Astronomy in Taíno Mythology

by Sebastián Robiou-Lamarche

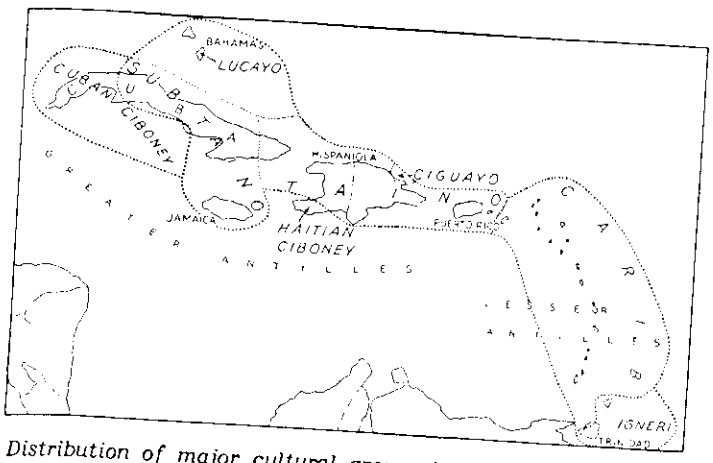
When Columbus arrived in 1492, the Greater Antilles were inhabited by Taínos, an Arawak people originally from the northern coast of South America. The Arawak migrations to the Antillean Islands had taken place during two epochs: the Sub-Taíno (700-1000 AD) and the Taíno (1000-1500 AD).

The Spanish chroniclers and historians wrote abundantly about the Taíno culture; yet very little information was given about their astronomical knowledge. We know only that they counted the months by moons (Anglería 1965), that the yuca (Manihot esculenta Crantz) was planted and their pottery made after the new moon (Oviedo 1959) and that the appearance of the Pleiades in May indicated the beginning of a new year (Tió 1966).

Nevertheless, archaeological and mythological evidence show that the Taíno culture's use and knowledge of primitive astronomy was much broader. In fact, some ceremonial plazas or ball courts, such as Chacuey in the Dominican Republic, seem to have their main axes oriented towards the sunrise at winter solstice (Robiou-Lamarche 1980).

The present study presents two important myths recorded by Fray Ramón Pané in his Relación Acerca de la Antiguedad de los Indios, compiled upon request from Columbus in his

Typical "cohoba zemi" figurine used by the Taino shaman during hallucinogenic rituals. "Cohoba" powder was placed on the disk above the figure's head. (From "Taino Indian Art" by Mela Pons Alegria, ARCHAEOLOGY 33(4), 1980)



Distribution of major cultural groups in the Caribbean at the time of European contact. (Map after I. Rouse, 1983)

second voyage. J. Arrom's version (1974), the most accepted edition of Pané's work, was the source used. This account of Taíno mythology has never been formally translated into English.

The Center Star

The starting point for our analysis is the mythic canoe journey performed by the hero Guahayona. In chapter V, Pané writes:

> When Guahayona left, he who took with him all the women, he took also those of his cacique (chief) named Anacacuya, deceiving him as he did the others...and while in the canoe, Guahayona said to his brother-in-law: Look what a beautiful cobo there is in the water! Which cobo is a sea shell. And when he looked at the water to see the cobo, his brother-in-law Guahayona took him by the feet and threw him into the sea; thus he took all the women for himself, and left them in Matininó, where it is said that there are only women... (Arrom 1974:24-25).

Now, what mythological necessity did Guahayona have to fling his brother-in-law into the water by the feet, before beginning his voyage in the canoe? Some authors see only a sociological reason for this action. But we also find a possible astronomical reason.

According to Arrom, a renowned linguist specializing in the Caribbean, Anacacuya means "central spirit" or "Star of the Center" (1974: 62). We know that the axis of the Earth points towards the North Star and that all other stars seem to rotate around it. Likewise, we know that the elevation above the horizon of Polaris is equal to the latitude of the observer. If we take as correct Arrom's philological interpretation of the name Anacacuya, we begin to understand the Taíno myth. The throwing overboard of the cacique Anacacuya is what makes possible the beginning of the mythic journey, since he becomes the Spirit or Star of the Center, in other words, the North Star. This is the dawn of Taíno navigation.

Furthermore, many cultures join the North Star to the Ursa Major constellation, commonly known as the Big Dipper or "cacerola", because of the alignment of the two pointers with Polaris. For instance, the Maya-Quiché clearly identified the deity Hurakán with the Ursa Major. The name is analyzed:

> HU for HUM or JUN = one
> RAKAN = leg or foot

In other words, for the Maya-Quiché, Hurakán was a one-legged deity associated with the destructive phenomenon of the same name (hurricane) as well as to Ursa Major (Tejera 1977:817). But Hurakán is also related to the center of the heavens, as evidenced in the Popol Vuh:

> ...the nature and life of Humanity is brought about in darkness, in the night, by him who is in the center of the sky, whose name is Hurakán. (1973)

Therefore, there is a clear relationship between the Mesoamerican deity Hurakán and the Antillean Anacacuya. Both are the "center" of the heavens, linked to Ursa Major through the North Star, and are associated, the first (Hurakán) to one-leggedness and the other (Anacacuya) to being plunged into the sea by his feet.

Let us now look into the relationship between these two deities of different cultures, Ursa Major and the hurricane, the destructive meteorological phenomenon that occurs in the Antilles and Mesoamerica. Figure 1 shows the current annual cycle of Ursa Major around Polaris, at approximately 18° above the horizon. The drawing corresponds to positions at dawn in March (spring equinox), June (summer solstice), September (autumn equinox) and December (winter solstice). Since the elevation of Polaris is 18°, there are approximately four months of

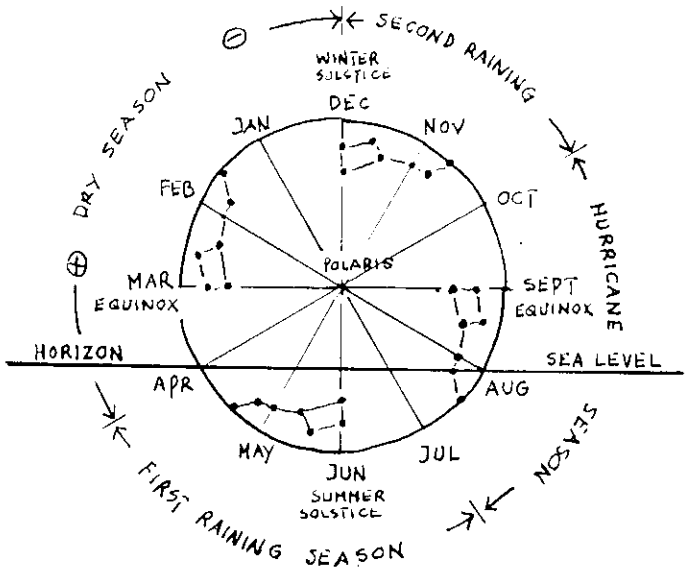


Figure 1: Annual cycle of Ursa Major around Polaris as a calendar for the hurricane season in the Antilles and Mesoamerica.

the year (from March to August) during which the Big Dipper will not be visible at dawn, being beneath the horizon.

Ursa Major's "entrance" into the sea resembles the entrance of Anacacuya head first into the water. This disappearance from sight takes place in March, and would logically indicate the beginning of the myth's cycle, the mythical moment when the hero's saga starts. After four months, around the first week of August, the Antillean and Mesoamerican primitive would watch the heliacal rising of Ursa Major. Today we know that the hurricane season runs from June to October, and that the months which have historically recorded more storms are August and September (Salivia 1972). Therefore, the reappearance of Ursa Major in August-September coincides with the most dangerous months of the hurricane season. It is clear why the Maya-Quiché named Ursa Major with the name of their deity Hurakán. The deity manifests itself when the constellation reappears. Furthermore, the reappearance of Ursa Major in August was perhaps also connected to the time of the year when navigation on the high seas becomes hazardous. If it were so, Ursa Major's cycle around Polaris, as shown in Figure 1, would illustrate a Taíno navigation calendar simultaneously integrated to the possible agricultural calendar that is discussed ahead.

Yet the relationship between the Antillean and Mesoamerican deities is deeper. The Popol Vuh also describes Hurakán as having three manifestations: Caculká Hurakán (the one-legged Lightning), Chipí Caculká (the smaller of the Lightnings) and Raxá Caculká (the very beautiful Lightning) (1973:4). We are immediately reminded of Pané's account, chapter XXIII, where the idol (cemí) Guabancex was aided by two others: Guataúba (harbinger and messenger of the wind and the rain) and Coatrisquie (gatherer and dispenser of the waters). We might infer, then, that these three Taíno cemíes associated with stormy waters and destructive winds are equivalent to the three above-mentioned expressions of Hurakán. In the Taíno culture, Guabancex, Guataúba and Coatrisquie would be expressions of Anacacuya, the deity that rises from the sea as Ursa Major in August, the month of hurricanes and thunderstorms.

The Crying Pleiades

Before he went away with all the women, Guahayona asked them to gather a lot of güeyo, which is a plant that has not been clearly identified. Afterwards, as we have seen, the navigating hero threw his brother-in-law Anacacuya into the water, and if we agree up to this point, Anacacuya became Polaris in order to make possible the first journey in the canoe. Guahayona and the women reach Matininó, where he leaves them and proceeds on his mythic travels.

This part of the Taíno myth reminds us of a South American Warao myth, in which men are deprived of tobacco because it has been taken away to an inaccessible island by some unmarried women (Lévi-Strauss 1972:358). Matininó, in our case, was a mythical island, much searched for and never found. Perhaps it was to that island where the güeyo was taken after the long journey at sea. This would mean that güeyo was some kind of tobacco, the "dried leaves that they value highly" as Columbus already noticed in his first voyage, when he encountered a canoe at sea near the Lucayas which carried tobacco. It appears that the primitive Antillean navigators chewed these leaves to appease hunger and weariness.

As a result of Guahayona's flight, the men are left without women and possibly without tobacco, and the children are left motherless. Pané's account says:

> Later, when they were bothered by hunger, it is said that they cried and called

for their mothers which were gone; and the fathers could not give relief to the children, who were hungrily calling the mothers, saying mama in words, but truly eager to be nursed. Thus crying, asking for the teat and saying "toa, toa", wishfully and slowly, they were transformed into little froglike animals, which are named "tonas", because of their yearning for the teat... (Arrom 1974:24).

This myth of the crying-hungry children, with variations, is widely spread throughout all South America, as Lévi-Strauss shows in his Mythologies. The most important point about this myth is its potential astronomical connection. The following South American myths are drawn from Lévi-Strauss (1968):

a. The Bororo Indians of Brazil attribute the origin of the stars to a group of hungry children, who, having cut the old woman-grandmother's tongue, ascended to heaven and became stars.

b. Among the Caduveos, the Pleiades were children converted into stars as a punishment for playing loudly after nightfall.

c. In other Chaco myths, the origin of the Pleiades is ascribed to children dragged to the sky after behaving noisily.

d. South of the Orinoco River, the Macushí believe that the Pleiades came into being when seven brothers, incessantly crying for food, decided to become stars and ascended slowly while singing and dancing.

These examples are sufficient to denote that the myth of the hungry-noisy-crying children is the origin of the stars or specifically the Pleiades in the South American mythologies. Our myth, although it also refers to hungry-noisy-crying children, differs insofar as the slow transformation of the children ends in frogs instead of stars or Pleiades. But, is there a mythological relationship between the frogs and the Pleiades? Definitely. Frogs are, first of all, a universal symbol of rainwater. To Arrom the words, "toa, toa", which the children cry out, mean water or onomatopoeic imitation of the frog's song (1975:61, 152). Now, if there is a symbolic relationship between frogs and rainwater, is there also one between the rainwater and the Pleiades? Lévi-Strauss has pointed out the same association of rain and Pleiades in South America. Making reference to the above-mentioned text, we can summarize the following:

a. The Sherenté keep count of the months by moons and their year begins with the rise of the Pleiades.

b. The Tapirapé keep close watch of the Pleiades, since their disappearance below the horizon in April announces the beginning of the rainy season.

c. For the Taulipang, the disappearance of the Pleiades forecasts the coming of the rains. To the Tupinambá, the Pleiades is what makes the yuca grow.

d. Among the Orinoco Indians, the new year and the rainy season begins when the Pleiades rise heliacally in the east. In fact, "the reappearance of the Pleiades represents the change of year, from east to west, all throughout the Guayana area, and from Orinoco to Cayena..." (Lévi-Strauss 1968).

As we can see, the rising and setting of the Pleiades is intimately associated with the rainy season in the northern area of South America, and it is the means for the measurement of time. We can consider that the Pleiades were as meaningful to the Taínos as they were to the South Americans, based on the myth of the hungry-noisy-crying children. The Antillean myth, rooted in similar South American myths, varies only insofar as the stars are replaced by frogs, which, like the Pleiades, symbolize rainwater. This mythological substitution can be due either to Pané's interpretation or account of the myth as he heard it or to the long period of Arawak migrations throughout the Antillean Islands during which variations could have taken effect.

Within the myth's chronology, the departure of Guahayona takes place around March, when Anacacuya, symbolized by Ursa Major, "enters the sea". In turn, the Pleiades also disappear about a month later, at the end of April. Therefore, the metamorphosis of the crying children into frogs would follow shortly, that is, in May. Indeed, throughout the Antilles, May is the month of the highest precipitation records. And it is also the month when the Pleiades reappear at dawn on the eastern horizon. Thus, the disappearance and reappearance of the Pleiades coincides with the annual precipitation cycle, giving meaning to the Taíno myth.

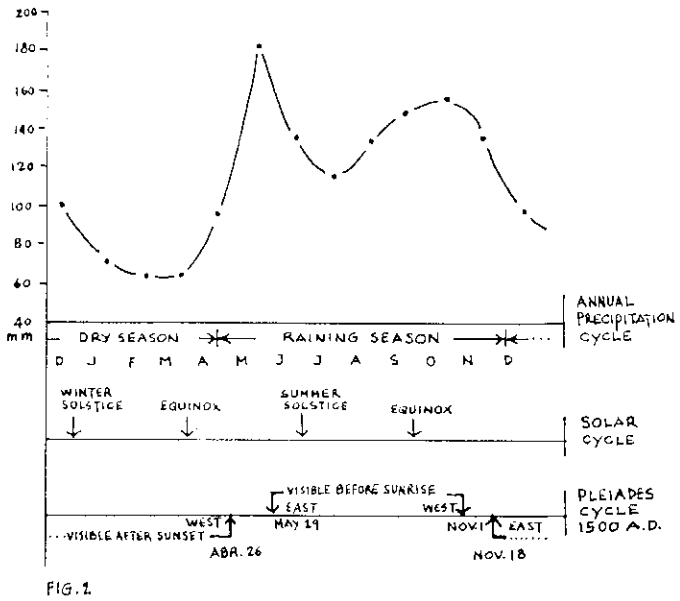


Figure 2

Let us analyze graphically these cycles. In Figure 2, the upper graph indicates the precipitation cycle as compiled by the author based on historical data from the Servicio Nacional de Meteorología. There is a first minimum rainfall recorded (February), a first maximum (May), a second minimum (June), and a second maximum (October). The second graph shows the four basic dates of the solar cycle. The third graph indicated the cycle of the Pleiades at 1500 AD, from Aveni (1980). Putting together these three cycles, we find the basis for a possible Taíno agricultural calendar. The winter solstice would signal the drought, the appropriate time to clear the land. The spring equinox would forecast the coming rains, as does the disappearance of the Pleiades. It would be the time to plant the yuca and the time of the first corn harvest benefitting from the occasional showers. Thus, in May, the little plants would be strong enough to resist the heavy rains. The summer solstice should represent the second minimum rainfall. In this interval, the first corn would be harvested and the new seed would be sown. The autumnal equinox would announce the second rainfall maximum and the beginning of the end of all the agricultural cycle.

Conclusions

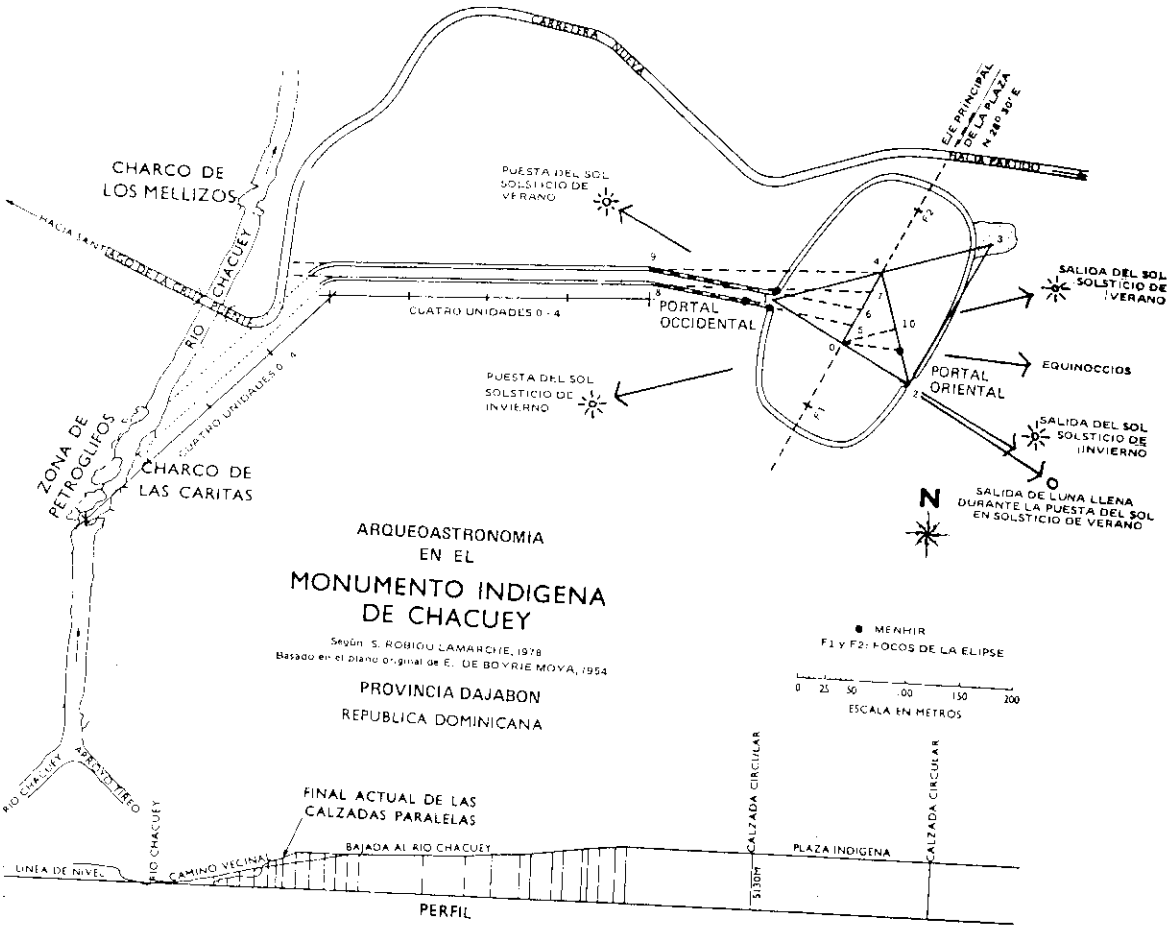
If the present mythological analysis holds true, new interpretations of the Arawak migrations from South America are possible. Considering Columbus' many observations as to the Taíno's knowledge and skill in navigation (Morison 1942), it can be thought that they could even take to the high seas at night using the stars. In fact, we can even think that the Arawak migrations from South America did not have to take place from island to island, going slowly upwards in the Lesser Antilles arch, as it has traditionally been held. Perhaps some migrations, aided by marine currents, could have come straight from the coasts of South America to the Greater Antilles. This possibility might help to explain the apparent Warao origin of some settlements in Florida (Sears 1977).

It is also tempting to propose that contact with Mesoamerica was much more than casual. We are induced to think that the Antilles were perhaps an area of cultural exchange between South America and Mesoamerica. The parallelism between Hurakán, the Maya-Quiché deity, and Anacacuya, Taíno mythic cacique, and the hungry-noisy-crying children myths from South America and the Antilles, would give grounds to such a theory.

We must not let go unnoticed the relationship between Anacacuya and the seashell, or cobo (strombus gigas L.). The mythic cacique is thrown into the water when he was looking at a cobo. This beautiful seashell, given sectional cut, results in a spiral. The symbol of the spiral (a universal symbol) is also present in all Taíno expressions of art and it could well represent the hurricane's rotating movement around a central point, a power symbol. In addition, the cobo is part of the cohoba ritual, since the pulverized shell combined with cojóbana seed (piptadenia peregrina L.), or sometimes with tobacco, produce the hallucinogenic effects distinctive of the sacred ceremony.

Furthermore, the meteorological and astronomical cycles described can be studied in unison with the solar cycles that seem to be evidenced in the construction of some ceremonial plazas, in an effort to arrive at a better reconstructed Taíno calendar and a deeper understanding of the Taíno's knowledge of nature.

The present study of Taíno mythology from an astronomical perspective does not pretend to be exhaustive. On the contrary, it is succinct and further consideration may enrich this initial exploration. It is our aim to assert that the Indians of the Antillean Islands knew more of natural cycles than the conqueror was able to appreciate.



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