



# Planetary Science Division Program Status

*Presentation to the LPSC*

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# Outline



- Administrative Matters
- Recent Accomplishments
- Presidents FY11 Budget for SMD & PSD
- Upcoming Planetary Events



# Administrative Matters



- There will be a number of PSD employee changes over the next year
- Staff Loses: Karen McBride, Tom Morgan, Dave Lindstrom and Marilyn Lindstrom
- New Civil Servants onboard: Kristen Erickson
- New Detailees: Jeff Grossman, Amy Kaminski, Tiffany Nail, Andrea Razzaghi
- PSD anticipates additional Civil Servant opportunities at HQ this FY

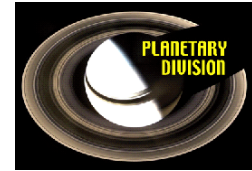


# Recent Accomplishments

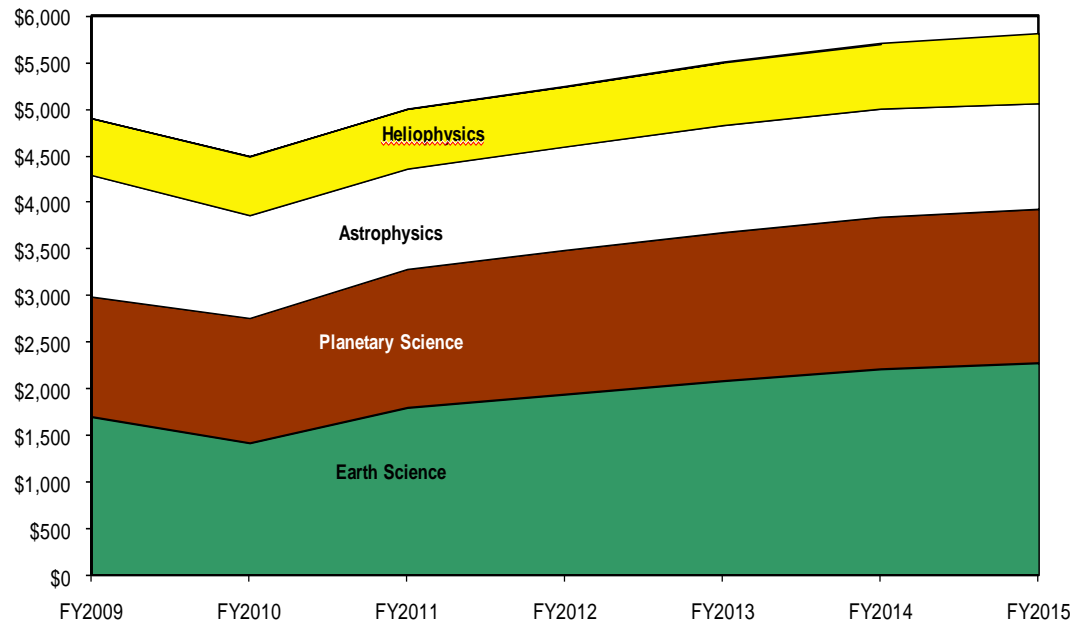
- Selection for New Frontiers-3 announced:
  - MoonRise: SPA Basin Sample Return (Brad Joliff, PI)
  - OSIRIS-Rex: Asteroid sample return (Mike Drake, PI)
  - SAGE: Venus lander (Larry Esposito, PI)
- Discovery's bidder conference & comment period (Jan. 15)
  - We received a lot of comments that will need careful consideration
  - We have heard the communities concerns on the cost of ASRGs
- SALMON released for instruments on ESA's Trace Gas Orbiter - Mars 2016
  - Released Jan 2010 will select instrument this fiscal year



# SMD FY11 Budget By Theme



	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	Change FY10-15	
<b>Science</b>	<b><u>\$4,903.1</u></b>	<b><u>\$4,493.3</u></b>	<b><u>\$5,005.7</u></b>	<b><u>\$5,248.7</u></b>	<b><u>\$5,509.7</u></b>	<b><u>\$5,709.9</u></b>	<b><u>\$5,814.1</u></b>	<b><u>\$1,320.8</u></b>	<b>29%</b>
Earth Science	\$1,702.3	\$1,420.7	\$1,801.7	\$1,944.5	\$2,089.5	\$2,216.6	\$2,282.2	\$861.5	61%
Planetary Science	\$1,288.1	<b>\$1,341.3</b>	<b>\$1,485.8</b>	\$1,547.3	\$1,591.3	\$1,630.2	\$1,649.5	\$308.2	23%
Astrophysics	\$1,304.9	\$1,103.9	\$1,076.3	\$1,109.3	\$1,149.1	\$1,158.7	\$1,131.6	\$27.7	3%
Heliophysics	\$607.8	\$627.4	\$641.9	\$647.6	\$679.8	\$704.4	\$750.8	\$123.4	20%





# FY11 SMD Budget Features



- In these economic times the President's budget is strong statement in support of NASA's Space & Earth Science programs
- SMD Budget increased (FY11-10)~\$512M
  - ESD has new climate initiative ~\$380M
  - PSD funding change ~\$145M
- In the past, “New Initiatives” would be at the expense of the other divisions keeping the total SMD budget constant



# Planetary Science Program Content

New Decadal Period

	FY09	FY10	FY11	FY12	FY13	FY14	FY15
FY11 President's Budget	1,288.1	1,341.3	1,485.8	1,547.3	1,591.3	1,630.2	1,649.5
Planetary Science Research	166.2	160.7	180.4	190.8	195.2	214.2	240.9
Lunar Quest	69.1	103.6	136.6	136.4	131.7	109.7	110.5
Discovery	234.8	209.2	202.0	216.8	235.9	263.0	312.9
New Frontiers	279.0	264.1	223.8	229.5	237.9	247.7	258.5
Mars Exploration	361.7	416.1	532.8	514.8	549.9	569.6	485.8
Outer Planets	104.8	98.6	103.5	157.9	152.0	144.0	155.8
Technology	72.4	89.0	106.6	101.2	88.8	82.1	85.2

PSD funding change FY11-FY10 = \$145M



# PSD FY11 Budget Highlights



- Approved Cassini's "Solstice" mission (XXM)
- NEO identification and characterization \$20M/yr
- Cost sharing the restarts Pu-238 production with DOE
- Continues to operate 11 planetary missions
  - Including LRO
- Fully funds upcoming missions: Juno, GRAIL, MSL, LADEE, and MAVEN
- Develops ASRG for 2014/2015 launch readiness date
  - Will be an option to fly on the next Discovery AO
- Continues funding Europa Jupiter System Mission in Pre-Phase A
  - Our plans are to keep OPF going while we are awaiting the results of the new Planetary Decadal





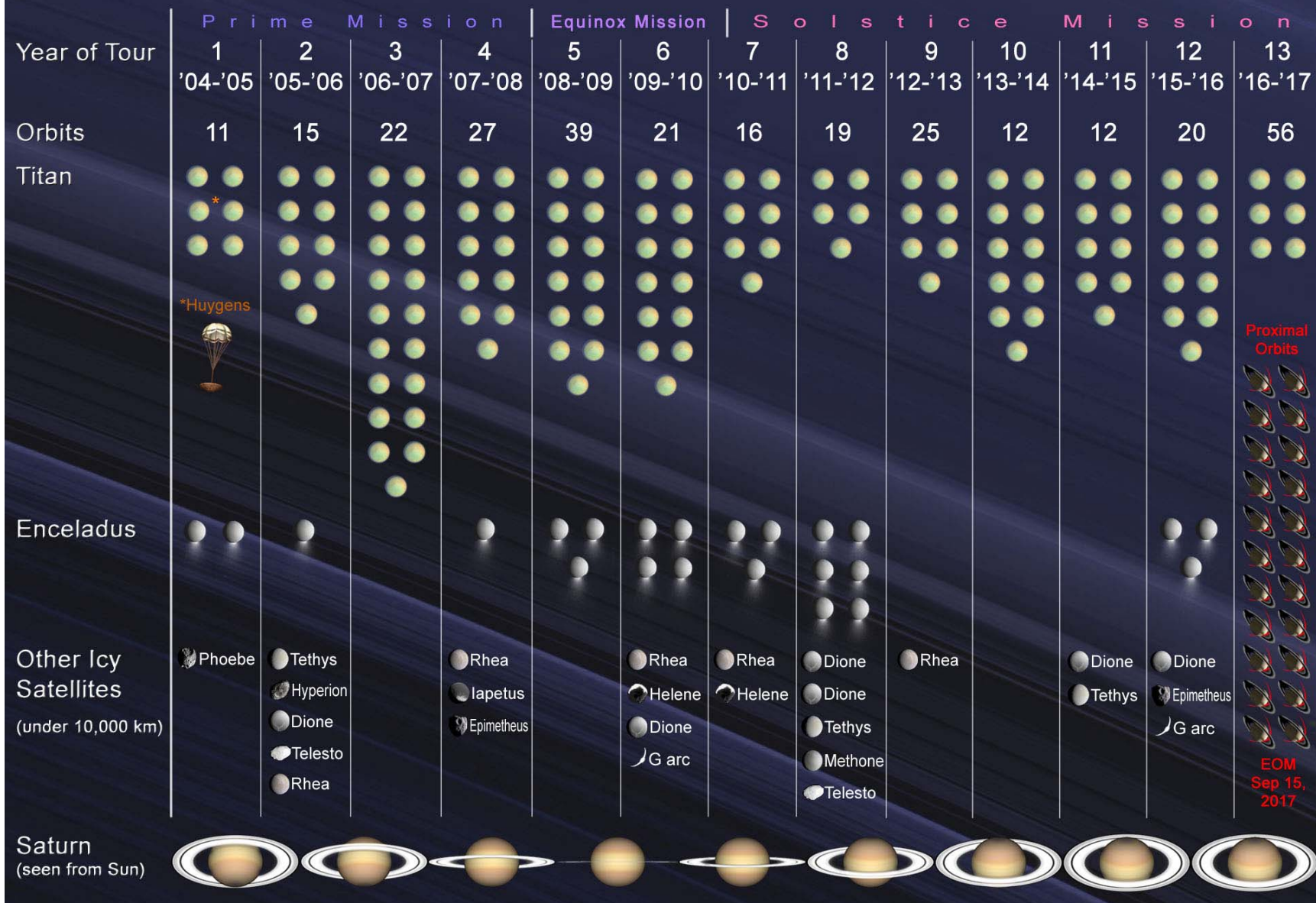
# Congressional Actions: Pu-238



- DOE FY10 Appropriations Conferees results:
  - Adopted Senate position of zero funding
  - Stating: "*Pu-238 Production Restart Project.- ... [a] start-up plan which shall include the role and contribution of major users of Pu-238, such as the NASA, ... shall be submitted with the fiscal year 2011 budget....*"
- NASA worked with DOE to create such a plan and continued to maintain the testing of advanced RPS
  - NASA and DOE are working well together
- From NASA's perspective this is back on track
- Pu-238 can only be restarted if Congress passed a budget that supports it
  - Restart or not will appear in the DOE legislation not NASA!

# Cassini Mission Overview

Four-Year Prime Tour, Equinox Mission, and Solstice Mission (Proposed), July 2004 - July 2017



Proximal Orbits

EOM  
Sep 15,  
2017



## Congress fears that NASA leaves too much money unspent for too long

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As Congress appropriated funds for NASA's FY10 budget:

“While the conference report does not adopt the position proposed by the House to **limit appropriations available to NASA to one-year while providing an allowance of ten percent for two-years** to reflect the research and development nature of the work performed, the conferees will continue to **monitor NASA's efforts to improve its obligation rate with commensurate improvements in accrual of costs and outlays** to determine if the House's proposal warrants further consideration.”

**During program years 2006 through 2008**, NASA awarded \$687M more than our awardees told us that they had spent by September 30, 2009.

Grants and cooperative agreements are roughly **5%** of NASA's budget, but account for **half** of these (apparently) unspent funds.

**NASA has promised Congress that we will do better in 2010...**

You can help: It's all about timely billing NASA for your work!



## SMD Mission E/PO Policy Approved



- Floor is 1% of total mission cost excluding LV
  - Covers all missions (AO selected, strategic, decadal survey, etc)
  - Provides milestones for development and review of E/PO plans
  - Sets out reporting and evaluation requirements
  - Provides budget phasing guidance (Phase A-E)
- Planetary Science EPO Forum is up and running
- For E/PO information and guidance contact:

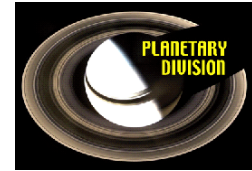
Lunar & Planetary Institute

Point of Contact: Stephanie Shipp

E-Mail: [shipp@lpi.usra.edu](mailto:shipp@lpi.usra.edu)



# Upcoming PSD Mission Events



## 2010

- May 26 – Launch of O/OREOS
- June 13 - Hayabusa (JAXA) asteroid sample return
- July 10 – Rosetta (ESA) closest approach for Lutetia
- Sept – LRO transitions to Planetary Science Division
- Nov 4 - EPOXI encounters comet Hartley 2
- Late '10 Venus Climate Orbiter (JAXA) arrives at Venus
- Late '10- Early '11(?) – Opportunity gets to Endeavour

## 2011

- Feb 14 - Stardust NExT encounters comet Tempel-1
- Mar 18 - MESSENGER orbit insertion at Mercury
- July - Dawn orbit insertion at asteroid Vesta
- Aug - Juno launch to Jupiter
- Sept - GRAIL launch to the Moon
- Oct - MSL launch to Mars

## 2012

- Mid-year – Dawn leaves Vesta starts on its journey to Ceres
- Aug - MSL lands on Mars
- Late to early '13 - LADEE launch to the Moon



# **NASA's Planetary Science**

**Advance scientific knowledge of the origin and history of the solar system, the potential for life elsewhere, and the hazards and resources present as humans explore space**

**“Flyby, Orbit, Land, Rove, and Return Samples”**