The Twelve Sacred Planets

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Abbreviations

1. Ancient cultures

The seven sacred planets of the ancients are: Saturn, Jupiter, Mars, Venus, Mercury, and the Sun and Moon. The Sun and Moon are not, of course, planets in the usual sense of the term, but from a geocentric perspective all these seven bodies appear to revolve around the Earth. Theosophy explains that the Sun and Moon are really substitutes for two hidden planets, one between Mercury and the Sun, and the other near the Moon.

Uranus, Neptune, and Pluto were discovered in 1781, 1846, and 1930 respectively. In 2006 Pluto was downgraded to the status of a 'dwarf planet'. It is often said that ancient cultures did not refer to any of these planets because they are not readily visible to the naked eye and were therefore unknown. H.P. Blavatsky comments:

The now universal error of attributing to the ancients the knowledge of only seven planets, simply because they mentioned no others, is based on the same general ignorance of their occult doctrines. The question is not whether they were, or were not, aware of the existence of the later discovered planets; but whether the reverence paid by them to the four exoteric and three secret great gods – the star-angels, had not some special reason. The writer ventures to say there was such a reason, and it is this. Had they known of as many planets as we do now (and this question can hardly be decided at present, either way), they would have still connected with their religious worship only the seven, because these seven are directly and specially connected with our earth ...³

The seven planets are not limited to this number because the ancients knew of no others, but simply because they were the primitive or primordial *houses* of the seven *Logoi*. There may be nine and ninety-nine other planets discovered – this does not alter the fact of these seven alone being sacred.⁴

Like other writers, HPB says that earlier cultures did in fact know of more planets:

even with the Sun and the Moon thrown out of the calculation, the ancients seem to have known of *seven* planets. How many more are known to us, so far, if we throw out the Earth and Moon? *Seven*, and no more: Seven primary or principal planets, the rest *planetoids* rather than planets.⁵

Another proof ... that the ancient Initiates knew of more than *seven* planets is to be found in the Vishnu Purana, Book II., ch. xii., where, describing the chariots attached to Dhruva (the pole star), Parasara speaks of 'the chariots of the NINE planets,' which are attached by aerial cords.⁶

The seven sacred planets and the Earth form a particular hierarchy within the solar kingdom because they are closely united in origin and destiny. Together they form the sacred ogdoad of the ancients. According to theosophy, there are really 12 sacred planets. The ancients, too, sometimes referred to 12 spiritual planetaries or rectors, known as the twelve counsel gods and called in the Etrusco-Roman language 'consentes dii' – 'consenting or cooperating gods'.

The ancients arranged the seven planets in the following order: Saturn, Jupiter, Mars, Sun, Venus, Mercury, Moon. This order is defined by their geocentric radii, i.e. the relative time occupied by each in its apparent orbit of the Earth: approx. 30 years, 12 years, 2 years, 1 year, 7 months, 3 months, and 1 month respectively.

The order of the days of the week is determined as follows. Imagine that the first hour of a particular day is under the governance of Saturn. Each subsequent hour is under the governance of the subsequent planet. The 8th, 15th, and 22nd hours are therefore governed by Saturn. The 24th hour is governed by Mars, and the first hour of the next day is governed by the Sun: Saturn-day (Saturday) is therefore followed by Sun-day (Sunday). The same procedure is followed in determining the remaining five days of the week. The order and names of the days of our week are therefore based on ancient astrology. Moreover,

[they] were the same in India and in Northern Europe, and in some parts of Asia, a matter which has never yet been satisfactorily explained by our current calendarists and astronomers. The reason is found in the fundamentally identical astrological system common to the entire ancient world.¹¹

The following table gives the English and Scandinavian names for the days of the week, the names of the Scandinavian gods from which they are derived, and the names of the seven sacred planets. 12

| Monday | Måndag | Manen | Moon |
|-----------|---------|------------------|---------|
| Tuesday | Tisdag | Tiw (God of War) | Mars |
| Wednesday | Onsdag | Wotan | Mercury |
| Thursday | Torsday | Thor | Jupiter |
| Friday | Fredag | Freya | Venus |
| Saturday | Lördag | ? | Saturn |
| Sunday | Söndag | ? | Sun |

The following table gives the French and Spanish names of the days of the week, and the corresponding Roman gods, which are also the names of the sacred planets.¹³

| Lundi | Lunes | Luna, the Moon |
|----------|-----------|----------------|
| Mardi | Martes | Mars |
| Mercredi | Miércoles | Mercury |
| Jeudi | Jueves | Jupiter |
| Vendredi | Viernes | Venus |
| Samedi | Sábado | Saturn |
| Dimanche | Domingo | Sun |

Copernicus introduced the heliocentric (sun-centred) model of the universe in the 16th century, and it was subsequently adopted by Kepler and Galileo. Western astronomers had previously followed the geocentric system expounded by Ptolemy. Although the ancients generally used a geocentric system, there is plenty of evidence that they were aware of the truth of the heliocentric system. HPB writes:

Hicetas, Heraclides, Ecphantus, Pythagoras, and all his pupils, taught the rotation of the earth; and Aryabhata of India, Aristarchus, Seleucus, and Archimedes calculated its revolution as scientifically as the astronomers do now ... 14

The *Vishnu-Purana* teaches heliocentrism in one passage (bk. 2, ch. 8), but deliberately contradicts it in others, 'because it was a secret temple-teaching'. 15

Notes to section 1

- 1. 'The seven globes of our planetary chain were likewise frequently called the seven sacred planets by the ancients' (FEP 541).
- 2. Also classed as dwarf planets are Ceres (the largest body in the asteroid belt between Mars and Jupiter) and Eris (a body in the Kuiper Belt, beyond Pluto); see http://en.wikipedia.org/wiki/Dwarf planet.
- 3. SD 1:574fn.
- 4. SD 2:602fn.

Church Father Origen testifies to the fact that the gnostics associated rectors with the seven sacred planets: Ildabaoth, genius of Saturn; Eloi, of Jupiter; Sabao, of Mars; Adonai, of the Sun; Orai, of Venus, Astaphai, of Mercury; and Iao, of the Moon (SD 1:577; Isis 2:294; Geoffrey A. Barborka, *The Divine Plan*, TPH, 1964, 414).

The Greek names of the deities associated with the seven sacred planets are: Kronos, Zeus, Ares, Phoebus, Aphrodite, Hermes, Semele. They are usually given in their Latin names: Saturn, Jupiter, Mars, Apollo (the Sun), Venus, Mercury, Diana/Luna (*The Divine Plan*, 413).

5. SD 1:575fn; see also 1:99-100. This statement is still correct now that Pluto has been demoted.

The ancients had an ogdoad which did not include the earth (BCW 14:226). '... the Ancients knew of seven planets besides the Sun ... The seventh, with two others, ... were "mystery" planets, whether Uranus or any other' (BCW 14:316fn, 332). KH: 'Neptune is the secret planet of the ancients' (www.blavatskyarchives.com). GdeP: 'The ancients in my judgment knew of the planets Uranus and Neptune, but they did not include them in their astronomical works. We Theosophists know why' (SOP 6).

- 6. SD 2:488-9fn.
- 7. ET 183; Dia 1:250.
- 8. FSO 319.
- 9. FEP 329; BCW 12:551.
- 10. FEP 329-30. See also BCW 12:536.
- 44 FED 000 OD 4 050

11. FEP 329; SD 1:652.

'The names of the days of our (Christian) week are those of the gods of the Chaldaeans, who translated them from those of the Aryans ... Greece did not get her astrological instruction from Egypt or from Chaldaea, but direct from Orpheus, as Lucian tells us. It was

- 12. L. Gordon Plummer, The Mathematics of the Cosmic Mind, TPH, 1982, 150.
- 13. Ibid. 'Notice that due to the Christian influence and customs, the correspondences break down for the names of Saturday and Sunday, although the English words for these two days quite evidently correlate with Saturn and the Sun' (150).
- 14. SD 1:117, 2:153.
- 15. SD 2:155. See Richard L. Thompson, Mysteries of the Sacred Universe, Govardhan Hill Publishing, 2000, 118-20, 259.

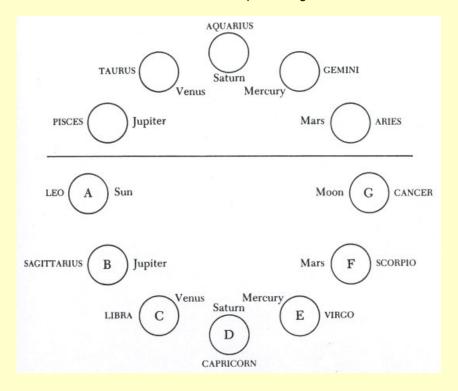
Orpheus, as he says, who imparted the Indian Sciences to nearly all the great monarchs of antiquity ...' (BCW 14:350).

2. The sacred planets

HPB says that the seven sacred planets 'were the heavenly bodies in direct astral and psychic communication with the Earth, its Guides, and Watchers – morally and physically; the visible orbs furnishing our Humanity with its outward and inward characteristics, and their "Regents" or *Rectors* with our Monads and spiritual faculties'. The sacred planets did not include Uranus or Neptune, 'not only because they were unknown under these names to the ancient Sages, but because, they, as all other planets, however many there may be, are the *gods* and guardians of other septenary chains of globes within our systems'.

The seven sacred planets are usually listed as: Saturn, Jupiter, Mars, Venus, Mercury, Sun, Moon. The Sun is a substitute for a planet between Mercury and the Sun, at present invisible but suspected by some 19th century astronomers, who called it Vulcan. The Moon is a substitute for a planet (Lilith) 'sometimes seen near the moon – by those who "have eyes to see" '. In one place HPB omits Mars from the list of sacred planets: 'Saturn, Jupiter, Mercury, and Venus, the four exoteric planets, and the three others, which must remain unnamed'. G. de Purucker explains: 'Like the sun and the moon which are substitutes for two secret planets, Mars – to a certain extent – is in the same category'.

There are really 12 sacred planets, just as there are 12 globes of a planetary chain. These include the seven commonly referred to, plus the Earth and four other invisible planetary chains. Each globe of our planetary chain is the child of, and in a sense built, controlled, and guided by, one in particular, but all in general, of the 12 sacred planets. Our own globe D, for example, was especially built by, and is especially guided by, Saturn, assisted by our Moon. The reference here is to the ensouling divinities of the sacred planets rather than their material bodies. Each round and each root-race are likewise under the particular governance of one of the sacred planets.



Planetary and zodiacal correspondences of the 12 globes of our planetary chain.⁹

The seven or twelve planets are sacred because they are the transmitters to the globes of our planetary chain of the twelve primal spiritual and other forces emanating as minor logoi from the supreme logos of our Sun. Each logos is the rector or genius of one of the sacred planets and uses that planet as its principal house or 'nerve centre'. The main substance of a planetary chain comes from itself through its laya-centre, but it draws into itself other energies and atoms flowing from its family of sacred planets, which are closely attuned to it karmically. The life-flow from the sacred planets provides us with our seven elements and principles. 10

The spiritual rectors or governors of the sacred planets are the world-builders or kosmokratores often mentioned by the Greek philosophers. Our planetary chain was built by these kosmokratores, along with the svabhavic impulses emanating from the planetary chain itself. Similarly, our own planetary chain helps to build and guide some other planetary chain. Throughout the solar manyantara, all

planetary chains cooperate in building one another's structures, and in filling each other with the characteristic energies and radiations belonging to each one. All the planetary chains therefore work out their common destiny together. The solar system as a whole is a living entity; its heart and brain are combined in the Sun, and the planets are its organs or ganglions.¹¹

The twelve life-waves or families of monads currently associated with the Earth planetary chain remain tied to it for the whole of the present solar manvantara (comprising seven planetary embodiments). During the outer rounds, the various classes of monads have to pass through, and evolve in, each of the sacred planets in turn. The order is: Vulcan, Jupiter, Venus, Earth, Mercury, Mars, Lilith. 12 Individual monads also pass through the sacred planets for much shorter periods during sleep, after death, and during initiation. 13

Notes to section 2

- 1. SD 1:575.
- 2. BCW 10:340; FSO 331-2. See Appendix 1, 'The search for Vulcan'.
- 3. FEP 349. 'Some astrologers are beginning to suspect the existence of such a planet near the moon, and one or two of them have even given to it the newfangled name of Lilith a name taken from Rabbinical legend as signifying the quasi-animal and first "wife" of Adam' (FSO 319). See Appendix 2, 'Lilith and the second moon'.
- 4. SD 1:575.
- 5. FSO 332; FEP 210, 526.
- 6. See section 3. Neither Neptune nor Uranus belongs to the 12 sacred planets (ET 190).
- 7. ET 183-4; FEP 526-7, 530-1, 562; FSO 321-2; Dia 1:39-40.

Every planetary chain is the sevenfold or twelvefold constitution of a celestial being, whose abode is mainly in the highest globe, and whose vital influence and mind permeate every globe, and therefore every being or atom which goes to form the various globes of that chain. Just as man has his 7, 10, or 12 element-principles, so every planetary chain has its 7, 10, or 12 foci or knots of consciousness (its element-principles), which are its respective globes (FSO 129, EST 4:26).

- 8. FEP 325, 530-1. The planet corresponding to each of the seven rounds or root-races is the same as that corresponding to globes A to G in turn.
- 9. FSO 141, 323; FEP 548, 561. In this diagram five of the seven sacred planets appear twice. This is 'more or less a blind', though based on the occult fact that the 12 zodiacal magnetisms working through our solar system can be viewed as being six fundamental but bipolar magnetisms (FSO 323-4).
- 10. FSO 320-2; FEP 325, 472.

'Every sun is the outward vehicle of an indwelling spiritual and intellectual presence – the solar logos ... Our sun is a cosmic atom ... ensouled by its own spiritual-intellectual "life-atom," at the core of which there resides a divine monad of stellar origin and character' (FSO 298).

- 11. FSO 318-19; ET 187-8; FEP 548, 562.
- 12. Dia 1:21, 72; FSO 141, 151. The list is clearly incomplete as it does not include Saturn or the four invisible planetary chains. Regarding Saturn, GdeP says: 'in the peregrinations of the monads, Saturn opens the peregrination before the Sun is reached, and closes it after the Sun is left behind' (Dia 1:41).

He also says that when a sacred planetary chain (e.g. Venus) has ended its seventh round and died, the monads during the outer round will visit a substitute, but he does not give any further details (Dia 2:318). The higher element-principles of the globes of a planetary chain naturally continue to exist after the planet has died, as in the case of a human.

13. See 'Inner and outer rounds'.

3. Mars/Mercury controversy

In 1882 A.P. Sinnett asked mahatma KH the following question:

What other planets of those known to ordinary science, besides Mercury, belong to our system of worlds? Are the more spiritual planets – (A, B & Y, Z) – visible bodies in the sky or are all those known to astronomy of the more material sort?¹

As HPB later said, to this 'vague and indefinite' question KH gave an equally 'vague and incomplete' reply:

Mars and four other planets of which astronomy knows yet nothing. Neither A, B, nor Y, Z, are known; nor can they be seen through physical means however perfected.²

Sinnett misinterpreted this to mean that the physical planets Mars and Mercury were globes C and E of the Earth planetary chain – a view he expressed in an article in *The Theosophist* and in his book *Esoteric Buddhism*.

HPB refers to this 'great mistake' in *The Secret Doctrine*, when correcting the 'gratuitous speculations ... sometimes indulged in by the European lay-chelas'.

It was asked: 'What planets, of those known to ordinary science, besides Mercury, belong to our system of worlds?' Now if by 'System of Worlds' our *terrestrial chain* or 'string' was intended in the mind of the querist, instead of the 'Solar System of Worlds,' as it should have been, then of course the answer was likely to be misunderstood. For the reply was: 'Mars, etc., and four other planets of which astronomy knows nothing. Neither A, B, nor YZ are known nor can they be seen through physical means however perfected.' This is plain: (a) Astronomy as yet knows nothing in reality of the planets, neither the ancient ones, nor those discovered in modern times. (b) No *companion* planets from A to Z, *i.e.*, no upper globes of any chain in the Solar System, can be seen. [With the exception of course of all the planets which come *fourth* in number, as our earth, the moon, etc., etc. – HPB] As to Mars, Mercury, and 'the four other planets,' they bear a relation to Earth of which no master or high Occultist will ever speak, much less explain the nature.

... neither Mars nor Mercury belong to our chain. They are, along with the other planets, septenary *Units* in the great host of 'chains' of our system, and all are as visible as their *upper* globes are invisible.⁴

HPB then guotes another letter from KH:

Our Globe, as taught from the first, is at the bottom of the arc of descent, where the matter of our perceptions exhibits itself in its grossest form. ... Hence it only stands to reason that the globes which overshadow our Earth must be on different and superior planes. In short, as Globes, they are in CO-ADUNITION but not IN CONSUBSTANTIALITY WITH OUR EARTH and thus pertain to quite another state of consciousness.⁵

Instead of learning from his mistake, Sinnett chose to take offence at HPB's 'scandalous' remarks. He was convinced that HPB was wrong and he was right. His error regarding Mars and Mercury was later endorsed by Annie Besant and C.W. Leadbeater, based on their 'clairvoyant' investigations. Yet it appears to have been KH himself who was responsible for the corrections presented in the SD; in August 1888 he wrote to H.S. Olcott:

Be assured that what she [HPB] has not *annotated* from scientific and other works, we have given or *suggested* to her. Every mistake or erroneous notion, corrected and explained by her from the works of other theosophists was *corrected by me, or under my instruction*.[§]

It was left to GdeP to shed further light on KH's reply to Sinnett. He points out that 'our system of worlds' can refer to our universal solar system (i.e. all the solar systems revolving around the same raja-sun as our own⁹), our planetary chain, our group of seven sacred planets, and to 'this mystery-group – Earth, Mercury, Mars, and four other secret planets'. KH's generalized reply refers in particular to this latter group, because Sinnett had just been questioning KH 'on a certain aspect of the teachings which could not be fully explained without giving out the doctrine concerning this mystery-group'. ¹⁰

GdeP explains that many planetary chains in our solar system and universal solar system have no globes on our own plane of perception. All the countless planetary chains, visible and invisible, are divided into families of seven (or twelve), whose members are closely related karmically. Referring to our own sacred planets, he writes:

[The] seven sacred planets are profoundly instrumental in building our planetary chain; but the earth also itself is one of another group or series of seven planets, which build or cooperate in building the planetary chain of certain other ones of our planets ...¹²

Earth, Mercury, Mars, and the four secret planets are a septenary group 'whose function is to act in building another planetary chain'. 13

Our own planetary chain helps to build and guide one of the other planetary chains in particular but all the other planetary chains of our solar system in general. Mars, for example, is built by its particular group of seven or twelve planetary chains, itself being the eighth of its ogdoad, and our Earth chain is one of these. 14 Not all of the seven sacred planets of any of the planets in our solar system would necessary be our own sacred planets. 15

Referring to the twelve sacred planets, GdeP writes:

We thus have the seven planetary chains, two of which are invisible, respectively Vulcan and the sacred planet named in connection with the moon; and there are four other invisible planetary chains mentioned in *The Mahatma Letters* (p. 176) under the mere letters 'A, B, and Y, Z.' These four, with the seven enumerated, make eleven, to which we may add the solar chain, forming the full number of twelve. These planetary chains are those which especially recognize our sun as their ruler, and therefore they form the main members of its kingdom.¹⁶

GdeP's inclusion of the solar chain in the preceding quotation may be a blind, since KH includes the Earth in the 'mystery group' of planets that include A, B, Y, and Z. This is supported by GdeP's statement that 'the fields of action of the spiritual monad are our solar system, particularly the seven sacred planets and our earth as well as four other "secret" planetary chains'. He also writes:

There are only twelve sacred planets for us in the solar system. The sun is our common Chief. [T]his is the secret why Jesus had twelve disciples while he himself was the thirteenth or teacher. 18

Notes to section 3

- 1. ML2 148, MLC 307.
- 2. ML2 176, MLC 331.

- 3. 'Fragments of occult truth, no. VII', The Theosophist, April 1883, 162; A.P. Sinnett, Esoteric Buddhism (1883), 5th ed., 1885, Wizards Bookshelf, 1973, 136.
- 4. SD 1:163-4, also 152-3. Note that HPB does not quote KH's words altogether accurately: she adds 'etc.', omits 'yet', and paraphrases and interprets his words rather freely. Sinnett accused her of 'garbling' KH's reply. GdeP comments: 'You see, then, that there is much behind all this, much that does not appear on the surface.' Like KH, HPB 'could not tell the whole truth, because pledged to secrecy'. What she says is true, but hints at something more; 'it was a "blind," and yet was absolutely responsive and truthful, as far as it went' (FEP 540).
- 5. SD 1:166. In other words, the various globes are composed of different grades of energy-substance, but are karmically bound together as a unitary group (coadunated) (SOP 92; Dia 2:252).
- 6. The last letter that Sinnett received directly from KH dates from the end of 1885 (ML2 488 (#145), MLC 453). From 1887 until his death in 1921, Sinnett used a number of clairvoyants in a successful (in his opinion!) effort to remain in touch with KH and other masters. 'KH' allegedly told him to say nothing of these contacts to others, including HPB. He also assured Sinnett that his views on Mars and Mercury were perfectly correct! (See: *Autobiography of Alfred Percy Sinnett*, Theosophical History Centre, 1986, 39-41; Virginia Hanson, *Masters and Men*, TPH, 1980, 304-10; MLC 465; *Theosophical History*, Oct 1986, 205-7, Apr 1987, 51-2.)

Through medium Robert King, Sinnett learned from a discarnate entity claiming to be Laplace that Mars was still inhabited by members of the Earth's humanity, most of them being laggards, living in ignoble, degraded conditions; the animals on Mars consisted solely of reptilians, inhabiting the 'canals' or elongated seas (Leslie Price, 'A Martian problem solved?', *Theosophical History*, Oct 2006, 5-11).

7. Arthur E. Powell, *The Solar System*, TPH, 1930, 3, 11-14. See also Margaret Thomas, *Theosophy versus Neo-Theosophy*, Isis Books, 1990, 56-7.

Neotheosophy also claims that Neptune, Pluto, and another planet beyond Pluto are likewise three physical globes belonging to the same planetary chain (*The Solar System*, 13).

See ML2 (Appendix, 489-93) for statements by Sinnett and Besant on the Mars/Mercury dispute and comments by A. Trevor Barker. Barker and W.Q. Judge objected that since there is a correspondence between the globes of a planetary chain and the human principles, there cannot be three physical globes since we do not have three physical bodies (Echoes 1:348-50, 475-7). This argument is flawed, however, because while there is a certain analogy between globes and principles, every globe has its own seven principles (FEP 210, 472; Dia 2:256; ET 855-6fn). When on globe E we will, at certain periods, be able to see globe C (FSO 247; SOP 93), but that does not mean that we will have two visible bodies!

- 8. LMW 1:47. See also: Echoes 1:321-9; ISD, last 6 pages.
- 9. FSO 129-32, 324. A universal solar system is 'a particular group of solar systems closely resembling a vast chain of suns, of which only one sun, our own, is visible to us on this cosmic plane. Not only are all the other suns of our universal solar system invisible, but likewise their respective planetary chains, because our vision is limited by our karmic development to this particular sub-subplane of a cosmic plane' (FSO 132).
- 10. FEP 539; also 520-1, 529-31 (in relation to FEP 529 (1st ed., 459) see FSO 652).
- 11. FSO 317-8.
- 12. FEP 532.
- 13. FEP 587.
- 14. FSO 324.
- 15. FEP 350.
- 16. FSO 320.

As regards the asteroid belt between Mars and Jupiter, most of the asteroids are fragments of an exploded or broken up planet, while others are captures. The prevailing 'scientific' belief is that no planet could ever have formed between Mars and Jupiter, but some scientists disagree (Tom Van Flandern, 'The exploded planet hypothesis – 2000', http://metaresearch.org). The planet concerned is currently 'on the descending arc, coming out of the more ethereal and therefore invisible realms on to this physical plane'. In several million years, it will be visible as a comet, slowly settling into an elliptical orbit around the Sun, in the ring now occupied by the asteroids. As it materializes into a planet, it will gather up most of the asteroids. Similarly, before our Earth began its first round, it settled into an orbit around the Sun (somewhat farther from it than at present), which was then occupied by vast numbers of asteroids (FSO 337-8). The planet between Mars and Jupiter could be one of the four additional sacred planets.

- 17. FSO 635.
- 18. SOP 618.

4. Planetary ages

Planetary age has two meanings: the evolutionary stage a planet has reached in its current embodiment (its physical age); and the embodiment it has reached in the present minor manvantara of seven embodiments (its spiritual age). The general rule is that the farther a planet is from the sun, the younger it is physically (i.e. in this planetary embodiment), but the older spiritually (i.e. in the solar manvantara).¹

We are told that Mercury is now emerging from obscuration to begin its seventh and final round. Venus is in its seventh round, and its human kingdom is in its sixth or seventh root-race. Earth is in its fourth round, and its human kingdom is nearing the middle of the fifth root-race. Mars is currently in obscuration between its third and fourth rounds. Lilith has reached the end of the seventh round. Saturn and Jupiter are in their earliest rounds.

GdeP says that the density of the planets as given by science is a fairly accurate guide to their physical age; as a general rule, the nearer planets are to the Sun, the denser they are. The following table gives the density and stage of evolution of the Sun and planets, where they are known.

| | Density (g/cm ³) ⁸ | Round |
|---------|---|----------------------------|
| Sun | 1.41 | ? <u>9</u> |
| Vulcan | ? | ? |
| Mercury | 5.43 | obscuration prior to 7th |
| Venus | 5.25 | 7th (6th or 7th root-race) |
| Earth | 5.52 | 4th (5th root-race) |
| Lilith | ? | end of 7th |
| Mars | 3.95 | obscuration prior to 4th |
| Jupiter | 1.33 | 1st/2nd? |
| Saturn | 0.69 | 1st? |
| Uranus | 1.29 | ? |
| Neptune | 1.64 | ? |

The table shows that the planets grow increasingly dense as we move from Saturn to the Earth, while Venus and Mercury are less dense than Earth since they have passed the fourth round. In general, the planets nearer the Sun are older in their current embodiment, though the relative ages of Saturn and Jupiter are uncertain (as are those of Uranus and Neptune), and Venus and Mercury ought perhaps to swop places since Venus is the older of the two in terms of rounds. Lilith is an exception to the general rule, since although it is at the end of its seventh round it is situated 'near' the Moon. Vulcan is 'in a certain sense the highest psychologically of the seven sacred planets, even though not the least dense'. 10

Jupiter is now ending the stage of evolution associated with the element of fire and beginning that associated with the element of air.

These elements correspond to the first and second rounds respectively.

Jupiter is 'more evolved in its planetary evolution' than Saturn.

Saturn 'is in one of the earliest phases of its existence as a planetary sphere', and as it evolves it will grower denser, until it becomes a rocky globe like the Earth.

It is 'in a sense the youngest' of the seven sacred planets, and the most ethereal (visible) planet in the solar system.

Thus, in terms of rounds, Venus is older than Mercury, which is older than Earth, which is older than Mars, which is older than Jupiter and Saturn. This does not automatically mean that this order also applies to the planets' ages expressed in Earth-years. First, for each planet, the length of one of its years (i.e. one revolution around the Sun) is proportional to its distance from the Sun. ¹⁶ Relative to an Earth-year, a year of each of the planets is as follows:

| Mercury | Venus | Earth | Mars | Jupiter | Saturn | Uranus | Neptune |
|---------|-------|-------|------|---------|--------|--------|---------|
| 0.241 | 0.615 | 1.00 | 1.88 | 11.86 | 29.46 | 84.01 | 164.79 |

Second, although we know that the Earth's current planetary manvantara will last about 4.32 billion Earth-years, we do not know how long the present manvantara of each of the other planets lasts in years of the planet concerned. Nor do we know the relative length of the seven rounds, even as regards our own Earth.¹⁷

The general rule states that the further a planet is from the Sun, the more spiritually advanced it is, i.e. the greater the number of embodiments it has passed through in the present solar manvantara, which comprises seven embodiments. Hence the planetary spirit of Jupiter is more spiritually advanced in terms of cosmic experience than that of Mars or Earth, and the planetary spirit of Earth is spiritually more advanced than that of Venus because older in number of cosmic manvantaras. Although Venus is more advanced than the Earth in the sense that it is farther along in the number of rounds run through in its present planetary manvantara, it has only reached its fourth embodiment, and is 'more material physically' than the Earth. The Earth is probably in its fifth embodiment.

GdeP mentions another factor:

As the planets considered as individuals grow older, they approach the sun. Coincidently their prakritis evolve more strongly, partly to protect them against the sun which otherwise would simply annihilate them, and partly because such is evolution's course. ... Thus Venus is grosser and more prakritic and more material in the proper sense than is earth, Mercury than is Venus.²¹

However, the correspondences between the planets and human principles do not reflect this:

... Mercury, corresponding to our principles, is buddhi. Venus is higher manas. Our Earth is kama-manas. Mars is kama ... 22

HPB lists the correspondences as follows: Sun – prana or jiva (life); Mercury – buddhi (spiritual soul); Venus – manas (higher mind, human soul); Moon – linga-sharira (astral double); Mars – kama-rupa (vehicle of animal instincts and passions); Saturn – kama-manas (lower mind, animal soul); Jupiter – auric envelope.²³

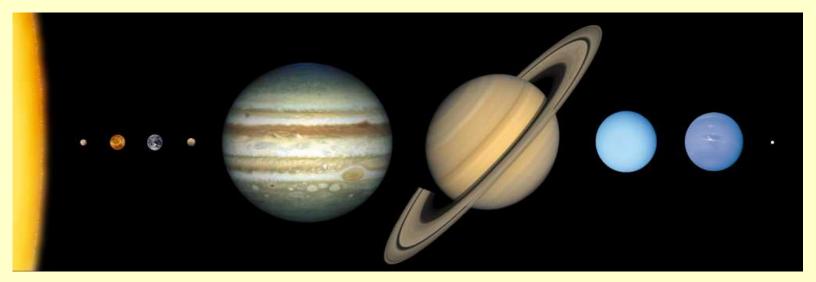
GdeP says that Saturn is spiritually more advanced than Mars or Earth, and that Saturn and Jupiter are intrinsically of a more spiritual syabhaya than the planets closer to the sun. 24 in accordance with the general rule. But he also says that Saturn 'is in one of its manyantaric

existences previous to its fourth manvantaric existence, the most material'; consequently Saturn is 'intrinsically a more material planet than Earth' and Earth is intrinsically 'a more spiritual planetary chain than the Saturnian chain is'. 25

Saturn ... is one of the most material planets in our solar system, although physically it is the most ethereal – the most material from the standpoint of psychic and soul-substance, and the most ethereal from the standpoint of mere physical matter.²⁶

After reiterating that Saturn is the most ethereal planet known in the solar system, but spiritually one of the least high, GdeP adds that from another standpoint, 'mainly connected with peregrinations of entities', it functions as one of the most spiritual planets in the solar system. This, he says, is not a contradiction but a paradox.

To speak of [Saturn] as one of the most material [planets] merely means that it is one of the least evolved spiritually; yet it too has its high spiritual phase, aspect or portion, and it is through this spiritual phase or portion that its spiritual functions in the solar system operate.²⁷



This illustration shows the approximate relative sizes of the Sun, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. (http://solarsystem.nasa.gov)

Notes to section 4

- 1. FEP 208. '[T]he nearer the sun, the more advanced is the planet in its evolution, and consequently the more evolved are its burden of living things. The farther from the sun, the more ethereal and in one sense the more spiritual are the planets, but less evolved in their respective planetary manvantaras' (FSO 327).
- 2. SD 1:165; FEP 208; FSO 331.
- 3. SD 1:165; FEP 208; FSO 327-8.
- 4. See 'Evolution in the fourth round'.
- 5. SD 1:165; FEP 208; FSO 332.
- 6. FEP 324; 349; FSO 346, 348.
- 7. FEP 209, 323.
- 8. Penguin Dictionary of Astronomy, Penguin, 3rd ed., 1998, table 5.
- 9. Stars themselves have their rounds, just as planets have (Dia 2:173). The Sun's age can be very roughly estimated as follows: If we assume that the Sun will live for seven planetary embodiments of the Earth (seven days and nights of Brahma), then the Sun is probably in its fifth round, since the Earth is in its fifth embodiment. If each manvantara and each pralaya of the Earth were to last 4.32 billion years, the Sun would be about 37 billion years old and would have another 24 billion years to live.

By contrast, according to current 'scientific' models and assumptions, the Sun is 4.57 billion years old and will live for another 5 billion years or so before becoming a white dwarf; the Earth is supposedly 4.567 billion years old, but theosophy says it is about 2 billion years old in its present planetary manvantara (see 'Secret cycles').

- 10. FSO 332, FEP 324.
- 11. FSO 334.
- 12. SD 1:259-60. A globe is also in a 'fiery' stage before the first round begins (FSO 197).
- 13. FSO 327.

- 14. ET 155.
- 15. Dia 1:34.
- 16. In the 17th century, Kepler discovered that the ratio of the square of a planet's period of revolution (T) around the Sun to the cube of its mean distance (r) from the Sun is always the same number (T²/r³ = constant). See 'Patterns in nature', section 9.
- 17. See 'Secret cycles'.

Although Mars has completed three rounds, and the Earth has completed three and a half, if Mars were to live for a total of 4.32 billion Mars-years (each of which is currently 1.88 times longer than an Earth-year), Mars would now be about 3.5 billion Earth-years old, whereas the Earth is only about 2 billion years old.

- 18. FSO 326-7
- <u>19.</u> Dia 1:17.
- 20. Echoes 2:405-6; FEP 184, 468; Dia 1:17-18.
- 21. Dia 1:34; FSO 330.
- 22. Dia 1:34.
- 23. HPB also gives the planets' correspondences with numbers, metals, colours, sounds, and parts of the body, but stresses that it is not the physical planets that are being referred to (BCW 12:544-5, 548, diagrams 1 & 2).
- 24. FEP 209; FSO 330.
- 25. Dia 1:17-18.
- 26. Dia 1:10.
- 27. Dia 1:24.

5. Planetary characteristics

Vulcan is described as 'in a certain sense the highest psychologically of the seven sacred planets, even though not the least dense'. It became practically invisible towards the close of the third root-race, after the separation of the sexes. As we have now reached on the ascending arc the plane of development corresponding to that of the third root-race, it should begin to show itself again in a relatively short period. Although it is too ethereal to be visible to the naked eye, it might under favourable conditions be visible when crossing the solar disk, as it would be thrown into shadow by the Sun's brilliance. GdeP mentions that on 26 March 1859 a body was seen transiting the solar disk, which led some astronomers to believe that there was an intramercurial planet. It was thought that this might explain a perturbation in the orbital motion of Mercury. However, Vulcan eventually fell from scientific favour as it failed to reappear at predicted times.¹

Mercury is now emerging from obscuration to begin its seventh round. Many ancient nations closely associated Mercury with the after-death teaching of the Mysteries. Mercury was always known as the god of secret wisdom. The Greek equivalent is Hermes, the god of learning, overseer of mystics, and 'conductor of souls' to the underworld. The Sanskrit equivalent is Budha (wisdom), and among the Egyptians it was Thoth.² HPB says: 'Man derives his spiritual soul (buddhi) from the essence of the manasaputras, the sons of wisdom, who are the divine beings (or angels) ruling and presiding over the planet Mercury'.³

Being spiritually younger than the Earth, Venus is intrinsically more material or prakritic, but is nevertheless more ethereal since it is in its seventh round. As it is nearing the end of its globe-manvantara, it radiates an auric light and is slightly self-luminous. When the Earth nears the end of its seventh round it will probably be somewhat more luminous than Venus is today. Venus is intimately connected with our Earth because it is the planet from which we last came on the outer round, and is closely connected with the development of our manasic body. It is described as the occult sister, alter ego, and spiritual prototype of the Earth. Whatever takes place on one planet is felt by and reflected on the other.

Theosophy teaches that there are phases of life on every planet.

On every one of them there is or will be a serial line of ascending degrees of entities; three elemental kingdoms, a mineral kingdom, something corresponding to our vegetable kingdom, and again to our animal kingdom, and on some of the planets a kingdom corresponding to the human. For life itself is everywhere because it is the very basis of things ... I

Since no single atom in the entire Kosmos is without life and consciousness, how much more then its mighty globes?

Lifeforms on other planets would not be visible to us unless they existed on exactly the same subplane of our solar system. Moreover, they might look quite different from anything we know on Earth:

The inhabitants of the other planets – those which are inhabited at the present time – must have forms strictly related to and fitted by evolution for their particular planet. They would be very various indeed, and we might not easily accept those beings as intelligent, sensitive and conscious. Some may be flat, some spherical, and some long ... The inhabitants of some of the

are with us, and yet are highly intelligent, conscious beings. ...

The inhabitants of other planets would look like monstrosities to us ... On the other hand, we men of earth, for instance, would be like developed beasts to the inhabitants of Mercury, repulsive in shape and horrible in the uses to which we put our faculties.⁹

The inhabitants of Mercury are said to have the closest resemblance to us. HPB says: 'The men of Budha (Mercury) are metaphorically *immortal* through their Wisdom.' The 'humans' on Venus, who are in the sixth or seventh root-race of the seventh round, are much more intelligent than we are, but not as spiritual or ethereal. They are 'doubles' (hermaphrodites), ovoid in shape. 11

The Moon is a substitute for, and closely associated with, the hidden planet Lilith. The Moon is the parent of the Earth, the remains of globe D of the Earth chain in its previous embodiment; more specifically, the Moon we see is the astral shell, or kama-rupa, of globe D of the Moon chain, since the Earth reembodied one subplane higher than in its last embodiment. The Moon is therefore far older than the Earth, and was certainly not created by a body the size of Mars striking the young Earth where the Pacific Ocean is now located, and throwing up an enormous mass of material that condensed into our satellite – a theory that has been in and out of fashion for over a hundred years. The Moon was once far larger and far closer to the Earth. It is gradually disintegrating and will have dissolved into dust before the Earth reaches its seventh round. The lunar craters are largely pustules or vents caused by the release of gases and other things from within the Moon. 13

Although the Moon is a dead planet, 'the particles of her decaying corpse are full of active and destructive life', and are constantly being absorbed by her child, the Earth. Lunar emanations are both beneficent and maleficent, but usually maleficent, despite the key role they play in such matters as birth and growth.

As the giver of both physical and astral life, the moon is also the transmitter of the lower mental and psychical vitality. But it is full of all the energies of death as well. It is a decaying body. ... The lunar vitality not only stimulates the grosser forms of our physical existence, but can likewise by that very action cause decay and disease in other parts of the human constitution. 15

Lilith – also known as the Planet of Death or Eighth Sphere – is in its last round and is slowly dying. It is composed of material so dense that we are unable to perceive it. However, on rare occasions, certain individuals may catch a glimpse of it near the Moon due to a number of converging causes, including the Moon's materializing influence. The tilt of a planet's axis gradually changes; the Planet of Death is at present inverted and therefore rotates on its axis in a retrograde direction (i.e. clockwise).¹⁶

Lilith is described as the lowest of the seven sacred planets; it is 'a chain beneath ours'. 17 As the Eighth Sphere, it is one of the bodies in the solar system that act as 'vents, cleansing channels, receptacles for human waste and slag'. 18 It is the sphere of 'absolute' matter, the lowest stage of our own hierarchy, in which matter has reached its ultimate density; beneath it begins a new hierarchy. 19

Lilith is called the Planet of Death because it is the sphere to which lost souls – utterly corrupt souls which have lost their link with their inner god – finally descend, drawn by their own heavy material magnetism. There they are 'slowly ground over in nature's laboratory' until disintegrated. The Planet of Death corresponds to the lowest part of avichi. A lost soul is an aggregate of astral-vital-psychical life-atoms concreted around an as yet scarcely evolved monad. When freed from its 'earth veil of life-atoms', this monad begins a career of its own in the highly material Planet of Death. The latter's 'normal' inhabitants must not be confused with these monads arriving from our Earth. These fallen monads are imperfectly evolved entities, or 'failures', which in the next globe embodiment of the Planet of Death will have to begin their evolution in an inferior capacity.²⁰

HPB writes:

A new Moon will appear during the 7th Round, and our Moon will finally disintegrate and disappear. There is now a planet, the 'mystery Planet', behind the Moon, and it is gradually dying. Finally, the time will come for it to send its principles to a new laya centre, and there a new planet will form, to belong to another solar system, the present 'mystery Planet' there functioning as Moon to that new globe. This Moon will have nothing to do with our Earth, although it will come within the range of vision.²¹

GdeP implies that Lilith will orbit the Earth as a satellite (and probably already does) before becoming the parent moon of the next embodiment of itself.

Before our planet shall have reached its last or seventh round, our moon will have disintegrated into stellar dust, but by that time this secret or Mystery-planet near the moon and now dying will be dead, and will be to us as a moon; not a true moon in the sense of our lunar mother, but rather a satellite. It will *appear* to us as a moon; and, indeed, will be a 'moon,' because it will be a dead body.²²

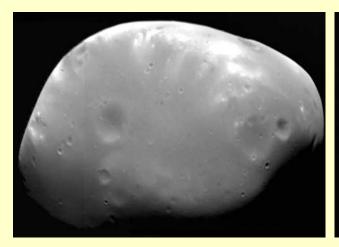
The physical globe of Mars has completed its third round, and is currently in complete obscuration, meaning that there are no actively evolving life-waves on it; most of its living entities have moved on to higher globes of the planetary chain. However, the most evolved representatives – the shishtas, or 'remainders' – of each kingdom remained behind, and when the life-waves return in the next globe-manvantara they will find these bodies waiting.²³

During its active periods, or globe rounds, every globe of a planetary chain is said to be surrounded by a meteoric veil consisting mainly of interplanetary and interstellar dust. It acts as a protective shield, and its electromagnetic interchanges with the planet concerned help to produce various meteorological and climatic phenomena.²⁴

Mars has only a very thin shell of meteoric matter surrounding it because it is in obscuration and the forces of attraction holding the meteoric masses together have been relaxed. 'When the life-waves begin to come into Mars again, as they will before many millions of years have passed, Mars also will begin again to be re-covered with what scientists call heavy clouds, which are really veils of meteoric dust.' Mercury has a thicker meteoric veil around it, as it is currently coming out of obscuration to begin its seventh round, while Venus has an even denser veil, because its seventh round is now in full swing. Venus's meteoric veil is closely associated with its thick clouds, preventing us from seeing its real face. 26

The Earth's Moon is a true moon, in the sense that it is the parent of the Earth, the remains of globe D of the Earth chain in its previous embodiment. Any planet normally has only one true moon, and any other moons or satellites are usually captures. Venus and Mercury have no moons, while Mars has two, but neither of them is its true moon. A master says that the reason Mercury and Venus have no satellites is because they are far older than Earth and because 'Mars has two satellites to which he has no right' . W.Q. Judge infers that 'Mars absorbed these moons or dragged them off into his orbit at some time enormously distant and still keeps them', and adds that 'Venus being in her 7th round, all vestiges of old moons have been sublimated and absorbed into her atmosphere'. GdeP says that the moon of Venus disappeared after its fourth round.

Phobos is the innermost of Mars' two moons, and Deimos is the outermost. Both are among the smallest known moons in the solar system, with Deimos being the larger of the two. Phobos is closer to its primary than any other moon in the solar system, being less than 6000 km above the surface of Mars. Both moons are widely believed to be captured asteroids. 30





Deimos (left) and Phobos (right). (http://berlinadmin.dlr.de)

GdeP writes: 'Phobos is not a moon; but Deimos is a true moon, but not of Mars. Phobos is a capture ...'31 In conjunction with the above quotations, it might be inferred that Deimos is the true moon of *Mercury*.32 GdeP also says: 'the true moon of Mars has not disappeared yet'33 – which could mean that it is a physical body located elsewhere in the solar system, or that it still exists but is too ethereal to be seen.

Jupiter is one of the least dense planets of our solar system.

Physically speaking, many of its characteristics closely resemble those of the sun; in fact, Jupiter is an infant sun, in the sense of 'small' sun. There is liquid on Jupiter, but of a kind that would be unrecognized in our laboratories. ... Jupiter's atmosphere is very heavy and very dense in comparison to that on earth. It has a relatively heavy core, but of a fluidic character.

Most of the light we receive from Jupiter is reflected sunlight, but to some degree it results from the planet's glowing nature, which, in contrast to Venus, is caused by its fiery character rather than its highly progressed stage. 34

KH speaks of a raja-sun 'hidden' by Jupiter. GdeP says that it exists on a superior plane and is on the descending arc of its own solar round. It is thousands of times larger than Jupiter, but on our physical plane it is a laya-centre, a mere physical point, a nucleus of matter in its seventh or highest state. It is closely connected with the dense, concealing cloak of 'vapour' which, according to astronomers, surrounds the planet. Jupiter's red spot is due to a phase in the planet's evolution and to the effect of the raja-sun.³⁵

Jupiter has about 63 satellites, and GdeP says that Callisto is its true, parent moon. Callisto has the most cratered surface of any body yet observed in the solar system. Saturn has about 56 satellites, and its true moon is probably lapetus.³⁶

The rings of Saturn are a result of the evolution of the planetary nebula, and later the comet, which became Saturn. They are part of its meteoric continent, which is especially thick in the region of the equator, and act as 'stepping-stones' for entities entering and leaving the planet. Other planets have similar rings but they are not visible to our physical eyes. We can see Saturn's because that planet is very closely connected with the Earth; it is the planet astrologically governing our Earth in this fourth round. 37

Jupiter's inhabitants are described as huge aeriform or igniform entities, and as probably the most different from us in form. The Jovians and Saturnians are much more ethereal than we are, but less evolved and less spiritual. 38

Neptune, Uranus, and Pluto are part of our solar system in so far as they revolve around the Sun, but are described as captures or intrusions into it.

Uranus is a member of the universal solar system, but does not belong to *our* solar system, even though as a true planet it is closely linked with our sun both in origin and destiny. ...

Neptune, on the other hand, is not by right of origin in this solar manvantara a member of either our solar system or the universal solar system. ... It has been captured in the same sense as some of the planets have captured moons.³⁹

Neptune was originally a captured comet, and it strongly influences the solar system as a whole because its capture changed the solar system's polarity. It is an 'outside' influence, though strictly karmic. Unlike the true planets of our solar system, it has no direct connection with the 12 houses of our zodiac.⁴⁰

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GoeP also says that Uranus, Neptune, and Pluto

belong to a solar system of their own, although equally with our solar system belonging to the universal solar system. It can happen in the economy and interacting relations of the cosmic Egg of Brahma that certain planets of one solar system can intrude into visibility for the inhabitants of another solar system, because both belong to the one *universal* solar system; and when two such solar systems approach each other as regards position and evolutionary place on the cosmic planes, they are thus partially visible each to each because of similarity of vibrations.⁴¹

Notes to section 5

- 1. FSO 331-2; FEP 324, 349, 351, 525; BCW 12:549fn. See Appendix 1, 'The search for Vulcan'.
- 2. FSO 331; FEP 249-50; BCW 10:265, 14:458fn; TG 331-2.
- 3. BCW 12:545.
- 4. FSO 327-9, 335; Dia 1:32.
- 5. Dia 1:21.
- 6. SD 1:305, 2:30-2.
- 7. FSO 333.
- 8. SD 2:702fn.
- 9. FSO 333-4. See 'Life on other worlds'.
- 10. SD 2:44-5.
- 11. FSO 334.
- 12. FEP 548-50; FSO 342; Dia 2:139; SD 2:45, 115, 611.
- 13. SD 1:154-6, 2:64; IGT 49; ET 858fn; FEP 349; FSO 342-3; Dia 1:98-9, 2:170.
- 14. SD 1:156.
- 15. FSO 341.
- 16. FSO 346-7. Lilith is 'sometimes visible at a certain hour of night and apparently near the moon' (BCW 10:341). It is 'very near the moon', but it is misleading to say that the Moon 'hides' it (Dia 2:5; FEP 324).

Several other planets in the solar system currently have an axial tilt greater than 90° and therefore have a retrograde rotation: Venus (177°21'), Uranus (97°46'), and Pluto (119°37'). See 'Poleshifts', part 2, section 1.

- 17. FEP 349; Dia 3:289-92.
- 18. FSO 347.
- 19. ET 174.
- 20. FSO 347-8; FEP 269.
- 21. IGT 42.
- 22. FEP 349-50. See Appendix 2, 'Lilith and the second moon'. If Lilith is currently orbiting the Earth, references to its 'retrograde motion' (FEP 324; BCW 10:340-1) might also refer to the direction in which it orbits the Earth and not just to its axial rotation.
- 23. FSO 332; FEP 207-8; Dia 2:264, 357-8; Echoes 2:411. See 'Mars: our sleeping neighbour', and 'Shishtas: seeds of life'.
- 24. See 'Earth's meteoric veil'.
- 25. SOP 320. A more exact figure for the time that remains of Mars' obscuration is not given. KH says that the mahatmas 'have every indication that at this very moment such a solar pralaya is taking place while there are two minor ones ending somewhere' (ML2 98, MLC 188). In the letter concerned, 'minor pralaya' is generally used to mean a night of Brahma. It's possible, however, that he is using it here to mean obscuration, in which case one of the two planets where a 'minor pralaya' is ending could be Mercury.
- 26. FSO 336; FEP 327-8, 339-40; SOP 294-5, 320.
- 27. SD 1:155-6fn, 165.
- 28. Echoes, 2:217.

29. Dia 1:98-9.

In the course of a minor solar manvantara, the globes of a planetary chain reembody successively one subplane lower until the fourth embodiment is reached, and thereafter one subplane higher until the seventh and final embodiment is reached. That is why the Moon we see is the astral shell of globe D of the Moon chain. Similarly, if Venus is now in its fourth embodiment, the globe we see is presumably the astral Venus. And any parent moon it once had on our own subplane would have been the remains of its physical globe D in its previous embodiment. If Mercury still has a physical moon on our subplane, it might be inferred that that planet too is in its fourth embodiment. But things might not be that simple. If Saturn and Jupiter were in their sixth or seventh embodiment, they would be one or two subplanes higher than our own globe. But would we still be able to see them?

- 30. www.nineplanets.org.
- 31. FEP 526. 'Phobos, the supposed INNER satellite, is no satellite at all' (SD 1:165).
- 32. GdeP says at one point that the moons of both Mercury and Venus 'have long since dissipated into cosmic dust' (Dia 2:170).
- 33. Dia 2:170.
- 34. FSO 334-5.
- 35. ML2 167, MLC 323; FSO 335-6; Dia 2:171-3.

Referring to the solar system's motion through space, KH says that 'no astronomer will perceive it *telescopically*, until Jupiter and some other planets, whose little luminous points hide now from our sight millions upon millions of stars (all but some 5000 or 6000) – will suddenly let us have a peep at a few of the *Raja-Suns* they are now hiding.'

GdeP says that Mars, Jupiter, and Saturn alone 'hide billions and billions and billions of suns that we during our present manvantara or world-cycle cannot ever see. Some day in the far distant future, as evolution works on the matter of our world-sphere, we shall see some of the raja-suns now hid by these three planets – by the spheres of these three planets, for the planets and their respective spheres are really the same' (FSS 13-14).

- 36. Esoteric Instructions, 400.
- 37. Dia 1:7-8, 10, 97.
- 38. FSO 330, 334.
- 39. FSO 324-5; FEP 520.
- 40. FSO 324-5; ET 192-3; FEP 522-3; Dia 1:370-2, 2:81.
- 41. FSO 129fn.

Appendix 1. The search for Vulcan¹

On 26 March 1859, amateur astronomer E.M. Lescarbault of Orgères, France, observed a round black spot of planet size crossing the Sun's disk. It moved a quarter of the solar diameter in about an hour and a quarter. The French mathematician Urbain Le Verrier – who together with John Adams is credited with having predicted the position of Neptune before it was discovered, based on anomalies in the orbit of Uranus² – investigated Lescarbault's observation and concluded that it was genuine. He computed the following orbit: period 19 days 17 hours, mean distance from Sun 0.147 astronomical units (AU), inclination of its orbit to the ecliptic 12°10'. The planet's diameter was considerably smaller than Mercury's and its mass was estimated at 1/17 of Mercury's mass. Le Verrier expected there to be at least two, and usually four, transits each year, around 3 April and 6 October.

The planet was later named Vulcan (after the Roman god of fire), and Le Verrier announced its discovery at a meeting of the Académie des Sciences in Paris on 2 January 1860. Not everyone agreed with him: French astronomer Emmanuel Liais, one of his rivals, had been viewing the Sun in Brazil at the same time as Lescarbault and with a telescope twice as powerful, yet had seen no planet.

Le Verrier calculated that the precession of Mercury's apsides (the advance of its perihelion) was about 38 arc-seconds greater than the value of 527 arc-seconds per century expected on the basis of newtonian mechanics. He argued that this deviation might be caused by an intramercurial planet. The object Lescarbault sighted was too small to account for the deviation, but Le Verrier thought it might be the largest member of an intramercurial asteroid belt. The only way to observe an intramercurial planet or asteroids was either when they transited the Sun or during total solar eclipses.

Reports of earlier sightings of intramercurial bodies began to surface, dating back to 1758, but their quality varied considerably. J.C.R. Radau deduced from a few of these observations that Vulcan had a period of 38.5 days, and predicted transits on 29 March, and 2, 4, and 7 April 1860. Astronomers around the world awaited these events but no planet was sighted.

Nothing was seen again until 20 March 1862, when amateur astronomer W. Lummis of Manchester, England, observed a 'small black spot' move about a fifth of a degree across the Sun in the space of 20 minutes, and showed it to a colleague. Based on this report, J.F.B. Valz calculated that Vulcan's orbital period was 17.5 days, while Radau arrived at a figure of 19.9 days. An astronomer in New York and one in Germany said they had also observed the object, but their records indicated that it corresponded to nothing more than two ordinary sunspots; Lummis had allegedly seen one of them and then 20 minutes later the other, and confused it with the first. On 8 May 1865 French astronomer A. Coumbary, at Constantinople, saw a small object crossing the Sun. A handful of sporadic sightings were reported over the next few years.

On 4 April 1876, German astronomer Henrich Weber saw a small round spot on the Sun. Le Verrier's orbit indicated a possible transit on 3 April of that year. By selecting the five 'strongest' observations of 'Vulcan', R. Wolf calculated a period of 42.2 days while Le Verrier thought a period of 28.01 days might fit the observations better. However, Vulcan failed to show itself in October of that year as predicted. Moreover, two astronomers said that they too had seen Weber's 'round dot' but claimed it was nothing but a sunspot without a penumbra. Le Verrier again revised his calculations, and decided that Vulcan had failed to appear because it moved in a highly eccentric orbit with an extreme inclination of 10.9°. He derived a new period of 33 days and predicted the next transit for 22 March 1877 – but again it failed to appear. Le Verrier died later that year, still a staunch believer in Vulcan.

During the total solar eclipse of 29 July 1878, two experienced observers – James Watson and Lewis Swift – independently reported seeing intramercurial planets. Both observed two bright objects, but in different places – making four potential new planets, none of which matched the position of Le Verrier's or Lescarbault's Vulcan. No other astronomers had seen anything unusual. T.R. von Oppolzer reworked the chief historical records of possible bodies orbiting the Sun, published an orbit radically different from any proposed by Le Verrier, and predicted a transit would take place on 18 March 1879 – but again Vulcan failed to register an appearance.

Searches for Vulcan continued to be made, including during solar eclipses. Very occasionally something unusual was seen, but not by many astronomers simultaneously. Most astronomers abandoned the search for Vulcan after Einstein published his general relativity theory in 1915, which supposedly explained the Mercury's anomalous perihelion advance (see below). In May 1929 Erwin Freundlich of Potsdam photographed the total solar eclipse from Sumatra. A comparison of the plates with images taken six months later revealed no unknown object brighter than the 9th magnitude near the Sun.

However, a few astronomers remained convinced that not all the alleged observations of Vulcan were bogus. Henry Courten and his associates studied photographic plates of the 1966 and 1970 solar eclipses, and detected several objects which appeared to be in orbits close to the Sun; a few were confirmed by other observers. Courten believed that an intramercurial planetoid between 130 and 800 kilometres in diameter was orbiting the Sun at a distance of about 0.1 AU. Other images on his eclipse plates led him to postulate the existence of an asteroid belt between Mercury and the Sun.

Some of these objects could have been faint comets or small asteroids. In recent years numerous small sungrazing comets have been recorded by satellites, and some have collided with the Sun. In addition to misidentified sunspots and stars, near-earth objects might also account for some of the earlier sightings of objects assumed to be close to the Sun, and this could explain why they were visible from some locations but not others. Today, the quest continues for Vulcanoid asteroids, but any asteroids larger than about 60 km are considered to have been ruled out.

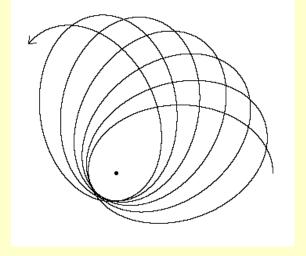
Theosophy says that Vulcan is currently too ethereal to be seen. Whether it would still have measurable gravitational effects on our own subplane is unclear. If not, it would not explain the excess advance of 39.5 to 43 arc-seconds in the perihelion of Mercury's orbit. The general belief nowadays is that Einstein's general relativity theory can explain this without the need for an intramercurial planet. However, it is absurd to claim that an abstract geometric concept such as 'curved spacetime' can 'explain' gravity or anything else! Relativity theory assumes uniform curvature of space around a celestial body, and is therefore unable to explain why the orbits of the planets are elliptical in the first place. Furthermore, it accounts for only one-sixth of the advance in the perihelion of Mars and cannot explain the anomalous motion of the nodes of Venus. There is no need to invoke general relativity to explain Mercury's anomalous orbit, the gravitational redshift, and the gravitational bending of light, as all three phenomena can be explained in terms of an etheric medium pervading space, whose density increases around large bodies such as stars and planets.

For the sake of completeness, it should be mentioned that in 1929 psychic Geoffrey Hodson (of the Adyar Theosophical Society) claimed he had 'seen' two planets not visible to usual sight. The first one (Vulcan) revolves within the orbit of Mercury, and radiates or reflects only deep infrared radiation, which is why it is generally invisible. The other one is normally in the inner part of the asteroid belt just beyond Mars and is 'etheric' or plasmic. According to Hodson's colleague George Sutcliffe, Vulcan has a mean period of 25.2883 days. Hodson also saw two planets beyond Neptune, but neither of them turned out to be Pluto.⁸

If Vulcan is visible *only* when crossing the Sun's disk, then sightings of it in the vicinity of the Sun during solar eclipses cannot be genuine. If Vulcan is *always* visible when transiting the Sun, it is likely that it would have become an accepted planet by now.

Notes to appendix 1

- 1. Richard Baum & William Sheehan, *In Search of Planet Vulcan: the ghost in Newton's clockwork universe*, Plenum, 1997; Paul Schlyter, 'Vulcan, the intra-Mercurial planet, 1860-1916, 1971', www.nineplanets.org; William R. Corliss (comp.), *The Sun and Solar System Debris*, Sourcebook Project, 1986, 96-102, 107-15; 'Vulcan (hypothetical planet)', http://en.wikipedia.org; *The Complete Books of Charles Fort*, Dover, 1974, 196-208, 320-1, 340.
- 2. Neptune was found within one degree of the position predicted by Le Verrier. However, it is about 30 AU from the Sun, whereas Le Verrier had predicted a distance of 35 to 37.9 AU, and its orbital period is about 165 years, compared with the 207 to 233 years calculated by Le Verrier. Le Verrier initially said that the planet discovered in 1846 was not the one he had predicted but this is no longer mentioned in the textbooks. The region in which Adams had predicted Neptune would be found was so large that it would have taken over three months to search the entire area. As another contemporary astronomer said, Neptune's discovery was a 'happy accident'. (See *The Complete Books of Charles Fort*, 138, 318-19, 728-30.)
- 3. As a planet orbits the Sun, its line of apsides the line joining the point where it comes closest to the Sun (perihelion) and the point where it is furthest from the Sun (aphelion) slowly rotates, so that over time its elliptical orbit traces out a rosette pattern in space. This is known as apsidal precession (see 'Poleshifts', part 1, section 5). This effect is exaggerated in the diagram below.



4. See www.vulcanoid.org.

- 5. Writing in October 1992, KH hinted at more than one planet between Mercury and the Sun: 'Not all of the Intra-Mercurial planets, nor yet those in the orbit of Neptune are yet discovered, though they are strongly suspected. We know that such exist and *where they* exist; and that there are innumerable planets 'burnt out' they say, in *obscuration we* say; planets in formation and not yet luminous, etc.' (ML2 169, MLC 325).
- 6. The formula Einstein published in 1915 for calculating the excess advance of Mercury's perihelion was exactly the same as the formula published by Paul Gerber in 1898 even to the extent of using the same upper and lower case forms of the same typographical symbols. Einstein said he was not familiar with Gerber's work. Relativists have consigned Gerber's work to oblivion on the grounds that his approach was theoretically flawed. But exactly the same objection could be directed at Einstein. (See: Harold Aspden, www.energyscience.org.uk; Ian McCausland, 'Anomalies in the history of relativity', Journal of Scientific Exploration, 13:2, 1999, 271-90.)
- 7. See 'Space, time and relativity', section 3.
- 8. www.librarising.com/space/unknown.html.

Appendix 2. Lilith and the second moon¹

The Moon is the second brightest object in the sky after the Sun. It has a diameter of 3476 km (compared to the Earth's 12,756 km) and orbits the Earth at an average distance of 384,400 km. It is commonly believed to be the Earth's only natural satellite. However, the possibility that the Earth has one or more other natural satellites has long been a hot topic – among astronomers and astrologers alike.

In 1846, French astronomer Frederic Petit announced that two observers at Toulouse and a third at Artenac had discovered a second moon of the Earth on 21 March of that year. He calculated that it took 2 hours 44 minutes 59 seconds to orbit the Earth, and that its elliptical orbit took it as close as 11.4 km to the Earth's surface at its nearest approach (perigree) and as far as 3570 km at its furthest point (apogee). Years later, he argued that a second, small moon could account for certain unexplained minor deviations in the motion of our principal moon – but it would have to be at least several miles large and would have been spotted by ancient sky-gazers.

Astronomers generally ignored Petit's claims, but the idea of a second moon received wide publicity after Jules Verne included it in his novel *From the Earth to the Moon* (1865). Amateur astronomers around the world began to search for the extra moon in the hope of achieving fame – but in vain.

In 1898, German amateur astronomer Georg Waltemath claimed to have discovered a second moon inside a whole system of tiny moons. He had found anomalous observations scattered throughout records dating from 1618 to his own day that suggested the existence of a body orbiting the Earth in a very stable and predictable orbit. He gave the following orbital elements: distance from Earth 1.03 million km, diameter 700 km, orbital period 119 days, synodic period 177 days. Astronomers had failed to discover it because it was not highly reflective and could only be seen when transiting the Sun's disk, or rarely when it was in opposition with the Sun when its full face could sometimes be seen as a reddish glow.

Waltemath predicted the dates and times of several more transits of the body across the Sun's disk, and claimed to have confirmed these predictions by his own direct observations and those of witnesses. On 4 February 1898, he and 11 witnesses reported seeing a dark object having one fifth the Sun's apparent diameter traverse the solar disk in the space of an hour. However, two professional Austrian astronomers had observed only a few ordinary sunspots at that time. Waltemath continued to issue predictions and ask for verifications but was generally ignored by astronomers. However, the idea of a second moon was later taken up by astrologers (see below).

In 1922, US astronomer W.H. Pickering published an article on the possibility of a 'meteoric satellite' orbiting Earth. He calculated that a satellite 0.3 metres in diameter orbiting 320 km above the Earth's surface should be visible in a 3-inch telescope, and a 3-metre satellite would be visible to the naked eye. This led to another flurry of activity by amateur astronomers, but again the search proved fruitless.

Scientists believe that it is possible for the Earth to have other natural satellites, but only for a short time.

Meteoroids passing the Earth and skimming through the upper atmosphere can lose enough velocity to go into a satellite orbit

around the Earth. But since they pass the upper atmosphere at each perigee, they will not last long, maybe only one or two, possibly a hundred revolutions (about 150 hours). There are some indications that such 'ephemeral satellites' have been seen; it is even possible that Petit's observers did see one.²

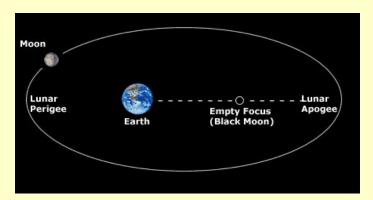
Since Waltemath's time, other additional moons have been reported from time to time. For instance, a German amateur astronomer, W. Spill, claimed to have observed a second moon cross our first moon's disk on 24 May 1926. Beginning in 1953 observations of the space between the Moon and the Earth were made at the Lowell Observatory, but the searches turned up nothing. Since the 1960s, American scientist John Bagby has published several hotly debated papers contending that the Earth has captured chunks of space debris, of which some have disintegrated, and others are still in orbit. Several near-Earth asteroids – e.g. 3753 Cruithne (5 km across) and 2002 AA29 (about 100 m across) – with 'horseshoe orbits' can be considered companions of Earth even though they do not orbit it directly.³

Another possibility is that the Moon itself may have natural satellites orbiting it, but, despite several searches, none have been found. Scientists believe that due to the Moon's uneven gravity field any lunar satellite will crash into it after a few years or possibly a decade. Like Jupiter, the Moon might have Trojan satellites, i.e. secondary satellites in the lunar orbit, travelling 60° ahead of or behind the Moon (these locations being gravitationally stable). Since the late 1950s, evidence for clouds of dust particles (visible as faint patches of light) in these positions has been detected. In 1990 they were found to be a few degrees in apparent diameter, and to 'wander' up to 10° away from the Trojan point. They are very hard to detect and to distinguish from the zodiacal light, in particular the gegenschein.

Waltemath's observations generated interest in Lilith among astrologers. In 1918 an astrologer calling himself Sepharial (his real name was Walter Gornold, a one-time theosophist and pupil of H.P. Blavatsky⁵) named this moon Lilith, after Adam's first demonic wife in Hebrew mythology. Like Waltemath, he considered it to be so black and nonreflective that it was invisible most of the time, and that it only became visible when crossing the solar disk or in opposition to the Sun. He constructed an ephemeris of Lilith (i.e. its celestial coordinates), based on Waltemath's research. He considered Lilith to have about the same mass as the Moon, but scientists object that any such satellite, even if not directly visible, would reveal its presence by perturbing the Earth's motion. One of Sepharial's followers concluded that it was probably just a dust cloud of varying density.

Sepharial's Lilith is still used by some astrologers when casting horoscopes. In fact, in modern astrology the name 'Lilith' is given to four different astronomical entities:

- 1. Dark Moon Lilith is the Earth's second moon as postulated by Waltemath and Sepharial. It is said to have a diameter about one quarter of the Moon's, and to orbit the Earth at three times the distance of the Moon, with a geocentric period of 119 days. Some astrologers adhere to Waltemath's original calculations, while others use the ephemeris calculated by Sepharial or Delphine Jay (*Interpreting Lilith*, 1981). Many astrologers believe Lilith's existence has been disproved by science, and it is certainly true that a second large moon orbiting the Earth would have been discovered by now *if it were an ordinary physical object*.
- 2. Black Moon Lilith is not a celestial object but an abstract, geometric point. An ellipse has two focal points: in the case of the Moon's orbit, the Earth is located at one of the focal points and Black Moon Lilith is considered to be either the other focal point (about 36,000 km from the Earth), or the apogee of the Moon's orbit, both points lying in the same direction from the Earth. Black Moon Lilith is commonly used in mainland Europe, and its use in the US and UK is increasing.



- 3. Asteroid no. 1181, located in the main asteroid belt between Mars and Jupiter, is called Lilith and taken into account by some astrologers.
- 4. The star Algol (Beta Persei) in the constellation Perseus is known as Lilith by some astrologers. It is a variable star, as its system consists of three stars orbiting around one another. It has a reputation as the most evil star in the sky. The Hebrews called it Satan's Head and Lilith.⁸

The precise interpretation of these various Liliths differs among different astrologers, but in general Lilith is held to be closely connected with the 'shadow' side of the personality.

Notes to appendix 2

- 1. Paul Schlyter, 'The Earth's second moon, 1846-present', www.nineplanets.org; William R. Corliss (comp.), *The Moon and the Planets*, Sourcebook Project, 1985, 14-18; William R. Corliss (comp.), *The Sun and Solar System Debris*, Sourcebook Project, 1986, 115-17; 'Lilith (hypothetical moon)', http://en.wikipedia.org.
- 2. www.nineplanets.org/hypo.html.

- 3. William C. Corliss (comp.), Science Frontiers, Sourcebook Project, 1994, 56-7; Science Frontiers II, Sourcebook Project, 2004, 77; www.astro.uwo.ca/~wiegert/3753/3753.html.
- 4. The reflection of sunlight from the zodiacal cloud (a tenuous cloud of dust enveloping the inner solar system) is believed to give rise to the zodiacal light a very faint cone of light in the sky, visible in the east just before sunrise and in the west just after sunset; on very clear nights the glow extends along the ecliptic (the plane of the Earth's orbit around the Sun). Reflected sunlight also produces the gegenschein ('counter glow'), a bright, diffuse patch in the night sky directly opposite the Sun. See 'Earth's meteoric veil', section 4.
- 5. Gornold is better known in theosophical circles under his original name: Walter Richard Old (1864-1929). He started corresponding with H.P. Blavatsky in 1887, met her in London, and became for a while a close associate and a member of her Inner Group; he was therefore familiar with her teachings about the 'mystery planet' 'behind' the Moon. Several years after HPB's death, Annie Besant and others accused W.Q. Judge of misusing mahatmas' names and handwritings. Old played a key role in fomenting suspicion against Judge, and published material relating to the 'Judge case' in *The Westminster Gazette*, thereby hastening the split in the Theosophical Society. Even H.S. Olcott, who suspected W.Q.J. of 'treachery', described Old's behaviour as 'beastly caddishness'. Old left the TS, took on a new identity as Walter Gornold, and threw himself into astrological work, becoming one of the foremost astrologers of the day. (See Ernest E. Pelletier, *The Judge Case*, Edmonton Theosophical Society, 2004, pt. 1, 365-6, 370-4, 396, 398-9, 411-12; Kim Farnell, 'Walter Richard Old: the man who held Helena Blavatsky's hand', *Theosophical History*, Apr 2000, 71-83; Kim Farnell, 'That terrible iconoclast: a brief biography of Sepharial', www.skyscript.co.uk/sepharial.html.)
- 6. Frater RIKB, 'The Black Moon Lilith', www.horusset.com/RIKB/Lillith.pdf; M. Kelley Hunter, 'The Dark Goddess Lilith', www.mountainastrologer.com/hunter.html; M. Kelley Hunter, 'Lilith, triple goddess +', www.heliastar.com/triplegoddess.html; Sue Simmons, 'Lilith', www.astrologysoftware.com/resources/articles/getarticle.asp?ID=168&orig=; Axel Harvey, 'Lilith, Lilith, Lilith and Charybdis', www.astrologymontreal.com/articles/ah on lilith.htm; 'Lilith the dark moon', www.astro.com/astrology/in lilith e.htm.
- 7. Only the Moon's mean orbit approaches a perfect ellipse; its true orbit is an approximate, wobbly ellipse. This means that there is a true and a mean apogee, and astrologers do not agree on which is the best one to use.
- 8. R.H. Allen, Star Names, Their Lore and Meaning (1899), Dover, 1963, 332.

Appendix 3. Sounds from unseen planets

In October 1882 A.P. Sinnett asked KH the following question:

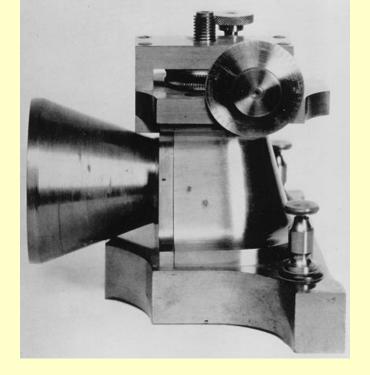
Could any other planets besides those known to modern astronomy (I do not mean mere planetoids) be discovered by physical instruments if properly directed? 1

KH replied:

They must be. Not all of the Intra-Mercurial planets, nor yet those in the orbit of Neptune are yet discovered, though they are strongly suspected. We know that such exist and *where* they exist; and that there are innumerable planets 'burnt out' they say, – in *obscuration* we say; – planets in formation and not yet luminous, etc. But then 'we know' is of little use to science, when the Spiritualists will not admit our knowledge. Edison's tasimeter adjusted to its utmost degree of sensitiveness and attached to a large telescope may be of great use when perfected. When so attached the 'tasimeter' will afford the possibility not only to measure the heat of the remotest of visible stars, but to detect by their invisible radiations stars that are unseen and otherwise undetectable, hence planets also. The discoverer, an F.T.S., a good deal protected by M. thinks that if, at any point in a blank space of heavens – a space that appears blank even through a telescope of the highest power – the *tasimeter* indicates an accession of temperature and does so invariably, this will be a regular proof that the instrument is in range with the stellar body either non-luminous or so distant as to be beyond the reach of telescopic vision. His *tasimeter*, he says, 'is affected by a wider range of etheric undulations than the eye can take cognizance of.' Science will *hear* sounds from certain planets before she sees them. This is a *prophecy*. Unfortunately I am not a Planet, – not even a 'planetary.' Otherwise I would advise you to get a *tasimeter* from him and thus avoid me the trouble of writing to you. I would manage then to find myself 'in range' with you.²

KH begins his response by saying that it *is* possible for physical instruments to detect planets as yet unknown to science. He then indicates that the mahatmas know of the existence of such planets in our own solar system thanks to their occult powers. Next he says that the tasimeter developed by the celebrated inventor Thomas Edison, if perfected, could detect the heat radiation of unseen stars, and perhaps unseen planets too. He points out that Edison was a member of the Theosophical Society, and that mahatma M took an interest in him.

The tasimeter was a radically new infrared sensor which could detect a temperature change of a millionth of a degree. Edison's favourite demonstration was to show that it was six times more sensitive to heat from his little finger than a conventional thermopile to a red-hot iron. He used it to detect heat from the remote star Arcturus, and a few days later, at the total eclipse of 29 July 1878, to detect heat from the Sun's corona, but the apparatus was too sensitive to obtain exact measurements. Edison believed that by attaching the tasimeter to a large telescope, it would be possible to detect burnt-out stars, extremely faint stars, and feebly reflecting planets. He also envisaged a host of nonastronomical uses for it. However, the detector was too delicate, slow, and erratic, and soon faded into obscurity.³



Edison's tasimeter. The horn (left) is about 7 cm in diameter. (www.americanscientist.org)

KH concludes his reply to Sinnett with a touch of humour: he says he is not a planet – let alone a 'planetary' (i.e. a planetary spirit or dhyani-chohan) – otherwise he would be able to communicate with Sinnett via a tasimeter, rather than having to write to him. But before saying this, he makes the following dramatic statement:

Science will hear sounds from certain planets before she sees them. This is a prophecy.

As several theosophical writers have pointed out, this seems to be a reference to *radio astronomy*,⁴ which emerged in the 1930s and blossomed after the Second World War. It allow us to see things that are not detectable optically, and led to the discovery of new classes of highly energetic objects such as pulsars, quasars, and radio galaxies. Radio telescopes have also been used to observe the Sun and solar activity, and for radar mapping of the planets.

Some writers have claimed that KH's prophecy has already been fulfilled by the discovery of quasars and other bodies imperceptible optically. However, radio-wave sources such as quasars, pulsars, and radio galaxies are obviously not *planets* in the modern sense of the term, so their discovery is – at best – only a partial fulfilment of the prophecy. It's true that, in the same letter, KH refers to the Sun as a 'central planet', but if we read the entire passage in which he makes his prophecy, he does seem to be referring above all to planets, rather than to stars, or to galaxies (which astronomers didn't discover until the 1920s²).

Radio astronomy is one of the techniques used in the search for extrasolar planets, or exoplanets. On this subject, KH writes in the same letter quoted above:

No planets but one have hitherto been discovered outside of the solar system, with all their photometers, while we know with the sole help of our spiritual *naked* eye a number of them; every *completely matured* Sun-star having like in our own system several companion planets in fact.⁸

Wikipedia sheds light on the 'discovery' KH is referring to:

Claims about the detection of exoplanets have been made for over a century. Some of the earliest involve the binary star 70 Ophiuchi. In 1855, Capt. W.S. Jacob at the East India Company's Madras Observatory reported that orbital anomalies made it 'highly probable' that there was a 'planetary body' in this system. In the 1890s, Thomas J.J. See of the University of Chicago and the United States Naval Observatory stated that the orbital anomalies proved the existence of a dark body in the 70 Ophiuchi system with a 36-year period around one of the stars. However, Forest Ray Moulton soon published a paper proving that a three-body system with those orbital parameters would be highly unstable. During the 1950s and 1960s, Peter van de Kamp of Swarthmore College made another prominent series of detection claims, this time for planets orbiting Barnard's Star. Astronomers now generally regard all the early reports of detection as erroneous.⁹

The first published discovery of an exoplanet to receive subsequent confirmation was made in 1988. The first definitive detection of an exoplanet orbiting an ordinary main-sequence star was announced in October 1995. As of March 2007 the number of known exoplanets stands at about 215.



False-colour infrared image of the brown dwarf 2M1207 (blue) and its planetary companion 2M1207b (red), as viewed by the Very Large Telescope. This was the first extrasolar planet to be directly imaged. (http://en.wikipedia.org)

Various methods are used for detecting extrasolar planets. Because they are very small and faint compared with their parent stars, only one or two such planets have so far been observed optically, but various indirect methods are available. Astrometry involves observing changes in a star's position to see whether it betrays the gravitational influence of an orbiting planet. The Doppler (or radial velocity) method involves observing the displacement in a star's spectral lines resulting from changes in speed that might be caused by an orbiting planet. The transit method involves looking for variations in a star's apparent brightness that might be caused by a planet passing in front of it.

Another method is pulsar timing: a pulsar is a small star that emits radio waves extremely regularly. Slight anomalies in the timing of the radio pulses can be used to track changes in the pulsar's motion caused by the presence of planets. The first planets orbiting a pulsar were discovered in 1992; this is considered to be the first definitive detection of exoplanets. Note that the radio waves ('sounds') being detected in these cases are not emitted by the planet itself but by the star, so this does not constitute a strict fulfilment of KH's prophecy. But the story does not end there.

Planetary low-frequency radio astronomy is currently being used to detect and study solar system planetary lightning and different types of radio emission from Jupiter, among other things. Philippe Zarka of the Paris Observatory writes:

With Jupiter's decametric emissions being as intense as Solar ones, it is tempting to search for analog non-thermal coherent emissions from the magnetosphere of exoplanets. However, due to the limitations imposed by the LF sky background fluctuations, man-made interference, and ionospheric fluctuations, only emissions at least 1000 times more intense than Jupiter's ones have a chance to be detectable at stellar distances ...¹¹

Exoplanetary radio emissions may either be inferred from plasma interaction between a sun and a suspected planet (a likely example of this has already been observed), or radio emissions from an exoplanet's magnetosphere might be detected directly. ¹² The latter would constitute a direct fulfilment of KH's prophecy. Zarka believes that such emissions will be detected in the near future, as instruments become increasingly refined. Whether radio astronomy will ever detect hidden planets in our own solar system remains to be seen.

Notes to appendix 3

- 1. ML2 146, MLC 306.
- 2. ML2 169-70, MLC 325.
- 3. J.A. Eddy, 'Thomas A. Edison and infra-red astronomy', *Journal for the History of Astronomy*, v. 3, 1972, 165-187, www.adsabs.harvard.edu; Frank Lewis Dyer & Thomas Commerford Martin, *Edison: his life and inventions*, Harper Brothers, 1929, www.arcamax.com/biography/b-1081-booktoc (b-1081-22, 25, 88, 89).
- 4. W.T.S. Thackara, *Sunrise*, April/May 1988, p. 149, <u>www.theosophy-nw.org/theosnw/science/sc-wtst.htm</u>; Ted Davy, *The Canadian Theosophist*, May-June 1989, see: *The High Country Theosophist*, June 1991, p. 4, <u>www.hctheosophist.com/archives/pdf/hc199106.pdf</u>.
- 5. Vicente Hao Chin, MLC 325fn; Mark Jaqua, Protogonos, Fall 1989, p. 28.
- 6. ML2 163; MLC 319.
- 7. The word was, however, already being used to mean a large assemblage of stars. E.g. in February 1882 KH wrote: 'Thus there are among the stellar galaxies births and deaths of worlds ever following each other in the orderly procession of natural Law' (ML2 67, MLC126).
- 8. ML2 165, MLC 322. A photometer measures the intensity of light; KH comments on their unreliability due to atmospheric disturbances. Based on current findings, astronomers estimate that about 10% of sunlike stars have planets, but they concede that, given the difficulty of detecting extrasolar planets, the true proportion may be much higher.
- 9. http://en.wikipedia.org/wiki/Extrasolar_planet.
- 10. The exceptionally rapid flashes of energy (both light and radio-frequency emissions) emitted by pulsars is usually attributed to their incredibly rapid rotation; some would have to be rotating several hundred times a second! This would cause ordinary stars to fly apart, so

astronomers invented the idea that pulsars were composed of exceptionally dense 'strange matter'. An alternative explanation is that pulsars are emitting pulsed radio-frequency signals due to an *electric* oscillation phenomenon (Donald E. Scott, *The Electric Sky: a challenge to the myths of modern astronomy*, Mikimar, 2006, 175-80).

- 11. Philippe Zarka, 'Planetary low-frequency radio astronomy with large ground-based instruments', Proceedings of the XXVIIIth URSI General Assembly in New Delhi, Oct 2005.
- 12. Philippe Zarka, 'Plasma interactions of exoplanets with their parent star and associated radio emissions', Planetary and Space Science, v. 55, 2007, 598-627.

Abbreviations

| BCW H.F | P. Blavatsky Collected Writin | S Theosophical Publishing | House (TPH) 1950-91 |
|---------|-------------------------------|---------------------------|---------------------|
|---------|-------------------------------|---------------------------|---------------------|

Dia The Dialogues of G. de Purucker, A.L. Conger (ed.), Theosophical University Press (TUP), 1948

Echoes Echoes of the Orient, W.Q. Judge, Point Loma Publications (PLP), 1975-87

EST Esoteric Teachings, G. de Purucker, PLP, 1987

ET The Esoteric Tradition, G. de Purucker, TUP, 2nd ed., 1973

FEP Fundamentals of the Esoteric Philosophy, G. de Purucker, TUP, 2nd ed., 1979

FSO Fountain-Source of Occultism, G. de Purucker, TUP, 1974
FSS The Four Sacred Seasons, G. de Purucker, TUP, 1979

IGT The Inner Group Teachings of H.P. Blavatsky, Henk J. Spierenburg (comp.), PLP, 2nd ed., 1995

ISD An Invitation to The Secret Doctrine, H.P. Blavatsky, TUP, 1988

Isis Isis Unveiled, H.P. Blavatsky, TUP, 1972 (1877)

LMW Letters from the Masters of the Wisdom, TPH, 1973/77

ML2 The Mahatma Letters to A.P. Sinnett, A.T. Barker (comp.), TUP, 2nd ed., 1975
MLC The Mahatma Letters to A.P. Sinnett, V. Hao Chin (ed.), TPH, chron. ed., 1993

OG Occult Glossary, G. de Purucker, TUP, 2nd ed., 1996
SD The Secret Doctrine, H.P. Blavatsky, TUP, 1977 (1888)
SOP Studies in Occult Philosophy, G. de Purucker, TUP, 1973

TG The Theosophical Glossary, H.P. Blavatsky, Theos. Co., 1973 (1892)

by David Pratt. May 2007.

Life on other worlds

Mars: our sleeping neighbour

Evolution in the fourth round

Inner and outer rounds

Secret cycles

Shishtas: seeds of life

Earth's meteoric veil

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