Tombs of the Tibetan Emperors: Divine Descent and Mortal Remains in the Chongye Valley

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1. Introduction

There are a considerable number of burial fields scattered across Tibet (Feiglstorfer 2018; Hazod 2009, 2013, 2016, 2018a, 2018b, 2019; Ryavec 2015, map 13). In the Yarlung and Chongye valleys southeast of Lhasa, alone, there are at least a dozen burial grounds (Hazod 2013, map 1). Most contain small round-shaped tumuli. A few, however, include large rammed-earth and stone mounds.

Situated in the Chongye Valley, the Mura Mounds are among the most impressive burial mounds found anywhere in the world (Figures 1 and 2). The mounds are massive. What makes the Mura Mounds special, however, is that they hold the mortal remains of Tibet's first historic emperors (*btsan po*)— i.e., emperors of the Yarlung (*sPu rgyal*) dynasty (c. AD 620–AD 842) (Hazod 2013; Richardson 1963; Tucci 1950).

Although the existence of the Mura Mounds has been known for centuries, very little archaeological investigation has been done. There are a few tantalizing references to the mounds in the ancient literature, a few inscriptions in stone, and some oral traditions; but to date, no modern excavation reports, no LiDAR data, no detailed ground surveys, and no geophysical studies. One of the interesting things about the mounds, however, is that although situated in a tight group, they are not oriented in the same direction.

The orientation of ancient structures can be influenced by any number of factors including earth, sky, and water variables (e.g., Romain 2017, 2018, 2019, 2021). Topography, climate, aesthetics, defense, astronomic phenomena and even random chance can influence orientation. Additionally, structures can be oriented to more than one phenomena.

Knowing from earlier work (Romain 2021) that Tibetan temples and other structures are sometimes oriented to the cardinal

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directions, or sacred mountains, my hypothesis was that perhaps similar design protocols were used in the orientation of the royal burial mounds. The results of that inquiry are presented here.

Several mounds in the Mura group are found oriented to mountains associated with myths concerning the founding of the Yarlung dynasty. One or more mounds are oriented to mountains considered manifestations of powerful mountain deities known as *yul lhar*. Several are oriented to the cardinal directions. Based on these findings it is proposed that through orientation of their burial mounds, Tibetan emperors sought to affirm, even in death, their legitimate right to rule through divine lineage.

The paper begins with background information relative to the Mura Mounds. A methods section follows. In the next section, topographic analyses and ethnohistoric data are provided for each mound in the Mura Group. The paper ends with a discussion and a few concluding remarks.

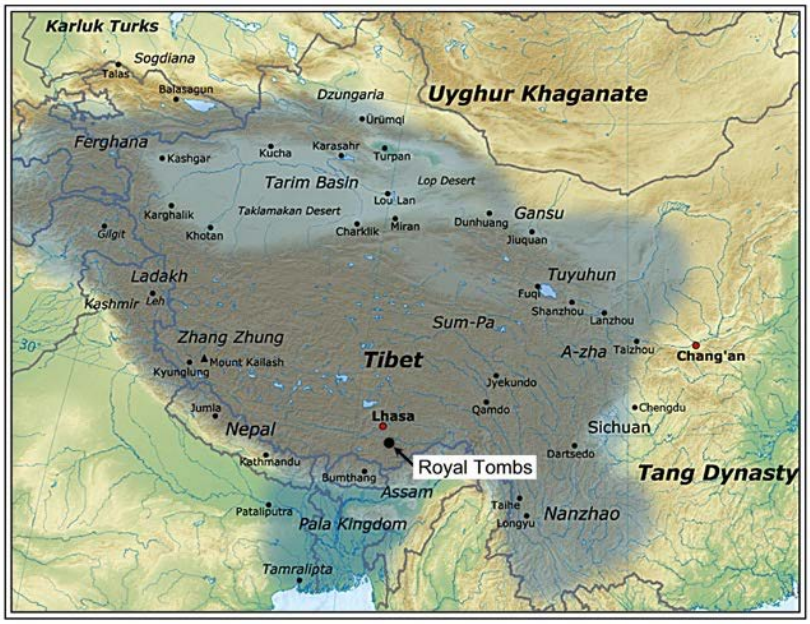


Fig. 1 — Map of the Tibetan Empire at its greatest extent between the 780s and the 790s CE. Map by Javierfv1212, CC BY 3.0 <https://creativecommons.org/licenses/by/3.0>, via Wikimedia Commons. Location for Royal Burial Mounds added by present author.

2. The Royal Burial Mounds

The Royal Burial Mounds are located on the east side of the Chongye River, southeast of Chongye village (*Phyong* rgyas[1]) about 88 kilometers (55 mi) southeast of Lhasa.

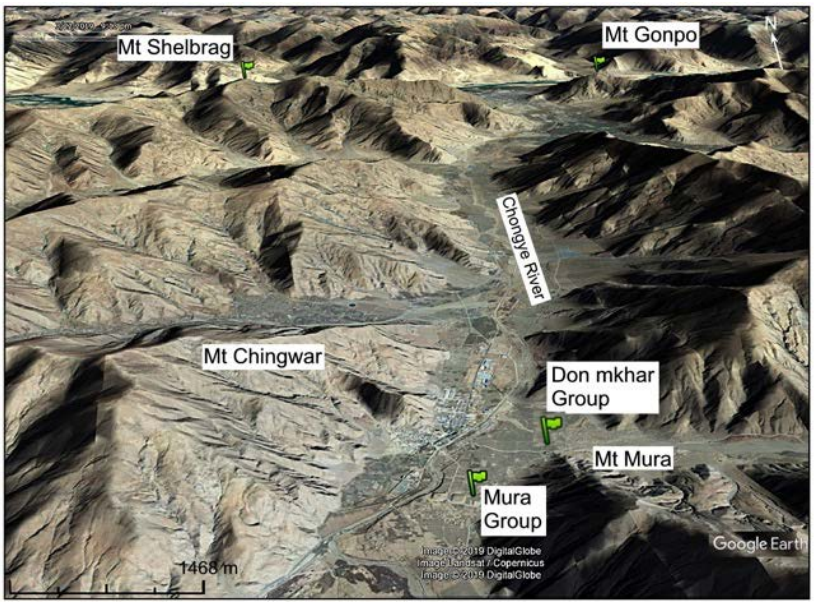


Fig. 2 — Google Earth view looking north along Yarlung Valley. Image date 11-30-2014, eye altitude 8.5 km. Annotation by author.

The Royal Burial Mounds consist of two groups: the Mura Group and the *Don mkhar* Group. Both are situated across the river from Chongye village. The Mura Group mounds are the largest in Tibet. They also hold the remains of most of the Yarlung dynasty emperors. Ten mounds can be identified with certainty (Figure 4). Originally there may have been more (see e.g., Wang *et al.* 2005, 229–230). The Mura mounds are the focus of the present paper.

[1] For the benefit of non-specialist readers I have elected to use transcriptions based in the THL Simplified Phonetic Transcription system, with the addition of the Wylie transliteration in parentheses where the name or place is part of an original quote or might otherwise be useful for reference purposes. Where the phonetic transcription is unknown to me I have used the transliteration as provided in the source document.

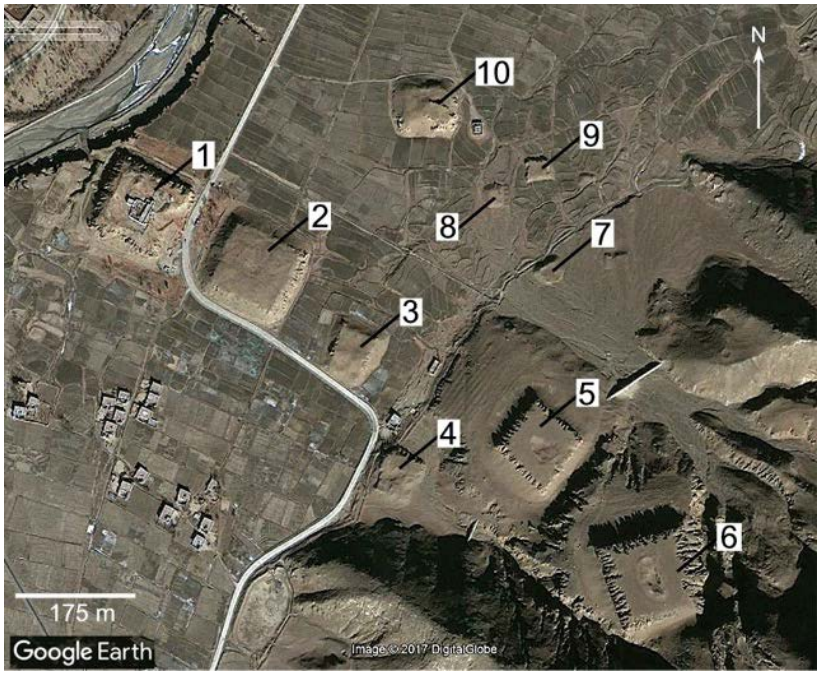


Fig. 3 — Google Earth view of the Mura mounds with presumed identity of burials as noted. Image date 1-5-2011, eye altitude 5.3 km. Mound 1: Songtsen Gampo; Mound 2: Mangsong Mangtsen; Mound 3: Tridu Songtsen; Mound 4: Namde Osung; Mound 5: Tride Tsugtsen; Mound 6: Trisong Detsen; Mound 7: Mune Tsenpo; Mound 8: Trimalö; Mound 9: Langdarma; Mound 10: Tride Songtsen. Annotation by author.

The *Don mkhar* Group is also situated across the river from Chongye village (Figure 3). This group is at the entrance to the Don mkhar Valley. Hazod (2018a, Royal Tombs 1, annotated satellite photo) shows 12 mounds in this group. The Don mkhar Group is briefly considered in the Discussion section.

The Mura Mounds are constructed of rammed earth and stone. Circular depressions in some of the mounds are the result of looting during the 10th century (Hazod 2013, 106) and 18th century (Richardson 1963, 77) and also, possibly, to provide access for ceremonial purposes (Vogliotti 2019).

As to who is buried in which mound, a useful list of Tibetan rulers is provided by Haarh (1969, 45–60). His list delineates thirty-two mythical and quasi-mythical Yarlung kings and a historic line of ten Tibetan emperors. Historic emperors are counted from Songtsen Gampo (Wylie: *Srong btsan sgam po*), making Songtsen Gampo the 33rd ruler in the lineage. The first twenty-six rulers are usually considered mythical. Numbers 27 through 32 were actual Yarlung

regional kings; number 33 (Songtsen Gampo) through number 42 (Langdarma) were emperors, ruling all of Tibet.

The exact number of historic rulers differs among researchers, depending on whether or not certain princes and regents are included in the count. With reference to Figure 3, sources agree that Songtsen Gampo is buried in mound number 1. The identities of persons buried in mound numbers 2 and 3 are also generally agreed upon. As to who might be buried in the others, opinions differ based on local oral traditions, inscriptions on pillars found in the area, and ancient texts that describe locations in vague terms. (For a useful discussion see Vogliotti 2019.)

For the purposes of discussion I have followed the burial identifications proposed by Hazod (2013, 2018a). His work results from a multi-year on-site project in collaboration with Tibetan archaeologists. In any case, relevant research suggests that persons buried in the Mura tombs were members of the royal lineage or their entourage and for that reason, had cause to assert genealogic connections to the special places noted below.

Dates provided for the emperors' reigns follow McKay (2003, Appendix: The Historical Lineage of the Yarlung Kings). Approximate mound dimensions (dims) as provided by Wang *et al.* (2005) are included in the summaries below in the format: length/width/height. (Also see Chan 1994.)

3. Methods

The Mura Mounds are of interest because they hold the mortal remains of Tibet's first historic emperors. In their design, orientation, and associations the mounds have the potential to inform us about Yarlung dynasty beliefs. As explained by Zang (2020, 146): "Tomb orientation is a very serious matter in almost every culture ….By placing and positioning the dead, human societies map out and express their relationships to the ancestors, land, and the living." Fortunately for the present inquiry, the Mura Mounds are also relatively intact, and again, they are, by far, the largest burial mounds in Tibet.

To establish the orientation of the mounds a GPS or total station survey would have been ideal. Unfortunately the day before my planned departure from Lhasa to the Yarlung Valley, my permit to visit the area was revoked without explanation.

My next best research option was to make use of satellite imagery. Using *Google Earth Pro* (ver. 7.3.3), the Mura Mounds were located. Google Earth (GE) offers a series of satellite photos taken at various dates. From these photographs the highest quality image was

selected-for based on spatial resolution, cloud cover, and ground shadows, with preference given to photographs pre-dating what appear to be several instances of recent erosion mitigation work along the edges of a couple of mounds.

Preliminary assessments involved extending the forward azimuths (initial bearings) for the major and minor axes of each mound to see how they might relate to the lay of the land, astronomic targets, surrounding mountains, or other features. These azimuths were plotted using the GE ruler tool. Initial assessment resulted in the identification of likely alignments to mountain summits for seven mounds, with three additional mounds oriented to the cardinal directions.

For a more precise assessment, azimuths were next calculated using an online program that uses inputted latitude and longitude coordinates (https://www.movable-type.co.uk/scripts/latlong.html).

Using coordinate data the program provides azimuth results referenced to Great Circle as well as rhumb line plots. In this case the azimuths between mound centers (for mounds 1 – 7) and mountain summits were calculated. Of interest is that the earlier GE ruler azimuths were identical to the program calculated (Great Circle) azimuths.

Once the mound center-to-mountain summit azimuths for mounds 1 – 7 were known, either a square, rectangle, or other quadrilateral figure was drawn onto the GE image for each mound. (Several mounds—i.e., mounds 3, 4, 7, and 9 are trapezoidal in shape.) Each quadrilateral figure was then rotated so its axis of symmetry (not mound edge) matched the calculated mound-to-mountain azimuth. For mounds 8, 9, and 10 superimposed quadrilaterals were oriented along a north-south meridian. Although not ideal, I believe this procedure allows for a good visual estimate of how close each mound is aligned to either mountain targets or cardinal directions. We need to keep in mind, however, that Western standards of precision may not have been the objective of ancient tomb builders. 'Close enough may have been good enough.' And there are other factors that come into play. For example, establishing the precise centers or edges of eroded and slumped earthen mounds, more than one thousand years old, using satellite imagery is not an exact science. Without knowing original dimensions it is not possible to determine how close modern-day images are to the original. The problem is exacerbated by sheet wash which has partially buried the base of most mounds (Vogliotti 2019, 575).

Less problematic but still an issue is image resolution. Specific resolution data are not provided by GE; however, it appears that the resolution for images taken in years 2014 and 2019 was 1.5 meters.

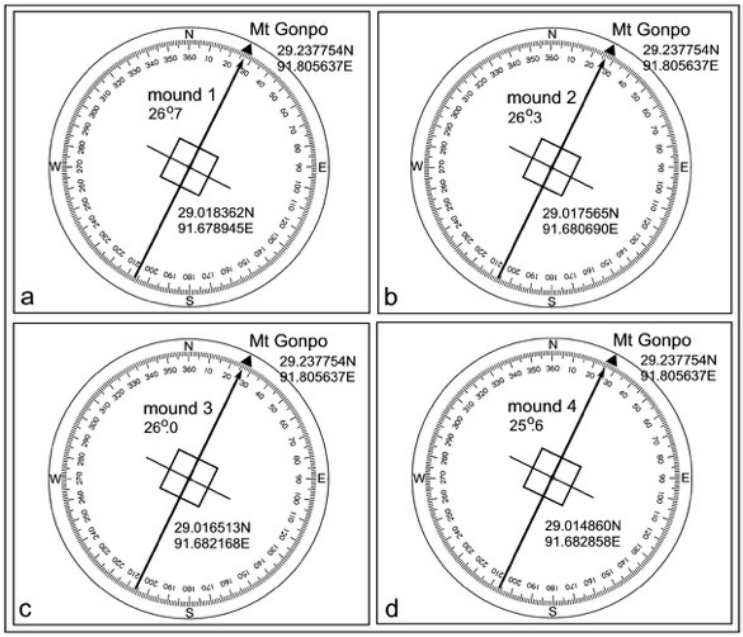
Spatial resolution is not especially problematic for plotting azimuths between mound centers and mountain peaks. At the distances involved, an error in plotting beginning or end points by a few meters will not materially affect calculated azimuths. Spatial resolution does need to be considered, however, with regard to the superimposition of ideal geometric shapes on to satellite images. Given a spatial resolution of 1.5 meters (panchromatic) the GE azimuth of a mound edge having a length, for example, of 130 meters (i.e., Songsten Gampo's tomb) has a potential range of error of ±1°.3 (Romain 2020).

Having tentatively established the mound orientations—with no illusions as to their accuracy, the next step was to investigate what might have motivated the orientation for each mound. Alignment data do not provide those kinds of answers. One way forward, however, is by review of ethnohistoric and other literature (e.g., Chan 1994; Dorje 1999; Dowman 1988; Haar 1969; McKay 2003; Sørensen and Hazod 2005). The results of those inquiries are presented below.

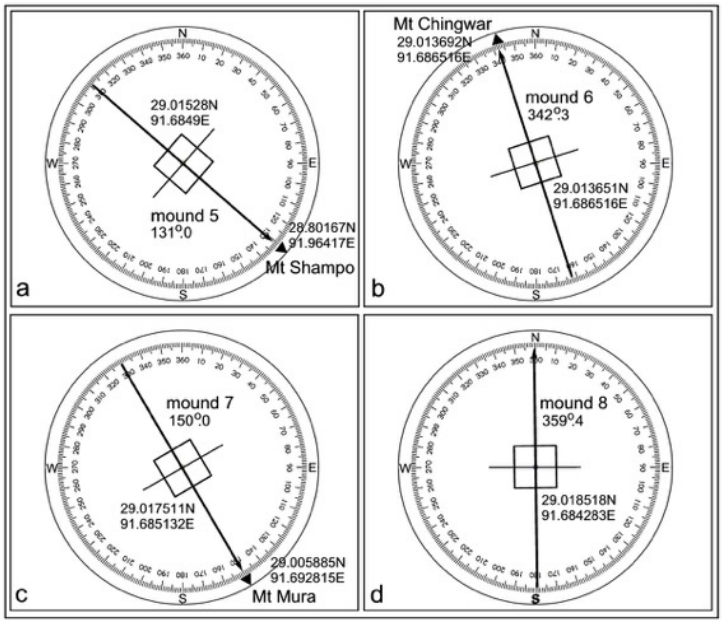
That said, there is a further caveat with regard to use of ethnohistoric legends. Their age is not known with certainty. Most are found in texts written or discovered after the Yarlung dynasty (e.g., *The Clear Mirror* (Sørensen 1994 [1368]; *Mani Kabum* (Trizin Tsering 2007 [mid-12th to mid-13th century]); *Butön's History* [14th century]). This was a time when accounts were often written or 'discovered' as previously hidden treasure texts (*gter ma*) by Buddhists who had their own interpretations of the imperial dynasty and earlier events. Materials written or discovered after the Yarlung dynasty may have oral traditions as their source and may in some cases be based in actual events; but without contemporaneous records, we will likely never have an entirely accurate and unbiased representation of those times.

4. Results

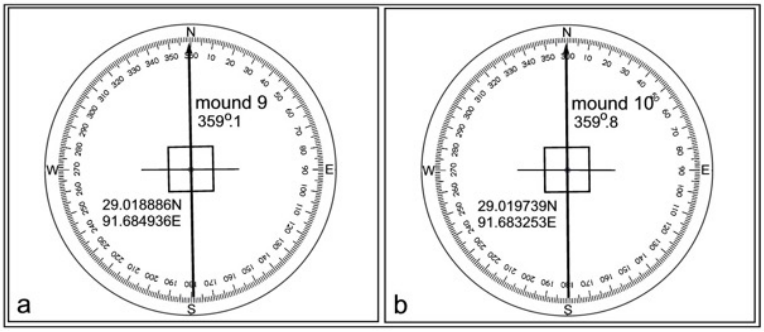
When looking at a square mound of earth, without any external clues, it is not possible to determine what was intended as the front, back, or sides (if indeed there was ever an intention to explicitly designate orientation in that manner). Consequently, the orientations for both major and minor axes for each mound were plotted and again, the azimuths between mound centers and mountain summits determined using latitude and longitude coordinates. Figures 4 – 6 show the results. Four mounds are aligned to Mount Gonpo; one mound is aligned to Mount Shampo; one mound is aligned to Mount Mura; one mound is aligned to the castle on Mount Chingwar; three mounds are oriented to the cardinal directions.



Figs. 4a-4d — Orientations of mounds 1 – 4 plotted relative to target mountains. Latitude and longitude data are for centers of mounds and mountain summits. Drawing by the author.



Figs. 5a-5d — Orientations of mounds 5 – 8 relative to target mountains or cardinal directions. Latitude and longitude data are for centers of mounds and mountain summits. Drawing by the author.



Figs. 6a-6b — Orientations of mounds 9 and 10 relative to cardinal directions. Latitude and longitude data are for centers of mounds. Drawing by the author.

With reference to Figures 4 and 5, if each of the four target mountains has a lateral spread of about 6^0 then the statistical likelihood that a mound having four directional trajectories will point to one of these mountains by chance is 1 in 15 (i.e., $360^0/6^0 = 60$; $60/4 = 15$).

5. Individual Cases

Mound 1 (Figures 7 and 9) (dims: 130/124/18 meters)

Mound 1 is traditionally considered the burial mound of Emperor Songtsen Gampo (Srong btsan sgam po) (Tucci 1950, 32). Songtsen Gampo reigned from c. AD 629–AD 649 except for six years c. AD 640–c. AD 646 when his son Gungsong Gungtsen briefly ruled but unexpectedly died young. A reconstructed 13th century temple presently occupies the top of the mound.

Fig. 7 — Burial mound of Emperor Songtsen Gampo. Photo by Erik Törner, CC BY-NC SA 2.0.

Analysis of Google Earth imagery finds that Songtsen Gampo's burial mound faces Mount Gonpo (*Gong po ri*), roughly 27 km distant (Figures 7–9).

Fig. 8 — View of Mount Gonpo from Tsetang city street. Photo courtesy of Sonam Jamphel, www.exploretibet.com.

Mound 2 (Figure 9) (dims: 149/135/15 meters)

This is the tomb of Emperor Mangsong Mangtsen (*Khri mang slon rtsan*, r. AD 649–AD 676). He was Songtsen Gampo's grandson and succeeded to the throne after Songtsen Gampo's death in AD 649 (Dotson 2009, 143). Mangsong continued to consolidate the Tibetan Empire and began to expand into Chinese Tang territories.

This burial mound faces Mount Gonpo, roughly 27 km distant.

Fig. 9 — Google Earth images showing how mounds 1 and 2 face Mount Gonpo. Imagery date 12-1-2014. Annotation by author.

Mound 3 (Figure 10) (dims: 92/85/7 meters)

This is the tomb of Emperor Tridu Songtsen (*Khri 'dus srong btsan*, r. AD 676–AD 704). Tridu Songtsen became emperor upon the death of his father Mangsong Mangtsen. Mound 3 faces Mount Gonpo, roughly 27 km distant.

Mound 4 (Figure 10) (dims: 67/66/5 meters)

Sources differ as to who is buried in this tomb. According to Hazod (2013, 110) this is the tomb of Tri Osung (*Khri 'od srung*; also known as Namde Osung). Namde Osung was one of Langdarma's sons. (Langdarma briefly reigned as emperor from c. AD 838–AD 841.) Civil war erupted when Namde Osung and his brother, Tride Yumten, disagreed over who would rule certain areas. Namde Osung died c. AD 905. Tibetan tradition holds that Namde Osung was the last of the royal family to be buried at Chongye (Hazod 2013, 110).

According to Chan (1994, 356-357) the tomb is that of Mune Tsenpo (*Mu ne btsan po*, r. c. AD 797–AD 798). Mound 4 faces Mount Gonpo, roughly 27 km distant.

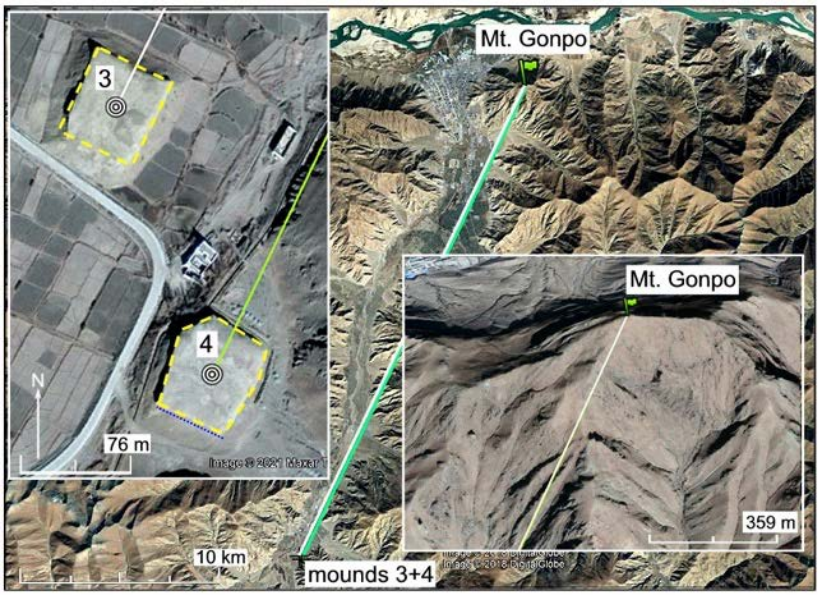


Fig. 10 — Google Earth images showing how mounds 3 and 4 face Mount Gonpo. Imagery date 12-1-2014. Annotation by author.

The alignments to Mount Gonpo are clear. The question then becomes: what is it about Mount Gonpo that made it so important that Yarlung dynasty tombs might be oriented to that mountain?

One possible answer is that Mount Gonpo is a protective deity. In the Tibetan language Mount Gonpo is known as *mGon po ri*. In Tibetan, *mgon po* means "protector" and *ri* means mountain (http://www.thlib.org/reference/dictionaries/tibetan-dictionary/translate.php). Hence Mount Gonpo means 'protector mountain.' In Tibetan belief, mountain gods were territorial protectors and guardians of the royal lineage.

The second reason Mount Gonpo is important is that it is the genesis place for the Tibetan people. The story is known as the monkey myth.

Mount Gonpo and the Cave of the Monkey God

According to the monkey myth, Mount Gonpo is the legendary birthplace of the Tibetan people. This resulted from a union between a monkey bodhisattva and rock ogress. With minor variations the story appears in several ancient texts, including the *rGyal rabs gsal ba'i me long* (Sørensen 1994) and *Mani Kabum* (Trizin Tsering 2007). The story illustrated in Figure 11 can be summarized thusly:

Long ago there was a monkey bodhisattva named Pha Trelgen Changchup Sempa. The monkey was sent to Tibet by Avalokiteśvara (Tib.: *Chenrezi*) to meditate. The monkey settled on Mount Gonpo. There the monkey led a life of asceticism and chastity. At some point, however, the monkey caught the attention of a *brag srin mo*, or rock demoness. The demoness tried to seduce the monkey but failed. The monkey explained that he wished to live the life of a chaste monk. Not satisfied with that answer, the she-demon threatened the monkey, saying that if he did not marry her, she would mate with a demon and from that union she would have many small monster children who would destroy all living beings. Faced with this dilemma, the monkey consulted Avalokiteśvara and was told to marry the rock-demon. Months later, six monkey children were born. The monkey children went on to produce more offspring. The monkey children lived and played in the valley below Mount Gonpo. Hence the town below Mount Gonpo is today called *Tsethang*, meaning 'playground.' Eventually the monkey children ate all of the fruit in the valley and so the monkey father taught them how to plant wheat, barley, and lentils. Once they learned agriculture and as years went by, they lost their monkey tails and hair and became human. Thus the original six monkey-children are considered the progenitors of the founding clans of the Tibetan people.

It is difficult to know how old the monkey myth is. Gyalbo, Hazod and Sørensen (2000, fn. 40, p. 51) offer the following opinion: "Originally an oral tradition…it evidently permutated into a proper

narrative with central narrative elements gleaned from the Rāmayāna, already known in Tibet since dynastic time (being found in a number of Tibetan translations among the Dunhuang documents…) and blended with textual and doctrinal materials pertaining to the cult of Avalokiteśvara, which ultimately dominates this story."

In any case, the cave of the monkey god is a real place (Figure 12). It is located on Mount Gonpo, about 80 kilometers southeast of Lhasa. Mount Gonpo is situated immediately to the east of Tsethang, at the juncture of the Yarlung Tsangpo River and Yarlung Valley.

Fig. 11 — Painting detail showing the she-devil or rock ogress offering a cluster of fruit to the monkey bodhisattva Pha Trelgen Changchup Sempa. (The Yarlung Valley is known for apple and pear production.) The scene takes place in a cave within Mount Gonpo. Pictured are the offspring of their union — monkey children — founders of Tibet's original "six clans." Shown in the upper left is the Avalokiteshvara. Illustration from ཕྱི་དར་ཀར་བོད། *Wikimedia Commons.*

Fig. 12 — View of Mount Gonpo Monkey Cave. Cave is 3 meters high, 7 meters wide, and 15 meters deep. Photo by "Jack" Phuntsok, used with permission.

Victor Chan (1994, 520) describes the cave thusly: "The Monkey Cave, at a height of 4060 m, is located some 70 m below Gonpo ri's summit. A sheer drop of 500 m falls from the cave mouth to the floor of the Yarlung Valley. Just within the entrance, on the surface of a crack, is an image of the monkey. This 'self-manifesting' figure is much venerated by pilgrims. On the southeast wall is a colored painting of the monkey sitting on rhododendron flowers. Next to this is another painting of a baby monkey. Nearby are a few stone slabs, each carved with figures of divinities. Prayer flags and carvings of the Six Syllables [i.e., the mantra *Oṃ Maṇi Padme Hūṃ*] are everywhere."

I suggest that the location for the monkey story on Mount Gonpo is sufficient reason for the tomb of Songtsen Gampo and other emperors to be aligned to that special place. Orientation to Mount Gonpo and the monkey cave affirmed the emperors' divine lineage.

Claims to divine descent are furthered by the understanding that the monkey god and emperor Songtsen Gampo are manifestations of the same entity. As explained by Guise (1988, 15), "Tibetan Buddhists have long recognized incarnations of Avalokiteśhvara's essential being in, variously: the legendary monkey to whom they trace their ancestry; the king who unified their country; and the Dalai Lamas who were and are the living embodiment of their own religious

spirit." Indeed, as the 14th Dalai Lama has stated: "There is no doubt that Songsten Gampo was a manifestation of Chenrezi" (quoted in Laird 2006, 29).

Mound 5 (Figures 13 and 14) (dims: 110/92/9 meters)

Sources disagree on who is buried in this mound. Hazod (2013, 109) and Chan (1994, 158) claim Emperor Tride Tsugtsen (*Khri lde gtsug brtsan*; also known as Me Agtsom, r. AD 704–c. AD 754) is buried in the mound. Tride Tsugten was murdered during a revolt led by two of his ministers.

According to Wang *et al.* (2005, Table 1) Emperor Tridu Songtsen is buried in the mound.

Mound 5 faces Mount Shampo, located 37 km to the southeast (Figures 13 and 14).

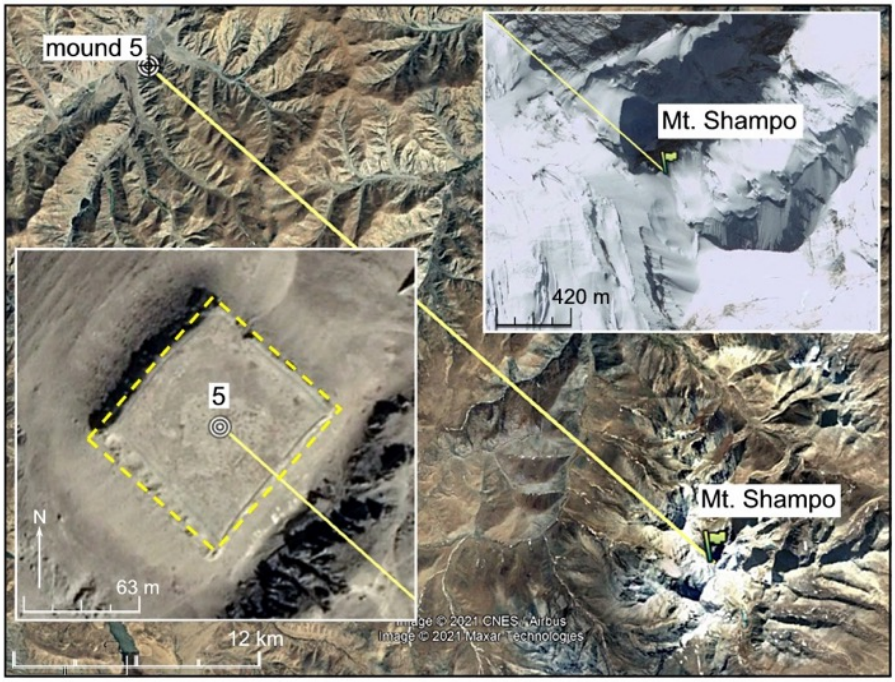


Fig. 13 — Google Earth images showing how mound 5 faces Mount Shampo. Imagery date 10-17-2014. Annotation by author.

Fig. 14 — View of Mount Shampo. Photographer not identified. From http://www.chinatravelpage.com/eight-holy-mountains-in-tibetan-areas.

Mount Shampo is one of the most visually impressive mountains in the Yarlung region. It is also the source of the Yarlung and Chongye rivers, which provide water for the fertile Yarlung Valley. There are two additional factors, however, that help explain why an emperor might want to align his tomb to the mountain.

First, there are myths claiming that the first quasi-mythical king of Tibet, Nyatri Tsenpo (Wylie: *gNya' khri btsan po*), descended from heaven on to Mount Shampo (Sakyapa Sönam Gyaltsen 1996 [1368], 82; Tucci 1949 vol. 2, 728). Other accounts claim he descended on other mountains—e.g., Mount Shelbrag (Sørensen 1994, 139) or Mount Gyang to (Kirkland 1982); or even that he came from India (Butön 2013 [14th century], 278). We cannot give countenance to any one myth in particular because all are fictions. But if the emperor buried in mound 5 believed that Nyatri Tsenpo descended onto Mount Shampo, then by aligning his tomb to Mount Shampo he presumably affirmed his divine lineage.

Fig. 15 — Seventeenth century mural painting in Potala palace showing the descent of Nyatri Tsenpo from heaven. After Ryavec, 2015: Figure 10.3, with permission.

Second, Mount Shampo is one of the "four chief mountain-god[s]" of pre-Buddhist as well as imperial times (Xie 2001, 343; also see Nebesky-Wojkowitz 1956, 203). Specifically, Mount Shampo is the personification of the mountain god Yarlha Shampo. Of considerable importance, Dotson (2012, 190) describes Yarlha Shampo as "…the tutelary divinity (*sku bla*) of the Tibetan lineage." Jisheng Xie (2001, 345) explains that "the mountain god *yar lha sham po* is often called the royal god, and represents the power of the royal family." Pommaret (1996, 20) explains, there exists an "…ancient Tibetan concept that mountain and local deities are totally linked to a territory, well defined geographically, which they protect, and that the **rulers of this territory have a personal relationship with them**" (emphasis added by present author).

Given that Yarlha Shampo is the most powerful mountain deity in the region as well as the tutelary deity of the Tibetan royal lineage, it follows that in death an emperor might wish to make explicit his

association with the deity. Arguably, the alignment of mound 5 affirmed the emperor's relationship to the mountain god and provided spiritual protection for the emperor, even in death.

Mound 6 (Figures 15 and 16) (dims: 136/118/36 meters)

Hazod (2013, 109) and Chan (1994, 358) propose that Emperor Trisong Detsen *(Khri srong lde btsan)* is buried in this mound (r. c. AD 754–AD 797). Trisong Detsen is considered the second great Dharma emperor of Tibet. Under the rule of Trisong Detsen, Tibet expanded to its greatest geographic extent, controlled the northern Silk Road and became a major Asian power.

Burial mound 6 faces the ruins of an ancient castle on a ridge of Mount Chingwa (*'Phying ba*) about 2 kilometers distant. The castle (and mound 6) overlook the town of Chongye (Figures 16 and 17). Chongye was an important political center from where early local kings ruled (Chodag 1988, 58). Six successive palaces were built on the ridge. The castles are connected by a wall that follows the ridge line. Collectively they are known as the "Six Palaces of Chingwar Taktse" (Chodag 1988, 59). Legend claims that the Chingwar Taktse fortress was built by one of the early mythical kings — i.e., Ru la skyes (*sPu de gung rgyal*) (Tarthang Tulku 1986, 154). Notably, King Ru la skyes is described as "a magical child" born from the union of Queen Klu srin mer lcam and the mountain deity Yarla Shampo (Tarthang Tulku 1986, 154).

Chodag (1988, 60–61) makes the point that, "Even the later Tsanpos who lived in Lhasa dared not forget that their ancestors had originated from the Yarlung Valley, and they frequently came back to reside so as to never forget their ancestors' heroic deeds and meritorious services. The Princesses Wencheng and Jincheng of the Tang court also often spent time there after their marriage with the Tubo Tsanpos."

The alignment of mound 6 to Chingwar Taktse connects the emperor's final resting place to the spiritual center of his homeland. That the emperor intended his tomb to be oriented in this manner is explained by Henss (2014, vol. 1, 316): "we know from historical texts that Trisong Detsen's tomb was built during his lifetime, 'raised by the [king] himself before [he] passed away.'" The historical text that Henss refers to is *The Clear Mirror of Royal Genealogy*.

Fig. 16 — Burial mound 6 for Emperor Trisong Detsen. Person walking on path provides a sense of scale. Photo by Erik Törner, CC BY-NC SA 2.0.

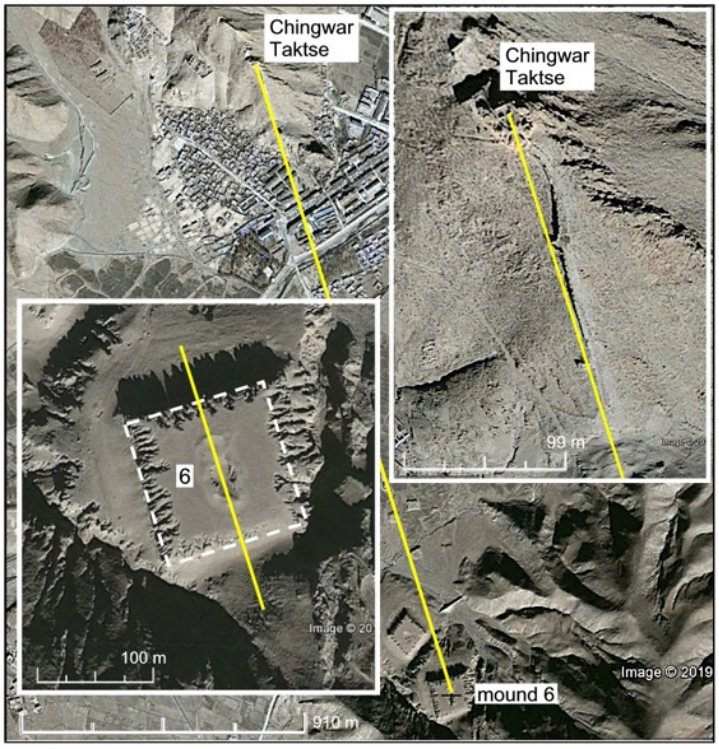


Fig. 17 — Google Earth images showing how mound 6 is oriented to Mount Chingwar ridge and Chingwar Taktse. Date of images 1-20-2011. Annotation by author.

Fig. 18 — Chingwa Taktse (Tiger Peak castle). Licensed-use photo, Alamy photo # APG31W. Structure on south side on the mountain slope (lower left corner in image) is the 15th century Riwo Dechen monastery.

By aligning his tomb to Chingwa Taktse, the emperor asserted his connection to the earliest ancestor kings (seven of whom were said to have descended from heaven – see Tarthang Tulku 1986, 145). Presumably by means of this alignment the emperor made clear his right to rule based on divine affiliation.

Mound 7 (Figure 19) (dims: 38/37/6 meters)

According to Hazod (2013, 109) this is the tomb of Muné Tsenpo (*Mu ne btsan po*, r. AD 797–AD 798). Chan (1994, 359) claims this is the tomb for Namde Osung. Namde Osung was a son of Langdarma. Civil war erupted when Namde Osung and his brother Tride Yumten disagreed over who would rule certain areas. Namde Osung died c. AD 893.

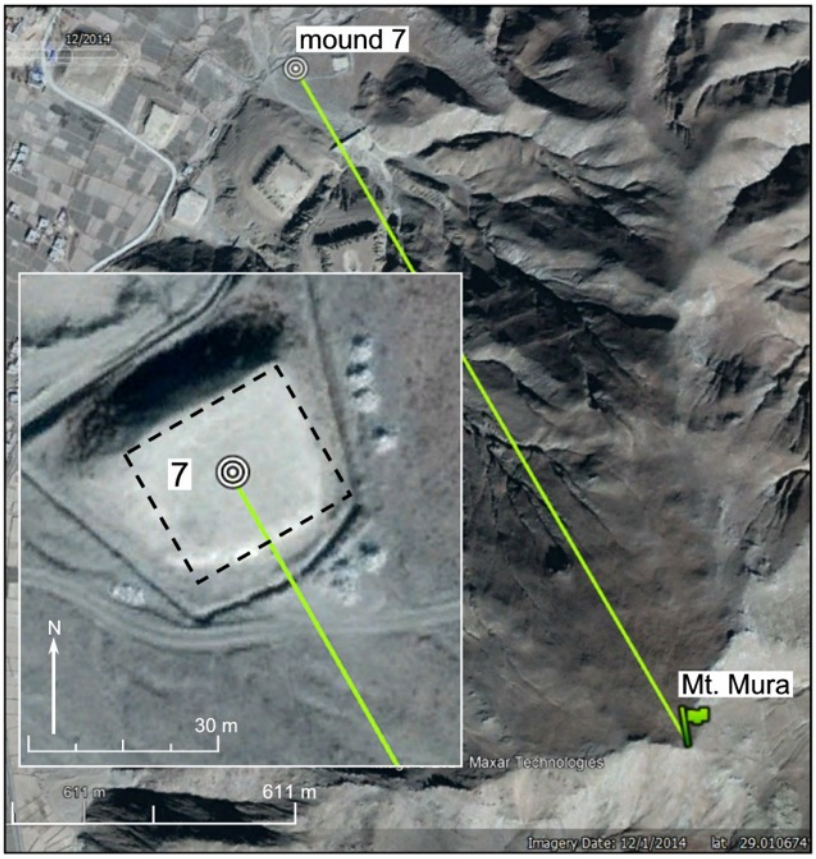


Fig. 19 — Google Earth image showing alignment of mound 7 to Mount Mura. Imagery date 12-1-2014 . Annotation by author.

Although upper edges of mound 7 are eroded, enough remains of the northwest edge and corner to establish the likely orientation for this mound. Mound 7 is oriented to the summit of Mount Mura, 1.5 km distant.

I have not found any special status documented for Mount Mura. It does, however, separate the Chongye Valley from the Don mkhar Valley.

Mound 8 (Figure 20) (dims: 42/33/5 meters)

Hazod (2013) indicates this is the tomb for Empress Trimalö (*Khri ma lod*). Empress Trimalö was married to Mangsong Mangtsen (second emperor of Tibet). Due to a combination of circumstances the empress ruled Tibet as regent from AD 675 to AD 689 and again from

AD 705 to AD 712 (Dotson 2009, 143); hence she is given the title *tsenmo*, meaning female emperor.

Chan (1994, 359) believes this is the tomb of Prince Jangtsa Lhabon. Jangtsa Lhabon was the son of Tride Tsugten.

Figure 20 shows the mound. Due to erosion, the edges of mound 8 are difficult to discern. The superimposed square shows what I believe to be the best fit. If correct, then mound 8 is oriented to the cardinal directions.

Mound 9 (Figure 20) (dims: 22/19/3 meters)

According to Hazod (2013, 110) this is the tomb of Langdarma (*Glang dar ma*, r. c. AD 841–AD 842). Langdarma seized the throne by having his brother, the emperor Tri Ralpachen, assassinated. Ralpachen is best known for his efforts to eradicate Buddhism from Tibet (Laird 2006, 65-69).

Wang *et al.* (2005, Table 1) posit that the occupant of this tomb is Mune Tsenpo (r. AD 797–c. AD 800).

Fig. 20 — Google Earth images showing the cardinal orientation for mounds 8 and 9. Imagery date 1-6-2011. Annotation by author.

Figure 20 shows mound 9. The south side of the mound is badly eroded or may have been cut into in order to increase agricultural area. Assessment using the other mound edges, however, suggest that mound 9 is oriented to the cardinal directions.

Mound 10 (Figure 21) (dims: 99/90/11 meters)

Hazod (2013), Wang *et al.* (2005), and Chan (1994) agree this is the tomb of Tride Songtsen (*Khri lde srong btsan*; r. c. AD 798–AD 800 and c. AD 802–AD 815). A stone pillar extolling Tride Songtsen's accomplishments is located near the southeast corner of the mound (Tucci 1950, 37–39).

Fig. 21 — Google Earth image showing cardinal orientation of mound 10. Image date 1-6-2011. Annotation by author.

Of interest is what the pillar states regarding the first king. The inscription reads: "The king, divine son, *O lde spu rgyal*, from (the condition of being a) God of heaven, (as he was), came (down upon earth) to be a prince of men" (Tucci 1950, 36–37). (O lde spu rgyal later came to be called Nyatri Tsenpo (Wylie: *gNya' k'ri btsan po* — see Wylie 1963). This inscription, presumably written around the time of Tride Songtsen's death, ca. AD 815, provides contemporaneous affirmation that during the Yarlung dynasty, it was asserted that the royal lineage had divine origins.

As noted, tombs 8, 9, and 10 are oriented to the cardinal directions. The reason(s) for the cardinal alignments is lost to time. Perhaps relevant, however, is the following description concerning the burial of early kings. The description is from a mid-fourteenth century

revealed treasure text known as the *bKa' thang sde Lnga* (Five Chronicles): "The body of the dead king was first anointed with gold dust and then placed in the center of nine enclosures" (Tarthang Tulku 1986, 156). Given that the description is from the mid-fourteen century we cannot be certain that it reflects burial practices during the Yarlung dynasty. Nevertheless it provides a certain sense of what might have been. Instructive in this regard is the placement of the emperor's body at the center (also see Heller 2003 regarding the cruciform chamber at the center base of the recently excavated 8th century, Dulan-Reshui M1 tomb). Commenting further, Giuseppe Tucci (1950, 9) offered the opinion that "These partitions represented the universe, displayed round the central point, nine being the sacred number of the Bon po and the king being then buried in the middle of the tomb, ideally transferred into and identified with the pole of the universe of which the tomb itself was supposed to be a magical projection." We will return to this in a few moments.

First though, we turn to the Jokhang temple. Situated in Lhasa, the Jokhang is Tibet's most revered temple. It was built by Tibet's first emperor, Songsten Gampo. At its core, the Jokhang is a square structure built at the center of a filled-in lake. Like tombs 8, 9, and 10, the Jokhang is precisely oriented to the cardinal directions (Figure 22a). Legend has it that the future location for the Jokhang temple was identified when, after a ring toss, a stupa magically appeared in Lake Otang. As explained by Tibetologist Gyurme Dorje (2010, 50) "The foundations of the stone walls were actually secured at the center of the Milk Plain Lake, a power place perceived as the core or axis of a stone stupa, the very fabric of which is said to have materialized from the self-manifesting pristine cognition of buddha-mind." Figure 22b shows the stupa with its radiating rainbow rays. Foundation timbers are shown laid across the lake in a square shape.

Ancient texts such as *The Clear Mirror* (Sakyapa Sönam Gyaltsen (1996 [1368],174) recount how Songsten Gampo incorporated Indian, Chinese, and Bon architectural elements into the design of the Jokhang. Chinese influence on construction of the temple is well-documented. Indeed the geomantic recommendations of Chinese Princess Wencheng (consort to Songsten Gampo) were central to the layout of the Jokhang. For comparison purposes, Figure 22c shows the plan of the ideal Chinese city. The square city is oriented north-south with the emperor's palace in the center. The significance of the north alignment is that celestial north was where the Supernal Lord (*Tian* or *Shangdi*) was located (Pankenier 2013). In China, the emperor was considered the Son of Heaven (Wheatley 1971, 431). In fact, as Pankenier (2013, 93) points out. "With the inception of the imperial

system [Qin dynasty, 221 BC] the emperor also came to be titled *Di*, as in Shangdi or Supernal Lord."

Looking to Tibetan beliefs, the square mandala in Figure 22d shows the bodhisattva *Avalokiteśvara* (Tib.: *Chenrizi*) at its center. Recall that according to Tibetan Buddhist accounts (e.g., *Mani Kabum*), Songsten Gampo was an emanation of Avalokiteśvara (Halkias 2017; Kapstein 2013, 89).

In summary, what Figures 22a-22d have in common is the idea that the Supernal One is situated at the center of a cardinally-aligned square. From this we can speculate that perhaps tombs 8, 9, and 10 are microcosmic symbols of the universe, with the emperor at the mound centers. (Also see Tucci 1950, 9; Wheatley 1971, 430–431). Indeed, if, as Haarh (1969, 391) said of Songtsen Gampo's tomb, "the actual tomb is a microcosm, a horizontal projection in the form of a *re'u mig* [mandala] of the universe," then what more fitting place could there be for an emperor then at the center of that universe? In this understanding, through the orientation of their tombs to celestial north, the emperors were forever connected to the pivot point of the heavens and Supernal Lord, around which all things revolve.

Perhaps supportive of this interpretation is that a photograph of the pillar adjacent to tomb 10, shows right-facing and left-facing swastika symbols engraved on its surface (Tucci 1950, Figure 2). Most often, right-facing swastikas are considered to be Buddhist symbols whereas left-facing swastikas are associated with the Bon religion (although exceptions are sometimes found). In the present context perhaps the swastikas represent the rotation of the Northern Dipper around the celestial north pole. If that is the case then the left-facing swastika symbols in particular might reflect not only Bon influence (as suggested by Tucci 1950, 36) but also reiteration of the significance of north.

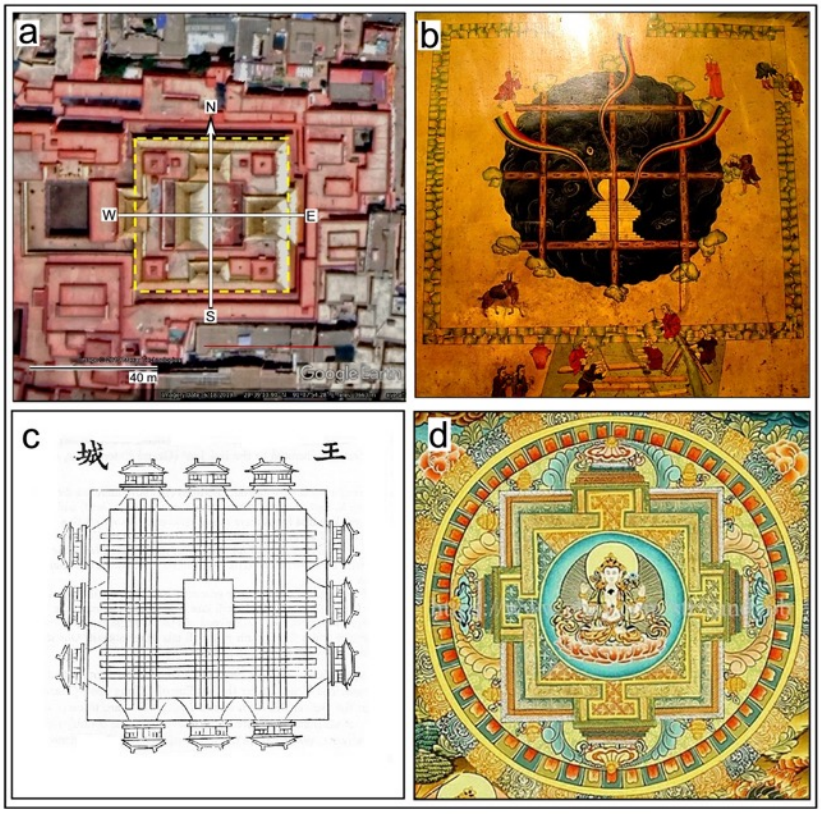


Fig. 22a — Google Earth view of Jokhang temple.
Fig. 22b — Detail of mural in Jokhang temple. Photo by author.
Fig. 22c —Plan of ideal Chinese city from the Record of Trades, Kao Gong Ji, in the Rituals of Zhou (Zhou Li , c. 1066-221 BC). After Needham 1971, Figure 712.
Fig. 22d — Detail of *Tibetan mandala with Avalokiteśvara at the center. Printed on paper, 51 cm x 36 cm. Author's collection. Photo by author.*

7. Discussion

While the intentionality of the alignment scenarios just presented seems compelling, it is important to consider other possibilities. The wide range of orientations exhibited by the Mura Mounds argues against alignments to the Chongye River, or the lay of the land. Astronomic targets, however, are always a possibility. The vast number of possibilities provided by the Sun, Moon, stars and planets assure that at some point in time, one out of four mound axes will line-up something in the sky.[2] For assessing the possibility of celestial

[2] With reference to possible alignments to stars or asterisms Hazod (2018a, 2019) raises to two interesting points. First Hazod (2019, 21) states, "what we find are

alignments it is useful to calculate declinations (for explanation of declination see Ruggles 1999, 18, 22–23). Two pieces of data are needed for calculating declination: 1) the azimuth of the mound axis; and 2) the altitude (in degrees) where the plotted azimuth intersects the horizon. Once the declination for the horizon intersection point is calculated that value can be compared to the declinations for various celestial bodies. The closer the match, the closer a potential alignment. (For solar and lunar declinations see Ruggles 1999, Astronomy Box 6; for planetary declinations see Westin 1999; for stellar declinations see https://en.wikipedia.org/wiki/List_of_stars_for_navigation).

For the present case, horizon altitudes were determined using the online program, HeyWhatsThat (https://www.heywhatsthat.com/). Those data as well as azimuth data for each axis were then inputted into an online declination calculator provided by Ruggles (https://www3.cliveruggles.com/index.php/tools/declination-calculator).

The resulting declinations are shown in Table 1. Column headings in Table 1 (e.g., North-facing, South-facing, etc.) indicate the quadrant that either a major or minor axis points to.

indications that point to a different alignment of the burial chamber and the outer trapezium….the question of whether or not certain heavenly orientations are responsible for this asymmetry is to be part of the second phase of the TTT project [Tibetan Tumulus Tradition project]." Certainly, different alignment schemes for internal and external features are possible, (e.g., astrological-related alignments for internal features based on death horoscopes [see e.g., Mumford 1989, 198-204] or Bonpo traditions and mountain alignments for external mound orientations). As Hazod (2019, 21) also points out, however, data regarding internal mound features are, unfortunately, "rather poor." Data for the Mura Mounds are limited to interpretations by Haarh (1969) based on generalized descriptions found in the *rGyal rabs gsal ba'i me long* (Sørensen 1994) and *Mani Kabum* (Trizin Tsering 2007) (also see Tucci 1950) and very limited assessments of extant visible features of looted tombs (i.e., Feiglstorfer 2015). As to the exterior shape of the mounds, the trapezoidal shapes resemble alluvial fans. It may also be the case, however, that the shape of certain tombs were modelled after celestial asterisms. In particular, trapezoidal shapes are suggestive of the 'bowl' or 'scoop' of the Big Dipper (Ursa Major) and/or Little Dipper (Ursa Minor). In Chinese thought, for thousands of years, these asterisms have been associated with the location for the Supreme Emperor of Heaven (e.g., *Taiyi*) (Chang 2000).

Table 1. Apparent Horizon Declinations for Burial Mound Major and Minor Axes

Mound	North-facing	East-facing	South-facing	West-facing
1	+52⁰ 33′ 48″	-16⁰ 30′ 11″	-44⁰ 52′ 28″	+29⁰ 58′ 06″
2	+52⁰ 56′ 16″	-15⁰ 25′ 55″	-44⁰ 40′ 20″	+29⁰ 21′ 23″
3	+54⁰ 24′ 23″	-13⁰ 40′ 23″	-44⁰ 35′ 44″	+28⁰ 39′ 09″
4	+53⁰ 52′ 56″	-10⁰ 48′ 21″	-39⁰ 17′ 05″	+28⁰ 10′ 21″
5	+42⁰ 43′ 38″	-20⁰ 31′ 28″	-35⁰ 00′ 35″	+43⁰ 28′ 44″
6	+20⁰ 00′ 40″	-34⁰ 48′ 26″	-12⁰ 46′ 32″	+60⁰ 28′ 33″
7	+30⁰ 46′ 43″	-32⁰ 36′ 05″	-23⁰ 31′ 50″	+54⁰ 51′ 56″
8	+65⁰ 06′ 45″	+03⁰ 57′ 17″	-49⁰ 06′ 33″	+03⁰ 34′ 53″
9	+65⁰ 02′ 56″	+04⁰ 20′ 13″	-47⁰ 44′ 37″	+03⁰ 19′ 57″
10	+65⁰ 24′ 57″	+03⁰ 38′ 11″	-52⁰ 16′ 07″	+04⁰ 06′ 29″

Looking at the compass-rose orientations in Figures 4a – 4d, one might suspect that mounds 1 – 4 are aligned to the winter solstice sunrise. However, due to the height of the mountains to the east, horizon altitudes range from 12⁰ – 21⁰. This moves the apparent sunrise azimuths to the south, well-beyond the mound azimuths. Further, the data in Table 1 show no convincing matches to lunar, stellar or planetary declinations.

As to alignments to the lay of the land, Hazod (2016, 3) makes the interesting observation that, "one gets the impression that they [trapezoidal-shaped mounds] were simply an adaptation to the existing topography; composed as hills and situated at the edge of the hillside or within the trapezoidal shaped alluvial fan, the tombs actually merge with the environs and even larger structures are often times almost indiscernible from some distance." Hazod is commenting on a mound group located in eastern Tibet. However, to a certain extent his observations are true for the Mura Mounds.

Mounds 5 and 6 in particular, blend into Mount Mura (Figure 3). And the mounds are situated in an alluvial fan; but that does not account for their orientations.

In summary, of the ten burial mounds in the Mura Group, four mounds are oriented to Mount Gompo, one to Mount Chingwa castle, one to Mount Shampo, and one to Mount Mura. The remaining three tombs are oriented to the cardinal directions.

Four tombs are oriented to Mount Gonpo, the legendary birthplace of the Tibetan people. As S. G. Karmay (1994, 97) has commented, "The version of the origin myth….conveyed the idea of the sacred nature of the king, thereby contributing to the formation of the notion of kingship and royal power. It was the foundation of Tibet's royal lineage through which later descendants in the line could claim the legitimacy of being the ruler…" Indeed, the connection between the emperors' tombs and Mount Gonpo was a powerful statement attesting to the emperor's role (in the guise of the monkey) in the creation of the Tibetan people. Based on belief in that seminal mythical event, Tibetan people owe their very existence to the self-sacrifice of the Monkey God. And, as noted, the emperor was understood as a manifestation of the Monkey God.

Further connecting the emperors and their tombs to the mountains is that most of the Mura tombs have 'secret' names. Henss (2014, 316) explains: "In most cases, the secret name of each burial mound includes the word *ri*, 'mountain', as for example, in the 'brown Mu mountain' [or Purple Mu ri Mountain] (*rMu ri smug po*) of Songtsen Gampo, which is based on a symbolic analogy between the sacred tomb (and the sacred character of the king, whose personal deity was identified with a mountain) and the sacred mountain — and between the celestial spheres of the World Mountain — from where the divine ruler had descended to earth." Other secret tomb names include "Apparitional Mountain" (*Phrul ri gtsug snang*; tomb of Dusong Mangpoje), "Heaven Mountain" (*Gung ri sogs ka*; tomb of Namri Songtsen), "God Mountain" (*lHa ri gtsug nam*; tomb of Tride Tsugtsen), and "Corpse Mountain" (*sKya ri ldem bu*; tomb of Muné Tsenpo) (Haarh 1969, 392–393; Wang *et al*. 2005, 231).

Of course when one reads of posited alignments to mountains as far away as 27 kilometers a legitimate question is how such alignments could have been accomplished. We have no textual information in that regard. What is known, however, is that, as early as 200 BC, the Chinese were building long roads straight across difficult terrain (Pankenier 2020, 224).

Elsewhere (Romain 2021) I have explained how Tibetan designers could have used simple sighting tubes and range poles (already known for centuries to the Chinese) for laying out long sightline

lines. And it is possible that long sightlines across mountainous terrain could have been laid-out using signal mirrors, or heliotropes. A heliotrope is a simple device. As explained by Herbert M. Wilson (1912, 506), the heliotrope "is an instrument designed to reflect sunlight from the station sighted upon to that occupied by the observer." In the 1800s many large-scale land surveys in North America were carried-out using heliotropes. A heliotrope signal from a square-shaped mirror having sides equal to "0.92" inches is capable of being seen at a distance of "20 miles" (Wilson 1912, Table 32). In 1878, U.S. Coast and Geodetic Survey assistant B.A. Colonna (1880) successfully used heliotropes to signal from Mount Shasta to Mount Helena across a distance of 309 kilometers.

Also worth noting is that as early as the Han dynasty, the Chinese had many kinds of mirrors including convex, concave, and flat, as well as T-mirrors, fire-starter mirrors and so-called 'magic mirrors' (Needham 1962, 87–97). It would be naïve to think that mirror technology was unknown to the Yarlung dynasty.

Given the foregoing, several points can be made:

1. Analysis of satellite imagery shows that seven out of ten mounds are oriented to mountains having legendary importance.
2. Cross-culturally, people place great importance on creation myths to include how people came into existence (e.g., Leeming and Leeming 1994). Four out of ten mounds are oriented to the mythic place of origin for the Tibetan people—i.e., Mount Gonpo. An additional mound is oriented to the fortress built by the founders of the Yarlung dynasty. One mound is oriented to the mountain where the first king descended from heaven. In short, a minimum of six mounds are oriented to mountains associated with ancestral origins.
3. The manner in which mounds are aligned to target mountains is suggestive of intentionality. Although the mounds face different directions, all are oriented to target mountains along an X or Y axis rather than, for example, along diagonal axes. Consistency in alignment protocol suggests intentionality.
4. Alignments to mountains are not only expressed in the same manner; they are also expressed in the same way over hundreds of years. The Yarlung dynasty spanned hundreds of years. The tradition of mound orientation using the axis of a mound was maintained over hundreds of years.
5. The 'secret' names for individual burial mounds that include the Tibetan word for *mountain* indicates that in ancient Tibetan belief, the Mura Mounds were considered analogous

to mountains. The physical alignment of individual mounds to real mountains furthered that notion and provided confirmation of the connection between burial mound and mountain.

6. Other structures in this region of Tibet are also oriented to special mountains. The Samye monastery, 38 km northwest of the Mura Mounds is simultaneously oriented to Mount Shampo and Mount Nyenchen (Romain 2021). So too, the Tradruk temple in the Yarlung Valley is oriented to Mount Gonpo (Romain 2021). These alignments provide independent data supporting the hypothesis of mountain alignment.

Considered together, the preceding analyses support the notion that the Mura Mounds were intentionally aligned so their orientations reinforced ideas of divine lineage. For comparative purposes it would be interesting to assess potential alignments at other burial fields in Tibet.

We need to keep in mind, however, that the Mura Mounds are unique. First, they hold at least 80% of the Yarlung dynasty's emperors. And, only in the Chongye and Yarlung valleys do we find the unique combination of emperors, Monkey God cave, Tiger Peak castle, and so on. Except perhaps for cardinal alignments, we cannot expect other burial fields to have the same alignment protocols as identified here. Rather, other burial fields will likely reflect beliefs associated with unique landscape features and local myths.

That said, the closest burial field that might be considered similar to the Mura group is the Don mkhar Group (Figure 23). Most of the mounds are considerable smaller than the Mura Mounds; and they have been heavily impacted by erosion. They are difficult to identify in aerial imagery. Several mounds, however, are of interest. Mound VI seems oriented to Mount Gonpo and maybe mound iv.1, as well (numbering per Hazod 2018a). Mounds IV and XV appear aligned north-south through their corners. Ground-truthing and additional analyses are needed; but these preliminary findings seem promising.

Figure 23. *Google Earth view looking east showing location of Mura and Don mkhar group mounds. Image date 2-27-21, eye altitude 5.1 km. Annotation by author.*

8. Concluding Remarks

Contrary to what some might believe, imperial Tibet was not a paradisical Shangri-la. Even cursory review of the Yarlung emperors' biographies reveals that "the entire duration of the imperial period…was marked by internal power struggles, marital alliances and territorial disputes among and within the Yar lung Dynasty and other local polities and major families of Tibet" (Doney 2019, 18). Contributing to this instability was a tension between supporters of the indigenous Bon religion and newly introduced Buddhist religion. As a result and as J. Russell Kirkland (1982, 269) has pointed out, "Like virtually all rulers, they [Yarlung emperors] required legitimizing support of an affective or ideological nature in order to withstand real or potential internal and external challenges. Since the tradition of divine ancestry had already become closely associated with the apotheosized founder of the state, it was a simple extension for each emperor in turn to claim a sacred status based upon descent from the traditional ancestor."

Even before Songsten Gampo, "The Tibetan kings of old [i.e., the mythical kings] were exalted as the 'son of the gods' (*lha sras*) and came from heaven…" (Halkias 2017, 138). From this it followed that "The sovereignty of the Tibetan emperors was fortified by a claim of descent from heavenly deities" (Kirkland 1982, 257).

I believe the preceding has shown how the narrative of divine lineage was furthered, even in death, by alignments of the royal tombs to special places associated with divine lineage founders, indigenous protector deities, and in several instances connections to the Supernal Lord at the center of the heavens. These alignment prerogatives appear to have been exclusive to the emperors (or selected members of the royal lineage). In this the Yarlung emperors reinforced their pre-eminent status. For all practical purposes, they were, 'Sons of Heaven.'

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