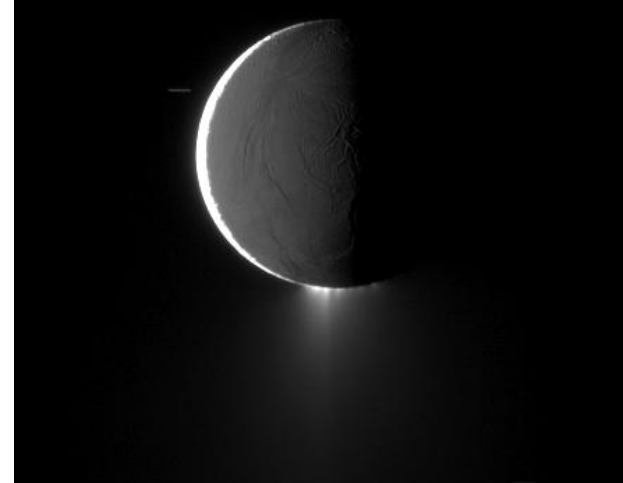


SOST Plume PIE Observations

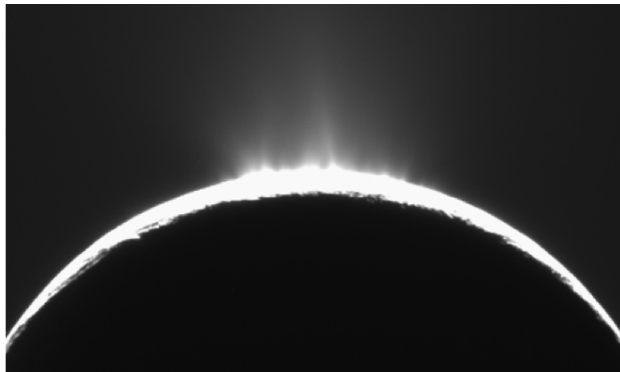
Why so many plume observations?

1. To obtain different viewing geometries which better characterize plume morphology, particle size, and the relationship between plumes and surface features and thermal anomalies. Specific jets are mapped to specific locations. In addition, large distances are required for context and to understand the relationship of the plumes to E-ring.
2. To understand the variability of geologic activity on Enceladus. The same viewing conditions at different times are required.



S68 PLUME PIE: SATURN Rev 148
2011-130T15:00:00 - 130T16:30:00

260,000 km away, with a fairly small solar phase angle ($\sim 126^\circ$), to characterize the backscattering properties and thus the size of the plume particles



Nov. 30, 2010

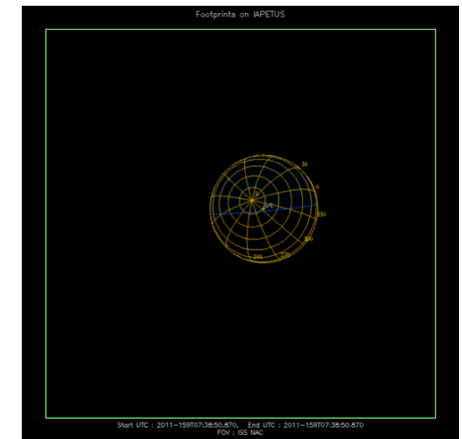
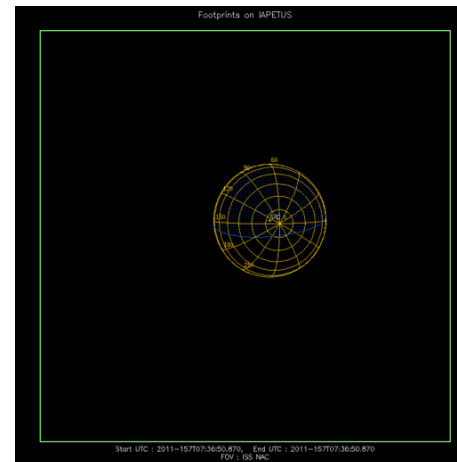
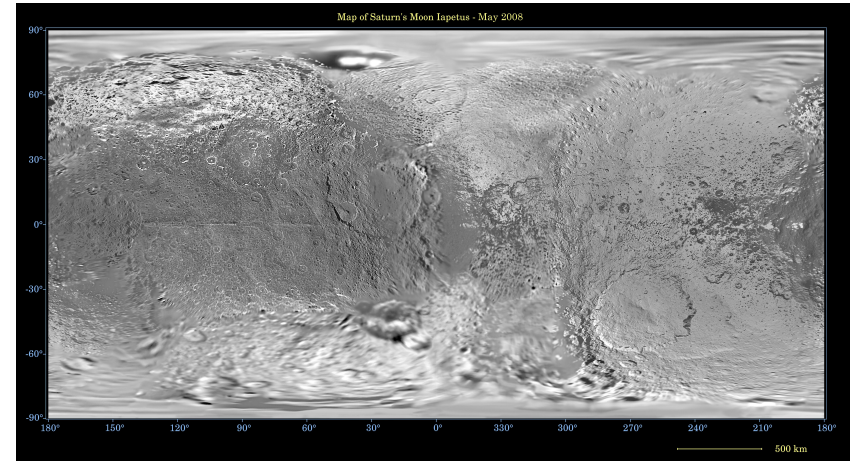


The Iapetus campaign June 6-9, 2011 (apoapsis)

Scientific Goals

1. To search for companions, debris, dust, etc. in the Hill sphere*, and any possible atmosphere or activity
2. To image regions that have been poorly observed, especially the southern hemisphere, to understand volatile distribution and specific geologic structures
3. To understand thermal segregation of volatiles on Iapetus

*The region around a moon for which its gravitational attraction binds other objects



Typical views during the campaign
(~200-250 NAC pixels)

Iapetus campaign: Overview of observations

XD_148_149: 2011-157T06:44:00-161T04:00

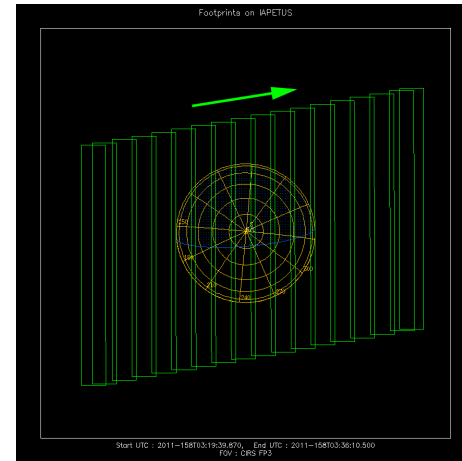
C/A = 862,500 km; lat down to 88°S; solar phase angle ~80°-100°; best observations For rest of mission.

Next campaign is in Mar/Apr 2015 with a C/A of 978,600 km of the northern pole.

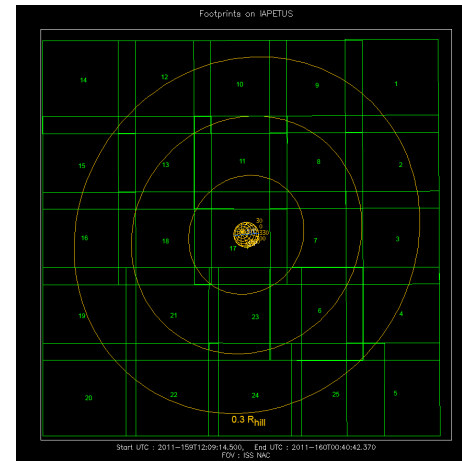
Two basic templates:

- 1. No Hill sphere pointing:
0:00 UVIS_FUV ~2 sec
0:01 CIRS_FP1 ~20 min.
0:22 CIRS_FP3 scan (~4 mrad at ~6 urad/s)
0:38 UVIS_FUV stare ~3:22 hrs (ISS does its shutters here; VIMS spectral data obtained as well.)**
- 2. As above, but with a Hill sphere search, as illustrated at right.**

These cyclics occur over 3 main Observation periods.



CIRS FP3 scan



ISS footprints for a Hill sphere search