



The Rings of Saturn

One instance of the Saturn myth can be verified with the help of a small telescope: Saturn is in chains. Instead of solving anything, this fact presents a new problem that demands a solution. How did the ancient Greeks and Romans know that Saturn is encircled by rings?⁽¹⁾ It is strange that this question was not asked before.⁽²⁾ The existence of these rings around Saturn became known in modern times only in the seventeenth century, after the telescope was invented. They were first seen, but misunderstood, by Galileo⁽³⁾ and understood by Huygens.⁽⁴⁾

If the myth did not by mere chance invent these rings, the Greeks must have seen them. The last case could be true if the Greeks or some other oriental people possessed lenses adapted for the observation of celestial bodies, or if the rings around Saturn were visible to the naked eye at some time in the past—today they are not visible without magnifying instruments. There are cases of exact observations by the Chaldeans which suggest the use of some accurate technical means.⁽⁵⁾ These means could consist of a sort of astrolabe like that of Tyche de Brahe who made most accurate observations of celestial bodies without the help of a telescope; also Copernicus, prior to Tyche de Brahe, made all his calculations of the movements of the planets before the telescope was invented. But neither Tycho de Brahe nor Copernicus saw the rings.

The statue of Saturn on the Roman capitol had bands around its feet,⁽⁶⁾ and Macrobius in the fifth century of our era, already ignorant of the meaning of these bands, asked: “But why is the god Saturn in chains?”

In the Egyptian legend Isis (Jupiter) swathes Osiris (Saturn). The Egyptian appellative for Osiris was “the swathed.”⁽⁷⁾

In the *Zend-Avesta* it is said that the star Tistrya (Jupiter, later Venus) keeps Pairiko in twofold bonds.⁽⁸⁾ Saturn is encircled by two groups of rings—one larger and one smaller, with a space in between. To see this a better telescope than that used by Galilei or that used by Huygens is needed; the twofold structure of the girdle was first observed in 1675.⁽⁹⁾

The rings of Saturn were known also to the aborigines of America before Columbus discovered the land; this means also before the telescope was invented at the beginning of the seventeenth century. An ancient engraved wooden panel from Mexico shows the family of the planets: one of them is Saturn, easily recognizable by its rings.⁽¹⁰⁾

Nor were the Maoris of New Zealand ignorant of them: “One of the great mysteries connected with Saturn is the still unanswered question of how the ancient Maoris of New Zealand knew about her rings—for there is evidence that they did have a Saturnian ring legend long before the days of Galileo.”⁽¹¹⁾

In the myth it is said that Jupiter drove Saturn away and that on this occasion Saturn was put in chains. If these words mean what they say and are not a meaningless portion of the myth—in a dream, at least, there are no meaningless parts—then the knowledge of the ancients about the rings of Saturn could have been acquired because of better visibility: in other

words, at some time in the past Saturn and Earth appear to have been closer to one another.

Originally I assumed that the rings of Saturn may consist of water in the form of ice, but since the ancient lore all around the world tells that it was Jupiter that put these rings around Saturn,⁽¹²⁾ I considered that they might have some other components, too. Since the 1960's spectroscopic study of the Saturnian rings has confirmed that they consist most probably of water in the form of ice.⁽¹³⁾

References

1. [The rings of Saturn are referred to by Aeschylus, *Eumenides* 641: "He [Zeus] himself cast into bonds his aged father Cronus" ; cf. Lucian, *Astrology*, 21: "Moreover, it is not true, neither, that Saturn is in chains." Neoplatonists like Proclus *In Timaeo*, tr. by Festugiere, vol. III, p. 255 and n. 4; *In Cratylo* 209.3f) and Porphyry (*De Antro Nympharum* 67.21ff.) sought a philosophical or mystical meaning in the tradition. Cf. also Clemens Alexandrinus, *Homilia*, VI. xiii in *Patrologiae Cursus Completus*, Series Graeca, J.-P. Migne ed., vol. II.207f; Dio Chrysostom, *Fourteenth Discourse* 21ff: "And yet the King of the Gods, the first and eldest one, is in bonds, they say, if we are to believe Hesiod and Homer and the other wise men who tell this tale about Cronus." Cf. Hesiod, *Works and Days*, 169ff. Augustine, refuting those who asserted that the Jewish Sabbath was held in honor of Saturn, wrote: "*ita patres nostri longe fuerunt a Saturniacis catenis, quamvis pro tempore propheetiae sabbati vacationem observaverint.*" (*Contra Faustum Manichaeum* XX. 13. in Migne ed., *Patrologiae Cursus Completus*, Series Latina, Vol. XLII, p. 379). Cf. also Arnobius, *Contra Gentes* IV. 24 in *ibid.*, vol. III: "*Numquid paricidii causa vincitum esse Saturnum, et suis diebus tantum vinculorum ponderibus revelari?*" and Minucius Felix, *Octavius* XXI, in *ibid.*, vol. III, col. 304: "*Quid formae ipsae et habitus? . . . Saturnus compeditis.*" An epigram of Martial (III. 29) refers to the bonds of Saturn, comparing them to rings: "*Has cum gemina compede dedicat catenas, Saturne, tibi Zoilus anulos priores.*" "These chains with their double fetter Zoilus dedicates to you, Saturnus. They were formerly his rings."—transl. by W. Kerr (London, 1919). The shrines to Saturn in Roman Africa portrayed the god with his head surrounded "by a veil that falls on each of his shoulders," in a way reminiscent of the planet's rings. See J. Toutain, *De Saturni Dei in Africa Romana Cultu* (Paris, 1894), p. 42 and figs. 1 and 2.].
2. [But cf. Th. Taylor in *The Classical Journal* 40 (1819), pp. 324-326, and A. de Grazia, "Ancient Knowledge of Jupiter's Bands and Saturn's Rings," *KRONOS* II.3 (1977), pp. 65ff.]
3. [When Galileo first saw the rings in July of 1610, he thought them to be two satellites on either side of Saturn, and this is what he also announced in his *Sidereus Nuntius*. Cf. A. Alexander, *The Planet Saturn*, (1962), pp. 84ff.]
4. [Chr. Huygens, *Systema Saturnium* (1659); Cf. Alexander, *The Planet Saturn*, loc. cit.]
5. P. Jensen, *Die Kosmologie der Babylonier*, p.
6. Macrobius, *The Saturnalia*, I.8.5, transl. by P. V. Davies (New York, 1969): " Saturn, too, is represented with his feet bound together, and, although Verrius Flaccus says that he does not know the reason . . . Apollodorus says that throughout the year Saturn is bound with a

bond of wool but is set free on the day of his festival.” Cf. *ibid.*, I.8.1.

7. See below, section “Tammuz and Osiris” . Cf. A. S. Yahuda, “The Osiris Cult and the Designation of Osiris Idols in the Bible,” *Journal of Near Eastern Studies* III (1944), pp. 194-197.
8. *The Zend-Avesta* xvi, transl. by J. Darmesteter (1883), p. 107. [The text of the *Zend-Avesta* reads: “Tistrya, bright star, keeps Pairiko in twofold bonds, in threefold bonds.” A third ring around Saturn was observed in 1980. Velikovsky also thought that Mithraic representations of Kronos with his body encircled by a snake (cf. F. Cumont, *The Mysteries of Mithra* [1903], figs 21-23) may attest to a memory of the rings of Saturn. Cf. the Hindu Sani (the planet Saturn) shown in an ancient woodcut reproduced in F. Maurice, *Indian Antiquities* (London, 1800), vol. VII, and described by the author as “encircled with a ring formed of serpents.” Tammuz, who represented the planet Saturn in Babylonia (E. Weidner, *Handbuch der Babylonischen Astronomie* [Leipzig, 1915], p. 61) was called “he who is bound.” See also Thorkild Jacobsen, *Toward the Image of Tammuz* (Harvard University Press, 1970), p. 85. and A. E. Thierens, *Astrology in Mesopotamian Culture* (Leiden, 1935). Ninib, who was also Saturn, was said to hold “the unbreakable bond” or “*der maechtigen Schlange*”—Jastrow, *Die Religion Babyloniens und Assyriens*, ch. xvii, p. 463.].
9. The observation was made by G. D. Cassini.
10. Kingsborough, *Antiquities of Mexico* (London, 1830), vol. IV, the fourth plate from the end of the volume. See fig.
11. Guy Murchie, *Music of the Spheres* (Boston, 1961), p. 94. [A useful discussion of Maori astronomical ideas is provided in a monograph by E. Best, *The Astronomical Knowledge of the Maori, Genuine and Empirical*, New Zealand Dominion Museum Monograph no. 3 (Wellington, 1922), p. 35:

PAREARAU represents one of the planets. Stowell says that it is Saturn; that Parearau is a descriptive name for that planet, and describes its appearance, surrounded by a ring. The word *pare* denotes a fillet or headband; *arau* means “entangled”—or perhaps “surrounded” in this case, if the natives really can see the *pare* of Saturn with the naked eye. If so, then the name seems a suitable one. . . . Of the origin of this name one says, ‘Her band quite surrounds her, hence she is called Parearau.’”]

12. [Regarding the process of formation of Saturn’s rings, Velikovsky thought that it might have been analogous to the formation of a disc-like ring of gaseous material around some stars in binary systems, as described by H. Friedman in *Science* 181, (Aug. 3, 1973), p. 396: “The gas enters into Keplerian orbits and accumulates in a disc somewhat resembling Saturn’s rings. . . .”]
13. In August 1965 Tobias Owen, writing in *Science*, (p. 975) reported that “the reflection spectrum from the ice block gave best match to the absorption observed in Saturn’s ring”—but that “the most likely alternatives” would be “ices of methane and ammonia”—both known ingredients of the Jovian atmosphere, methane being also in the composition of the Saturnian cloud envelope. See also Appendix 26. [As early as 1947 Kuiper (*The Atmospheres of the Earth and Planets* [1949]), concluded on the basis of spectral measurements in the infrared that “the rings are covered by frost, if not composed of ice.”

Cf. A. Cook *et al.*, “Saturn’s Rings—A Survey,” *Icarus* 18 (1973), p. 317: “Although frozen H₂O is a major constituent, the spectral reflectivity indicates the presence of other materials.”].

