

Cassini completes final, fateful Titan flyby

On April 24, 2017 the Cassini Spacecraft made its 127th and last Titan flyby. The craft passed at an altitude of about 979 km above the moon's surface. Cassini is now in position for its daring Grand Finale.

NASA said today that Cassini has had its last close brush with Saturn's hazy moon Titan and is now beginning its final orbits around the ringed planet. The final series of orbits – known as Saturn's Grand Finale – will take the spacecraft between Saturn's rings and the body of the planet. The spacecraft has been orbiting Saturn since 2004 and is now nearly out of fuel.

Spacecraft engineers needed the Titan flyby to reshape the robotic probe's orbit slightly so that instead of passing just outside Saturn's main rings, Cassini will begin a series of 22 dives between the rings and the planet.

Cassini transmitted its images and other data to Earth following the recent encounter. Scientists with Cassini's radar investigation will be looking this week at their final set of new radar images of the hydrocarbon seas and lakes that spread across Titan's north polar region. The planned imaging coverage includes a region previously seen by Cassini's imaging cameras, but not by radar. **The radar team plans to use the new data to probe the depths and compositions of some of Titan's small lakes for the first (and last) time, and look for further evidence of the evolving feature researchers have dubbed the 'magic island.'** The first Cassini dive between the body of Saturn and the inner rings is scheduled for April 26. The spacecraft will be out of contact during the dive and for about a day afterward while it makes science observations from close to the planet. The earliest time Cassini is scheduled to make radio contact with Earth is 07:05 UTC on April 27. Images and other data are expected to begin flowing in shortly after communication is re-established.

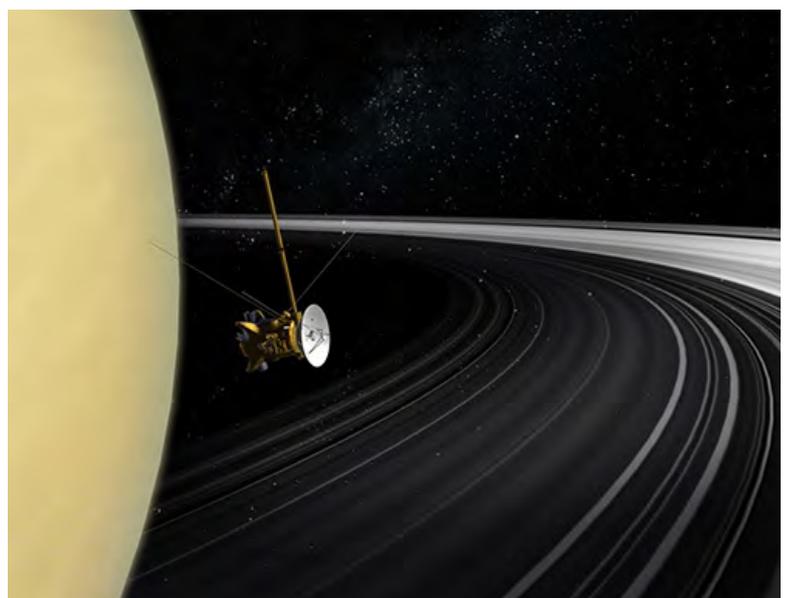
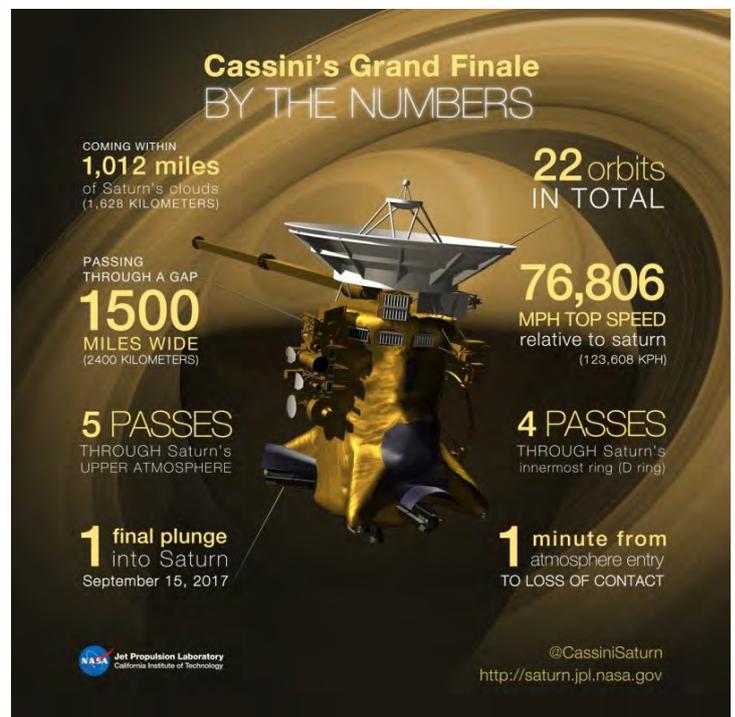
SUMMARY OF KEY DATES:

- April 22: Titan 126 Flyby at 6:08am UTC
- April 23: First Grand Finale Orbit Begins at 3:46am UTC
- April 26: First Ringplane Crossing at 9am UTC
- May 24: Northern Summer Solstice Begins
- Sept. 15: Cassini's Final Entry into Saturn's Atmosphere begins at 10:44am UTC. Spacecraft loss of signal comes one minute later at 10:45am UTC. Final signal received on Earth at 12:08pm.

No one knows, of course, exactly what lies between the inner rings and outer atmosphere of Saturn. It's possible this region contains unseen debris, which might harm the spacecraft. In fact, astronomers and space scientists have been discussing sending a spacecraft into this unknown region for decades, beginning with the Voyager flybys of Saturn in 1980 and 1981. But they have never attempted it ... until now. Should be exciting!

The mission will conclude with a science-rich plunge into Saturn's atmosphere on September 15, 2017.

AK, with Wikipedia Notes



Artist's concept of Cassini diving between Saturn and its innermost ring.