



Hydrogen and Oxygen

The conflict between the larger planets resulted in long-stretched filaments ejected by a disturbed Saturn to cross the Earth's orbit. The hydrogen of the planet combined with the oxygen of the terrestrial atmosphere in electrical discharges and turned into water.

There are definite indications of a drastic drop in the atmospheric oxygen at the time of the Deluge—for instance, the survivors of the catastrophe are said in many sources to have been unable to light fires.⁽¹⁾

The consumption of the oxygen in the air by its conversion into water could not fail to have a marked effect upon all that breathes. The animal life that survived needed to accommodate itself to the changed conditions.

According to rabbinical sources, before the Deluge man was vegetarian; but the post-diluvian population did not continue the vegetarian habits of the “sinful” population of the earth. The Talmud and the Midrashim narrate that after the Deluge a carnivorous instinct was awakened in animal and man, and everyone had the impulse to bite.⁽²⁾

The fear of you and the dread of you shall be upon every beast of the earth and upon every bird of the air. . . . Every moving thing that lives shall be food for you; and as I gave you the green plants, I will give you everything.⁽³⁾

The prohibition against quenching the thirst for blood⁽⁴⁾ is an ordinance said to have been introduced immediately after the Deluge.

In a teleological program this result of the Deluge does not seem appropriate for a catastrophe brought about to chastize the human race and the animals, to cleanse them of their vices and make them better. Because of its non-program appearance the carnivorous urge must have been not a mythological motif, but a result of physiological changes. Most probably an anemia connected with the diminution of oxygen in the air was responsible for the new inclination.⁽⁵⁾

References

1. [Such were the accounts of the Sioux, Menomini, and other Indian tribes as told by J. G. Frazer in his “Remarks” to Volume II of Apollodorus’ *The Library* in the Loeb series, p. 342. Cf. Skanda Purana, describing the deluged world in which “nothing could be seen . . . fire there was not, nor moon, nor sun.” (Shastri, *The Flood Legend in Sanscrit Literature*, p. 88). Even in the relatively slightly rarefied atmosphere of La Paz, Bolivia, “because of the reduced oxygen content . . . fires start with such reluctance that there is little work for the city’s fire department.” (*Area Handbook for Bolivia* [Washington, 1974], p. 55.).
2. *The Book of Enoch* 89:11: “After the deluge they began to bite one another.” According to Midrash Aggada to Genesis 10:8, Nimrod was the first to eat meat.
3. Genesis 9:2-3

4. Genesis 9:4ff.

5. [One might speculate that the diet of meat would be conducive to the production of the additional red blood cells needed by the body to absorb more efficiently the diminished amount of oxygen entering the lungs. In Tibet the high altitude and rarefied atmosphere is said to make it impossible to follow the vegetarian diet advocated by Buddhist teaching. Cf. *Science* Vol. 203, no. 4383 (March 23, 1979), p. 1230: “At high altitudes all animals hyperventilate—an involuntary mechanism of fast breathing in which carbon dioxide causes the *ph* of the blood to become alkaline and constricts blood vessels. This, in turn, reduces the blood flow to the brain and brain cells become starved of oxygen, eventually dying. An alkaline *ph* in the blood can also produce other fatal effects.”].





The Origin of the Oceans

It must have been at the very beginning of my occupation with the problems later developed in my books and in not yet published manuscripts, that I came upon the question of the origin of salts in seas and oceans. The common salt is a substantial ingredient of the oceanic content, or, said differently, the water of the oceans and seas contains a substantial solution of NaCl, or sodium chloride. Even though our blood and tissues abound in sodium chloride, man and animals are not adapted to drink salty water, and life on land could develop only thanks to the evaporation of the water from the surface of seas and oceans, or to distillation—the evaporating water is free from salts. Falling as rain or snow or dew, it feeds underground sources and also glaciers, and through them the brooks and rivers and lakes, and is delivered to our use usually through concrete tubes and metal pipes.

Of the salts of the seas sodium chloride is by far the most abundant. The provenance of it is, however, a riddle. It was, and still is, assumed that the salts in the oceans originated mainly through importation from land, having been dissolved from rocks by flowing rivulets and rivers, themselves fed by underground sources, and the same process working on the rocks of the seabed. Terrestrial formations are rich in sodium, and in eons of time, it is assumed, the sodium washed out of the rocks supplied its content to the oceans; the seas evaporate and the concentration of these salts grows. But the rocks are by far not so rich in chlorine, and hence the problem—from where did chlorine come to contribute its abundance to oceanic water? There is chlorine in source water, but usually not in significant amounts. The proportion of salts in the rivers is very different from their proportion in the seas. River water has many carbonates (80 percent of the salts), fewer sulphates (13 percent) and still fewer chlorides (7 percent). Sea water has many chlorides (89 percent), fewer sulphates (10 percent) and only a few carbonates (0.2 percent). The comparison of these figures makes it clear that rivers cannot be made responsible for most of the salts of the seas. Therefore it is also obvious that there is no proper way of calculating the age of the Earth by comparing the amount of salts in the seas with the annual discharge by the rivers; the most that can be done in this respect is to calculate the rich amount of carbonates in the rivers in their relation to the relatively poor concentration to these salts in the seas; but then there will be no explanation for the rich concentration of chlorides in the seas in comparison with their poor concentration in the rivers.

A part of the salts could be traced to the washing of lands and the floor of the seas; chlorine is known also to be discharged by volcanoes, but to account for the chlorine locked in the seas, volcanic eruptions, whether on land or under the surface of the seas, needed to have taken place on an unimaginable scale—actually, it was figured out, on an impossible scale. Thus it was acknowledged that the provenance of chlorine in the salts of the seas is a problem unsolved.

Paleontological research makes it rather apparent that marine animals in some early age were more closely related to fresh-water fauna; in other words, the salinity of the oceans increased markedly at some age in the past.

The most obvious and permanent effect of a deluge of extraterrestrial origin on the Earth would be the increase in its water volume and of the place occupied by the seas. Presently four-fifths of the Earth are covered with

water. A stupendous addition of water to the Earth should have decreased, not increased its salinity, if the water came down in a pure state. But if the Earth was showered by torrents of hydrogen and water some other ingredients of the Saturnian atmosphere could also have swept across the Earth's orbit.

In the Buddhist book on "The World Cycles," the *Visuddhi-Magga*, where the catastrophes that terminated the world ages are described, it is said:

But when a world cycle perishes by water . . . there arises a cycle-destroying great cloud of salt water. At first it rains with a very fine rain which gradually increases to great torrents which fill one hundred thousand times ten million worlds, and then the mountain peaks of the earth become flooded with saltish water, and hidden from view. And the water is buoyed up on all sides by the wind, and rises upward from the earth until it engulfs the heavens.⁽¹⁾

Volcanoes which were active during the cataclysm of the Deluge and during other cosmic upheavals vomited sulphur, chlorine, and carbonates, and contributed to the composition of the salts of the oceans. Carbonates fell on Earth in large quantities in some of the upheavals, certainly in the one which took place in the middle of the second millennium before the present era, at the very end of the Middle Kingdom in Egypt, an upheaval described in detail in *Worlds in Collision*. But a major portion of the chlorine in which the oceans are so rich must have come from an extraterrestrial source.⁽²⁾

My explanation of the origin of a large portion of the salts of the seas suggests that Saturn is rich not only in water but also in chlorine, either in the form of sodium chloride or in some other combination, or even atomic free. The last solution, of atomic free chlorine, appeared chemically and biologically somewhat difficult to contemplate, because chlorine is a very active element, seeking ties with other elements; biologically because it would be damaging to any plant life, yet there are other indications which point to the possibility of plant life on Saturn.

References

1. The *Visuddhi-Magga*, transl. by H. C. Warren in *Buddhism in Translations* (Cambridge, Mass., 1896), Chap. xiii, p. 327.
2. [The knowledge that the water of the oceans came from the most part from Saturn and that the waters were salty was combined by the Greeks into a metaphor which has the sea being the "tear of Kronos." This tradition originated with the Pythagorean school and may derive ultimately from Egypt. (Plutarch, *De Iside et Osiride*, ch. 32: "According to what the Pythagoreans say, the sea is the tear of Kronos." Clement of Alexandria, *Stromata*, V. 8, 20f.: "This the Pythagoreans believed . . . comparing the sea to a tear of Kronos." The same is found in a fragment of Aristotle in the edition of V. Rose (Teubner, 1886), no. 196. Cf. Porphyry's *Life of Pythagoras* (Nauck ed., p. 39). Cf. also E. Lefebure, *Etudes Egyptologiques*, Vol. III: *Le Mythe osirien* (Paris, 1874), p. 125: . . . *et il faut sans doute regarder comme égyptienne cette croyance des Pythagoriciens rapportée par Plutarch, que la mer était une larme de Kronos. . . .*]



Saturn the God of Seeds

Saturn was called “the god of seeds” or “of sowing,” ⁽¹⁾ also “the lord of the fieldfruits.” ⁽²⁾

A Deluge destroying much faunal life must have caused a dissemination of plants: in many places new forms of vegetation must have sprouted from the rich soil fertilized by lava and mud; seeds were carried from all parts of the globe and in many instances, because of the change in climate, they were able to grow in new surroundings. The axis of the earth was displaced, the orbit changed, the speed of rotation altered, the conditions of irrigation became different, the composition of the atmosphere was not the same—entirely new conditions of growth prevailed.

Ovid thus describes the exuberant growth of vegetation following the Flood. “After the old moisture remaining from the Flood had grown warm from the rays of the sun, the slime of the wet marshes swelled with heat, and the fertile seeds of life, nourished in that life-giving soil, as in a mother’s womb, grew, and in time took on some special form.” “When, therefore, the earth, covered with mud from the recent Flood, became heated up by the hot and genial rays of the sun, she brought forth innumerable forms of life, in part of ancient shapes, and in part creatures new and strange.” ⁽³⁾

The innumerable new forms of life in the animal and plant kingdoms following the Deluge could have been solely a result of multiple mutations. ⁽⁴⁾ Although this seems a sufficient explanation of why and how Saturn came to be credited with the work of dissemination and mutation, the mention of another possibility should not be omitted.

If it is true that the Earth passed through the gases exploded from Saturn, it should not be entirely excluded that germs were carried together with meteorites and gases and thus reached the Earth.

The scholarly world in recent years has occupied itself with the idea that microorganisms—living cells or spores—can reach the Earth from interstellar spaces, carried along by the pressure of light rays. ⁽⁵⁾ The explosion of a planet is a more likely method of carrying seeds and spores through interplanetary spaces.

The new forms of life could be the result of mutations, a subject I have discussed in *Earth in Upheaval*. But the possibility that seeds were carried away from an exploding planet cannot be dismissed either.

References

1. Augustine, *De Civitate Dei* VII. 13f. [Augustine wrote: “*Saturnus . . . unus de principibus deus, penes quem sationum omnium dominatus est.*” Cf. Amobius 4.9; Macrobius, *Saturnalia* I. 7. 25; Servius, *On Vergil’s Georgics* I. 21; Saturn was credited with the introduction of agriculture in Italy (Macrobius, *Saturnalia* VII. 21). In Greece Kronos was closely associated with the harvest of grain (H. W. Parke, *The Festivals of the Athenians* (London, 1977), p. 29. Among the Egyptians it was said that “Osiris is seed.” (Firmicus Maternus, *The Error of the Pagan Religions*, II. 6; cf. A. Erman, *Die Religion der Aegypter* (Berlin, 1934), p. 40; Gressman, *Tod und Auferstehung des Osiris*, p. 8ff. In Babylonia during the festival marking the drowning of Tammuz, grains and plants were thrown upon the waves. (Langdon, *Tammuz and Ishtar*, p. 13.)

2. Lydus, *De Mensibus* IV. 10.
3. Ovid, *Metamorphoses*, lines 418ff., transl. by F. J. Miller. Cf. Empedocles, fg. 60, 61, edited by J. Brun (Paris, 1966); cf. also Plato, *The Statesman*, 65.
4. [The effects of nearby supernovae on the biosphere have been the object of intensive study by geologists in recent years, in the attempt to account for abrupt changes in the history of life on this planet. Cf. D. Russel and W. Tucker, "Supernovae and the Extinction of the Dinosaurs," *Nature* 229 (Feb. 19, 1971), pp. 553-554. Sudden extinctions were followed by the appearance of new species, quite different from those preceding them in the stratigraphic record. In a relatively brief interval whole genera were annihilated, giving way to new creatures of radically different aspect, having little in common with the forms they replaced. See N. D. Newell, "Revolutions in the History of Life," *Geological Society of America Special Papers* 89, pp. 68-91; Cf. S. J. Gould and N. Eldredge, "Punctuated equilibria: the tempo and mode of evolution reconsidered," *Paleobiology* 1977, Vol. III, pp. 115-151. Thus over the past two or three decades many geologists and paleontologists have found themselves increasingly drawn to the view that the observed abrupt changes in the biosphere, such as that which marked the end of the Mesozoic and is thought to have brought with it the extinction of the dinosaurs, among other animal groups, could best be explained by the exposure of the then living organisms to massive doses of radiation coming from a nearby supernova. The radiation would annihilate many species, especially those whose representatives, whether because of their large size or for other reasons, were unable to shield themselves from the powerful rays; at the same time new organisms would be created through mutations or "macro-evolution." See Velikovsky's comments in "The Pitfalls of Radiocarbon Dating," *Pensée* IV (1973), p. 13: ". . . in the catastrophe of the Deluge, which I ascribe to Saturn exploding as a nova, the cosmic rays must have been very abundant to cause massive mutations among all species of life. . . ." Animals would suffer much more severely than plants—on plants the principle effect would be mutagenic. See K. D. Terry and W. H. Tucker, "Biologic Effects of Supernovae," *Science* 159 (1968), pp. 421-423.].
5. E.g. F. Hoyle and Ch. Wickramasinghe, "Does Epidemic Disease Come from Outer Space?" *New Scientist*, 17th November, 1977, pp. 402-404.





The Worship of Saturn

Saturn, so active in the cosmic changes, was regarded by all mankind as the supreme god. Seneca says that Epigenes, who studied astronomy among the Chaldeans, “estimates that the planet Saturn exerts the greatest influence upon all the movements of celestial bodies.” [\(1\)](#)

On becoming a nova, it ejected filaments in all directions and the solar system became illuminated as if by a hundred suns. It subsided rather quickly and retreated into far-away regions.

Peoples that remembered early tragedies enacted in the sky by the heavenly bodies asserted that Jupiter drove Saturn away from its place in the sky. Before Jupiter (Zeus) became the chief god, Saturn (Kronos) occupied the celestial throne. In all ancient religions the dominion passes from Saturn to Jupiter. [\(2\)](#) In Greek mythology, Kronos is presented as the father and Zeus as his son who dethrones him. Kronos devours some of his children. After this act Zeus overpowers his father, puts him in chains, and drives him from his royal station in the sky. In Egyptian folklore or religion the participants of the drama are said to be Osiris-Saturn, brother and husband of Isis-Jupiter.

The cult of Osiris and the mysteries associated with it dominated the Egyptian religion as nothing else. Every dead man or woman was entombed with observances honoring Osiris; the city of Abydos in the desert west of the Nile and north-west of Thebes was sacred to him; Sais in the Delta used to commemorate the floating of Osiris’ body carried by the Nile into the Mediterranean. What made Osiris so deeply ingrained in the religious memory of the nation that his cult pervaded mythology and religion?

Osiris’ dominion, before his murder by Seth, was remembered as a time of bliss. According to the legend Seth, Osiris’ brother, killed and dismembered him, whereupon Isis, Osiris’ wife, went on peregrinations to collect his dispersed members. Having gathered them and wrapped them together with swathings, she brought Osiris back to life. The memory of this event was a matter of yearly jubilation among the Egyptians. [\(3\)](#) Osiris became lord of the netherworld, the land of the dead. A legend, a prominent part of the Osiris cycle, tells that Isis gave birth to Horus, whom she conceived from the already dead Osiris, [\(4\)](#)

and that Horus grew up to avenge his father by engaging Seth in mortal combat.

In Egyptology the meaning of these occurrences stands as an unresolved mystery. The myth of Osiris “is too remarkable and occurs in too many divergent forms not to contain a considerable element of historic truth,” wrote Sir Alan Gardiner, the leading scholar in these fields, [\(5\)](#) but what historical truth is it? Could it be of “an ancient king upon whose tragic death the entire legend hinged” ? wondered Gardiner. [\(6\)](#) But of such a king “not a trace has been found before the time of the Pyramid texts,” and in these texts Osiris is spoken of without end. There he appears as a dead god or king or judge of the dead. But who was Osiris in his life? asked Gardiner. At times “he is represented to us as the vegetation which perishes

in the flood-water mysteriously issuing from himself. . . .” (7) He is associated with brilliant light.(8)

After a life of studying Egyptian history and religion Gardiner confessed that he remained unaware of whom Osiris represented or memorialized: “The origin of Osiris remains from me an insoluble mystery.” (9) Nor could others in his field help him find an answer.

The Egyptologist John Wilson wrote that it is an admission of failure that the chief cultural content of Egyptian civilization, its religion, its mythological features again and again narrated and alluded to in texts and represented in statues and temple reliefs, is not understood.(10) The astral meaning of Egyptian deities was not realized and the cosmic events their activities represent were not thought of.

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The prophet Ezekiel in the Babylonian exile had a vision—the likeness of a man, but made of fire and amber who lifted him by the lock of his hair and brought him to some darkened chamber where the ancients of the house of Israel with censers in their hands were worshipping idols portrayed upon the wall round about. Then the angel of the vision told him: “Thou shalt see greater abominations that they do”—and he brought the prophet to the door of the gate of the Lord’s house—“and, behold, there sat women weeping for Tammuz.” Next he showed him also Jews in the inner court of the Lord’s house “with their back toward the temple of the Lord and their faces toward the east; and they worshipped the sun toward the east.” (11)

The worship of the sun and the planets was decried by Jeremiah, a contemporary of Ezekiel. But what was this weeping for Tammuz?

Tammuz was a Babylonian god; one of the months of the year, approximately coinciding with July, in the summer, was named in his honor; and by this very name it is known in the present-day Hebrew calendar. Tammuz was a god that died and was then hidden in the underworld; his death was the reason for a fast, accompanied by lamentations of the women of the land. His finding or his return to life in resurrection were the motifs of the passion.(12)

Tammuz was a god of vegetation, of the flood, and of seeds: “The god Tammuz came from Armenia every year in his ark in the overflowing river, blessing the alluvium with new growth.” (13) In the month of Tammuz he was “bound, and the liturgies speak of his having been drowned among flowers which were thrown upon him as he sank beneath the waves of the Euphrates.” (14) The drowning of Tammuz was an occasion for wailing by women: “The flood has taken Tammuz, the raging storm has brought him low.” (15)

Of Tammuz it also is narrated that he was associated with brilliant light,(16) with descent into the nether world, visited there by Ishtar, his spouse. Tammuz’ death, his subsequent resurrection, or his discovery in the far reaches, but no longer brilliant, were the themes of the cult that was not just one of the mysteries, but the chief and paramount cult.

The Osirian mysteries, the wailing for Tammuz, all refer to the transformation of Saturn during and following the Deluge. Osiris was not a king but the planet Saturn, Kronos of the Greeks, Tammuz of the Babylonians. The Babylonians called Saturn “the Star of Tammuz.” (17) After the Deluge Saturn was invisible (the sky was covered for a long time by clouds of volcanic dust) and the Egyptians cried for Osiris, and the

Babylonians cried for Tammuz. Isis (Jupiter at that time) went in search of her husband, and Ishtar (also Jupiter at that early time) went to the netherworld to find her husband Tammuz. For a time Saturn disappeared, driven away by Jupiter, and when it reappeared it was no longer the same planet: it moved very slowly. The disappearance of the planet Saturn in the “nether world” became the theme of many religious observances, comprising liturgies, mystery plays, lamentations, and fasts. When Osiris was seen again in the sky, though greatly diminished, the people were frenzied by the return of Osiris from death; nevertheless he became king of the netherworld. In the Egyptian way of seeing the celestial drama, Isis (Jupiter), the spouse of Osiris (Saturn) wrapped him in swathings. Osiris was known as “the swathed”—the way the dead came to be dressed for their journey to the world of the dead, over which Osiris reigns. Similar rites were celebrated in honor of Adonis, who died and was resurrected after a stay in the netherland⁽¹⁸⁾, in the mysteries of Orpheus.⁽¹⁹⁾

Sir James G. Frazer, the collector of folklore, came to regard Osiris as a vegetation god⁽²⁰⁾; likewise he saw in the Babylonian Tammuz, an equivalent of the Egyptian Osiris, a vegetation god and, carried away by this concept, wrote his *The Golden Bough*,⁽²¹⁾ built around the idea of the vegetation god that dies and is resurrected the following year.

A few peoples through consecutive planetary ages kept fidelity to the ancient Saturn, or Kronos, or Brahma,⁽²²⁾ whose age was previous to that of Jupiter. Thus the Scythians were called Umman-Manda by the Chaldeans⁽²³⁾—“People of Manda”—and Manda is the name of Saturn.⁽²⁴⁾ The Phoenicians regarded El-Saturn as their chief deity; Eusebius informs us that El, a name used also in the Bible as a name for God, was the name of Saturn.⁽²⁵⁾ In Persia Saturn was known as Kevan or Kaivan.⁽²⁶⁾

The different names for God in the Bible reflect the process of going through the many ages in which one planet superseded another and was again superseded by the next one in the celestial war. El was the name of Saturn; Adonis of the Syrians, the bewailed deity, was also, like Osiris, the planet Saturn; but in the period of the contest between the two major planets, Jupiter and Saturn, the appellation of the dual gods became Adonai, which means “my lords” ; then, with the victory of Jupiter, it came to be applied to him alone.⁽²⁷⁾

References

1. *Naturales Quaestiones* VII. 4. 2. [An astrological treatise ascribed to Manetho states that “In the beginning Kronos the Titan ruled the entire ether; his star the far-seeing gods called ‘the shining one.’” *Manethonis Apotelesmaticorum libri sex*, ed. C. A. M. Axtius and Fr. A. Rigler (Cologne, 1832), p. 64 (Bk. IV, lines 14-15). Cf. Proclus, *In Timaeo* (ed. E. Diehl, Leipzig, 1904), vol. III, p. 169.]
2. [Cf. Ovid, *Metamorphoses* I, transl. by M. Innes: “When Saturn was consigned to the darkness of Tartarus . . . the world passed under the rule of Jove.” Tacitus refers to “a storm during which Saturn was forcibly expelled by Jupiter and ceased to rule.” (“*qua tempestate Saturnus vi Jovis pulsus cesserit regnis.*”) *The Histories* V. 2.]
3. [For a graphic description of some of the Egyptian rites, see Firmicus Maternus, *The Error of the Pagan Religions* transl. by C. Forbes (New York, 1970), pp. 44f.]
4. Plutarch, *De Iside et Osiride*.

5. Gardiner, *Egypt of the Pharaohs*, (Oxford University Press, 1961), p. 424.
6. [This view was held by Kurt Sethe. See *Urgeschichte und älteste Religion der Ägypter* (Leipzig, 1930), p. 73, n. 3.]
7. *Ibid.*, p. 426. [The connection of Osiris with water or flood-water is frequently stressed both in native Egyptian sources and in reports by classical and early Christian authors. Plutarch (*De Iside et Osiride* 33. 364f) wrote that the Nile is the “moist principle and power,” that the Nile is the “efflux of Osiris” (39. 366c, 32.363d, 38.366a) and that Osiris is Oceanus (34,364d). Cf. Griffiths, *Plutarch’s De Iside et Osiride*, pp. 36, 56f., 424. See also Origen, *Contra Celsum* 5.38; Hippolytus, (*Refutatio Omnium Haeresium* 5.7.23) reported that the Egyptians “say that Osiris is water.” Cf. also Sallustius, *De diis et de mundo*, 4. Nock in his commentary to his edition of Sallustius (p. xlviij, n. 44) compared a first century Greek papyrus (P. Leiden J. 384, col. vii, 23) in which it is written “I am Osiris, who is called ‘water.’” The drowning of Osiris, described by Plutarch, is attested in some of the earliest Egyptian hieroglyphic texts. See K. Sethe, *Die altaegyptische Pyramidentexte* 24D, 615D, 766D; cf. idem, *Denkmal Memphitischer Theologie* 8, 10b, 19ff., 62ff; H. Gressmann, *Tod und Auferstehung des Osiris*, pp. 4, 11-12, 39.].
8. [H. Brugsch, (*Astronomische und astrologische Inschriften altaegyptischer Denkmäler* [Leipzig, 1883]) wrote of the identification of certain planets, among them that of Osiris, with the sun (“Die Planeten als Sonnen”) and published an inscription he had copied at Philae: “*es sind Sonnen, welche leuchten tagtäglich und welche strahlen in der Dämmerung, es sind (dies) der Sahu-Stern der Seele des Osiris und der Sothis Stern.*”].
9. Gardiner, “Was Osiris and Ancient King Subsequently Deified?” *The Journal of Egyptian Archaeology* 46 (1960), p. 104.
10. J. Wilson, “Egyptian Culture and Religion” in *The Bible and the Ancient Near East, Essays in Honor of William Foxwell Albright* ed. by E. Wright (New York, 1961), p. 307.
11. Ezekiel, ch. 8.
12. S. Langdon, *Tammuz and Ishtar* (Oxford, 1914), pp. 9, 22, 84f.
13. H. Gressman, *The Tower of Babel* (New York, 1928), p. 28; cf. Langdon, *Tammuz and Ishtar*, p. 13.
14. Langdon, article “Tammuz” in *The Encyclopaedia Britannica, XIIIth Edition* See also idem, *Babylonian Liturgies* (Paris, 1913), p. 96.
15. Langdon, *Tammuz and Ishtar*, p. 15. Langdon adds that “As Damu he [Tammuz] is called *bel girsu (ummun mersi)*, ‘lord of the flood.’” (*Ibid.*, p. 6 n.)
16. Langdon, *Tammuz and Ishtar*, p. 15: “The shining ocean to thy perditions has taken thee. . . .” Cf. p. 21: “The shining crown from thy head is divested. . . .”
17. E. F. Weidner, *Handbuch der babylonisches Astronomie* (Leipzig, 1915), p. 61; cf. A. Jeremias, *Handbuch der altorientalistischen Geisteskultur* (Leipzig, 1913), pp. 92, 137.
18. Cf. C. Vellay, *Le Culte et les fetes d’Adonis-Thammouz dans l’orient antique* (Paris, 1904); Sir James G. Frazer, *Adonis, Attis, Osiris*, Vols.

19. Cf. W. Guthrie, *Orpheus and Greek Religion* (London, 1935).
20. This was also recognized by Hugo Gressman ("Tod und Auferstehung des Osiris," *Das Alte Orient* [1923], p. 12.
21. See especially the volume entitled *Adonis, Attis, Osiris*.
22. [That Brahma is Saturn was understood by Velikovsky as long ago as the early 1940's though he did not publish the idea until 1974 in the text of his lecture before the American Association for the Advancement of Science Symposium. See *Pensée* VII (1974), p. 10 and *KRONOS* III.2 (1977), p. 6. The identification of Brahma with Saturn is evidenced by the fact that the god is assigned a celestial sphere (cf. *The Ramayana*, transl. by R. Griffith, Vol. I [London, 1870], Canto XLV, p. 208; cf. also *The Kalika Purana*, ch. xxv). A celestial sphere should probably be interpreted as an orbit. In the *Mahabharata* it is further said that "the high-souled Brahma [is] seated in the highest (abode)" (quoted in Shastri, *The Flood Legend*, p. 10). *The Brhad-aranyaka Upanishad* places Brahman in the highest "world." In the cosmology of the *Yogabhasya* of Vyasa, the highest celestial sphere is that of Brahma. In the *Vishnu Purana* the Brahmaloaka, which is the heaven of Brahma, is the seventh and highest heaven. In some sources the Brahmaloaka is referred to as Satyaloka. Cf. Tacitus, *The Histories* V. 4: "In the highest orbit and exerting the greatest influence moves the star Saturn." Many years ago F. Wilford reported the opinion of certain learned Brahmins who told him that while Shiva shines in the planet Jupiter, "Saturn is directed by Brahma." ("On Egypt etc. from the Ancient Books of the Hindus," *Asiatick Researches* III (1799), p. 382). Cf. E. Moor, *The Hindu Pantheon* 1864), p. 218. I believe Wilford is the unacknowledged source of Moor's assertion that Brahma is Saturn.

In China the planet Saturn was associated with the palace and with the Emperor. It was called "the planet of the Son of Heaven." (Se-ma Ts'ien, *Les memoires historiques*, ed. by E. Chavannes, vol. III, pt. 2, p. 367.)].
23. Cyril I. Gadd, *The Fall of Nineveh* (London, 1926); cf. D. J. Wiseman, *The Chronicles of the Chaldean Kings in the British Museum* (London, 1956).
24. P. Jensen, *Die Kosmologie der Babylonier*, p. 114. Cf. *The Brihajgatakam of Vahara Mihira*, transl. by Swami Vijnanananda (Allahabad, 1912), p. 38, n.2: "Saturn is Manda."
25. *Praeparatio Evangelica* IV.xvi: "Kronos [El] was deified in the star Saturn." This statement is quoted by Eusebius from Philo's redaction of the lost *Phoenician History* of Sanchuniathon. Some classical writers, among them Tacitus (*Histories* V.4) alleged that the Jews were worshippers of Saturn; cf. Augustine's refutation in *Contra Faustum Manichaeum* XX. 13.
26. *Dabistan* 31; *Bundahis*, E. West. P. Jensen, *Die Kosmologie der Babylonier*, p. 114.
27. Origen, *Contra Celsum*, V. 41.



Seventeen

In the story of the Universal Deluge it is said: “In the six hundredth year of Noah’s life, in the second month, on the seventeenth day of the month, the same day were all the fountains of the great deep broken up, and the windows of heaven were opened.” ⁽¹⁾ Five months later, according to the Book of Genesis, on the seventeenth day of the seventh month, the ark rested upon Ararat.

In Egyptian religious belief Osiris was drowned “on the seventeenth day of the month Athyr.” ⁽²⁾ The fast for Tammuz, commemorating his descent into the netherworld, began on the seventeenth of the month named for him. ⁽³⁾ Although the similarity of the Babylonian and Biblical versions of the story of the Deluge was repeatedly stressed, the significance of the number seventeen in the story of Tammuz in relation to the same number in the book of Genesis was not emphasized, or even noticed.

The feast of Saturnalia began “always on the 17th of December” and with time, in imperial Rome, when it was celebrated for three consecutive days, it began on the fifteenth and continued for two more days, until the seventeenth. ⁽⁴⁾

The connection between the number seventeen and the Deluge is thus not confined to the Biblical, Babylonian, and Egyptian sources—we meet it also in Roman beliefs and practices. The significance of the number seventeen in the mystery plays related to Osiris’ drowning and in the festivities of Saturnalia is an indication that these memorials were related to the Deluge.

References

1. Genesis 7:11.
2. Plutarch, *De Iside et Osiride*, ch. 13; cf. also ch. 42. [The coincidence of the Biblical date of the beginning of the Deluge with the date of Osiris’ disappearance, or drowning, was noted by the eighteenth-century scholar Jacob Bryant, who claimed, in addition, that in both accounts the month was the second after the autumn equinox (*A New System or An Analysis of Ancient Mythology*, second edition [London, 1775], p. 334. Bryant also believed that “in this history of Osiris we have a memorial of the Patriarch and the Deluge” (*ibid.*, p. 334, n. 76). The identity of the two dates has been noted by several other authors, among them George St. Clair. See his *Creation Records Discovered in Egypt* (London, 1898), p. 437. On the significance of the date seventeen in Egypt, cf. Griffiths, *Plutarch’s De Iside et Osiride*, p. 312. Cf. H. E. Winlock, “Origin of the Ancient Egyptian Calendar,” *Proceedings of the American Philosophical Society* 83 (1940), p. 456 n.: “Throughout Coptic and Arab times at least, the night of June seventeenth was celebrated as ‘the night of the Drop’ when it was believed that a miraculous drop fell into the Nile, causing it to rise.”].
3. [According to Langdon, “In Babylonia the god Tammuz was said to have descended to the lower world on the 18th of Tammuz and to have risen on the 28th of Kislev (December).” (*Babylonian Menologies and the Semitic Calendars* [London, 1935], p. 121).

Originally the date had been the seventeenth; but when “the reckoning of time was altered to the extent of making the day begin with sunrise instead of with the approach of night” (M. Jastrow, *The Religion of Babylonia and Assyria* [Boston, 1898], p. 78), the 18th day of the month began about twelve hours earlier and encroached upon the daylight hours of the seventeenth day, which were now counted as part of the eighteenth. According to rabbinical sources, the end of the 40 days of rain mentioned in the Genesis account came on the 27th of Kislew—the very same day as the 28th of Kislev in the Babylonian reckoning, when Tammuz is said to have risen.].

4. [Macrobius, *Saturnalia* I. 10. 2f. Cf. Cicero, *Ad Atticum* 13. 52. 1.]





Festivals of Light

The Deluge and the seven days of brilliant light immediately preceding it were a universal experience, and they left indelible memories. Many of the religious rites and observances of all creeds go back to these events of the past in which the celestial gods Saturn and Jupiter were the main participants. Among the most ancient of all such observances were festivals of light of seven days' duration, held in honor of Saturn. The "seven days of light" just before the Deluge overwhelmed the Earth are recreated in these feasts. [\(1\)](#)

Herodotos describes a nocturnal light festival held each year at Sais in commemoration of Osiris' death and resurrection. It was called the Feast of Lamps:

There is one night on which the inhabitants all burn a multitude of lights in the open air round their houses. . . . These burn the whole night. . . . The Egyptians who are absent from the festival observe the night of the sacrifice, no less than the rest, by a general lighting of lamps; so that the illumination is not confined to the city of Sais, but extends over the whole of Egypt. [\(2\)](#)

In Rome the feast of light was named Saturnalia. According to tradition the Saturnalia had been established in honor of Saturn when, all of a sudden, after a lengthy and prosperous reign, "Saturn suddenly disappeared." [\(3\)](#) Macrobius wrote that in celebrating the Saturnalia the Romans used to honor the altars of Saturn with lighted candles . . . sending round wax tapers during the Saturnalia." [\(4\)](#) In his time the festival was celebrated for three consecutive days but, Macrobius wrote,

And yet in fact among the men of old there were some who supposed that the Saturnalia lasted for seven days . . . for Novius . . . says: 'Long-awaited they come, the seven days of Saturnalia' ; and Mummius too . . . says: 'Of the many excellent institutions of our ancestors, this is the best—that they made the seven days of the Saturnalia begin when the weather is coldest.' [\(5\)](#)

Hannukah and Christmas are both feasts of light and, like the Saturnalia, both can be traced to the days of the Universal Deluge. The Hebrew tradition that Hanukkah was established to commemorate the "miracle with the oil" that was found undepleted and sufficed for seven days, is a poor rationalization. A better ground for a re-establishment of a holiday, so similar to the Saturnalia, in Judea, was in the fact that in the middle of the second century before the present era Rome conquered Greece, and about the same time in the rebellion of the Hashmanaim (better known by the name of one of the sons, Judah Maccabi) against Hellenistic rule, the people of Palestine were drawing near the Roman world with its usages. It appears that the Romans fomented the revolt in the Hellenized provinces at the time of their conquest of Greece. Thus the feast of Hanukkah seems to be an adaptation of the Roman Saturnalia. [\(6\)](#)

The observation of this festival was later taken over by the festival of Christmas, which was originally observed for seven days, from the 25th of December until the first of the New Year.

1. [The earliest of the festivals of this type that we know of was the yearly seven-day-long celebration commemorating the inauguration of the temple of Ningirsu in Babylonia in the time of Gudea (before ca. 2000 B.C.). For this and other similar festivals, see P. Bourboulis, *Ancient Festivals of "Saturnalia" Type* (Salonica, 1964). Ningirsu was "he who changed darkness into light," the same as Ninib, or Saturn (M. Jastrow, *Die Religion Babyloniens und Assyriens*, ch. IV, pp. 56ff). In Athens the feast in honor of Saturn was called the *Kronia*. See H. W. Parke, *Festivals of the Athenians* (London, 1977), pp. 29-30. It would appear that the main idea behind the Saturnalia-type festivals, so widespread in antiquity, was a re-enactment of the conditions that existed during the Golden Age when Saturn reigned. The celebration of the Roman Saturnalia, which, according to Macrobius, pre-dates the founding of Rome by many centuries (VII. ??), was marked by a reversal of social relations, the release of the statue of Saturn that stood in the Forum from its bonds (Macrobius, *Saturnalia* VII. ??), the crowning of a mock-king (apparently representing Saturn) whose every command had to be strictly obeyed (Tacitus, *Annales* 13, 15; Epictetus, *D*, I. 25. 8; Lucian, *Saturn.* 2. 4. 9), and who was later sacrificed on the altar of Saturn. Some details of such a sacrifice are given in *Acta Sancti Dasii*, ed. by F. Cumont in *Analecta Bollandiana* XVI (1897). See also Cumont, "Le roi des saturnales," *Revue de Philologie* XXI (1897), pp. 143-153. Porphyry reports the existence of a similar festival on Rhodes during which a man was sacrificed to Kronos (*De Abstinencia* II. 54). A similar Persian festival was the Sacaia (Dio Chrysostom, *Orationes* IV. 66). A possible parallel in Mexico may be the festival Atemoztli, "Coming Down of the Waters," described in a manuscript reproduced in Kingsborough, *The Antiquities of Mexico*: "On the XXI of December they celebrate the festival of that god who, they say, was the one that uncovered the earth when it was annihilated by the waters of the Deluge."].
2. Herodotos II. 62, transl. by George Rawlinson. Cf. J. G. Frazer, *Adonis, Attis, Osiris*, second edition (London, 1907), pp. 300f.
3. Macrobius, *Saturnalia* I. 7. 24: subito non comparuisset. [It was then, according to Macrobius, that Italy came to be called Saturnia in honor of the planet. Cf. Dionysius of Halicarnassus, *Antiquitates Romanorum* I. 6; Ovid, *Fasti*, VI. 1. 31.]
4. (*Saturnalia* I. 7. 31-32, transl. by P. Davies, 1969). Macrobius noted also the opinion of those who "think that the practice is derived simply from the fact that it was in the reign of Saturn that we made our way, as thou to the light, from a rude and gloomy existence to a knowledge of the liberal arts." [Cf. above, "Tammuz and Osiris," n. 9 on the Egyptian light festival in honor of Osiris.]
5. *Saturnalia* X.
6. Similarly, the way of praying with covered head appears to be a taking over of the Roman usage—the Greek custom was to pray with an uncovered head.



Saturn and Jupiter

The history of this pair, the ancient Kronos and Zeus, or Saturn and Jupiter, as reflected in many traditions all around the world, tells a story that has nothing in it resembling the sedate and uneventful circling of these bodies on their orbits that modern astronomy asserts as a fact.

Saturn and Jupiter are very much like the sun; were they not planets, they would be considered stars, like our sun.⁽¹⁾ Jupiter is nearly 330 times more massive than the Earth, and Saturn 80 times. Both planets are covered with gases which are in constant motion, like the gaseous atmosphere of the sun. The sun has nine satellites and numerous asteroids and comets; Jupiter has at least fourteen satellites and several asteroids and comets. Saturn has ten known satellites; and four or five comets constitute the Saturnian family (though these comets do not circle around Saturn itself, they are commonly regarded as related to the orbit of Saturn).

Were Jupiter and Saturn free from the bonds of the sun, they could be considered as stars or suns. Were two such stars set in space close to one another, they would constitute a double-star system, both stars circling around a common focus.

As told, the picture that emerges from comparative folklore and mythology presents Saturn and Jupiter in vigorous interactions. Suppose that these two bodies approached each other rather closely at one time, causing violent perturbations and huge tidal effects in each other's atmospheres. Their mutual disturbance led to a stellar explosion, or nova. As we have seen, a nova is thought to result from an instability in a star, generated by a sudden influx of matter, usually derived from its companion in a binary system. If what we call today Jupiter and Saturn are the products of such a sequence of events, their appearance and respective masses must formerly have been quite different.⁽²⁾

A scenario such as this would explain the prominence of Saturn prior to its cataclysmic disruption and dismemberment—it must have been a larger body than it is now, possibly of the volume of Jupiter. Interestingly, for certain reasons G. Kuiper assumed that Saturn originally was of a mass equal to that of Jupiter.⁽³⁾ At some point during a close approach to Jupiter, Saturn became unstable; and, as a result of the influx of extraneous material, it exploded, flaring as a nova which, after subsiding, left a remnant that the ancients still recognized as Saturn, even though it was but a fraction of the celestial body of earlier days. In Saturn's explosion much of the matter absorbed earlier was thrown off into space. Saturn was greatly reduced in size and removed to a distant orbit—the binary system was broken up and Jupiter took over the dominant position in the sky. The ancient Greeks saw this as Zeus, victorious over his father, forcing him to release the children he earlier had swallowed and banishing him to the outer reaches of the sky. In Egyptian eyes it was Horus-Jupiter assuming royal power, leaving Osiris to reign over the kingdom of the dead.

If the descriptions of Saturn as a “sun” mean anything, Saturn must have been visible, in the time before its explosion, as a large disk. If this was the case the increased distance between the Earth and Saturn could have been the result of the removal of the Earth from its place or of Saturn from its place, or both. Saturn could be removed only by the planet Jupiter, the sole

member of the planetary family more powerful than Saturn. And indeed, the myth says that Saturn was removed by Jupiter.

References

1. [In *Worlds in Collision* Velikovsky wrote of events that may theoretically take place in the future: “Some *dark star*, like Jupiter or Saturn, may be in the path of the sun, and may be attracted to the solar system and cause havoc in it.” (Emphasis added). While in 1950 both planets were assumed by astronomers to be covered by thick layers of ice, they are now known to be star-like in their composition and thermal properties. In the case of Saturn, H. Spencer Jones (*Life on Other Worlds* [Macmillan Company: New York, 1940], ch. 6) argued that Saturn must be coated with water ice or frozen ammonia. Spencer-Jones’ book was published in the same year in which Velikovsky drew very different conclusions about Saturn’s thermal history and structure. The astronomers’ conjecture was based on a simple calculation of the amount of heat reaching the planet: Saturn, being almost ten times farther away from the Sun than the Earth had to have a mean temperature in the neighborhood of -155 degrees Celsius. The reasons why Velikovsky concluded that Saturn’s temperature must be considerably higher than the accepted estimate were, first, in “the residual heat of the catastrophe in which Saturn was derailed from its orbit” and, second, “the radioactivity that resulted from the catastrophe must still be pronounced on Saturn.” (From the unpublished manuscript, *The Test of Time*). On top of all this, “based on its past history, Saturn can be regarded as a star and may have some of the mechanism that makes our sun burn with intense light.”

In 1966 Kellerman described his observations and measurements at a wavelength of 21.3 cm, which showed a temperature of 90 degrees Fahrenheit for the inner atmospheric layers. (*Icarus*) Revised textbooks, taking account of the findings, began to speak of “room temperature” on Saturn, recorded in the 21-centimeter band. (E.g., Fred Whipple, *Earth, Moon and Planets* third revised edition [Cambridge, Mass., 1968], p. 187). By 1972 measurements at radio wavelengths of 50 and 100 centimeters found “unusually high” temperatures—about 240 degrees F. and 520 degrees F. respectively. “Thus it appears that Saturn, like Jupiter, is not the entirely frozen wasteland it was once thought to be.” (D. McNally, “Are the Jovian Planets ‘Failed’ Stars?” *Nature* 244 [August, 1973], pp. 424-426).

Soon it was realized that Saturn must have an internal energy source, and is in fact more like a star than like a planet, though it is not considered sufficiently massive to function as a true star. (*Science News* 101 [1972], p. 312. The article compares the view expressed only a few years previously by C. Sagan that Saturn could not be an abode of life because of atmospheric temperatures several hundred degrees below zero Fahrenheit. Cf. *Intelligent Life in the Universe*).

Measurements in the far-infrared and submillimeter ranges, published in 1977, indicate that the internal energy source on Saturn lies “within the range of 2.3 to 3.2 times the absorbed solar flux.” (R. F. Loewenstein *et al.*, “Far Infrared and Submillimeter Observations of the Planets,” *Icarus* 31 [1977], p. 315. Cf. *The Astrophysical Journal* 157, pp. 169ff.). In other words, Saturn gives off up to about three times the amount of energy it receives from the Sun.

At the beginning of 1980 analysis of measurements taken by Pioneer 11 during its flight past Saturn showed that the interior of the planet has a temperature exceeding 10,000 degrees Kelvin, which is

considerably hotter than the surface of the Sun (less than 6,000 degrees Kelvin).].

2. A hypothesis that the protoplanet masses of Jupiter and Saturn were nearly the same was advanced by G. Kuiper. See *Sky and Telescope*, (March, 1959), p. 259.
3. *Sky and Telescope* (March, 1959), p. 259.





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.”].





Saturn's Golden Age

The age that man later called the Age of Kronos (Saturn) was remembered with nostalgia as an age of bliss. References to the Age of Kronos in the ancient lore are very numerous.⁽¹⁾

Hesiod tells of

A golden race of mortal men who lived in the time of Kronos when he was reigning in heaven. And they lived like gods without sorrow of heart, remote and free from toil: miserable age rested not on them . . . The fruitful earth unforced bare them fruit abundantly and without stint. They dwelt in ease and peace upon their lands with many good things. . . .⁽²⁾

Similarly writes Ovid in the sixth book of his *Metamorphoses*:

In the beginning was the Golden Age, when men of their own accord, without threat of punishment, without laws, maintained good faith and did what was right. . . . The earth itself, without compulsion, untouched by the hoe, unfurrowed by any share, produced all things spontaneously. . . . It was a season of everlasting spring.⁽³⁾

Rabbinical sources recount that men lived under very favorable conditions before the Deluge, and that these contributed to their sinfulness: "They knew neither toil nor care and as a consequence of their extraordinary prosperity they grew insolent."⁽⁴⁾

The dominance of Saturn at some remote period in the history of the life of the peoples on Earth was of such pronounced and all-pervading character that the question arises whether the adventures of the planet going through many exploits could by itself be the full cause of the worship of the planet and the naming of the Golden Age "the Age of Kronos" (Saturn). Saturn exploded and caused the Earth to go through the greatest of its historical catastrophes, and this was completely sufficient to make of Saturn the supreme deity; but it appears that the Age of Saturn is a name for the epoch *before* the Deluge; after the Deluge Saturn, dismembered, almost ceased to exist as a planetary body and when at length it was reconstituted it was fettered by rings, and was far from being the dominant celestial body that would behoove it as the supreme deity of the epoch. The "Age of Kronos" is so glorious an age that it is hardly thinkable to connect it with the period after the Deluge. The wailing for Adonis, Tammuz of the Babylonians, or Osiris of the Egyptians, deplored the end of its dominance, not the beginning of it.

Then why was Saturn the supreme deity by whose name the great and glorious age *before* the Deluge was named? Because it removed Uranus from its role of chief deity, and to the onlookers on Earth, emasculated him? If the distances between the Earth and Saturn and Uranus were then what they are now, then such occurrences could scarcely be observable: Uranus is only faintly visible in the night sky over Mesopotamia in a most translucent night. Saturn is clearly visible but is not, for an unaided eye, a spectacle in the sky; it was more voluminous and more luminous before the Deluge, but if it moved on an orbit not too different from the present one, and the Earth were moving approximately in the same quarters where it

moves today, then the surprise still persists as to how a body on a 30-years-long orbit could make the inhabitants of the Earth on its one-year-long orbit, regard it the supreme of all celestial bodies in the sky.

The appellative “sun” employed for Saturn could be explained by its unusual brightness when it exploded as a nova for a short time, actually for seven days, before the beginning of the Deluge on Earth. Assuming the length of the day in those times to have been not too dissimilar from its present value, the velocity of the moving masses being on the order of 100 kilometers a second or 8,600,000 kilometers in a 24-hour period, and the Earth and Saturn being on the closest points on their reciprocal orbits, or in conjunction (which is another surmise), in seven days a distance of ca. 60 million kilometers would be covered. On present orbits the distance between Saturn and Earth varies from 1,279 million kilometers at superior conjunction to 1,578 million kilometers at opposition; the lesser of these distances is ca. 21 times greater than that above calculated. This means also that unless the velocity of the ejected water was an order of magnitude greater than 100 km per second, the distance between Saturn and Earth must have been substantially smaller than it is at present.

I have rather arbitrarily selected the figure of 100 kilometers a second for the motion of the exploded material; today the escape velocity, or the speed required for a projectile on the surface of Saturn to leave the gravitational attraction of the planet is but 35 kilometers a second. For Jupiter the escape velocity is 59 kilometers a second. Assuming that Saturn was of a mass equal to that of Jupiter, the same figure would apply to it too. With 100 kilometers a second we have almost double the velocity of escape. The arbitrariness of the assumption of such velocity for our calculations is obvious. But if the set of figures is not too far from what they actually were, the conclusion would be that the distance of the Earth from Saturn was but a twentieth part of what it is now; this would permit us to speculate whether the Earth could at some early period have been a satellite of Saturn. The distance 60 million km is commensurate with the distance of Mercury from the Sun, or 58 million km; Jupiter’s satellites revolve at distances up to 24 million km from the primary. Theoretically Saturn could have satellites as large as the Earth: the Moon is only one-fortieth of the Earth in volume, whereas Saturn is 760 times larger than our planet.⁽⁵⁾

If such was ever the case, the “Age of Saturn” and the very unusual conditions under which mankind lived in it, and Saturn’s worship prior to the Deluge, would gain in meaning. The appellative “sun” used for Saturn would be understood as resulting not only from the great light it emitted for a short period when a nova, but also from its long-standing role of a primary for the revolving Earth.

If there is truth in the surmise, and nothing more it is than a surmise, that the Earth was once a satellite of Saturn, the latter must have revolved closer to the sun in order that the Earth should receive heat from it—Saturn exudes little heat⁽⁶⁾—and if the age of Kronos was a golden age, then it is also proper to assume that the conditions on the satellite Earth were not unfavorable for life. The geological record documents extreme climates for the past of the Earth—times when corals grew in the Arctic, and times when the Earth, partly even on the equator, was fettered by ice. Such climates require definitely abnormal conditions that could be created only by varying positions of our planet as an astronomical body. Therefore surmises as made in this section are not in conflict with geological and paleo-climatological records—yet it is not what could have taken place, but what took place, or the historical record, that is the proper goal for inquest. In the absence of direct indications we may only deal with the problem of the Earth as a satellite of Saturn as with a hypothetical construction, requiring further elucidation.

It is assumed by modern astronomy that the ninth planet, Pluto, was once a satellite of Neptune, which, having collided with Triton, another satellite of the planet, was thrown out of the ring and became an independent planet; the satellite Triton, however, as a consequence of the collision, reversed the direction of its revolution and became a retrograde satellite.⁽⁷⁾ Another instance of a postulated conversion of a planetary satellite into an independent planet is discussed by Van Flandern and Harrington in their paper “A Dynamical Investigation of the Conjecture that Mercury is an Escaped Satellite of Venus,” *Icarus* 28 (1976), pp. 435-440.]. Thus the principle of a conversion of a satellite into a planet in its own right is not a phenomenon that is discussed here for the first time.

The Golden Age of Saturn or Kronos came to its end with the supreme god of that period, the planet Saturn, was broken up. The Age of Kronos was not the earliest age of which man retained some, however dim, memories—but farther into the past the dimness amounts almost to darkness.⁽⁸⁾

References

1. [On Kronos’ golden age see Plato, *The Statesman*. cf. P. Vidal-Naquet, “Plato’s Myth of the Statesman, the Ambiguities of the Golden Age and of History,” *Journal of Hellenic Studies* 98 (1978), pp. 132-141. Cf. Porphyry, *De Abstinencia* IV. 2; Teleclides, quoted in Athenaeus, *Deipnosophistae* VI. According to Macrobius, in the reign of Saturn there was no distinction between freedom and slavery (*Saturnalia* I. 7. 26) and all wealth was held in common (I. 84). Cf. Pompeius Trogus in Justin, bk. 43: “Saturn is said to have been so just that no one under him was a servant, nor did anyone have any private possessions, but all things were held in common and undivided, as if the inheritance of one belonged to all.” On Saturn’s reign in Italy, see Dionysius of Halicarnassus, *Antiquitates Romanorum* I. 36. 1; Vergil, *Fourth Eclogue* also, *The Aeneid* 11. 252 Silius Italicus 3. 84; 13, 63; 17. 380. Martial, *Epigrams* 63. Macrobius, *Saturnalia* VII. 26.].
2. Hesiod, *Works and Days*, transl. by Evelyn-White, 110.
3. Ovid, *Metamorphoses* Book I, tr. by Innes.
4. Ginzberg, *Legends*, I.
5. [The proportion of the Earth’s mass to that of Saturn is 1:90.]
6. [Analysis of the data collected by Pioneer 11 has led to an estimate of a temperature of ca. 10,000 degrees Kelvin in the interior of Saturn. There appears to be some net outflow of heat at the top of the atmosphere.]
7. [R. A. Lyttleton, “On the Possible Results of an Encounter of Pluto with the Neptunian System,” *Monthly Notices of the Royal Astronomical Society* 97, p. 108. Cf. the criticism of Lyttleton’s suggestion of R. S. Harrington and T. C. van Flandern in “The Satellites of Neptune and the Origin of Pluto,” *Icarus* reprinted in *KRONOS* V. 2. (1979), p. 76. The alternative postulated by the authors involves a near-encounter between Neptune and a hypothetical planet of two to five Earth masses. The authors’ suggestion that Pluto’s newly-discovered moon may once also have been an independent satellite of Neptune could help solve the question of the origin of the Earth’s companion.]
8. [Similar traditions of a golden age existed among the Sumerians (S. N. Kramer, “Sumerian Myths and Epic Tales” in J. Pritchard ed.,

Ancient Near Eastern Texts Relating to the Old Testament [Princeton, 1950], pp. 37ff.), ancient Egyptians (F. Lenormant, *Les Origines de l'histoire* [Paris, 1880], vol. I, p. 58), Hindus (*The Laws of Manu*) and Chinese (*Les Memoires historiques de Se-ma Ts'ien*, transl. by E. Chavannes [Paris, 18xx], vol. I, pp. 17ff.) among others.].





Rainbow

After the Deluge the hope grew into faith that no such or similar destruction would again come to decimate mankind. The story is told that the Lord made a covenant with Noah, and the following were the terms of the covenant:

Then God said to Noah. . . . “I establish my covenant with you, that never again shall all flesh be cut off by the waters of a flood, and never again shall there be a flood to destroy the earth.” [\(1\)](#)

As a visible sign of the obligation not to repeat the catastrophe, a colorful rainbow appeared for the first time after the Deluge—it was a new and till then unknown atmospheric phenomenon. In this colored refraction of sunlight in small and suspended drops of water the rescued believed to see the divine promise not to repeat the flood:

And God said, “This is the sign of the covenant which I make between me and you and every living creature that is with you, for all future generations: I set my bow in the cloud, and it shall be a sign of the covenant between me and the earth. When I bring the clouds over the earth and the bow is seen in the clouds, I will remember my covenant.” [\(2\)](#)

The covenant, according to the moral conception of the Hebrews, was a reciprocal deed. It was kept only in its promise not to bring a paramount flood upon the Earth: the Earth and man continued to be shaped and reshaped in further catastrophes before the close of the age of creation that is the theme of the Book of Genesis.

References

1. Genesis IX. 8-11.
2. Genesis IX. 12-15. [According to Genesis II. 5-6 no rain fell on the newly created earth, which was watered only by a mist ascending from the ground and falling as dew. If this phenomenon persisted until the Deluge this would explain the novelty of the rainbow after the catastrophe.]

Pedro Sarmiento de Gamboa, the Spanish conquistador who traveled in the Andes in the sixteenth century, recorded in his *Historia de los Incas* a tale about Manco Capac, the first Inca, which has a curious resemblance to the Biblical story. Emerging from a cave after the re-appearance of the sun, Manco Capac and his brothers “arrived at the mountain which is two leagues, approximately, from the town of Cuzco, and climbing to the top, they saw in it the rainbow, which the natives call *guanacuari*. And, interpreting it as a favorable omen, Manco Capac said: ‘Consider this a sign that the world will not again be destroyed by water’” (“*Tened aquello por senal que no sera el mundo mas destruido por agua!*” Chapter 12). The rainbow was depicted on the altar of the Coricancha in the temple of Viracocha in Cuzco. See R. T. Zuidema, “La Imagen del Sol y la Huaca de Susurpuquio en el Sistema Astronomico de los Incas en el Cuzco,” *Journal de la Societe de Americanistes* LXIII (1974-76), p. 218. If, as Dwardu Cardona has suggested, the reference to the rainbow in

this passage is to the rings of Saturn—a suggestion with which I tend to concur—the “bondage” of Saturn in its rings may have been regarded as a guarantee of its future behavior.].

