

The Sky in the World View of Indigenous Australians

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A worldwide common feature of the cultural evolution seems to be that the first engagement of humans with the starry sky has led to the making of star constellations (images). Undoubtedly, they root in the different regional, cultural and religious distinctions which leads to differences between the star constellations. However, the motives of exploring the sky are very similar. In the following this will be illustrated with the example of the Australian Indigenous peoples. In two journeys to Australia the author approached this topic.

Indigenous Australians – Cultural background

For about 40.000 years Indigenous Australians have lived on the Australian continent. Before colonisation by the Europeans approximately 300 language groups (tribes/ nations) had been populating the continent. In contrast to the so called “occident”, there had barely been any contact to cultures outside the continent, allowing an independent development of Aboriginal cultures. Consequently, Australia’s Indigenous cultures may be the world’s oldest cultures alive.

Traditional Aboriginal tribes were nomads: along their personal songlines they moved through the country, setting up their temporary camps in different places, depending on the season. They lived from hunting, plants, insects and worms and from the fruits growing on the land. The basis of this way of live is an intense connection with the land, with “mother earth” and with nature, which is holy to them. Everyone relied on each other which led to a strong social network with strictly regulated rights and duties of its members. The relationship between the different tribes can be characterized by exchange on the one hand and warfare on the other hand.

This complex network of regulations, which is the foundation of their every day live, their identity and culture in the Western world is called “Dreamtime”. For non-Indigenous people this term might raise a false impression, since “Dreamtime” does not stand for something transcendental or supernatural, but it characterises the mutual relationship between humans, animals, nature, land and sky. Even though the different tribes use different terms for this concept, the meaning stays the same. Everything is perceived as a unit, which was created by the ancestors before mankind came to live on the land. Other than the Genesis of the

Bible, most of the creating myths assume a world that had already existed before mankind and which was supplied by social, material and spiritual input by the Creators (e.g. the Rainbow Snake).

Similarities and Differences

The relationship of the Indigenous peoples to the starry sky, on the one hand, appears to be very similar to the according procedures in different regions of the world, especially in Western Europe. On the other hand, there are fundamental differences. Similarly to other cultures, in Aboriginal Australia, the sky was populated with figures created by imagination. These, however, are closely related to the people's every day life. Rather, the stories around these "starry images" are rooted in every day life experiences of the people and not "literary myths" like the starry constellations of the classic Greek starry sky. Just as in Western cultures, the sky is used as a cosmic clock, i.e. the relationship between visibility of different constellations of stars and the seasonal alternating occurrences in flora and fauna.

The construction of these images, however, is very different to the creation of images in the occidental tradition. Whereas in Western view the constellations are exclusively interpreted as silhouettes, in Indigenous cultures the single object (star) stands for an entire figure. In our culture this only applies for the Pleiades.

There is no common interpretation of the starry sky in Indigenous Australia. The different cultures have included different stars into the images and interpreted them according to their specific culture and every day experiences. Most "reliable"¹ information about the Indigenous sky Western world has about Northern Australia, especially the Northern Territory. This information was collected by Western explorers in the middle of the 20th century, mainly in Arnhem Land and some Islands offshore Arnhem Land. In this area, contact with the Western world, which in other regions was the beginning of a systematic destruction of Indigenous cultures, was considerable late. Therefore, the knowledge gathered from the Northern region can be considered quiet "reliable", i.e. the interpretation of the images of the sky has stayed nearly the same for the past couple of hundred years. Reports from other regions of Australia, especially from Southern and Eastern Australia date back to the 19th century. These reports, however, lack astronomic foundations and were not conducted by means methods used in ethnographic field research, which were developed only later. Extensive knowledge is due to several America-Australian expeditions lead by the Australian Charles Mountford (1890-1976). In 1948, 1949 and 1952 he travelled to Arnhem Land returning with an array of bark paintings of the Indigenous starry sky including the explanations by the owners of the paintings. Today, most of the paintings are held in the South Australian Museum in Adelaide

Fishermen, Fish and Women in the Sky

All Indigenous cultures view the sky as a mirror of the earthly landscape – the sky as a world which in many respects is ruled by the same laws as life on earth. At the same time, the sky is home to the ancestors; hence, there is a connection between the sky and the kinship system of the people. Some examples illustrate this relationship. Let's begin with the well-known "Southern Cross". This group of four stars and a couple of neighbouring objects tell a story. The two brightest stars of the image, which are α Cru and β Cru depict two brothers who have caught a gigantic fish with their harpoon. The Milky Way "flowing" in this area is said to be the sky river carrying prospering fish and water plants. The stars γ Cru and δ Cru

¹ The quotation marks emphasise that the word *reliable* is to understand within a Western framework of conducting scientific research. Hence, *reliable information* is such information that stems from sources we can trace back and that we would understand as "true". For the Indigenous people, of course, all information and knowledge passed on in their traditional way is reliable to them, because it fits their framework of the structure of knowledge.

are the fire places where the fish is prepared. The hunting booty appears on the image as well: The fish is what in Western Astronomy is called the bag of coals, the dark core in the constellation Crux. Nearby two friends have gathered (α and β Cen) who have just returned from hunting. This is symbolised in four boomerangs in the painting. Whereas the representation of the six stars that are incorporated into the story is topographically comprehensible, it is different with a scene of the stars around the European constellation "Orion": The three most prominent stars of Orion's belt ordered angular are the three fishermen burum-burum-runja. They are sitting in a boat. Even the stars of the Pleiades on the firmament (in our constellation "Taurus"), which is considerably far away, are incorporated into the interpretation: They are the women, the wutarinja. This shows how topography in the images is of little importance.

Astonishing is the inclusion of the dark core into the hunting story of the "Southern Cross". Even more amazing is the inclusion of planets into the stories around the stars which are directly related to the fixed stars. As an example, on Groote Eylandt, the Venus is seen as a man and the Jupiter as a woman. Their children, however, are the stars λ and ϵ Scorpii, which are fixed stars. Thus, in the story the parents are very seldom near their children, the mother even less often than the father. The two Magellanic Clouds are interpreted as shelter of an old couple which cannot provide for themselves anymore. Food is brought to them by the other star people – a demonstration of the laws of social interaction in earthly Indigenous cultures.

Sun, Moon and Tide

Sun worship and stories about the sun play a subordinate role. This is presumably because there was no fear about the sun disappearing in wintertime because of Australia's geographical position. The sun is described as a woman who powders her body with red ochre before rising in the morning. Once arisen, she shakes off the powder from her body and dyes the morning clouds. Equipped with a torch of burning bark she travels through the firmament and in the evenings returns to her home through a subterranean valley. From there she starts her journey the next day.

The moon is considered male among all Indigenous groups. The stories in which the moon plays a part are about the phases of the moon and the tides, a relationship which was apparent especially to the coastal people. The growth of the moon was explained in terms of water floods of the ocean pouring into the moon. Declining moon meant a pouring out of the water back into the ocean. This circle at the same time was the explanation for the tide. The fact that there was high tide even at new moon did not appear to be a contradiction: The explanation is that even though a small area of the moon is lit, the entire form of the moon can be seen as it is filled with water ("ash-grey moonlight").

Besides these explanations which are based on natural observation there are literary stories, which view the moon as a lonely man longing for a woman. That's why the moon returns to the earth in a never ending circle. Repeatedly he approaches two women in a canoe who reject him leaving him no choice but to sink back into the water. This continuing pattern explains the disappearance and return of the moon in its different phases. The motive of the moon and his women finds expression in the colourful paintings of the Indigenous peoples.

The Cycles in the Sky and on Earth

The utilisation of astral constellations for practical reasons was mentioned earlier. The "messages of the stars" include the maturing time of fruits, the appearance of migratory birds and nomadic animals. This reminds us on the beginnings of the Western Astronomy, for example the correlations between the appearance of certain constellations with agricultural cycles described in the didactic poem by Hesiod "Works and Days". The Indigenous population of Groote Eylandt knew that with the appearance of ϵ and λ Sco, which we have

gotten to know as offspring of Jupiter and Venus, on the sky at night that the rainy season was coming to an end and that a dry southeaster would start blowing. When α Boo ("our" Arctur) would appear before sunrise it was time to get in the spike rush from which fishing nets and baskets were made. The Pitjantjatjara people from the Western desert knew from the appearance of the "seven sisters" (Pleiades) at the morning sky that it was time when the dingoes cast their young.

The use of the astral constellations for navigation is very likely as well. There are at least some indicators. There were not based on Geometrical knowledge but a on more naive orientation on specific constellations. Often it is spoken about the beginnings of a calendar system, which was often little specific. There are some remarks in a left area of the Ngaut-Ngaut, about 160 km North East of Adelaide, at the shores of the Murray River. Interestingly, a rock painting depicts a figure, two Boomerangs and nine immersions forming semi shells. The wife of the elder who represents here the rights of the Indigenous peoples explains this illustration to be an indication of time. The Boomerangs point to a battle, which took place nine full moons (nine months) before the rock painting was drawn. Obviously, the moon was used as an astral calendar. Investigations have shown that the rock paintings are a couple of thousands of years old.

Oldest Astronomy of the World?

How old are the astronomic images and concepts of the Australian Indigenous peoples? The few publications outside Australia like to speak about the „oldest Astronomy of the world“. Apparently, the dreamtime stories date back more than ten thousand years. This is a tricky question, because all sources we have are based on interviews conducted by the European colonisers and explorers after having invaded the country. The Europeans were the first to write down the stories. In traditional Aboriginal cultures all knowledge is passed on orally. Hence, the degree of "reliability" of the stories in the eye of the Westerners is only predictable. In terms of interpreting paintings, experts agree, that never the entire story depicted is revealed to an outsider. When being spoken about art work, the Indigenous owners differentiate between contents available to everyone and secret contents, which is not revealed. Due to the lack of written sources and other artefacts it is difficult, if not impossible, to date these ideas and concepts. Extensive research is still needed to approach this interesting key question. Only time can answer whether this will ever be achieved.

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- 1 Left area of the Ngaut-Ngaut people at the Murray River (South Australia)
- 2 Region around the “Southern Cross” (bark painting, Groote Eyland)
- 3 bark painting of the Magellanic Clouds (Groote Eyland, black & white copy, coloured by F. M. Arndt)
- 4 Exchange of water between moon and sea (bark painting, Groote Eyland)
- 5 The moon and its women (bark painting, Groote Eyland)
- 6 Nine moths – carved out of stone

(all photographs: D.B. Herrmann)