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Stories of the Stars

The History and Folklore of Tibetan Ethnoastronomy



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Abstract

Traditionally, the night sky played an important role in the lives of Tibetans. Stars and constellations were used in navigation and in telling time. Folklore and proverbs surround these constellations and there are myths about the moon and planets as well. However, many of the stories that can be found today either originate in or are influenced by Indian culture. With the introduction of Buddhism to Tibet, came Vedic texts on astrology, which had a profound impact on the culture of ethnoastronomy in the region. Adapted Vedic astrology, merged with practices from China, eventually replaced traditional ethnoastronomy. Because of the importance astrology has attained Tibetan culture, much is known about the topic. As a result, indigenous ethnoastronomy has largely been forgotten. What remains of the traditional ethnoastronomy is often found only from older generations, especially those from nomadic heritages. Through a careful untangling of the web of Tibetan astrological practices and traditions, some aspects of traditional Tibetan ethnoastronomy slowly emerge.

Acknowledgments

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Introduction

Gazing up at the stars seems a natural human curiosity. Since the dawn of civilizations, there are records documenting a close relationship with the celestial sphere. There are texts dedicated to reading divinations from the stars and early civilizations around the globe have created structures aligned to the rising and setting of the sun and moon. World-wide, people have related stories of the sun, the moon and constellations. Situated on the roof of the world with wide horizons and clear skies, Tibet has a uniquely layered astronomic history.

An old story tells of an industrious grandmother who spun yak wool into yarn.¹ Every day she would spin the wool from dawn to dusk, and when the moon would allow, she would spin into the night by the light of the moon. After years of spinning, she began to notice patterns in the lengths of days and the phases of the moon. In order to know when she would be able to spin wool at night, she began observing the cycles of the moon. According to legend, this was the birth of astronomy in Tibet.

In the early prehistory of Tibet, astronomy was used for basic purposes like that of the old grandmother's. In order to know when to plant and harvest the crop, astrological markers, like the length of the day and the arrival of certain constellations in the sky, were consulted. The cycles of the moon were also useful in determining the passage of days and in recording the date of historical and political events. Astronomy in those days was a simple practice with direct application to daily life.

The arrival of Buddhism from India brought about a huge growth of the study, particularly the discipline of astrology. Soon the systems of stars and constellations from Indian texts were adapted for use in divination and prediction practices. Over the ages, the proliferation of astrology replaced the need for traditional astronomy practices. Today, astrology is immensely important in Tibetan culture and it has taken priority over indigenous mythologies, many of which have been lost.

Because of the importance of the cosmos in Tibetan culture much has been research and said about the topic. However, preferential treatment has been given to astrology as it forms the basis for many cultural traditions and is such an important part of the Tibetan mindset. As a result, little has been said about traditional ethnoastronomy, the reflection of the heavens in mythology and practical application of the movement of celestial bodies.² Though much of this knowledge has been abandoned in the pursuit of astrology, some original ideas and beliefs can be glimpsed through what folklore remains. However, caution must be seeded in the process as nearly every story and belief has been shaped by Buddhist principles and Vedic tradition. Through a careful untangling of the web of Tibetan astrological practices and traditions, some aspects of traditional Tibetan ethnoastronomy slowly emerge.

¹ Trinley, Ngawang, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 24, 2013).

² Note on terminology: astronomy refers generally to the study and observation of objects in the night sky. Astrology is the application of astronomy for use in casting horoscopes, divination and predictions. Ethnoastronomy refers to the culture of astronomy which may include traditional stories, folklore, and proverbs about the night sky.

History

Long before the arrival of Buddhism, when Tibet was a mountain kingdom, astronomy was the clock by which life was timed.³ Seasons were marked by the arrival of certain constellations. Accordingly, farmers would begin planting or harvesting the crop and herders would move their animals to different pastures. In this time, knowledge of these things was passed through generations orally and so no written record of these constellations or practices from this time exists. Additionally, such knowledge has been seemingly lost or, in most cases, replaced with Buddhist astrology and cosmology.

Along with traditional farming practices, astrology was used by the Bon religion. From the second century BCE until the fourth century CE, prior to the introduction of Buddhism in Tibet, the Bon religion provided a basis for early Tibetan Astrology.⁴ The Bon religion used astrology in shamanistic divination and for predictions, much akin to the manner in which it is used today. The Bon doctrines refer to five elements (wood, fire, earth, metal and water) indicating early Chinese influence.

Observations of contemporary astrology in the Bon religion, which still hold considerable importance, cannot assumed to be a pristine window into ancient astrological thought in Tibet. When Buddhism supplanted Bon, Bon had to adapt its practices and integrate Buddhist elements order to survive.⁵ Thus, today much of Bon astrology has distinguishably Buddhist traits. It is still used for divination but also as a medical diagnosis.

Tibetan astrology, as it is understood today, originated with the introduction of Buddhism to Tibet. Along with the introduction of the Dharma to the Tibetan plateau, came Indian astrology. In fact, astrology in the Vedic tradition is the primary influence on the Tibetan practice. Thus, in order to understand Tibetan astrology it is important to understand Vedic astrology. And though the Tibetans received many ideas of astronomy from Indians, many of the concepts are not originally of Indian origin. The true origin of astronomy reaches back to the cradle of civilization, Mesopotamia.

As early as the third millennium BCE, there are records of astral religions in Mesopotamia and by the end of the millennium similar records appear in the Harappan civilization in the Indus Valley.⁶ The first concrete record of stars and constellations appears in the *Rig Veda*, a collection of early Hindu religious songs composed between 1500-1400 BCE. This text mentions the sun, moon, planets and the 27 *naksatras*, or asterisms. Though there are many similarities between the *naksatras* and asterisms in Mesopotamian texts, it is not believed that the Indian *naksatras* were adapted from Mesopotamian constellations. However, it is thought that the Mesopotamian tradition of giving each god and goddess a constellation influenced the early Vedic asterisms to similarly associate each *naksatra* with a Hindu god or goddess.

Though they only receive passing mention in the *Rig Veda*, the *naksatras* appear with increasing variation in later texts, suggesting they were further developed over time. By 850 BCE, an astrological system with the *naksatras* was fully established. Ultimately the *naksatras* would be used to locate the position of not only the moon, as was its initial use, but also the planets.

³ Dhondrup, Kunda, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 19, 2013).

⁴ Gyal, Yangbum, and Tsering Choedup. *Men-Tsee-Khang: An Informative Guide*. Dharamsala: Documentation and Publication Department, 1999, 15.

⁵ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 19-20.

⁶ Thompson, Gary D. *Early Constellations in India*. March 11, 2013. <http://members.westnet.com.au/gary-david-thompson/page11-23.html> (accessed April 10, 2013).

In addition to the *naksatras*, Vedic astronomy also identifies twelve zodiacs or *rāśis*. These signs, originally Babylonian, came to India through Greece sometime between the first millennium BCE and the first millennium CE.⁷ In Vedic tradition they are considered representations of different parts of the celestial being *Kalapurūṣa*.⁸ This time was also saw the transmission of Greek and Persian cosmology and arithmetic to northern India during Persian conquests. Some aspects of the Persian cosmology, such as creation myths, would later disseminate to Tibet and are visible through their manifestations in Bon creation stories.⁹

By the birth of Shakyamuni Buddha in the sixth century BCE, astrology was well established as means of prediction through horoscopes.¹⁰ The Buddha would eventually come to condemn astrology as an “unprofitable preoccupation.” He disliked the stress laid on predestination and instead favored self discipline and personal effort. For a time, astrology was set aside in favor of disciplines like art, literature and the sciences, but by the second century BCE it was firmly established as an important discipline within Buddhism. The astrology used in Buddhism descends directly from the Indian astrology in Hinduism which has its origins in Persian and Mesopotamian traditions.

Buddhist texts were brought to Tibet by Buddhist missionaries in the fourth century CE, though in Tibetan legend they are considered to have fallen from the sky.¹¹ Along with the teachings of the Dharma, came the practice of astrology from the Hindu tradition. Of the texts on astronomy that came from India, perhaps the most important is the treatise of the *Kālachakra*.

Though Tibetan Buddhism is predominantly based in Indic origin, it has also received influence from the East. In the 6th century CE, the Tibetan King Namri Songsten sent four of the land’s brightest scholars to China to study astrology.¹² The knowledge they brought back was integrated into Tibetan astrology. A century later, Kong Ju, the fifth wife of the Tibetan King Songsten Gampu, who was herself an accomplished astrologer, introduced further elements of Chinese astrology.

Whereas Indian astrology lent its constellations and zodiac to Tibetan astrology, Chinese astrology’s contribution was in the elements, cycles and philosophy. One of the earliest Chinese emperors, Fu-Hsi, is credited with creating Chinese astrological philosophy when he “raised his eyes to heaven and contemplated the stars, then lowered his gaze and saw what was happening on earth.”¹³ This philosophy is reflected in Tibetan astrology which is based on a harmony of terrestrial and celestial spheres.

The five elements and the calendar cycles of twelve and sixty also came from China. Initially, Chinese astrology used a system of four animals to classify years.¹⁴ Eventually it expanded to twelve animals and five elements which in rotation complete a sixty year cycle. This cycle was spread throughout Central Asia and introduced to Tibet in 642 CE by the princes Kong Ju, according to Tibetan sources.¹⁵ Originally only the twelve animals were used to identify years but gradually the entire sixty year cycle was adopted. In a Buddhist adaption, the twelve animals are the ones said to have attended the

⁷ Ibid.

⁸ Rao, Rama R. *Introduction to Indian Astronomy*. Delhi: Sri Satguru Publications, 1994, 5.

⁹ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 20.

¹⁰ Rao, Rama R. *Introduction to Indian Astronomy*. Delhi: Sri Satguru Publications, 1994, 5.

¹¹ Thompson, Gary D. *Early Constellations in India*. March 11, 2013. <http://members.westnet.com.au/gary-david-thompson/page11-23.html> (accessed April 10, 2013).

¹² Gyal, Yangbum, and Tsering Choedup. *Men-Tsee-Khang: An Informative Guide*. Dharamsala: Documentation and Publication Department, 1999, 16.

¹³ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 21.

¹⁴ Thompson, Gary D. *Early Constellations in India*. March 11, 2013. <http://members.westnet.com.au/gary-david-thompson/page11-23.html> (accessed April 10, 2013).

¹⁵ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 30.

blessing given by the Buddha before his departure to *parinirvāna*.¹⁶ Chinese astrology has not significantly contributed to Tibetan astrology in the form of celestial interpretations but it is important in understanding the workings and use of the discipline.



Figure 1 - The twelve zodiac animals

By the eleventh century, Indian astrology had further influence on Tibetan astrology with the translation of the *Sri Kālachakra*. This text became the foundation for the Tibetan almanac which allows for the determination of positions of stars, planets and constellations in the zodiac and is the main use of Tibetan astrology today. The *Kālachakra*, as used in Tibetan Buddhism, was taken in whole from India but the Chinese sixty year cycle was also woven in with the cycle starting in 1027 BCE.¹⁷

Most of the astrological treatises used in Tibet were translated from foreign sources and almost nothing was developed internally. As a result, there is a disconnection between the calculation of astrology and its physical manifestation in the cosmos. When astrology texts were translated from Sanskrit, often they were taken rote and with no pause to understand the mathematics behind the formulas.¹⁸ Additionally, there has been no cultural history of precision in astrology. Because of our orbit around the sun and the sun's own slight movements, the location of the zodiac used in astrology has shifted over the years. As a result, the system used by the Men-Tsee-Khang in the Central Tibetan Administration in Dharmasala, India is off by close to twenty days.¹⁹ The Men-Tsee-Khang acknowledges this discrepancy but chooses to ignore it, citing the accuracy of the horoscopes they have produced over the years and the calculations written in the *Kālachakra*. Some astrologers who are less steeped in the tradition and stubbornness of the Men-Tsee-Khang have chosen to update their calculations. This has created a discrepancy between practitioners as to which system should be used; that of the ancient texts or what is really overhead at night.

In light of this history of Indian and Chinese influence, it may seem that Tibet has no indigenous practices or teachings. However, it is more an effect of the overshadowing foreign influences that hid Tibet's early interests in measuring the cosmos. As with the legend of the curious grandmother, Tibet's population long had reason to take note of the stars. The cycles of the sun and moon have long been

¹⁶ Ibid., 65.

¹⁷ Ibid., 30.

¹⁸ Trinley, Ngawang, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 24, 2013).

¹⁹ Ibid.

useful in measuring the passage of days and years which had advantageous uses in agriculture, for planting and harvesting, but also in religious ceremonies which need to line up on the same date each year or are chosen based on the phase of the moon. Political history is also often recorded based on such celestial calendars.²⁰ Early on, methods were developed to be able to determine the solstices. The shadows created by high, pointy mountains were tracked over months on the valley floor using piles of colored rocks. This allowed for the determination of when the shadows were the shortest or longest so as to determine the solstices. The high mountains were useful in exaggerating these effects because of their great size, but because of the variable geography in the adjacent valley, precise measurements were difficult. Between 100-200 BCE, an observatory was built at a monastery near Mt. Kailash in western Tibet. The observatory was built at the summit of a flat-topped mountain and consisted of a flat field with sighting devices at the middle and ends to track the gradual motion of the sun and moon. These calculated practices are indicative of a society with an invested interest in using astrology to determine time but does not show so much of an interest in the cosmos outside our solar system.

Given Tibet's location at a crossroads between two powerful empires, it seems natural that its astrological tradition would stem from a combination of cultures. It is clearly apparent how the Tibetan astrological sciences are influenced by Chinese and Indian traditions but it is also important to note the indirect Persian and Greek influences. The influence of Chinese and Indian practices shows up not only in astrological use but also in Tibetan cosmology.

²⁰ Ibid.

Cosmology

Early Tibetan folklore has a very basic explanation for the origin of the celestial bodies, and it is rooted in Buddhist tradition. In a creation myth from Tibetan folklore, the appearance of the celestial bodies are recounted:

Then, out of darkness of night there appeared in the heavens the sun, and when the sun faded the moon and stars lit up the sky and illuminated the world. The sun, moon and stars appeared because of the past good deeds of the gods, and are a constant reminder to us that our world was once a peaceful, beautiful place, free from suffering and pain.²¹

This karmic explanation clearly is one influenced by Buddhist thought. Much of the Tibetan folklore that exists today is highly influenced by Buddhist teachings and morality, like this one.

When considering not just the origin of the universe but the entire cosmos, Tibetan cosmology is quite similar to modern astronomical thought. From the *Kālachakra*, it is believed that the existential and spatial universe are one and in it is contained all the levels of heavens, hells and existences.²² In line with some modern cosmological theories, there is a great universe in which our own universe is just one of ten million. Buddhist cosmology has long recognized a massive scale that modern science is only beginning to understand. In early Buddhist teachings, our solar system was considered to be geocentric, though in current times the heliocentric model is widely accepted.²³ Today, astrologers still use the same methods which are based off this geocentric system as it has no appreciable effect on divination results as opposed to making corrections for a heliocentric model.

In Buddhism, it is believed that at the beginning of this universe, a giant tortoise rose out of a sea of milk.²⁴ Manjushri, the bodhisattva of wisdom, had a vision that the world needed a stable base and so shot the turtle with a golden arrow. Injured, the animal rolled over onto its back. Manjushri then inscribed a diagram that depicted many secrets and all of the astrological methods that could be used to divine the future for the duration of the universe. This is an explanation given for the origin of astrology.

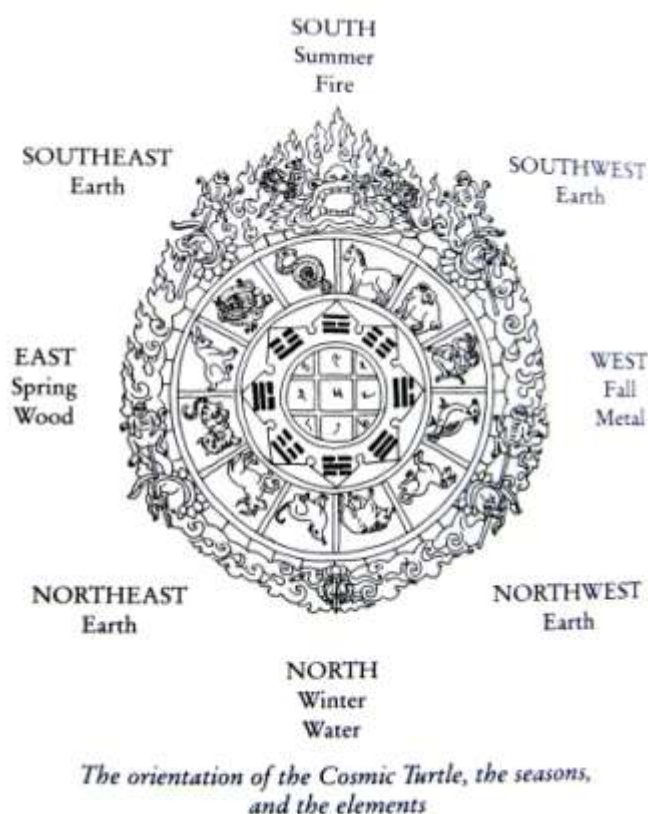


Figure 2 - Depiction of the Rubal with inscriptions of the Chinese zodiac, I-Ching and magic number square inside

²¹ Hyde-Chambers, Frekrick and Audrey. *Tibetan Folk Tales*. Boston: Shambhala Publications, Inc., 1981, 3.

²² Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 257-264.

²³ Loden, Tenzin, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 19, 2013).

²⁴ Ibid.

The tortoise, or turtle in some sources, is known as Rubal and is thought to have come from a diagram of a turtle brought to Tibet around CE 642 by the Chinese princess W'en Cheng.²⁵ The diagram may have come from the Chinese practice of using turtle shells in divination. Manjushri is said to have drawn the twelve Chinese zodiac animals and eight trigrams used in Chinese divination. The head of the turtle was divided in to two vajras which symbolized the solar and lunar channels. On the turtle's tail, eight symbols were carved to represent the planets and shadow planets. The planets and their symbols can be seen in Figure 1. These symbols are still used in Buddhist art today.

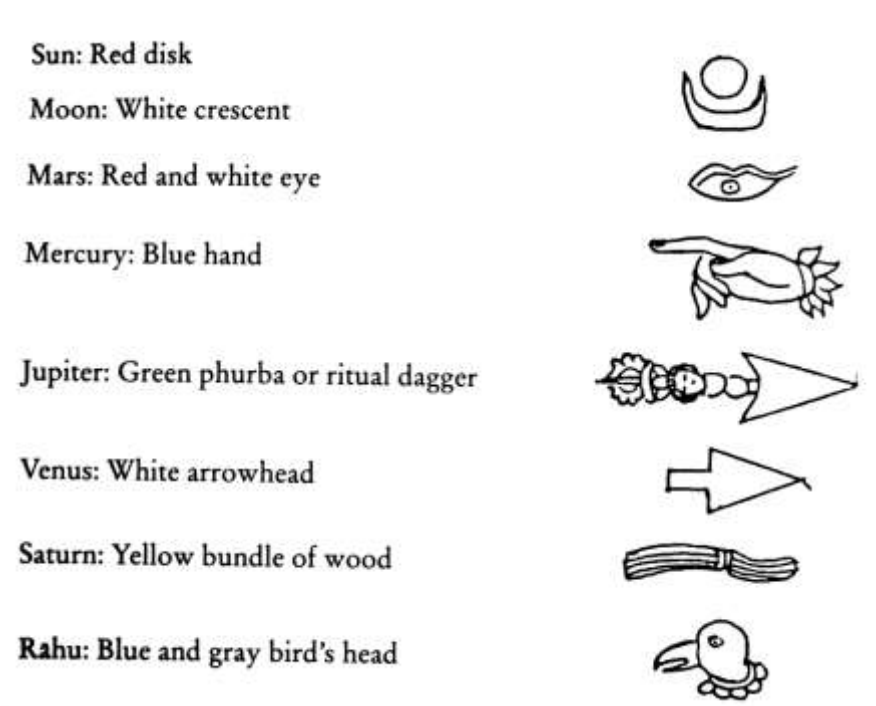


Figure 3 - The planets and their symbols in Tibetan and Buddhist art

In some tantric beliefs, it is thought that the universe, and also Rubal, are represented in the human form. This belief takes the right eye to be the Sun and the left eye the Moon.²⁶ Tibetan yoga considers some of the channels in the body to be connected with the planets. The central channel, *Tsa Uma*, is connected with the planet *Rahu*. The right channel, *Roma Tsa*, is paired with the sun and the left channel with the moon. The head chakra is associated with space.

Manjushri originally gave all 84,000 astrological doctrines to mankind but they became so engrossed in the practice that they neglected the Dharma and all other teachings.²⁷ To correct their path, Manjushri rescinded all of the teachings back into his own mind, thus concealing them as *gter ma*, hidden mind-treasure. With all of the wisdom taken away by Manjushri, mankind was submerged in darkness. When turmoil broke out among the humans, other deities convinced Manjushri to give the teachings back to mankind.

²⁵ Beer, Robert. *The Encyclopedia of Tibetan Symbols and Motifs*. Boston: Shambhala Publications, Inc., 1999, 117.

²⁶ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1999, 266.

²⁷ Beer, Robert. *The Encyclopedia of Tibetan Symbols and Motifs*. Boston: Shambhala Publications, Inc., 1999, 117.

Stars and Asterisms

Today, most of what remains of traditional Tibetan constellations are the stars and asterisms used in astrology. From the Indian *naksatra*, Tibetan astrology uses twenty-seven lunar mansions, *gyukar*.²⁸ The Tibetan lunar mansions are also referred to as the *rGuy sKar Ner brGyad*, which translates literally as the “twenty-eight running stars”.²⁹ The Indian system identifies only twenty-seven mansions but one comprises two adjacent constellations. Occasionally these are separated for a total of twenty-eight. Most of the Indian *naksatras* are constellations composed of three to eight stars, though one even numbers one hundred stars. Only two *naksatras* are single stars. The *naksatras* are each associated with a Hindu deity, a gender, a body part and a characteristic nature.³⁰ Each constellation is also has a representative figure, but these representations vary widely and are not standardized in any manner. The names of the *naksatra* derive from the brightest star in the constellations. These stars are called *yogataras* or “juncture stars”.³¹ The *naksatra* originated in India and are not found in early Mesopotamia.³²

In Tibetan astrology, the *gyukar* are identified by one star, the same as the *yogataras* from Indic tradition. The rest of the stars of the Indic asterism are ignored, as are the associated characteristics and qualities. Instead, the *gyukar* are associated with one of the five elements and a cardinal direction.³³ Both of these associations show the influence of Chinese astrology. The *Kālachakra* further classifies the *gyukar* into three groups that are considered the royal dwellings of the North, South and Center. The nine *gyukar* in each group are associated with one of the following symbols: gem, horse, umbrella, whip, lion, elephant, sacred text, wheel of the Dharma, and teaching Mudrā. Each *gyukar* also has distinguishing characteristics but they are different from the *naksatra* characteristics. The *gyukar* and their characteristics are listed in Table 1 in Appendix A with their *naksatra* and Western equivalent.

In modern usage in astrology, the *gyukar* are considered as single stars, not constellations.³⁴ It is thought that originally they may have had corresponding constellations with multiple stars but they are no longer widely known and may have been lost. The *Jungtsi Men Ngak*, an ancient Tibetan text influenced by Chinese astrology, cites some of the *gyukar* as stars and some as constellations but the wording is such that they may all have been considered only as stars. The *gyukar* referred to as constellations in the text include: Mindruk, Narma, Go, Lak, Nabso, Kak and Gyal.³⁵

In *The Hundred Thousand Songs of Milarepa*, the *gyukar* are mentioned in a passage from The Song of the Snow Ranges.³⁶

Black clouds swept in from all directions;
The sun and moon we shut in darkness;
And the twenty-eight constellations were fixed
The Milky Way was pegged,
And the eight planets were tied by an iron chain

²⁸ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 117.

²⁹ Chang, Garma C.C. trans. *The Hundred Thousand Songs of Milarepa*. Boston: Shambhala Publications, Inc., 1962, 36.

³⁰ Siddhi Vinayak Astrology Services Pvt. Ltd. *Nakshatra or Stars in Astrology*. <http://www.ganeshaspeaks.com/article/constellations.action> (accessed April 12, 2013).

³¹ Thompson, Gary D. *Early Constellations in India*. March 11, 2013. <http://members.westnet.com.au/gary-david-thompson/page11-23.html> (accessed April 10, 2013).

³² Thompson, Gary D., e-mail message to Mara Johnson-Groh, 16 April 2013.

³³ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 134.

³⁴ Loden, Tenzin, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 19, 2013).

³⁵ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 133.

³⁶ Chang, Garma C.C. trans. *The Hundred Thousand Songs of Milarepa*. Boston: Shambhala Publications, Inc., 1962, 27.

It is apparent that at the time of composition, the *gyukar* were widely known. Astrologers today recognizes only seven planets and the eighth planet referenced in this poem may correspond to the shadow planets of the moon's nodes.

One of the *gyukar* considered a constellation by Tibetan astrologers is Mindruk (Kṛttikā) or the Pleiades.³⁷ Perhaps it is due to the confined nature of the Pleiades as an open cluster spanning only about 100 arc minutes, that it has retained its status as an asterism. In Indian tradition, the Sanskrit name Kṛttikā means the Cutters.³⁸ The constellation is considered the “stars of fire” and consists of six stars in the form of a fire.³⁹ Hindu mythology considers the stars as the six mothers of the war god Murugan. In Chinese folklore it is considered the Hairy Head of the White Tiger of the West. The Himalayan Ben Raji peoples, who live across Nepal and northern India, consider the Pleiades to be the *hatai halyou daa salla* – the seven sisters-in-law and brother-in-law. This is probably a derivative of the Greek mythology of the Pleiades as the seven sisters.

In Tibetan culture, the mythology of the Pleiades is the same as it is in Indic tradition. It clearly has a long tradition as it is mentioned in *The Life of Milarepa*. In the tale, Milarepa's mother sews seven ounces of gold in to a patch on a yogin's cloak.⁴⁰ Over it she places a piece of black cloth embroidered with the seven stars of the Pleiades. Later she says, “If your provisions are exhausted, look in the region facing north where, against a black cloud, the constellation of the Pleiades will appear. Beneath it are the seven houses of your cousins.”⁴¹ It later becomes apparent that this statement functioned as a riddle for Milarepa to find the gold in the yogin's cloak but it shows that the Pleiades, and perhaps other constellations, were used in giving directions.

Stories of traditional constellations that can be found today seem unrelated to the *gyukar*. Some appear to be stories as the same stars as the *gyukar* but this is probably due to the relative brightness of these stars in the sky, not the influence of the Indian asterisms. Much of what may have originally existed in Tibetan ethnoastronomy has been either cover up by Tibetan astrology, or forgotten. The few accounts that remain stem from older sources. Often, elders in Tibetan communities have little firsthand knowledge of the cosmos but cite their parents, or more often grandparents, as the ones who knew such stories. Unfortunately these folktales are not being passed down to younger generations and almost no youth today know these types of stories.

Tibetan ethnoastronomy that can still be found often exists as proverbs related to time or giving directions. Much of the ethnoastronomy comes from nomadic Tibetans who relied on the stars for navigation. One of the best remembered constellations is known as *Karma Mindrup*, and possibly corresponds to the Greek constellation Ursa Major. *Mindrup* consists of six or seven stars and, as it rises in the north year-round, is commonly used for orientation.⁴² *Karma Karchen* or *Torang Karchen* (the “big early” constellation) is used to find east, where it rises before dawn. It was also used as a timekeeper as it appears just before the start of day during some parts of the year.

³⁷ Loden, Tenzin, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 19, 2013).

³⁸ *Pleiades in Folklore and Literature*. April 12, 2013.

http://en.wikipedia.org/wiki/Pleiades_in_folklore_and_literature (accessed April 12, 2013).

³⁹ Rao, Rama R. *Introduction to Indian Astronomy*. Delhi: Sri Satguru Publications, 1994, 101.

⁴⁰ Lhalungpa, Lobsang P. *The Life of Milarepa*. Book Faith India: New Delhi, 1997, 30.

⁴¹ *Ibid.*, 31.

⁴² Informal interviews conducted with Tibetan Elders, by Mara Johnson-Groh, translated by Tenzin Youdon, in McLeod Ganj, India. (April 23, 2013).

Polaris, the North Star, has a history of use in orientation throughout the northern hemisphere thanks to its fixed location. Tibetans have used it for generations as a way to find north and it is known in Tibetan as the “fixed star of the north”.⁴³ Though it can’t be proven, it was almost certainly used in this manner before the introduction of astrology in the region. Despite, or perhaps because of, its intransient nature, it had no meaning in the discipline of astrology. Some consider Polaris to be three stars very close together.⁴⁴ It is thought to be connected with the summit of Mount Meru in Buddhist cosmology.⁴⁵

Streaming off Polaris is Ursa Minor. In Tibetan culture, this constellation is known as *Karma Pun Dhun*, or the Seven Siblings. A proverb tells of how the siblings had a race and got spread across the sky. In the tale, the two fastest siblings are in a tie for first. Two farther back are in a close competition for third. The fifth is a hunter and his dog trails behind him. The last sibling stopped to go to the toilet and got left behind. As all the other siblings go racing off, the last one is stuck home and remains stationary in the sky (Polaris).

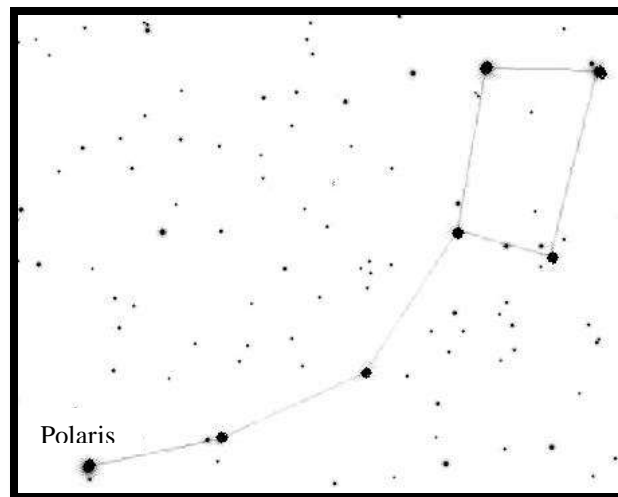


Figure 4 - The constellation *Karma Pun Dhun*, also known as Ursa Minor

Before calendars were widely used, people used the arrival of seasonal constellations to mark times of the year. *Karma Mar* heralds the start of spring. Its name, *mar* meaning red, comes from one particularly bright red star in the constellation. It could refer to the star Antares, which rises in the East in the spring. October is signaled by the arrival of *Karma Golak*. Literally translated as “head-hand”, this constellation looks as its name suggests. This time of the year brings good weather in Tibet so when the constellation rose, it signaled the time to start drying meat for winter. One proverb says that when this constellation has risen, the butcher’s daughter will not have time to be bothered. Based on these descriptions it is impossible to say which Western constellation this might correspond to, but it may share some stars in common with Perseus. December brought the arrival of *Karma Mindrup* just after sunset. This indicated it was time to start weaving wool to make new clothes in time for Losar, the Tibetan New Year, which comes in February.

Rising in July, *Karma Rikchu*, or *Rikche* depending on pronunciation, heralds a very auspicious time of year. It is said that this constellation appeared after the Buddha became enlightened. For the first twenty-one days it rises, any butter churned is considered especially holy and is only shared with close relatives. During this time, people bath in water that has been touched by the constellation as it is considered especially holy. If there are no large bodies of water nearby, water is placed in containers and placed on the roof of the house, where after it becomes holy once exposed to stars’ light. The stars in the constellation are thought to be a good omen when thirsty and have the power to balance the temperature of the body. The stars are also associated with the words light, clean, and soft. It is possible that this constellation corresponds to Cygnus.

According to one Tibetan elder, the stars that compose *Karma Mindrup* have been identified as the ones belonging to Ursa Major. Another source attributes the same stars to a constellation called *Helki*.⁴⁶ This constellation is known as the “sky dog”, so named because of the shape its stars are said to

⁴³ Beer, Robert. *The Encyclopedia of Tibetan Symbols and Motifs*. Boston: Shambhala Publications, Inc., 1999, 120.

⁴⁴ Loden, Tenzin, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 19, 2013).

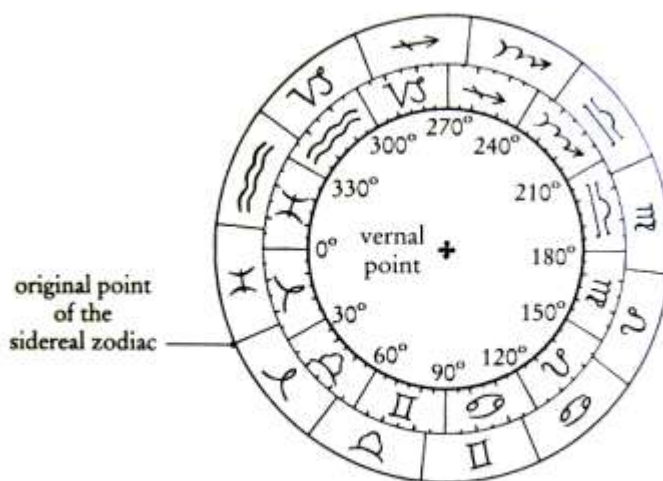
⁴⁵ Trinley, Ngawang, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 24, 2013).

⁴⁶ *Ibid*.

resemble. In this account, it is considered a demon or bad spirit. Because the constellation Ursa Major is composed of several bright stars and is easily recognizable, it is possible that both of these asterisms derive from the same stars. However, it is important to remember that identifying constellations from spoken narratives is a tricky undertaking due to the large number of possible star formations.

Historically, Tibetans have used astronomy in meteorological studies as well as in astrology and time measurement. Near the constellation Scorpio are five stars that are said to represent a hand or a hand with a bangle.⁴⁷ This constellation is known in Tibetan as *Lak-Sur*. It is used in making meteorological predictions based on where the moon aligns with the constellation. The observer's hand is held up to match the constellation and based on where the moon crosses the hand, different weather patterns will occur depending on the time and season.

In addition to the twenty-seven *gyukar*, there are twelve zodiac signs or *khyim*. The zodiac is a 9° wide band that stretches across the ecliptic along which the moon and planets move. The zodiac is divided into 30° segments, each of which has its own *khyim*.⁴⁸ The Tibetan *khyim*, like the *gyukar*, come from the Indian zodiac which originated in Mesopotamia. All the systems are identical except for the starting point for the rotation of the signs. The location of the sun on the spring equinox is considered the vernal point and is where the ecliptic and celestial equator cross. Because of the precession of the sun, this point is slowly shifting. This shift is accounted for in the Western zodiac systems but not in the Indian and Tibetan system. The result is a shift in the overlap of the Indo-Tibetan and Western zodiac systems which is important in accounting for when switching between the systems.



The two zodiacs superimposed

Figure 5 - Comparison of the Western (inner) and Tibetan (outer) zodiac cycles showing the offset between the two

The constellations of each of the zodiac signs are the same in the Indo-Tibetan system as they are in the Western one as the concept of the zodiac originated in Mesopotamia. Each sign in the Vedic tradition is associated with a color, gender, direction, element, and planet.⁴⁹ In astrology, each zodiac has defining characteristics exhibited by those born under that sign, just as in Western astrology. However, unlike the Western tradition, there does not seem to be any mythologies associated with any of the Indo-

⁴⁷ Ibid.

⁴⁸ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 128.

⁴⁹ Rao, Rama R. *Introduction to Indian Astronomy*. Delhi: Sri Satguru Publications, 1994, 25.

Tibetan zodiacs. A list of the Tibetan *khyim* can be found in Table 2, Appendix A along with the corresponding Indian and Western names.

Although the majority of Tibetan folklore is based within the terrestrial realm, there are a few myths that pertain to the heavens. According to one belief, counting the stars is bad because “If one does so, the stars in turn will count us: one corpse, two corpses, three corpses and so on. But if one were to count the stars as one god, two gods, three gods and so on, they would count us as one human being, two human beings and so on, in response.”⁵⁰ This reflects an interesting insight as it portrays looking up at the stars as careless and even rash endeavor. It shows that one must be careful in considering the stars and even that harm may come of considering the heavens as one entity. The dour nature of this myth would not encourage one to contemplate the heavens. Traditionally, each star and planet was considered to be a spirit.⁵¹ This belief was slowly replaced with the advent of Buddhism which stated a logical system of the cosmos.

A similar myth shows the importance of astrology in the society.

By calculations, an astrologer can find out where a person’s star is located and in what way it will affect his life. If it falls right on the swirl on the back of the head, there is no question of his becoming a king. If it falls on his knee, he will become a very busy man and will always be on the move for some reason or other. It is said that his feet are turned by the whirl of the wind. If the star falls on his palm, it is said that he will be rich.⁵²

These myths are indicative of the way astrology has replaced traditional ethnoastronomy in the Tibetan culture. No longer are there stories and myths of constellations. Instead one finds myths relating to astrology. Though stories about stars and asterism are difficult to find anymore, such stories about the moon are a bit more common.

⁵⁰ Chopel, Norbu. *Folk Culture of Tibet*. Dharamsala: Library of Tibetan Works and Archives, 1983, 18.

⁵¹ Trinley, Ngawang, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 24, 2013).

⁵² Chopel, Norbu. *Folk Culture of Tibet*. Dharamsala: Library of Tibetan Works and Archives, 1983, 29.

The Moon

In the Tibetan culture, the moon is the most important body in the night sky. Many aspects in the culture are governed by its motions. The Tibetan calendar is based on the lunar cycle and many holidays are aligned with specific phases of the moon. In astrology, the entire system of the *gyukar* is designed solely to locate the position of foremost the moon, though also the planets, which allows for divination practices. Given the prominent nature of the moon in the culture, there are considerably more references to it in Tibetan folklore.

In Tibetan culture, which probably stemmed from Indic traditions, the moon is considered to be the god Candra.⁵³ Candra drives a crystal chariot through the sky, chasing the twenty-eight goddesses of the stars, each night staying with a different goddess. This is the traditional explanation for the phases of the moon. The goddesses are the daughters of Jigten Kyong, the Four Guardian Kings of the Quarters of the Universe. The kings each claim a side of Mount Meru and the goddesses reside along the ecliptic in the sky. It is thought that looking at the moon is good for one's eyesight as the rays of light come from a deity and as such are precious and medicinal.⁵⁴

Whereas Western folklore sees a "man in the moon", Tibetan and Chinese folklore tells of a hare.⁵⁵ This image dates back to a *Jataka* legend from Indian Buddhism. The story relates how the Buddha, born as a hare in a previous life, was tested for endurance by the god Indra who drew an outline of a hare on the moon where it remained.

The moon and all planets are considered home to heavenly beings according to Tibetan belief.⁵⁶ It is thought that the planets are infinitely far away and so can never be reached. Because of this, many older Tibetans do not believe that man has stepped foot on the moon.

Other than these short excerpts, there are very few traditional stories of the moon. The only noteworthy mention of the moon in Tibetan folklore is in the story of the Monkeys and the Moon (see Appendix B). This story places no importance on the moon itself and rather uses the moon as a prop in a story conveying a lesson of the importance of leadership. The only other place celestial objects occur in these folk tales, is in passing references of the moon, particularly in full or new phases, in relation to determining dates and indicating passage of time. Despite its prominence in the calendar and in holidays, the moon does not have much folklore surrounding it.



Figure 6 - Chinese depiction of the hare in the moon

⁵³ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 131.

⁵⁴ Chopel, Norbu. *Folk Culture of Tibet*. Dharamsala: Library of Tibetan Works and Archives, 1983, 29.

⁵⁵ Beer, Robert. *The Encyclopedia of Tibetan Symbols and Motifs*. Boston: Shambhala Publications, Inc., 1999, 120.

⁵⁶ Chopel, Norbu. *Folk Culture of Tibet*. Dharamsala: Library of Tibetan Works and Archives, 1983, 29.

The Planets

Second to the moon in importance, are the planets. Although there are no holidays or festivals centered on the movements of the planets, they are very important in astrology where their location is said to be indicative of the future. Like the constellations that help locate them, legends of the planets originated in India.

In Tibetan astrology, seven planets are acknowledged: the Sun (*Nyima*), the Moon (*Dawa*), Mercury (*Lhakpa*), Mars (*Mikmar*), Venus (*Pasang*), Jupiter (*Phurbu*), and Saturn (*Penpa*). Additionally there are two nodes of the Moon (*Rahu* and *Ketu*) which are considered shadow planets.⁵⁷ For astrological purposes, the Earth is not considered one of the planets. At the time of the development of astrology, no other planets were known as only these ones were visible with the naked eye. Only in the last century has modern science discovered Uranus and Neptune through mathematical modeling and high-powered telescopes. Some progressive astronomers take into account these two distant planets but over-achingly they are ignored in Tibetan astrological calculations.⁵⁸

The sun is considered the Lord of the Planets, or *Sūrya* as it is known in Vedic Tradition. In Tibetan astrology it is called *Namkhe Mik* which translates as the “Eye of the Sky” which is similar to the Egyptian sun god *Ra* whose eye is what we see in the sky.⁵⁹ *Sūrya* is the symbol of life and provides both light and life for living beings. The sun is the father of Saturn (*Shinje Dakpo*) who is the Lord of Death according to astrological belief. Thus, life gives birth to death. The Sun travels through the heavens in a chariot pulled by seven horses and is escorted by his eight wives and servants. It is believed that reflecting the light of the sun with a mirror will bring negative karma because reflecting the light is denying a gift from the gods.⁶⁰

Jupiter, or *Vrihaspati*, is a teacher to the gods and is also known simply as the Guru.⁶¹ Wife of Jupiter is the planet Venus, or *Tārā*. Venus is a teacher to the demigods, the *āsuras*. It is said that *Candra*, the god of the Moon, seduced *Tārā*, who then bore Mercury (also known as *Dakye* or “Born of the Moon”). In his anger, *Vrihaspati* cursed *Candra* to lose his powers during the latter half of each month.

Each of the planets has a corresponding day of the week. The Tibetan word for each day comes from its corollary planet. Each planet also has defining characteristics and cardinal direction, similar to the *gyukar*.

Perhaps most interesting of the planets are the shadow planets, *Rahu* and *Ketu*. In some sources, the shadow planets are considered to be a circling dragon with *Rahu* as the head and *Ketu* as the tail.⁶² Others consider *Rahu* as a formless being of darkness and in mythology he is just a head.⁶³ All sources agree that they are always on the opposite sides of the universe, forever chasing one another.

Eclipses in Buddhist and Hindu lore are considered the work of *Rahu* and *Ketu* (see appendix B). When *Rahu* catches the Sun, a solar eclipse occurs.⁶⁴ Since *Rahu*'s head is severed from his body, the sun reappears after a short time. Similarly, *Ketu* is the cause of lunar eclipses. Early astrological treatises

⁵⁷ Loden, Tenzin, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 19, 2013).

⁵⁸ Dhondrup, Kunda, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 19, 2013).

⁵⁹ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 143.

⁶⁰ Chopel, Norbu. *Folk Culture of Tibet*. Dharamsala: Library of Tibetan Works and Archives, 1983, 29.

⁶¹ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 143.

⁶² Loden, Tenzin, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 19, 2013).

⁶³ Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 143.

⁶⁴ *Ibid.*, 145.

attribute these shadow planets as causing the eclipses but later Buddhist doctrine recognize the eclipses as the results of the shadows of the Moon and Earth passing between each other and the Sun.

A method of calculating a prediction of an eclipse arrived in Tibet only two hundred years ago.⁶⁵ The *Kālachakra* from India never contained any calculations for such events. The mathematics were originally developed by Tycho Brahe in Europe and were brought to China where they disseminated first to Mongolia and then south to Tibet. These calculations are often erroneous and so are rarely used.

Eclipses are simultaneously considered good and bad luck in Tibetan traditions. In some cases, when an eclipse occurs, drums are banged to scare *Rahu* away.⁶⁶ The shadow of a solar eclipse is also considered poisonous by some and is even thought to cause epileptic fits.⁶⁷ In Buddhist astrology it is considered an auspicious occasion and good deeds are multiplied hundredfold.⁶⁸ Astrologers recommend people to kora, take holy pills and commit good deeds during eclipses as the results of these actions will be intensified during this period.

⁶⁵ Trinley, Ngawang, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 24, 2013).

⁶⁶ Ibid.

⁶⁷ Beer, Robert. *The Encyclopedia of Tibetan Symbols and Motifs*. Boston: Shambhala Publications, Inc., 1999, 123.

⁶⁸ Loden, Tenzin, interview by Mara Johnson-Groh, McLeod Ganj, India. (April 19, 2013).

Conclusion

Astronomy in Tibet has developed greatly from the days of an old woman studying the moon in order to know when she could make more wool. From an initial necessity to know when to plant crops and how to find one's way home, astronomy developed into astrology with uses of divination and prediction. For the most part, this development happened suddenly with the introduction of Buddhism and the influx of astrological treatises from India. This definitive assimilation of astrology has had detrimental ramifications for traditional ethnoastronomy in the region while simultaneously establishing the use of astronomy for decades to come.

In Europe and North America, the traditional stories the originally Mesopotamian constellations, though no longer passed through generations orally, still exist and can be widely found. Such stories frequently appear in reference in modern literature, theater and cinema. Children read bedtime stories of cosmological myth and may go out with their parents to identify constellations in the night sky. But beyond these leisurely indulgences, there is little application of the cosmic spectrum in the culture. Astronomy is studied rigorously as a discipline but only within a small community of scientists. Horoscopes are printed in newspapers but as a whole are not granted with considerable credibility. The Tibetan tradition is just opposite this. Traditional ethnoastronomy was once an integral part of life, used to navigate and to tell time. Today as nomadic culture is disappearing and farmers are migrating to urban areas for work, these practices are no longer needed and no longer passed down through the generations. In its place, astrology has assumed a prominent role in society where it is used to cast natal horoscopes, and decide a good date to move, get married, and plan other major life events. It plays significantly into Buddhist culture where certain planetary alignments are considered auspicious and holidays align with specific phases of the moon. Though astrology has hidden much of Tibet's traditional ethnoastronomy it cannot be blamed for ethnoastronomy's disappearance as astrology has allowed astronomy to still exist in the culture.

This shift from ethnoastronomy to astrology has caused an interesting paradox in the relationship between Tibetan culture and astronomy. Astrology plays a huge part in the culture but at the same time practical applications of astronomy are no longer in use and are being forgotten. Additionally, Tibetan astrology has never placed much emphasis on precision and so astrology is drifting further away from astronomy. Astrologers do nearly all their predictions through calculations and rarely take sightings from direct observation. Many even prefer to use Google Sky when checks to calculations are needed. The zodiac is now almost an entire sign off from what appears in the sky and there are no calls for a correction. Despite this, astrology is a strong mainstay in the culture and has become a thriving business.

Given Tibetan astrology's origin in Indian and Chinese cultures, it can be difficult to say what can be considered Tibetan. Most of what is considered "Tibetan astrology" is really just the Tibetan cultural assimilation of other societies' practices. Though differences between the Tibetan and Indian systems exist, the majority of Tibetan astrology matches that of its Vedic origin. As a result, much of the Tibetan mythology about the night sky, especially the planets, is really adapted Indian mythology. What remains of indigenous ethnoastronomy is often found only from older generations. Many of the traditional stories are remembered only partially and names are often lost. It seems that much of the indigenous knowledge of the night sky has already been forgotten. Though traditional stories are slowly disappearing, the application of astrology remains a strong central platform for culture in Tibetan society and has no chance of being lost for future generations.

Appendix A

Table 1

<i>Gyukar</i>	<i>Naksatra</i>	Western Equivalent	Element	Direction	Symbol
Takar, Yugu	Aśvini	β -Arietis	Water	North	Gem
Dranye	Bharanī	34 Arietis	Earth	Northeast	Horse
Mindrük	Kṛttikā	Pleiades	Wood	East	Umbrella
Narma	Rohinī	Alderbaran	Earth	East	Whip
Go	Mrgaśirā	λ -Orionis	Wood	East	Lion
Lak	Ārdrā	α -Orionis (Betelgeuse)	Wood	East	Elephant
Nabso Gyaltö	Punarvasū	β -Geminorum (Pollux)	Wood	East	Sacred Text
Gyal, Gyalme	Pusya	5-Cancri	Wood	East	Wheel of the Dharma
Kak, Wa	Āślesa	α -Hydrae	Earth	Southwest	Teaching Mudrā
Chu, Ta Chen	Maghā	α -Leonis (Regulus)	Fire	South	Gem
Dre, Ta Chung	Purva-Phālgunī	δ -Leonis (Zosma)	Fire	South	Horse
Wo	Uttara-Phālgunī	β -Leonis (Denebola)	Fire	South	Umbrella
Mezhi	Hasta	δ -Corvi (Algorab)	Fire	South	Whip
Nakpa	Citrā	α -Virginis (Spica)	Fire	South	Lion
Sari	Svātī	α -Boötes (Arcturus)	Fire	South	Elephant
Saga	Viśākhā	α -Librae	Earth	Southwest	Sacred Text
Lhatsam	Anurādhā	δ -Scorpii (Iridis)	Metal	West	Wheel of the Dharma
Nrön, Deu	Jyeṣṭhā	α -Scorpii (Antares)	Metal	West	Teaching Mudrā
Nup	Mūla	λ -Scorpii (Schaula)	Metal	West	Gem
Chutö	Purvāṣṣdhā	δ -Sagittarii	Metal	West	Horse
Chume	Uttarāṣadhā	σ -Sagittarii (Pelagus)	Metal	West	Umbrella
Drozhin	Uttara-Āṣādhā	α -Lyra (Vega)	Metal	West	Whip
Jizhin	Śravaṇa	α -Aquilae (Altair)	Earth	Northwest	
Möndre	Dhaniāstha	β -Delphinium	Water	North	Lion
Möndru	Satabhiṣak	λ -Aquarii	Water	North	Elephant
Trumtö	Purvabāad- rapada	α -Pegasi (Markab)	Water	North	Sacred Text
Trume	Uttara-	γ -Pegasi / α -	Water	North	Wheel of the

	bhādrapada	Andromeda			Dharma
Namdru, Shesa	Revati	Σ Piscum	Water	North	Teaching Mudrā

Table 2

Tibetan Name	Indian Name	Western Name
Luk	Meṣa	Aries
Lang	Vṛṣa	Taurus
Trik	Mithuna	Gemini
Karkata	Karkā	Cancer
Senge	Simha	Leo
Pumo	Kanyā	Virgo
Sangwa	Tulā	Libra
Dikpa	Vṛścika	Scorpio
Zhu	Dhanus	Sagittarius
Chusin	Makara	Capricorn
Bumpa	Kumbha	Aquarius
Nya	Mīna	Pisces

Appendix B

The Monkeys and the Moon

Once long ago, there was a group of monkeys. They lived in a forest, and in the forest was a well. One night, the leader of the group of monkeys peered into the well and saw the reflection of the moon in the water.

“Look! The moon has fallen into the well! We must get it out or our world will have no moon,” he said.

The other monkeys looked into the well and saw that it was so. “Yes,” they agreed. “We need to get the moon out of the well.”

The monkeys formed a chain by holding the tail of the monkey above them. The top monkey held fast to a branch of a tree that stretched over the well. But the branch was small and began to bend under the combined weight of the monkeys. Soon it started to crack. The water was disturbed as the lowest monkey touched the water and the reflection of the moon disappeared. The branch broke, and the monkeys tumbled headlong into the well.

When the unwise are lead by the unwise, they are convinced of many things.

Rewritten from *Tibetan Folk Tales* by Fredrick and Audrey Hyde-Chambers.

The Hindu Legend of Rahu

Long, long ago, demons spread a poison across the land which killed many beings. The gods came together to churn the milk of the cosmic ocean to create an antidote. The god Viṣṇu declared the antidote be given only to the gods. One of the demigods, Rahu, who was known as a trickster, dressed himself as a god and was able to drink some of the antidote. However, the Sun noticed his ruse and so Rahu was forced to flee. Viṣṇu quickly pursued and threw a disk at the demigod. The disk decapitated Rahu and Viṣṇu took Rahu’s head and body and threw them into space in opposite directions. Because Rahu had consumed the antidote, he was immortal and so was condemned to live forever in the sky.

To this day, Rahu’s head and tail, known as Ketu, occupy opposite sides of the sky. They wait on the ecliptic trying to catch the Sun and the Moon. When Rahu catches the Sun, he eats the Sun but since he no longer has a body, the sun emerges again.

Rewritten from a narration by Tenzin Loden.

The Buddhist Legend of Rahu

Long, long ago, demons spread a poison across the land which killed many beings. The buddhas, in their compassion, created an antidote to the poison from the cosmic ocean and Mount Meru which granted immortality. It was given to Vajrapāṇi, the bodhisattva of energy, for safekeeping but the demigod Rahu managed to steal it. Rahu quickly drank all of the antidote and fled. However, the Sun and Moon had been watching so Rahu threatened them to keep quiet.

Vajrapāṇi soon returned and found the antidote missing. The Moon told him Rahu had taken it and so the god quickly rushed off after Rahu. When he finally caught up with Rahu, Vajrapāṇi hit him so hard with his vajra that Rahu's head was separated from his body. The poison in Rahu's body began to seep out and Vajrapāṇi drank it all to keep it from spreading to the humans. As a result he became totally black, losing all his golden luster.

Since he drank the antidote, Rahu had become immortal. He turned himself into a snake with nine heads and all his scars became eyes. In revenge for giving him up, Rahu ceaselessly chases the Sun and the Moon. When he catches them, there is an eclipse. Each time this happens, Vajrapāṇi comes to chase away Rahu and bring back the Sun or the Moon.

Rewritten from *Tibetan Astrology* by Phillipe Cornu.

Appendix C

Methodology

Research was based in McLeod Ganj, Dharamsala, India in April 2013. This location was chosen because of the large settlement of exiled Tibetans and Tibetan institutions such as the Men-Tsee-Khang of H.H. the Dalai Lama.

Information was collected both through literary sources and through oral accounts. Most written sources dealt only with Tibetan or Vedic astrology. Additional supplementary material was found through interviews with astrologers, but information gathered from these sources was primarily about astrology. To collect traditional folklore, elders in the community were interviewed. A home for the elderly in McLeod Ganj was approached in hopes of conducting interviews with the occupants. Unfortunately, permission for this was required from the Central Tibetan Administration and time constraints made gaining this permission impossible. Instead, informal interviews were conducted through a translator in the town. This was done by asking elders doing *kora* around the Dalai Lama's temple if they knew any stars, constellations or folktales about the night sky.

Interviews conducted showed that there exist more stories about the night sky and that most of these are known by elders in the community, not astrologers who are more focused on the application of astrology. Due to time constraints, more interviews could not be conducted and there is much room for further study.

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- Figure 1 – Chinese Horoscopes and Chinese Zodiac,
<http://chinesehoroscopeschinesezodiac.blogspot.in/2012/12/chinese-chi-life-force-energy-in.html> (April 26, 2013).
- Figure 2 – Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 54.
- Figure 3 – Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 144.
- Figure 4 – Johnson-Groh, Mara. April 2013.
- Figure 5 – Cornu, Philippe. *Tibetan Astrology*. Boston: Shambhala Publications, Inc., 1990, 130.
- Figure 6 – Beer, Robert. *The Encyclopedia of Tibetan Symbols and Motifs*. Boston: Shambhala Publications, Inc., 1999. Plate 60.
- Image on Page 26 – Johnson-Groh, Mara. April 2013.

Suggestions for Further Research

Tibetan ethnoastronomy is a complex subject as it is composed from so many traditions. When looking at the discipline, it is difficult to distinguish what was indigenously Tibetan and what came from foreign cultures. To add to this, much of what was indigenous has been replaced by foreign astrology. The central role astrology has assumed in Tibet over the years has only cemented the sideline position ethnoastronomy has been relegated to. As such, stories and folklore around traditional constellations are difficult to find. Though research to date has not revealed many stories, it has shown that such stories and folktales about constellations may still exist. However the challenge remains in finding such accounts. Few people seem to have knowledge, and those that do often do not remember whole accounts and usually only speak Tibetan. The Tibetan diaspora has only increased the difficulty in collecting stories as Tibetan settlements are spread throughout Asia and to a lesser extent worldwide. Tibetan ethnoastronomy is a topic that is fast disappearing with older generations who are in many cases the only people who still know these stories. In light of this, there is still potential for more research to be done in this area. More interviews can be conducted with Tibetans, particularly those of older generations and those from nomadic heritages, in order to collect these types of stories before they disappear entirely.



Collecting stories from Tibetan Elders in McLeod Ganj, Dharamsala, India