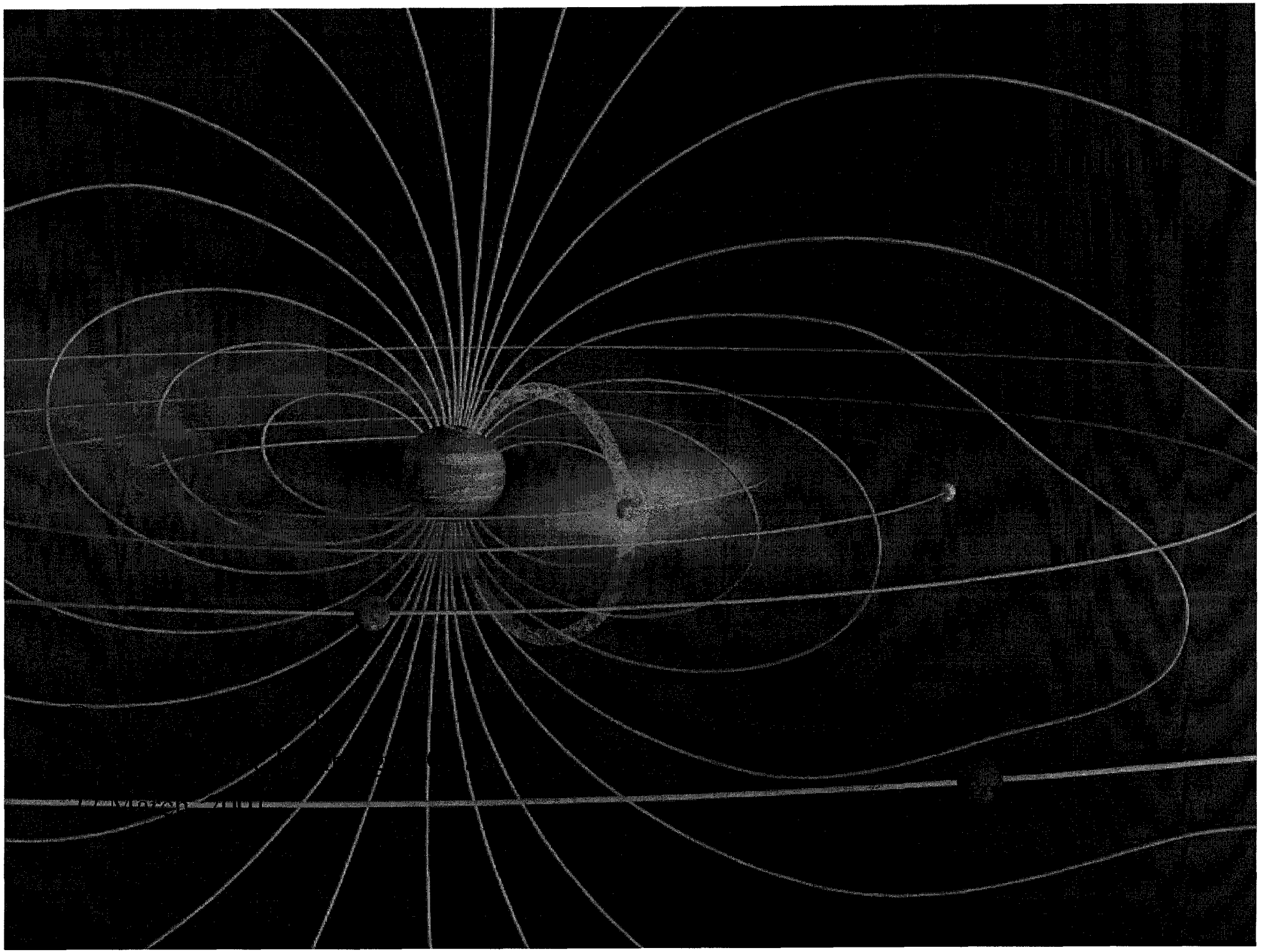
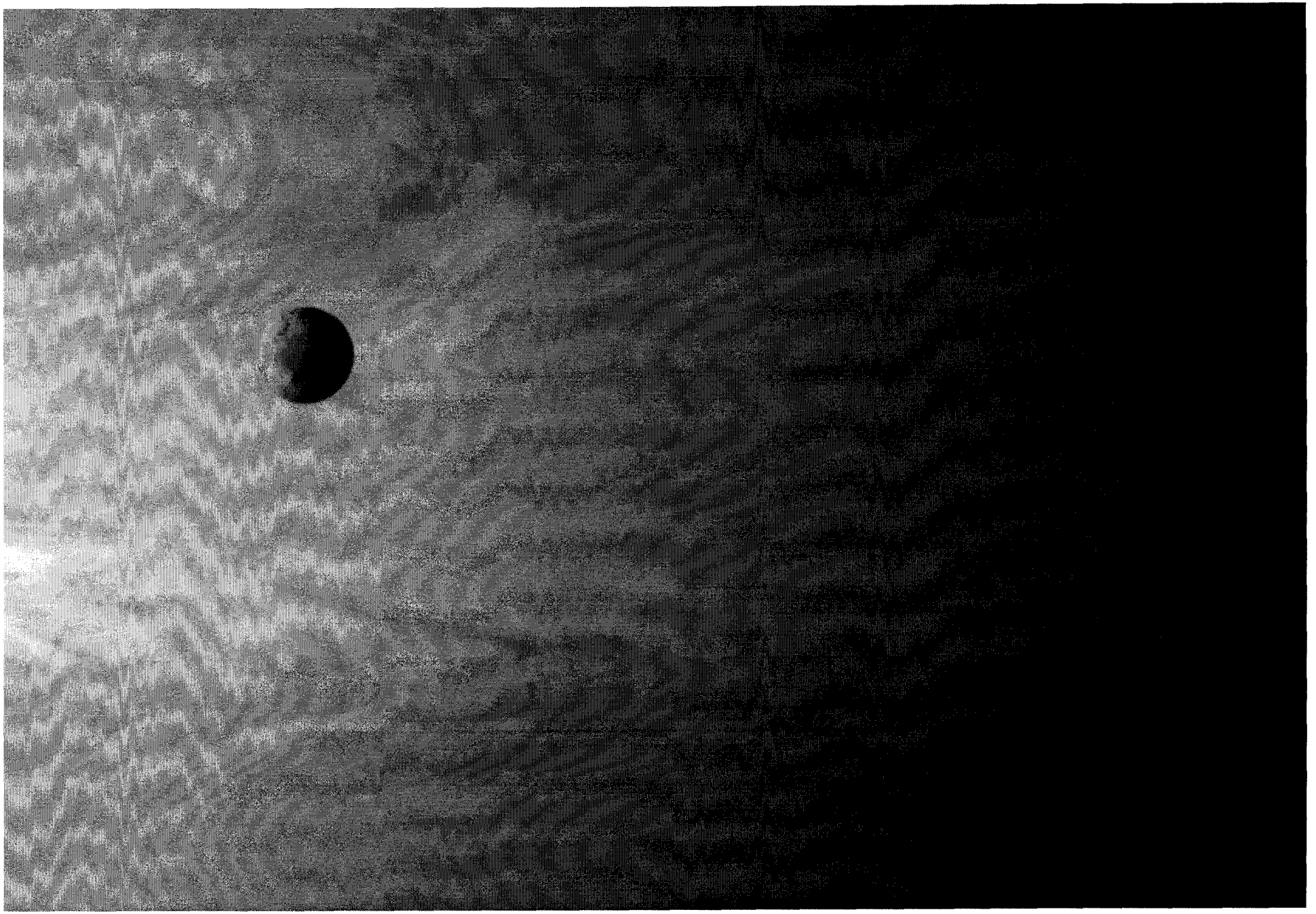


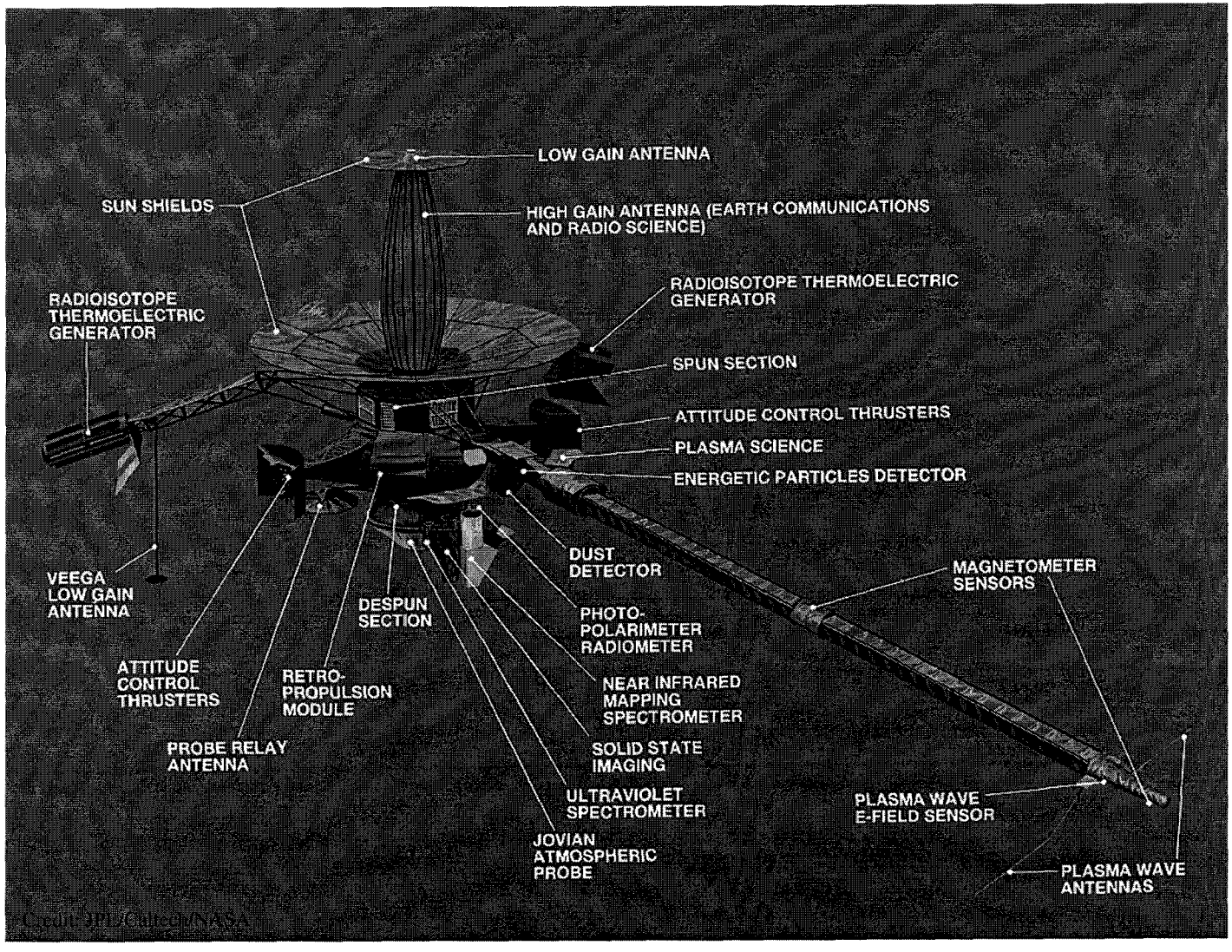
Jupiter: King of Planets

QuickTime™ and a
Motion JPEG A decompressor
are needed to see this picture.

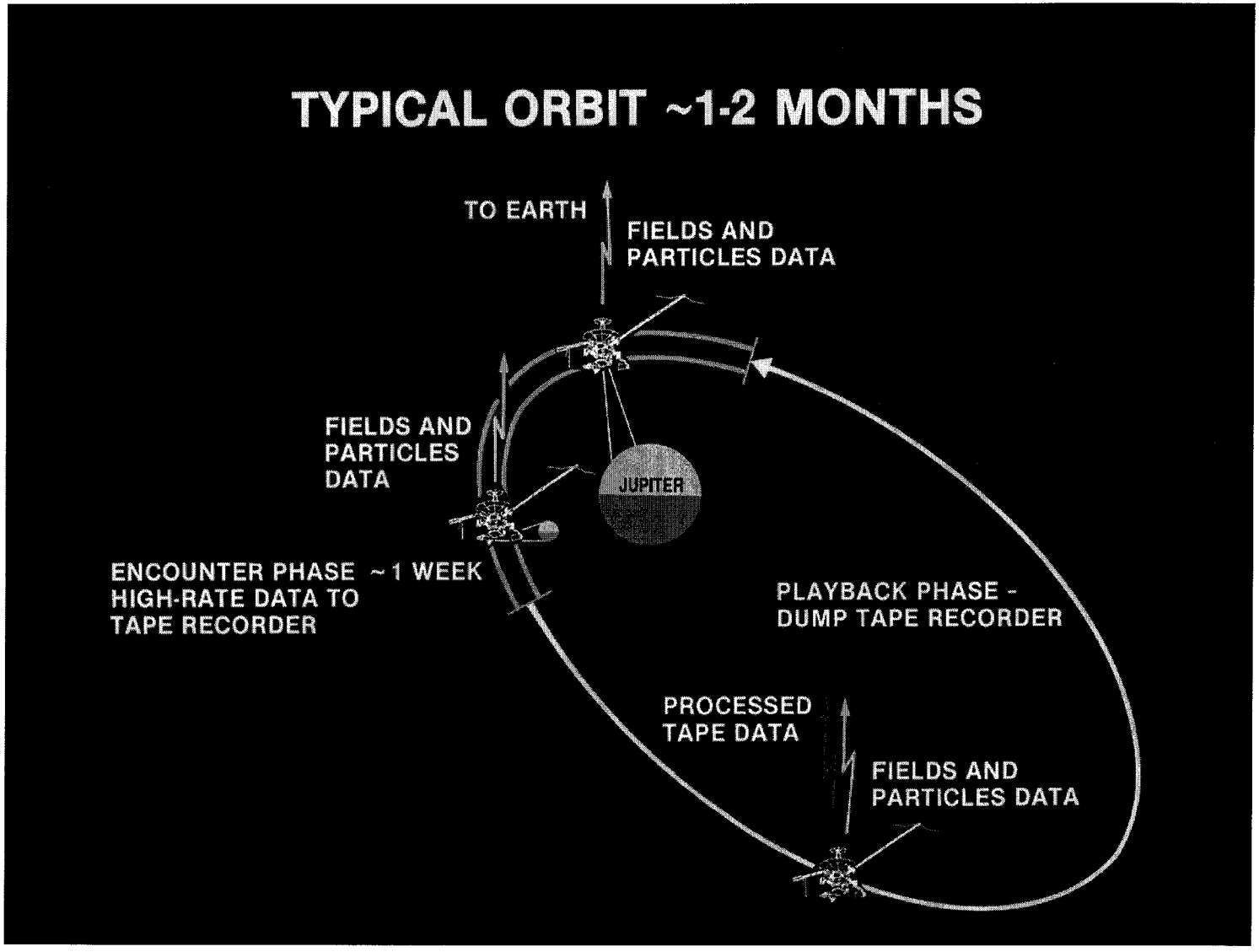
Credit: Cassini ISS (JPL/Caltech/NASA and Univ. Arizona)

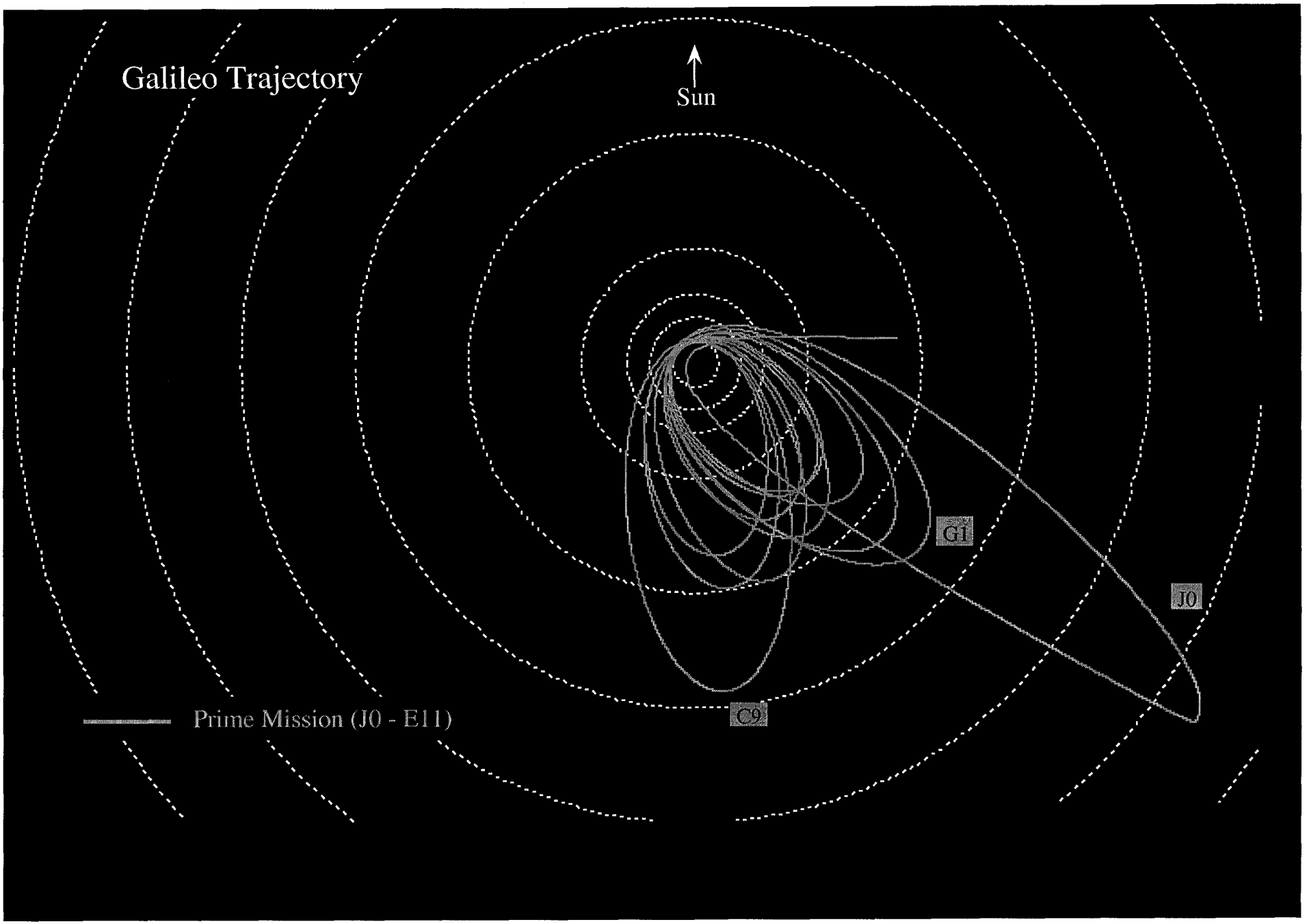


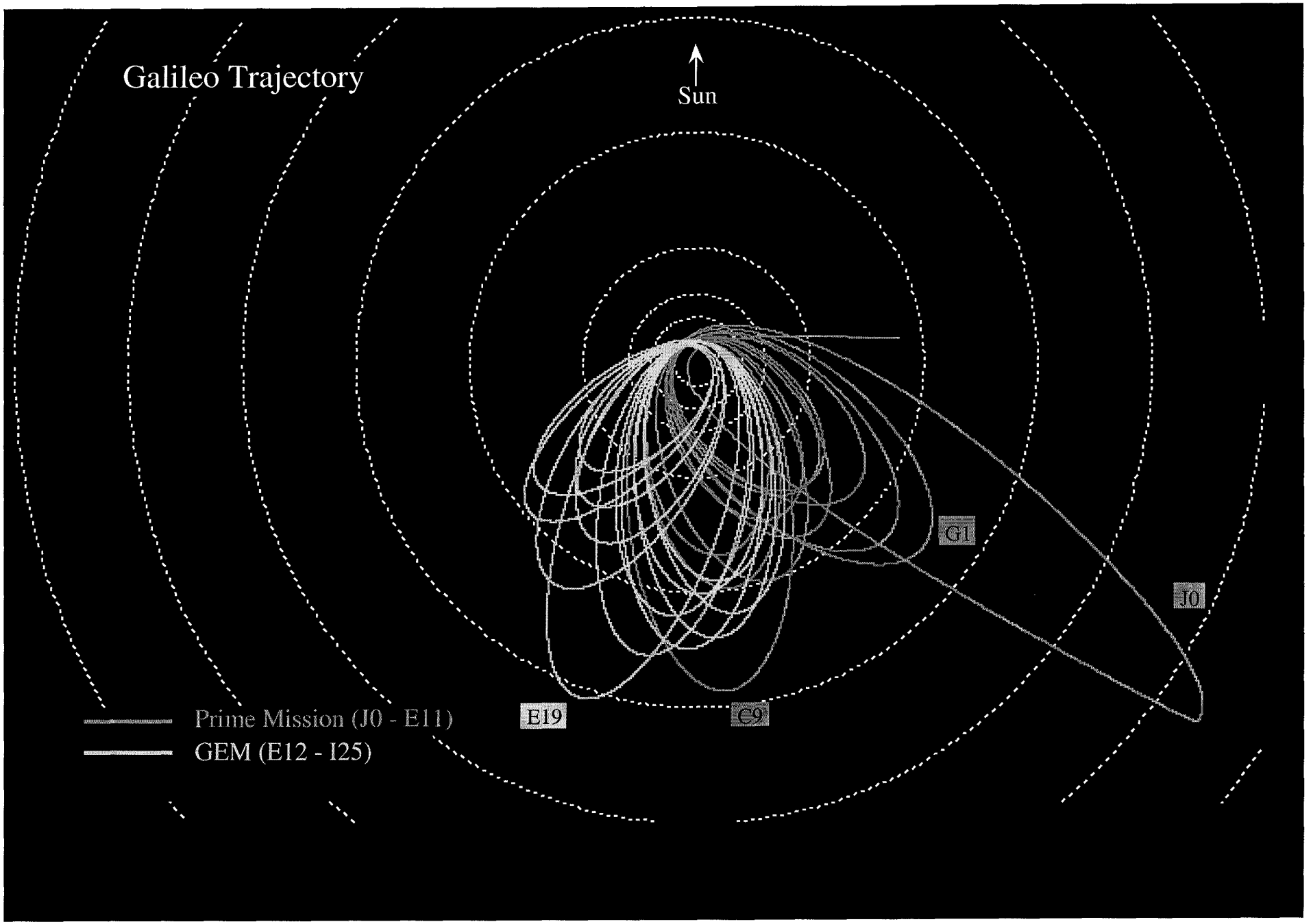
Galileo Spacecraft

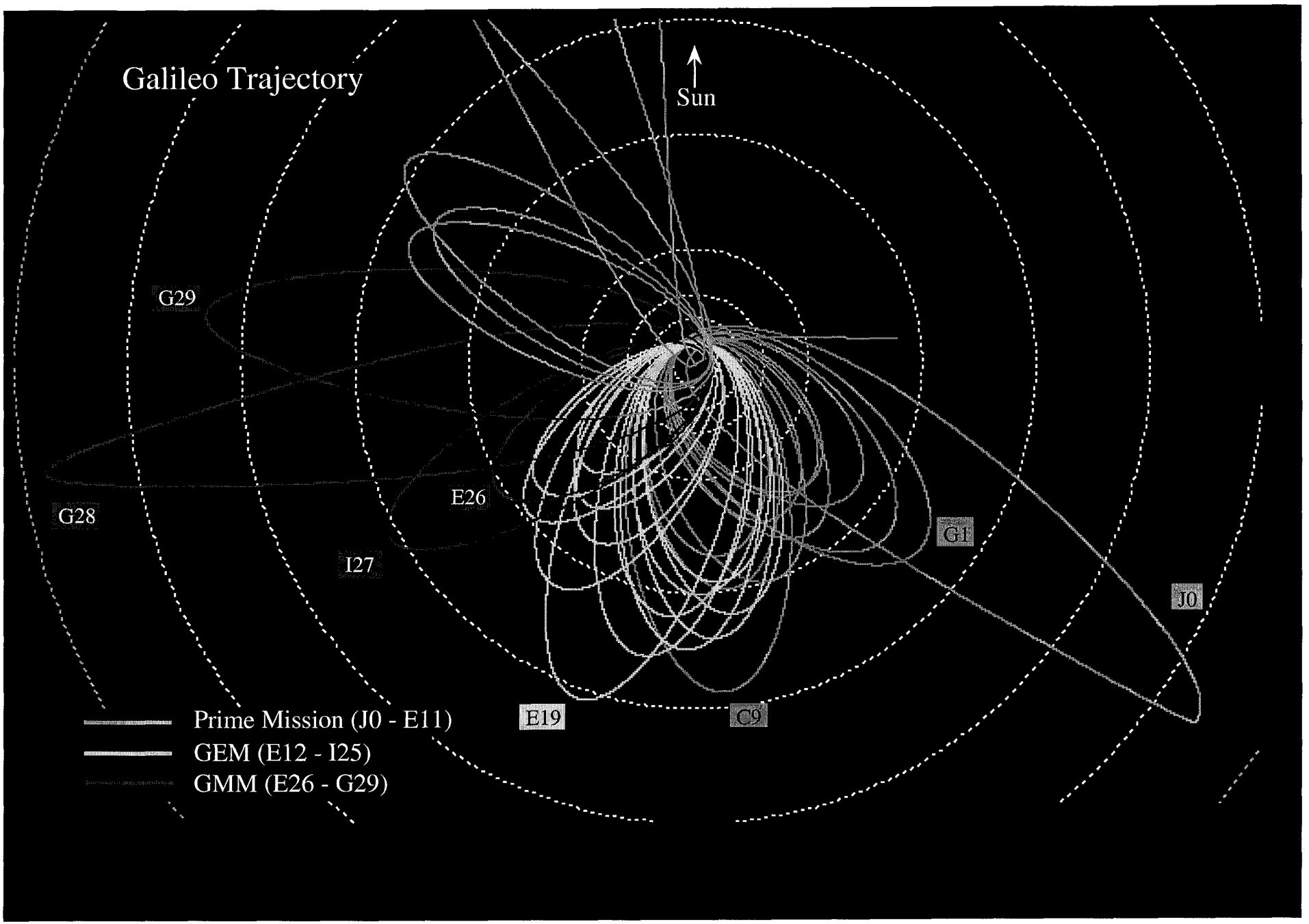


Galileo Operations

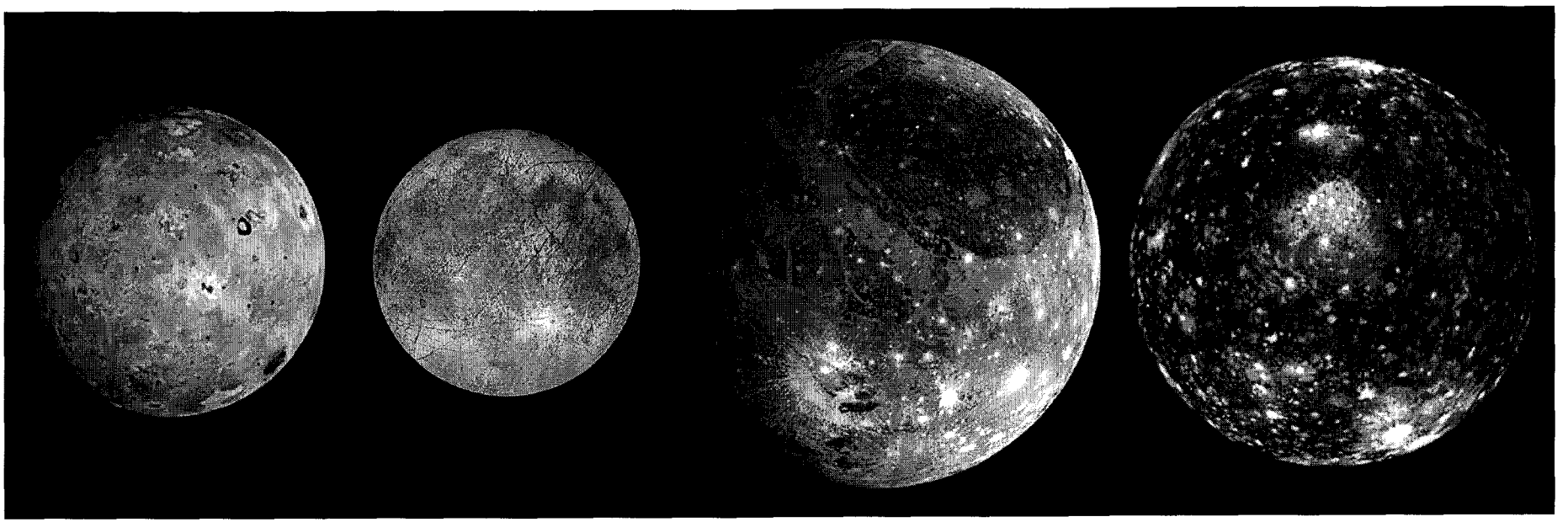



Galileo Trajectory
Sun
G1
J0
C9
Prime Mission (J0 - E11)

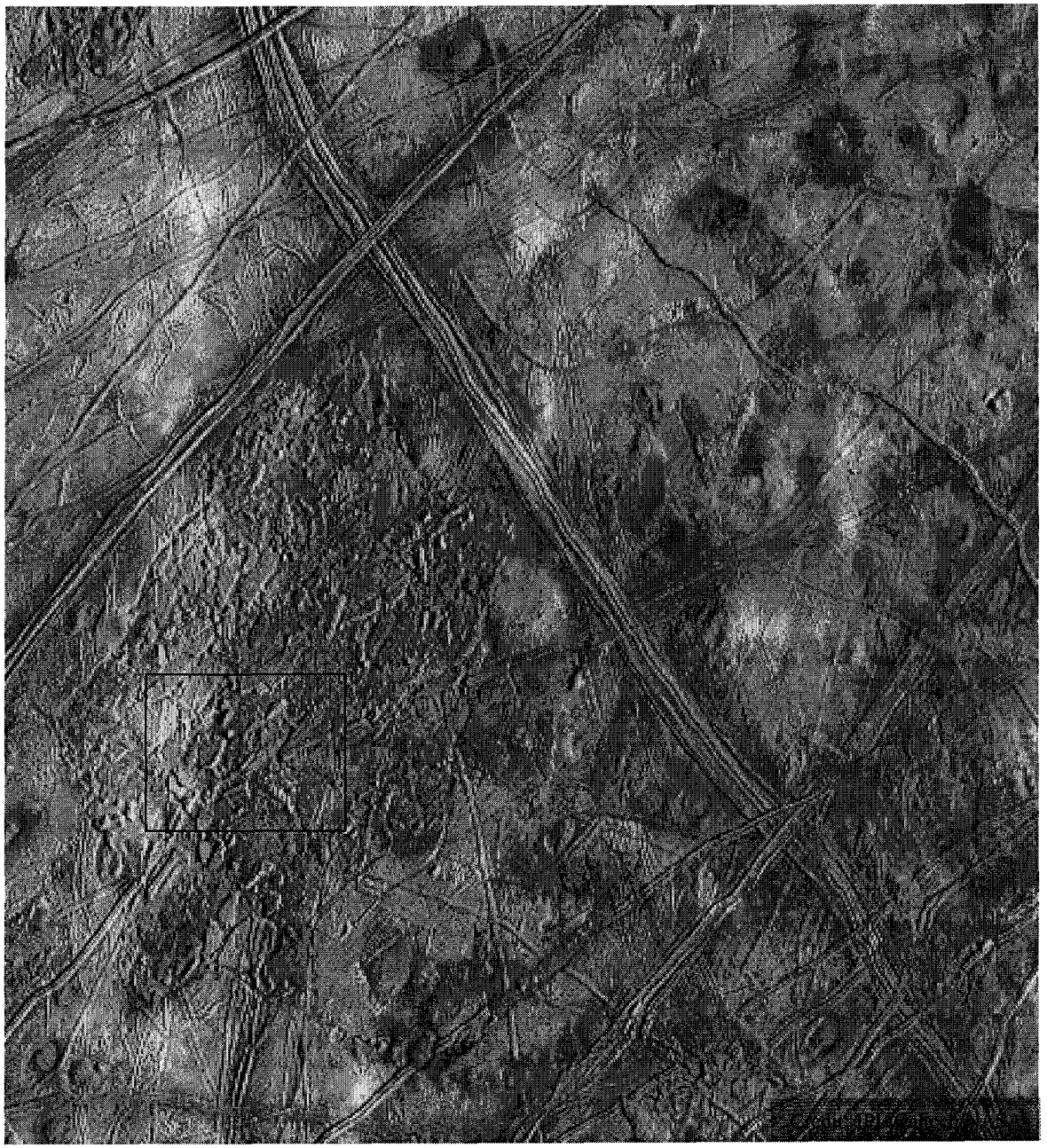

Galileo Trajectory
Sun
G1
J0
E19
C9
Prime Mission (J0 - E11)
GEM (E12 - I25)


Galileo Trajectory
Sun
G29
G28
E26
I27
G1
J0
E19
C9
Prime Mission (J0 - E11)
GEM (E12 - I25)
GMM (E26 - G29)

Galilean Satellites:
Io, Europa, Ganymede, Callisto



- Include 4 large Galilean satellites and 28 minor moons.
- Form a diverse "miniature solar system."

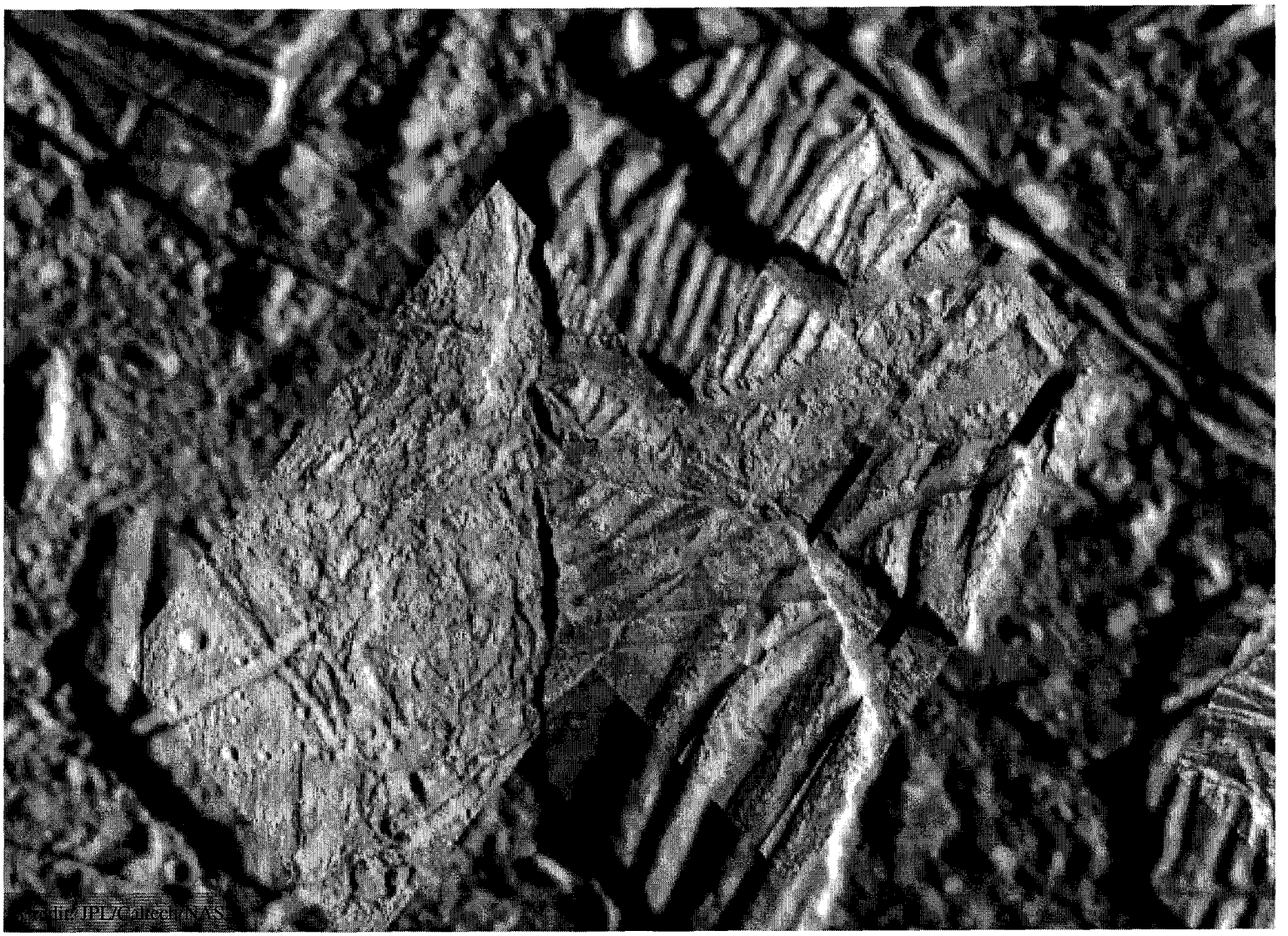


Conamara Chaos

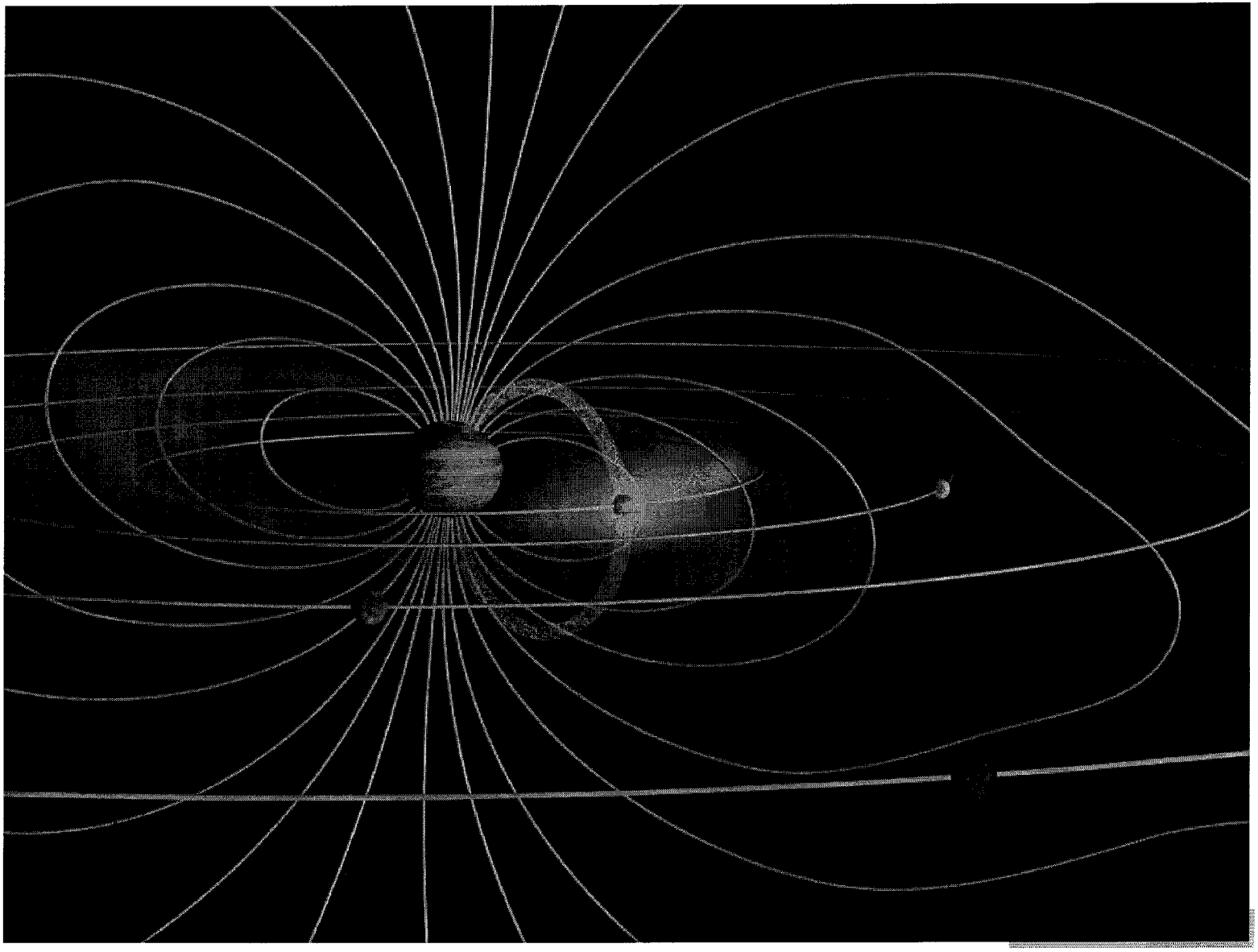
- One of the largest such regions.
- Individual blocks are clearly preserved.
- Both throughgoing and remnant structures are present
- Brownish areas are where significant amounts of non-ice materials (salts?) are present.

Conamara Chaos on Europa

Conamara Chaos on Europa



Jupiter's Magnetic Field & Europa

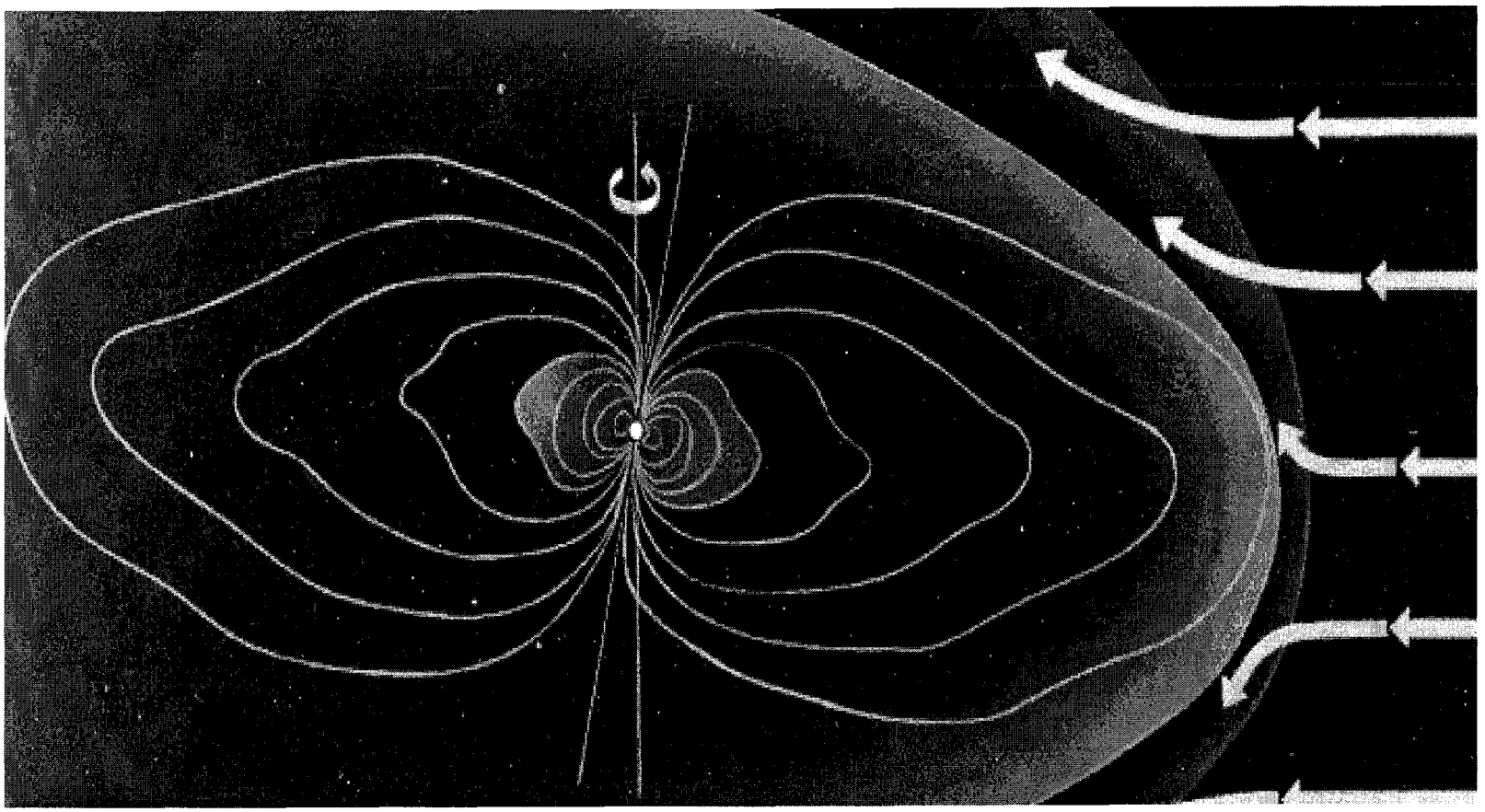


Europa's Induced Magnetic Field

QuickTime™ and a
Motion JPEG A decompressor
are needed to see this picture.

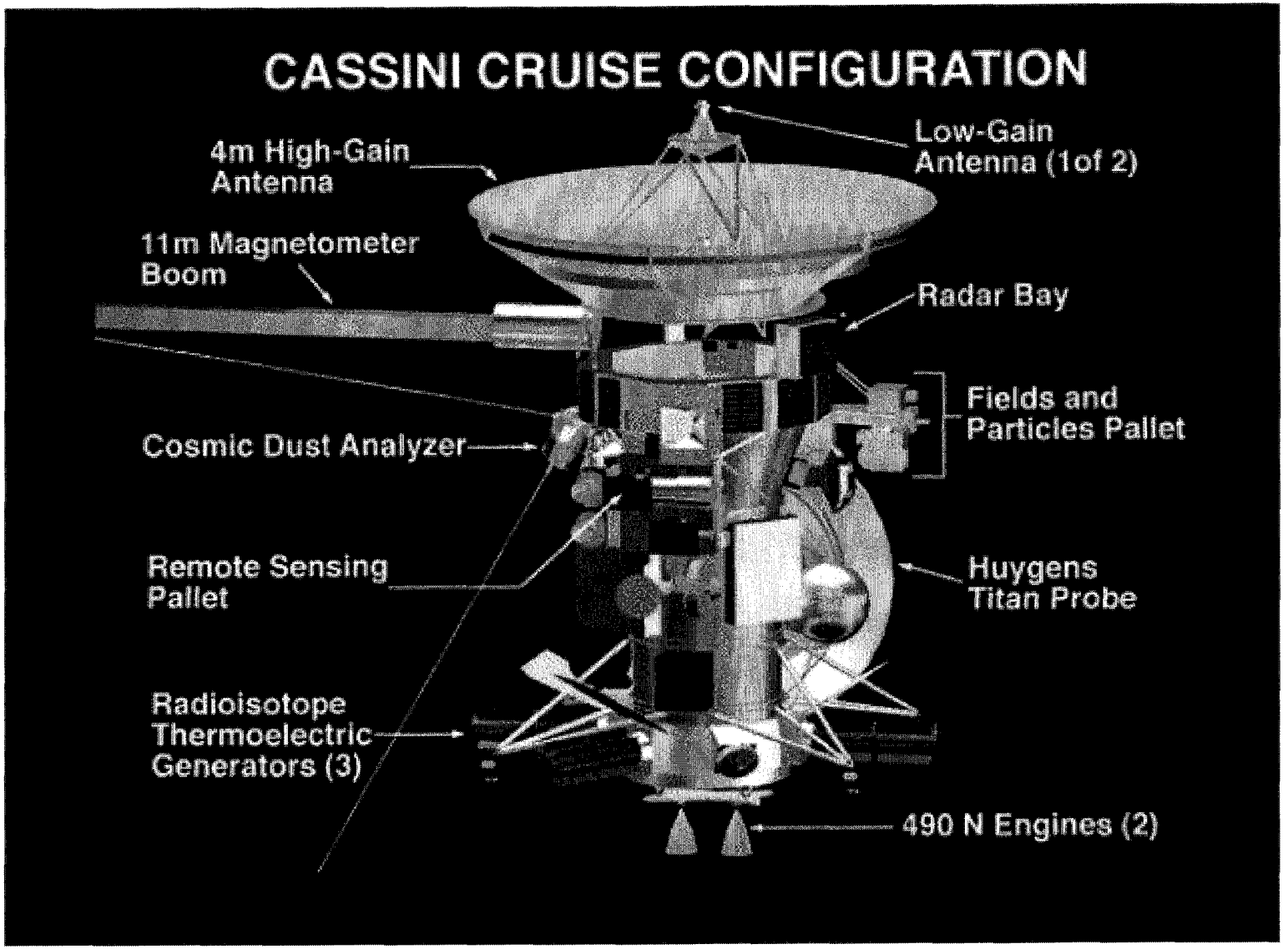
Credit: JPL/Caltech/NASA

Jupiter's Magnetosphere

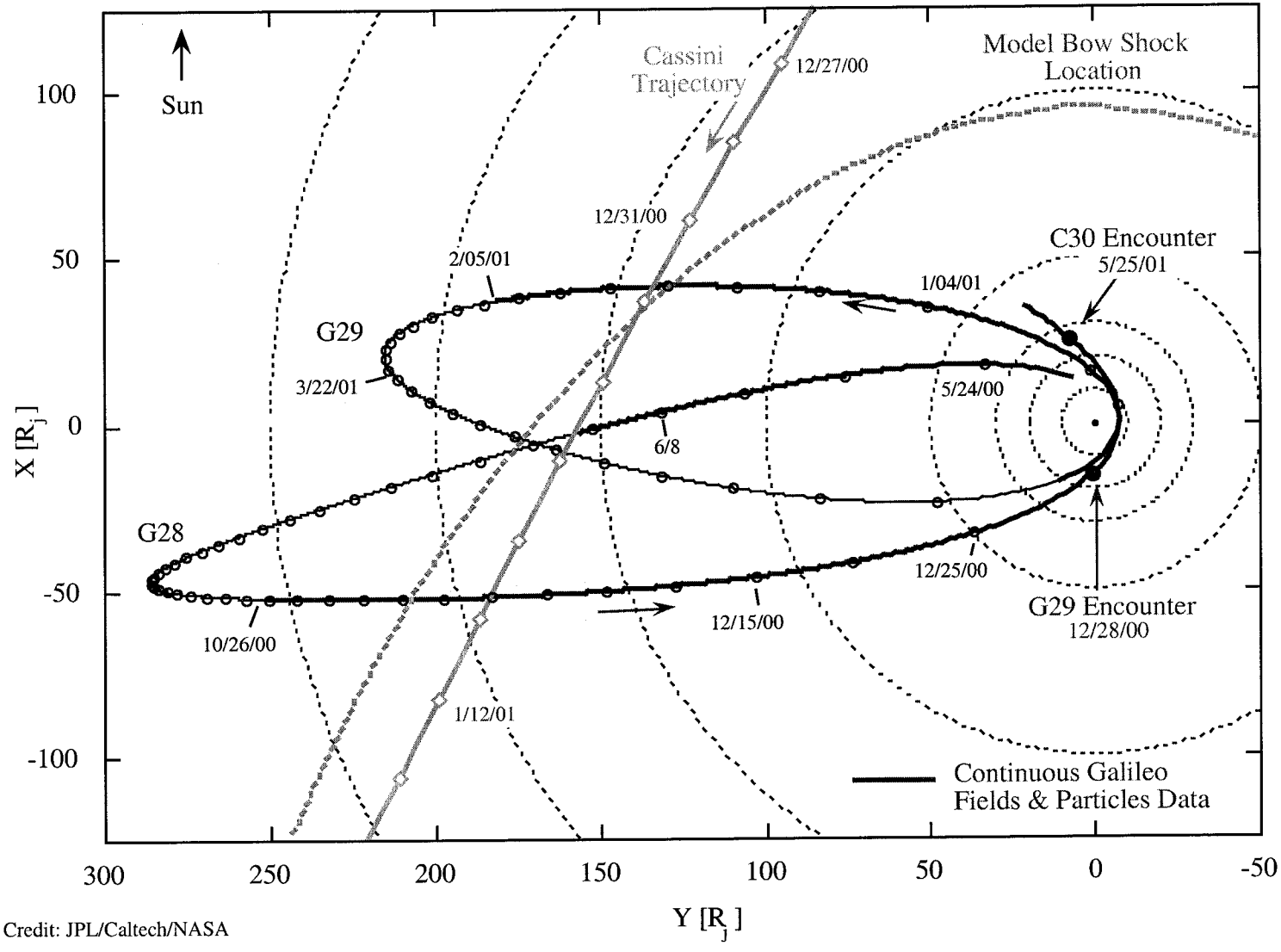


Is controlled by a mostly dipolar field, which deflects the solar wind.

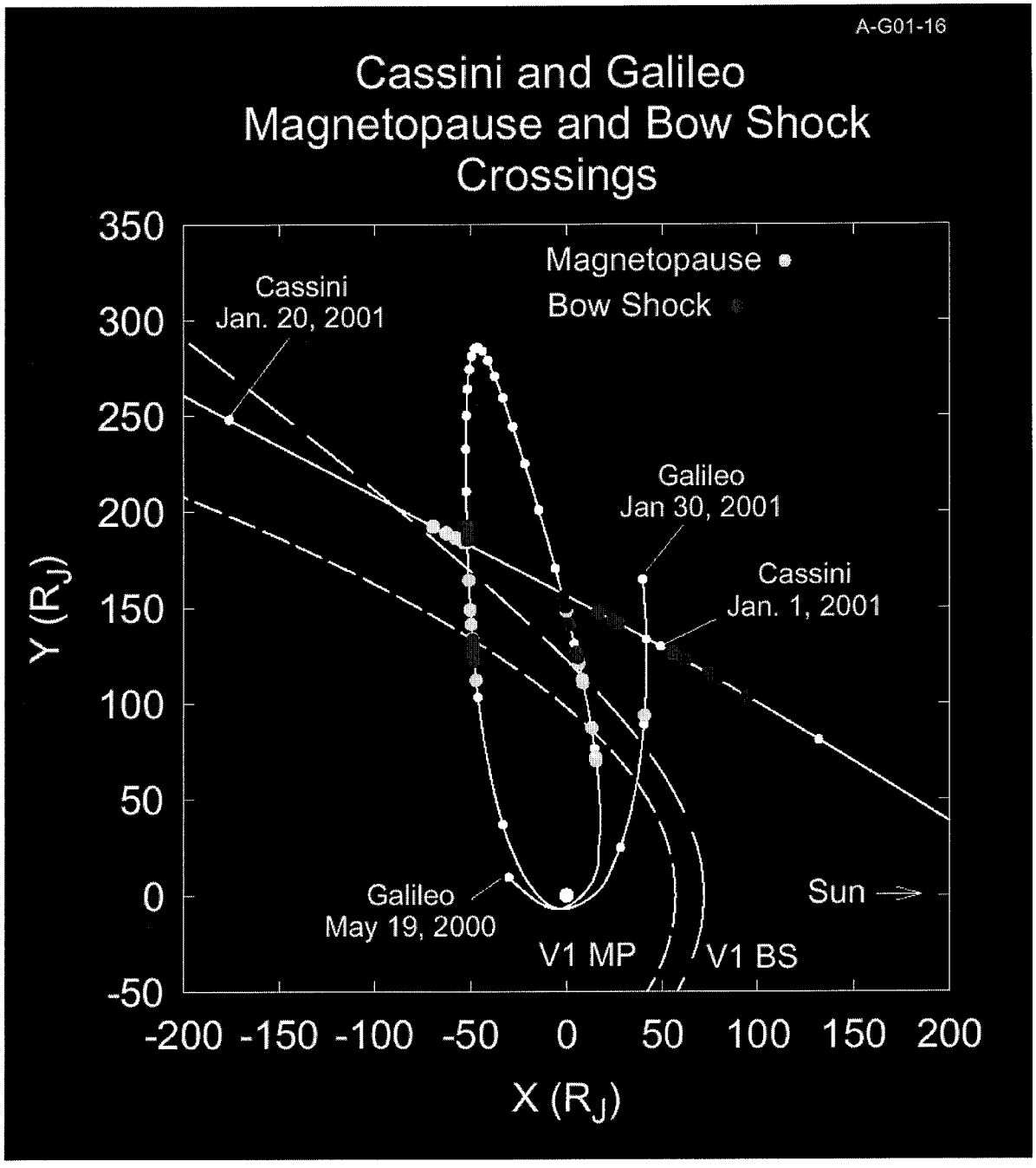
Cassini Spacecraft



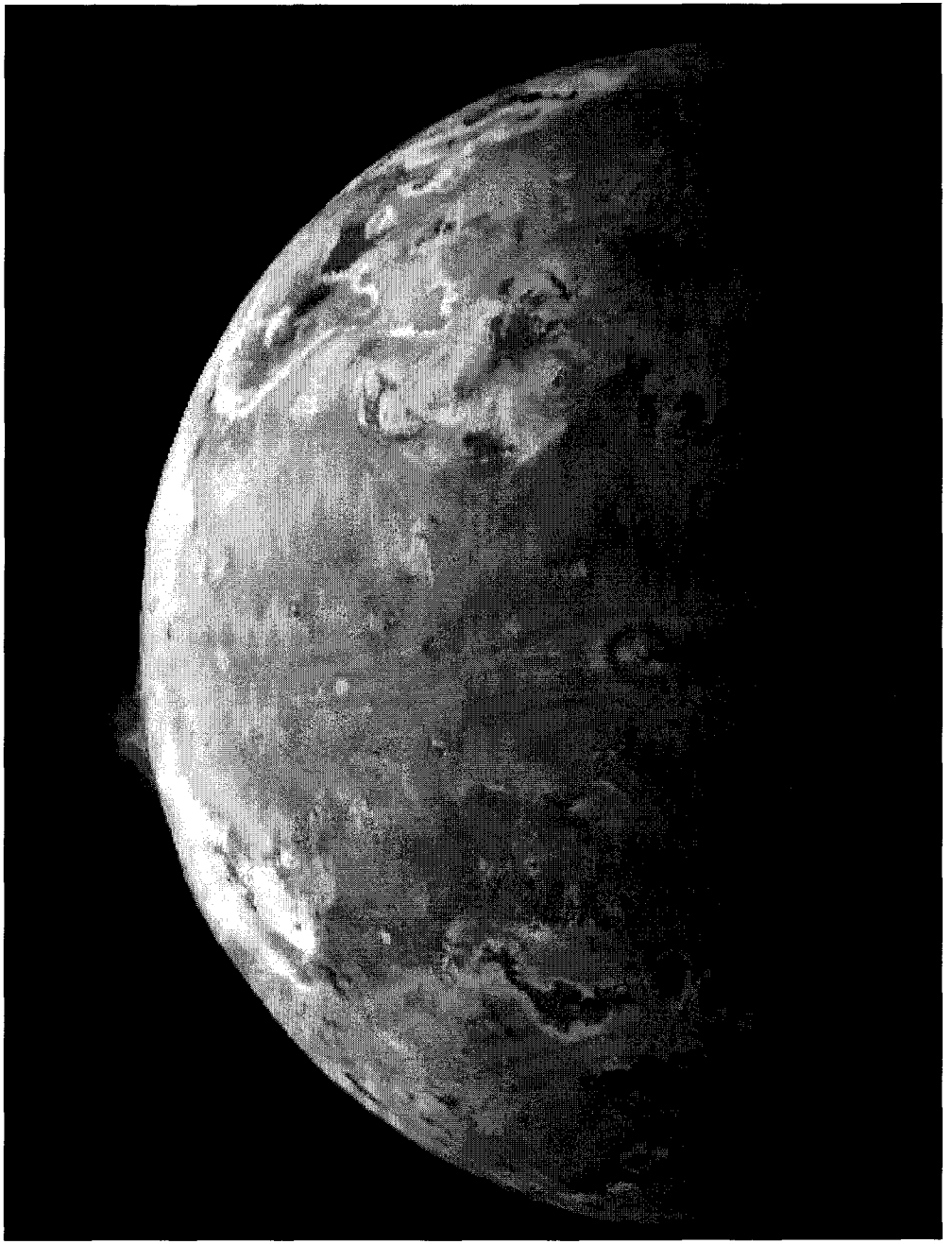
Galileo/Cassini Magnetospheric Study

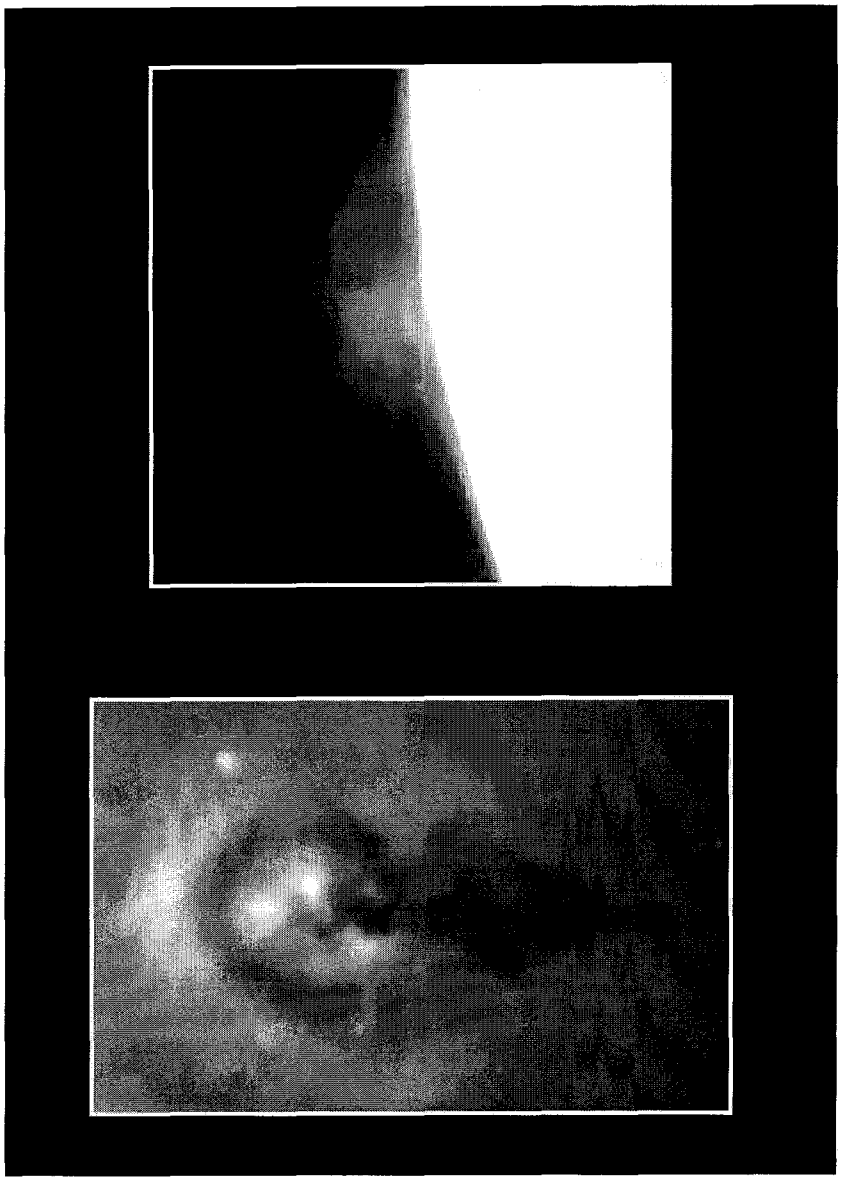


Credit: JPL/Caltech/NASA

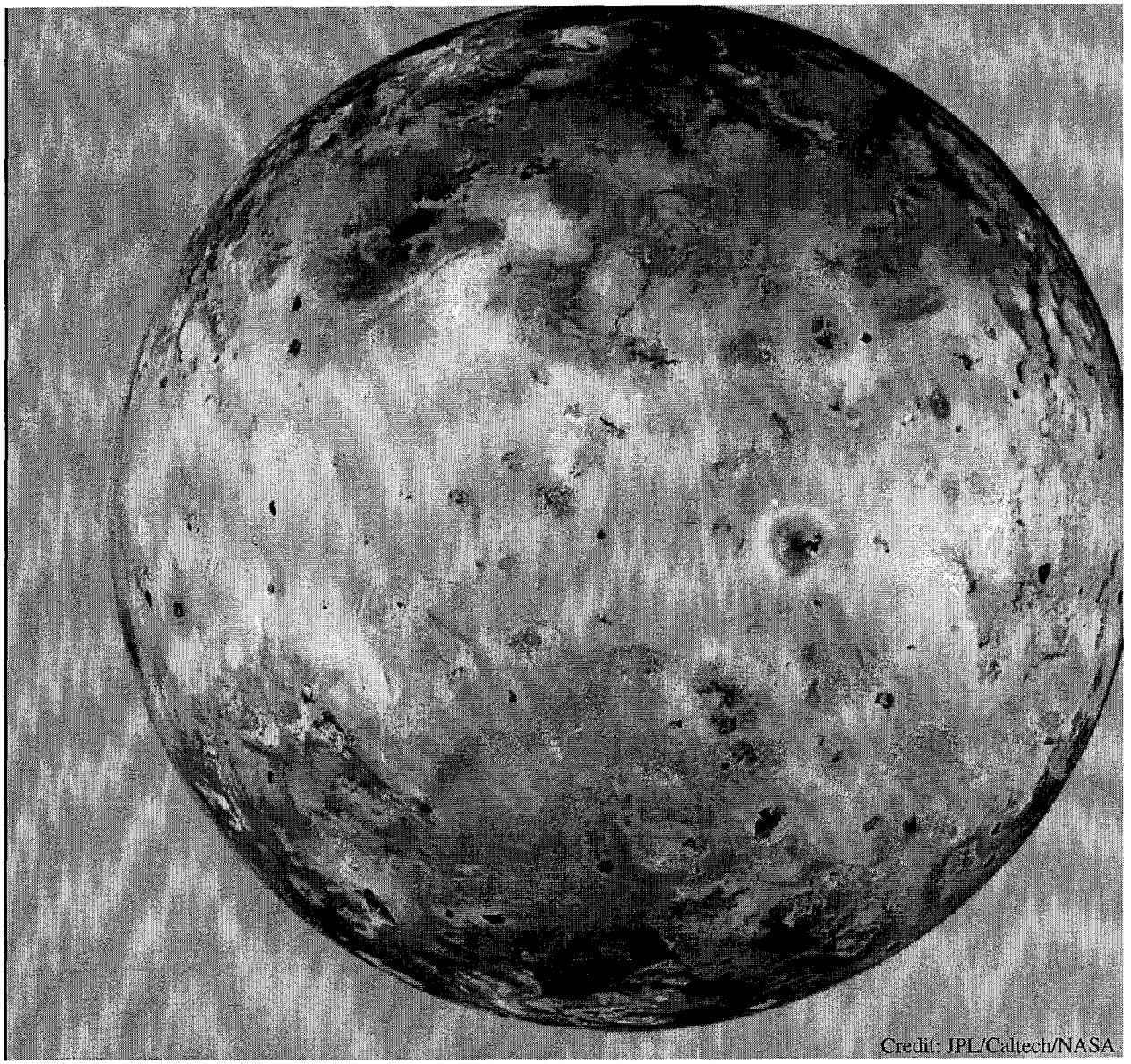

A-G01-16
Cassini and Galileo
Magnetopause and Bow Shock
Crossings
Magnetopause
Bow Shock
Cassini
Jan. 20, 2001
Galileo
Jan 30, 2001
Cassini
Jan. 1, 2001
Galileo
May 19, 2000
Sun
V1 MP
V1 BS
350
300
250
200
150
100
50
0
-50
-200 -150 -100 -50 0 50 100 150 200
Y (RJ)
X (RJ)

Prometheus Unbound?

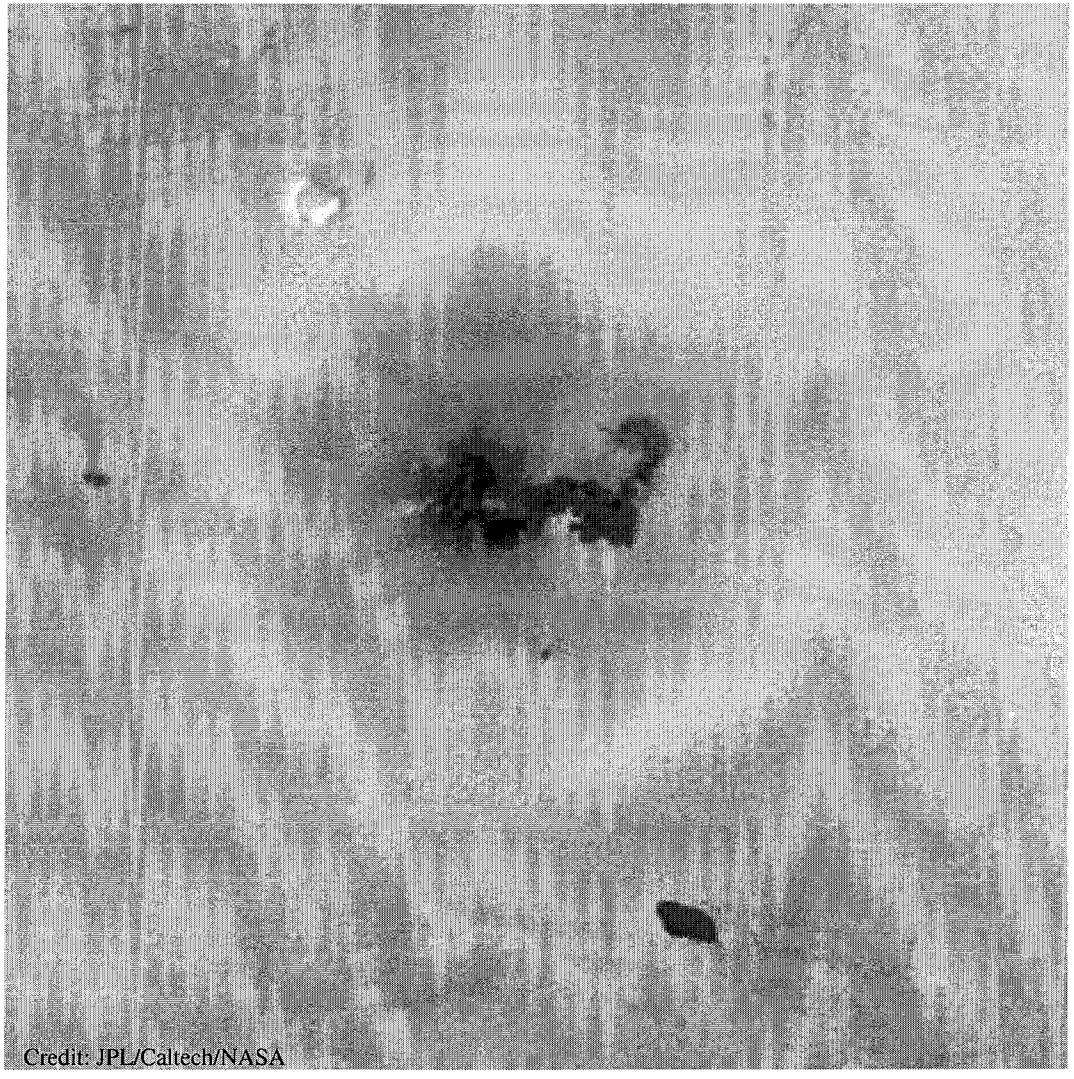




Prometheus Hemisphere of Io

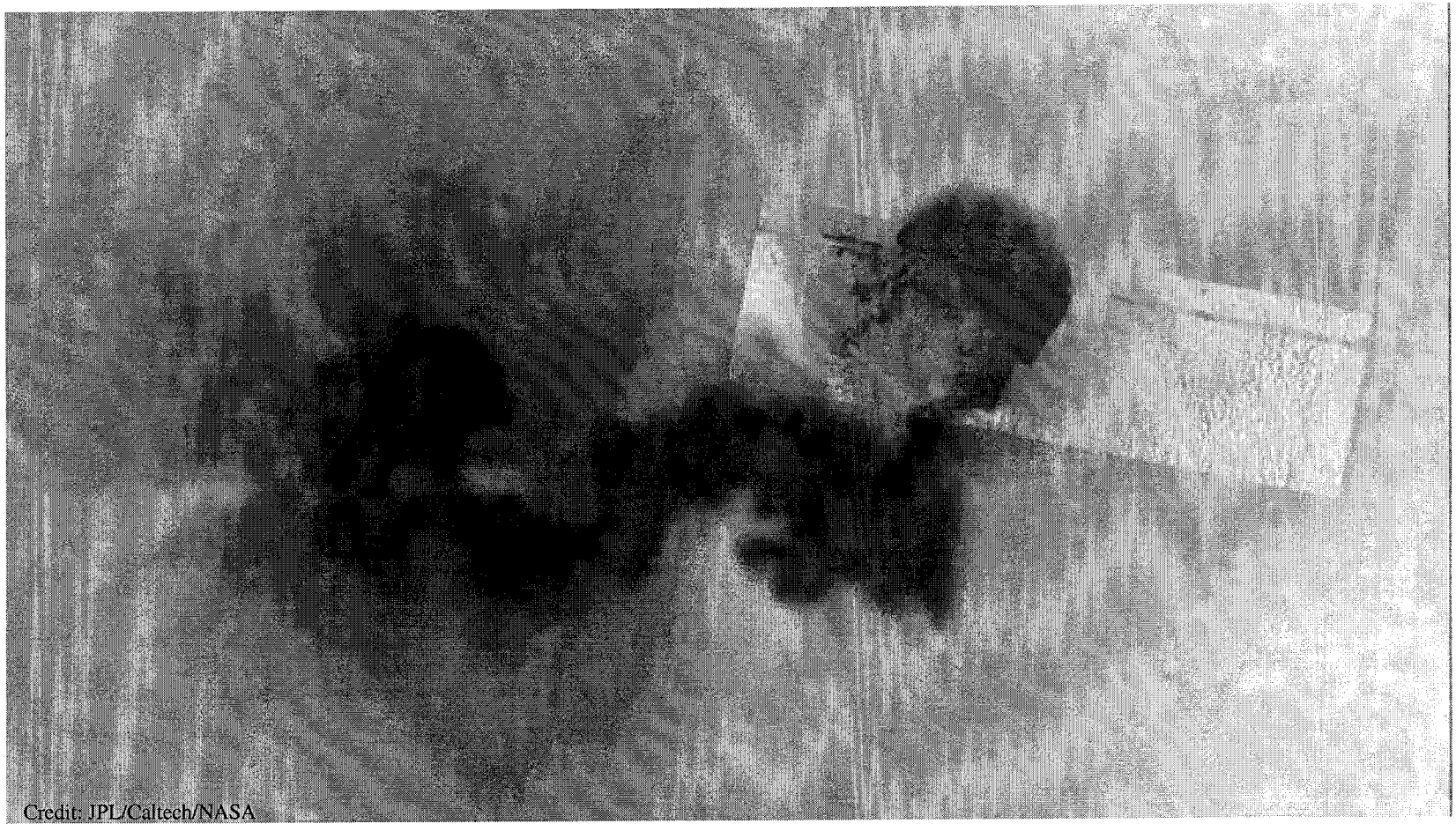


A Closer Look at Prometheus

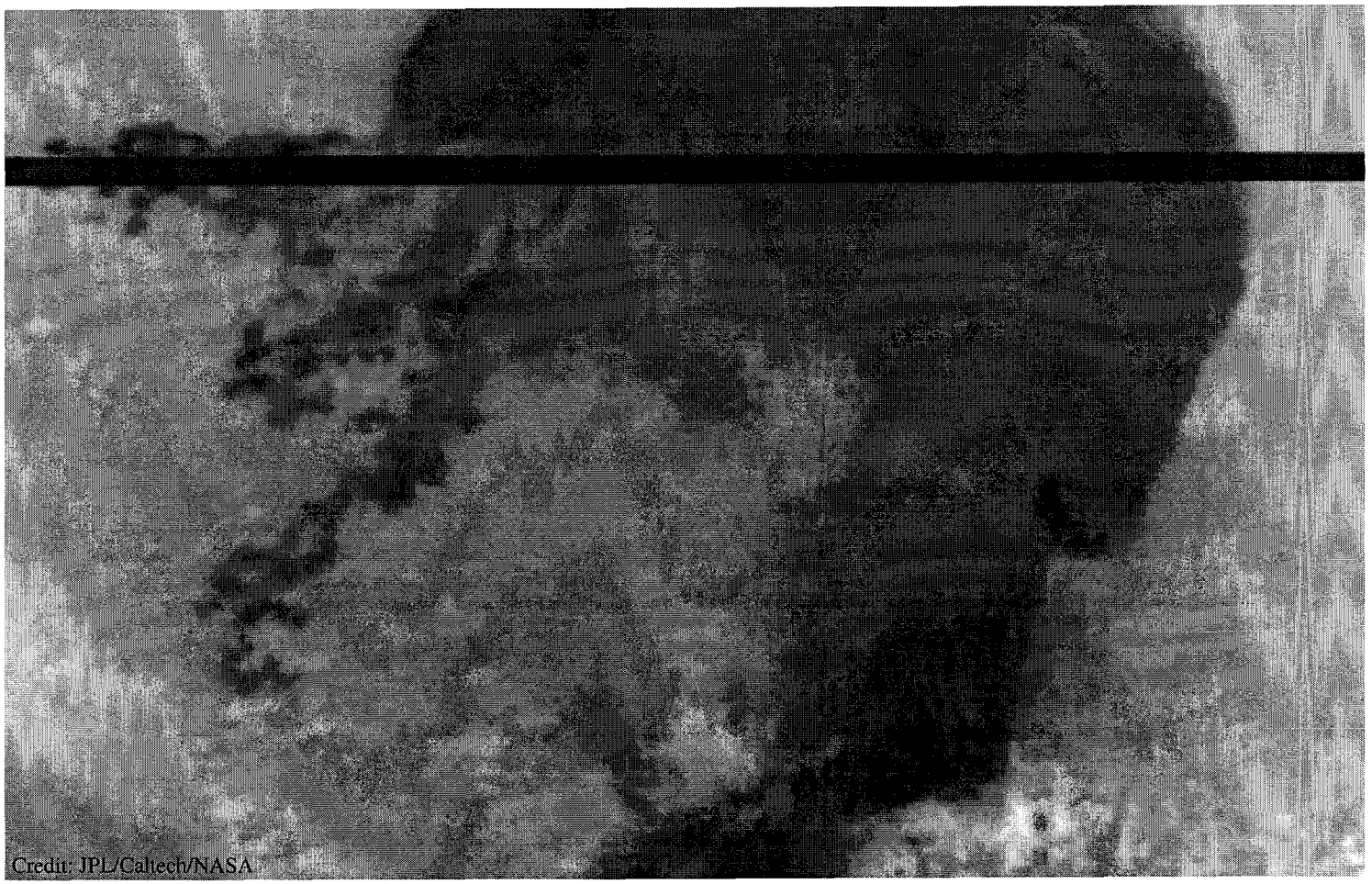


- Observation from Summer 1999.
- Voyager-era plume source was at the east (right-hand) end of the dark sinuous feature.
- Newer source region is at the western end – note radial streaks.
- Most of dark feature post-dates Voyager images.

Prometheus' Unexpected Caldera



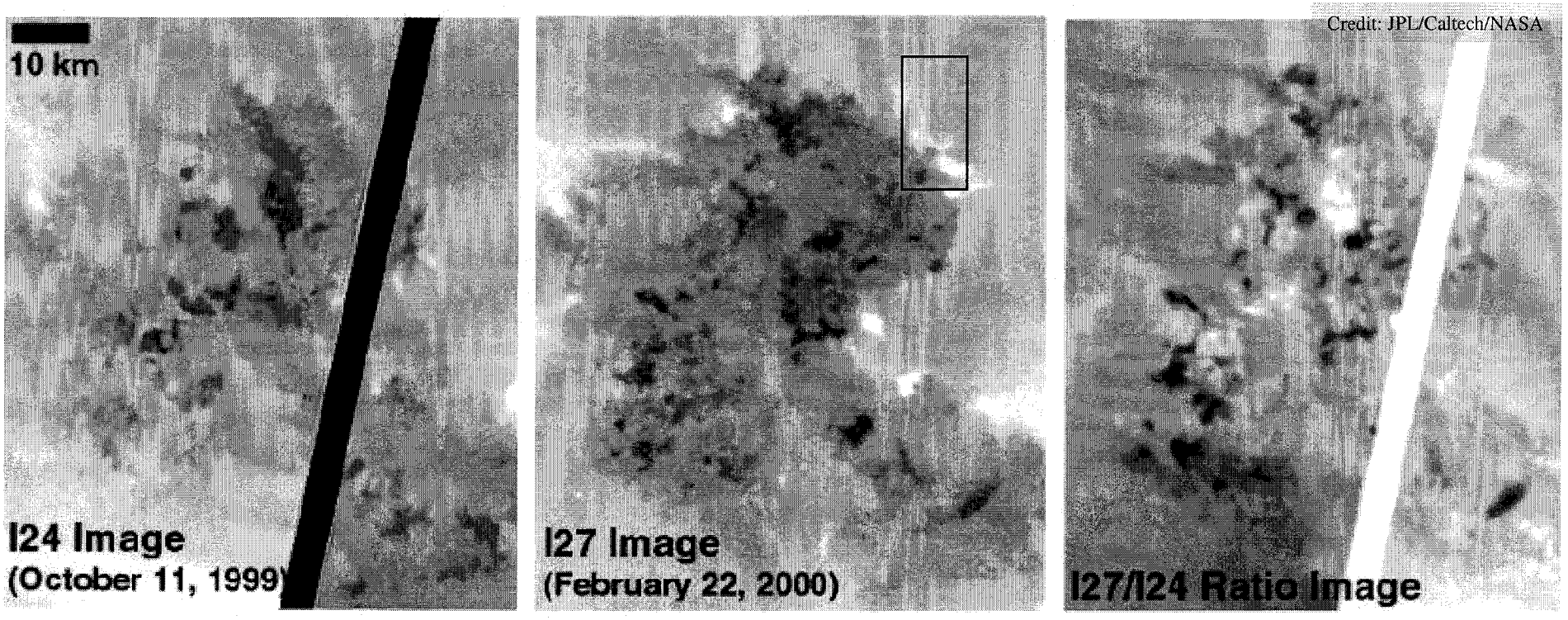
Prometheus' Unexpected Caldera



Prometheus Temperatures from NIMS

- Eastern hot region is south of caldera (source of lava).
- Western region is centered on currently-active lava flow field (source of the plume).

Prometheus Plume Source - Active Lava Flows

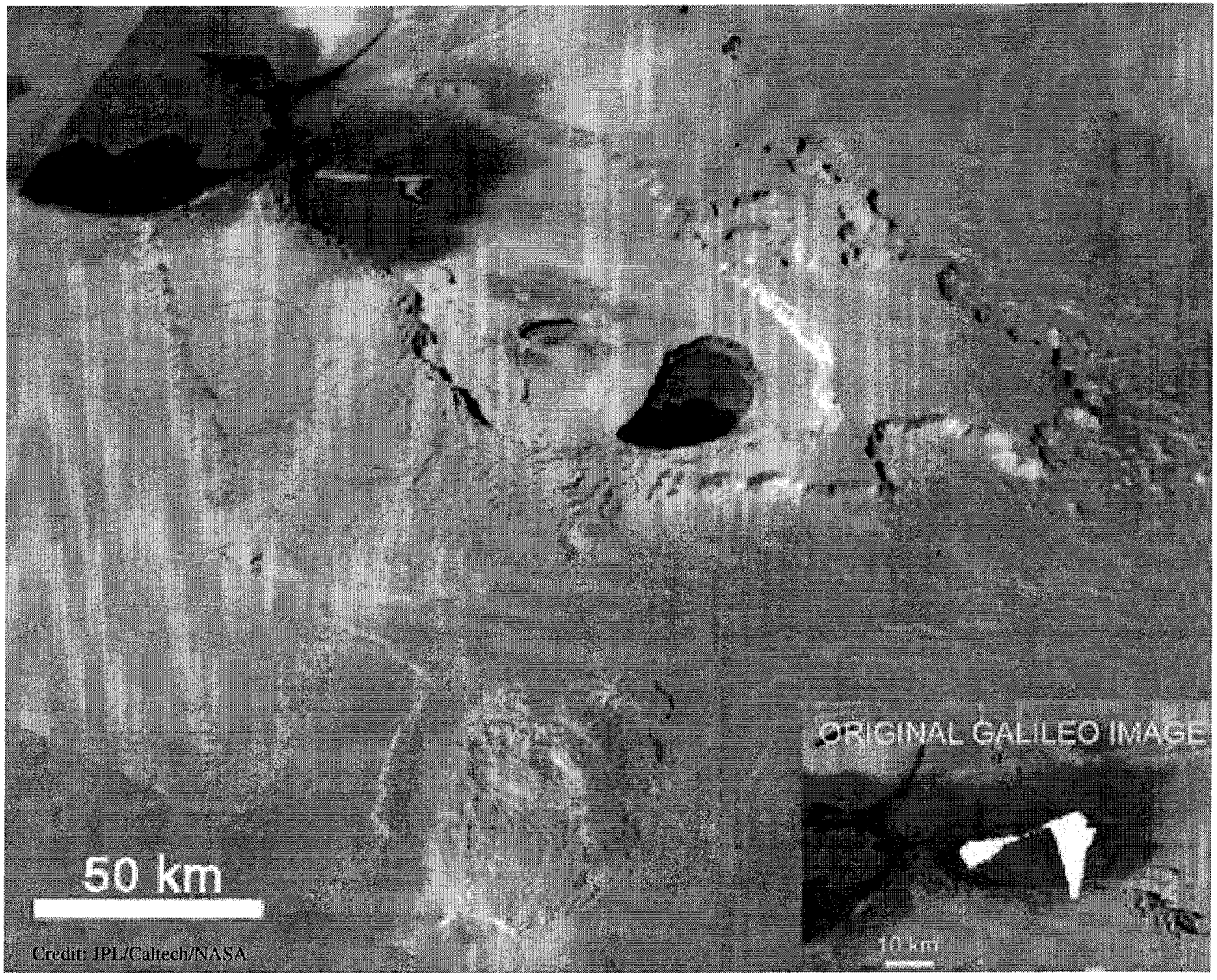


Lava on Sulfurous Snow

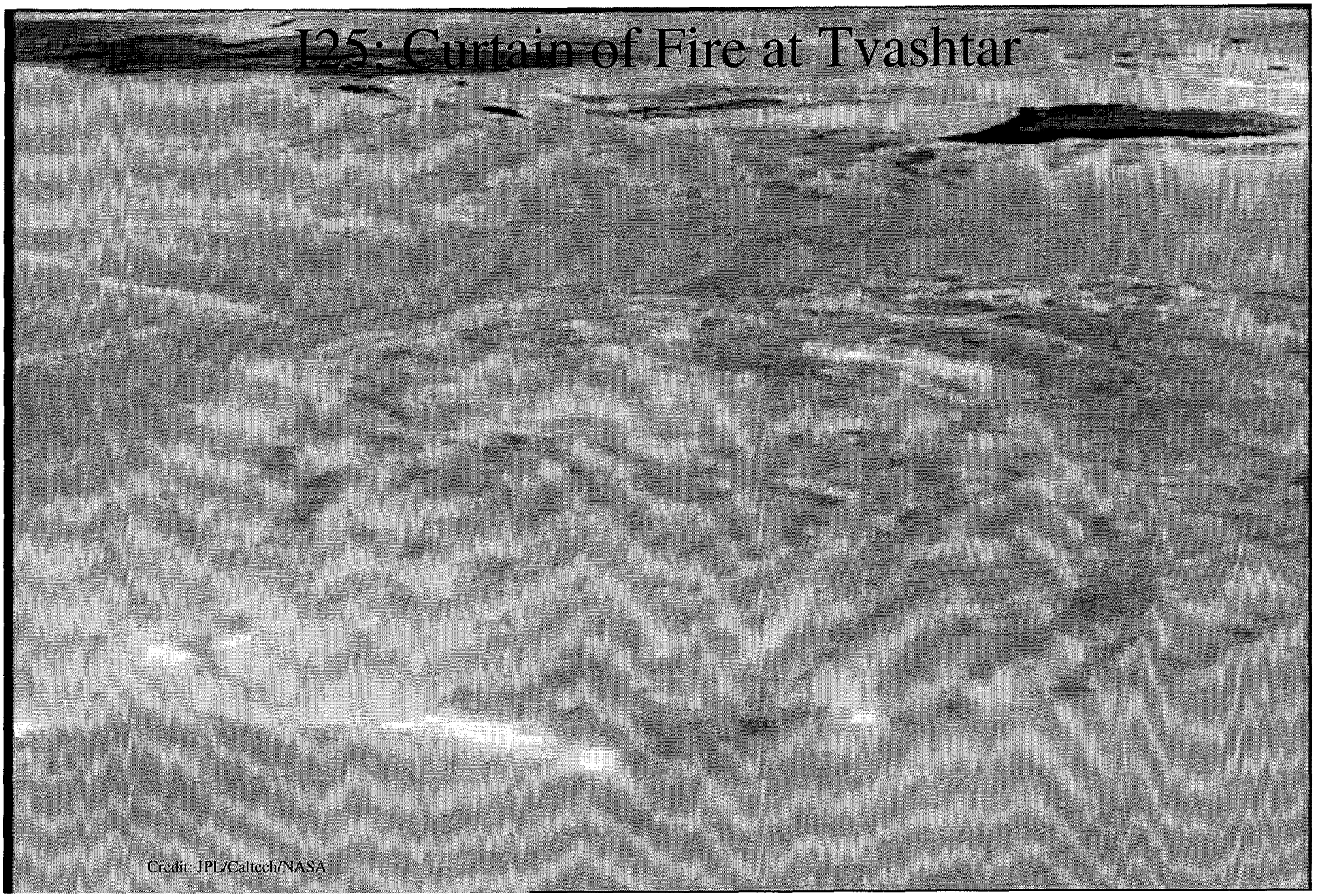
Credit: JPL/Caltech/NASA

- Dark regions are recent flows
- Ridged plains to north and east are SO2 "snow." Ridges origins not known (dunes?).
- Streaks are fresh SO2.

November 1999: I25 Flyby of Io

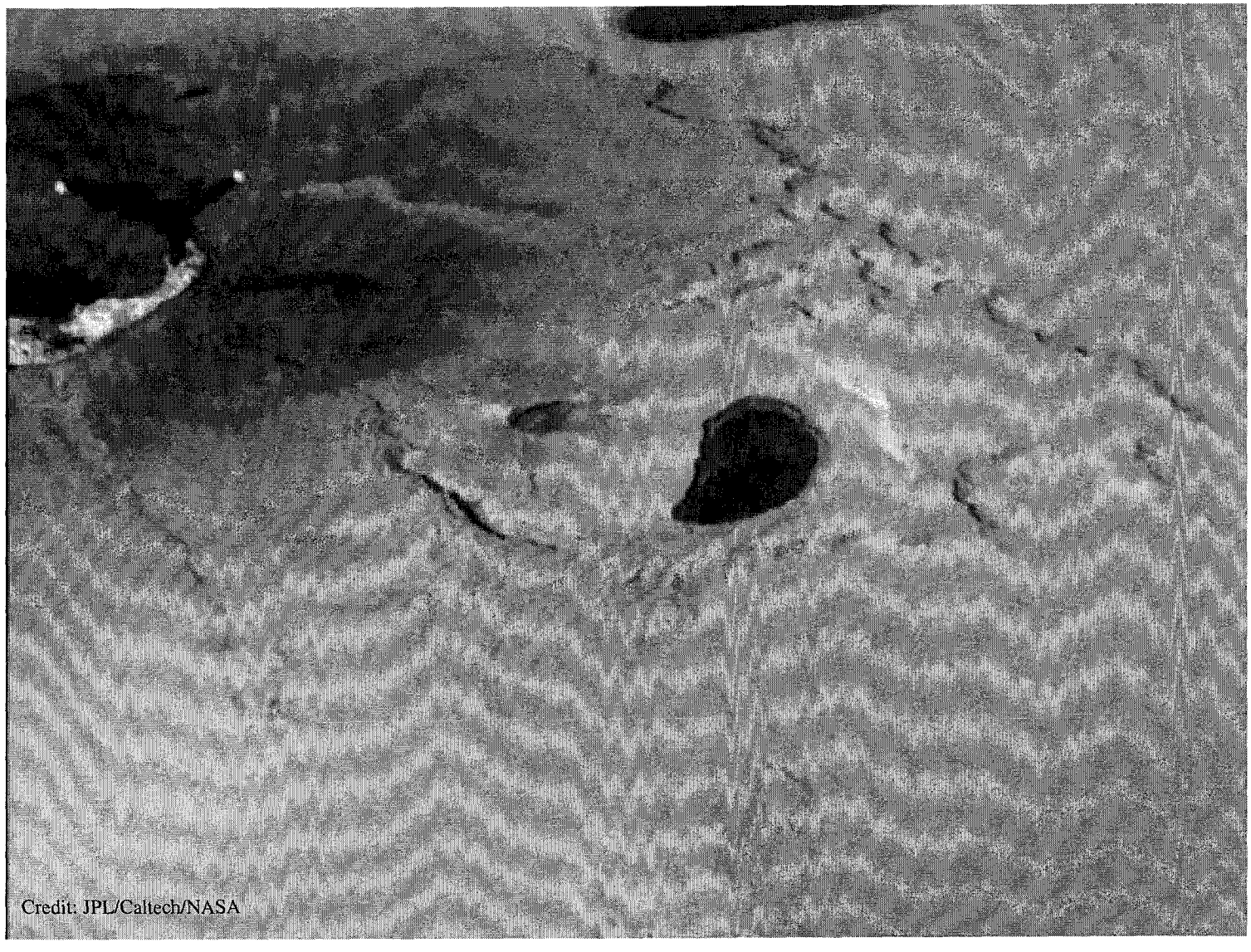


I25: Curtain of Fire at Tvashtar

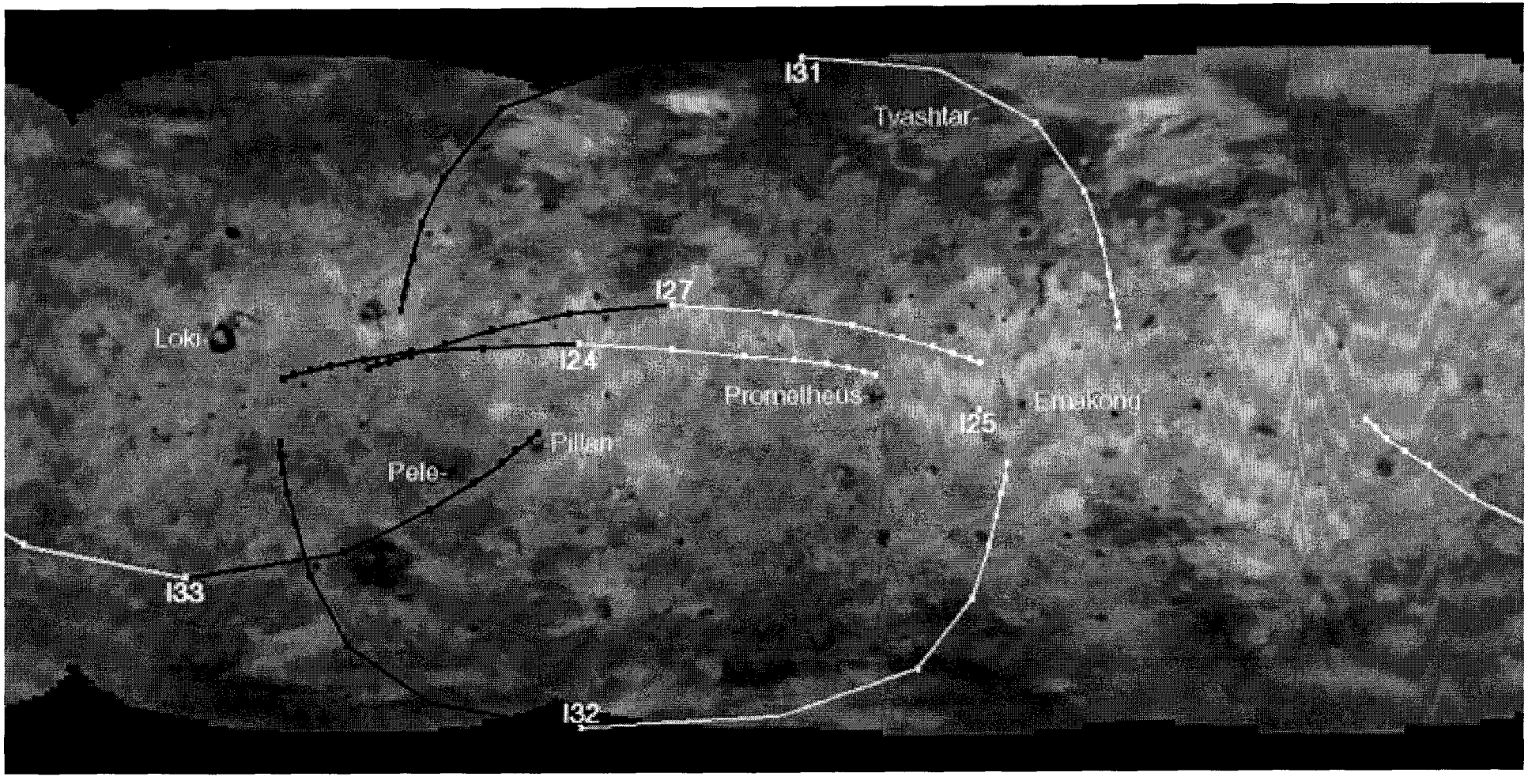
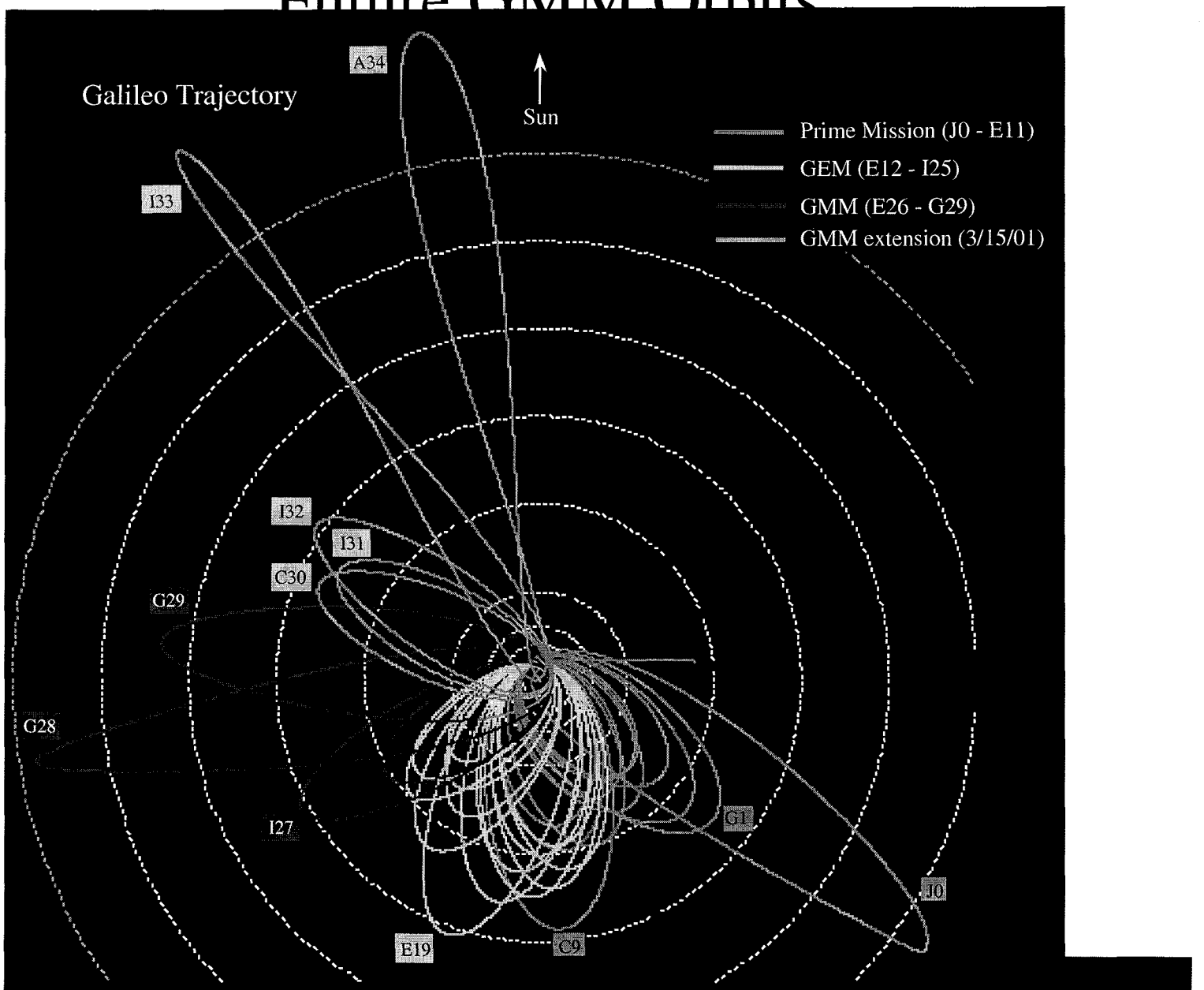


Credit: JPL/Caltech/NASA

I27: 60 km Lava Flow



Future Io Flybys



Future GMM Orbits