 1150, calculated from the average polar curve for the Midcontinent (Fig. 47).

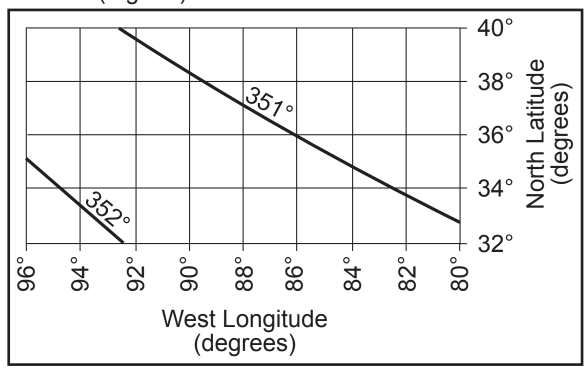



Figure 117. Contour map showing declination in the Midcontinent, A.D. 1100, calculated from the average polar curve for the Midcontinent (Fig. 47).

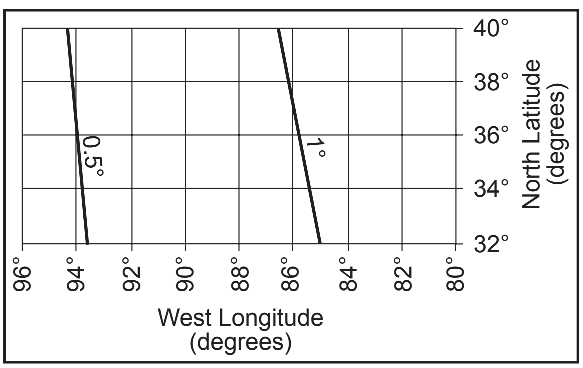



Figure 118. Contour map showing declination in the Midcontinent, A.D. 1000, calculated from the average polar curve for the Midcontinent (Fig. 47).

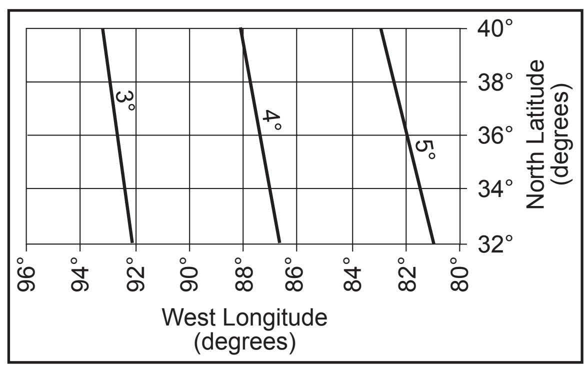



Figure 119. Contour map showing declination in the Midcontinent, A.D. 850, calculated from the average polar curve for the Midcontinent (Fig. 47).

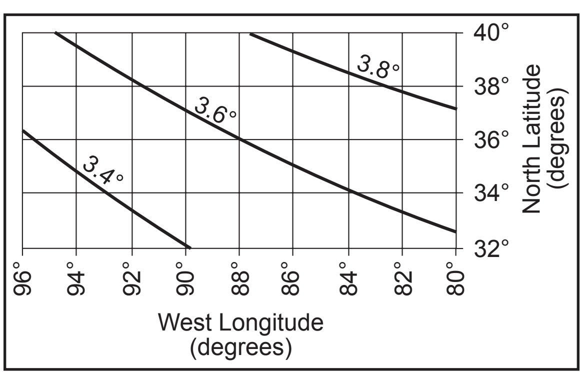



Figure 120. Contour map showing declination in the Midcontinent, A.D. 750, calculated from the average polar curve for the Midcontinent (Fig. 47).

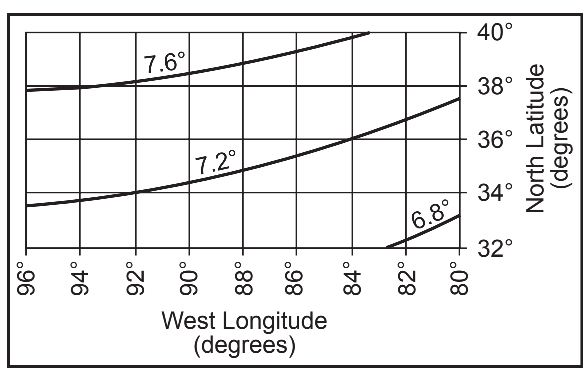



Figure 121. Contour map showing declination in the Midcontinent, A.D. 450, calculated from the average polar curve for the Midcontinent (Fig. 47).

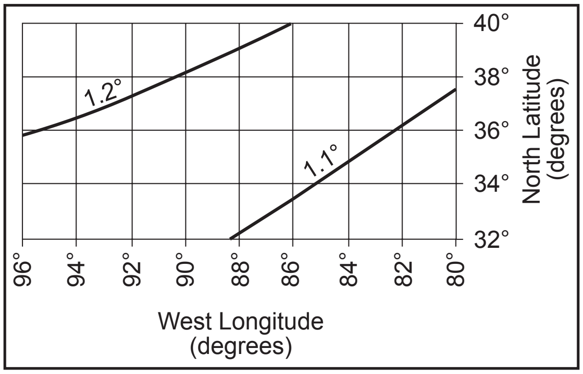



Figure 122. Contour map showing declination in the Midcontinent, A.D. 200, calculated from the average polar curve for the Midcontinent (Fig. 47).

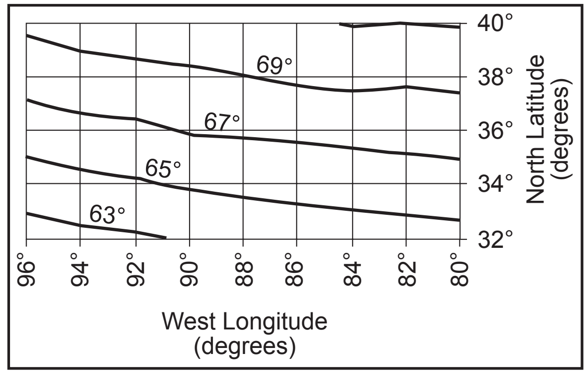



Figure 123. Contour map showing inclination in the Midcontinent, A.D. 1965, derived from the U.S. Coast and Geodetic Survey's (1965a) isoclinic chart.

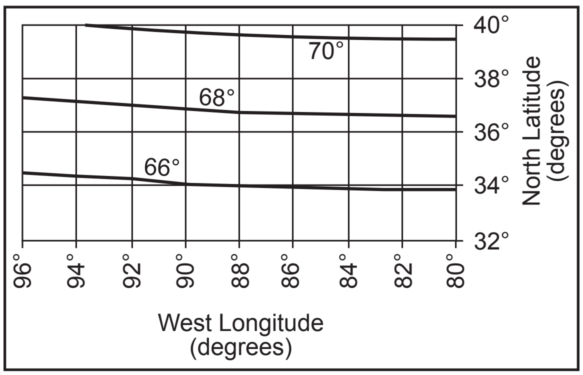



Figure 124. Contour map showing inclination in the Midcontinent, A.D. 1965, calculated from the average polar curve for the Midcontinent (Fig. 47).

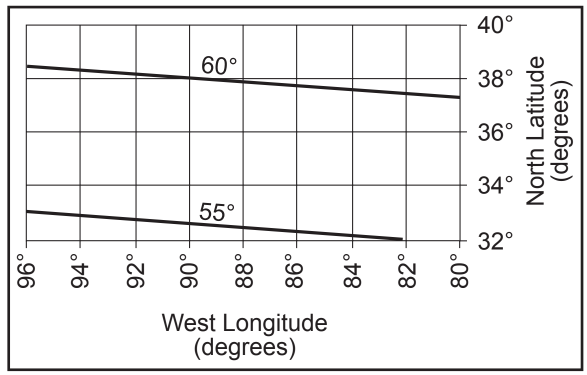



Figure 125. Contour map showing inclination in the Midcontinent, A.D. 1700, calculated from the average polar curve for the Midcontinent (Fig. 47).

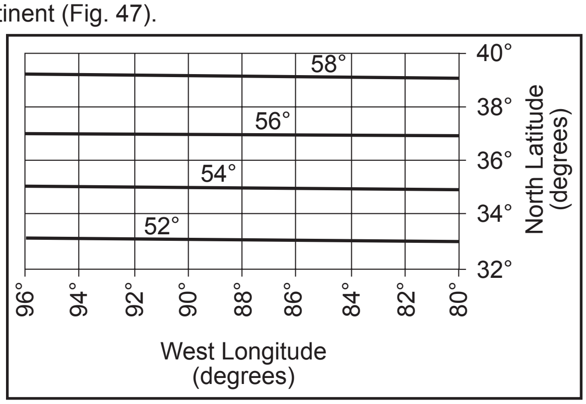



Figure 126. Contour map showing inclination in the Midcontinent, A.D. 1450, calculated from the average polar curve for the Midcontinent (Fig. 47).

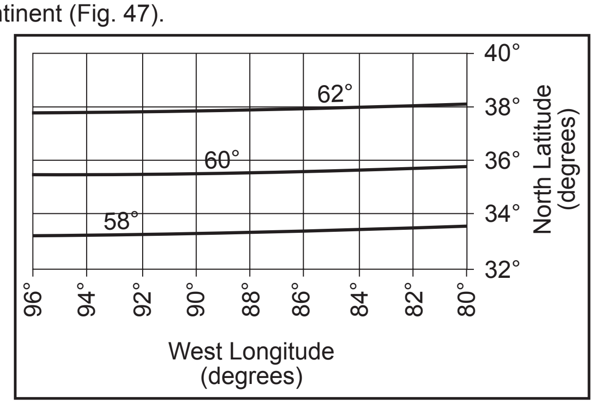



Figure 127. Contour map showing inclination in the Midcontinent, A.D. 1400, calculated from the average polar curve for the Midcontinent (Fig. 47).

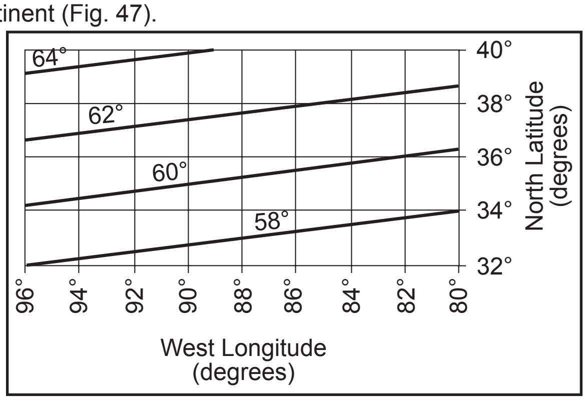



Figure 128. Contour map showing inclination in the Midcontinent, A.D. 1370, calculated from the average polar curve for the Midcontinent (Fig. 47).

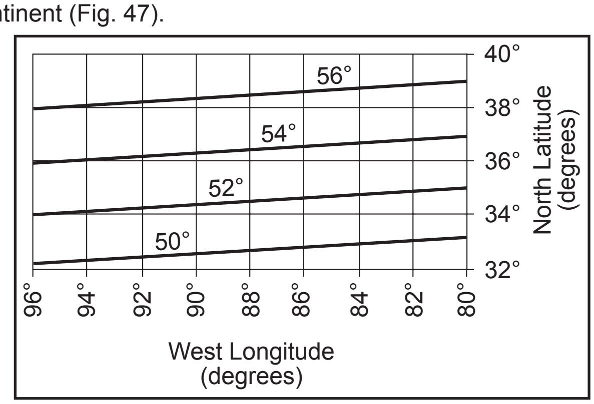



Figure 129. Contour map showing inclination in the Midcontinent, A.D. 1300, calculated from the average polar curve for the Midcontinent (Fig. 47).

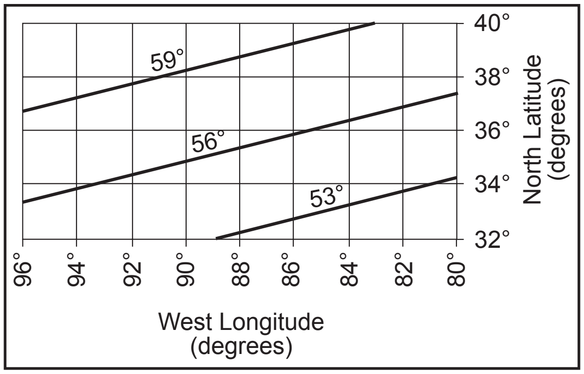



Figure 130. Contour map showing inclination in the Midcontinent, A.D. 1200, calculated from the average polar curve for the Midcontinent (Fig. 47).

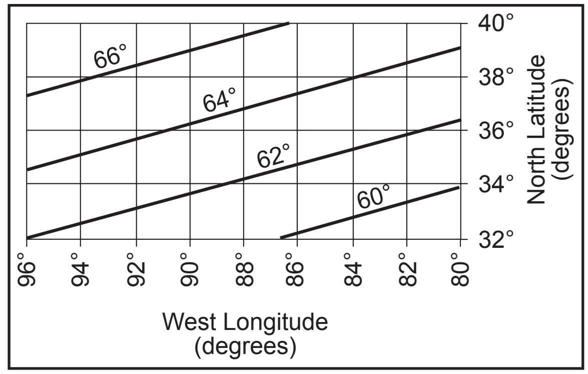



Figure 131. Contour map showing inclination in the Midcontinent, A.D. 1150, calculated from the average polar curve for the Midcontinent (Fig. 47).

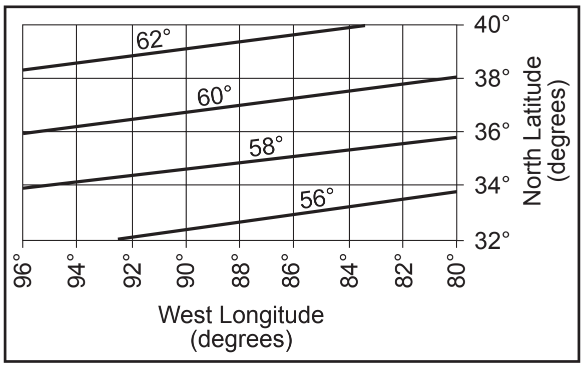



Figure 132. Contour map showing inclination in the Midcontinent, A.D. 1100, calculated from the average polar curve for the Midcontinent (Fig. 47).

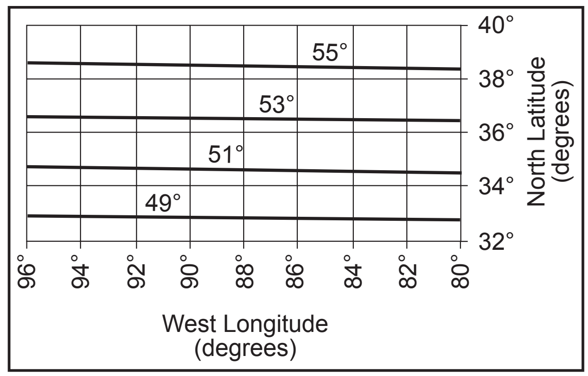



Figure 133. Contour map showing inclination in the Midcontinent, A.D. 1000, calculated from the average polar curve for the Midcontinent (Fig. 47).

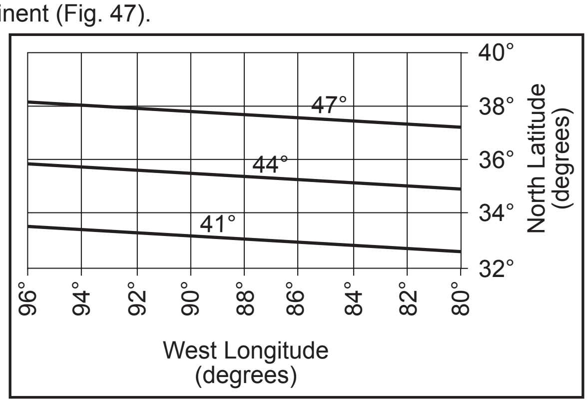



Figure 134. Contour map showing inclination in the Midcontinent, A.D. 850, calculated from the average polar curve for the Midcontinent (Fig. 47).

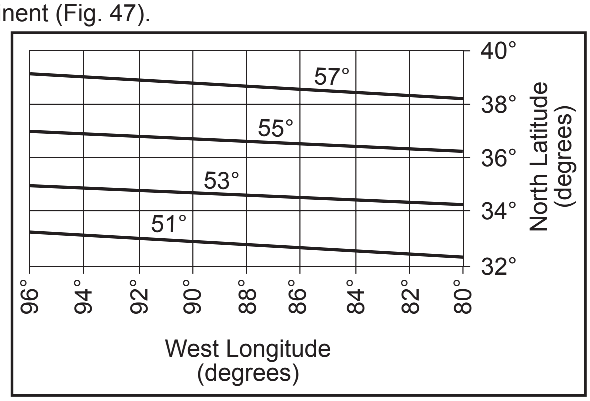



Figure 135. Contour map showing inclination in the Midcontinent, A.D. 750, calculated from the average polar curve for the Midcontinent (Fig. 47).

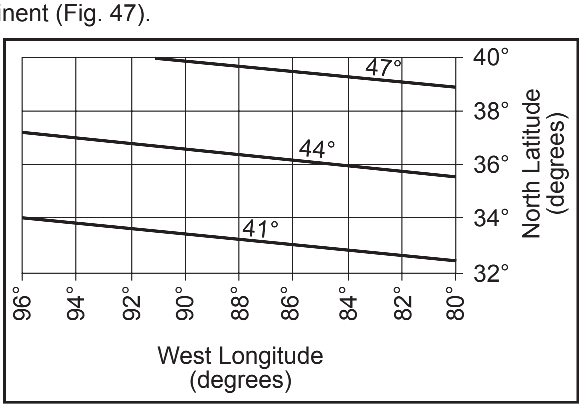



Figure 136. Contour map showing inclination in the Midcontinent, A.D. 450, calculated from the average polar curve for the Midcontinent (Fig. 47).

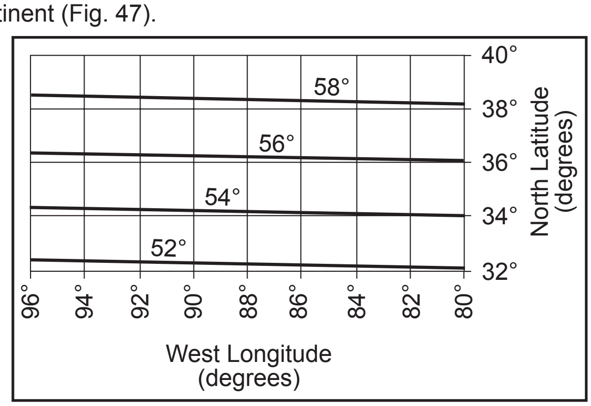



Figure 137. Contour map showing inclination in the Midcontinent, A.D. 200, calculated from the average polar curve for the Midcontinent (Fig. 47).