

EXECUTIVE SUMMARY

State Party	Republic of Peru
State, Province or Region	Department: Ancash, Province: Casma, District: Casma
Name of Property	Chankillo Solar Observatory and ceremonial center
Geographical coordinates to the nearest second	9°33'18" (S), 78°14'14" (W)

Textual description of the boundary(ies) of the nominated property

The property is made up of two zones: Chankillo Monumental Archaeological Zone and Cerro Mucho Malo (Map 2). As for the limits of Chankillo, the northwest limit has a segment of more than 3700 m, between Pampa Antival to the north and Pampa Cardales to the south. This segment starts from the west near the North Pan-American Highway (220 masl), crossing sandy plains and rolling hills in an approximate northeast direction, ending in the surroundings of the La Hacienda town center, in the San Rafael Valley, at about 120 masl. On the northeast side, it has a segment approximately 4600 long. It begins in the surroundings of La Hacienda, towards a predominantly southeast direction, until the surroundings of the Pueblo Joven town center, at approximately 150 masl. This segment is bordered by the agricultural lands of the San Rafael Valley, sometimes changing direction depending on the boundary with the valley, the dune front, and the carob tree corridor. On the other hand, to the east it presents a segment with irregular bearings more than 3300 m in length, which crosses windy plains and low hills, between the surroundings of Pueblo Joven town center in the north point to the surroundings of the Choloque Chico hill to the south, at 330 masl. To the east of this segment is the site of Virgen de Chapi agricultural company. To the south we find a straight segment of more than 4700 m that begins in the vicinity of Choloque Chico hill, crosses windy plains with active dunes, and hills, reaching the vicinity of the North Pan-American Highway at 240 masl. Finally, to the west, the limit is a segment almost 2600 m long that is almost parallel to the South Pan-American highway, approximately northward, crossing windy plains to meet the first point described in the northwest segment.

On the other hand, regarding the limits of Cerro Mucho Malo, in the north it has a segment more than 1200 m long that borders on the beginning of the alluvial dejection cone that forms Pampa de Las Llamas. It is between 330 and 360 masl. For the northwest and east it presents a segment of 6600 m in length, which goes approximately in the southeast direction to the right margin of the San Rafael Valley. This segment constitutes the approximate boundary between Cerro Mucho

Malo and Cerro Mirador, which are contiguous towards the northeast, forming part of the same mountain range. The segment crosses a maximum altitude of approximately 1000 masl. To the south, the limit runs parallel to the San Rafael Valley, with an approximate length of 7500 m, with a variable direction, depending on the shape of the valley. Finally, to the east the limit is a line segment with an approximate length of 6600 m, crossing the western slopes of Cerro Mucho Malo, having an irregular direction from south to north, as defined by the forms of the boundary of the delimited archaeological sites "Purgatorio" and "Pampa de las Llamas-Moxeque", which are located just to the west of the boundary polygon proposed for Cerro Mucho Malo.

A4 or A3 size map(s) of the nominated property, showing boundaries and buffer zone (if present)

1. General location map (country, region, department, district)
2. Boundary map: The Property
3. Boundary map: The Buffer zone
4. Chankillo Monumental Archaeological Zone Boundary map, according to Ministry of Culture
5. Map of archaeological sites in the Buffer zone

Criteria under which property is nominated (itemize criteria)

- i. to represent a masterpiece of human creative genius
- v. to be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change.

Draft Statement of Outstanding Universal Value

Brief synthesis

The Chankillo Solar Observatory and ceremonial center comprises a set of monumental constructions set among various related buildings and plazas in a well-preserved desert landscape in coastal Peru. They include a unique triple-walled hilltop complex known as the Fortified Temple, and an iconic line of thirteen cuboidal towers stretching along the ridge of a natural hill. The ceremonial center was dedicated to a solar cult, and the presence of two archaeologically distinct Observing Points on either side of the north-south line of Thirteen Towers unequivocally shows that the primary purpose of these structures was to function together as a calendrical instrument using the sun to define dates throughout the seasonal year.

Several of the related monuments that form Chankillo are also constructed and oriented in relation to artificial and natural horizon markers and the sun in order to support, and in some cases to orchestrate wider participation in, calendrically regulated ceremonials. In addition, the Fortified Temple and the distant eastern horizon it faces demonstrate the development of ideas leading to the construction of the Solar Observatory.

Chankillo is one of only two places in the ancient world known to have incorporated a complete solar horizon calendar, using its markers to track the progressive passage of the sun along the horizon throughout the entire solar year. And it is the only one where this was achieved on a monumental scale and where all the component elements of the instrument are still extant and functional.

Chankillo's carefully chosen location in a place of exceptional natural beauty, with a natural eastern horizon that is low enough for the observation of a rising celestial objects against distant natural foresights, the construction of an artificial horizon, and the precise design of the observation points and the Thirteen Towers, constitute an extraordinary example of the cultural transformation of the natural landscape, as well as the vital role of astronomical knowledge for early civilizations in the Andes.

Criterion (i)

The solar observation device incorporated in the Thirteen Towers of Chankillo, which permits the time of year to be accurately determined not just on one date but throughout the seasonal year, is unsurpassed as an example of ancient landscape timekeeping. Unlike architectural alignments upon a single astronomical target found at many ancient sites around the world, the line of towers spans the entire annual solar rising and setting arcs as viewed, respectively, from two distinctive observing points, one still clearly visible above ground. This device, known as the "Chankillo Solar Observatory", not only provides direct indications of all four solstitial rising and setting positions but also the means to identify every other day in the year by observing sunrise or sunset against the various towers and gaps between them.

Criterion (v)

The Chankillo Solar Observatory is an example, unique in the ancient world, of landscape time-keeping on a monumental scale that integrates elements of both the natural and built environment. Standing at the heart of a ceremonial center which incorporates further solar and possibly lunar alignments upon both constructed and natural targets, it exemplifies human interaction with a desert landscape and skyscape in a way that remarkably incorporates natural elements within the

astronomical function, giving them a value similar to that of constructed elements. Astronomical observations at Chankillo are still possible in the present day because this fragile landscape, very vulnerable to change in the face of development pressures and climate change, keeps the shape and physiognomy that facilitated its astronomical functions over two millennia ago, retaining its exceptional pristine conditions with relict ecosystems that favor the conservation of the property.

Integrity

The Chankillo Solar Observatory and the wider set of related monuments that form the site take advantage of a set of artificial and natural horizon markers to define dates. Few places in the ancient world have these attributes, and Chankillo is one of only two yet known to incorporate a complete solar horizon calendar, using markers to track the progressive passage of the sun along the horizon throughout the entire year. These elements are still extant and functional. The property identified as the Chankillo Solar Observatory and Ceremonial Center comprises the necessary elements to preserve and transmit these attributes of its cultural value.

The integrity of the astronomical sightlines at Chankillo is important in evaluating its attributes. The viewsheds that contain these astronomical sightlines are generally unobstructed. In large part the natural environment and climatic conditions that resulted in the good visibility needed for astronomical observations at the site are conserved and the sightlines still function as intended.

Authenticity

The position of the Western and Eastern Observing Points in relation to the Thirteen Towers at Chankillo, identified by archaeological excavation and geophysical survey and verified by archaeoastronomical data, unequivocally shows that the primary purpose of all these structures was to act together as a calendrical instrument. This conclusion enjoys high scientific credibility, which is vital for archaeoastronomical data being considered in a heritage context.

Since the 3rd century BC the sun has shifted slightly at and around the solstices, less at other times in the year. This small change has a negligible effect on the solar and possibly lunar alignments around the site and does not affect the ability of a present-day observer to understand through experience, directly, the way in which the Chankillo Solar Observatory functioned.

Requirements for protection and management

The property “Chankillo Solar Observatory and ceremonial center” is owned by the Peruvian nation, represented by the Republic of Peru, and administered by the State through its Ministry of Culture. It is protected by a series of legal provisions that recognize its condition of inalterable, inalienable, and imprescriptible National Cultural Heritage. Specifically, Law 30467 (June 2016),

promulgated by the Congress of the Republic of Peru, declared of national interest and public necessity the investigation, protection, revalorization and dissemination of Chankillo and adjacent prehistoric sites located in the province of Casma, department of Ancash.

The Ministry of Culture is the institution responsible for protecting the declared property through measures for its delimitation and its physical and legal protection. Likewise, any archaeological or conservation activity occurs within the framework of established regulations on archaeological and conservation interventions.

For the preservation, management and promotion of this property and its buffer zone, the Ministry of Culture, in cooperation with the local municipality and other institutions convened a multi-disciplinary team of professionals for the development of a Management Plan, as an instrument for the investigation, conservation, and social use of the Chankillo Solar Observatory, from the perspective of its surrounding territory, where its interpretative meaning lies. The plan considers the Chankillo astronomical landscape not only from its visual and physiognomic aspects, but also from the perspective of the natural and sociocultural processes that underlie it. The plan is multi-sectorial, decentralized and participatory; it includes government branches as well as members of civil society (community organizations, universities, etc.). It identifies problems and proposes the protection, conservation, and regulation of the use of the property and its environment through zoning the property and its buffer and by establishing a series of programs and projects to provide solutions. Currently, the Management Plan is under review by the Ministry of Culture.

In addition, the Provincial Municipality of Casma has approved a Territorial Conditioning Plan (PAT) 2017-2037, which recognized the proposed boundaries of the property and its buffer zone as part of areas reserved for the development of agriculture, tourism, and ecotourism.

Name and contact information of official local institution/agency

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