

Cassini Solstice Mission Quick-Look Flyby Facts

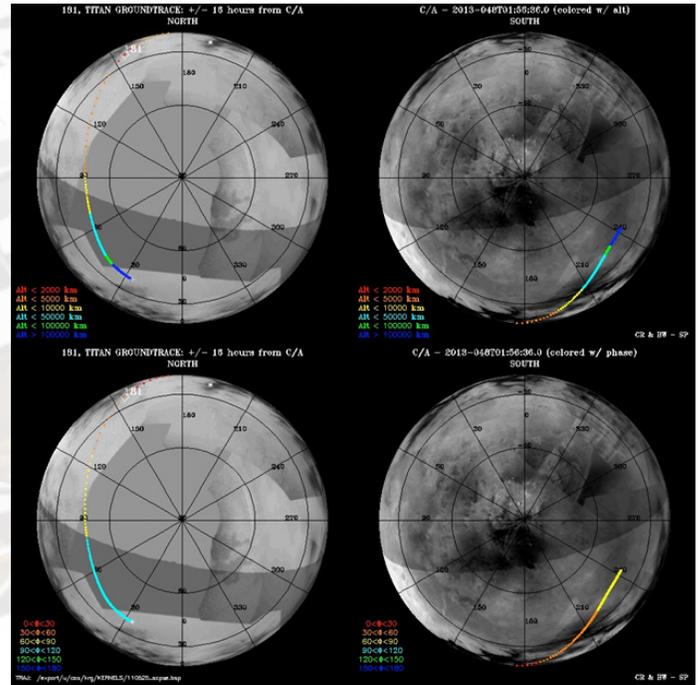
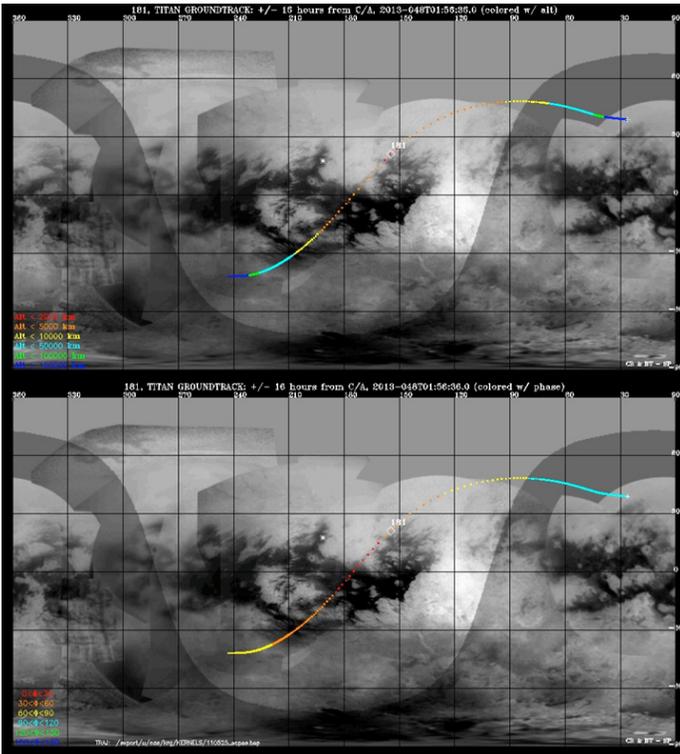
Titan T-89 Encounter (Orbit 181)



The T-89 flyby occurs with local time coverage moving from the dayside to the nightside.

Cassini Groundtrack: Global Plot

Cassini Groundtrack: Polar Plot



* Start \diamond Closest Approach + End

Quick Facts

Science Highlights

Closest Approach at 2013-048T01:56:35
Feb.16, 2013

Altitude: 1978 km (~1229 miles)
Speed: 5.8 km/sec (~13,000 mph)
Closest Approach latitude: 20.7° N

Flyby Setup Maneuver Schedule:
Titan approach maneuver on Sunday,
February 12 UTC 043T23:26:00
Closest Approach occurs ~ 3 days after Peri-
apse

19th Titan encounter in the Solstice Mission

Closest Approach/Unique Observations
RSS: T-89 is one of four RSS gravity flybys in the Solstice Mission. During the Solstice Mission, the main science objectives of gravity measurements at Titan support the Titan Interior Oceans Campaign. Additional gravity flybys are required to confirm or deny the presence of an ocean and determine whether the interior is soft or rigid. Additional RSS gravity observations will help determine if Titan's crust is thick and rigid, or thin. The latter would support ongoing dehydration today.

Titan T-89 Encounter

Time Ordered Listing

<u>Event</u>	<u>Time (PDT)</u>	<u>Event</u>	<u>Time (PST)</u>
Turn Cameras to Titan	Thu Feb 16 01:45 AM	Flyby	Thu Feb 16 07:15 PM
Deadtime	Thu Feb 16 02:25 AM	CIRS	Fri Feb 17 07:15 AM
CIRS	Thu Feb 16 02:39 AM	Deadtime	Fri Feb 17 03:34 PM
RSS	Thu Feb 16 07:15 AM	Downlink	Fri Feb 17 04:30 PM

Science Highlights Inbound/Outbound Wings

CIRS: On both the inbound and outbound wings, CIRS continues its stratospheric monitoring campaign.

ISS: On the outbound wing, ISS will ride along with CIRS' observation to image Titan's surface and atmosphere, including the region where extensive surface changes were observed in Fall 2010 and an area at mid-southern latitudes on the trailing hemisphere that has only been imaged at lower resolution.

VIMS: On the inbound wing, VIMS will ride along with CIRS, observing the illuminated North Pole area. This will provide data to monitor the evolution of the polar hood. On the outbound wing, VIMS will look for the evolution of the cloud pattern at mid-latitudes.

MAG: T-89 is another high inclination (1,500 km) flyby in the post noon sector of Saturn's magnetosphere. With closest approach near the day/night terminator, Cassini will be able to study the diffusion of the external magnetic field at low altitudes and high solar zenith angles. A comparison with T-83, T-84, T-85, T-86, T-87, and T-88 will be very useful.