One Moon Coats its Neighbor in Dust

- The trailing face of Saturn’s moon Iapetus is ~10 times brighter than its leading face.
- For 300 years, astronomers debated whether the cause was internal (e.g., eruption of dark material on one face) or external (e.g., debris from a nearby impact).
- The discovery of a giant ring around Saturn and close-up Cassini images confirm an external cause: dust particles coat one side and drive ice to the other by sublimation.

The Big Picture

- Planetary moons can be “painted” at a global level by external causes such as dust and even charged particles.
- Dark dust and bright ice can segregate on a moon’s surface, as sun-warmed dust drives ice to brighter, icier regions.
- New telescopes and instruments keep discovering new phenomena: The “Phoebe ring” is the largest and most distant from its parent body.

For More Information...

Press

- BBC.com - 10/07/09 - “New ring detected around Saturn”
http://news.bbc.co.uk/2/hi/8291905.stm
- Sky & Telescope - 12/11/09 - “Has Iapetus Finally Been Solved?”
http://skyandtelescope.com/community/skyblog/newswblog/7966992.html
- CNN.com - 10/07/09 - “Scientists discover massive ring around Saturn”

Images

- Slide 1 image courtesy NASA / JPL / Space Science Institute
http://photojournal.jpl.nasa.gov/catalog/PIA08234
- Slide 2 Phoebe image courtesy Cassini Imaging Team / SSI / JPL / ESA / NASA
http://apod.nasa.gov/apod/ap060212.html
- Slide 3 image NASA/JPL-Caltech/Keck

Source Articles

http://www.sciencemag.org/cgi/content/full/327/5964/432
http://www.nature.com/nature/journal/v461/n7267/full/nature08515.html

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