

LA 70189 (AR-03-06-06-00442)
LIGHTNING STRIKE

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The site consists of a pueblo roomblock and a probable Athabaskan encampment superimposed on a portion of it. Only the surface scatter of artifacts from the roomblock and several probable Athabaskan features lie within the highway right-of-way. The roomblock is 7.5 m outside of project limits (Fig. 2.239).

The site was tested in 1990 (Oakes 1990) and site limits were established at 38-by-30 m for an area of 1,140 sq m. Only 35 percent of this area is within the right-of-way. Four test pits revealed that most cultural material was generally no deeper than 10-15 cm below ground level, consistent with the site being an outside activity area related to the roomblock. Fifteen auger tests revealed the same depositional pattern as the test pits. Eighty-eight artifacts were recovered, including Reserve phase ceramics, lithic artifacts, and one small mano. The roomblock cobble mound measures 11.0-by-10.9 m and contains possibly six rooms. Cobble debris prevented a clear definition of wall alignments. The recovered sherds place the roomblock within the late Reserve phase at ca. A.D. 1100.

Excavation of the site occurred in 1991. Most of the site consisted of artifact debris from the pueblo roomblock. However, backhoe trenching revealed a shallow pit structure. Further excavations in this area also uncovered a roasting pit. Both of these yielded radiocarbon samples and produced post-pueblo occupation dates of A.D. 1430-1680 that are thought to be Athabaskan. Site limits were subsequently adjusted to 46 m north-south by 47 m east-west with a site area of 2,163 sq m.

A total of 90 1-by-1-m grids were excavated at Lightning Strike with 28.2 cu m of dirt removed. Cultural material ranged in depth from 4 to 69 cm below the surface. Mean excavation depth was 22.8 cm. Two backhoe trenches of 15.6 and 14.4 m in length were also excavated to insure that no further cultural features existed on the site.

SITE SETTING

Lightning Strike sits at the southeast base of the San Francisco Mountains at the point where the foothills level out and the land slopes gradually down into the Pine Lawn Valley. Site elevation is 1,987 m (6,520 ft)

within a forest setting of yellow pine, a few alligator juniper, piñon, and scrub oak. Because of the height of the pine trees here, the forest is more open than further upslope in the foothills, but a heavy duff layer covers the ground (Fig. 2.240). The closest stream flow is the Wet Leggett drainage 600 m to the southwest.

The area is not well suited for the pursuit of agriculture, although an opening could be cleared within the forest and water transported from the Wet Leggett. Only a few sites from various time periods sit higher on the southeast flanks of the San Francisco Mountains. Those subsistence items available in the immediate environment include acorns, piñon nuts, and wild game, which is plentiful.

Apache Woods, LA 37919, is diagonally across the road from Lightning Strike. It is an Athabaskan site and dates to the same general time period as the late occupation at LA 70189. The two sites may be part of a single Athabaskan occupation that was cut by original highway construction. The two sites or components indicate a repeated use of the area during the Athabaskan period. Two other Athabaskan sites lie .7 km upslope.

RESEARCH OBJECTIVES

Because the roomblock associated with this site lies outside of the highway right-of-way, we realized that only a potential activity area and isolated features might remain within the project limits. Therefore, expecting hearths and storage pits, we planned to retrieve sufficient floral and faunal samples to examine subsistence activities. The presence of numerous ceramics would also allow us to study types and sizes of cooking vessels. Activities such as food preparation, grinding of subsistence items, and tool manufacture and maintenance could all have occurred within this work area. Ground stone could also be examined using Hard's (1990) theoretical model.

The activity area from this site was to be compared with similar areas from other sites on the project in terms of length of occupation, labor investment, and activities performed in order to provide insights into Pueblo subsistence strategies. Subsequent excavations revealed that the area was primarily used for depositing sheet trash by roomblock dwellers. No cultural features were found on

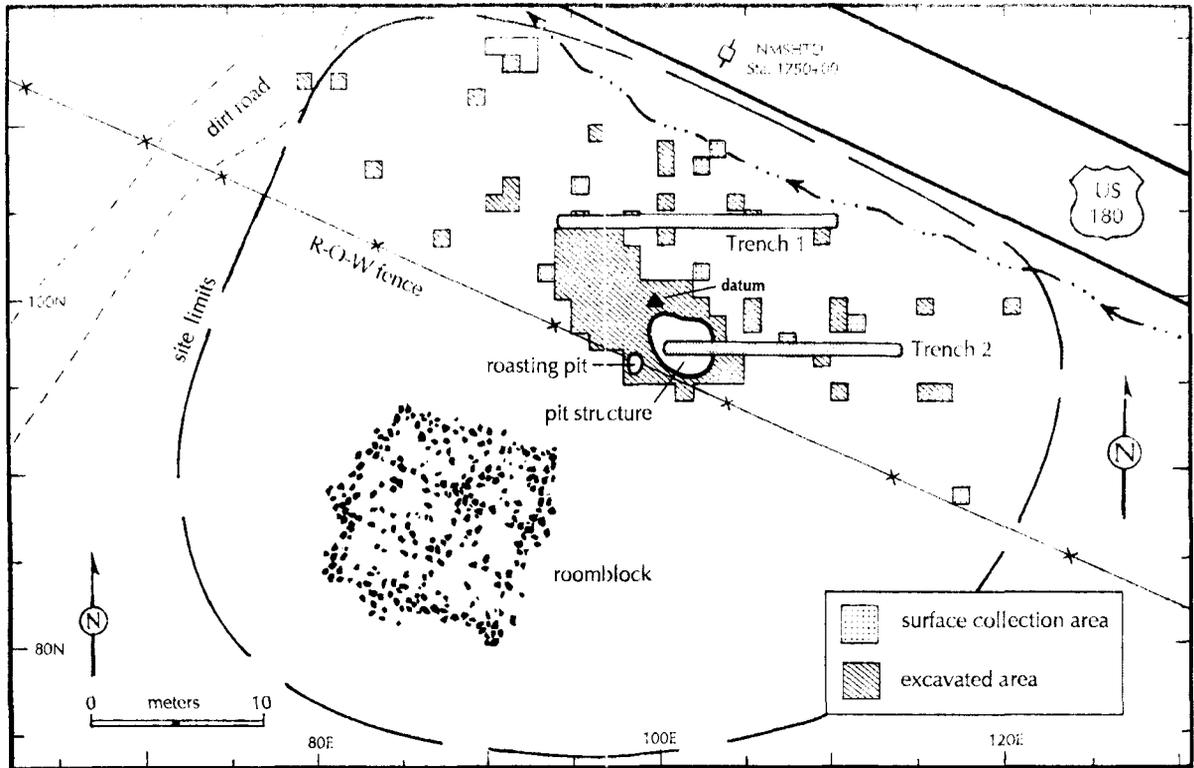


Figure 2.239. LA 70189, site plan of Lightning Strike.



Figure 2.240. Site setting at LA 70189, with cobble mound in background.

the surface that could be associated with this time period. The cultural features that were present all related to the probable Athabaskan occupation of the site. Therefore, the specific research objectives could not be met; however, the knowledge gained about Athabaskan settlement and subsistence patterns in the Mogollon Highlands is of great significance.

EXCAVATION PROCEDURES

A 1-by-1-m grid system was laid out over the site area and an arbitrary datum was reestablished at 100N/100E. The area with the highest artifact density was surface stripped first. Because a utilized surface was encountered at 10-15 cm below the ground level during the testing program, excavations proceeded in depth only until this compacted surface was revealed. The surface excavations were then expanded until the compaction could no longer be followed. In all other areas of the site, 1-by-1-m grids were taken down to the underlying caliche substrate to a maximum depth of 69 cm. When cultural features were encountered they were completely excavated along with the surrounding surfaces associated with them.

Excavations revealed no stratigraphic levels except the utilized surface. Those levels maintained include:

Level 1: Surface collecting and surface stripping to 15 cm in depth. Numerous artifacts were present. Soil was mostly loose and silty with a heavy cover of duff. Soil color was 5YR 3/2, dark reddish brown. Level 2: General fill. Soil sometimes mottled; charcoal flecks occasionally present. Color was 5YR 4/4, reddish brown. Artifacts were present within the

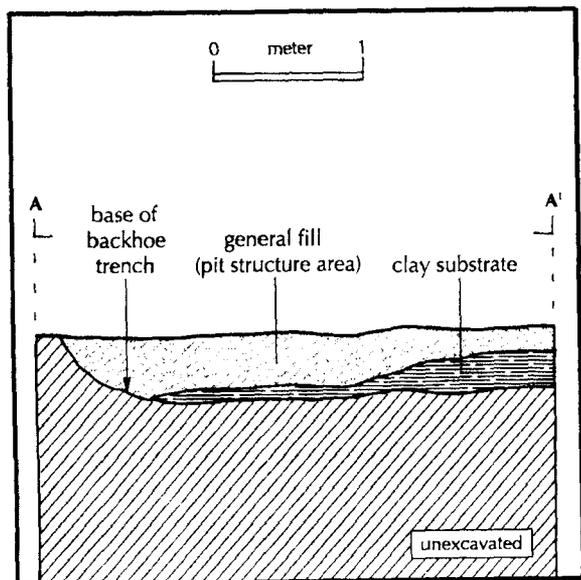


Figure 2.241. Profile of Backhoe Trench 2.

fill. Where soil reached the sterile substrate, the color changed to 10YR 3/6, dark yellowish brown. Level 3: Fill within the cultural features was darker with more charcoal. Munsell color was 10YR 3/2, very dark grayish brown. Artifacts were present.

Two backhoe trenches were dug on the site (Fig. 2.241) after excavated areas revealed no cultural features. A shallow pit structure was cut by the trench and the surrounding surface stripping uncovered a nearby roasting pit. All soil on the site was screened through ¼-inch screen. All artifacts recovered were bagged by grid and level. Profiles and plan views were drawn of all cultural features. Photographs were taken and a topographic map was produced using a transit and stadia rod.

CULTURAL UNITS

Excavations uncovered two cultural features within the proposed project limits: a shallow pit structure and a roasting pit (Fig. 2.242). Both represent a probable Athabaskan use of the site.

Pit Structure

A shallow pit structure was uncovered in a backhoe trench. It contained darker soil that was visible in the backhoe cut. Numerous artifacts had washed into the unit through time. The structure had sloping sides and no internal features. Radiocarbon samples produced dates representing a Pueblo period occupation. However, the feature may contain charcoal from old wood because we believe it to be Athabaskan in origin, associated with an Athabaskan-dated roasting pit nearby.

Dimensions. The pit structure measured 3.55 m north-south by 3.37 m east-west for an area of 11.9 sq m. It was somewhat irregular in shape and was very shallow—43 cm below the ground surface (Fig. 2.243a). Large pieces of charcoal were present in the loamy fill.

Walls. The pit structure was saucer-shaped with very gradually sloping walls (Fig. 2.243b). The unit had been dug directly into the native soil and the walls did not have prepared surfaces.

Floor. The floor was slightly uneven and was formed by simply packing down the exposed surface. Charcoal was mostly concentrated in the floor fill. Small charcoal flecks were present in the floor surface.

No artifacts were found on the floor.

Hearth. None present.

Postholes. None present.

Roof. No roof fall found.

Entry. No evidence of an entry was located.



Figure 2.242. Pit structure on left with backhoe trench visible. Roasting pit on right near fence.

Roasting Pit

A single roasting pit was located about 1 m southwest of the pit structure (Fig. 2.244). It was heavily burned and contained a few artifacts. Based on C-14 dates, it derives from the Athabaskan occupation of the site.

The roasting pit measured 1.15-by-.94-by-.35 m deep and was filled with fire-cracked rock and charcoal-filled soil (Fig. 2.243c). One small area of the pit wall had been oxidized to a reddish color. Also, a possible dirt shelf was located in the upper portion of the pit on the north side where the pit wall flattened out. A few artifacts were recovered from the pit.

ARTIFACTS

A total of 786 artifacts were recovered from the Lightning Strike right-of-way and include only a small portion of the cultural material associated with the roomblock to the west. Items found include 458 ceramics, 322 lithic artifacts, 5 pieces of ground stone, and 1 quartz crystal.

Ceramics

The recovered ceramics were part of the sheet trash from the nearby pueblo roomblock. They constitute 58.1 per-

cent of the site assemblage with most of them (69.8 percent) being the all-encompassing Alma Brown Wares (Table 2.135). Sherds that can be solely assigned to the Pueblo period represent 6.1 percent of the ceramics. The presence of a few Tularosa Black-on-white, White Mountain Redware, and Wingate Black-on-red indicates a late Reserve phase occupation, possibly ca. A.D. 1100.

Most sherds were recovered from surface stripping and general fill of the site. Nineteen percent were found within the pit structure and are presumed to have washed into this shallow unit over time. Another 1.7 percent (N=8) were from the roasting pit and could have also washed into the feature during rainy periods.

Twelve sherds and five lithic artifacts were found on the floor of the pit structure. These include Alma Plain, corrugated, smudged, and Reserve Black-on-white sherds and core flakes and angular debris. Because later-dating charcoal was retrieved from this same provenience, we assume that the artifacts were a secondary deposit as stated above.

Lithic Artifacts

Most lithic artifacts are core flakes. A small amount of angular debris also occurs (Table 2.136). Unifacial and bifacial flakes comprise only 5.2 percent of the lithic assemblage. Some material reduction occurred in this

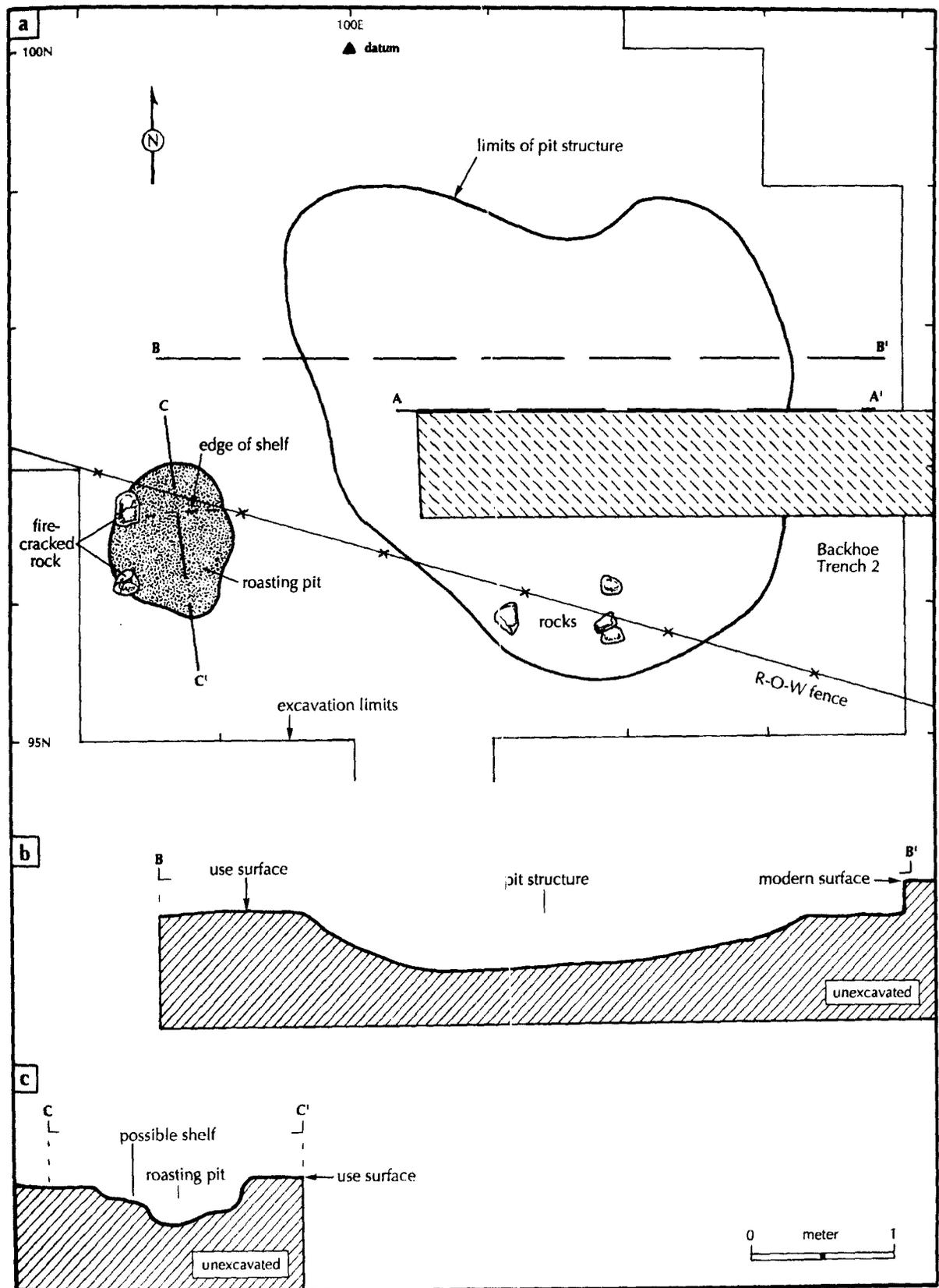


Figure 2.243. Plan and profile of pit structure and roasting pit; (a) plan view, (b) profile of pit structure, (c) profile of roasting pit.



Figure 2.244. Roasting pit, LA 70189.

area of the site; ten cores and one tested cobble were found. Some lithic material apparently washed into the pit structure and roasting pit.

Luna blue agate and chert represent 66.2 percent of the lithic materials on the site (Table 2.137). A wide variety of other materials were selected for use, including obsidian, which makes up 2.8 percent of the assemblage.

Both projectile points are Luna blue agate and are corner-notched. They may represent curated items or be associated with the Athabaskan use of the site.

Ground Stone

Only five pieces of ground stone were found at Lightning Strike (Table 2.138). Of these, only one is a milling stone, an indeterminate mano fragment. Other pieces include an abrading stone, lapidary stone, and two indeterminate fragments. Material type choices consist of four pieces of rhyolite and one of nonvesicular basalt, both typically found on most sites in the Mogollon Highlands. All were recovered from general fill except the lapidary stone, which was in the fill of the pit structure. It is not possible to determine cultural affiliation of these pieces of ground stone.

Miscellaneous Artifacts

A single modified quartz crystal was recovered from the general fill at LA 70189. Its cultural association is indeterminate.

ANCILLARY STUDIES

Faunal Remains

No faunal remains were recovered from this shallow, basically surface site.

Macrobotanical Remains

Charred nonreproductive plant parts were the only cultural remains recovered from the roasting pit along with an intrusive uncharred goosefoot seed. The charred four-wing saltbush leaves and pine bark could represent residue from using these genera for fuelwood.

The flotation sample from the pit structure produced charred maize cupules and yucca seed, indicating maize was either carried into the shallow depression or was transported there.

Wood charcoal species were predominantly coniferous including pinon, ponderosa, and juniper. Small quan-

Table 2.135. Ceramics from LA 70189

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Roasting Pit	Pit Structure	
Alma Plain	188 80.0% 51.8%	4 1.7% 50.0%	43 18.3% 49.4%	235 100.0% 51.3%
Alma Rough	70 84.4% 19.3%		12 14.6% 13.8%	82 100.0% 17.9%
Alma Punched	1 100.0% .3%			1 100.0% .2%
Alma Neckbanded	2 100.0% .6%			2 100.0% .4%
Three Circle Neckbanded	5 100.0% 1.4%			5 100.0% 1.1%
Plain Corrugated	22 84.6% 6.1%		4 15.4% 4.6%	26 100.0% 5.7%
Indented Corrugated	10 83.3% 2.8%	1 8.3% 12.5%	1 8.3% 1.1%	12 100.0% 2.6%
Incised Corrugated	14 82.4% 3.9%	1 5.9% 12.5%	2 11.8% 2.3%	17 100.0% 3.7%
Indeterminate Corrugated	7 87.5% 1.9%		1 12.5% 1.1%	8 100.0% 1.7%
Plain Smudged	22 56.4% 6.1%	1 2.6% 12.5%	16 41.0% 18.4%	39 100.0% 8.5%
San Francisco Red	1 50.0% .3%		1 50.0% 1.1%	2 100.0% .4%
Late White Ware	8 57.1% 2.2%		6 42.9% 6.9%	14 100.0% 3.1%
Red Mesa Black-on-white	6 85.7% 1.7%		1 14.3% 1.1%	7 100.0% 1.5%
Reserve Black-on-white	6 85.7% 1.7%		1 14.3% 1.1%	7 100.0% 1.5%
Tularosa Black-on-white	2 100.0% .6%			2 100.0% .4%
Indeterminate White Mountain Redware		1 100.0% 12.5%		1 100.0% .2%
Wingate Black-on-Red	4 100.0% 1.1%			4 100.0% .9%
Column Total	363 79.3% 100.0%	8 1.7% 100.0%	87 19.0% 100.0%	458 100.0% 100.0%

Table 2.136. Lithic Artifacts from LA 70189

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Roasting Pit	Pit Structure	
Angular Debris	60 89.6% 20.8%	1 1.5% 20.0%	6 9.0% 20.7%	67 100.0% 20.6%
Core Flake	204 89.9% 70.8%	3 1.3% 60.0%	20 8.8% 69.0%	227 100.0% 70.5%
Biface Flake	13 92.9% 4.5%		1 7.1% 3.4%	14 100.0% 4.3%
Tested Cobble	1 100.0% .3%			1 100.0% .3%
Core	8 80.0% 2.6%		2 20.0% 6.9%	10 100.0% 3.1%
Uniface		1 100.0% 20.0%		1 100.0% .3%
Biface	2 100.0% .7%			2 100.0% .6%
Column Total	288 89.4% 100.0%	5 1.6% 100.0%	29 9.0% 100.0%	322 100.0% 100.0%

Table 2.137. Lithic Artifact Material Types from LA 70189

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Roasting Pit	Pit Structure	
Chert	91 88.3% 31.6%	3 2.9% 60.0%	9 8.7% 31.0%	103 100.0% 32.0%
Chalcedony	11 73.3% 3.8%	1 6.7% 20.0%	3 20.0% 10.3%	15 100.0% 4.7%
Luna Blue Agate	100 90.9% 34.7%		10 9.1% 34.5%	110 100.0% 34.2%
Obsidian	9 100.0% 3.1%			9 100.0% 2.8%
Igneous	4 100.0% 1.4%			4 100.0% 1.2%
Basalt	26 86.7% 9.0%		4 13.3% 13.8%	30 100.0% 9.3%
Rhyolite	24 100.0% 8.3%			24 100.0% 7.5%
Siltstone	5 100.0% 1.7%			5 100.0% 1.6%

Table 2.137. Continued.

Cells: Count Row Percent Column Percent	Provenience			Row Total
	General Fill	Roasting Pit	Pit Structure	
Metamorphic	1 100.0% .3%			1 100.0% .3%
Quartzite	14 82.4% 4.9%	1 5.9% 20.0%	2 11.8% 6.9%	17 100.0% 5.3%
Quartzitic Sandstone	2 66.7% .7%		1 33.3% 3.4%	3 100.0% .9%
Massive Quartz	1 100.0% .3%			1 100.0% .3%
Column Total	288 89.4% 100.0%	5 1.6% 100.0%	29 9.0% 100.0%	322 100.0% 100.0%

Table 2.138. Ground Stone from LA 70189

Cells: Count Row Percent Column Percent	Provenience		Row Total
	General Fill	Pit Structure	
Indeterminate	2 100.0% 50.0%		2 100.0% 40.0%
Abrading Stone	1 100.0% 25.0%		1 100.0% 20.0%
Lapidary Stone		1 100.0% 100.0%	1 100.0% 20.0%
Mano	1 100.0% 25.0%		1 100.0% 20.0%
Column Total	4 80.0% 100.0%	1 20.0% 100.0%	5 100.0% 100.0%

tities of oak were also identified. Thus, firewood and construction material, at least, consisted of locally available taxa.

Pollen Remains

Five pollen samples were analyzed from Lightning Strike. Three were from the pit structure, one from the roasting pit, and another was a control sample from off-site (Table 2.139).

Locally available woods were present in the roasting pit along with cheno-ams, composites, Mormon tea, and prickly pear, all of which are edible items. Of interest is

the maize pollen and grains that showed up in the roasting pit and from the floor of the pit structure. It would appear that the Athabaskan peoples on the site had access to corn or corn products; however, because of the shallowness of the two features and the closeness to the Pueblo roomblock, these pollen remains may have washed into the structures with Pueblo period artifacts.

DATING METHODS

Five radiocarbon samples were obtained from the site and the results beg for more site data, which we were not able to obtain. Table 2.140 presents the C-14 results and

Table 2.139. Pollen Remains from LA 70189

Location	Pine	Juniper	Oak	Cheno-am	Composite	Mormon Tea	Sagebrush	Prickly Pear	Grasses	Corn
Pit Structure										
Sherd				X						
Floor	X			X	X					X
Floor	X			X						
Roasting Pit										
Sherd	X*	X	X	X	X	X		X		X
Control										
Off-site	X*	X	X	X	X		X		X	

*High Amounts

Table 2.140. C-14 Dates for LA 70189

Unit	Beta No.	Age B.P.	Calibrated 1-Sigma Date	Calibrated 2-Sigma Date	Calibrated Date	Context
98N/101E	69814	1040 ±90	A.D. 910-920 950-1040	A.D. 800-1200	A.D. 1010	Pit Structure (15-34 cm)
98N/98E	69815	600 ±60	A.D. 1300-1400	A.D. 1220-1430	A.D. 1400	Roasting Pit (10-30 cm)
98N/98E	57459	340 ±80	A.D. 1460-1650	A.D. 1430-1680 1770-1800 1940-1950	A.D. 1520, 1570, 1630	Roasting Pit (10-30 cm)
98N/100E	57460	1010 ±70	A.D. 990-1050 1100-1110	A.D. 890-1190	A.D. 1020	Pit Structure (2-45 cm)
98N/101E	64068	630 ±90	A.D. 1290-1410	A.D. 1240-1440	A.D. 1310, 1350 1380	Pit Structure (15-34 cm)

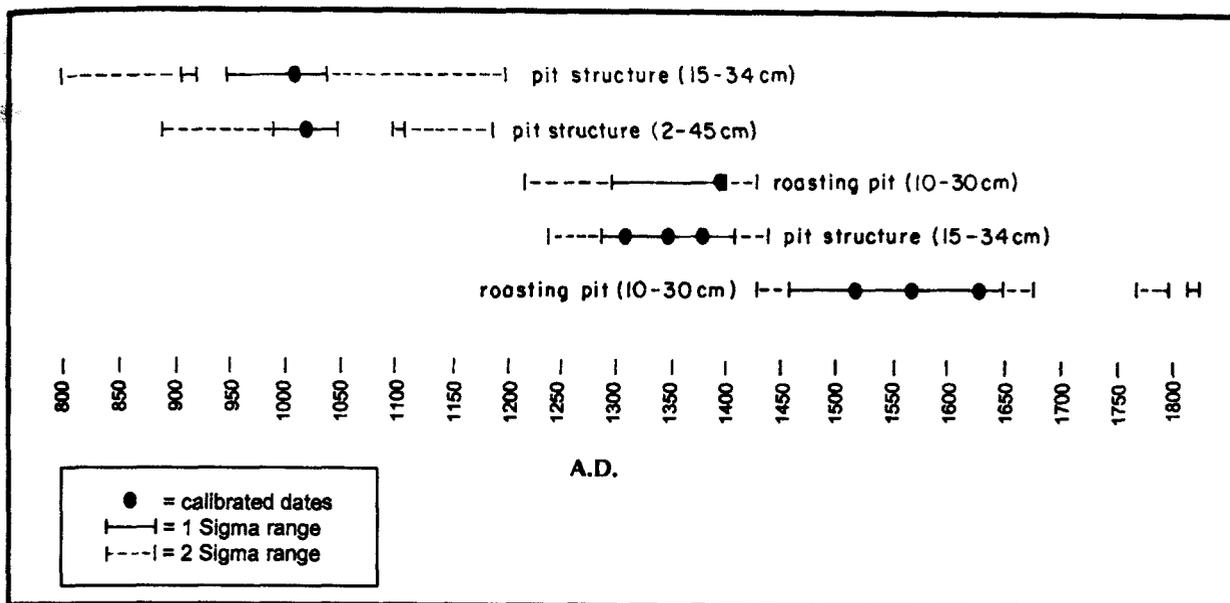


Figure 2.245. Seriation of dates, LA 70189.

Figure 2.245 graphs those results in seriated order. Three obsidian dates were also obtained and produced poor results. One date, 528 B.C., is aberrant, too early for the site. Two other dates retrieved from general fill are either too early, A.D. 509, or slightly too late, A.D. 1149, for the Reserve phase roomblock.

The first two graphed dates for the pit structure are between A.D. 950 and 1050 and probably represent an occupation date for the nearby roomblock due to charcoal from the pueblo washing into the pit structure fill. However, the sherds suggest a date closer to A.D. 1100. Another radiocarbon sample from the pit structure yielded a 2-sigma A.D. 1240-1440 date as does the roasting pit. The few late Pueblo sherds on the site—Tularosa Black-on-white, White Mountain Redware, and Wingate Black-on-red—fit into the first segment of this 2-sigma range (prior to A.D. 1350). This would mean that the shallow pit structure could be a late Tularosa phase manifestation. Shallow, expedient structures of this type are not known for the late Pueblo period, but could represent a transient occupation of the site at this time. However, we suspect, but cannot confirm, that the pit structure is contemporary with the nearby later roasting pit.

Charcoal from the late Pueblo period, at A.D. 1240-1440, was likewise present in the roasting pit. However, the roasting pit also produced a later date, probably between A.D. 1430 and 1680, and possibly as late as 1780-1800 (see Fig. 2.245). These dates indicate a probable Athabaskan use of the roasting pit.

In summary, there are probably two occupational episodes at Lightning Strike. The Pueblo roomblock is likely a Reserve phase settlement with radiocarbon samples yielding a weighted C-14 date of A.D. 1020; how-

ever, ceramics push that date closer to A.D. 1100. The use of old wood cannot be discounted.

The roasting pit seems to be clearly Athabaskan. Because of the shallowness of the pit structure and the considerable likelihood of cultural materials washing in or out of it, we cannot unequivocally state that the pit structure is related to the roasting pit, although we believe it is.

SITE INTERPRETATION

Lightning Strike has two discrete occupations. The Pueblo roomblock, outside of the project limits, dates to probably the late Reserve phase. Ceramics indicate an occupation around A.D. 1100. However, radiocarbon dates suggest an earlier A.D. 1020-1030 date, which probably represents the use of old wood. Without excavation of the roomblock, it is not possible to determine precisely when the pueblo was occupied. Based on surface sherds alone and assuming the A.D. 1020-1030 date represents old wood, we have elected to assign a late Reserve date to the rooms.

The shallow pit structure may have been associated with this occupation. The likelihood of charcoal and artifacts washing in or out of this feature is high. A nearby roasting pit dates securely after A.D. 1430 and as late as 1680 and the closely associated pit structure may derive from this same time. We have assigned an Athabaskan affinity to the roasting pit. The pit yielded numerous subsistence items available in the local environment and also produced maize remains. The presence of corn that probably was transported into the site is important to our understanding of Athabaskan subsistence choices in the

Mogollon Highlands.