

# Interpreting the Ponza Zodiac

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The most noteworthy feature of the Mithraeum on the island of Ponza, to which M. J. Vermaseren has devoted his recent *Mithriaca* II (1974), is the stucco zodiac on the ceiling of the cult niche. In itself, the zodiac is certainly of considerable interest, being not only elegantly executed but also highly unusual, indeed unique, in its content and composition. But, for Vermaseren, what gives it its greatest significance is that its composition, orientation and positioning in relation to the other features of the Mithraeum (i.e. the tauroctony, Sol, Luna, Cautes and Cautopates) appear to exemplify certain tenets of Mithraic doctrine. Its design is thus the work of a veritable '*sacerdos dei Solis invicti Mithrae studiosus astrologiae* who was at the same time *caelo devotus et astris*' (p. 9; see also p. 26) and whom Vermaseren unhesitatingly equates with the *pater* of the community.

For his monograph Vermaseren has assembled a wealth of comparative material, both archaeological and literary, for which any researcher touching on this monument will be greatly in his debt. Unfortunately, though, his analysis, especially where it has to do with the key matters of alignment and spatial relationships, is sometimes in error. Consequently, his claim that a sophisticated rationale underlies the planning of the Mithraeum and the composition of the zodiac in particular – a claim which I believe to be true on rather different grounds – cannot be accepted as fully substantiated. In what follows, then, my task (apart from the disagreeable chore of having to criticize so distinguished a Mithraic scholar) will be to offer an alternative analysis of the zodiac, based in part on additional data drawn from the realm of astrology. For the Ponza zodiac can, I believe, be made to shed some further light on the doctrines of Mithraism, at least on those areas that have to do with astrology and the celestial bodies. But of perhaps even greater importance is its significance for the history of ancient astrology and astral lore in general. As I hope to show, it provides for the first time visual documentation for certain rather strange concepts in astrology that are known so far only in literary sources.

The main axis of the Mithraeum runs east to west, with the cult niche at the west end. Nothing remains of the tauroctony itself, but on each side of the niche groups of supporting figures are still extant, albeit in a wretched state of preservation.<sup>1</sup> Like the zodiac, they are executed in stucco, as presumably was the tauroctony. On the left (i.e. to the south) are Sol in his quadriga and Cautes, on the right (i.e. to the north) Luna in a one-horse chariot and Cautopates. The representation of Sol is at a much higher level on the wall than that of Luna, an unusual detail which Vermaseren rightly stresses (pp. 7f., 13,

25). Cautes and Cautopates, it should be noted, are in the 'reversed' position, a point on which Vermaseren is strangely silent.<sup>2</sup> The reversal, in general a common enough phenomenon, is in these particular circumstances highly unusual. At Ponza the torchbearers (as also Sol and Luna) are not integral parts in the composition of the tauroctony proper. Now where representations of the torchbearers have been discovered *in situ* apart from the tauroctony, they are almost invariably in the 'normal' position, i.e. Cautes to the right (as the spectator faces the cult niche), Cautopates to the left. Leroy Campbell (1968: 42) lists eighteen instances of this arrangement and only one possible exception. Finally, though this plays no part in Vermaseren's analysis of the planning of the Mithraeum, to the right of Cautopates there are the remains of a kneeling figure which Vermaseren tentatively identifies as part of a representation of the water miracle.

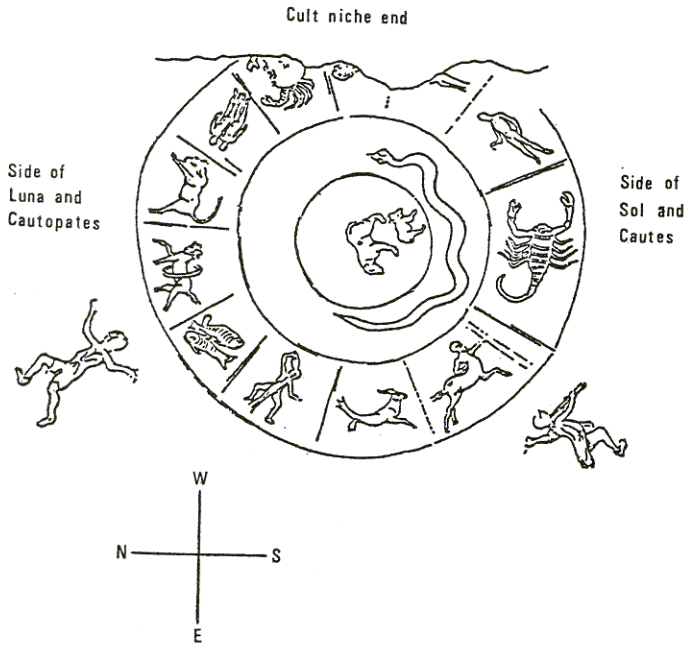


Figure 1 The Ponza Zodiac

The zodiac itself, as the drawing in fig. 1 shows,<sup>3</sup> consists of three concentric zones, whose boundaries are marked, as is also the centre point. The outermost zone carries the signs, represented in the usual fashion.<sup>4</sup> In the middle zone is a snake which Vermaseren identifies with the constellation of Draco, though that, as I shall argue, is not its primary significance. In the inmost zone are two bears which represent – the identification is here indisputable – the constellations Ursa Major and Ursa Minor. Lastly, outside the outermost ring are two figures which probably represent wind-gods, one of which is blowing on a long horn.

Since it is the positioning of the zodiac that is the key factor in Vermaseren's argument, it would be as well to set out here clearly and explicitly the facts of its orientation and relationship to the other features of the Mithraeum. This is made doubly necessary by

some unfortunate errors in Vermaseren's first chapter ('General Description of the Mithraeum'), which, although they do not invalidate the analysis in the second chapter ('Interpretation of the Mithraeum') where the correct information is either stated or implied, nevertheless cause the reader considerable confusion.<sup>5</sup> The zodiac, then, is so positioned that Leo and the head of the snake lie towards the west and are closest to the site of the tauroctony; Capricorn and the snake's tail lie towards the east and the entrance to the Mithraeum; Scorpius is set to the south on the side of Sol and Cautes, and Aries and Taurus are set to the north on the side of Luna and Cautopates; the wind-god with the horn is placed towards the south-east, the other towards the north-east. I would emphasize that the above description is meant to be purely factual; no special significance is to be read into the juxtapositioning of terms. Two further points should be noted. First, the zodiac proper is somewhat asymmetrical. Certain signs occupy more than a twelfth of the zone, others considerably less. As a result, the cardinal points cannot be neatly occupied by four signs in quadrature. Secondly, since we are dealing with a work executed on a ceiling, it should be remembered that what appears on the right *in the diagram* is in fact on the left side of the cult-niche and vice versa. Consequently, in the diagram the clockwise sequence of the cardinal points is altered from the usual north-east-south-west to north-west-south-east.

The order of the signs themselves is clockwise. The point is worth mentioning since it lends some support to Vermaseren's contention about the astrological competence of the Mithraeum's designer.<sup>6</sup> Ancient zodiacs in ring form vary in this respect: some run clockwise, though the majority run counterclockwise.<sup>7</sup> In most circumstances, it cannot be said that one type is any more correct than the other. However, at Ponza more than a zodiac alone is represented. From the presence of the bears it is clear that what is represented, in however rudimentary and peculiar an idiom, is the northern celestial hemisphere. Now where the hemisphere is represented, the clockwise direction of the zodiac corresponds to a view of the stellar sphere looking outwards from the centre, the counterclockwise to a view looking, as it were, from outside at the external surface of the sphere. When the sphere is depicted, for example, in a manuscript, either convention is suitable, and in fact examples of both conventions are found in the medieval manuscripts which carry the ancient tradition of celestial cartography.<sup>8</sup> The Ponza zodiac, however, is executed on a ceiling, and in these circumstances the proper representation is surely that which corresponds to the view outwards from the centre to the inner surface of the sphere. What one sees looking up at the ceiling should correspond to what one sees looking up at the vault of the sky. The zodiac, then, should run in a clockwise direction, and this is the direction that it takes at Ponza. The designer, then, has here chosen the appropriate type, though whether through genuine expertise or the luck of a fifty-fifty chance must remain, for the present, an open question.<sup>9</sup>

More important than the direction of the zodiac is the question of its orientation. Was the zodiac positioned in such a way as to co-ordinate its different segments either with the cardinal points or with the various other features of the Mithraeum or with both of these? Vermaseren believes that the zodiac was indeed deliberately aligned with reference to the cardinal points, and there is a tacit understanding that in this respect it fits in with the other features in a single pattern of spatial symbolism. 'The zodiac at Ponza,' he states (p. 26), 'is orientated correctly with the Ram near the north-side and with the Scorpion on its

southern side.' Why this particular alignment is correct he does not in fact explain. Subsequently, however, when he turns to the alignment of the Mithraeum as a whole (p. 28), he bases his argument on the passage in Porphyry *De antro nympharum* ch. 24 (as emended in the Arethusa edition, 1969) in which the equinoxes are assigned to Mithras as his 'proper seat' with the north and Cautopates to his right and the south and Cautes to his left:

τῷ μὲν οὖν Μίθρῳ οἰκείαν καθέδραν τὴν κατὰ τὰς ἰσημερίας ὑπέταξαν. . . . κατὰ τὸν ἰσημερινὸν τέτακται κύκλον, ἐν δεξιᾷ μὲν <ἔχων> τὰ βόρεια, ἐν ἀριστερᾷ δὲ τὰ νότια, τεταγμένου αὐτοῖς κατὰ μὲν τὸν νότον τοῦ Καύτου διὰ τὸ εἶναι θερμόν, κατὰ δὲ τὸν βορρᾶν τοῦ <Καυτοπάτου> διὰ τὸ ψυχρὸν τοῦ ἀνέμου.

But even to begin to make this passage square with the layout of the Ponza Mithraeum two major assumptions must be made, both of which are questionable and neither of which does Vermaseren attempt to justify explicitly. First, of course, one must accept the emendation of the Arethusa edition which here brings the two torchbearers into the text of the *De antro* for the first and only time.<sup>10</sup> Secondly, and even more seriously, one must suppose that the terms right and left are to be construed *from the spectator's point of view*, which is scarcely the most natural reading of the text nor the way in which the passage is usually taken.<sup>11</sup> But even if one allows both these assumptions, only the spatial relationship of Mithras to Cautes and Cautopates, south and north, left and right in the design of the Ponza Mithraeum, is as yet accounted for. It still remains to reconcile the alignment of the zodiac on the ceiling of the Mithraeum with the passage of the *De antro*, and this in fact is an impossibility, whether on Vermaseren's interpretation of the text or on any other. Porphyry states that Mithras is set at the equinoxes with the north to the right and the south to the left. Now the northernmost sign of the zodiac is Cancer, the sign of the summer solstice, and the southernmost is Capricorn, the sign of the winter solstice, facts which Porphyry had mentioned explicitly earlier in the *De antro*:

. . . δύο εἶναι ἐν οὐρανῷ ἄκρα, ὧν οὔτε νοτιώτερόν ἐστι τοῦ χειμερινοῦ τροπικοῦ οὔτε βορειώτερον τοῦ θερινοῦ· ἐστι δ' ὁ μὲν θερινὸς κατὰ καρκίνον, ὁ δὲ χειμερινὸς κατὰ αἰγόκερων (21).

But at Ponza Cancer and Capricorn are placed respectively not on the north and south sides of the vault of the cult niche, but on the west and east sides. Similarly, the equinoctial signs, Aries and Libra, which Porphyry in *De antro* 24 explicitly associates with the east and the west (οὔτ' οὖν ἀνατολῇ καὶ δύσει τὰς θύρας ἀνέθηκεν οὔτε ταῖς ἰσημερίαις, οἷον κριῶ καὶ ζυγῶ, ἀλλὰ νότῳ καὶ βορρᾷ),<sup>12</sup> do not occupy the east–west axis of the Mithraeum in line with the central image of the bullslaying Mithras, but are found displaced to the north and south respectively. It is clear, then, that the designer of the Mithraeum was concerned *neither* with aligning his zodiac with reference to the actual direction of the cardinal points<sup>13</sup> *nor* with following a spatial symbolism, such as that found in Porphyry, according to which, regardless of the physical location of the Mithraeum, the right of the cult image would represent the direction of Cancer and the summer tropic and the north, the left would represent Capricorn and the winter tropic and the south, while the central axis of the Mithraeum would represent an east–west line linking

the equinoxes in Aries and Libra and thus the celestial equator, the *ισημερινὸς κύκλος*, which is crossed by the zodiac at those two points.<sup>14</sup>

Is there, then, a different logic behind the positioning of the Ponza zodiac or is its arrangement a matter of random selection and thus without significance? That *some* system is at work is, I believe, suggested by the following consideration. Normally, as Gundel's catalogue (1972: 611–694) makes clear, ancient zodiacs in ring form are aligned with Aries at the top of the circle, Libra at the bottom, and the tropic signs, Cancer and Capricorn, to the left and right (or vice versa). If, then, the designer at Ponza were merely following the normal convention, we would expect to find Aries at the head of the cult niche closest to the tauroctony, or possibly at the opposite end of the niche nearest to the spectator, but certainly not rotated to one of the sides as is in fact the case. The slewing of the Ponza zodiac may of course be a purely accidental matter with the designer following neither the standard convention nor yet a conscious system of his own, but there is at least a strong possibility that the departure from the conventional norm was deliberate. Let us suppose that it was. What might account for it?

Now a glance at the diagram shows that the figures in the two inner rings, the two bears and the snake, are all set to one side of the main axis of the Mithraeum, namely the left (right in the diagram) or south side. This suggests that a significant division to right and left of the main axis may well be intended. To what distinction within the twelve signs of the zodiac might such an arrangement correspond? On first sight, the obvious distinction is seasonal: summer and autumn signs to the left, winter and spring signs to the right (though due to the asymmetry mentioned above, p. 3, the four groups are slewed somewhat in a counterclockwise direction). Yet it is hard to see any logic behind such a distinction. Furthermore, if the designer is in fact emphasizing such a distinction the result is singularly unfortunate symbolically. For in that case he has set the two seasonal groups of signs during which the sun *decreases* daily in altitude on the same side as the representations of Sol ascending in his quadriga and Cautes with his raised torch. It seems unlikely, then, that seasonal symbolism in fact plays any part in the arrangement of the zodiac at Ponza.

A second possible distinction, corresponding to the disposition of the signs to right and left of the main axis in the Ponza Mithraeum, is that between those signs which are 'fast-rising' (*ταχυνάφορα, ὀλιγοανάφορα, πλάγια*) and those which are 'slow rising' (*βραδυνάφορα, πολυανάφορα, ὀρθά*). The fast-rising signs occupy that half of the zodiac from Capricorn to Gemini (i.e. the winter and spring quadrants) in which the ecliptic is most oblique to the eastern horizon and in which, as a result, the signs take less time than average in their daily risings, while the slow-rising signs occupy the other half from Cancer to Sagittarius (i.e. the summer and autumn quadrants) in which the ecliptic is steepest to the eastern horizon and in which, consequently, the signs take more time than average in their daily risings.<sup>15</sup> Now in fact the signs on the right at the Ponza Mithraeum, the fast-rising signs, do on the whole occupy rather smaller segments of the full circle than those on the left, the slow-rising signs, and this is as it should be if the designer wished to emphasize this distinction graphically. However, although the distinction is an important one in astrology,<sup>16</sup> it is difficult to imagine how it could have any real relevance in the context of Mithraism in general or of the Ponza Mithraeum in particular or why the fast-rising signs should be set on the right of the Mithraeum and the slow-rising signs on the left. Perhaps the fact that the inequality of the segments of the Ponza zodiac happens to

square with the distinction between the fast- and slow-rising signs should be disregarded as a mere coincidence.

There is, however, a third distinction between two halves of the zodiac which I believe is entirely pertinent to the situation at Ponza. This is the distinction between those signs which are the solar or diurnal houses of the planets and those which are their lunar or nocturnal houses. The solar houses start with Leo which is the house of the Sun himself and extend through Virgo (Mercury), Libra (Venus), Scorpius (Mars), and Sagittarius (Jupiter) to Capricorn (Saturn). The lunar houses start with Cancer and extend backwards through Gemini (Mercury), Taurus (Venus), Aries (Mars), and Pisces (Jupiter) to Aquarius (Saturn).<sup>17</sup> The designer of the Ponza Mithraeum has, I believe, deliberately rotated the zodiac from its usual setting so as to position the solar houses, the segment of the zodiac that Ptolemy in the *Tetrabiblos* (1. 17) calls the ἡμικύκλιον ἡλιακόν, to the left on the same side (south) as the representation of Sol himself and the lunar houses, the ἡμικύκλιον σεληνιακόν, to the right on the same side as Luna, the houses of the two luminaries themselves being set at the west end closest to their own deities. The hypothesis is a neat and simple one. In its support, we should note that the actual positions of the signs to left and right of the main axis of the Mithraeum do in fact correspond much more closely to this particular distinction which divides the zodiac at the Cancer–Leo and Capricorn–Aquarius boundaries than to the other two distinctions discussed above, both of which divide the zodiac at the tropic points, i.e. at the Gemini–Cancer and Sagittarius–Capricorn boundaries. Moreover, it cannot be objected that the system of planetary houses is totally unknown in Mithraic contexts. In fact, Porphyry in *De antro nympharum* not only gives a summary of the system (ch. 22) but also uses it in a very far-fetched explanation of Mithras' association with the equinoctial sign of Aries (ch. 24): διό κριοῦ μὲν φέρει Ἀρηίου ζωδίου τὴν μάχαιραν (i.e. Mithras carries a dagger; the dagger is the weapon of Mars; the house of Mars is Aries).<sup>18</sup> I suggest that its presence can also be detected in the three tauroctonies that are surrounded by ring zodiacs. In the London and Siscia reliefs (*CIMRM* 810, 1472) the solar houses are on the same side as Sol and the lunar houses on the same side as Luna, though not with quite the same precision as at Ponza since the arrangement is strictly by seasonal quadrants. More significantly, both monuments are so designed that the Sun, the greatest of the planetary deities, is set beside his own house in the sign of Leo. In the Sidon relief (75) a further refinement is evident. Aries and Taurus are set at the top of the circle of the zodiac, to right and left respectively. Placed next to them, in an obviously intentional relationship, are the busts of Sol and Luna.<sup>19</sup> However, most unusually, Sol and Luna are reversed, Sol being on the right (next to Aries), and Luna on the left (next to Taurus). What I believe accounts for this reversal, which cannot but be deliberate, is the fact that Aries is the 'exaltation' (ὑψωμα) of the Sun and Taurus of the Moon.<sup>20</sup> According to Firmicus Maternus (2.3.4), in the Babylonian system the exaltations of the planets are their houses. There is, then, good evidence for allowing that the system (or systems) of planetary houses was in some instances known to and used by Mithraic designers. Though conclusive proof is not of course available, it is reasonable to suppose that the distinction between solar and lunar houses was the determining factor in the alignment of the zodiac at Ponza.

It is probable that the same distinction between solar and lunar houses was used in the composition of another Mithraic monument too, the Housesteads rock-birth (*CIMRM*

860). The emergent Mithras is here surrounded by a zodiac which runs in a horseshoe-shaped arch starting with Aquarius in the lower left, culminating with Cancer and Leo above Mithras' head to the left and right respectively, and ending with Capricorn in the lower right. The lunar houses are thus to the left of Mithras (from the spectator's point of view) and the solar to the right. The division is more noticeable here than at Ponza, for the circle is interrupted and the sequence of signs has a definite starting point, namely Aquarius, and furthermore their disposition, six on one side balancing six on the other with the Cancer–Leo boundary directly over Mithras' head, is much more symmetrical. The fact that the sequence of signs does start with Aquarius, an order which as far as I know is without parallel, suggests that the division into a lunar set and a solar set was intentional. There is, however, a problem. The rock-birth seems to have been positioned, like the tauroctony, so as to face down the length of the Mithraeum eastwards from the west end. The lunar houses of the rock-birth would thus have been on the same side (south) as the Sol of the tauroctony and the solar houses of the rock-birth on the same side (north) as the Luna of the tauroctony (the tip of Luna's crescent is preserved and thus guarantees the fact that the two deities were not reversed). Against this, however, can be set the fact that an altar of Sol (*CIMRM* 858) was found on the *north* side of the Mithraeum, i.e. on the same side as the solar signs in the rock-birth.

It is time now to turn our attention to the snake that occupies the left half of the middle ring. Vermaseren (p. 10) unhesitatingly identifies it as a representation of the constellation of Draco. Given its proximity to the two bears (Ursa Major and Minor), this is a reasonable first assumption. But it is, I believe, a wrong one; or rather, the assumption that the snake represents *only* the constellation of Draco is a wrong one. As I shall argue, the snake is a composite representation of a number of entities, only one of which – and not the most important – is Draco.

The main reason for questioning the identification of the snake with Draco is that its shape and position with reference to the pole, the bears, and the circle of the zodiac are neither correct in themselves nor in conformity with the system of ancient *astrothesie* as described in the texts or recorded visually. As the diagram in fig. 2 shows,<sup>21</sup> Draco, the constellation, is S-shaped, not C-shaped as at Ponza. Its tail is close to the north equatorial pole (closer in antiquity than now), but its head is quite some distance removed.<sup>22</sup> It thus gives the impression not so much of circling the pole (as at Ponza) as of swinging round the pole on its tail. Though the bulk of the constellation is indeed on the same side of the pole as the zodiacal constellations that appear with the snake on the left of the ceiling at Ponza, its head lies (roughly) towards Capricorn and its tail towards Cancer rather than vice versa. Finally, and most glaringly, Draco passes *between* Ursa Major and Ursa Minor, enveloping only the latter in its tail. It does not surround both bears as does the snake at Ponza. The fact that Draco passes between the two bears is a commonplace of ancient descriptions. Indeed, it is practically a defining quality of the constellation.<sup>23</sup> Aratus, for example, uses it to launch his description in the *Phaenomena* (45–48):

τὰς δὲ δι' ἀμφοτέρας οἷη ποταμοῖο ἀπορρῶξ  
 εἰλεῖται μέγα θαῦμα, Δράκων, περί τ' ἀμφί τ' ἑαγῶς  
 μῦριος. αἱ δ' ἄρα οἱ σπείρης ἑκάτερθε φέρονται  
 Ἄρκτοι . . .

In a similar vein is the opening of the anonymous *Sphaera* (1-4; Maass, 1898: 154):

ἥδ' ἔστιν ἄστρον τάξις. ἀμφὶ μὲν πόλον  
 Ἄρκτους διπλᾶς πρὸς νῶτα νεούσας τύποις  
 ἀντιστρόφοις οὐραῖσιν ἀλλήλων φοραῖς  
 σκολιὸς διείργει μὴ πελάζεσθαι Δράκων.

The separation of the bears by Draco is accurately reproduced in the illustrations of the medieval manuscripts, as it is in the central roundel of the *Tabula Bianchini*, a marble

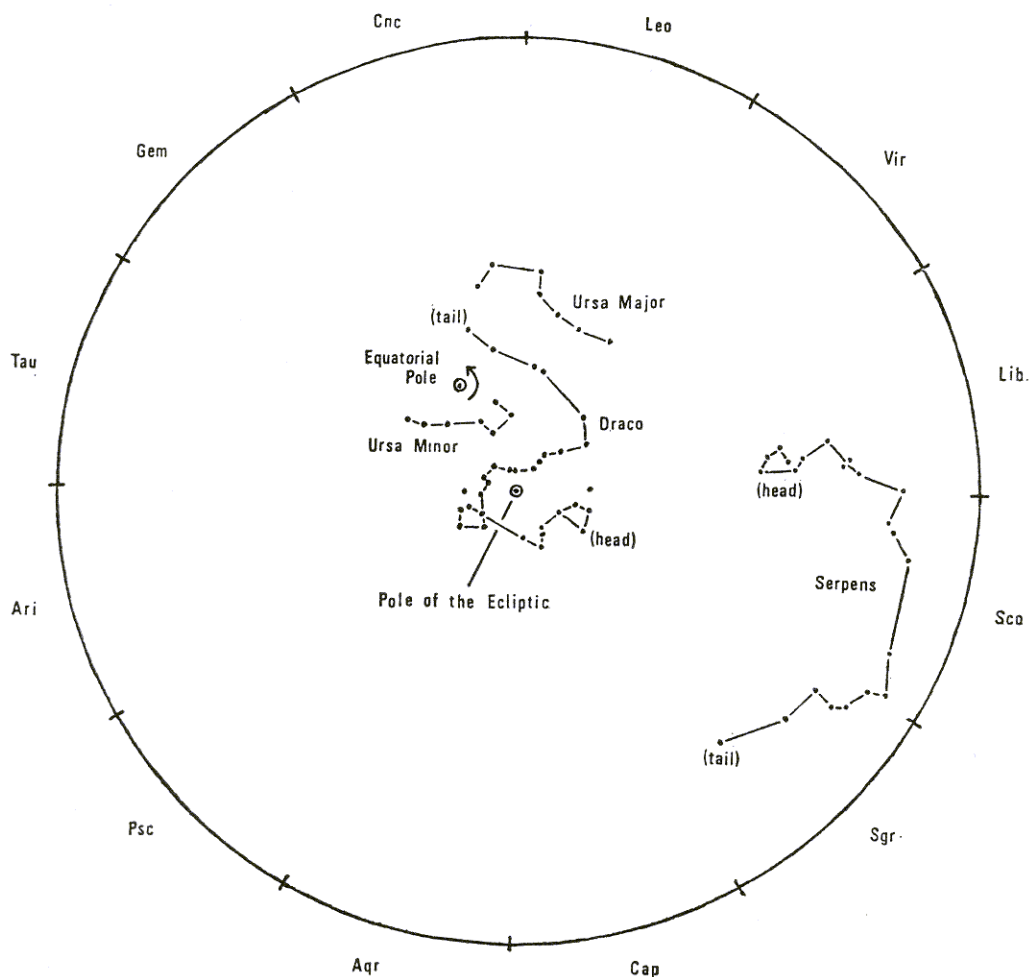


Figure 2 Ursa Major, Ursa Minor, Draco and Serpens in relation to the Poles and the Signs of the Zodiac, c. A.D. 100.

astrological table of the second or third century A.D.<sup>24</sup> The dissimilarity between these visual representations of Draco and the snake on the ceiling at Ponza receives explicit comment from Vermaseren (pp. 18-20). But since the snake interests him but little in comparison with the bears, he does not pursue the matter further, merely observing



in a note (p. 19, n. 1) that ‘the *draco* [i.e. at Ponza] is similar to that of the zodiac Daressy which follows the Egyptian tradition’.<sup>25</sup> It is, however, questionable whether the ‘snake’ curving around roughly a third of the central roundel of the zodiac Daressy and facing the busts of Sol and Luna is a snake at all. The zodiac itself was lost, but a cast shows merely an ‘arc-shaped excrescence’ which W. Gundel thought could as well be an arch symbolizing the divinity of the two luminaries as it could a snake: ‘Neben ihnen [i.e. Sol and Luna] zieht sich ein bogenförmiger Wulst hin, er könnte an einen Bogen, als Symbol beider Gestirngottheiten, oder auch an eine Schlange erinnern’ (in Boll, 1966: 198).<sup>26</sup> But even if we allow that the thing is a snake, and a celestial one at that, and that it represents a specific constellation rather than the path of the sun and moon whose busts it confronts the constellation that it would represent is not Draco at all, but Hydra. For the snake on the zodiac Daressy is set in an arc occupying the same segment as the signs of Gemini, Cancer, Leo and Virgo in the outermost circle, and it is along this sector of the zodiac, to the south, that the constellation of Hydra extends. Might the snake at Ponza, then, also represent Hydra? I do not believe so. In the first place, Hydra lies south of the ecliptic, while the snake at Ponza is set in the middle circle between the zodiac and the bears, i.e. to the north of the ecliptic. Secondly, the Ponza snake extends along a different set of signs. From the point of view of *astrothesie*, the Ponza snake actually corresponds quite closely to the third of the three celestial snakes, the constellation of Serpens which lies north of the ecliptic approximately between Libra and Sagittarius with its head pointing in the same direction as the Ponza snake’s (i.e. westwards) and with much the same appearance of a reversed ‘C’ (see diagram, fig. 2). An hypothesis that the Ponza snake is, in some measure, a representation of Serpens would perhaps explain the disproportionate size of the segments of the circle of the zodiac occupied by Libra, Scorpius and Sagittarius (especially the middle one of the three). However, the fact remains that Serpens extends along less than a quarter of the ecliptic while the Ponza snake covers a good half. Moreover, while Draco, as we shall see, has symbolic associations which might justify its inclusion with the zodiac and the bears in the composition at Ponza, to my knowledge, Serpens in itself carries no symbolism that would recommend it to the ceiling’s designer. I would suggest, then, as a more probable supposition, that the designer is representing some other and more important celestial monster which he has chosen to identify, from the point of view of *astrothesie*, with the constellation of Serpens, but which by its size alone reveals its origin as a creature of altogether greater significance.

There is in fact a creature of ancient astral lore to which the Ponza snake appears to correspond with quite remarkable exactitude. That creature is the monstrous dragon which was supposed to cause eclipses by blocking the light of the sun or the moon and which was believed to extend in a vast arc of 180° (half of the heavens) between two diametrically opposite points on the ecliptic and to face and move westwards, i.e. in a direction opposite to the order of the signs and to the motion of the sun, moon, planets, but in the same direction as the daily rotation of the whole celestial sphere. A glance at the diagram in fig. 1 will show that the same description of position, extent, and direction is precisely true of the snake in the Ponza zodiac. I suggest, then, that the Ponza snake, in its primary significance, is a representation of this eclipsing dragon. If this is so, it would also (as far as I know) be the first ancient representation of the eclipsing dragon to be discovered, or at least to be identified as such. It is thus a monument of considerable importance for the

history of astrology, meriting here a full discussion of the topic of the eclipsing dragon, its nature and pedigree, the sources in which it is found, and its various associations in myth and astral lore. It will, of course, be particularly important to try to determine the meaning that the dragon might have in a Mithraic context, though I should warn that the best we can hope for here is to establish a range of possible meanings, one or more of which may have relevance.

The most precise description of the eclipsing dragon that I know of occurs in the work of Severus Sebokht, a Syrian philosopher of the seventh century. Sebokht is well aware of the true causes of eclipses and reports the theory of an eclipsing dragon only to refute it. The dragon is called *Ataliâ*. According to Nau (whose translation from the Syriac I use) ‘ce mot est à rapprocher de l’assyrien *atalû* “éclipse”’ (1910: 230, n. 1):

Nous l’avions écrit auparavant, mais des hommes renommés dans cette science disent que les éclipses et la disparition des astres ont lieu à cause du Dragon (*Ataliâ*). Pour confirmer leurs paroles, ils dessinent une figure de ce genre, et ils disent que le dragon (*Ataliâ*) est un corps qui a une figure de dragon: souvent aussi ils l’appellent dragon et serpent. La largeur de son corps est de  $24^\circ$ , et le longueur est de 180 degrés, ce qui fait six signes du zodiaque ou la moitié de la sphère; on voit ainsi dès maintenant que sa tête et sa queue se font vis-à-vis et sont toujours diamétralement opposées. Ce dragon (*Ataliâ*) marche toujours dans deux signes du zodiaque, sa tête dans l’un et sa queue dans l’autre. Le milieu de son corps est en dehors de toute la couronne des signes du zodiaque, vers le nord, du côté du char, car il est courbé et a la forme d’un demi-cercle, comme un arc . . . Son mouvement a lieu non comme celui des planètes, de l’Occident à l’Orient, mais comme celui des douze signes, de l’Orient à l’Occident. Il se déplace de  $3' 11''$  en un jour et une nuit, de  $1^\circ 33'$  en un mois, et de  $19^\circ 20'$  en un an. Il fait donc une révolution complète en 18 ans, 7 mois et 16 jours. Parce que ce dragon (*Ataliâ*) est en dessous du soleil et de la lune, chaque fois que la lune est en conjonction avec le soleil dans le signe et le degré où se trouve la tête du Dragon (*Ataliâ*) ou sa queue, le Dragon (*Ataliâ*) se tient devant la lune et cache aussi le côté du soleil.

(Nau, 1910: 254)

One might note here a further similarity with the Ponza snake over and above the association with the zodiac, the  $180^\circ$  extent, the semi-circular shape, and the westward motion. While the head and tail of the dragon *Ataliâ* are set within the zodiac, the centre of its body arches to the north, ‘du côté du char’. In a similar manner, the Ponza snake is set *within*, i.e. on the northern side of, the ring of the zodiac, towards the same constellation that Sebokht mentions specifically, namely Ursa Major or the Wain (*ἄμαξα*).

It may seem strange that so fantastic a creature should admit of such an exact definition of its location and movements (e.g. the daily motion of  $3' 11''$ !). The reason for this precision is that the dragon has acquired characteristics which, in the realm of sober and factual astronomy, quite properly belong to two particular points of importance in the heavens. These points are the nodes of the moon’s orbit. The term requires some explanation. Just as the orbit of the sun, which is the ecliptic, is inclined to the plane of the equator, so the orbit of the moon is inclined to the ecliptic. The circle of the ecliptic intersects the

equator at two diametrically opposite points, namely the equinoxes. In precisely the same way, the orbit of the moon intersects the ecliptic at two diametrically opposite points. It is these points which are the lunar nodes (*σύνδεσμοι*). It will be immediately apparent that the nodes play a crucial role in eclipses. Only when the moon is on (or very close to) the ecliptic at one of the nodes, and simultaneously the sun is at the same point on the ecliptic or else at the diametrically opposite point, does an eclipse take place. If the sun and the moon are in conjunction at the same node the eclipse is solar (the moon interposes itself in line of sight between the earth and the sun). If the sun and the moon are in opposition at different nodes the eclipse is lunar (the earth blocks the sunlight from reaching the moon). In astral lore the nodes became the head and tail of the eclipsing dragon and transmitted their characteristics to it. As a Greek astrological manuscript (*CCAG* 7.125.11–13)<sup>27</sup> explains in the context of a more or less factual and accurate discussion of the nodes, *τούτων τῶν <δύο> κύκλων* (i.e. the ecliptic and the orbit of the moon) *ἡ περιφέρεια παρὰ τῶν Χαλδαίων Δράκων ὠνομάσθη καὶ αἱ τούτων συμβλήσεις (= σύνδεσμοι) ἡ μὲν κεφαλὴ τούτου ἡ δὲ οὐρά*. The so-called ‘ascending’ node (*σύνδεσμος ἀναβιβάζων*), the point at which the moon crosses the ecliptic from south to north, was equated with the dragon’s head and the ‘descending’ node (*σύνδεσμος καταβιβάζων*), the opposite point at which the moon crosses back into the southern hemisphere, with the dragon’s tail. Indeed, in astrology the words ‘head’ and ‘tail’ (*κεφαλὴ, caput, οὐρά, cauda*), often used without further qualifications, became technical terms for the lunar nodes, while the dragon itself was sometimes called simply ‘head-and-tail’ (*κεφαλὴ καὶ οὐρά, CCAG* 7.124.23; *καρόκερκος, id., 123.12*), a sure indication that at least for the sophisticated it was the merest hypostasis of the nodes, being no more than the sum of its two extremities. The 180° extent of the dragon reflects, of course, the fact that the nodes occupy diametrically opposite points on the ecliptic. The westward motion attributed to it stems from the fact that the nodes do not occupy fixed points on the ecliptic but move gradually westwards, completing a full circuit in approximately 18 $\frac{2}{3}$  years.<sup>28</sup>

The westward drift of the lunar nodes along the ecliptic was probably the determining factor behind a strange development in later Greek astrology in which the nodes were treated as if they were themselves real celestial bodies.<sup>29</sup> They were regarded in fact as an eighth and a ninth planet, the sole difference between them and the original seven being that their movement is contrary to the others’, i.e. westwards or ‘retrograde’ rather than eastwards. As planets, the nodes exerted their own proper influences according to their positions in the zodiac and their aspects with the other planets. They were thus of some importance in catarchic and genethliacal astrology. Bouché-Leclercq (1899: 122, n. 1; 509, n. 1) notes, for example, that the influence of the ascending node is mentioned – for ridicule – by Tertullian (*fortasse et Anabibazon obstabat aut aliqua malefica stella . . . In Marc. 1. 18*) and that the same planet figures in the horoscope of Proclus (*Marinus Vita Procli* 35) who was born in 410. From Greek astrology the planetary character of the nodes was transmitted to Arabic and to medieval western astrology, and to this day Indian astrology takes into account the *chayagrahas*, the ‘shadowy’ planets Rahu (= *caput*) and Ketu (= *cauda*).<sup>30</sup>

In the less sophisticated sources the relationship of the eclipsing dragon to the lunar nodes is forgotten or blurred and the dragon loses some or all of the nodes’ characteristics. For example, in two of the Greek astrological manuscripts already cited the definitive

180° extent is omitted, and the dragon is described as a ‘dark star’ (ἀστὴρ μέλας καὶ σκοτεινός) of the same size or somewhat larger than the luminaries whose light it eclipses (. . . ἕσος μὲν ἐστὶ τῷ ἡλίῳ, τριπλάσιος δὲ τῆς σελήνης, *CCAG*, 7.124.7f.; ἕσος κατὰ τὸ μῆκος τῆς σελήνης, *id.*, 23). Perhaps the most interesting such source, from our point of view, is a Vatican manuscript (gr. 191, f. 229ff., *CCAG* 5.2.130ff.), whose compiler seems to be unaware even of the definitive function of the dragon in causing eclipses, though the fact that the creature’s head is called Ἀναβιβάζων and its tail Καταβιβάζων, that it carries six signs of the zodiac on its back (i.e. that it extends along 180° of the ecliptic), and that it moves westwards (albeit not in a slow revolution of several years, but ἐν πολλῇ σπουδῇ καὶ ἀγῶνι ἀπαύστῳ, *id.*, 134.7), all these betray its origin as the eclipsing dragon. The account given in this particular source should thus alert us to the possibility that the designer of the Ponza zodiac may likewise have incorporated a creature whose iconography identifies it unambiguously as the eclipsing dragon without himself having any awareness of its original function and significance. The source is worth describing in some detail since our dragon has in it an important cosmogonic role which may be of relevance to the role of the snake in the Ponza Mithraeum. Interestingly enough, an excerpt of the manuscript in question was given by Cumont in *Textes et monuments* (1899: 35, n. 1) some time before its publication in the *Catalogus*, not because it had any specific allusions to, or direct bearing on, Mithraism, but because Cumont felt that it illustrated well the sort of astrological doctrines that Mithraism had been exposed to from Chaldaean sources.

Our manuscript contains, among other material, a sort of astrological cosmogony, supposedly of Chaldaean origin, as the heading and introduction assert: Θεμέλιος τῆς ἀστρονομικῆς τέχνης κατὰ τοὺς Χαλδαίους δόξα. Διήγησις σοφωτάτου ἀνδρὸς περὶ ποικίλης καὶ πολυμόρφου σφαίρας κατὰ τὴν τῶν ἐμπείρων καὶ σοφωτάτων Χαλδαίων δόξαν (*CCAG* 5.2.131.1–4). It relates how the ‘all-wise god’ first created a huge, shadowy dragon with its head (Anabibazon) in the east and its tail (Katabibazon) in the west: ἔπλασεν ὁ πάνσοφος θεὸς δράκοντα πᾶν μέγαν κατὰ μῆκος καὶ πλάτος καὶ βάθος, ζοφοειδῆ, ἔχοντα κεφαλὴν, τὸν λεγόμενον Ἀναβιβάζοντα, εἰς ἀνατολήν, καὶ τὴν οὐρὰν αὐτοῦ, τὸν λεγόμενον Καταβιβάζοντα, εἰς δύσιν (131.5–132.2). Next he created the twelve signs of the zodiac and made the dragon carry on its back six of the signs, namely the slow-rising signs (see above, pp. 5f.) from Cancer to Sagittarius, which at creation were set below the horizon in the invisible hemisphere, the other six signs (i.e. the fast-rising signs from Capricorn to Gemini) being above the horizon in the visible hemisphere: καὶ προσέταξε τὸν αὐτὸν δράκοντα βαστάζειν ἕξ ζώδια ἐπὶ τοῦ νότου αὐτοῦ, τὰ λεγόμενα ὀρθὰ καὶ πολυανάφορα, . . . εἰς τὸ ἀφανὲς ἡμισφαίριον ἀπὸ πρώτης μοίρας τοῦ ὑρίζοντος, ἡγουν ἀπὸ ἀνατολῆς μέχρι δύσεως· καὶ τὰ λοιπὰ ἕξ ζώδια . . . , τὰ λεγόμενα πλάγια καὶ ὀλιγοανάφορα, ἐν τῷ ἐμφανεῖ ἡμισφαιρίῳ (132.5–11). Last he created the seven planets and placed them in their original houses, the moon in Cancer, the sun in Leo, and the other five in their solar houses, as in the system already described (p. 6).<sup>31</sup>

Our source goes on to relate how the seven are set in motion and how the five planets proper flee from the sun to take up new positions in their lunar houses. The motion of the seven continues until each of them reaches his ‘exaltation’ (see above, n. 20) or, in the case of Mercury, his ‘depression’ (ταπείνωμα).<sup>32</sup> All this while the zodiac and the great dragon have remained unmoved. Then, however, the creator sets them in motion, and the dragon rushes westwards, still carrying six of the signs on its back but constantly changing them

as its impetus carries it ahead from sign to sign: τότε ὁ πάνσοφος δημιουργὸς οἰκείῳ νεύματι ἐκίνησε τὸν μέγαν δράκοντα σὺν τῷ κεκοσμημένῳ στεφάνῳ, λέγω δὴ τὰ δώδεκα ζώδια, βαστάζοντα ἐπὶ τοῦ νότου αὐτοῦ . . . τὰ ἕξ ζώδια, προηγούμενως αὐτῶν μεταβαίνοντα ἀπὸ ζωδίου εἰς ζώδιον ἀπὸ ἀνατολῆς πρὸς δύσιν ἐν πολλῇ σπουδῇ καὶ ἀγῶνι ἀπαύστῳ (134.3–7). The planets scatter in terror at the dragon's coming, which accounts for their erratic wanderings to the north and south and for their stations and retrogressions.

Does the dragon in this 'Chaldaean' cosmogony represent some specific celestial phenomenon? It is certainly not intended to represent the lunar nodes (although, as we have seen, it takes certain of its characteristics and the names of its extremities from the nodes),<sup>33</sup> since its movement is too rapid and, above all, there is no mention of eclipses in the account.<sup>34</sup> Most probably, it is meant to represent the daily westward rotation of the entire heavens. The narrative stresses the fact that the first motion imparted to the celestial bodies is the eastward motion of the sun, moon, and planets (i.e. their revolutions in periods of a year, a month, and so on), while the dragon and the zodiac (and by implication the whole sphere of the fixed stars) remain motionless: καὶ ἔμειναν τὰ δώδεκα ζώδια ἀκίνητα σὺν τῷ μεγίστῳ δράκοντι μέχρι πολλῶν περιόδων τῶν ἑπτὰ ἀστέρων (133.1f.). When the planets have reached their exaltations, the dragon and the zodiac are set in motion, and their motion is explicitly described as both rapid and contrary to the direction of the motion of the planets, which in panic at the dragon's onslaught abandon their original regular orbits: ἰδόντες δὲ <οἱ> ἑπτὰ φωστῆρες τὸν μέγαν καὶ φοβερόν δράκοντα καὶ τὴν ὄξειαν καὶ ἐναντίαν αὐτοῦ κίνησιν σὺν τῷ χορῷ τῶν ἀνομοιοτάτων δώδεκα ζωδίων, ἄφνω θροηθέντες ἔσφαλον τῶν οἰκείων δρόμων πλανώμενοι ἐκ τῆς ὁδοπορίας αὐτῶν (134.11–14). The only motion which corresponds to this description of the movement of the dragon, and with it of the zodiac, is the diurnal rotation of the heavens, the most fundamental of the celestial motions since it affects all the celestial bodies together. In the cosmogony, then, the dragon is probably meant to account, first and foremost, for the fact that the heavens in their entirety appear to wheel over our heads from east to west each day. The dragon carries the zodiac because the zodiac is the most important part of the sphere of the fixed stars, which is the sphere from which diurnal rotation is transmitted inwards to the spheres of the seven planets. It carries a varying set of signs, bearing them 'now into the invisible world, now into the visible' (134.7f.), because different signs become visible at different seasons of the year. It seems, then, that our 'Chaldaean' cosmogony has turned the eclipsing dragon of the lunar nodes into a creature representing the daily rotation of the entire heavens. If that is what it represents in this particular literary source, it is possible (though I shall argue later that this would not be the most plausible hypothesis) that it might symbolize the same phenomenon on the ceiling of the Ponza Mithraeum.

(to be continued)

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## Notes

- 1 So poor is the state of preservation of the figures on the walls that some of Vermaseren's plates are hard or even impossible to decipher and one sometimes has to work from his descriptions alone. This is especially true of the representation of Luna (pl. IV) and Cautopates (pl. V).

- 2 The description on p. 8 is misleading: 'A second point of interest is that Cautopates is as usual represented below Luna (to the right of the bullslaying), but that Cautes, standing at Sol's side, is not represented below him but apart to one side of the niche.' What Vermaseren means is that while the torchbearer on the right (who in this case happens to be Cautopates) is set below the moon goddess, i.e. in the usual relationship, the torchbearer on the left (in this case Cautes) is set not below but to one side of the sun god on a separate part of the wall. The most natural reading of Vermaseren's sentence, however, is that Cautopates' position on the right below Luna is his usual one, which is, of course, the exact opposite of the truth.
- 3 Reproduced from Vermaseren (1974: 9, fig. 6) by kind permission of the publisher, E. J. Brill.
- 4 Vermaseren's inference that the usual representation 'means that the artist has followed well the instructions of an *astronomus*' (p. 26) is surely invalid. The customary design in fact points to nothing beyond itself. The artist, as might be expected, has simply followed the commonplace artistic idiom for the representation of zodiacs, whether or not under the instructions of an *astronomus* it is impossible to tell. What would reveal the directing plan of an *astronomus* would be, on the contrary, some significant and astronomically explicable *departure* from the norm.
- 5 (a) The snake stretches round the bears on the *southern* side, not, as stated (p. 10), on the *northern* side, (b) Leo is situated opposite the snake's head on the *west* side, not the *east* side (*ibid.*), (c) the horn carrying wind-god opposite Sagittarius' is on the *left* side of the zodiac, not the *right* side (*ibid.*), and conversely (d) the hornless god next to Pisces and Aries is on the *right* side, not the *left* side (*ibid.*).
- 6 The mere fact of clockwise direction is mentioned by Vermaseren (p. 17), but its implications are not examined.
- 7 Rather more than two out of every three run counterclockwise. I take this figure from a rough count of relevant entries in H. G. Gundel's catalogue of ancient zodiacs (1972: 611–694).
- 8 E.g. clockwise: Monac. lat. 210, fol. 113<sup>v</sup>, s. ix (Gundel, zod. cat. no. 225); Bern. 88, fol. 11<sup>v</sup>, s. xi (Gundel 228); Harl. 647, fol. 21<sup>v</sup>, s. ix (Gundel 229). Counterclockwise: Basil. A. N. iv 18, fol. 1, s. viii–ix (Gundel 224); Phillip. 1830, foll. 11–12, s. ix (Gundel 226); Vat. gr. 1087, fol. 310<sup>v</sup>, s. xv (Gundel 230). Modern star maps, of course, all take the internal point of view, i.e. they plot the apparent positions of the stars as seen from the earth on the inner surface of what has long been accepted as a purely notional sphere. Hence, in a modern projection of the north celestial hemisphere the zodiac invariably runs clockwise (though counterclockwise in a projection of the southern hemisphere).
- 9 The distinction between the internal and the external point of view is mentioned several times by H. G. Gundel (1972: 607, 680, 681, 694; 1966: 1279). On two occasions, though, he is mistaken as to the proper correlation between the point of view and the direction of the zodiac. At one point in his catalogue of zodiacs (1972: 680) the correlation is simply misstated: 'Die Bildfolge im Z. ist bei einigen Tafeln dem Uhrzeigersinn entgegengesetzt, d.h. der Sicht von der Erde aus entsprechend (Nr. 224, 226, 230), bei anderen im Sinne des Uhrzeigers (rechtsläufig), d.h. der Aussenansicht eines Globus angepasst (Nr. 225, 228, 229).' Again, in his article on the zodiac in the *Enciclopedia dell'arte antica* (1966: 1279) he writes of the important stellar ceiling in the proto-Islamic (c. A.D. 700) baths at Qusayr'Amra in Jordan 'le costellazioni, forse tratte da un planisfero, sono dipinte come viste dall'interno della sfera celeste'. But the zodiac at Qusayr'Amra runs counterclockwise (Gundel, 1972: cat. no. 163). Paradoxically, then, the view there corresponds to what one would see looking down from *outside* the celestial sphere. It is worth noting that in this respect the Ponza ceiling is more accurate than that at Qusayr'Amra. On the Qusayr'Amra zodiac see Saxl and Beer (1932: 290): '... the painting was obviously taken from a foreign source and transferred to the wall with more or less understanding and certainly executed by a man who not only was no

- astronomer, but also could seldom have observed the heavens. For he who looked into the starry cupola of Qusayr'Amra saw the stars not as they appear in the heavens, but with a transposition from left to right. He saw them there as they are reproduced on the *outer surface of a globe of the heavens* [Saxl's italics] or on the page of a book, not as they appear to the observer who stands within the celestial globe.' For discrepancies in Manilius and Firmicus Maternus resulting from alternation between an internal view of the heavens as they actually appear to an observer and an external view as depicted on a globe see Boll (1903: 383, n. 1).
- 10 Some emendation is certainly called for, and the introduction of Cautes and Cautopates is ingenious and has much to recommend it, not least that it makes sense of this passage for the first time. *Tou Kautou* would replace the meaningless *tou kata* of M and *kat' autou* of V and the groundless conjecture *tou kat' auton hemisphairiou* of Lascaris in the editio princeps. *Kautopatou* would replace a lacuna left deliberately in V for which V<sup>2</sup> (=Lascaris) supplied *kat' ekeinou* (M is illegible at this point). The cause of the corruption might well have been the unfamiliarity of the scribes with the two proper names. The emendation has, however, one major drawback. By associating Cautes with the south and Cautopates with the north, it makes Cautopates the power of genesis and Cautes the power of apogenesis. This is contrary to the generally accepted symbolism in which Cautes with his raised torch is associated with sunrise, morning, spring, and birth, and Cautopates with his lowered torch is associated with sunset, evening, autumn, and death: See Cumont (1899: 211f.): '... la valeur allégorique des dadophores mithriaques n'est point discutable. Celui qui élève son flambeau, est la personnification du soleil matinal ou vernal qui monte de plus en haut dans le ciel, et, éclaire le monde d'une lumière toujours plus ardente, y répand la fécondité. Celui qui abaisse sa torche, représente l'astre à son déclin, soit qu'au couchant il descende derrière l'horizon, soit qu'il amortisse ses feux dans les brumes de l'hiver et laisse les frimas engourdir la végétation. D'une manière plus générale, l'un symbolisera la chaleur et la vie, l'autre le froid et la mort.' See also Vermaseren (1963: 72-74) and Schwartz (1975: 406). The inversion of the symbolism implicit in the Arethusa emendation seems to have escaped Vermaseren and in fact leads him into serious contradictions. Having quoted Porphyry (*alla Boreas men oikeiosis genesis iousais*) and having observed that Porphyry's 'philosophical explanation... is reproduced by the artist in Ponza in a remarkable way', he goes on to speak of 'the north side where Cautopates symbolizes the dark element, night, the realm of death' (p. 28)! The same error is made in connection with the London tauroctony (CIMRM 810): 'In the sanctuary at Ponza the north [sc. wind] is on Cautopates' side and this is contrary to Porphyry's symbolism. In this respect the London relief is more accurate: on the side of *genesis*, symbolized by the rising Sol in his quadriga and by the figure of Cautes, the bust of Boreas, recognizable by his beard and the wings at his temples, is present; whereas the youthful Notos (South) is represented as the dissolving wind on Luna's and Cautopates' side' (p. 29). In fact, if the Arethusa emendation is correct, the arrangement at Ponza conforms to Porphyry's symbolism more closely than the London tauroctony.
- 11 Though following very different lines of argument, Eisler (1910: 409), Campbell (1968: 55), and Gordon (1975: 232) all assume that the terms right and left are to be understood from Mithras' point of view. Two points could, however, be made in favour of Vermaseren's interpretation. First, the word *echōn* is a conjecture supplied by the early editors of the text. The passage would make equally good sense if a conjunction were supplied instead and a new clause understood to start at *en dexiāi men*. Thus, instead of Mithras 'having' north to the right, etc., the text would read in a much more neutral fashion 'north [sc. is] to the right and south to the left'. Secondly, and in conjunction with the first point, one could cite as a parallel Paus. 5.10.6. Speaking of the east pediment of the temple of Zeus at Olympia, Pausanias says that 'Oinomaos is on the right of Zeus', and right, as we can tell from a reconstruction of the

- remains, is here the spectator's right; see Wycherly (1955: 188, pl. 85a). The parallel is close, especially if one believes that Porphyry is talking as much about the position of the *image* of Mithras in the microcosm of the Mithraeum as about the god's position in the macrocosm of the heavens.
- 12 The association of the two equinoctial signs with the east and the west results from treating the circle of the zodiac as if it were, so to speak, the circle of a compass. If the tropics represent north and south, the equinoxes must represent east and west. In actual fact, east and west are only relative terms when applied to the zodiac (e.g. Taurus is east of Aries and Aries is west of Taurus). In an absolute sense, none of the twelve signs is any more eastern or western than any other.
  - 13 Orientation in this sense of deliberate alignment with reference to the cardinal points appears to have played little part in the design of Mithraea in general. One must of course allow that in individual cases orientation may have been an important consideration, sometimes (though not necessarily) in conjunction with the use of Mithraea as primitive observatories and in connection with the alignment of beams of light to fall on particular icons, as recently suggested by W. Lentz (1975). But considered *en masse*, Mithraea are found pointing in every direction, and despite Campbell's efforts to account for the variations in terms of the different associations of the cardinal points in the different climatic zones in which Mithraism was supposed to have had its early development (1968: 44–90), the best hypothesis remains the one that his carefully presented data (51ff.) most obviously suggest: that the direction of Mithraea in relation to the cardinal points was an arbitrary matter determined locally and not governed by any set doctrine of the cult at large. This is essentially the finding of Lentz (1975: 359–361) who aptly re-states Cumont's view (1899: 58): 'Suivant les circonstances locales, leur axe se dirige et leur porte s'ouvre vers tous les points de l'horizon.' The Ponza Mithraeum merely adds another instance to this general principle. Significant alignments with reference to the cardinal points could have been made, but were not.
  - 14 We might note briefly the Mithraic monuments which such a symbolism would in fact fit. First, the Mithraeum of the Seven Spheres (CIMRM 242): The bench on the left side of the Mithraeum is decorated with the six summer (i.e. northern) signs from Aries to Virgo, the bench on the right side with the six winter (i.e. southern) signs from Libra to Pisces. Hence the symbolic north would be to the right of Mithras in the main cult image and the symbolic south to his left, while the east–west axis of the equinoxes would extend in front of him down the length of the Mithraeum. Incidentally, the description in *CIMRM* of the order of the signs on the left side of the Mithraeum is incorrect: Aries is closest to the cult image, not Virgo; see Becatti (1954: 49, fig. 10, pl. VI. 1). Of the zodiacs that surround Mithras in a ring, the iconography that I suspect Porphyry has in mind in *De antro*, only 75 (Sidon) has Cancer and the summer signs to the left (i.e. Mithras' right) and Capricorn and the winter signs to the right (i.e. Mithras' left). However, the same arrangement of the zodiac is found in 695 surrounding the Modena deity; see Eisler (1910: 409). In 43 (Dura, zodiac on soffit of arch framing cult niche) right and left are inverted, the northern signs being to Mithras' left (spectator's right) and the southern to his right. The other three ring zodiacs all have Cancer at the top and Capricorn at the bottom. Symbolic north would thus be above Mithras and south below him, with the east and west (Aries and Libra) to his left and right, as in 810 (London) and 1472 (Siscia), or vice versa, as in 860 (Housesteads). These last three monuments cannot, then, be squared with Porphyry's symbolism. In the other pattern for Mithraic zodiacs, that in which the zodiac extends in an arc over the tauroctony (usually over the mouth of the cave) starting with Aries on the extreme right or left, the summer or northern signs are found on Mithras' right (spectator's left) and the winter or southern signs to his left in the following: 40 (Dura), 389 (Palazzo Barberini, upper zodiac), 635 (Rome), 1083a (Heddernheim



I), 1137a (Rückingen), 1140 (Gross-Krotzenburg), 1292 (Osterburken). The reverse arrangement with the northern signs on Mithras' left (spectator's right) and the southern to his right is found only in 390 (Palazzo Barberini, lower zodiac). In these arc-type presentations of the zodiac an east-west (equinoctial) axis cannot, of course, play any part, since one of the equinoxes (Libra) is directly above Mithras in the centre of the arc while the other (Aries) is on his extreme right (spectator's left) or extreme left (spectator's right – 390 only).

- 15 The distinction and its significance in astrology are fully explained by Bouché-Leclercq (1899: 259–269).
- 16 An accurate horoscope cannot be cast without taking into account the different lengths of the 'ascensions' (*anaphorai*) of the signs at the given latitude.
- 17 The system of 'houses' (*oikoi*) is explained in Bouché-Leclercq (1899: 182–192). The classic ancient account is Ptolemy's: *Tetrabiblos* 1. 17.
- 18 I argue elsewhere (1976: 95–98) for an emendation which would have Porphyry associate Mithras with the other equinoctial sign, Libra, in a similar manner: *epocheitai de taurōi Aphroditēs*; <*ho de zygos Aphroditēs*> *hōs kai ho tauros* (i.e. Mithras straddles a bull; the bull, Taurus, is the house of Venus; Libra is also Venus' house).
- 19 Aries is shown leaping towards Sol, Taurus towards Luna.
- 20 On the planetary 'exaltations' see Ptol. *Tetr.* 1. 19 and Bouché-Leclercq (1899: 192–199). It may be significant that in the London and Siscia tauroctonies not only is Sol next to his house in Leo but also Luna is next to her exaltation in Taurus.
- 21 The diagram is a planisphere showing the positions of Ursa Major, Ursa Minor, Draco, and Serpens in c. A.D. 100 relative to the poles and the twelve signs of the zodiac. The diagram is so aligned as to have the signs of the zodiac in roughly the same positions as in the diagram of the Ponza ceiling in fig. 1. Since the circumference of the planisphere is the ecliptic, its centre is the pole of the ecliptic, not, as is usual in such representations (e.g. the medieval planispheres, the Qusayr'Amra ceiling [see above, n. 9], modern star charts of the north polar region), the equatorial pole. To visualize the effects of diurnal rotation, one must therefore imagine that the diagram rotates *eccentrically*, i.e. around the equatorial pole which is shown above and to the left of the centre. As the arrow indicates, the direction of rotation is counterclockwise. The positions of the stars are plotted according to the co-ordinates for A.D. 100 given in Peters and Knobels' recension of Ptolemy's catalogue (1915: 51–52). I have plotted all the stars listed for Draco, Ursa Minor and Serpens (together with  $\delta$ ,  $\epsilon$ ,  $\nu$ , and  $\tau$  Ophiuchi which mark the hands of the 'Serpent-holder' where he grasps the snake), but for Ursa Major only the famous seven that make up the Plough or Big Dipper. Ptolemy's Ursa Major is a much larger creature that takes in a whole host of stars to the south-west (i.e. in the direction, approximately, of Gemini, Cancer and Leo), but it is an astronomer's construction and not the Great Bear of myth and popular imagination. Although the relative positions of the stars themselves have changed but slightly in the last two millennia, their positions in relation to the north equatorial pole has shifted considerably. To visualize this change, one must imagine the constellations revolved around the pole of the ecliptic (centre of diagram) in a clockwise direction approximately one twelfth of a full turn. This brings the star at the tip of Ursa Minor's tail (our modern Polaris) to its present position close to the north equatorial pole. The zodiacal *constellations* have of course also moved, although the *signs* of the zodiac, which are arbitrary 30° divisions of the ecliptic starting at the point of the spring equinox, remain fixed. Paradoxically, then, the stars of Gemini (for example) are now mostly in the sign of Cancer. In antiquity, however, the signs and the constellations of the zodiac more or less coincided, and from our point of view, fortunately, the two sets can be treated as virtually one and the same.
- 22 The distance of Draco's head from the pole received some attention in antiquity. There was,

- indeed, something of a controversy as to whether and at what latitudes the head of Draco sets, i.e. is so far removed from the pole that it skims or passes below the northern horizon at the nadir of its apparent orbit; see Mair (1960: 210-11) on Arat. 61f.
- 23 See the nomenclature of the constellation in Gundel (1937: 881). Presumably Draco is the 'snake between the bears' to distinguish it from the other celestial snakes, Hydra and Serpens.
  - 24 A description and plates of the Tabula Bianchini, together with bibliographic references, are given in Vermaseren (1974: 18, n. 1, and pls. XXVI and XXVII); see also Gundel's catalogue of zodiacs (1972: 632-633, 60). Around the central roundel containing Draco and the bears (the composition of which is determined solely by considerations of symmetry and balance, not accuracy of *astrothesie*) are a series of concentric rings containing, from the centre outwards, (a) the *dodekaoros* (i.e. the Egyptian zodiacal signs), (b) and (c) the Greek zodiac repeated in two identical rings, (d) the 36 decans (i.e. the guardians of each third of each sign, of Egyptian origin like the *dodekaoros*), and (e) the planetary deities corresponding to each decan.
  - 25 For the zodiac Daressy Vermaseren likewise furnishes a description, a plate, and bibliographic references (1974: 17, n. 2, and pl. XXV); further information in Gundel's catalogue (1972: 632, 59). Outside the central roundel, with its busts of Sol and Luna and a (?) snake, are two rings only, containing the *dodekaoros* (inner ring) and the Greek zodiac (outer ring). The quotation from Vermaseren given above is intended to mean that the monument as a whole 'follows the Egyptian tradition' (in that it includes the *dodekaoros*), not that there is anything peculiarly Egyptian about the representation of Draco.
  - 26 Daressy himself was non-committal. His description, in Boll's translation (1903: 305) reads simply: 'Ein Bogen ist neben sie [i.e. Apollo and Phoebe] gestellt.'
  - 27 Paris. 2506, f. 175<sup>v</sup>. Where appropriate, references to Greek astrological MSS. will be given, as above, by volume, page, and line number in the *Catalogus Codicum Astrologorum Graecorum*.
  - 28 It is interesting to note that even today the eclipsing dragon maintains a shadowy existence in scientific astronomy with the technical term for the interval between two successive passages of the same node, namely the 'draconitic' month (a period of just over 27 days and five hours).
  - 29 On this topic see Bouché-Leclercq (1899: 121-123).
  - 30 On the nodes in Indian astrology and the astral lore associated with them see K. S. I. Krishnamurti (1971: 296-300).
  - 31 With the exception of the dragon, the same description of the heavens at creation, the *thema mundi* as it is called, is found in Firmicus Maternus 3.1 and Macrobius *In somn.* 1.21.23-27.
  - 32 The lame expedient of placing Mercury in his depression is necessitated by the relative positions of Mercury and the sun. It is a physical fact that Mercury is never more than 28° of longitude, or just under a sign's width, distant from the sun. Therefore, if Sol is in his exaltation in Aries, Mercury cannot simultaneously occupy his exaltation in Virgo.
  - 33 In the account, the names of the head and the tail are given in close connection with the description of their original positions at creation (see above, p. 12). Anabibazon occupied the east, the quarter where celestial bodies *rise*, and Katabibazon the west, the quarter where they *set*. This represents, I believe, the compiler's attempt to give meaning to terms whose proper technical sense he does not understand.
  - 34 I take the fact that the dragon is described as *zophoeidē* to be a further indication of its origin as the monster that causes eclipses. At 131.6 (see above, p. 12) I have punctuated the text so as to make *zophoeidē* modify *drakonta*. Bidez, who edited the text in *CCAG*, placed no comma after *zophoeidē*, thus making the adjective modify *kephalēn*. In this, Bidez followed Cumont (1899: 35, n. 1).

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