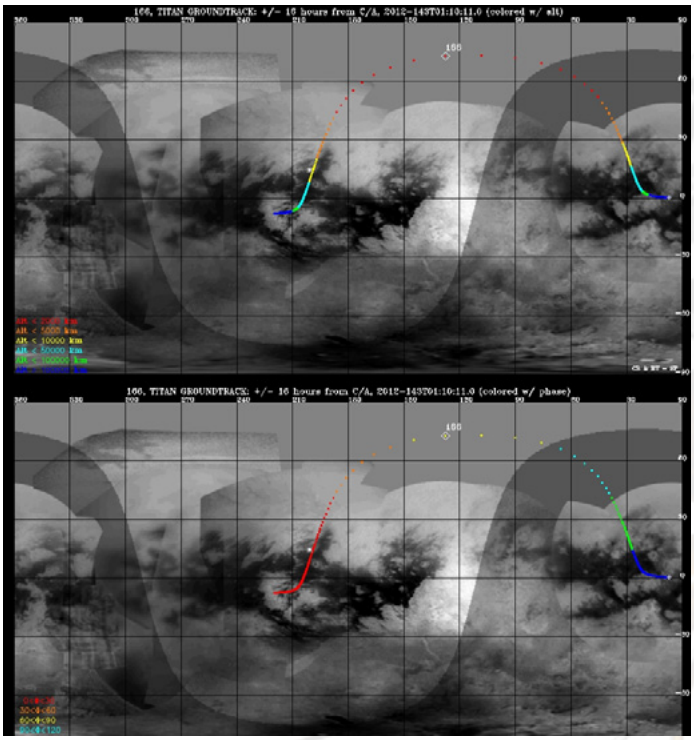
Cassini Solstice Mission Quick-Look Flyby Facts

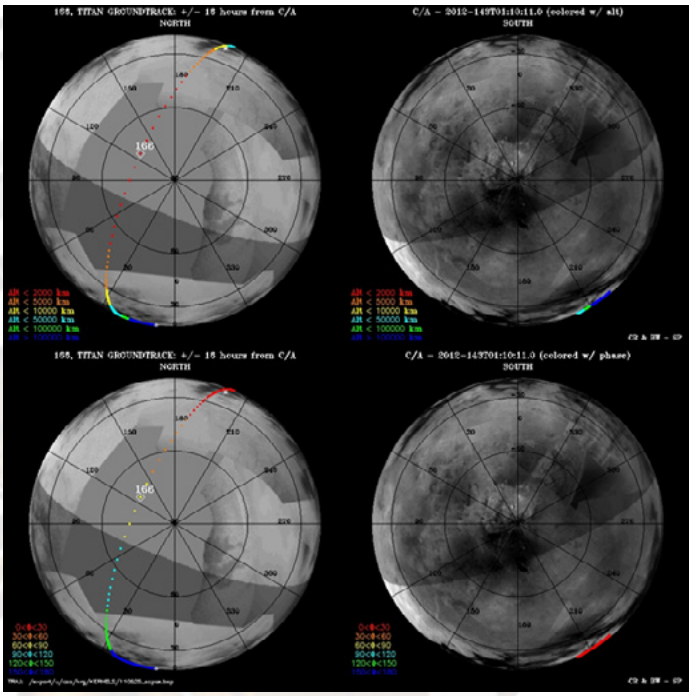
Titan T-83 Encounter (Orbit 166)

The T-83 flyby occurs with local time coverage moving from the dayside to the nightside.

Cassini Groundtrack: Global Plot



Cassini Groundtrack: Polar Plot



* Start ◇ Closest Approach + End

Quick Facts

Closest Approach at 2012-143T01:10:11
May 22, 2012 (SCET)
Altitude: 955 km (~593 miles)
Speed: 5.9km/sec (~13,000 mph)
Closest Approach latitude: 9.8° N

Flyby Setup Maneuver Schedule
Titan approach maneuver on Friday,
May 18 UTC 030T22:39:48
Closest Approach occurs ~ 2 days after Periapse

13th Titan encounter in the Solstice Mission

Science Highlights

Closest Approach/Unique Observations

RADAR: RADAR uses SAR to detect changes in small lakes seen on the T-16 and T-19 flybys. There is some overlap with territory seen in T-95.

INMS: T-83 is a high Northern latitude pass on the dusk side (Cassini relative to Titan). INMS is prime inbound and RADAR is prime outbound. This observation is key to the seasonal change objectives, and will be compared with previous observations of this region from the nominal and equinox missions

Time Ordered Listing

Event	Time (PST)	Event	Time (PST)
Turn Cameras to Titan	Mon May 21 02:45 AM	Flyby	Mon May 21 07:24 PM
Deadtime	Mon May 21 03:25 AM	RADAR	ongoing
VIMS	Mon May 21 03:40 AM	VIMS	Tue May 22 01:24 AM
CIRS	Mon May 21 10:24 AM	CIRS	Tue May 22 04:24 AM
RADAR	Mon May 21 04:57 PM	Deadtime	Tue May 22 10:00 AM
		Downlink	Tue May 22 10:15 AM

Science Highlights
Inbound/Outbound Wings

RADAR: Other RADAR observations include inbound and outbound radiometry, HiSAR and altimetry, along with outbound scatterometry.

VIMS: VIMS looks for specular reflection on the Northern lakes, and to detect clouds to monitor climatic changes after the equinox.

CIRS: CIRS maps the vertical temperature structure around 25% of the visible disk, and maps surface temperatures to search for diurnal and albedo-related differences.

ISS: ISS rides along with VIMS' and CIRS observations to image Titan's surface and atmosphere, including Adiri and the region where changes were observed in Fall 2010.

UVIS: . Inbound and outbound UVIS will obtain an image cube of Titan's atmosphere at EUV and FUV wavelengths by sweeping its slit across the disk.

MAG: With closest approach slightly in the dayside ionosphere, MAG will be able to study the diffusion of the external magnetic field at low altitudes and high solar zenith angles.