



The PARI Journal

A quarterly publication of the Ancient Cultures Institute
Volume XXII, No. 3, 2022

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Electronic version
available at:
www.precolumbia.org/
pari/journal/2203

ISSN 1531-5398

The Road and the Cave: The Cuevas de la Amistad in the Landscape of Teotihuacan

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Teotihuacan stands out as the most rigidly designed urban center of ancient Mesoamerica, with its grid-like plan, its careful and unerring orientation slightly east of north, and with architectural features that bear a close visual connection to its surrounding landscape. In one way or another these aspects of the city have been discussed by nearly all who have studied Teotihuacan and its development, based on the reasonable assumption that its steadfast adherence to an overarching plan must give some indication of its social, political and religious culture, so distinctive from much of the rest of Mesoamerica.

Many questions have focused the dominating north-south axiality of the so-called Avenue of the Dead (or Calle de los Muertos), perhaps the single most imposing architectural feature of the site. All major buildings at Teotihuacan carefully conform to the single basic orientation of the Avenue, including the many “apartment compounds” throughout the city. The Avenue of the Dead itself may have been the initial construction that determined this pervasive characteristic of the city’s urban design, running north-south at an angle of slightly less than 15.5 degrees east of north, with the Moon Pyramid at its northern terminus.

In this preliminary paper we present what we believe to be a significant new aspect of Teotihuacan’s planning and design, focusing on the Avenue of the Dead and its possible southern endpoint at an

impressive series of caves in the Cerro Patlachique range, known as the Cuevas de la Amistad (Figure 1). We present an overview of various interpretations of the Avenue of the Dead and then suggest that its orientation is best seen as a purposeful alignment toward the caves from the Moon Pyramid, extending an axial relationship already known with the Cerro Gordo to the north. We suggest that the caves serve as the southern terminus for the Avenue of the Dead, and therefore an elemental aspect of the city’s overall site plan, orientation and ritual landscape.

Avenues, Axiality, and Landscape

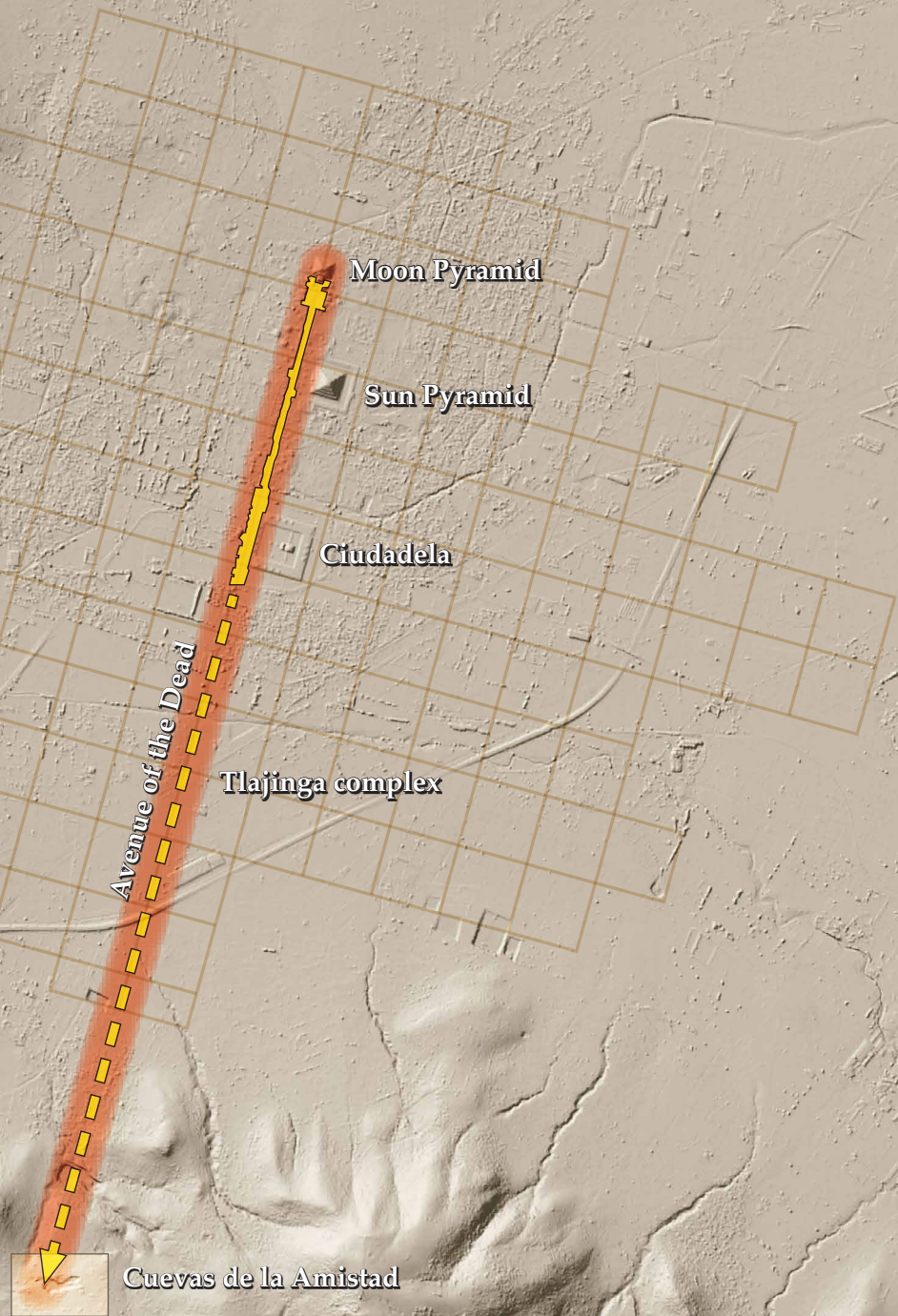
The landscape formations of the Teotihuacan Valley have long been recognized as a factor in the design and presentation of the ancient city’s monuments, many of which conform to surrounding vistas and contours. The most famous of these is of course Cerro Gordo, the mountain that looms behind the Moon Pyramid when viewed from a certain distance. The Avenue of the Dead and the orientation of the city seems to be aligned with it, as Linné noted: “the peak of Cerro Gordo, the highest mountain of the region, is to be seen in the prolongation of the Road of the Dead” (1934:32-33). More specifically it is a small cleft atop of Cerro Gordo which seems to be the road’s line, projected northward (Šprajc 2000:404, Tobriner 1972:104-105). As is well-known, upon approaching the Moon Pyramid

Cerro Gordo



0 0.5 1 1.5 2 km

Figure 1. INEGI lidar map overlaid by the Teotihuacan Mapping Project grid with the line of the Avenue of the Dead extended to the Cuevas de la Amistad (map by T. Garrison).



at plaza level, Cerro Gordo's wide profile gradually becomes invisible to the viewer, obscured and replaced by the expanding slopes of the pyramidal structure. This hybrid mountain-pyramid faces southward and establishes the northern base-point for the Avenue of the Dead, from which it runs southward for several kilometers.

Visitors and researchers at Teotihuacan have also long appreciated the importance of the highest mountain of the Cerro Patlachique, the range of hills to the south. The largest mountain of the range, Cerro Xococh (sometimes called Cerro Patlachique), was important in the design and construction of the Sun Pyramid, which when viewed from the Moon Pyramid replicates its profile almost exactly. Important archaeological remains have also been found directly atop this prominence, including several sculpted monuments (Helmke et al. 2013). Recently, Mejía Ramón and colleagues (2021) have identified important hydrological features associated with the Patlachique, accentuating its importance in the ancient landscape of Teotihuacan.

Tobriner (1972:105) observed that these southern hills offered a balanced effect in the layout and orientation of the city, contrasting with Cerro Gordo: "...turning around and looking south, one sees that the Road of the Dead points to a low concave ridge between two hillocks. Thus the southern vista of the road is low and placid while the northern vista is decidedly more elevated and dramatic." In this way, anyone experiencing the grandeur of Teotihuacan immediately sees how the Avenue of the Dead runs southwards toward these distant hills, past the Ciudadela and then a number of residential areas, including the Tlajinga complex near the southern extent of the city (Carballo et al. 2021). In a direct way the Avenue spatially binds the known architectural monuments of Teotihuacan to the lower hills of the Cerro Patlachique. And these clustered hills form a distinctive natural feature of their own, presenting a striking symmetry and arrangement, assuming the vague appearance of a "triadic" group of platforms or buildings (Figure 2). The Avenue of the Dead therefore serves as a direct reference point to more than one distant feature outside of the city-center, a topic we will return to momentarily.

On its own, the Avenue of the Dead can easily be appreciated as one of the great architectural monuments of Teotihuacan, and its history and particular orientation have long been topics of interest. Its axis runs approximately 15.28 degrees east of north (Dow 1967, Millon 1973:13, Sprajc 1999:204, 2000), and most explanations of this derive from various astronomical arguments. Some of these focus on the Pleiades (Aveni and Gibbs 1976) whereas other emphasize sunset alignments and their bearing on the Maya Long Count calendar (Malmström 1978). We agree with Sprajc (1999, 2000) that many of these earlier proposals are highly problematic, or that

they have little bearing on the alignment of the Avenue of the Dead itself. As he notes, "el alineamiento nort-sur de la Calzada de los Muertos no puede explicarse de manera convincente con referencias estelares" (Sprajc 1990:223). Astronomy certainly may have played a role of some sort in the urban design of Teotihuacan, but we propose that natural features of the horizon had a more direct role in the placement of the Avenue of the Dead.

Archaeological surveys of the valley established that the Avenue of the Dead extended a far greater distance to the south, past the western edge of the Ciudadela complex. Its impressive length was not realized until the early 1960s, when John Paddock undertook efforts to trace the road's southern extent, in preliminary surveys associated with the early days of the Teotihuacan Mapping Project (Millon 1973:38). Before 1959, it was generally believed that the Avenue of the Dead went only a little further than the Ciudadela, some two kilometers south of its northern end-point at the Moon pyramid. However, Paddock was able to trace the avenue past the Tlajinga compound(s) and into the southern end of the valley, up the point of the rail line and the four-lane highway that today crosses the very southern edge of the valley. This point represents the foot of the Patlachique range (Millon 1973:37-38, 55, 1981:203, S. Sugiyama 1993:105). Establishing the extent of the Avenue of the Dead to the base of the hills was highly significant, for it indicated that it most likely did not serve as a practical "entrance" into the city within the valley, as is sometimes assumed. Millon (1973:38) noted that while such a function was possible, it was "not the only or easiest way to enter the city from the south."

Rising above this last-known point of the Avenue, the Patlachique hills include the cluster of three promontories we have already described, a noticeable and discrete element of the surrounding landscape. From a distance, the line formed by the Avenue of the Dead can be visually traced to the center of this grouping, and more specifically to the space between the flanking hills. This grouping of low hills forming the triadic pattern includes Cerro Metecatl to the right (west), near the modern town of Xometla, and an unnamed rise at the base of the Cerro Patlachique to the left (east) (Figure 2). The higher, central promontory behind (south of) the Cuevas de Amistad is the Cerro Tezontlale. This hill's peak, whose name derives from Nahuatl *tezontli*, "volcanic stone," and *tlalli*, "land," lies along the same alignment of the Avenue of the Dead, and might prove to hold some important archaeological significance. The more distant Cerro Azteca often disappears on cloudy days, accentuating the triadic arrangement of the other three peaks. Whatever the case, visually "nestled" within the center of this noticeable and symmetrical cluster of hills is where we find a remarkable feature today known as the Cuevas de Amistad.

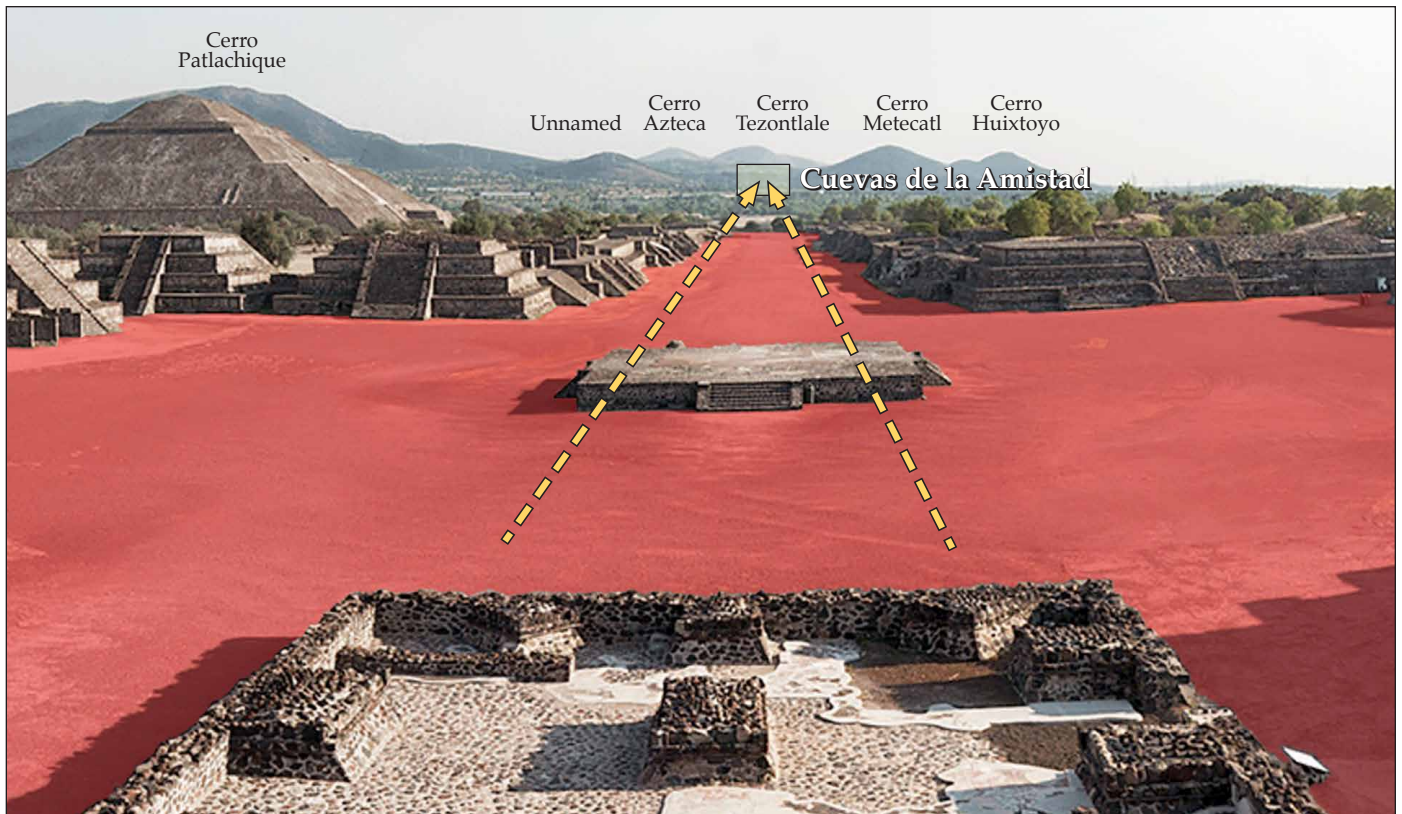


Figure 2. 3D view generated with INEGI lidar data looking south from the Moon Pyramid summit toward the Cuevas de la Amistad, overlaid on photograph looking down the Avenue of the Dead (lidar image by T. Garrison; photo by D. Stuart).



Figure 3. General view of central area of the Cuevas de la Amistad (photo by D. Stuart).

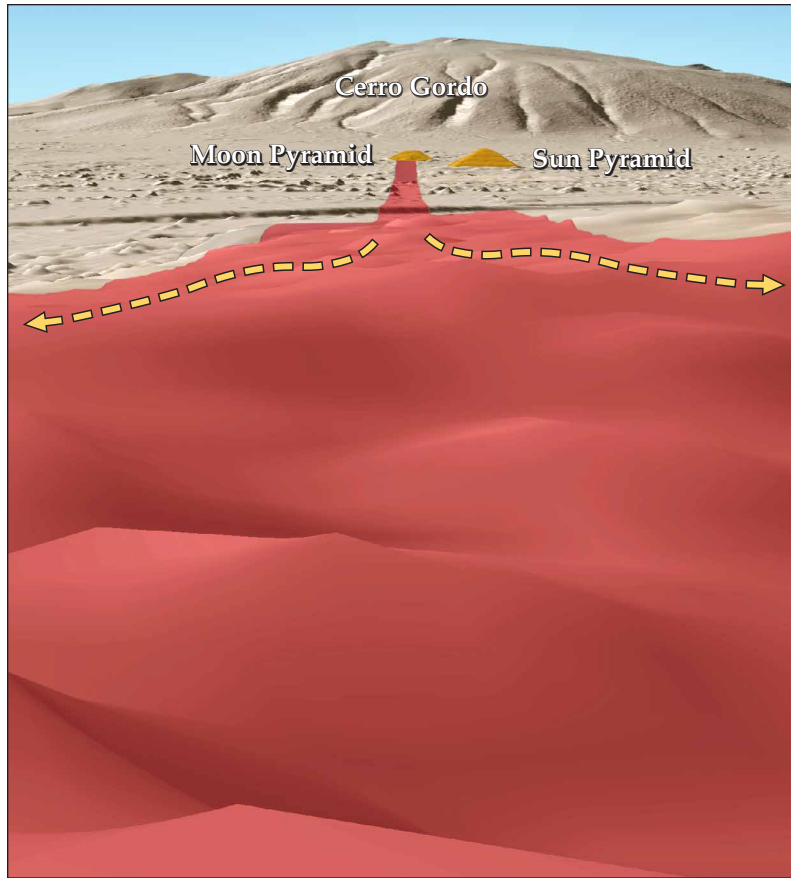


Figure 4. 3D view generated with INEGI lidar looking north from the upper rim of the Cuevas de la Amistad towards Teotihuacan and the Cerro Gordo (image by T. Garrison).

Las Cuevas de Amistad

The complex of caves and sunken terrain today known as the Cuevas de Amistad are located approximately 7.3 kilometers directly south of the Moon Pyramid, in a precise alignment with the Avenue of the Dead. It now assumes the form of a very large sunken “arena” within the surrounding landscape, conforming to a rough V-shape whose open end is oriented back toward the valley and the central area of Teotihuacan (Figure 3). The full width of the cave feature is impressive—approximately 300 meters, with the depressed area of the cave system covering over 18,000 m². The lowest areas of the feature are surrounded by tall cliffs into which are found several shallow caves. The cliffs themselves are large, dramatic exposures of volcanic tuff and more coarse gravel-like material known as *cascajo*, and it appears likely that most of the feature at Amistad represents artificial modification, or at least substantial human-made forms in association with natural crevasses and caves. Views northward from both the upper and lower rim of Amistad are impressive, and offer a clear sight of central Teotihuacan across to Cerro Gordo, running in direct alignment with the Avenue of the Dead (Figure 4). The authors visited the caves in 2021 and measured the alignment using a Brunton compass and a Spectra SP20 GPS unit. While trees obscured the precise

centerline, the Avenue was visible from multiple locations around the caves (Figure 5).

Today the cave complex is preserved as an ecological park, frequented by locals with its impressive scale, numerous caverns and pleasant vistas. It is easily accessible for family outings and is the occasional site for concerts and other large gatherings. The complex has a long but obscure history among the local population, and until recently it was known as a place for occasional rituals. Ashes and offerings are reported to have been found there. According to a local report on the creation of the park, “Inhabitants of the community of San Miguel Xometla claim that the caves are very old, since a cave is a natural cavity caused by some type of erosion, and this means that its origin and creation are not known” (Rodriguez Garcia et al. 2017, translated from the Spanish). As noted, the formation history of the caves remains unclear; it seems to be largely artificial, but perhaps with some natural processes involved.

Significantly for our discussion, there is abundant evidence of the caves’ archaeological importance, with remains of ancient relief sculpture—including a clear representation of a feather headdress (Figure 6)—within at least one cavern, and perhaps also artificial steps carved into the rock faces. It is difficult to date this headdress sculpture but it is clearly Precolumbian. Its location is in the western sector of the caves under a shallow overhang, in the area most precisely aligned with the Avenue of the Dead. The authors’ two-day visit to the caves revealed surprising concentrations of ceramics on the surface above and to the north of caves (near the modern *parqueo*) as well as within the large sunken area, and in the individual cave features. Surface sherds included Thin Orange and other familiar Teotihuacan types, as well as at least one Aztec III/IV sherd, dating to the Late Postclassic. Manos and great quantities of obsidian artifacts might suggest the presence of ancient residences in the area. To our knowledge there has been no formal archaeological assessment of the Amistad caves, yet its significance as an ancient place of activity seems clear and in need of further investigation. The impressive scale of the complex and the density of artifacts at least suggest a place of importance for the ancient inhabitants of Teotihuacan.

As noted, parts of the Amistad cave complex may well represent natural fissures

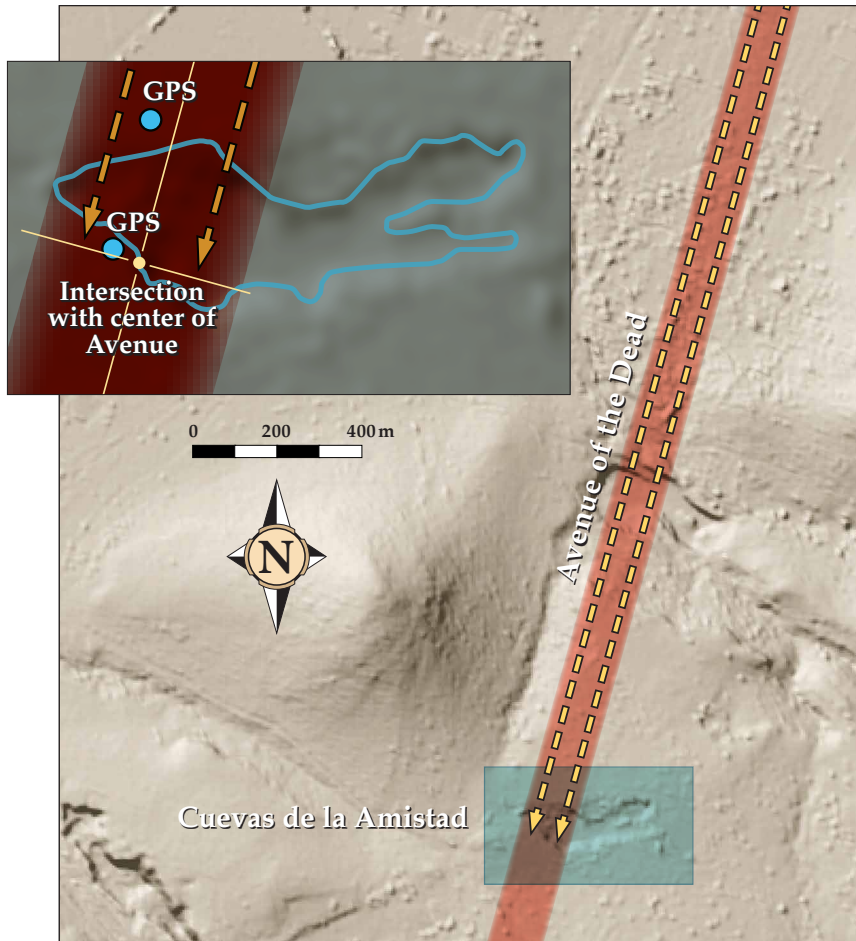


Figure 5. INEGI lidar map showing the relationship of the Cuevas de la Amistad to the alignment of the Avenue of the Dead. GPS points indicate field-verified sight lines in 2021 (map by T. Garrison).



Figure 6. Relief sculpture with headdress element at the Cuevas de la Amistad (photo by D. Stuart).

of the landscape, in many respects it looks to be a place where *casajo* or *tepetate* was mined, both in ancient times and more recently. Many quarry features are known from the terrain around Teotihuacan itself (Barba et al., 1990, Nuttall 1926:76-77), although the Amistad complex appears far larger in scale. At the same time, for the reasons just stated, there are indications that it was a place of significant ceremonial importance in Precolumbian times. And given the visual relationship of the Avenue of the Dead to the cluster of “triadic” hills to the south, we believe it is significant that the Cuevas de la Amistad lie at their visual center, in a direct alignment with the axis of the ancient city. We propose that the Cuevas de Amistad represent a conceptual if not actual “terminus” of the Avenue of the Dead, sitting opposite the Moon Pyramid.

Cave features are of course important in Mesoamerican site-planning and landscapes, as previous investigations have abundantly shown (Ashmore 2008, Moyes and Brady 2012). In fact the phenomenon was first studied at Teotihuacan itself, with the discovery of the tunnel and cave feature under the Temple of the Sun. In a series of influential studies, Heyden (1973, 1975) proposed that this one feature was a “cave of origin,” much like the one later described in narratives around Chicomoztoc (see also Millon 1981:232-235, 1993 and Taube 1986) Sload (2020) has recently shown that this Sun tunnel is a man-made feature, which serves to highlight its importance as a ritual space. The discovery of the even more massive tunnel feature under the Ciudadela and the Feathered Serpent Pyramid has brought new attention to the question of caves and Teotihuacan’s plan and architectural design (Gómez Chávez 2017). In Maya archaeology, caves and cenotes are now understood to often be integral to site plans and architectural configurations (Brady 1991, 1993, 1997, Brady and Ashmore 1999, Slater 2014) and the sacrality of caves as places of origin and abundance across Mesoamerican civilizations likely derives from a deep, shared past (Garrison 2014).

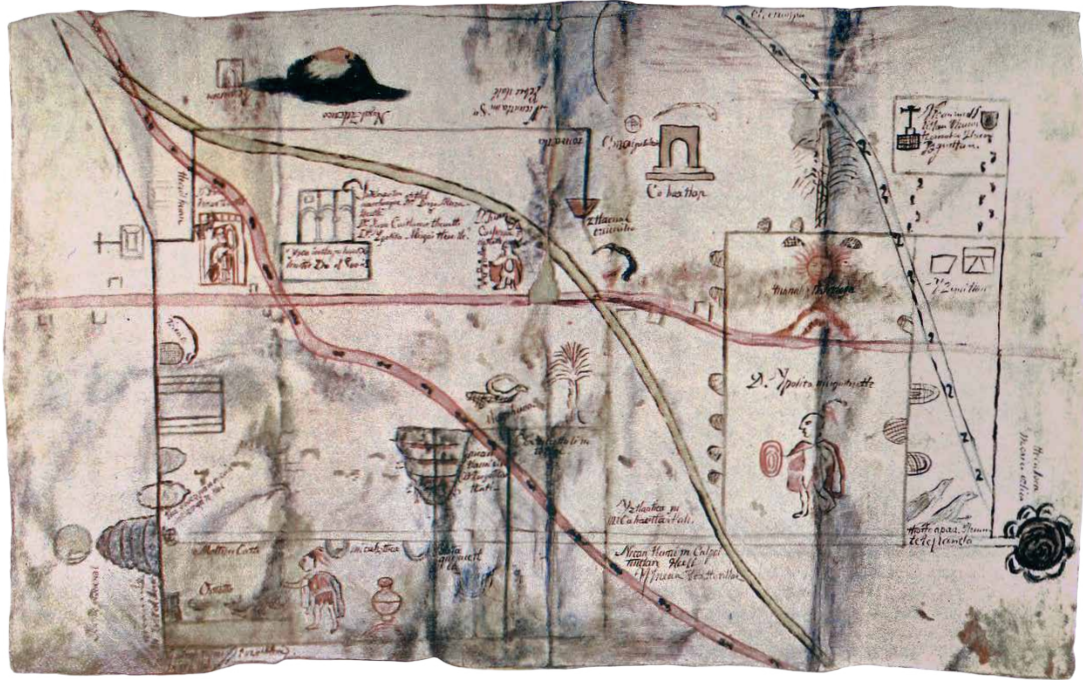


Figure 7. The *Mapa de Mazapan*, ca. 1560. Note the circular “cave” feature at lower right, marking the southern terminus of the Avenida de los Muertos (after Carballo and Robb 2017:Fig. 1.2).

Colonial Maps

Associating the Cuevas de Amistad with the southern terminus of the Avenida de los Muertos may find support from two sixteenth century maps of the Teotihuacan valley, known respectively as the *Mapa de Mazapan* and the *Mapa de Tecciztlan* (Carballo and Robb 2017:fig. 1.2, Kubler 1982) (Figure 7). Both pictorial maps date to the mid-1500s, and were produced to document land holdings in the vicinity of the ancient ruins. Visible are the Moon and Sun Pyramids and the Ciudadela, all arranged properly along the Avenue of the Dead, which runs in a straight line crossing horizontally across the bottom portions of each map (north being to the left). At the lower right we see the road ending abruptly at a large dark circle, especially clear on the Mazapan map. This prominent feature is surrounded by a series of “humps” that present a crenelated border, suggestive of a hilly terrain and strongly hinting to its form as a hole or depression in the landscape. We offer the very tentative suggestion that this may be an early colonial depiction of the sunken area of the Cuevas de Amistad complex. Unfortunately, none of the accompanying Nahuatl captions or glosses help in determining the nature of this curious yet prominent feature. At the very least, we suggest that this feature on both the *Mapa de Mazapan* and the *Mapa de Tecciztlan* should help in understanding the southern “terminus” of the Avenida de los Muertos, however it was originally designed or conceived.

Even earlier, the *Codex Xolotl*, a pictorial and geographical history produced in Texcoco in the 1540s,

refers to a prominent cave at Teotihuacan as a part of its complex visual narrative (Figure 8). As Heyden (1975) pointed out, the artist marked the location of the ancient city using two stepped pyramids together with a hieroglyphic sign for “cave,” **OZTO(TL)**. This clearly alludes to the importance of one or more caves within Teotihuacan’s landscape. Heyden posited a relationship of this cave sign to the tunnel beneath the Sun Pyramid, although it must be kept in mind that numerous caves and cave-like features appear in the immediate area of the ruins, as we have noted (Barba et al. 1990). Given the juxtaposition of the single hieroglyph with the pyramids, we speculate this illustration may refer to two prominent features along the Avenue of the Dead, and to the conventionalized circular “hole” shown at the southern end of the road on the two maps discussed above, dating also to the mid-sixteenth century. It is perhaps relevant that ceramics dating to the Late Postclassic or early colonial eras were found on the surface at the Cuevas de Amistad, as briefly noted earlier. This would demonstrate the use and occupation of the Amistad complex, in some capacity, around the same general time-frame of these important early colonial maps.

Conclusions

Sugiyama (1993:121) noted that the north-south orientation of Teotihuacan, defined by the carefully placed axis of the Avenue of the Dead, had clear cosmological significance related to “the earthly representation of the universe.” The road itself he suggests was conceived

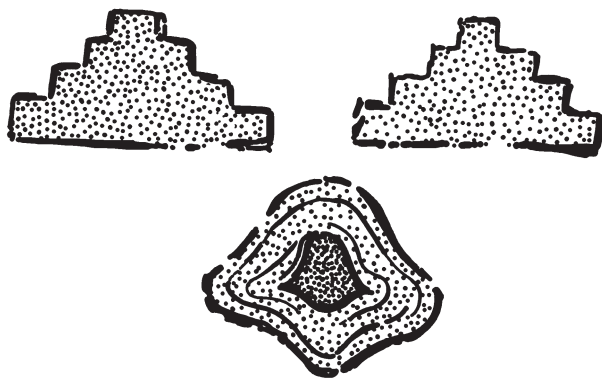


Figure 8. Toponymic marker for Teotihuacan, including a logogram for OZTO(TL), “cave.” From the *Codex Xolotl* (drawing by D. Stuart).

as “a passage from the heavens to the underworld on the horizontal dimension.” His “underworld” was spatially associated with the Ciudadela and the Great Compound. While we agree with this general interpretation of the north-south axis as a reflection of vertical symmetry between sky and earth-interior, we believe that such symmetry might operate on a much larger scale. The Moon Pyramid, we suggest, is spatially tethered to the Cuevas de Amistad, a feature most appropriate for such an interpretation of “underworld” or earth interior. Also, Cerro Gordo is to be understood as the natural counterpart of the Moon Pyramid, looming over the northern horizon of the city, where it too stands in spatial and conceptual contrast with the Amistad caves and the surrounding Patlachique hills. Specific cosmological interpretations are difficult given our lack of knowledge of Teotihuacan’s religious system and ideology, but we can readily acknowledge that these spatial relationships reflect widespread Mesoamerican views of directionality and their associations with horizontal and vertical placement—“north” as “up” or “zenith” and “south” as “down” or “nadir.” This would strengthen the supposition that the Cuevas de Amistad held a broad significance in the Teotihuacan plan as a reflection of the earth’s interior. Given its spatial link to the heart of the ancient city, we would entertain the interpretation of the caves as a defining feature of Teotihuacan’s sacred landscape, perhaps associated with old ideas of earth-emergence and creation mythology. Broad parallels to the significance of Chicomoztoc in much later Nahuatl narrative histories may be relevant here, much like the role they have played in the interpretation of the artificial caves known within Teotihuacan’s site center (Heyden 1973, Taube 1986).

At this preliminary stage, we believe there are

sufficient indications pointing to the importance of the Cuevas de Amistad as an archaeological site of some significance, a feature that seems to date to the time of Teotihuacan’s height and which was integral to the ceremonial landscape surrounding the city. We suggest there is also a compelling reason to see this complex as a visual focal point of the southern direction of the Avenue of the Dead, nestled in the cluster of hills that sit opposite of Cerro Gordo and its dominant profile over the valley. This will need to be carefully tested and assessed through future archaeological investigation and documentation. If these suppositions prove to be true, it would be a significant advance in understanding Teotihuacan’s urban design and orientation, building upon numerous studies that already recognize the importance of hills and caves, whether natural or artificial, in the sites architectural design and developmental history. It also agrees with the emerging picture of the Cerro Patlachique as an important element of Teotihuacan’s ritual landscape.

A thorough archaeological survey of the Cuevas de la Amistad is obviously needed, along with a careful investigation of the highly disturbed terrain leading up to them from the valley floor (the small community of San Lucas Tepango and its large quarry are located a short distance to the north, or below, the Amistad complex). Such an assessment would need to carefully consider how the caves may have been exploited in historical and modern times, in addition to their clear ritual and practical uses in antiquity. We trust that efforts to further document the Cuevas de Amistad and their significant archaeological remains can shed more light on a number of long-standing issues in Teotihuacan research, including the relationship between the urban area and its surrounding landscape, as well as to the mythical narratives of earth-emergence that persisted in Mesoamerica over the course of many centuries.

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Yaxchilan Lintel 24. Rubbing by Merle Greene Robertson.



Yaxchilan Lintel 42. Rubbing by Merle Greene Robertson.



Yaxchilan Lintel 15. Rubbing by Merle Greene Robertson.