

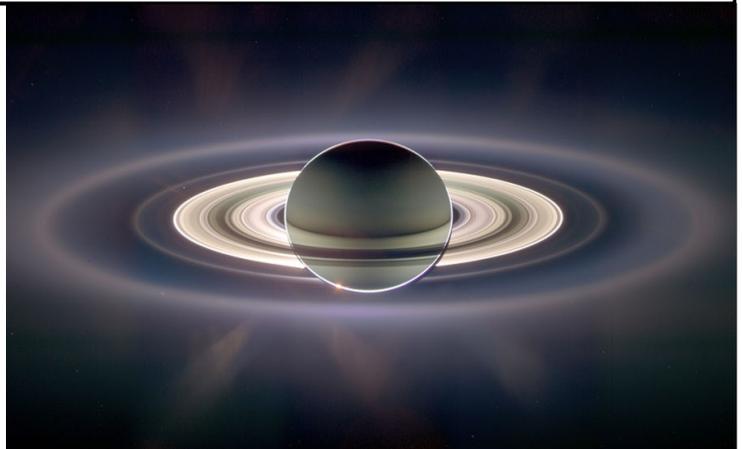
Conservation Corner

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Have you been following the final days of the 20-year international *Cassini* mission to Saturn? If so, you might remember that one of several space events we looked at last spring included *Cassini*'s Grand Finale. Launched by NASA in 1997, the spacecraft entered Saturn's orbit in 2004 and in 2005 successfully landed the ESA probe *Huygens* on Saturn's largest moon, Titan. As *Cassini*'s fuel tank read empty, the spacecraft was sent on one last mission. *Cassini* spent the summer entering the gap between Saturn's cloud tops and rings 22 times before disintegrating in a final meteoritic blaze on Sept. 15.



"The Day the Earth Smiled" ~ July 19, 2013 Solar Eclipse

Since prehistoric times, humans have followed the wandering path of Saturn, one of the brightest objects in the night sky. Ancient writings reveal that Babylonian as well as Hindu, Chinese, and Japanese astronomers followed the orbit of Saturn. In 1610, Galileo first viewed Saturn through a modern telescope. In 1659, Dutch Astronomer Huygens discovered Saturn's rings and largest moon, and in the early 1660's French-Italian Astronomer Cassini discovered four more moons.

It wasn't until the fly-by missions of *Pioneer 11* in 1979 and *Voyagers 1* and *2* in the early 1980s that close-up images revealed hundreds of rings, similar to the grooves on a phonograph record, and over 60 moons. *Cassini*, however, is the only spacecraft to ever orbit Saturn, and its mission's findings will help rewrite the science books.

In our solar system, of course, other gas giants have ring systems, but Saturn's are by far the biggest and best. Did you know they are kept in place by Shepherd Satellites, small moons found near the ring sections that use their gravitational pull to ride herd on the countless dust and ice particles surrounding Saturn?

Consider these nine ways as outlined by NASA that the *Cassini* spacecraft and *Huygens* probe have made a difference.

1. Expanded our understanding of the kinds of worlds where life might exist.
2. At Titan, they showed us one of the most Earth-like worlds we've ever encountered, with weather, climate, and geology that provide new ways to understand our home planet.
3. Served as a time machine portal to see the physical processes that formed our own solar system.
4. Improved our understanding of Earth's weather patterns by observing weather and seasonal changes on Saturn over the length of the mission.
5. Revealed Saturn's moons to be unique worlds with stories of their own.
6. Showed us the complexity of Saturn's rings and the dramatic processes operating within them.
7. Prompted scientists to rethink their understanding of the solar system.
8. Found innovative ways to use the spacecraft and its instruments and paved the way for future missions to explore our solar system.
9. Revealed the beauty of Saturn, its rings, and moons, inspiring our sense of wonder and enriching our sense of place in the cosmos.

I'll close with a trivia question just in time for harvest season. How did Saturn get its name?