

## Astrology and Cosmology in the World's Religions

### Nicholas Campion

### Chapter 5

#### North Americas: the Great Spirit

*We are the stars which sing,  
We make a road for spirits,  
For the spirits to pass over.*<sup>1</sup>

The study of Native American cosmology, as with the study of all things Native American, is beset by political problems. While there is an abundance of literature, much of it intelligent and sympathetic, most of it is by westerners who inevitably cannot have an insider's understanding of Native American beliefs, and tend to fall into camps, for the best of intentions. First, there are those who attempt to particularise Native American cosmology making it special by rendering it unique and different to, for example, European thought. Second, are those who attempt to normalise Native American ideas by drawing out similarities to European concepts. All accounts of Native American cosmology should therefore be treated with moderate scepticism for western scholars cannot but help, however hard they try, to completely abandon their own educations. My own inclination, to state my own bias, as any anthropologist must, is towards the notion of similarities between Native American and other cosmologies, including western.<sup>2</sup>

The scholarly study of traditional North American cosmology dates back to the mid-to-late nineteenth century, but it is only since the 1970s that the area has attracted a dedicated group of academics. Anthony Aveni's *Native American Astronomy*, Von Del Chamberlain's *When Stars Came Down To Earth*, Jerry Gill's *Native American Worldviews*, Trudy Griffin-Pierce's *Earth Is My Mother, Sky Is My Father*, Dennis and Barbara Tedlock's *Teachings from the American Earth: Indian Religion and Philosophy* and Ray A. Williamson's *Living the Sky* and (with Claire Farrer) *Earth and Sky: Visions of the Cosmos in Native American Folklore*, are all highly recommended.<sup>3</sup> Kim Malville's *Guide to Prehistoric Astronomy in the Southwest* is an excellent introduction of the incorporation of celestial significance into architecture and rock-art.<sup>4</sup>

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<sup>1</sup> Von Del Chamberlain, 'The Algonquin Song of the Stars', <http://www.clarkfoundation.org/astro-utah/vondel/songofstars.html>, accessed 11 September 2010.

<sup>2</sup> For doubt on the difference between Native American and English concept of time, for example, see Thomas McElwain, 'Seneca Iroquois Concepts of Time', in Don McCaskill, *Amerindian Cosmology*, (Brandon and Edinburgh: Canadian Journal of Native Studies and the Traditional Cosmology Society, 1988), pp. 265-277.

<sup>3</sup> Anthony Aveni (ed.), *Native American Astronomy*, (Austin and London: University of Texas Press, 1975); Von Del Chamberlain, *When Stars Came Down To Earth: Cosmology of the Skidi Pawnee Indians*

For purposes of convenience, in view the complexity and richness of the material, I have divided American cosmology and astrology into two chapters, one for the North and the other for the Centre and South. First, though, I need to make some general comments of relevance to both. To accept the prevailing description of the Americas, north, south and central, as a 'New World' is to write into modern history a particular construction in which history is dated from the point of human colonisation. Yet, from the point of view of those people who inhabited the Americas prior to European colonisation, whether we call them 'Indians', 'indigenous peoples', Native Americans or 'First Nations', their existence could be traced back to their creation in some (again, in modern terminology), mythical, distant, past. In the minds of the pre-Columbian inhabitants of the Americas - those who occupied the continent prior to 1492 - their habitation of the Earth is as ancient as any that the Old World may have to offer. In certain fundamental respects, the two systems share significant features, including the widespread reverence for a supreme creator, near-universal worship of the sun, a belief that terrestrial society should be harmonised with the passage of time as revealed in the passage of the celestial bodies, the division of space and time into four and, in central America, an acceptance of the periodic, apocalyptic, destruction and rebirth of the world.

The geographical boundaries of American cultural zones are not precise. Most writers take the modern, arbitrary, boundary between the United States as indicative of a pre-Columbian reality and so, with a few notable exceptions, we tend to see books either on the Maya and Aztecs on the one hand, or the Native Americans of the modern USA and Canada on the other. However, the recognisable cultural zone represented by features of Mesoamerican culture such as monument construction, extended well north of the modern Mexican border, while an insistence on the importance of aspects of horizon astronomy – especially the rising and setting of the sun at particular moments of the year – appears to be universal. Additionally, of course, the people of North America were themselves diverse and might be settled or nomadic, and live in the Floridan heat or amongst the Arctic ice-sheets. I have therefore taken the culture of North America as a whole, while trying to do justice to its diversity.

The origins of human occupation in the Americas are difficult to date and subject to the constantly shifting discoveries of archaeologists. If we wish to identify pre-colonial cosmology we also have to identify and filter out possible western imports. Could the Skidi Pawnee belief

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of North America, (Los Altos and College Park, Maryland: Ballena Press and the Center for Archaeoastronomy, 1982); Jerry H. Gill, *Native American Worldviews: An Introduction*, (Amhurst, New York: Humanity Books, 2002); Trudy Griffin-Pierce, *Earth Is My Mother, Sky Is My Father: Space, Time and Astronomy in Navajo Sandpainting*, (Albuquerque: University of New Mexico Press, 1995); Trudy Dennis Tedlock and Barbara Tedlock (eds.), *Teachings from the American Earth: Indian Religion and Philosophy*, (New York: Liveright, 1975); Ray A. Williamson, *Living the Sky: The Cosmos of the American Indian*, (Norman: University of Oklahoma Press, 1987); and Ray A. Williamson and Claire R. Farrer (eds.), *Earth and Sky: Visions of the Cosmos in Native American Folklore*, (Albuquerque: University of New Mexico Press, 1992).

<sup>4</sup> J. McKim Malville, *Guide to Prehistoric Astronomy in the Southwest*, (Boulder: Johnson Books, 2008).

that the good are transported to the stars after death while the bad are turned to stone, be an adaptation from Christian missionaries? Alice Fletcher thought so, although precisely why is not clear: there is no Christian dogma that evil people are turned to stone, unless there is a confusion with their presumed descent to a subterranean Hell.<sup>5</sup> There is also, it has to be said, a certain confusion in the transcription of names, let alone their translation, as linguists struggled to communicate concepts English or another European language, using the best approximation to Native American words.

Our knowledge of Native American cosmology is fragmentary, partly due to the widespread destruction of material during the period of colonisation, but there are other culture specific problems awaiting the researcher. The First Nations of North America were systematically uprooted from their lands, brutalised and humiliated. The consequence is a resistance to outside investigators, fuelled by resentment at recent New Age adaptation of Native American lore, which is making research into, for example, archaeoastronomical remains, extremely difficult. Even a casual tourist question concerning, for example, the activities which might take place in a kiva, the building within which religious-shamanic activities take place, can be met by hostility. Understandable as such attitudes may be, and even though there are many exceptions, even the most welcome of western scholars frequently find that they are not trusted with the knowledge considered only to be available to insiders. To be fair, such secrecy is also borne of the belief, shared with so many traditions, that the sacred must be protected by discretion, a point of view summed up in the Jewish reluctance to speak the name of God, and the Islamic prohibition on representing him. This is especially true of initiatory knowledge, which loses its power and value if disseminated to the non-initiated.

Certain of the North American peoples, such as the Navajo and Skidi Pawnee have been subjected to western scholarship more than others, so many of my examples have been taken from the two. Also, although I agree wholeheartedly with Steve McCluskey, who said, quite rightly, that 'It would be a gross oversimplification to speak of a single Native American cosmology', it is, nevertheless, possible to draw out certain themes while at the same time being aware of the significant achievements and points of view of particular cultures. Similarities can tell us as much as differences.<sup>6</sup>

The literature on Native American religious cosmology is not great, but sufficient to draw certain conclusions. So, while Steve McCluskey is quite correct that there is no single cosmology, I would qualify this statement as follows: there is no single cosmological dogma, but there are recognisable, widespread assumptions, which we may identify as follows: the cosmos is an essential unity bound together sometimes by its origin in a single creator, but always by the

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<sup>5</sup> Alice C. Fletcher, 'Pawnee Star Lore', *The Journal of American Folklore*, vol. 16, no. 60, (Jan.-Mar. 1903), pp. 10-15.

<sup>6</sup> Stephen McCluskey, 'Native American Cosmologies', in Norris Hetherington (ed.), *Encyclopaedia of Cosmology*, (New York and London: Garland Publishing, 1993), p. 427.

interlocking relationships of all living beings amongst whom we must include not only animals, birds and fish, but water, plants, meteorological phenomena, such as clouds, winds and thunder, and the invisible beings whose existence one is only aware of through dreams and the imagination. Crucially for my current purpose, the sun, moon and stars form an important component of this living cosmos, engaged as they are in a symbiotic relationship with humanity, and with the repetitive patterns evident in their motions pointing to a world governed by a cyclical law of birth, decay and regeneration. This living, breathing, thinking, world is then described through myth and managed through ritual. Lastly, there is a tension between the predictable order of events such as solar and lunar cycles and the nightly rising and setting of the stars, on the one hand,<sup>7</sup> and the alarming incidence of unpredictable events, such as eclipses and comets, on the other.<sup>7</sup> The purpose of calendrical rituals managed by (at least amongst the Pueblo, specialist ‘sun-watchers’) was to actively ensure the continued smooth operation of the entire cosmos.

The ethnographic evidence suggests that the most antique item of star-lore in north America, one which is strongly suggestive of a shared legacy with northern Europe and Asia dating back to the Palaeolithic, relates to the Great Bear. This constellation, Ursa Major in its conventional Latin form, is one of the largest in the sky and is recognised as a Bear both in northern Europe and amongst certain North American peoples.<sup>8</sup> Aside from its status as one of the largest of the constellations, the Great Bear’s astronomical feature points to its potential religious significance. From the point of view of any observer in the northern hemisphere, it never dips below the horizon. Instead – and this is a simple experiment which anyone with the energy to spend a sleepless night outdoors can conduct, it rotates around a central point in the night sky (now occupied by the pole star). This point therefore tends to become representative of stillness, symbolic of an absence of movement through either time or space. This is certainly how the Egyptians saw it when they described the stars which orbit it as immortal, as free from the patterns of birth and death which pervaded the universe. For Ros Frank this point of stillness was the upper part of the pillar on which the world rotates, and the focus of the ancient shamanic bear cult for which she finds evidence in modern folklore.<sup>9</sup> The constellation was known sometimes

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<sup>7</sup> Peter Nabakov, *A Forest of Time: American Indian Ways of History*, (Cambridge: Cambridge University Press, 2002), p. 43.

<sup>8</sup> William B. Gibbon, ‘Asiatic Parallels in North American star lore: Ursa Major’, *Journal of American Folklore*, vol. LXXVII, (1964), pp. 236-50; Owen Gingerich, ‘The Origin of the Zodiac’, in *The Great Copernicus Chase and other adventures in astronomical history*, (Cambridge, Mass.: Sky Publishing Corporation and Cambridge University Press, 1992), p. 10. Also see Krupp, E.C., *Beyond the Blue Horizon: Myths and Legends of the Sun, Moon and Stars and Planets* (New York and Oxford: Oxford University Press, 1991), esp. p. 239; and Joseph Campbell, *Historical Atlas of World Mythology*, Volume 1: ‘The Way of the Animal Powers’, Part 2: ‘Mythologies of the Great Hunt’, (New York: Harper & Row, 1988).

<sup>9</sup> Roslyn M. Frank, ‘Hunting the European Sky Bears: When Bears Rule the Earth and Guarded the Gate of Heaven’, in Vesselina Koleva and Dmiter Kolev (eds.), *Astronomical Traditions in Past Cultures*, Proceedings of the First Annual General Meeting of the European Society for Astronomy in Culture,

as the Seven Brothers - over an area which ran north-south from Saskatchewan to Oklahoma - but more often as the Bear. In some stories the two motifs overlap. For example, one version among the Blackfoot, Wichita and Crow, involves seven brothers and two sisters, one of whom becomes a bear and chase the others, who then take refuge as the stars of the constellation; the sky, in this sense, offers safety and reassurance.<sup>10</sup> The notion of seven siblings suggests an exchange of motifs with the equally ancient star group, the Pleiades whose standard myths involve a chase involving seven sisters, while the theme of a Magic Flight, in which an people being cased place a series of obstacles in the path of the chaser is reminiscent of a wide body celestial journey stories in which safety or salvation is found in the sky. The notion of Paleolithic links between the northern areas of Europe, Asia and America was first proposed by the folklorist Charles G. Leland, who travelled amongst the Algonquin Indians, collecting stories, poems and songs which he published in 1884.<sup>11</sup> One is a beautiful evocation of the shamanic relationship between the Algonquin and the sky.

We are the stars which sing,  
 We sing with our light;  
 We are the birds of fire,  
 We fly over the sky.  
 Our light is a voice.  
 We make a road for spirits,  
 For the spirits to pass over.  
 Among us are three hunters  
 Who chase a bear;  
 There never was a time  
 When they were not hunting.  
 We look down on the mountains.  
 This is the Song of the Stars.<sup>12</sup>

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Smolyan, Bulgaria, 31 August-2 September 1992, (Sofia: Institute of Astronomy, Bulgarian Academy of Sciences and National Astronomical Observatory, Tozhen, 1993, pp. 116-142; Roslyn M. Frank, 'Hunting the European Sky Bears: Hercules Meets Harzkume', in Cesar Esteban and Juan Antonio Belmonte (eds.), *Astronomy and Cultural Diversity, proceedings of the 1999 Oxford VI Conference on Archaeoastronomy and Astronomy in Culture*, (Tenerife: Oranismo Autonomo de Museos del Cabildo de Tenerife, 2000), pp. 169-175; Roslyn Frank, 'Hunting the European Sky Beers: A Proto-European Vision Quest to the End of the Earth', in John W. Fountain and Rolf M. Sinclair (eds.), *Current Studies in Archaeoastronomy: Conversations Across Time and Space*, (Durham NC.: Carolina Academic Press, 2005), pp. 455-74.

<sup>10</sup> William B. Gibbon, 'Asiatic Parallels in North American star lore: Ursa Major', *Journal of American Folklore*, vol. LXXVII, (1964), p. 237.

<sup>11</sup> Charles G. Leland, *The Algonquin Legends Of New England Or Myths And Folklore Of The Micmac, Passamaquoddy, And Penobscot Tribes*, (Boston: Houghton, Mifflin And Co., 1884).

<sup>12</sup> Von Del Chamberlain, 'The Algonquin Song of the Stars', <http://www.clarkfoundation.org/astro-utah/vondel/songofstars.html>, accessed 11 September 2010.

William Gibbon, who is responsible for significant cross-cultural comparisons between European, Asiatic and American astronomy, pointed that the Milky Way, the ‘stars that sing’, was identified as a path for flights of birds amongst the Algonquins of Quebec and Ontario, although not amongst other north Americans, as well as amongst Finns and Estonians, as well as tribes of Turco-Tatar stock.<sup>13</sup> The question, which is ultimately unanswerable, is whether the bird-Milky Way analogy is the legacy of some shared story told by Homo Sapiens tens of thousands of years ago in central Asia, and preserved only by selected groups, including the Finns and Algonquin, or whether there is a coincidence and that, sooner or later two peoples in different parts of the world were bound to independently come up with the connection. In the final analysis, the widespread occurrence of the Bear is convincing and there is no theoretical objection to a shared origin. This is in spite of the fact that there is other evidence suggesting that a Bear constellation may have been located elsewhere. Von del Chamberlain suggested that, for the Skidi Pawnee, the Bear might actually corresponded to Sagittarius, a constellation entirely unrelated to the Great Bear.<sup>14</sup> The argument is tenuous but is enough to remind us of the caution required when reliant on second-hand ethnographic evidence.

The most common and near-universal theme of American religious astronomy is the worship of the Sun. Here, we do not need to worry about the transmission of ideas, for reverence for the sun is a feature of virtually all religious traditions. The Native peoples of North America tend to accept the existence of a primeval Great Spirit, a monotheistic creator, who is sometimes equated with the sun. First, though, a word of caution. The use of the word monotheism, loaded as it is with Judea-Christian preconceptions may be used in such a way as to shape Native American ideas so that they are seen as equal in value to western, a tendency to which both Native Americans and western scholars may be susceptible; on the other hand, neither should we rule out the possibility that there is a genuine similarity.<sup>15</sup>

The Skidi Pawnee creator, a version of the ubiquitous Great Spirit, was Atius Tirakittako, a name which may be translated as ‘Father Highest-Power Sitting Above’. That the spirit is Wakan Tanka in Lakota, Ababinili amongst the Chicksaw and Gitchi Manitou in Algonquian points immediately to possible differences of detail within the overall conception. To the Blackfoot he is the Old Man while that the Hopi Spirit, Spider Woman, is female points to other possibilities. Amongst the Inuit the Spirit is Torngasoak, the most powerful of all spirits - although not all-

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<sup>13</sup> William B. Gibbon, ‘Asiatic Parallels in North American star lore: Milky Way, Pleiades, Orion’, *Journal of American Folklore*, vol. 85, no. 337, (1972), pp. 236-7.

<sup>14</sup> Von Del Chamberlain, *When Stars Came Down To Earth: Cosmology of the Skidi Pawnee Indians of North America*, (Los Altos and College Park, Maryland: Ballena Press and the Center for Archaeoastronomy, 1982), p. 129.

<sup>15</sup> For insight into the issues see William K. Powers, ‘Cosmology and the Reinvention of Culture: the Lakota Case’, in Don McCaskill, *Amerindian Cosmology*, (Brandon and Edinburgh: Canadian Journal of Native Studies and the Traditional Cosmology Society, 1988), pp. 165-180, esp. p. 177, and the discussion Benjamin Lee Whorf, ‘An American Model of the Universe’, in Dennis Tedlock and Barbara Tedlock (eds.), *Teachings from the American Earth: Indian Religion and Philosophy*, (New York: Liveright, 1975), pp. 121-129.

powerful. Some prefer the term Great Mystery to Great Spirit, on the grounds that the term 'Mystery' defuses anthropomorphic associations inherent in the word 'Spirit'. The truth seems to be that the North American supreme deity fulfils the functions which tend to have been separated amongst different varieties of creator elsewhere. S/he, or It, if we prefer, is at once the impersonal force which holds the world together, permeating the entire cosmos, and the personal, supernatural parent, who provides a protective role, teaching the first humans the skills and secrets of survival and guiding those who observe the harmonies of the natural world. S/he is both a single entity and a composite of all that exists.

The variety of cosmogonies amongst the Native Americans is as great as that we find in any other continent. The creation of the world often begins in the sky, but rarely, if ever, suggests creation *ex-nihilo*. In some, the process begins with an original supreme creator, imagined not as a personal god, but as an original form of creation. The Hopi story is particularly poetic, beginning with nothing but infinite space

The first world was Tokpela [Endless Space].

But first, they say, there was only the Creator, Taiowa. All else was endless space. There was no beginning and no end, no time, no shape, no life. Just an immeasurable void that had its beginning and end, time, shape, and life in the mind of Taiowa, the Creator.<sup>16</sup>

Sometimes the heavens have a structure which appears to be astronomical in nature. The *Book of the Hopi*, for example, refers to the seven heavens, which invariably in other cultures, refers back to the sun, moon and the five visible planets.<sup>17</sup> Amongst the Iroquois and Hurons, the chief deities were those who embodied the power of nature, Wind and Thunder and Echo. Thunder, the highest god, lived above the clouds in the space occupied by the sun, moon and stars. Generally all the peoples of the Americas, in common with much of the rest of humanity, believed in an upper world, the home of the heavenly powers, a lower world populated by the dead, and the middle world, inhabited by people, animals, plants and spirits.

The notion of order in the cosmos frequently functioned as an organisational justification for social and political affairs, what we might call, as Trudy Griffin Pierce did, a 'patterned mirroring' between sky and earth.<sup>18</sup> On this, all anthropologists agree. It is only the details that are a matter of uncertainty and disagreement, partly because westerners have too often jumped to conclusions, but also because their informants are often unsure of the origin of their sky-traditions.

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<sup>16</sup> Frank Waters, *Book of the Hopi: the first revelation of the Hopi's Historical and Religious Worldview of Life*, (London: Penguin, 1977), p. 3.

<sup>17</sup> Frank Waters, *Book of the Hopi: the first revelation of the Hopi's Historical and Religious Worldview of Life*, (London: Penguin, 1977), p. 3.

<sup>18</sup> Trudy Griffin-Pierce, *Earth Is My Mother, Sky Is My Father: Space, Time and Astronomy in Navajo Sandpainting*, (Albuquerque: University of New Mexico Press, 1995), p. 63.

The cosmological organisation of the Skidi – or Skiri - Pawnee, who were originally settled along the Missouri river before being ejected by white settlers, is a case in point. Aspects of their cosmology, including the Morning Star sacrifice, were noted as early as the 1820s and, in the 1980s, over a century and a half's worth of observations were used by Von Del Chamberlain in order to reconstruct a systematic account of Skidi Pawnee religious astronomy.<sup>19</sup> Even given the uncertainty in the evidence, which makes any precise account of Pawnee astronomy highly speculative, it is apparent that their cosmology emerged from general cosmogonic principles into a very precise astrology: the term astronomy is anachronistic in this sense because it is clear from the earliest systematic work which was published in the 1900s by Alice Fletcher, that the Pawnee were concerned with actively living in a meaningful and harmonious relationship with a universe governed by obvious and repetitive celestial laws.<sup>20</sup>

The Zuni, a Pueblo people (the Pueblo being the characteristic settlement of much of what is now the southwest of the USA) were typical. For Jane Young, the movements of the celestial bodies and conceptions of the structure of the universe provided a paradigm by which the Zuni organised all aspects of their lives, the most dramatic evidence being in their rituals and rock-art.<sup>21</sup> The Zuni had two seasons, one of which began at the winter solstice, the other at the summer, and each consisted of six months conceived of in two pairs: each month in **oen** season bore the same name as one in the other. The duality of night/day and winter/summer and the two war gods (the morning and evening stars) was expanded into a fourfold cosmos when both rising and setting points of the winter and solstice suns were taken into account, and a six-fold scheme when the zenith and nadir – the highest and lowest points of the sky, were added. Their sacred and calendrical rituals were focused on six kivas which represented not just to six directions but six colours, rain-hearing winds, water-bringing birds and rain-priests.

In spite of our best efforts, there is still doubt about the identity or location of many of the Native American constellations. I have already noted that Von Del Chamberlain equated the Skidi Pawnee constellation of the Bear with Sagittarius, which is distant from and entirely unrelated to, the conventional Great Bear constellation. But, as Chamberlain himself conceded, the identification is highly speculative. Even if we wanted to, we cannot reconstruct a precise religious cosmology in the Native American sky. Far more important, it seems, is the numinous power of the stars, with whom one's personal relationship was more important than questions of mathematical precision.

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<sup>19</sup> Von Del Chamberlain, *When Stars Came Down To Earth: Cosmology of the Skidi Pawnee Indians of North America*, (Los Altos and College Park, Maryland: Ballena Press and the Center for Archaeoastronomy, 1982).

<sup>20</sup> Alice C. Fletcher, 'Pawnee Star Lore', *The Journal of American Folklore*, vol. 16, no. 60, (Jan-Mar 1903), pp. 10-15; Alice C. Fletcher, 'Star Cult among the Pawnee – a Preliminary Report', *American Anthropologist*, New Series, vol. 4, no. 4, (Oct-Dec 1902), pp. 730-736.

<sup>21</sup> M. Jane Young, *Signs from the Ancestors; Zuni Cultural Symbolism and Perceptions of Rock Art*, (Albuquerque: University of New Mexico Press, 1988), pp. 95-103.

After the sun and moon, the most important of the celestial bodies was Venus, a significant planet in all cosmologies due to its periodic brilliance either in the western evening sky after dusk or the eastern morning sky before sunrise. However, while some designations are obvious, others are not. It may be apparent that a star described as ‘a great warrior, painted red, carrying a club in his folded arms, and having on his head a downy feather’ is Mars.<sup>22</sup> However, the identity of the Morning Star, as Melburn Thurman, has made clear, is entirely uncertain and its identification as Venus is a consequence of the simplifying instincts of the first westerners to encounter the Pawnee.<sup>23</sup> The Morning Star may well be Venus on occasion. But it could equally be Mars, or it might, some think, be Jupiter.

We can face this problem from a number of directions. One is that the Pawnee priests deliberately obfuscated, refusing to reveal secret knowledge to outsiders. In a context in which even the name of the celestial father, Tirakittako, was spoken only in hushed tones, even amongst insiders, such discretion is plausible. Another solution identifies 19<sup>th</sup> century Pawnee astronomy as the fossilised remnant of a tradition which might date back to the 14<sup>th</sup> century, or earlier, and which was no longer understood. A third possibility is that the Pawnee, unlike their western interrogators, were simply not concerned with precision, but with meaning. They were speaking in a language of symbols – yellow star, black star, morning star, and so on – symbols which were multivalent. Not only might such symbols have multiple meanings, but they might transfer between different celestial bodies. A well-understood analogy from the Near-East is the relationship between the Sun and Saturn, in which the latter was called the ‘star’ of the former, and in which a single deity might have multiple celestial affiliations.<sup>24</sup> Therefore the ‘Morning Star’ may simply be any one of the planets which takes a role as bright pre-dawn star, achieving its power by heralding the rising sun. Alternatively, when we are told that the Pawnee have two Morning Stars, brothers, and that one named Hopirikutsu, ‘the mighty star of fire’, is red, with a half black, half red face, and demands sacrifice, while the other is kindly and white, the inference is that both Mars and Venus are Morning Stars.

Native American astrology was intended to harmonise human life with celestial powers, and was largely collective, expressed through the ritual pattern of life. However, as stars and people were both alive, the relationship between them could be individual and dynamic. We are told that, if a Skidi Pawnee child is born at night then the stars are observed, but the only interpretative factor is the weather: a calm night followed by a clear morning signified a healthy, problem-free life, but violent weather indicated the opposite. The relationship continues into adult life. According to one of Alice Fletcher’s Pawnee informants, ‘it often happens that when a person goes out on the

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<sup>22</sup> Alice C. Fletcher, ‘Pawnee Star Lore’, *The Journal of American Folklore*, vol. 16, no. 60, (Jan-Mar 1903), p. 11.

<sup>23</sup> Melburn D. Thurman, ‘The Timing of the Skidi-Pawnee Morning Star Sacrifice’, *Ethnohistory*, vol. 30, no. 3, (Summer 1983), pp. 155-163.

<sup>24</sup> R. Campbell Thompson, *The Reports of the Magicians and Astrologers of Nineveh and Babylon in the British Museum*, 2 Vols, (London: Luzac and Co., 1900), p. 176; Nicholas Campion, *A History of Western Astrology*, Vol 1. The Ancient World, (London: Continuum, 2009), ch. 4.

hills at night to fast and to pray to the powers above, he will, as he is praying, become conscious that a particular star is looking at him'.<sup>25</sup> The consequence of being singled out by an individual star in such a manner would invariably be a vision followed by the requirement to implement whatever instructions the star sends. The consequences were not always desirable. Fletcher's informant told her of one incident in which a star made a boy crazy. That this was a familiar problem is suggested by the immediacy with which a healing ritual was conducted. The doctor, by whom we might read shaman or priest, took the boy outside and waited for the guilty star to rise. When it did so, the boy was painted black, covered in white spots and wrapped in a fawn skin, and a star was painted on his forehead; the treatment was successful as long as the star remained on his forehead, but when it wore off he went mad again.

The typical division of time and space into four, which appears to be an (almost) universal feature of human culture, occurs across the Americas. From the north of what are now the states of North and South Dakota, the Lakota, according to Tyon, one of their wise men, recorded in the early twentieth century, 'grouped all their activities by fours. 'This', the sage continued, 'was because they recognised four directions: the west, the north, the east, and the south; four divisions of time: the day, the night, the moon and the year'.<sup>26</sup> The list continued to include every feature of the natural or supernatural world imaginable: the four parts of a plant (root, stem, leaf, fruit), kinds of things that breathe (those that crawl, fly, walk on two legs and walk on four legs), ages of human life (infancy, childhood, adulthood, old age), things above the world (sun, moon, sky and stars) and the kinds of god (the great, their associates, the gods below them and the spirits). The Navajo surrounded their world with four sacred mountains, each associated with colours and stones and kinship clans. East, for example, was white, a white shell, and the Leaf Clan.<sup>27</sup>

Concepts of temporal progression do not seem to occur amongst the peoples of North America for whom time may be seen as atemporal, or ahistorical, in the sense that the passage of time does not require any kind of evolution or qualitative change. We shouldn't imagine that time doesn't matter, though, for it has to be remembered that observation of the calendar festivals is crucial. Nevertheless, space is far more important as a guide for one's relationship with the cosmos than is often the case if one focuses simply on astronomy. This is as it often is when the focus of one's engagement with the sky is through the horizon. As the rising (or setting) sun shifts its position between midwinter and midsummer it carves an arc along the horizon, encoding time in the landscape. From a particular vantage point the daily sequence of risings and settings can become its own epic drama, now appearing over a distant mountain top, now a valley. The primary referent on the horizon, and which enables the division of space into four quarters, is the

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<sup>25</sup> Alice C. Fletcher, 'Pawnee Star Lore', *The Journal of American Folklore*, vol. 16, no. 60, (Jan-Mar 1903), p. 11.

<sup>26</sup> Dennis Tedlock and Barbara Tedlock (eds.), *Teachings from the American Earth: Indian Religion and Philosophy*, (New York: Liveright, 1975), pp. 215-6.

<sup>27</sup> Ingrid van Dooren, 'Navajo Hohgan and Navajo Cosmos, in Don McCaskill, *Amerindian Cosmology*, (Brandon and Edinburgh: Canadian Journal of Native Studies and the Traditional Cosmology Society, 1988), pp. 260-2.

location of the solstice points, the locations on the horizon at which the sun rises on the shortest day of the year, and the longest. The additional points - at which the sun sets on the solstices - are often, if not always, as important, and are directly opposite the rising points. This solar grid formed the basis of a fourfold division of space which contrasts with the four cardinal points - north, south, east and west - which commonly divide time and space into four in Europe and Asia. The use of stars to time rituals is apparent in some cultures, such as the Mescalero Apache timing of their female puberty ritual. According to Claire Farrer,

It's all in the stars...Arcturus sets approximately one hour before timing begins with the Big Dipper. Alkaid ticks of hours by degrees (and) by the time that Capella is first visible... all the night's songs should be finished and a rest break called... as the stars fade and the sun once more fulfils the promise of the Creator, the girls will be painted [with solar symbols] the crowd will be blessed (and) the girls will complete the last of their runs to the east and around the ceremonial basket.<sup>28</sup>

The living, moving structure of the cosmos was enacted in rituals designed, as in all religious cultures, to harmonise with and pay respect to, the greater life-field of which humans are a part. The ritual enactment of the fourfold cosmos was observed by the anthropologist Julian Steward in the 1920s, when he spent time with the Hopi of First Mesa.<sup>29</sup> Steward described a series of three winter festivals, the Wöwöchim, the Soyala, celebrated at the winter solstice, the shortest day, and the Powamu. All three festivals feature corn, a staple of the diet for the Hopi as much as for the central Americans, a reminder of the centrality of food as a requirement for survival, an obvious statement perhaps but one often overlooked by western scholars conditioned by centuries of high theological debate into the view that debates over the nature of deity are more important than physical survival. The Wöwöchim was significant as the occasion for the initiation of boys into manhood, but Steward's description of the Powamu contained more astronomical detail. According to Steward's account, the official observations were conducted by a 'Sun chief or watcher', which may have been a position which was both hereditary and, while being exercised, took the observer outside of the usual clan structure.<sup>30</sup> The Sun watcher then entered into the same kind of universal, timeless, shamanistic condition occupied by many priests at significant moments. This is not to say that he entered any alternate consciousness but that he was detached from the ordinary controls of social existence. The Powamu commenced with the first appearance, which would have been in the early evening shortly after sunset, of the new moon in late January or early February, corresponding to the Greco-Babylonian sign, Aquarius. Already, at the previous full moon the Kachina chief had planted a box of corn which

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<sup>28</sup> Claire Farrer, 'Star Clocks: Mescalero Apache Ceremonial Timing', in Don McCaskill, *Amerindian Cosmology*, (Brandon and Edinburgh: Canadian Journal of Native Studies and the Traditional Cosmology Society, 1988), p. 235.

<sup>29</sup> Julian H. Steward, 'Notes on Hopi Ceremonies in their Initiatory Form in 1927-8', *American Anthropologist*, New Series, vol. 33, no. 1, (Jan.-Mar. 1931), pp. 56-79.

<sup>30</sup> Julian H. Steward, 'Notes on Hopi Ceremonies in their Initiatory Form in 1927-8', *American Anthropologist*, New Series, vol. 33, no. 1, (Jan.-Mar. 1931), p. 59.

is then distributed in the early days of the ceremony, its healthy sprouting, Steward speculated, being an omen for the coming year. A kachina is a spirit being, a reminder that the astronomy of the situation requires both ritual enactment and co-operation with invisible intelligences. The astronomy was visual and the ceremony's start depended on an actual observation of the moon. Steward recorded:

January 22. On this day the new moon appeared. Kachina chief looked for it, but was unable to see it on account of clouds. He must actually see it.

January 23. The Kachina chief looked again for the moon and was successful in seeing it. This day is not counted as part of the ceremony. The following day is the first day.<sup>31</sup>

The astrology operating here is one of signs, involving an active dialogue between sky and earth. The human act cannot actually start until the time is right, and this information, which must be revealed by the moon. While it is clear, then, that there is a notion that time unfolds in rhythms and patterns, their significance requires an act of communication between moon and human: human sees moon and moon sends information to human. Once the moon had been seen, the 'raising up of the sun' ritual could be performed, in which one man took the part of Ahül, the Sun kachina, beginning with nightfall and then welcoming the rising sun, before visiting significant kivas, houses and natural locations, observing the four directions, spreading corn paste, buying prayer sticks and so on. The ceremony then proceeded for 17 days of events, sometimes serious, at others playful, often contemplative, but also festive, until the power of the life-world has been restored.

If cosmology was enacted in ritual, it was also embodied in the built environment. According to Jerry Gill, many, if not 'most', Native Americans orient their dwellings to face the rising sun.<sup>32</sup> One might imagine that this tendency of purely natural origin: what better way to wake up than with the first rays of light. On the other hand, there is no need to face the sun in order to either experience morning light or wake up; it is circadian (daily) rhythms in body chemistry and physiology, which cause human beings to make that crucial shift from sleep to wakefulness and no direct exposure to the sun is necessary for the resulting hormonal event to take place. Besides, it is also perfectly natural to pitch one's dwelling with a view of the most inspiring landscape feature or, if the sun is the crucial factor, to the south, in order to enjoy the maximum benefits of the sun's heat and light – an important consideration for northerners. A fixation with the east is, then, a religious imperative. It results from an understanding that the quality of time varies throughout the day and at dawn, one partakes of the source of the life itself. Celestial relationships could also be much more elaborate. The Skidi Pawnee, for example, who, as we have seen had a sophisticated but, by modern astronomers, little understood, system of

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<sup>31</sup> Julian H. Steward, 'Notes on Hopi Ceremonies in their Initiatory Form in 1927-8', *American Anthropologist*, New Series, vol. 33, no. 1, (Jan.-Mar. 1931), p. 60.

<sup>32</sup> Jerry H. Gill, *Native American Worldviews: An Introduction*, (Amhurst, New York: Humanity Books, 2002), p. 17.

constellations, embodied stellar patterns in the layout of their villages.<sup>33</sup> Domestic architecture, as well as religious and social, incorporated cosmological principles (such as the use of four supporting posts to represent the four-fold structure of time and space), even though preferences varied between both circular and square forms. Of a purely ritual/astronomical nature are the so-called medicine wheels, the surviving examples of which are found mainly along the foothills and plains to the west of the northern range of the Rockies, with most in the Canadian province of Alberta, suggesting the phenomenon is strongly regional. The best known example is the Big Horn Medicine Wheel in Wyoming, which consists of a central cairn of around 4 meters in diameter, surrounded by 28 spokes, consisting of stones, extending about 12 metres to an outer circle which contains, or is surrounded by, six other stone cairns. These can be used to measure both sunrise and sunset on the summer solstice as well as the rising of three bright stars, Aldebaran, Rigel, and the brightest of all the fixed stars, Sirius.<sup>34</sup> The medicine wheels in general are difficult, if not impossible to date but would have functioned as timers for the ritual year particularly, perhaps, for the Sun Dance, ceremony which, for some tribes, marked the summer solstice.

On a more massive scale, the cosmological monument building practices of Mexican civilisation are evident in the extensive structures of the Puebloan culture in the southwest of the USA, of which the best known are the ruins at Chaco Canyon, in New Mexico, which were constructed between around 850 and 1150 CE.<sup>35</sup> Key structures, such as Casa Rinconada, the Great Kiva at Chaco Canyon, were a model of the creation, of the unity of time and space, and the function of rituals performed at critical points of the year, such as the solar solstices, re-enacted the birth of humanity, as well as of the world as a whole, in a moment which enabled the process of life to continue.

From Alaska to Florida, and Labrador to California, Native American cosmology was based on an essential unity between all things and its astrology operated on the premise that humanity was a willing participant in a dialogue with the stars, a partner in the endlessly repeating patterns of the sun and moon and the wandering paths of the planets. Native American astrology was, in terms of classical typology, 'electional', and designed to identify auspicious moments for conducting the rituals which tied their societies to the heavens. It was also magical, in the sense that structures which incorporate celestial principles function as talismans, protecting humanity by calling heaven down to earth. In this sense for the Native Americans, to live meant to act.

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<sup>33</sup> Ralph N. Buckstaff, 'Stars and Constellations of a Pawnee Sky Map', *American Anthropologist*, New Series, vol. 29, no. 2, (Apr. 1927), pp. 279-285; Patricia O'Brien, 'Prehistoric Evidence for Pawnee Cosmology', *American Anthropologist*, New Series, vol. 88, no. 4, (Dec. 1986), pp. 939-946.

<sup>34</sup> John A. Eddy, 'Medicine Wheels and Plains Indians Astronomy', in Anthony Aveni (ed.), *Native American Astronomy*, (Austin and London: University of Texas Press, 1975), pp. 149-53.

<sup>35</sup> J. McKim Malville, *Guide to Prehistoric Astronomy in the Southwest*, (Boulder: Johnson Books, 2008).