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The era of Aries and Kriophoros statues

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We discuss the possibility that the great number of ancient Greek statues of Kriophoros (= 'ram-bearer') before 1 BC may have been the result of religious influence stemming from the knowledge that the constellation of Aries marked the point of vernal equinox rather than Pisces.

Keywords: Constellations; Zodiacal signs; Precession; Vernal equinox; Sculpture

1 Introduction

We will discuss here the possibility of the influence of astronomical knowledge on the commissioning of some Kriophoros ('ram-bearer') statues in Ancient Greece. Namely, in that period (approximately 2000–1 BC), due to the precession of the Earth's axis, the point of vernal equinox, marking the beginning of spring and new life, was in the constellation of Aries (ram), and not Pisces.

In the first part of the paper we will briefly review the Ancient Greek knowledge of constellations and the Earth's orbital precession, and then we will discuss the possibility of the influence of this knowledge on the number of Kriophoros statues.

2 The four seasons and the position of the zodiacal constellations

By the 1st millennium BC, the early Babylonian calendar had evolved from 12 lunar months to an ideal solar year of 12 months, each consisting of 30 days. They had also developed 12 zodiacal constellations (among many others) to mark each month. We know this from a cuneiform list written on a clay tablet (the *mul-Apin* series) that dates to around 700 BC. It was the ancient Greeks, however, who organised and codified the celestial knowledge and tied it to their mythology. The Greek astro-

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nomer Eudoxus (*ca.* 390–340 BC) first described the constellations in two works called *Enoptron* ('Mirror') and *Phaenomena* ('Appearances'), neither of which exist today. The Greek poet Aratus of Soli (*ca.* 315–245 BC) wrote a poem, also named *Phaenomena*, which does survive and gives us a complete guide to the constellations as they were known at that time. In his poem, Aratus identified 47 constellations and six individual stars along with a list of their risings and settings. It was the great astronomer Hipparchus (2nd Century BC), however, who created the first star catalogue around 129 BC. To his credit, he: 1) calculated the length of a year to within six and half minutes, 2) devised a coordinate system to plot each star's location, 3) developed a scale to rank star brightness that is still in use today, 4) corrected errors that Eudoxus and Aratus had made and precisely defined all the constellations for the first time, and 5) figured out that the Earth's axis wobbles as it spins, what is called precession.

It is fairly certain that the zodiacal zone was initially conceived in order to mark the annual apparent path of the Sun on the ecliptic. As an aside, Achilles Tatius (3rd century AD) gave the name 'ecliptic', which replaced the previous 'circle among the zodia (zodiacal signs)'. This significant astronomer, philosopher and priest justified the new name based on the fact that whenever the Moon happens to be at the center of the zodiacal zone during one of its synods, an eclipse happens. So the twelve zodiacal constellations were marking the apparent path of the Sun in the sky. And these constellations are twelve because of the fact that the Sun traces approximately 30 degrees per month on the celestial sphere during its apparent annual motion, thus making a complete circle. One should mention that their number was smaller in the beginning. Ovenden (1966) supposed that they were created between 2000 and 3000 BC by the people who lived near the 36° northern geographical latitude. Roy (1984) tried to identify the possible creators of zodiacal constellations, and concluded that the Phoenicians, Egyptians, Babylonians and Minoans were the most likely candidates.

Thanks to long-term and systematic observations, ancient sky watchers were able to associate a view of the starlit sky with the respective seasons of the solar-tropical year. Relating the position of the Sun when it has its maximum altitude with the respective duration of the day and night, or with the azimuth of its rising or setting, they determined four principal points of the apparent annual motion of the Sun on the ecliptic: the two equinoctial points (Υ and Υ') and the two solstices (E and E$'$). The discovery of these four basic positions of the Sun on the ecliptic was very important, since these positions signalled the start and the succession of the four seasons of the year.

Though the origin of some of the constellations (e.g. Gemini and Cancer) can be traced back to the Bronze Age (3300–1200 BC), the first record that we have of a star catalogue which listed numerous constellations dates to around 1000 BC by the Babylonians (Rogers, 1998, pp. 9–28). A 7th century BC copy of the text is preserved on two clay tablets (i.e., *mu-lapin),* that list the names of 66 stars and constellations as well as their rising, setting and culmination dates. Babylonian astronomers divided the ecliptic into twelve segments; each one identified by a different zodiacal sign and constellation. Their calendar began with the new moon following the vernal equinox, which at the time was in the constellation of Aries. The Babylonian constellations were grouped into two distinct sets: one set (called the "divine set") represented various gods and animals while the other represented daily activities,

tools and workers. Thus Aries the Ram was also known as "The Agrarian Worker" (Rogers). For unknown reasons, only the divine set was transmitted and integrated into Greek astronomy. Eudoxus of Cnidus (408–355 BC) described the constellations schematically and ascribed seasonal phases to each in his two works *Phenomena* and *Enoptron* (Treatise on astronomy, discussed by Aratus). Greek astronomers visualized Aries as a ram lying on its side with its head turned up and to the right. The stars Alpha, Beta and Gamma Arietis mark the ram's head and horns. The horns were a symbol of fertility and renewal; thus Aries carried special importance in that it ushered in the beginning of spring.

Prior to the Era of Aries, the vernal equinox occurred in the constellation of Taurus (the Bull). Though there are no records of the knowledge of constellations at this time, it is known that the bull cult of the Minoan Civilization (approximately 3000–1500 BC) coincided with the Era of Taurus. Also, Bronze Age Egyptians, Persians and Assyrians all represented their solar deities with bull-like characteristics.

Over a period of time, the precession of the terrestrial axis led to the constellations shifting position in the sky (known as 'precession of the equinoxes'). A slow but continuous westward shift of the points where the celestial equator intersects the ecliptic occurs such that the Υ, Υ', E and E$'$ shift by approximately 50 arc seconds per year, or 1° every 72 years. Therefore, approximately every 2140 years the zodiacal constellations, which define these four main positions of the solar motion, change, and every 25,800 years every constellation returns to its initial position after a complete cycle.

Table 1 The quartets of the basic zodia (signs) from 6000 BC to 4500 AD.

Era	Spring	Summer	Autumn	Winter
6000–4500 BC	Gemini	Virgo	Sagittarius	Pisces
4500–2000 BC	Taurus	Leo	Scorpius	Aquarius
2000–1 BC	Aries	Cancer	Libra	Capricornus
1–1950 AD	Pisces	Gemini	Virgo	Sagittarius
1950–4500 AD	Aquarius	Taurus	Leo	Scorpius

Table 1 presents the approximate periods when the various equal-length constellations were, are or will be at the equinox and solstice positions. But the earliest constellations were not of equal length, even within a quartet! This fact was supported by Geminus of Rhodes: *'But the signs made up of fixed stars are neither equal in size nor made up of an equal number of stars'* (2006, p. 126). This fact creates considerable scatter in the actual dates. It is also important that these dates are for the equinoctial (or solsticial) Sun appearing inside the limits of the constellations and this is an intrinsically un-observable event. All these led us to the conclusion that there must be more or less a systematic shift of about one epoch in Table 1.

Each constellation quartet assumes the name of the constellation being at the point of the vernal equinox (Υ) during the respective season. But since the ordering of the constellations took place in the first millennium BC, when the constellation of Aries was at the vernal equinox, we generally call (Υ) *the first point of Aries* even today and the symbol (Υ) is actually a depiction of the head and horns of Aries (the Ram).

In the era of Hipparchus, the constellation of Aries was in the first twelfth (0° to 30°) of the zodiacal circle (the sign and the constellation were identical), while

today it is in the last (330° to 360°). Aries was called *Princeps signorum coelestium* (Leader of the Celestial Signs), *Princeps zodiaci* (Leader of the Zodiacal) and *Ductor exercitus zodiaci* (Guide of the Zodiacal Army), while today Pisces has the title of the Leader of the Celestial Host (Allen, 1963, pp. 76, 337).

Middle eastern mythologies were profoundly influenced by this astronomical phenomenon; they assigned to it an intense astrological meaning, taking the entrance of the Sun into each new zodiacal sign as the start of a new solar / cosmic era for the universe. During each one of these periods they assigned to the Sun-god a form corresponding to the zodiacal constellation upon which it was projected. For example, when the vernal equinox was occurring in Aries, the solar deity, Apollo, was represented in the form of a golden-haired shepherd bearing a ram on his shoulders.

3 Kriophoros (Ram-Bearer) statues and the era of Aries

We pose the question: Does the fact that the vernal equinox occurred in the constellation of Aries have anything to do with the number of ancient Greek statues of Hermes Kriophoros? The knowledge of the natural philosophers and astronomers was also shared by the priesthood. Priests possessed the proper astronomical background and they knew well the time periods adopted from the Sun and the Moon, as well as the constellations. This was certainly true after approximately 400 BC (when Eudoxus of Cnidus recorded this knowledge), but it could have come from an earlier age as well. Many of the Greek Kriophoros statues were sculpted in the latter part of the era of Aries. It is possible that the priests who possessed this astronomical knowledge had an influence on the theme of public works and statues at the time.

Ancient Greek sculptors and craftsmen were considered lowly manual laborers. Plutarch (46–120 AD) wrote, in his *Life of Pericles II,* "We admire the work of art but despise the maker of it". This was a common view in the ancient world, and, consequently, artisans relied on commissions from benefactors to create major sculptures. Works could be commissioned by wealthy individuals or by the state, and used in public buildings, temples, or as grave markers (as is frequently shown by inscriptions on the base of the statues). We know, for example, that many of the great works of Phidias were commissioned by Pericles in 447 BC to commemorate Greece's victory against the Persians at the Battle of Marathon (490 BC), and to give thanks to Athena and Zeus for their protection. Regarding the Kriophoros statues, it is our hypothesis that priests, either directly or indirectly (by influencing aristocrats or state officials), commissioned these sculptures to honor both the god Hermes (the Greek equivalent of Mercury) and the Ram (Krios), symbolizing the astronomical beginning of the new spring. A number of Kriophoros statues exist, as for example:

1. The Giant Kriophoros in the Museum of the island Thassos (580 BC, H = 3.5 m)
2. The Archaic or archaizing bronze Hermes Kriophoros from Arcadia in the Boston Museum of Fine Arts, acc. no. 99.489 (520–510 BC, H = 16.7 cm 6 9/16 in)
3. Hermes Kriophoros from Sparta (500 BC). Boston Museum of Fine Arts
4. Hermes Krioforos of Kalamis, V 1010658.JPG. (First half of the 5th century BC) in the Museo Barracco–Roma

5. Hermes Krioforos from Thebes in Boeotia, ca 450 BC (Musée du Louvre)
6. Cleveland Museum of Art. Archaic painted terracotta warrior Kriophoros from Crete, Crete, 7th c. BC, Acc. no. 1998.172
7. Krioforos from Crete (620 BC). Old Museum–Berlin
8. Another one in Berlin: Abb.4. Archaische Hermes Berlin. Statuette. SMPK. INV. 30552.
9. Hermes Krioforos (No 54) and Goddess Relief (No 54), National Archaeological Museum of Athens (Part of a Throne)
10. Hermes Kriophoros (ram-bearer), bronze, Peloponnesian workshop, 550–525 BC. National Archaeological Museum of Athens
11. Archaic Hermes Krioforos in the new Acropolis Museum, Athens, ca 570 BCE, Acc. no. 624
12. Hermes Krioforos ca 450 BC (Museo di Palermo)
13. Hermes Krioforos. Attic black-figure olpe, 515–510 BC. H. 21.30 cm; D. 12.60 cm, Musée du Louvre F159)
14. The stone Krioforos from the Temple of Apollo in Curio Cyprus
15. Hermes Krioforos, from a terracotta relief, British Museum, terracotta room, case C, B 486. [Wilton House Stables, archaizing marble Hermes Kriophoros with a wedge-shaped beard. (Cornelius Vermeule and Dietrich von Bothmer, "Notes on a New Edition of Michaelis: Ancient Marbles in Great Britain Part Two". *American Journal of Archaeology* **60**.4 (October 1956:321–350) p. 347 and pl. 105, fig. 6)].

4 Hermes as protector of flocks

Hermes is mentioned in the *Iliad* as the god that protected the flocks of sheep-and-goats; Hermes had a son, Eudorus, with the Nymph Polymele (= the one with many sheep) and another son with Rhene (the deity of the sheep): Samon, the eponymous hero of Samothrace. Still other sons of Hermes were Polybous (= the one with many cattle, king of Corinth) and the pastoral gods Pan and Priapus.

Arcadians, as a stock-breeding people, prayed to Hermes to favor the proliferation of their flocks; and, since the main breeding animal is the ram, it occupied a vital place in the god's worship in Arcadia. Pausanias writes: *"on the road from Lechaeon to Corinth there is a statue of Hermes with a ram besides him. According to Homer Hermes is the protector god of flocks and their guard. They utter some secret phrase about Hermes and the ram during the initiations of the Mother goddess, but I can't tell it"* (Pausanias, 1935, *Description of Greece* 9.22.1–2).

Hermes is frequently depicted wearing head-dress and seated upon a male goat or holding a ram. According to a Homeric Hymn, he is considered as the patron not only of cattle, sheep, rams and goats, but also of horses, mules and dogs, even of the wild animals. With reference to this identity, the appellations and adjectives describe Hermes as: *Kriophoros, nomios, epimelios, melossoos, agroter, tereuter* and *courotrophos.*

However, despite the fact that Hermes is the protector of almost all domestic animals (cattle, rams, sheep, horses, mules and dogs), as well as of the wild animals, in his statues he is mainly depicted as *Hermes Kriophoros*. This fact is quite impressive given that this is the astronomical era of Aries (i.e. the beginning of spring and the renovation of life commenced when the point of vernal equinox was in the constellation of Aries). This is wholly compatible with our proposition, at least as a hypothesis for further study.

When the flock exits the sheep-cote, the ram goes in front and leads the other animals: the ram is the leading animal that through its fertilizing power conserves and multiplies the life of the flock. We could compare this with the position of constellation of Aries at that time, as *Ductor exercitus zodiaci* (Guide of the Zodiacal Army), which is the sign of the spring and the beginning of new cycle of life after winter.

5 Conclusion

We have proposed the hypothesis that one of the possible factors contributing to the number of statues of Hermes Kriophoros in ancient Greece is that the knowledge of the natural philosophers and astronomers was also shared by the priesthood and those who commissioned such statues. Priests possessed the proper astronomical background and they knew well the time periods adopted from the Sun and the Moon, as well as the constellations, and the fact that the constellation of Aries, with the point of vernal equinox, at that time was the sign of the beginning of the new cycle of life – the beginning of spring.

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