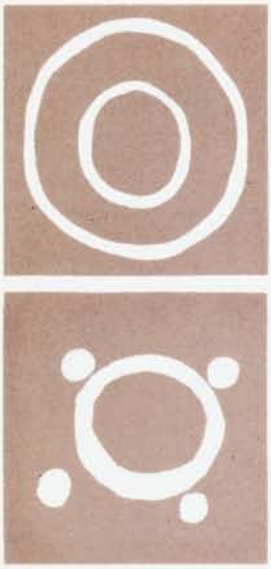
The World Atlas of Mysteries

Francis Hitching

Early astronomers



The primitive tribe of Dogon people in the southern Sahara draw sand pictures of the halo that surrounds Saturn and of the four moons circling Jupiter.

Galileo's announcement on 7 January 1610 that his new-fangled invention, the telescope, had enabled him to identify four moons revolving round the planet Jupiter was hotly disputed. He was already a controversial figure, and the accuracy of his telescope and his judgement were attacked and a pamphlet published against him. The authorities were concerned that, should he be right, it would have thrown into doubt the prevailing concept that the Earth was the centre of the Universe. A variety of counter-suggestions were put forward to 'explain' what he had seen – optical illusions, haloes, reflections, luminous clouds, self-delusion. As Arthur Koestler remarked in *The Sleepwalkers*, the furore had all the elements of a similar controversy 300 years later concerning the existence of flying saucers: 'The Jupiter moons were no less threatening to the outlook on the world of sober scholars in 1610 than, say, extra-sensory perception was in 1960.'

We know now that Galileo was right, and with even limited understanding of the force of gravity and its effect on the movement of the celestial bodies, we have no intellectual difficulty in accepting that not only Jupiter, but most other planets, have satellite moons revolving around them. But was Galileo the first to perceive this? And is a telescope the only means of seeing distant moons? Beyond easy explanation, a number of primitive tribes and early societies seem to have gained a knowledge of the Universe that greatly exceeds the bounds of normal sight. The preoccupation of emerging civilizations with the movement of celestial bodies (page 58) is itself a wonder; it is almost beyond belief that a few people could identify small globes as they invisibly orbited pinpoints of starry light in the sky.

Pygmies from the Ituri forest of central Africa know about the moons of Saturn.

Ituri pygmies

Yet that is what, for instance, the Pygmies of the Ituri Forest in Central Africa can do. Jean Pierre Hallet, a French anthropologist who became an honorary member of the Efé tribe and lived with them for 18 months, was astonished to find that they traditionally called Saturn *Bibi Tiba Abutsiua'ani* – 'the star of the nine moons'. This arcane astronomical fact was at the time of Hallet's visit a little-known truth, Saturn's ninth planet having been discovered by the American, W. H. Pickering, in 1899. In 1966 a tiny tenth moon, about 200 kilometres in diameter, was discovered by the French astronomer Audouin Dollfus, but this hardly detracts from the pygmies' achievement. Hallet summed up: 'I have never encountered a Bantu or Sudanese who credits Saturn with any moons, much less nine. Most Americans and Europeans are no better informed concerning the existence and number of Saturn's satellites.'

The Dogon

South of the Sahara desert live four related tribes of Africans whom the French anthropologists Marcel Griaule and Germaine Dieterlen studied from 1946–1950, living mainly with the Dogon people and inspiring such confidence that four of their head priests were persuaded to reveal their most secret traditions. There is no doubt that what the two scientists were told was authentic; so highly were they respected by the Dogon that when Griaule died in 1956, 250,000 Africans from the area gathered in tribute for his funeral in Mali.

Drawing patterns and symbols in the dusty soil, Dogon priests showed that they had inherited from ancient times a knowledge of the universe that was unbelievably accurate. The focus of their attention was the star Sirius, the brightest in the sky – in fact, a binary star; around Sirius A, the star we can see, revolves Sirius B, a 'white dwarf' star of great density which is totally invisible to the naked eye, and was seen for the first time in 1862 by the American Alvan Clark when he peered through the largest telescope then existing, and spotted a faint point of light; being 100,000 times less bright than Sirius A, it was not possible to capture it on a photograph until 1970. Yet the Dogon not only knew about this star, but also many of its characteristics. They knew it was white, and that although it was 'the smallest thing there is', it was also 'the heaviest star', made of a substance 'heavier than all the iron on Earth' – a good description of Sirius B's density, which is so great that a cubic metre weighs around 20,000 tons. They knew correctly that its orbit round Sirius A took 50 years, and was not circular but elliptical (true of the movement of all celestial bodies, but not

widely known outside the world of trained astronomers); they even knew the position of Sirius A within the ellipse.

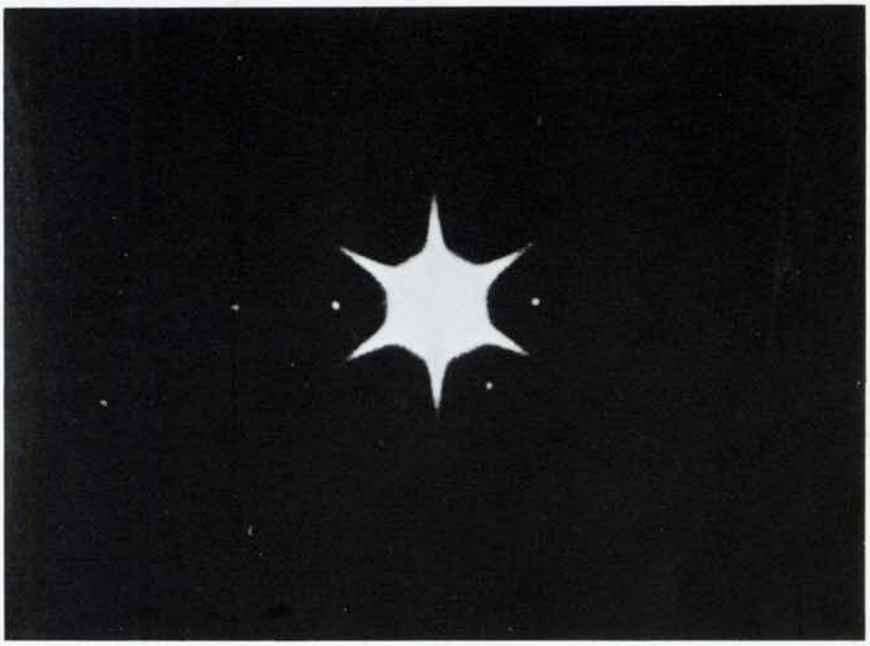
Their knowledge of astronomy in general was no less astonishing. They drew the halo that surrounds Saturn, which is impossible to detect with normal eyesight; they knew about the four main moons of Jupiter; they knew that the planets revolved around the sun, that the Earth is round and that it spins on its own axis; incredibly, they were sure that the Milky Way is a spiral-like shape, a fact not known to astronomers until well into this century. They also believed (page 150) that their knowledge was obtained from extra-terrestrial visitors.

The Maoris

Though not in the same class as the Dogon, the Maoris of New Zealand were also found by early travellers to have a rich and extensive lore about the stars and planets, reputedly having used astronomical methods when they sailed from their unknown place of origin through the Polynesian Islands – a formidable feat of neolithic navigation. According to one explorer in 1814: 'They have given names to certain stars and constellations, and have likewise connected with them some curious traditions, which they hold in superstitious veneration. It is usual with them in the summer season to remain awake during the greater part of the night watching the motions of the heavens, and making inquiries concerning the time when such-and-such a star will appear.' The most important apparently paranormal observation that the Maoris made was that one of the planets, which they called Parearu, was surrounded by a ring. Whether they meant the rings of Saturn or the bands of Jupiter is not clear from their legends, but neither can nowadays be seen with the naked eye.

Early telescopes

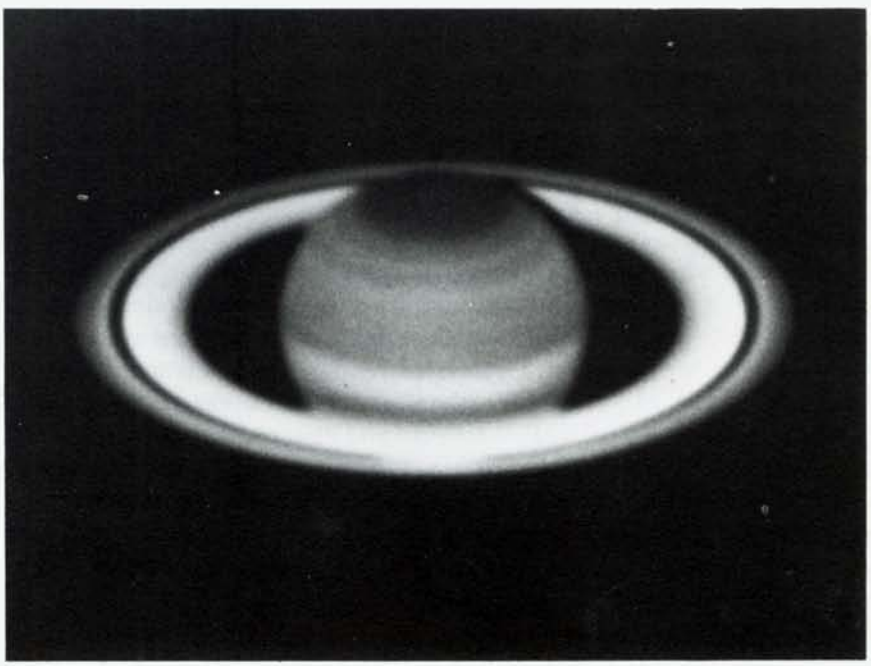
So where did all this extraordinary tribal knowledge come from? Perhaps in the case of the Maoris, superhuman eyesight cannot be ruled out. Telescopic vision; the presence of magnifying atmospheres; larger, more marked bands and rings seen through a clearer atmosphere; a time in history when the planets were closer to Earth than now; all these have been put forward as unlikely but not absolutely impossible ways of obtaining information. But the Dogon and the Ituri Pygmy knowledge is in a different class. The two French anthropologists understated the problem when they said the difficulty was to discover 'how, with no instruments at their disposal, men could know the movements and certain characteristics of



The tiny dot to the lower right is Sirius B, a star known to the Dogon tribe; it is dwarfed by Sirius, and was not photographed until 1970. Other small dots on the photograph are multiple images of Sirius.

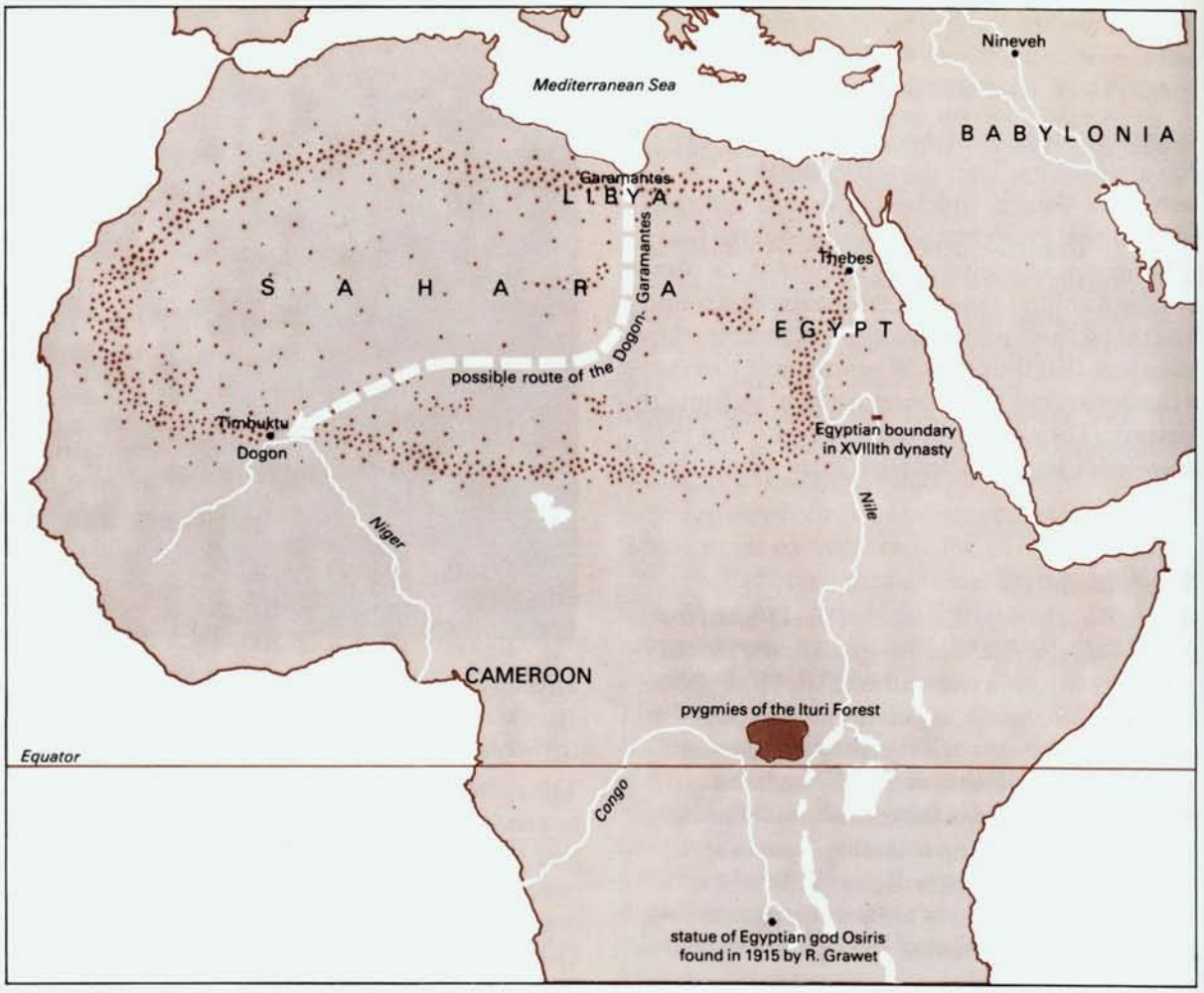
virtually invisible stars'; what the Dogon and the Ituri knew is not virtually invisible, but totally invisible.

The possibility is that they learned their astronomy from somebody else – not recent European explorers, for the traditions go back to much more distant times, but perhaps from contact with ancient Mesopotamia, Egypt or Greece. This is distinctly more likely.
Although Galileo is usually credited as being the first person to use a telescope methodically, it is certain that cruder versions were available long before his time. The first man-made glass is dated to around 3500 BC in Egypt, and primitive lenses made about 2000 BC have been found in Crete and Asia Minor; it is a short and simple step to place one lens in front of another to make a basic telescope, and the chances are it must have



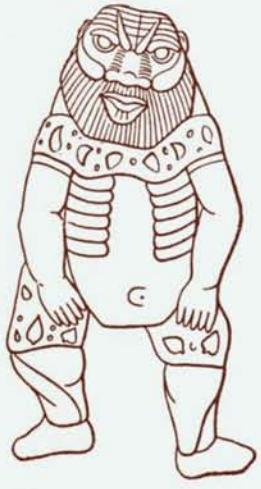
Only a powerful telescope can enable people to see the bands that form a halo round Saturn.

Possible route of Dogon Africans in ancient times from north Africa to their present homeland.



happened thousands of times. Galileo himself noted that the 'ancients' were aware of telescopes. By the Third Century BC Euclid was laying down the principles of light refraction and magnification, and there is evidence in Greek drama of magnifying glasses made of globes filled with water. Later Nero (who was extremely short-sighted) used a telescope made of emerald lenses to watch the Roman Games.

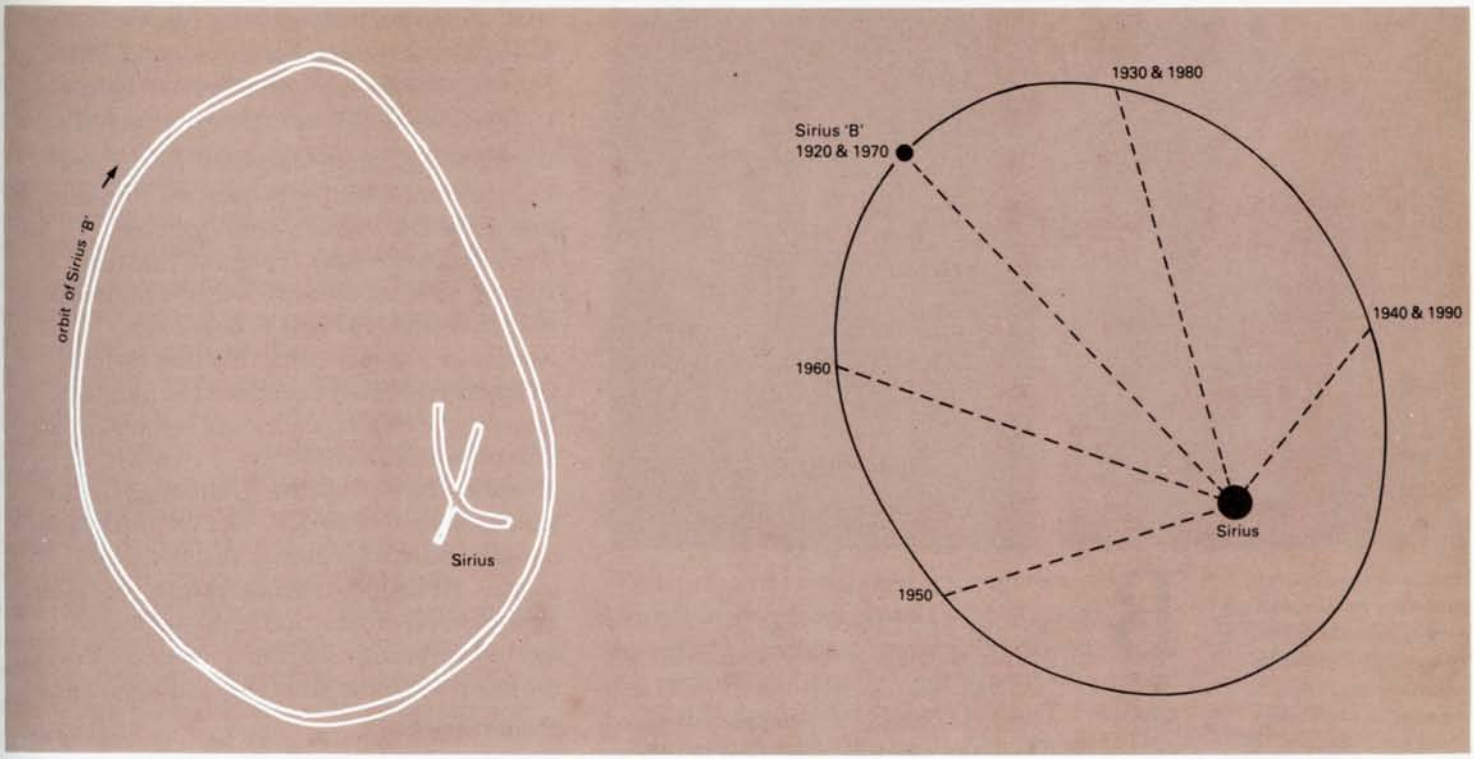
Was the astronomical knowledge of primitive African tribes diffused from Egypt? Pygmies (below) occur often in Egyptian reliefs.



The crucial question is just how good these telescopes may have been, and how much knowledge the astronomer-priests of early civilizations were able to obtain. Babylonians certainly knew of the phases of Venus, and possibly observed the moons of Jupiter and Saturn, although they thought Saturn had seven of them rather than nine. If the secrets of the Great Pyramid have truly been decoded at last (page 65), Egyptian knowledge went much farther than this, embracing truths about the nature of the Universe that were later taken up by Pythagorean and Platonic schools of philosophy to form the basis of civilized thinking for more than a thousand years. Such knowledge certainly would perhaps have included everything that the Dogon and the Ituri Pygmies know now, and more.

The American historian Robert Temple has argued persuasively in *The Sirius Mystery* that this is what happened. (His proposal that beings from a Sirian planet brought the knowledge in the first place is examined on pages 150–152 of this Atlas.) He has traced the origins of the Dogon to the Garamantes people of Libya, Egypt's neighbour; in any case, Egyptian influence through the African continent was wider than is normally assumed. The Pygmies were well-known to the Egyptians, who employed the little folk as clowns and dancers at court, where they were highly valued. Egyptian – Pygmy contacts were established at least as early as the Old Kingdom (*c.* 2300 BC), and at some date Egyptian influence spread even further, for a statue of the god Osiris was found well to the south of the Ituri forest. It has even been suggested that the mysterious homeland of the New Zealand Maoris was among a Libyan people known as 'Ma'. The Egyptian sun-god Ra is paralleled by use of the same word for the same god throughout Polynesia and New Zealand.

If there is a common source for the astronomical understanding of all three tribes, Temple's is undoubtedly the neatest solution. The problem is whether the Babylonians and Egyptians really knew the details about Sirius; his evidence relies on hieroglyphic texts which everybody agrees are



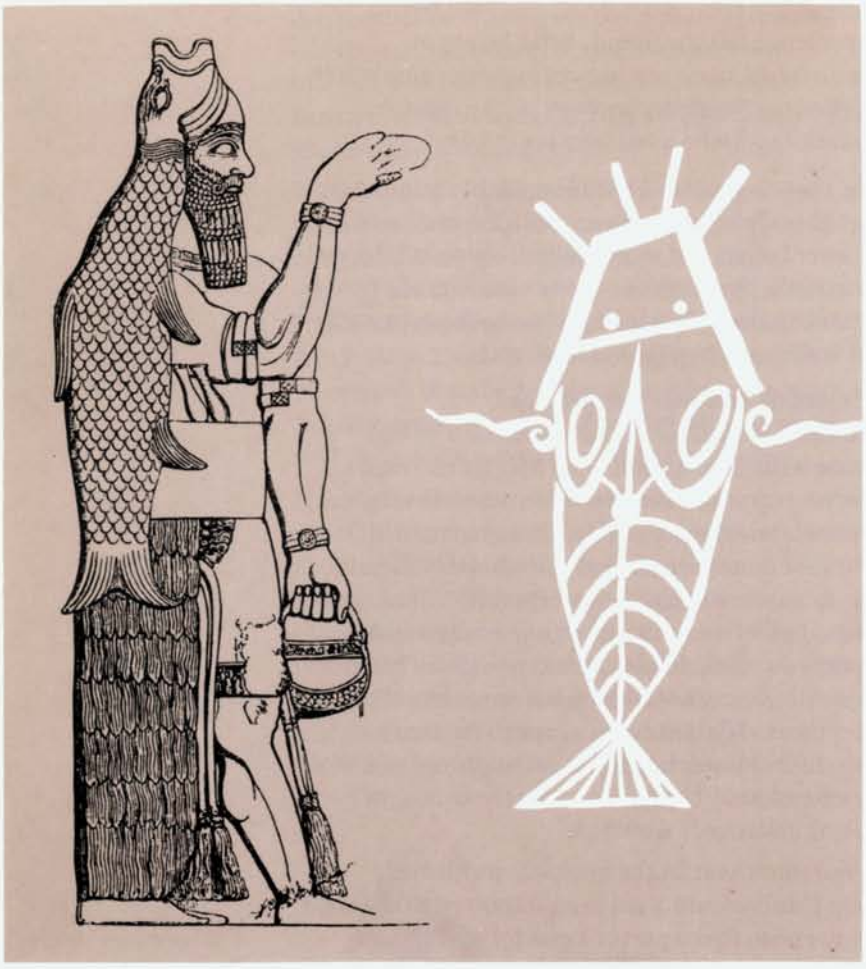
Dogon sand drawings showing details of the orbit of Sirius B around Sirius.

notoriously difficult to interpret. It is curious, to say the least, that the Dogon are able to explain everything so precisely when the written evidence from ancient civilization is so obscure.

Recent experiments into remote viewing and extra-sensory perception (page 82), suggest one other possible explanation. In the extraordinary world which modern psychics such as Ingo Swann seem able to penetrate, distance makes no difference. With another subject, Harold Sherman, he recorded his impressions of what it was like to 'view' the surface of Jupiter and Mercury in advance of the *Pioneer 10* and *Mariner 10* rocket probes. What the two men described was remarkably similar in detail – on Jupiter, eerily coloured thick cloud, blue ice crystals, tornado-force winds; on Mercury a thin atmosphere, a small magnetic field, and a helium tail streaming out from the planet away from the sun (all unsuspected by astronomers but later confirmed by *Mariner 10*). The degree of Dogon knowledge is hardly more accurate than this, and intriguing though it is to see them as the last inheritors of an ancient wisdom brought from outer space, the reality is that everything they know could have come from one wise old tribal seer, projecting his mind from his body towards the brightest star in the sky, and describing with wonder what he saw there.

Ground glass in the British Museum, probably used as a lens *c.* 8th Century BC.

Amphibians from Sirius



Oannes, the civilizing amphibian sea-god of ancient Babylonia, and the amphibian god Nommo of the Dogon African tribe, have many of the same characteristics. (below right) How the Dogon picture the arrival of the space creatures Nommos in their 'ark'.

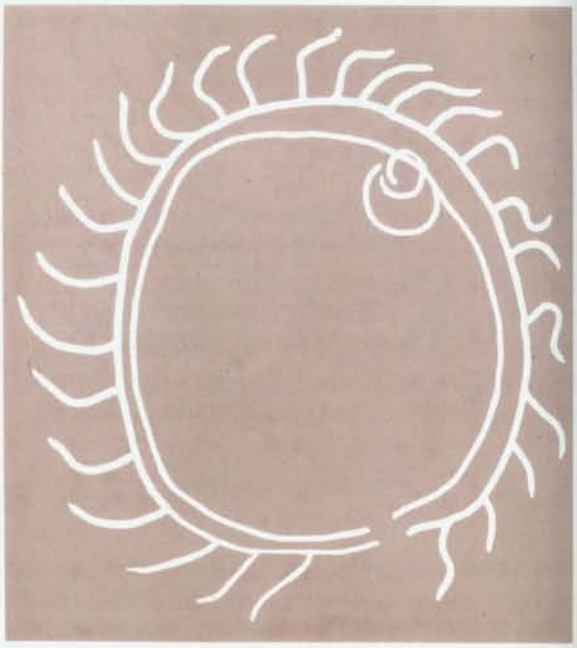
Quite the most remarkable example of unexplained astronomical knowledge among primitive peoples (page 108) is that of the Dogon tribe of Africans living in Mali, south of the Sahara desert. They know accurate details about a small star totally invisible to the human eye, that orbits Sirius, the brightest star in the sky. They know it is massively heavy, it has an elliptical orbit, and the position of Sirius within the orbit. Details apart, it is astonishing that they know about it all for they could not have been told about it by explorers; its existence was not suspected by Western astronomers until the middle of the 19th Century, and it was not photographed, so faint is it compared with Sirius, until 1970.

Yet this star (called Sirius B by modern astronomers) has formed the basis of the most sacred Dogon beliefs since antiquity. So how could they have learned so much about it? There seem only two conceivable possibilities: either they used some form of divination or distant viewing, as in psychic experiments being carried out today (page 82); or, as the Dogon themselves believe profoundly, visitors from a planet attached to Sirius B landed on Earth and passed on the knowledge themselves. This is the solution which the historian Robert Temple has explored in a remarkable book *The Sirius Mystery*, in which he makes out a persuasive case for the Dogons being the last people on Earth to worship extra-terrestrial amphibians who landed in the Persian Gulf at the dawn of civilization, and whose presence can be detected in drawings and legends of the gods of ancient Babylonia, Egypt, and Greece.

Nommo's ark

He describes how the Dogon call the creatures *Nommos*, who have to live in water. They are said to have arrived in an ark, and drawings in the dust portray 'the spinning or whirling of the descent of the ark'. They describe the noise of thunder that it made, and a whirlwind of dust caused by the violence of its impact with the ground. Other legends tell of 'spurting blood' from the ark, which may refer to its rocket exhaust; the Dogon also seem to make a distinction between the ark that actually landed on earth, and a star-like object in the sky that may represent the main inter-stellar spaceship.

All this might just be science fiction curiosity were it not for the extraordinary scholarship that took Robert Temple back to the origins of the Dogon in Libya, and from there to the undoubted parallels between their Nommo and the amphibian god of Babylon, *Oannes*, a superior being who with his companions was said to have taught the Sumerians mathematics, astronomy, agriculture, social and political organization, and written language – in other words, according to Professor Carl Sagan of Cornell University, 'all the arts necessary for making the transition from a hunter-gatherer society to the first civilization'. Surviving fragments of the *Babylonian History* written in Greek by a priest named Berossus, describe



Oannes closely: 'The whole body of the animal was like that of a fish; and it had under a fish's head another head, and also feet below, similar to those of a man, subjoined to the fish's tail. His voice, too, and language, were articulate and human; and a representation of him is preserved even to this day . . . When the sun set, it was the custom of this Being to plunge again into the sea, and abide all night in the deep; for he was amphibious.'

Mystery religions

Having established the parallel between the two gods, Robert Temple makes a closely-argued case that Oannes and the Sirius connection is at the heart of the Classical 'mystery religions' that have so far defied explanation because they were deliberately recorded in coded form; initiates of the mysteries were forbidden to reveal the arcane knowledge they had been taught. But various clues were written down to indicate

Many Greek myths tell of amphibian beings, similar to those described by Dogon Africans today, who were 'civilizers' teaching writing and other arts.

1 Home of the Annedoti ('Repulsive Ones'), the fish-men who the Babylonians said brought them civilization. The first and most famous was called Oannes or Oe, who was thought to have come from 'a great egg'. They were said to have appeared at the dawn of history, but as late as the 2nd Century AD Plutarch reported a mysterious 'man' who appeared from the Gulf once a year, spending 'the other days of his life with roving nymphs and demigods'.

2 The oldest city in Sumer, where kingship first 'descended from Heaven'. It was the city of Enki or Ea (= Oannes, Oe), god of wisdom and the patron of mankind. Ea was thought to live in the 'Apsu', a submarine palace, and there are traces of his worship (piles of fish-bones) at one of the earliest temples at Eridu, *c.* 3500 BC.

3 The Philistines worshipped two amphibian deities, Dagon (male) and Atargatis (female), who were represented with the tails of fishes and human bodies. Atargatis was also known as the 'Syrian Goddess' who was said to have been born from an 'egg' that dropped from heaven into the River Euphrates.

4 Home of the amphibian god Proteus ('First Man'), known as the 'Old Man of the Sea'. He could change his shape and see into the future. He used to rest in a cave, among sea-lions, to 'shelter from the heat of the star Sirius'. Many of the Greek heroes consulted him as an oracle.

5 Home of the amphibian god Triton, who could foretell the future and possessed immense powers, including control over the sea. He assisted the Argonauts when the *Argo* became stuck in Lake Triton. (Temple identifies an important 'Sirius factor' in the myth of the fifty Argonauts.) 'Triton' became the common Greek word for 'merman'.

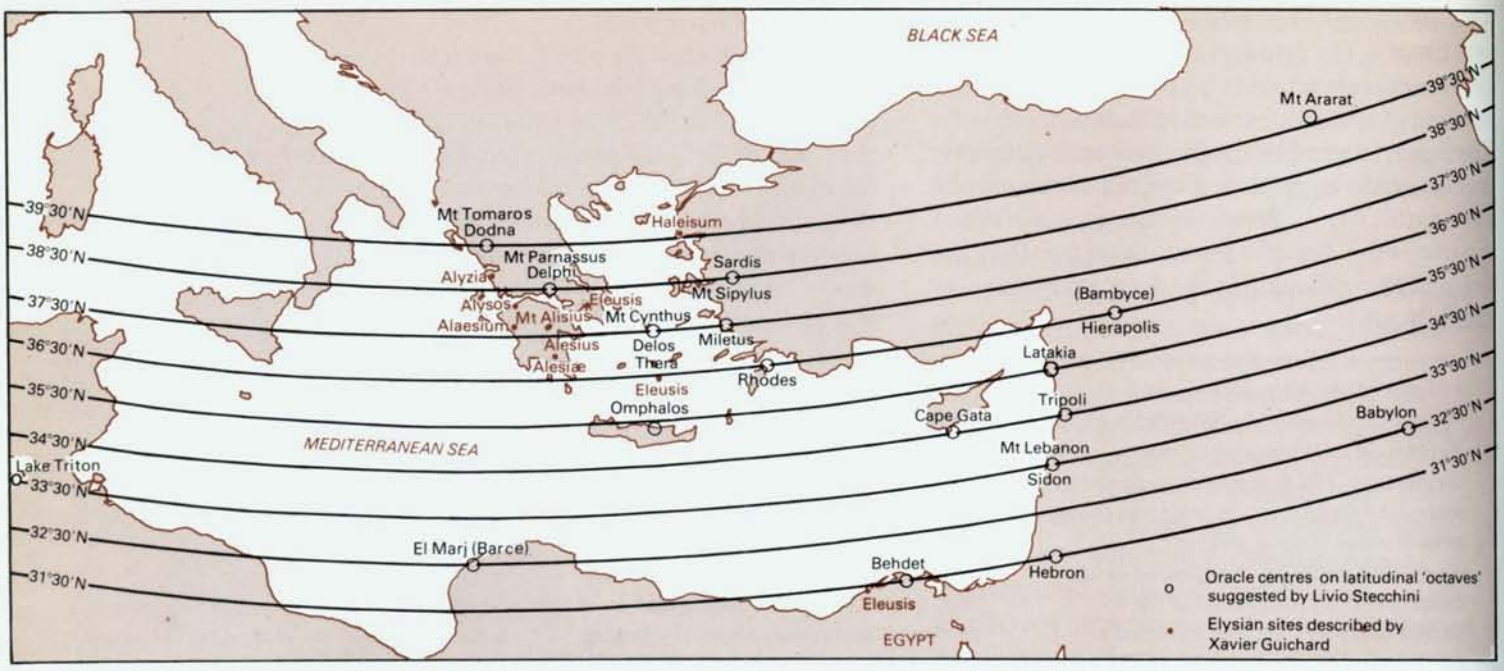
6 Home of Nereus, another 'Old Man of the Sea'; like Proteus and the Telchines, he could change his shape and give oracles. He had fifty daughters – the Nereids – who were represented in art, like him, with half a human body, and a fish's tail. Nereus was also thought to live in 'Eridanus', which connects him with the Sumerian god Enki/Ea of Eridu.

7 Haunt of the prophetic amphibian god Glaucus ('Grey-green'), who taught divination to Apollo, the Greek god of prophecy and the owner of the oracle at Delphi.

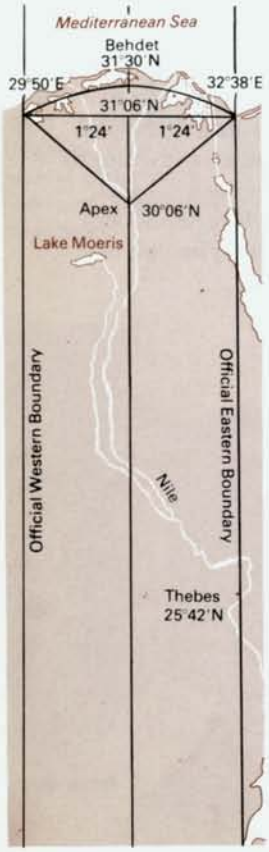
8 Where a pickled 'Triton' was exhibited in the Temple of Dionysus. The Greek traveller Pausanias (2nd Century AD) saw it, and a similar one at Rome: 'Tritons are certainly a sight; the hair on their heads is like the frogs in stagnant water: not only in its froggy colour, but so sleek you could never separate one hair from the next: and the rest of their bodies are bristling with very fine scales like a rough-skinned shark. They have gills behind the ears and a human nose, but a very big mouth and the teeth of a wild beast. I thought the eyes were greenish-grey, and they have their hands and fingers and finger-nails crusted like sea-shells. From the breast and belly downwards they have a dolphin's tail instead of feet.'

9 Site of an ancient sanctuary described by Pausanias, where an image of Artemis (Goddess of Sirius according to Temple) was kept – the image was of a woman down to the waist, and below that of a fish. It was also known as 'Eurynome', one of the oldest of the Greek goddesses, who dwelt under the sea.

10 Home of the Telchines (see text), amphibian gods with magical powers who were both feared and respected. Zeus attempted to destroy them after they had interfered with the weather, and scattered them from Rhodes. They fled to Lycia, where they built a temple to Apollo, and some to Greece, where they became the fifty 'hounds of Actaeon'.



Oracle centres of the classical world seem to be spaced symmetrically according to Robert Temple (see text). Overlaid are sites with 'Eleusis' names referred to on page 77 of this Atlas. (below) The geodetic map of ancient Egypt, with Behdem as the point from which all measurements were taken.



the link with Sirius – for instance, the repeating motif of 50 representing the orbital period of Sirius B, and a dog-headed deity or other dog-associations representing Sirius A, the 'Dog Star'.

Temple recounts many legends that back up his theme, and because these were originally intended to be elusive, it is not surprising that they have many other interpretations. But it is hard to disagree that a Sirius factor is present in many of them. Moreover, there is a rich fund of material in Greek myth that tends to support his theory, but is not included in his book. Some of these myths are included in the map on the preceding page, and a particularly compelling one concerns the islands of Rhodes and its legendary first inhabitants, the Telchines.

Demons of Rhodes

Diodorus Siculus, the Greek historian, wrote of them that they were the 'discoverers of certain arts and that they introduced other things which are useful for the life of mankind. They were also the first, men say, to fashion statues of the gods, and some of the ancient images of the gods have been named after them.'
This description of the Telchines as civilizers, already a close parallel to Oannes and the fish-people of the Persian gulf, is made even more precise by other descriptions of how they were wizards who could summon clouds and rain and hail at will, were 'submarine magic spirits', and 'demons of the depths of the sea'.
Robert Graves wrote that they had dogs' heads, and flippers instead of hands. Clearly the original myth of the amphibian gods spread far through the Mediterranean. There is also no doubt that, according to legend, the Telchines were forced to flee and their survivors became the 50 hounds of Actaeon; this too is a link with a key part of the Sirius evidence that Robert Temple has compiled.

One other conclusion of Robert Temple's connects directly with various themes already touched on in this Atlas. He believes that the science of geodetics used by the ancient Egyptians (page 65), in which they marked out their country according to certain rules derived from the dimensions of the Earth, was given to them in the first place by the amphibians from Sirius, and was applied throughout the Classical world. He has traced the sacred oracle centres, each containing a large megalith called an *omphalos*, as lying on equally spaced bands that cover the entire Mediterranean and Near East. It is not too far-fetched to suggest that the system spread even further. The oracular secrets formed part of the Eleusinian mysteries. 'Eleusis' became 'Alaise' in Europe (page 77) and a 'ley' in Britain – near-identical words describing the alignments between ancient sites. The parallel is undeniably close, and although the record of exactly what was going on in those times was destroyed for ever in the fire of the Alexandrian Library, we can be sure that the lost science, which was the foundation of civilization and lasted for 3000 years or more, was based on an intense desire to understand earth patterns and forces whose existence is nowadays unhappily ignored.