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The geoglyphs of Palpa, Peru: documentation, analysis, and interpretation

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9. Appendix

In the appendix detailed descriptions of specific archaeological contexts (stratigraphy, excavations) in the Palpa area are provided from which some results in section 6 are derived.

9.1 Development of complex geoglyph sites

For some rather complex sites (> 20 geoglyphs) on Cresta de Sacramento and Cerro Carapo stratigraphic sequences could be reconstructed that allowed the study of site development in some detail. Two sites (PV67A-39 and -40) on sloped terrain can only be described in summary here because they are not very well preserved. But, three sites on plateaus (PV67A-35 and PV67A-47 on Cresta de Sacramento and site PV67B-55 on Cerro Carapo) offered detailed stratigraphies that were visualized using the Harris matrix[69]. Stratigraphic relationships of geoglyphs on other sites are reported in the database on the DVD.

9.1.1 Geoglyph sites on sloped terrain

Geoglyph sites on hillsides generally lack the complexity of sites on plateaus, since geoglyphs are usually placed further apart from each other. On the other hand, they are more difficult to date both in terms of relative and absolute chronology. Wherever geoglyphs on slopes cross other geoglyphs, erosion has usually long since washed away any clear signs of a stratigraphic sequence. Datable ceramics are associated with geoglyphs on slopes in lower numbers and less unambiguously than with geoglyphs on plateaus. On the most complex and most interesting site featuring the famous *reloj solar* or sun dial geoglyph (240), site PV67A-39, all stratigraphic evidence was destroyed when the geoglyphs were cleaned and reconstructed in the 1980s by a local schoolteacher (fig. 46). However, the placement of different geoglyph types on slopes indicates site development over time. Two neighboring sites on the southern flank of Cresta de Sacramento can serve as an example.

Sites PV67A-39 and -40 (Cresta de Sacramento)

On these two neighboring sites (map 1), anthropomorphic figures are usually placed on the steepest part of the slope, although at different levels. Sometimes, two figures are placed close to each other. Wherever they occur together with lineal geoglyphs the latter cut the former (240/241, 236/229). Thus, anthropomorphic figures were the earliest geoglyphs on hillsides. Most other types of geoglyphs found on sloped terrain are from all time periods of the geoglyph complex and are therefore not datable on the basis of shape alone. Most probably they were made over a long period of time, from Initial Nasca to Late Nasca.

Groups of lineal geoglyphs on slopes have common points of origin on the edge of the plateau (226/242/248, 261/263), or they branch off from a main line running downhill (248/243/245/247, 263/264/268, 277/275). This indicates that new lines were adapted to existing ones, adding one line after another over a long period of time. Trapezoids on hillsides, considerably smaller than their plateau counterparts, were placed on the lower parts of slopes where the degree of terrain inclination is lower (219, 223, 254, 274, 286). Just like on plateaus, they were flanked by meandering lines (224, 253, 287) and spirals (252). The *reloj solar* or sun dial geoglyph (240) is a peculiar combination of both line types (fig. 46). Its construction date remains unknown, but evidence from other sites suggest that all spirals were constructed no later than in the Early Nasca period. Some of the lines on slopes seem to cut through trapezoids, but the evidence is not clear. The odd-shaped geoglyph 226, which seems to cut a series of lines and a trapezoid, was probably left unfinished. Its uncommon shape is in any case not due to the

[69] Each Harris matrix was generated using ArchED 1.4.1 which is available for free download at: www.ads.tuwien.ac.at/ArchEd/ (accessed August 18, 2004).

Fig. 46. View over geoglyphs on site PV67A-39 from the upper plateau of Cresta de Sacramento (cp. map 1).

modern reconstruction of geoglyphs mentioned above, since it is already visible in that shape in a 1944 SAN aerial photograph.

9.1.2 Geoglyph sites on plateaus

Site PV67A-35 (Cresta de Sacramento)

This site occupies the southwestern-most part of the main plateau of Cresta de Sacramento. It is composed of three major trapezoids, a series of lines, and the figure of a whale or shark (map 3). The central part of the site is crossed by a road leading from Río Grande to Palpa, and a radio transmitter has been built on the north-eastern side of the road on the main plateau. Both modern features have destroyed parts of several geoglyphs. Furthermore, cars have left their tracks on many parts of the site, and modern trash has been dumped in several places. All in all, however, the geoglyphs are well enough preserved to study their stratigraphy in detail (fig. 47).

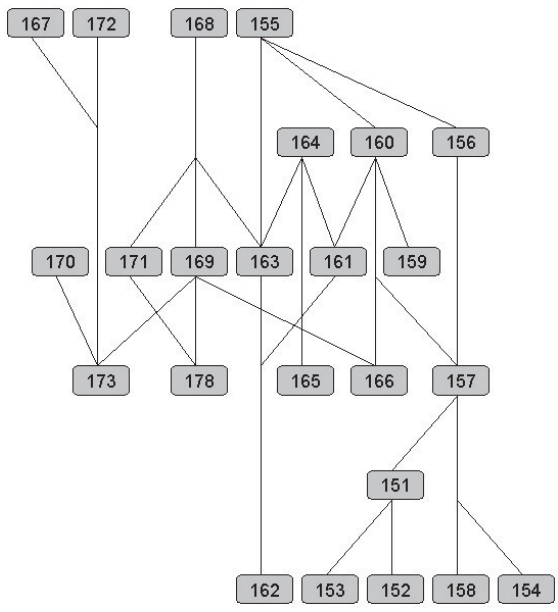


Fig. 47. Geoglyph stratigraphy on site PV67A-35 (cp. map 3).

The first geoglyphs to be constructed on the plateau were several narrow straight lines (152–154, 158, 162, 178), none of them very long, and some of them parallel to each other. Since no datable ceramics were found on either of them, it is unclear when this first activity occurred, but certainly no later than Nasca 2 when the first datable geoglyphs were constructed that partially covered the previously mentioned lines. The whale or shark figure (151) as well as the largest trapezoid dominating the site (161) were constructed next (fig. 48). Both had ceramics dating to Nasca 2, 3, and 5 on them that indicated a long period of use. This is confirmed by evi-

Fig. 48. Aerial view of western portion of geoglyph site PV67A-35 (cp. map. 3).

dence that both geoglyphs were remodeled at least once. Thus, Nasca 2 marked the beginning of large-scale geoglyph related activity on the site. In the northeastern part of the site, the second major trapezoid (169) was also constructed during that time, partly covering an already existing zigzag line (173). Though no ceramic evidence is available, several lineal geoglyphs must have been constructed in Early Nasca times as well which is indicated by their stratigraphic position. This includes lines flanking the major trapezoids (159, 163, 171) and possibly the star-like geoglyph 164 (in fact composed of six U-shaped lines).

These geoglyphs may have been constructed as well during the second major activity phase on the site which is marked by ceramics dating to Nasca 5. During this time, meandering lines flanking the major trapezoids were constructed (157, 170) and later partially covered by a series of areal geoglyphs, some of which were designed so as to connect existing cleared areas (167, 168) while others occupied hitherto unused parts of the plateau (156). Furthermore, the largest trapezoid (161) was converted into a rectangle (160) (though this remodeling was never finished) as was the close-by geoglyph 168 that dates from the same time. Some straight lines cutting earlier geoglyphs (156, 172) complete the group of geoglyphs dating to Nasca 5. By the end of that phase, geoglyph construction seems to have ceased, although other activities continued.

For epochs later than Middle Nasca the evidence is solely from datable fineware ceramics. These sherds are clustered around trapezoid 156 on the northern part of the western portion of the site. While the meandering line 157 had Late Nasca ceramics associated with it, ceramics from the Middle Horizon and the Late Intermediate Period were found on the trapezoid. However, there is no evidence of new geoglyphs being constructed later than Nasca 5.

Site PV67A-47 (Cresta de Sacramento)

This site occupies the central part of the main plateau of Cresta de Sacramento just above the famous *reloj solar* or sun dial geoglyphs on the southern slope of the ridge (map 5, fig. 49). Though situated far from drivable roads, the site is equally marked by recent car tracks. Its proximity to the tourist viewpoint that overlooks the *reloj solar* site has furthermore led to people walking over the main geoglyphs. The eastern end of the geoglyph complex was de-

Fig. 49. Aerial view of site PV67A-47 on Cresta de Sacramento (cp. map. 5).

stroyed in prehispanic times by a site from the Late Intermediate Period. But, the preserved evidence is suitable for a detailed study of the development of the geoglyph complex based on stratigraphic relationships and associated datable ceramics (fig. 50).

Site PV67A-47 is linked to site PV67A-35 by a long zigzag line (183) that crosses the open space between both sites and uses its full width. As evidenced by Nasca 2 ceramics associated with this zigzag line, it was one of the earliest geoglyphs to be constructed on the site and dominated it in the beginning. Just like site PV67A-35, several rather isolated straight lines (184, with Initial Nasca ceramics, and 205) were also among the earliest geoglyphs on site PV67A-47. The zigzag line 183 was accompanied by a second line of the same shape (203). Both were covered by a large trapezoid (189) on which the earliest ceramics date to Nasca 2. Two spirals (206, 208) on the northern edge of the site were constructed at about the same time as were several lineal geoglyphs (190, 193, 202) that flank the main trapezoid. The S-shaped spiral (206) was remodeled during Nasca 3 (207), when an areal geoglyph linking the main trapezoid with a viewpoint overlooking the valley

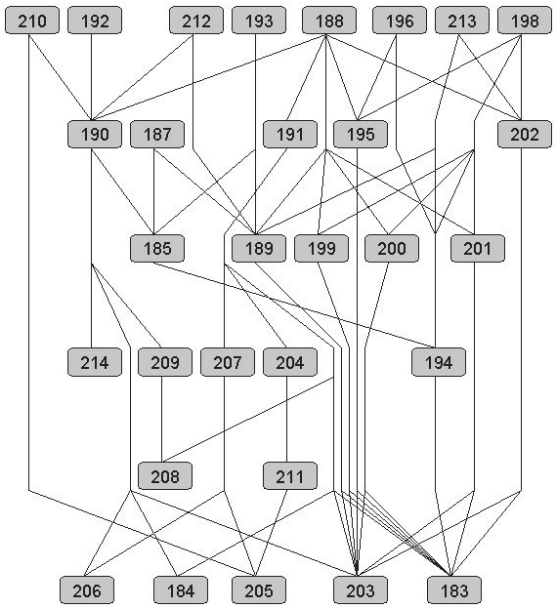


Fig. 50. Geoglyph stratigraphy on site PV67A-47 (cp. map. 5).

(196) was constructed, too. All in all, construction activity was substantial and varied during the Early Nasca period.

By the Middle Nasca period, Nasca 4 and 5 ceramics indicate that several lineal geoglyphs were added to the complex on the southern side of the main trapezoid (195, 199–201) and on its western end (187). The spirals on its northern side were partially cut or covered by several lines (191, 210) as well as by one of the smallest trapezoids documented in the Palpa region (209). The narrow eastern end of the central trapezoid (189) was converted into a large rectangle and continued in use.

In the Late Nasca period, the largest trapezoid found on Cresta de Sacramento (188) was built in such a way that it cut through most existing lines and also the central trapezoid in an oblique direction. Nasca 7 sherds were found on this geoglyph. Its orientation allowed optimal use of the remaining free space on either side of the central complex of geoglyphs. Near its narrow end, the trapezoid partially covered an unfinished areal geoglyph with Nasca 6 sherds on it. Some Nasca 7 and Loro sherds were found on areal geoglyphs close to the eastern end of the site. The presence of sherds from the Late Intermediate Period also found on that part of the site is most probably due to the construction of buildings during that period which obliterated some geoglyphs. All in all, the latest evidence of activity on site PV67A-47 dates to the Nasca 7/Loro transition. Contrary to site PV67A-35, this activity still included the construction of large geoglyphs.

Site PV67B-55 (Cerro Carapo)

This site occupies the westernmost foothills of the ridge between Río Palpa and Río Viscas (map 13, fig. 7). This is the only plateau on the Carapo ridge comparable to the larger plateaus on Cresta de Sacramento and Pampa de San Ignacio. Though closer to Río Viscas, the site is only accessible from Río Palpa via a slope also covered by geoglyphs, whereas a sharp escarpment separates it from the Viscas valley. Towering on small hills above this escarpment, a site from the Late Intermediate Period dominates the plateau. Structures built during that time, among them walled enclosures, graves, and a ditch, have damaged the site´s central trapezoid. Other than that, the geoglyphs are well preserved since no modern path or road crosses the site.

Just as on the Sacramento sites, the first geoglyphs constructed on Cerro Carapo were several narrow straight lines distributed over different parts of the site (595, 599, 603, 612, 613, 615, 620, 624 and probably others more,

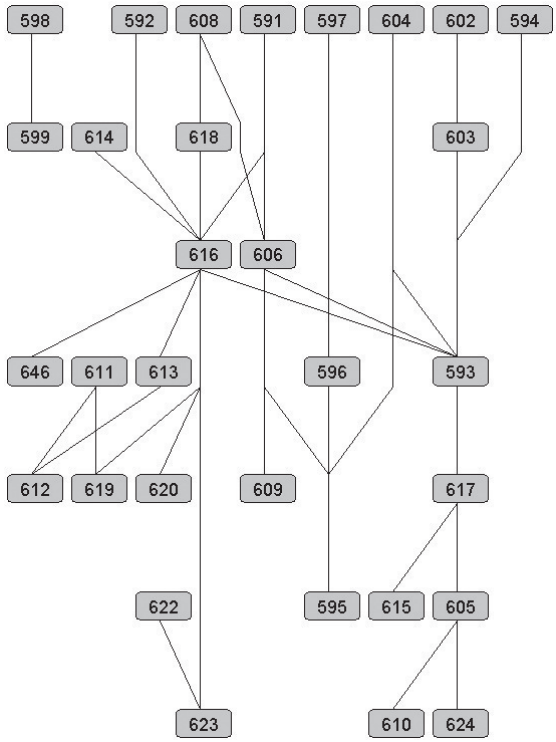


Fig. 51. Geoglyph stratigraphy on site PV67B-55 (cp. map. 13).

see fig. 51). Associated ceramics date the earliest of these lines to Nasca 2. Early Nasca furthermore saw the construction of an angular spiral (596) and a large meandering line (593). Probably at about the same time, the first large trapezoid of the site (605) was started but never finished. Though associated ceramics suggest a later date, the stratigraphic position of two large zigzag lines crossing the plateau shows that they also were constructed during the Early Nasca period, cutting several earlier geoglyphs. Thus, a wide array of geoglyphs dates to that period. On many of these, Nasca 5 ceramics indicate a continued use during Middle Nasca times when new geoglyphs were added to the complex. Among them were several amorphous geoglyphs (592, 597, 598, 602), and probably some of the lineal geoglyphs that lack datable finds. Most important of all, the large trapezoid 591 that dominates the southern half of the site was constructed during the Middle Nasca period, probably covering a series of earlier geoglyphs and thus changing the layout of the site. By then, a good part of the available space of the plateau had been covered by geoglyphs.

The dates of other trapezoids (590, 600) on the site are unknown. There is no evidence of Late Nasca activity. Late Intermediate Period

sherds scattered on the surface are clearly associated with the stone structures of the site from that period which is situated south of the geoglyphs.

9.2 Excavation of stone structures on geoglyph sites

Several well preserved stone structures associated with geoglyphs were fully or partially excavated on Cresta de Sacramento and Cerro Carapo in order to determine their construction technique, age, function, and relationship with the geoglyphs. Two types of stone structures could be distinguished: elongated platforms on the edge of plateaus, and rectangular platforms on trapezoids.

9.2.1 Elongated platforms on the edge of plateaus

Site PV67A-47 (Cresta de Sacramento)

On the southern margin of the vast plateau on which site PV67A-47 is located (fig. 49, maps 1, 5), a low stone platform is situated on the edge of the flat terrain and overlooks the Palpa valley (Horkheimer 1947: figs. 21, 22; Reindel et al. 1999: fig. 16). Unlike the main part of the plateau, the surface is not covered by a continuous stone pavement around the platform[70]. To the north, a roughly rectangular cleared area (geoglyph 196) crossing a shallow *quebrada* connects the platform with the central trapezoid of the site (189) crosscutting several lines (183, 194, 195). To the south, the platform marks the starting or ending point of a straight line (256) running down or up the slope, ending or starting at a not clearly defined point at the foot of the slope.

The stone structure (figs. 52, 53) is oriented from southwest to northeast, thus following the general orientation of Cresta de Sacramento. It has an elongated, roughly rectangular shape, and is composed of six adjoining chambers of roughly equal size organized in a somewhat irregular row with one lateral chamber abutting the middle chambers on the southeastern side. The structure is approximately 11 m long and 1.00 – 1.20 m wide. The chambers are outlined by a single row of unworked boulders or slabs standing upright in the subsoil. There is no evidence of mortar or additional stone layers. The chambers are filled to an average height of 0.20 m with gravel composed of stones of different sizes, probably the same material that forms the desert pavement. No debris is visible around or upon the platform. Although some stones of the retaining wall are missing or seem to be out of their place, the overall state of preservation of the stone structure is good.

Two chambers were excavated in 1997: the northeastern and the lateral one. The results of the excavations were the same for both pits. The main part of the fill consisted of gravel as described above. Below it was a thin layer of beige soil, apparently the material excavated to place the stones of the retaining wall. Below this second layer of the construction fill, the natural desert surface appeared. Apart from one Nasca 3 sherd, the construction fill contained no other cultural remains. Contrary to Horkheimer's speculation (Horkheimer 1947: figs. 21, 22), there was no evidence that the structure may have contained a tomb.

Site P67A-35 (Cresta de Sacramento)

A similar elongated stone structure was partially excavated on the neighboring site PV67A-35 (map 3). It is situated on the southwestern edge of the main plateau of Cresta de Sacramento, not far from the whale figure (geoglyph 151), and is oriented from northwest to southeast following the edge of the plateau (fig. 48). Together with two gravel heaps, this structure marks the somewhat irregular wide base of the central trapezoid of the site (161). The stone structure is constructed in a similar fashion as its counterpart on site PV67A-47, with a row of stones that retain gravel fill. It consists of five chambers in a row and two lateral chambers attached to the central section on both sides (fig. 54). Unlike the structure on PV67A-47, however, the chambers vary greatly in size. The lateral chambers are the smallest, and the two easternmost chambers slightly bend towards the north. The overall length of the structure is 12 m, and its average width is 1 m. The structure is generally well preserved.

A small pit was excavated in 1997 in the central part of the stone structure. It cut through two lateral chambers and part of the chamber

[70] Similar areas without dense stone cover have been repeatedly noticed on the *pampas* around Palpa, always along the margins of plateaus. They seem to lack a stone cover due to natural reasons, whereas an anthropogenic origin can be ruled out since the transition to the dense stone cover is gradual and without clear limits. It is not clear whether the term *campo barrido* as used by Silverman and Browne to describe cleared areas without well defined boundaries refers to such areas (Silverman 1990b: 444; Silverman/Browne 1991: 211f).

Fig. 52. Stone platform at the end of geoglyph 196 on site PV67A-47 (cp. map. 1).

Fig. 53. Partially excavated stone platform on site PV67A-47 (cp. fig. 38).

in between them (fig. 55). The excavation results were exactly the same as described for the structure at PV67A-47, except that no ceramics were found in the construction fill.

Summary

Low, elongated platform or bench-like stone structures similar to those excavated on sites PV67A-47 and PV67A-47 are a common feature on geoglyph sites in the Palpa region. They generally occur in two contexts: at the wide end of large trapezoids or on the edge of plateaus where one or several straight lines run up or down the hillside. Often, albeit not always, both conditions coincide.

The structures were constructed in a simple manner using only materials available on the spot. The presence of individual chambers suggests that the platforms were constructed in several steps, though no clear building stratigraphy is usually evident. In some cases the central section of the structure is distinguished

Fig. 54. Stone platform at the end of geoglyph 161 on site PV67A-35 (cp. map. 3).

Fig. 55. Partially excavated stone platform on site PV67A-35 (cp. fig. 48).

by lateral chambers or by the incorporation of large boulders (*e. g.* on site PV67A-22). Stones used to construct the structure were probably gathered when a new geoglyph was constructed. It is clear, however, that only a small number of the removed stones ended up in the platforms, while the majority were used to form the heaped borders of the new geoglyph. The platforms do not have any surface finish. It is not clear whether the platforms were stood upon. There is furthermore no direct evidence that objects were placed on them, although broken vessels seem to occur in higher frequency around those platforms.

What draws the most attention is the position of the structures in the landscape. They are usually found on edges of high plateaus marking the upper end of one or several straight lines on the slope. Both the valley and the geoglyph sites can often be viewed from these vantage points. Often, lines on slopes and trapezoids on plateaus meet at such a structure or they are

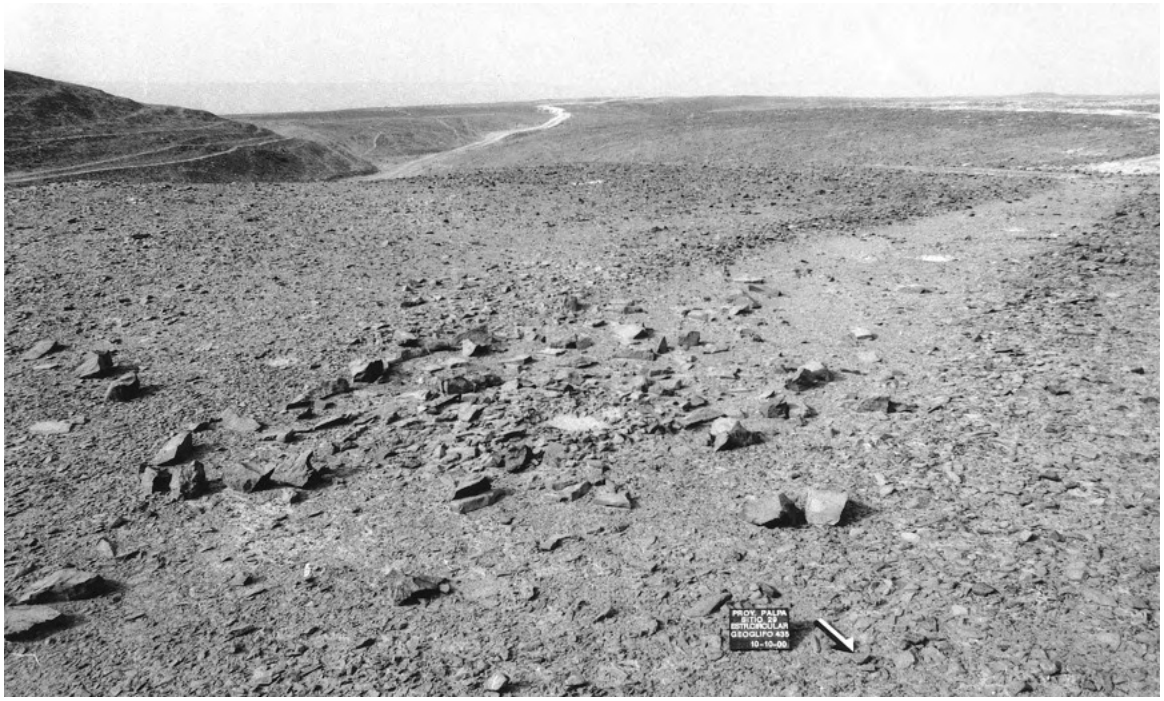


Fig. 56. Geoglyph 395 with stone structure on site PV67A-90 (cp. map 11).

Fig. 57. Stone structure on geoglyph 395 on site PV67A-90 with broken pottery.

connected by some kind of bridging geoglyph like the one on PV67A-47. Thus, the platforms together with the lines on the hill indicate where the trapezoids on the plateaus are located. Without the platforms they cannot be located visually from the valley floor.

9.2.2 Rectangular platforms on trapezoids

Site PV67A-90 (Cresta de Sacramento)

PV67A-90 is one of the biggest geoglyph sites on Cresta de Sacramento. It is situated on the eastern end of the main plateau close to the foothills of Cerro Pinchango (map 11). The main part of the badly preserved site is composed of an impressive series of lineal geoglyphs, but there are also some small trapezoids and

rectangles, and a possible bird figure (geoglyph 389, now largely destroyed).

On the northeastern end of the site, one of the smallest trapezoids in the Palpa area is somewhat separated from the main geoglyph complex close to a shallow *quebrada*. This trapezoid (geoglyph 395) is only about 21 m long and up to 3.20 m wide (fig. 56). It is defined by two heaped borders framing a cleared interior. Between the stones of one of the borders, sherds of an Ocucaje 8 ceramic vessel were recovered. Close to the northeastern end (the wider one), a small stone cairn approximately 1.40 m in diameter is located in the cleared interior of the geoglyph. It has a sand-filled hole in its center, probably due to looting, which would also explain the presence of larger stones dispersed around the cairn. Sherds of a Nasca 7 painted vase were found on and between the small stones of which the cairn was built (fig. 57).

This was confirmed by the excavation in 2001 of a small trench dug through the center of the cairn down to the original desert surface. The whole cairn consisted of stones or small boulders piled up without any type of construction like a retaining wall. No worked stones were present, and no evidence of mortar was found. Between the stones, aeolian sand had accumulated over time. The cairn rested directly on the desert surface.

The whole trapezoid, and especially the small cairn, seems to mimic the well known larger geoglyphs of the same type. The chronological evidence is confusing. Two vessels were recovered that date to different times (Late Paracas and Late Nasca, respectively), and seem to indicate different construction dates for the geoglyph and the cairn. This would be in accordance with evidence from other trapezoids where stone buildings upon them seem to have been built long after the geoglyph itself. The Nasca 7 vase was intentionally broken when placed on the cairn.

Site PV67A-80 (Cresta de Sacramento)

Crossing the flat plateau on top the Sacramento ridge in a southwesterly direction from PV67A-90, the next big geoglyph site is PV67A-80 (map 8). The northeastern end of this site is heavily affected by a site from the Late Intermediate Period that partially covers several geoglyphs (fig. 58; cp. Clarkson 1990: fig. III.6).

PV67A-80 is dominated by a large trapezoid (geoglyph 333) about 535 m long, which is among the largest geoglyphs on Cresta de Sacramento. It is flanked by other areal geoglyphs, several lines, and a spiral. The northeastern narrow end of the trapezoid is somewhat irregular, possibly because it was left incomplete. It gets narrower where two stone structures were placed in a central position between its lateral borders. The situation is unclear because of disturbances by structures from the Late Intermediate Period and modern dirt roads. The partially looted stone structures, both approximately 3 m wide, 0.60 m high, and separated by 1.20 m, were excavated in 2001 (figs. 39, 60). They were found to be low rectangular platforms consisting of a retaining wall of a single row of large stones set without mortar on the leveled ground, and with a fill of gravel and some sand. The northern platform measured 1.45 m × 2.0 m, whereas the southern one was slightly larger (1.55 m × 2.40 m). No second row of stones and no surface finish was observed, although the platforms originally might have been higher judging from the amount of debris. On the debris, but not in the platform fill, two datable sherds were recovered (Nasca 5 and Nasca 7, respectively). No other finds or construction features were observed.

Sites PV67A-15 and -16 (Cresta de Sacramento)

The geoglyphs of site PV67A-15 and -16 are located on a flat natural terrace about half way between the bottom of the Palpa valley and the top of Cresta de Sacramento (map 9). Apart from a series of smaller geoglyphs, the site is dominated by a large trapezoid (geoglyph 52) approximately 390 m long. Its narrow end crosses obliquely the end of meandering line 55. Along with a connecting meandering line (56), this lineal geoglyph was converted into a huge cleared rectangle (57) after its initial construction. Another later alteration of the ensemble was the lateral enlargement of trapezoid 52 on its northwestern side. On this trapezoid, two stone structures were placed on the narrow end and a larger one was built on the central axis close to the wide base of the geoglyph. The former were excavated in 2000, the latter in 2001.

The two stone structures close to the narrow end of the trapezoid (fig. 59) are located in a place where several geoglyphs (52, 55/56, 57) converge, and which is disturbed by modern footpaths and the frequent presence of goat herds in the neighboring *quebrada*. It is therefore difficult to determine the relationship between stone structures and geoglyphs. The two structures are not placed on the central axis of

Fig. 58. Stone structures on geoglyph 333 on site PV67A-80 (cp. map 8). Note LIP buildings covering geoglyphs.

Fig. 59. Excavated stone structures on the narrow end of geoglyph 52 on site PV67A-16 (cp. map 9).

trapezoid 52, but shifted in a northwesterly direction, roughly in line with the border of the lateral enlargement of that trapezoid. It is therefore clear that the structures could not have been built on the original trapezoid. The stone structures are furthermore positioned such that part of meandering line 55 passes through them. But, since that line is almost completely obliterated by the later rectangle 57 on which the stone structures also rest, this relation remains ambig-

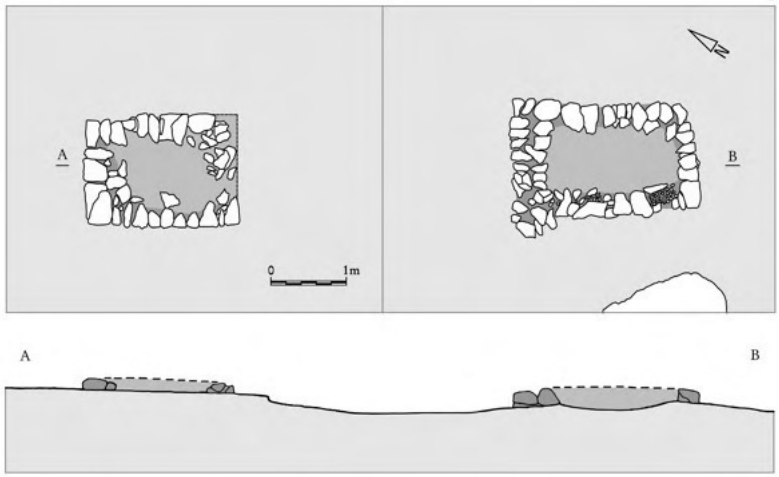


Fig. 60. Stone structures on geoglyph 333 on site PV67A-80 after excavation (cp. fig. 39).

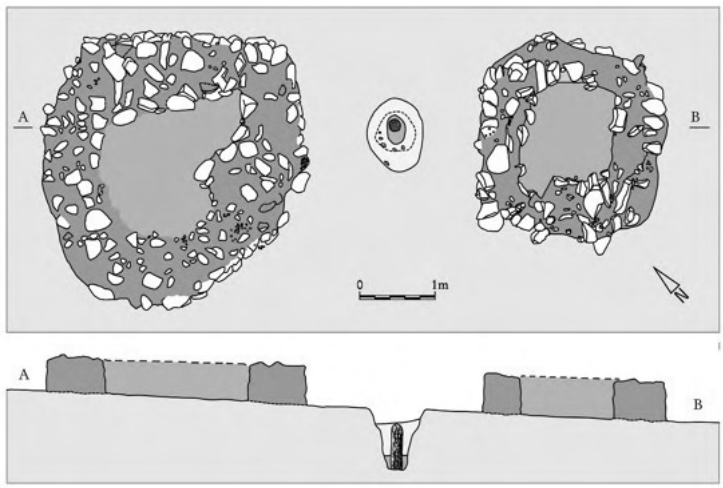


Fig. 61. Stone structures and wooden post on the northeastern end of geoglyph 52 on site PV67A-16 after excavation.

uous. In any case, the typical combination of two structures on the narrow end and one bigger structure on the wide base of a trapezoid indicates that the stone structures were built as part of trapezoid 52, but after other geoglyphs of the ensemble had been built.

The stone structures appeared to be simple stone heaps before excavation. They were both roughly 4.50 m in diameter and 1 m high, with holes in their centers indicating they had been looted. The excavation revealed two irregular, roughly rectangular, low structures with double-faced walls made of large unworked stones set with mud mortar on the natural ground (fig. 61). The southern structure had interior subdivisions of upright stones that retained the construction fill. In this first building phase, the interior of the structure had apparently been accessible. In its final phase, however, it was covered by gravel and sand that served as fill retained by the outer walls. In the debris that covered the preserved remains as well as in the construction fill, sherds

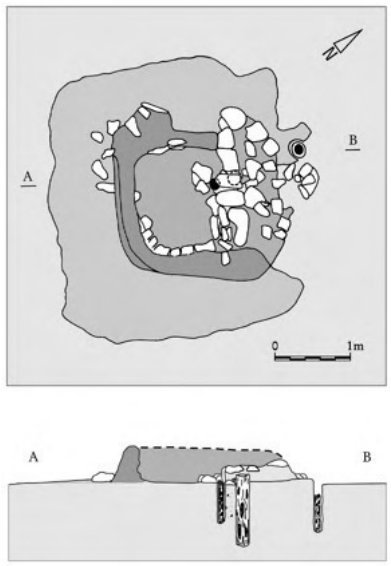


Fig. 62. Stone structure and wooden posts on the southwestern end of geoglyph 52 on site PV67A-15 after excavation (cp. map 9).

from Nasca ceramic vessels (Initial Nasca, Nasca 3 and 7), several fragments of *Spondylus* shells (one of them made into a pendant, fig. 40), and fragments of crawfish were found. Due to the looters' pits the original context could not be determined exactly, but some of the finds seem to have been placed as offerings, while others were part of the construction fill.

The northern structure was built in a similar way but it was a little smaller. The overall shape, construction technique, interior subdivision, and recovered materials closely resembled the southern platform, but a maize cob wrapped in textiles was also found in the fill.

Midway in between both platforms, the remains of a wooden post (*sauce*) were found in a hole in the ground. It had apparently been cut already in prehispanic times, and the hole filled with stones. As on the stone structures, found in the pit were sherds dating to Initial Nasca and Nasca 7.

Close to the wide base of the same trapezoid, and placed on its central axis, another partially looted stone structure was excavated in 2001 (fig. 62). It had a roughly oval form and measured 3.60 m × 4.50 m. The low height of only 0.60 m was mainly due to its having been torn down by looters which is why many large stones were scattered around the structure. The excavation revealed a badly preserved structure with two building phases corresponding to different uses.

In the first phase, a rectangular wall entirely formed of mud was set on the leveled ground, measuring about 2.20 m × 2.20 m, and with a height of 0.40 m. A compacted dirt floor inside the enclosure as well as around it indicated that the wall in the first phase enclosed an accessible room with an entrance on its northern side. However, due to later remodeling and the subsequent destruction of the structure, no traces were left of the alleged access. Four wooden posts, three of them arranged in a row leading out of the room in a northerly direction and a fourth one outside the structure, were part of the first building phase. Because of subsequent destructions it is not clear in which way the walls, the interior room and the posts were integrated into the original structure. All of the posts were poplar (*sauce*) logs, their diameter ranged from 0.07 m to 0.18 m, and their preserved height was from 0.20 m to 0.91 m. Furthermore, all of them were deeply embedded in the ground and affixed by a framework of stones that indicated that they once reached a considerable height above ground. In three of the post holes, well preserved guinea pigs were placed there as offering and could be recovered.

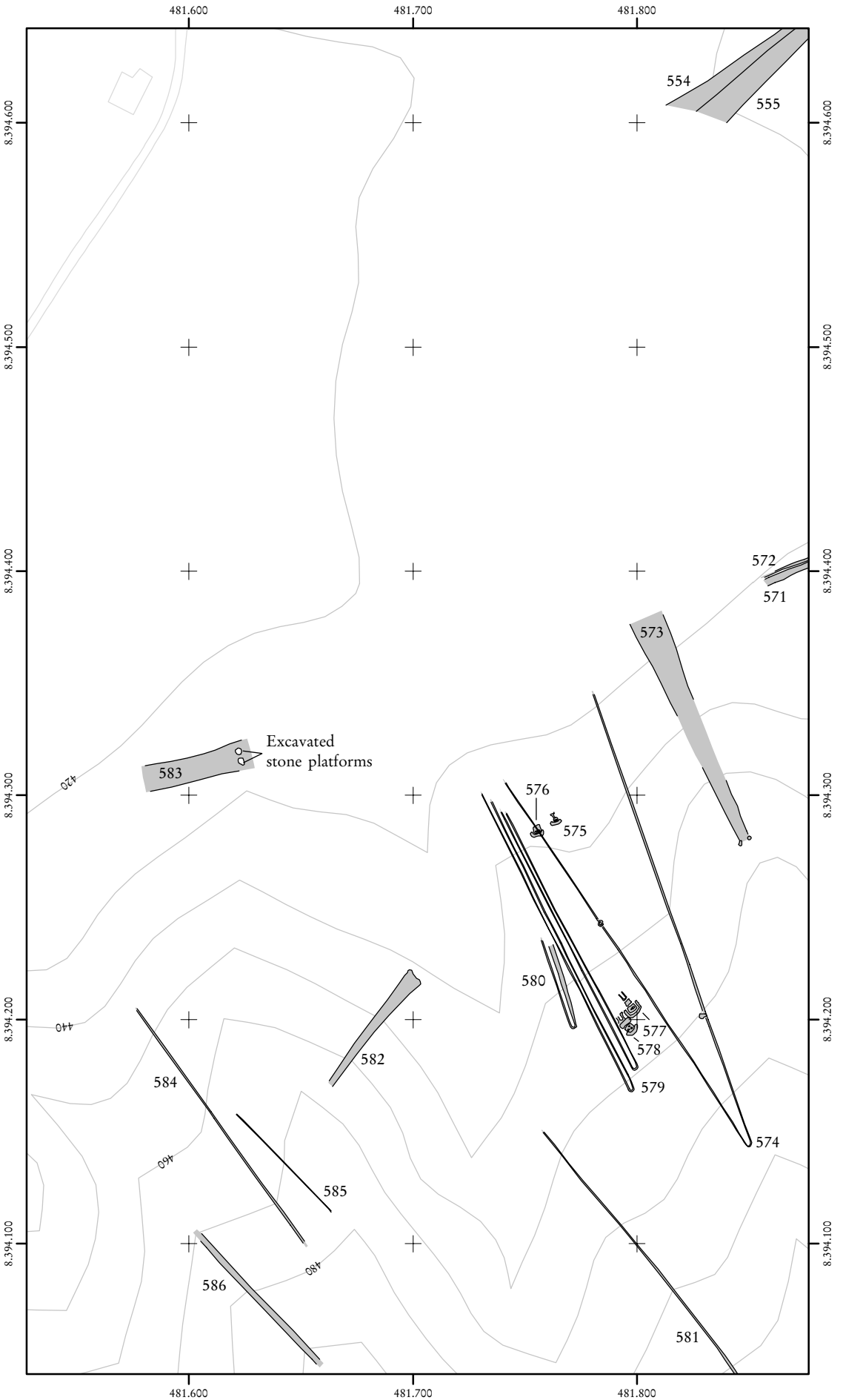
In a second building phase, the posts were cut and covered by adobe bricks, the interior room was filled with gravel, adobe bricks, straw, and mud, and the original walls were heightened using stones and mud mortar. Apparently, the fill was sealed with a mud layer, providing a plain surface. In the construction fill, fineware ceramic sherds dating to Initial Nasca and Nasca 7 were found. In the debris caused by the slow collapse of the structure further fineware sherds dating to Nasca 2, Nasca 3, Nasca 5, and Loro were recovered. Further finds included maize cobs, rodent bones, chrysocole fragments, and *Spondylus* shells. The disturbance caused by looting made it difficult to determine which layers the finds were related to, but in any case the recovered sherds indicated a long period of use of the structure. A radiocarbon sample of the single post outside the structure was dated to AD 603–644[71]. The date seems late since the post is associated with the first building phase before the structure was remodeled. Nevertheless, Nasca 7 and Loro sherds indicate that the structure was still in use during the transition from Late Nasca to the early Middle Horizon.

Site PV67A-62 (Cerro Carapo)

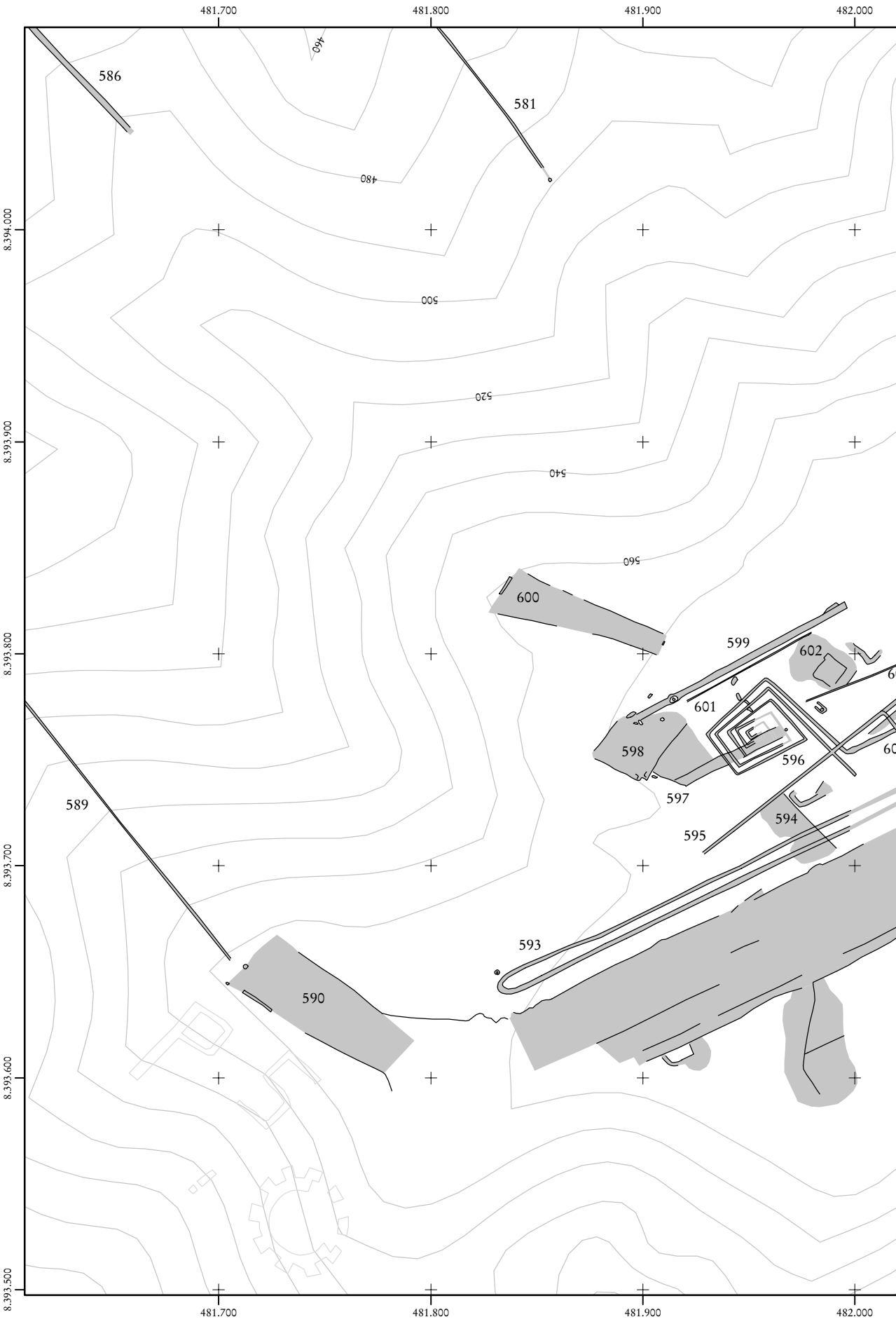
Site PV67A-62 is located on the base of the northern slope of Cerro Carapo, near the western end of the ridge (map 12). The slope is covered by several lines and figures. At the foot of the hill a rectangle (583) measuring approximately 50 m × 13 m is located on gently sloping terrain and partially destroyed by an irrigation channel and a field. In its cleared interior two relatively well preserved stone cairns were placed close to the narrow end of the geoglyph (fig. 63). Both had a diameter of approximately 3 m and a height of about 0.80 m, but were disturbed by looters' pits placed in their centers. Both stone structures were excavated in 2001.

The northern structure (the one closest to the valley floor) was a low, rectangular platform measuring approximately 2 m × 2 m, with a preserved height of 0.70 m. It consisted of one row of large, unworked stones set upright on the leveled ground without mortar that served as retaining wall for a fill composed of gravel and some sand. On its northern side a small annex built in the same way abutted the plat-

[71] Sample HD-24683, age given as calibrated 1 sigma range. Date courtesy of Ingmar Unkel, Heidelberg.



Map 12. Geoglyph site PV67A-62 at the foot of Cerro Carapo.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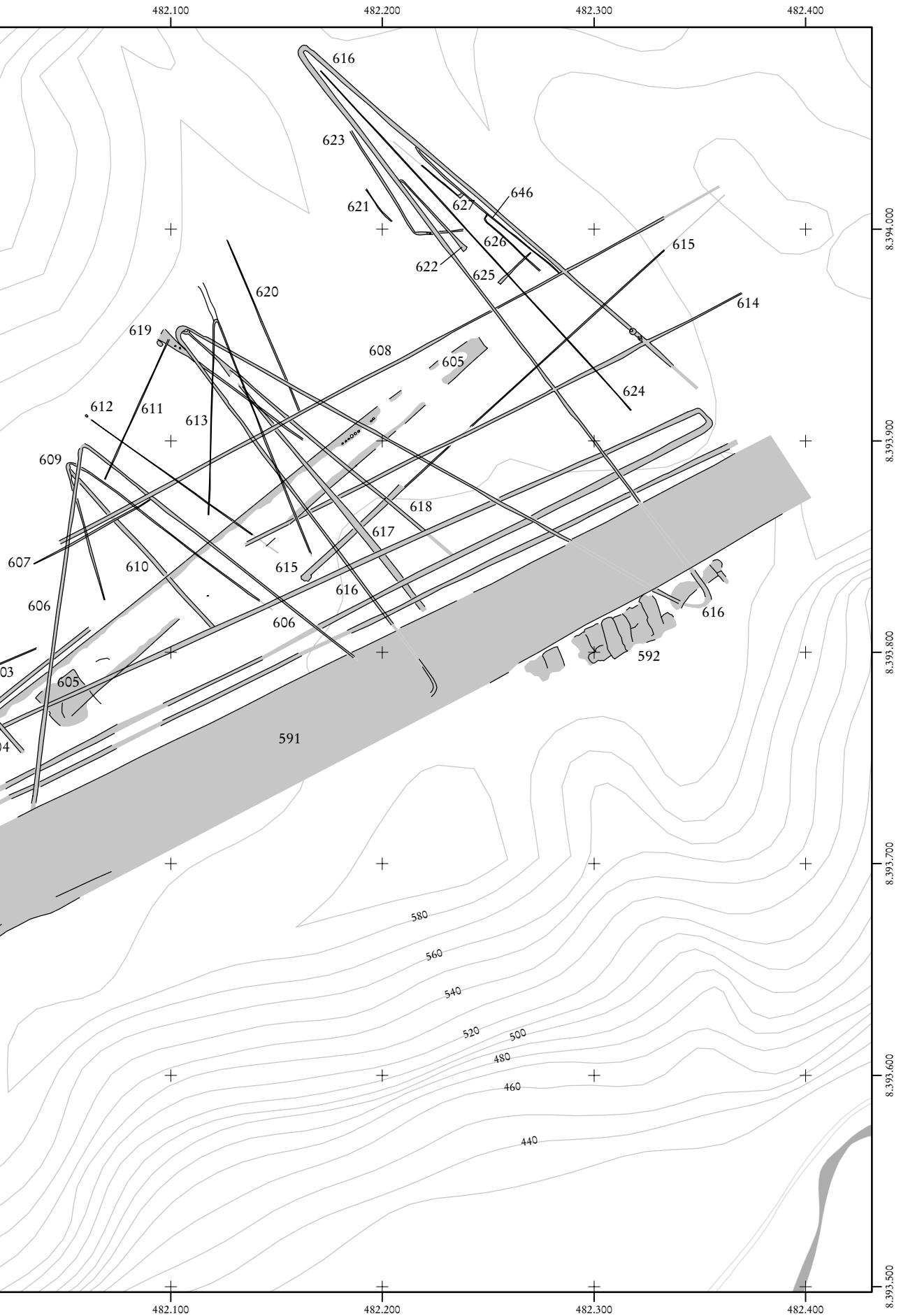

Map 13. Geoglyph site PV67B-55 on Cerro Carapo.

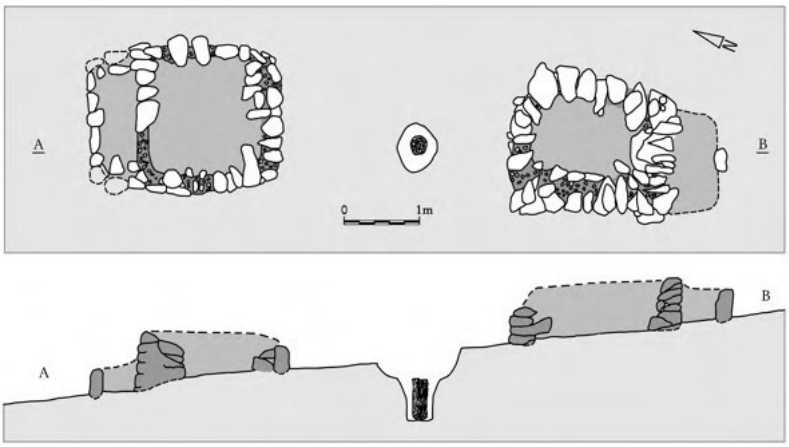

Fig. 63. Stone structures and wooden post on geoglyph 583 on site PV67A-62 after excavation (cp. map 12).

form, serving either as constructional support or as step leading up to the platform. The upper surface of the platform was not preserved. Fineware ceramics recovered from the construction fill of the main platform dated to Nasca 4 and 5, while sherds from the annex fill were from Nasca 7 vessels. The platform was covered by debris resulting from the deterioration of the platform after its abandonment, although some debris may also have been placed on it intentionally to cover the structure. Among the debris, maize cobs, obsidian and chrysocole fragments, seashells, rodent bones, and Nasca 4 sherds were found. These materials had probably once been placed on the platform.

The southern structure, built on slightly higher terrain, was constructed in much the same way, and included an annex that was built later. The platform measured 1.75 m × 2.25 m, again with a preserved height of 0.70 m. Due to a looters' pit it was less well preserved than the northern platform.

Midway between the two structures the remains of a wooden post were found set in a hole in the ground approximately 1.10 m deep. The post, a poplar (*sauce*) log with a diameter of 0.10 m, was preserved to a height of 0.47 m inside the hole. The fact that the post hole was more than 1 m deep and the post had been affixed with large stones indicates that it once had reached a considerable height above ground. Under the post, chrysocole fragments and a guinea pig were found. The latter was well preserved due to arid subsoil conditions. It had apparently been placed there as offering before the post was put in place in a similar fashion to that on PV67A-15.

Summary

While low, elongated platforms like those excavated on PV67A-35 and PV67A-47 apparently were built at the beginning or during the construction process of adjoining geoglyphs, only a few, if any, of the pairs of stone structures excavated on PV67A-15/16, PV67A-80, PV67A-90, and PV67A-62 were built at the same time as the geoglyphs they were placed on. Furthermore, several of them show clear indications of later alteration which means that the structures were used over a considerable time span. This is confirmed by associated finds, although it is often unclear which phase the datable finds are related to due to the bad state of preservation of most structures. All in all, the structures seem to have been part of the long-term process of construction, use, and alteration typical of complex geoglyph sites.

The stone structures were constructed in a simple manner, with most of their material picked up on the site. Mud mortar was used only in some cases, while other structures feature dry walls or in the case of the smallest excavated structure on PV67A-90 there were no walls.

The best identifiable activity related to the structures was the placing of maize cobs, ceramic vessels, seashells (among them *Spondylus*), fragments of chrysocole, and other materials on the top of the platforms. The platforms may also have been used to stand upon, but there is little evidence to support this idea. Only on PV67A-15/16 are there indications of the structures having served as rooms or enclosures, but both were later also converted into platforms. On PV67A-15/16 and PV67A-62 there are some

indications that the debris covering the platforms did not result solely from the deterioration of the structures but that part of it may have been placed intentionally on them after their abandonment.

The function of the wooden posts associated with the stone structures is not entirely clear. In two cases (PV67A-15 and PV67A-62), a single post was placed in the middle of two stone structures near the narrow end of the trapezoid, a position where no post was found on PV67A-80. On PV67A-15 wooden posts were furthermore associated with the single structure placed in the center of the wide base of the trapezoid, whereas on PV67A-90 no such posts were found. All posts must have reached a considerable height above ground, as judged by the deep holes into which they were placed, and must therefore have been visible from a considerable distance. Their general association with the central axis of the trapezoids may indicate that they were needed in some way during the construction process of the trapezoids. The leveled and compacted ground around the structures indicates the frequent presence of people close to them. Compared to lineal geoglyphs, many of which are compacted along their whole course, the trapezoids are only compacted, presumably by human activity, around the platforms.