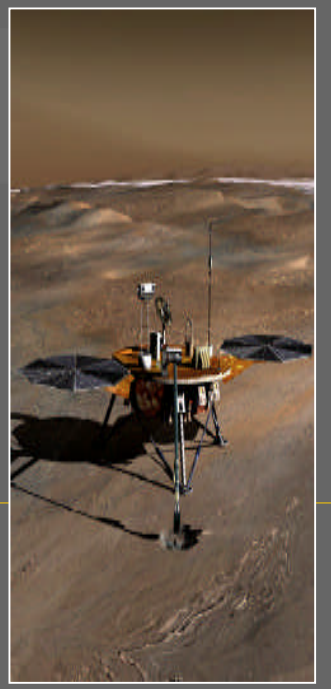
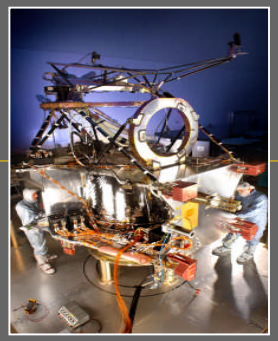
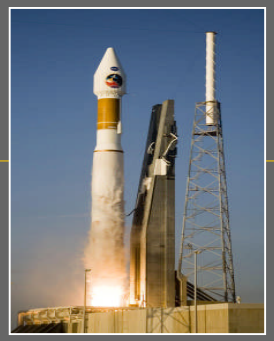
JPL: A Space Trailblazer

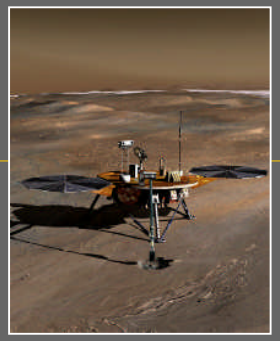


Amanda Beckman-Hezel
Acquisition Deputy Division Manager
Jet Propulsion Laboratory

History Speaking for Itself

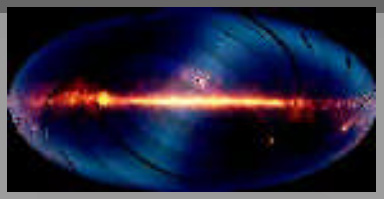




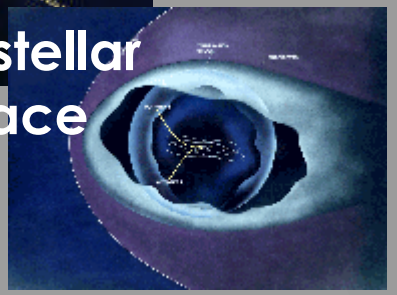


Forty-eight Years of Exploration

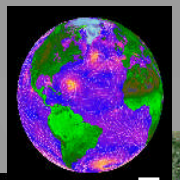
Giant planets

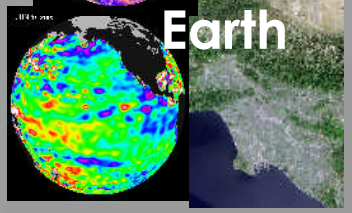


Astrophysics

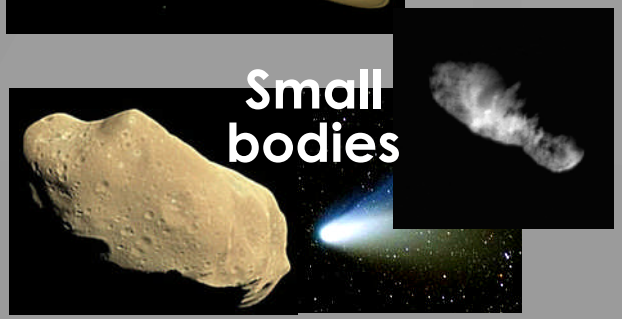


Interstellar space

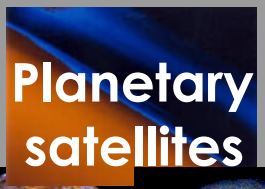




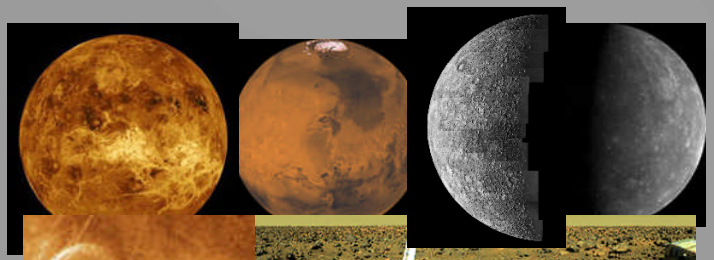
Earth

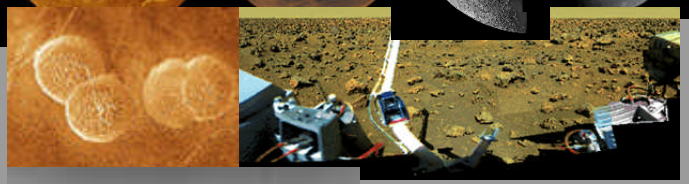


Small bodies

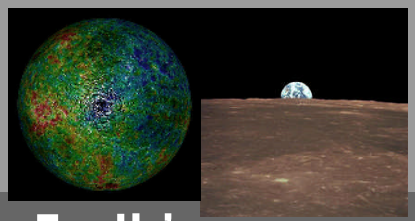


Planetary satellites



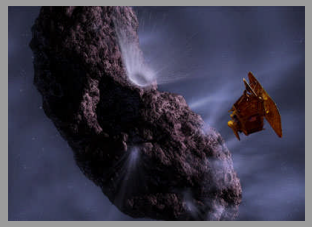


Terrestrial planets



Earth's moon

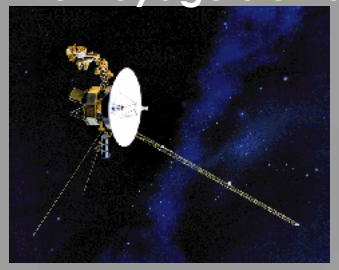
Seventeen Spacecraft and Five Instruments
Operating Across the Solar System

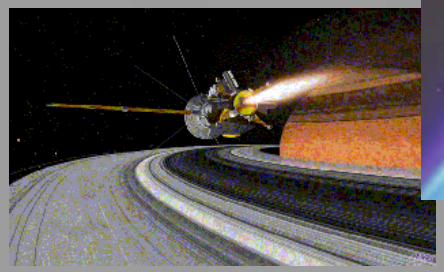


Deep Impact

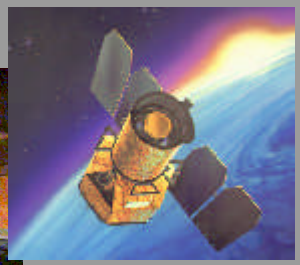
Spitzer studying stars and galaxies in the infrared

Two Voyagers on an interstellar mission



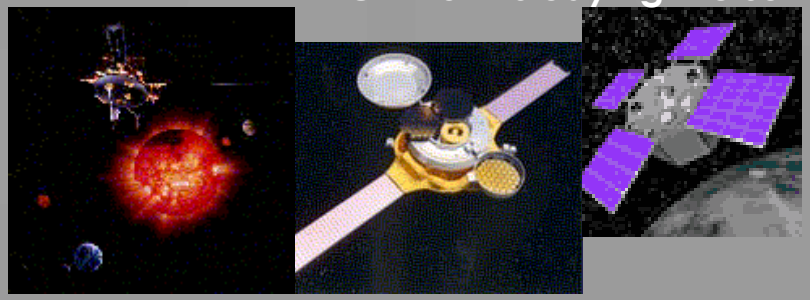


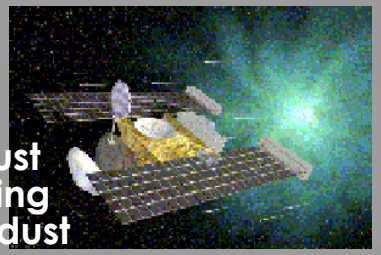
Cassini studying Saturn



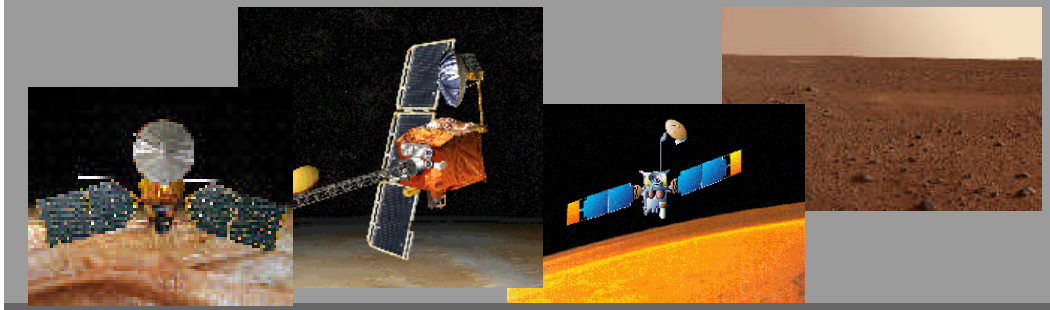
GALEX studying UV universe

Ulysses, Genesis, and ACRIMSAT studying the sun





Stardust returning comet dust

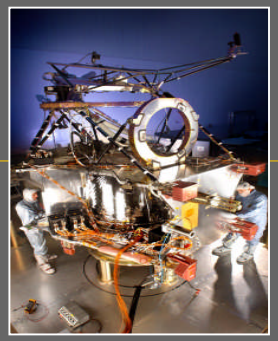


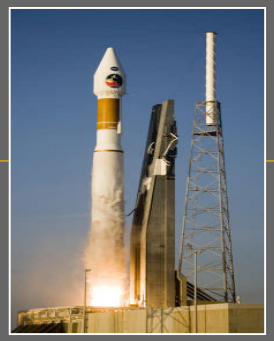
Mars Global Surveyor and Mars Odyssey orbiters; "Spirit" and "Opportunity" on Mars

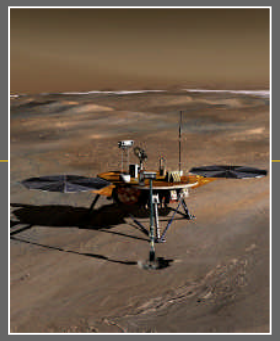
(Plus ASTER, MISR, AIRS, MLS and TES instruments monitoring Earth.)

Topex/Poseidon, QuikSCAT, Jason 1, and GRACE

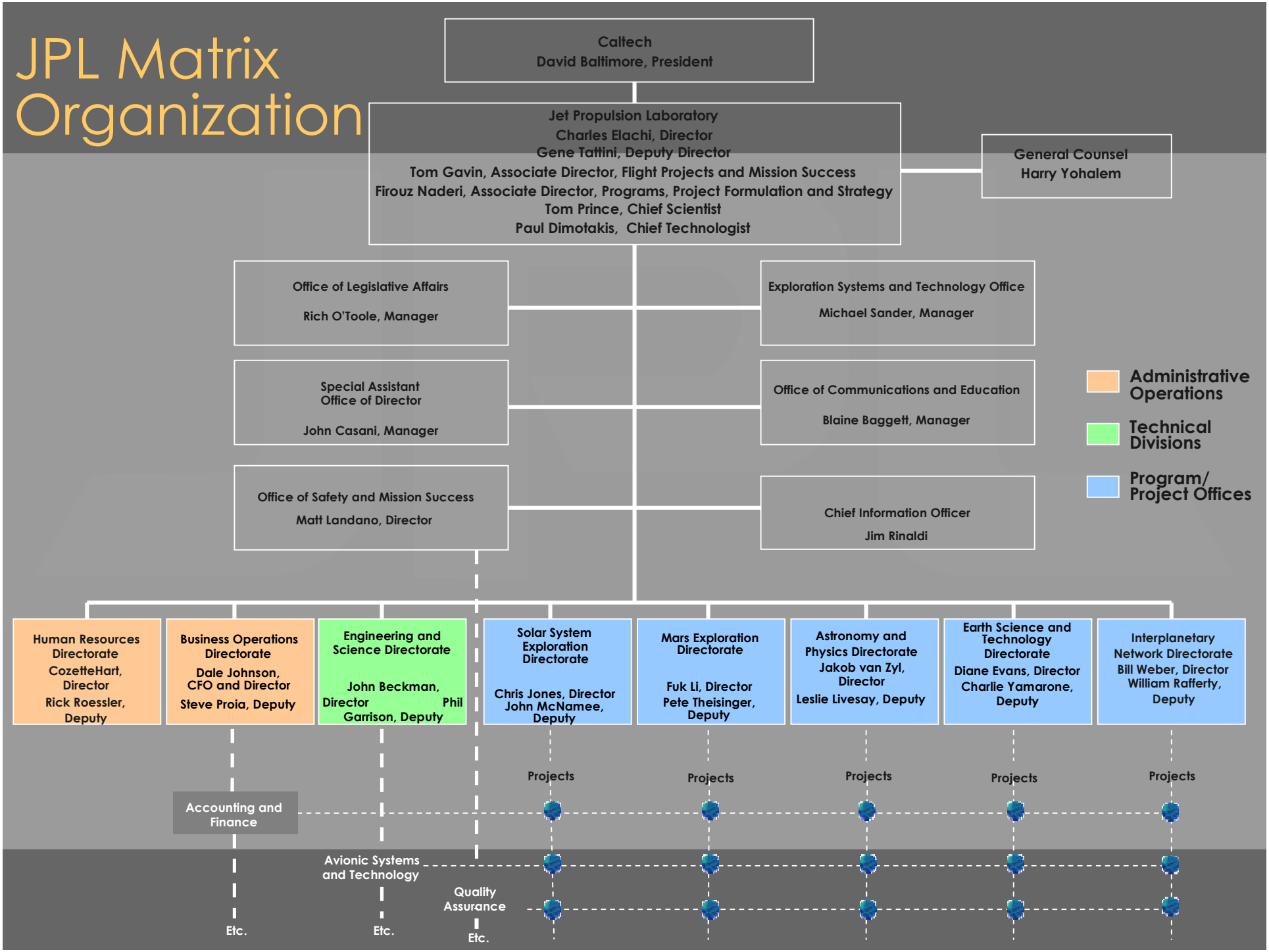
JPL Working Together





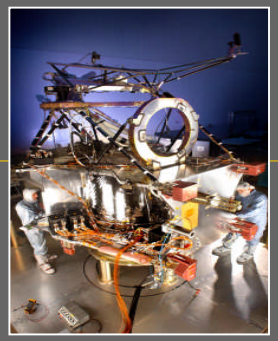


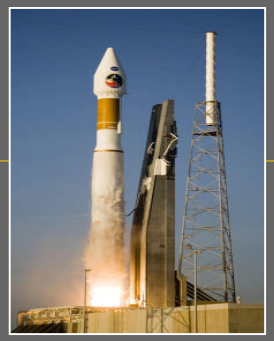
JPL Matrix Organization

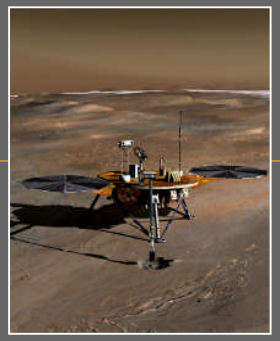


Looking Back…

Recent Accomplishments







Celebrated MER 2nd Anniversary

Spirit at top of Husband Hill, preparing for descent into East Basin, December 2005

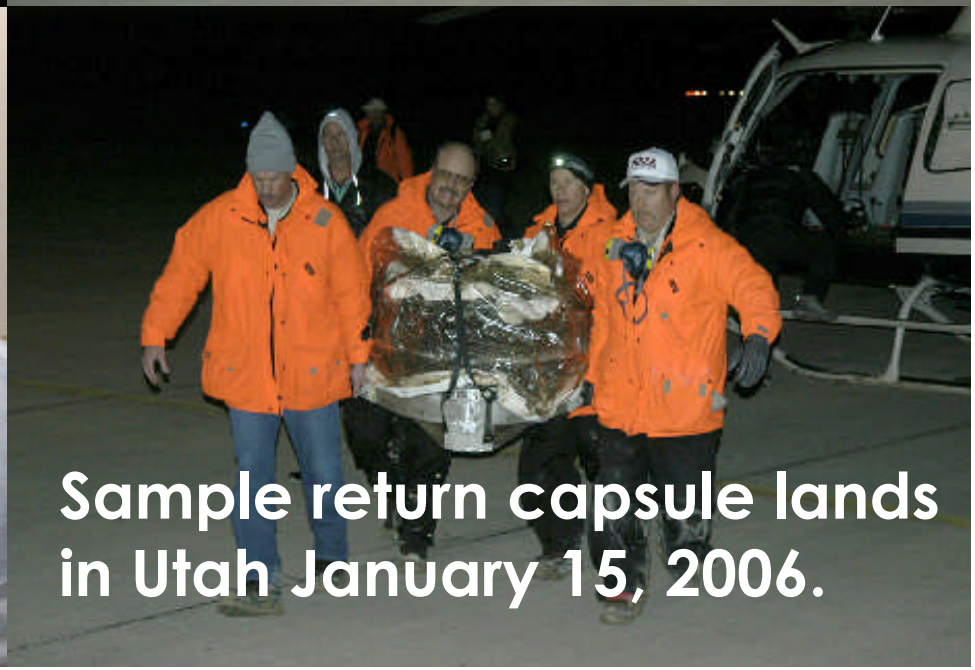
Image created by inserting rover onto *Spirit* panoramic camera image.

View of Earth from Mars from Spirit Rover
(50 million miles away)

Stardust Returns!

Launched February 7, 1999.

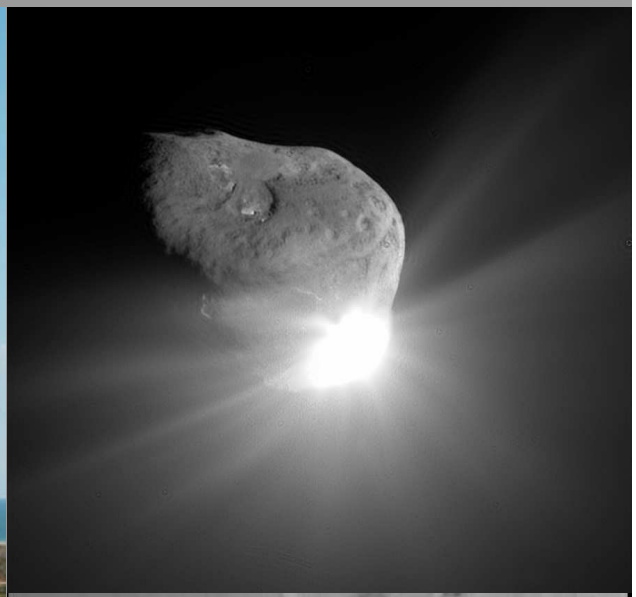
Grabbed sample of coma from comet Wild-2 on January 2, 2004.

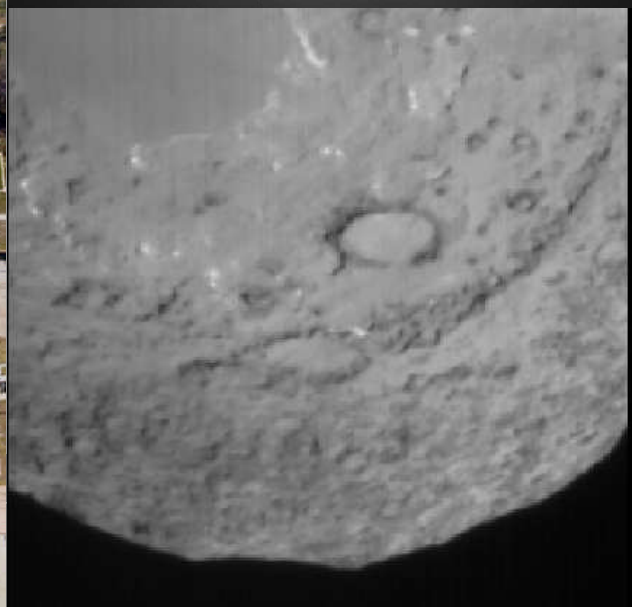


Sample return capsule lands in Utah January 15, 2006.

Deep Impact's
Successful Encounter

- Hit Comet Tempel I on July 4, 2005.
  - *"We made it look simple, but it was hard and trail-blazing work."*
- Project well on its way in meeting all level one requirements.
- The most public interest for a JPL mission to date.
- Opportunity to fly by another comet in three years.



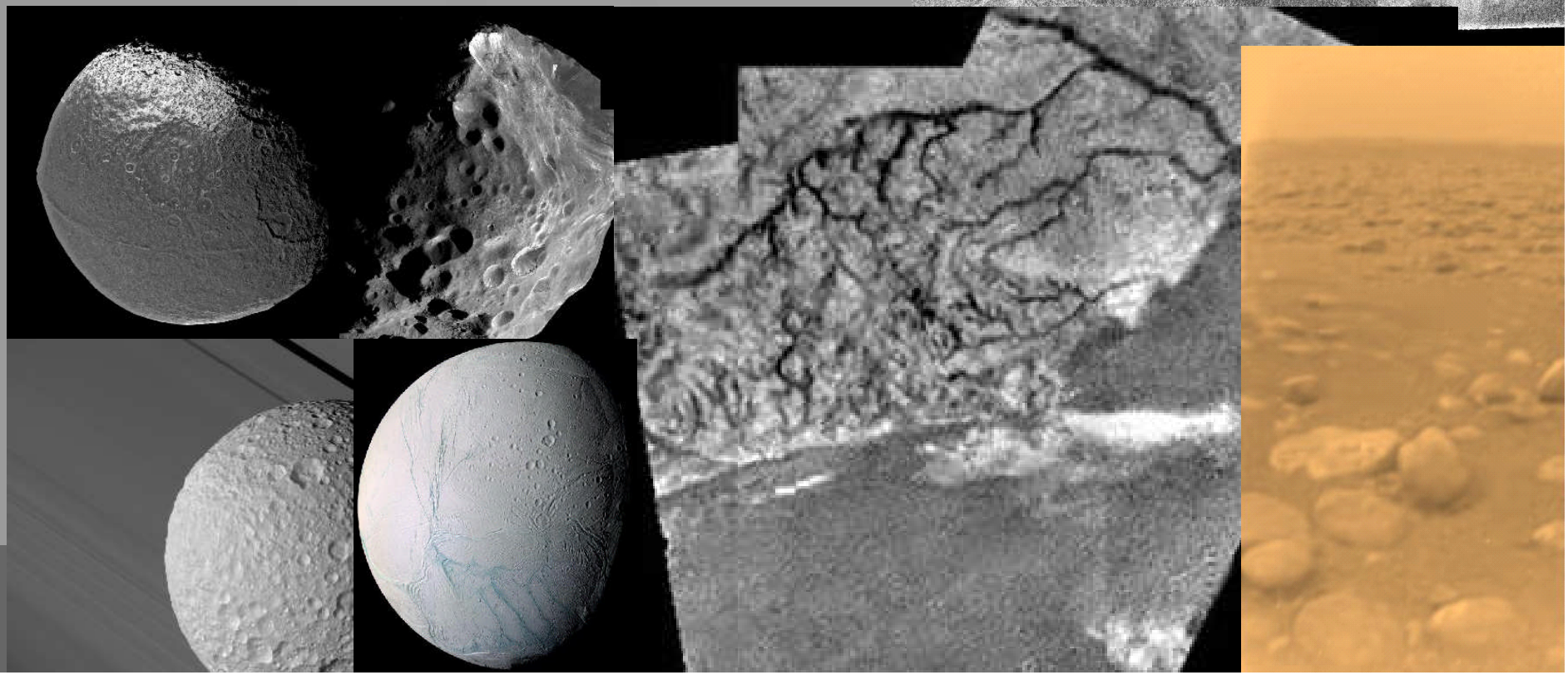


Mars Reconnaissance Orbiter (MRO)
Launches

- Launched August 12, 2005
- Planned Mars orbit insertion March 10, 2006 followed by seven months of aero-breaking and two years of primary science mapping
- Will obtain highest spatial resolution imagery to date (30 cm/pixel), hyper-spectral imaging for mineralogy studies, climate signature information and subsurface sounding.

Cassini/Huygens
Continues Exploring Saturn and its Moons

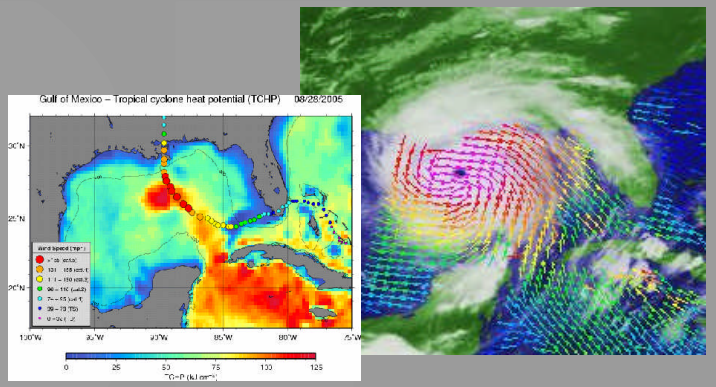
Carried Huygens and communicated with it during Titan landing. Studying Titan with radar and multi-spectral imaging. Studying Saturn and its moons. 12 targeted flybys of Saturn's moons in 2005.



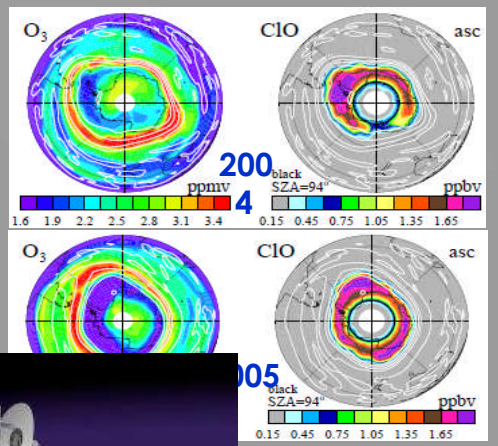
Spitzer Space Telescope
Sees the Center of our Galaxy

FY'05 JPL Earth Science Programs
(Partial List)

Heat potential derived from Jason 1 data is being used routinely by the *National Hurricane Center for Hurricane Prediction.*

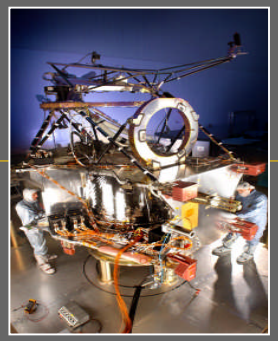


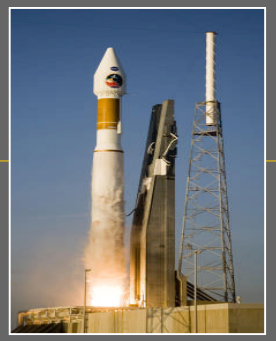
Microwave Limb Sounder (MLS) data show, as of the end of August 2005, the Antarctic ozone hole is developing faster than in 2004.

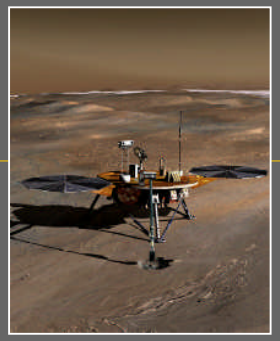


Looking Forward…

Where JPL is Going

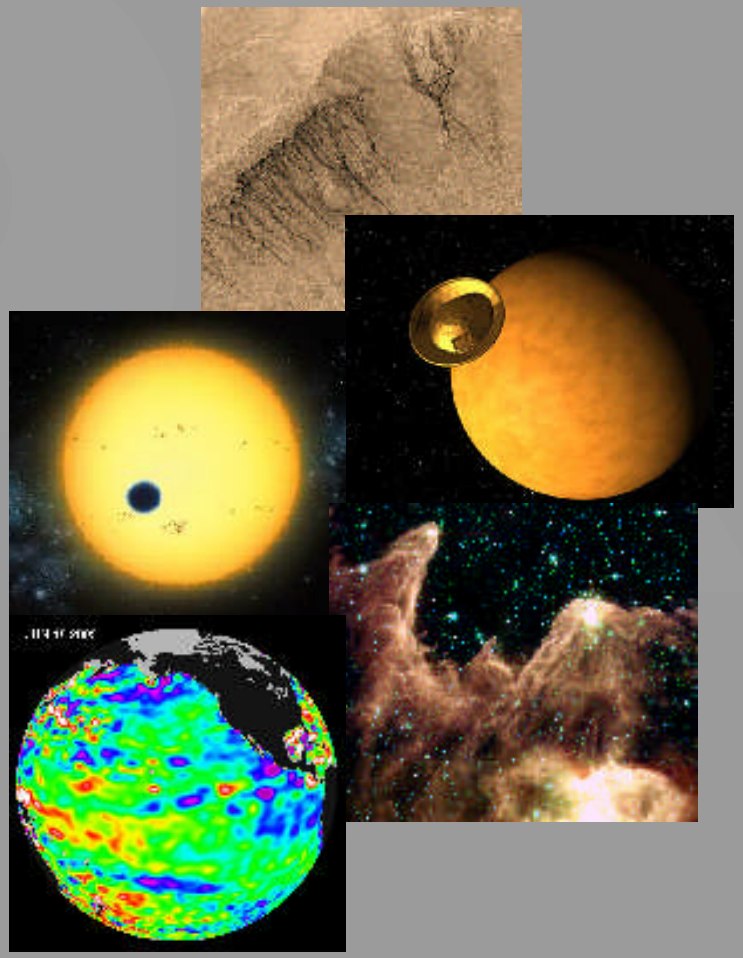






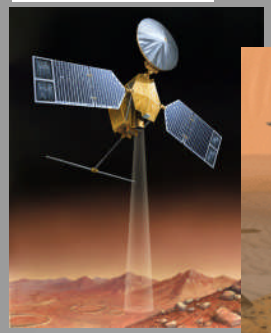
Realizing the Potential of Space Science
In Five Themes

- **Mars Exploration: follow the water**
- **Life-friendly sites in the solar system**
- **Extra-solar planets**
- **Origins of galaxies and the universe**
- **Our home planet, Earth**

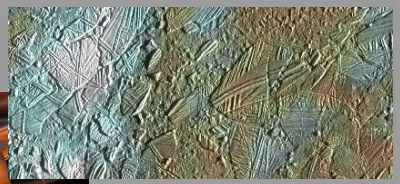


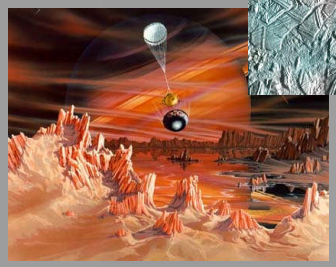
Our Vision: JPL's Legacy by 2020

Established a continuous presence *around* and *on the surface* of Mars.

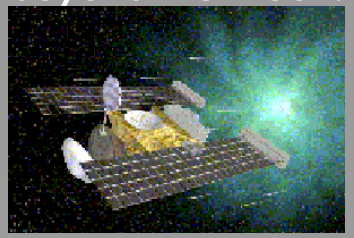


Explored the Jovian and Saturnian satellites in detail and probed their surfaces and interiors for possible pre-biotic and life-favorable environments.

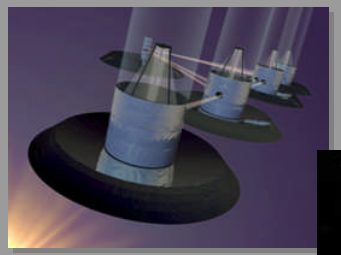




Returned first samples from other solar system bodies beyond the moon.

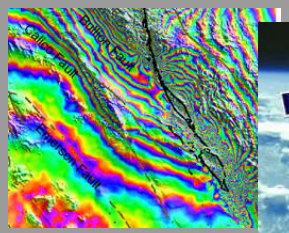


Began exploring neighboring solar systems.

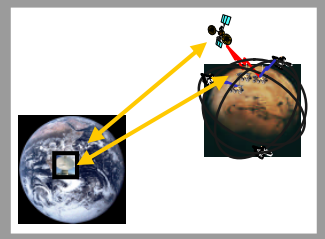


Explored the boundaries of physics to understand the forces which powered the Big Bang.

Established operational capability to monitor dynamics of solid Earth and its oceans and atmosphere.



Established the Interplanetary Network, which is being commonly used by students.

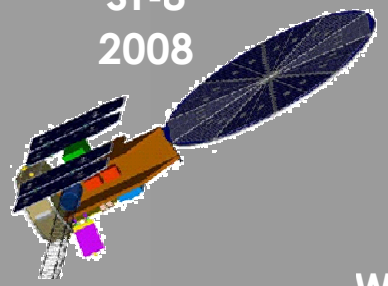


Missions Under Development

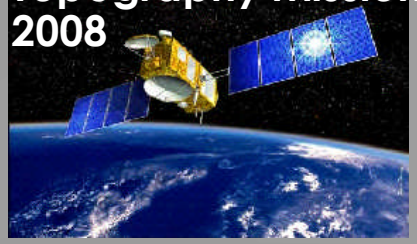
CloudSat
2006

Phoenix
2007

ST-8
2008



Ocean Surface
Topography Mission
2008

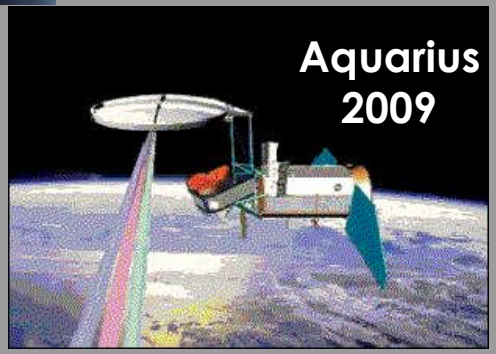


Orbiting Carbon
Observatory
2008

MSL
2009

WISE
2009

Kepler
2008



Aquarius
2009

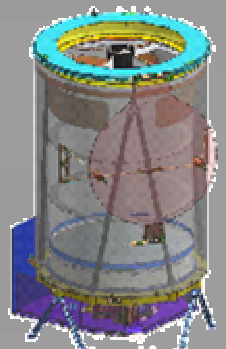
Juno
2010

PlanetQuest Space
Interferometer Mission
2011-2015

Major Instruments Under Development

Planck instrument
2007

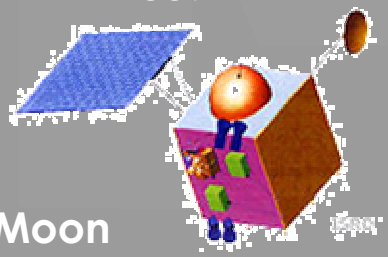
Herschel
instrument
2007



Active Mirror
Telesope
2007

ST-7 DRS on
LISA pathfinder
2008

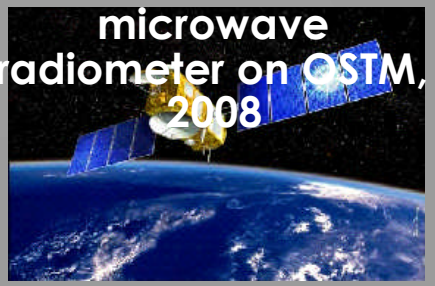
Diviner lunar radar
experiment2008



Moon
Mineralogy Mapper
2008

CheMin on MSL
2009

Advanced
microwave
radiometer on QSTM,
2008



High-res 3-channel
grating pectrometer
on OCO

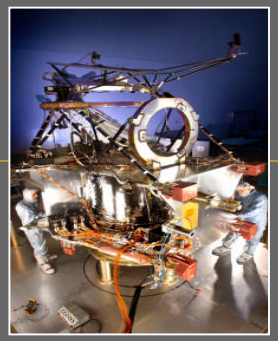
L-band
active/passive
MW on Aquarius
2009

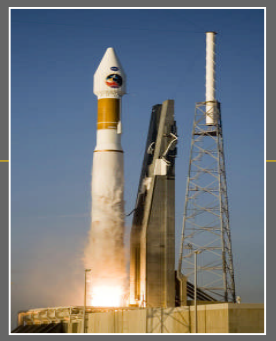
MW radiometer,
heat
magnetometer,
gravity science
on Juno
2010

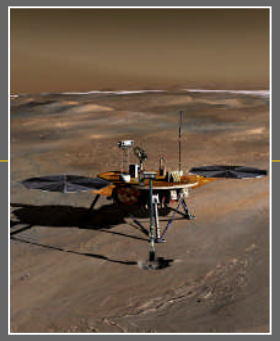
MIRI on JWST
2013

Looking Forward…

How JPL is Going To Get There







We Can't Do This Alone

JPL Needs Your Partnership

Talk with prime contractors in the "Marketplace"

Network with peers

Become 'informed' by attending workshops

Enjoy the conference.