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 it 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.