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# Huge “hidden” Saturn ring found

Oct. 7, 2009  
Courtesy Nature  
and World Science staff

Observations from a space telescope have revealed the largest-known planetary ring in the Solar System, astronomers report.

The subtle, newfound ring surrounds the gaseous planet, but much further out than its familiar, more visible rings, scientists said; if it were visible from Earth, the ring’s full circle would appear to be twice the size of our Moon.



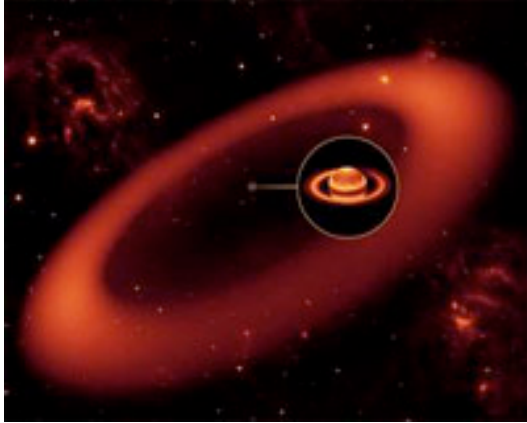
Saturn’s moon Iapetus. Astronomers propose is darkly colored on one side because of dust from a newly discovered ring of Saturn. (Image courtesy Cassini Imaging Team, SSI, JPL, ESA, NASA )

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The ring is associated with Saturn’s distant moon Phoebe, which orbits the giant planet about 13 million kilometres (8 million miles) away. That is roughly 200 times Saturn’s radius, or distance from its center to its surface.

Until now, the largest-known planetary rings were Jupiter’s gossamer rings and Saturn’s E ring — sheets of dust that extend to about 5 to 10 times the radius of their respective planets.

The new findings, made using NASA’s Spitzer Space Telescope, are described in the Oct. 8 issue of the research journal *Nature*. Astronomers Anne Verbiscer of the University of Virginia and colleagues, who reported the find, also presented simulations showing how dust in the ring could come from repeated impacts of objects striking Phoebe.



An artist's conception simulating an infrared view of the giant ring surrounding Saturn. Saturn itself is just a dot, enlarged in the inset image. (NASA / JPL-Caltech / Keck)

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The newfound ring is tilted 27 degrees with respect to the main rings, researchers said.

The faint but enormous ring may also explain a longstanding mystery: the two-tone coloration of another Saturnian moon, Iapetus, Verbiscer and colleagues proposed. One side of Iapetus is darker than the other, leading to suggestions that the front face might be coated with dust spiralling in from Saturn's darker outer moons, including Phoebe.

Verbiscer and colleagues calculate that, over the history of the Solar System, material from the ring could have supplied Iapetus's front face with a blanket of dark dust a few metres (yards) thick.