



Planetary Science Division Update

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Director, Planetary Science
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Outline

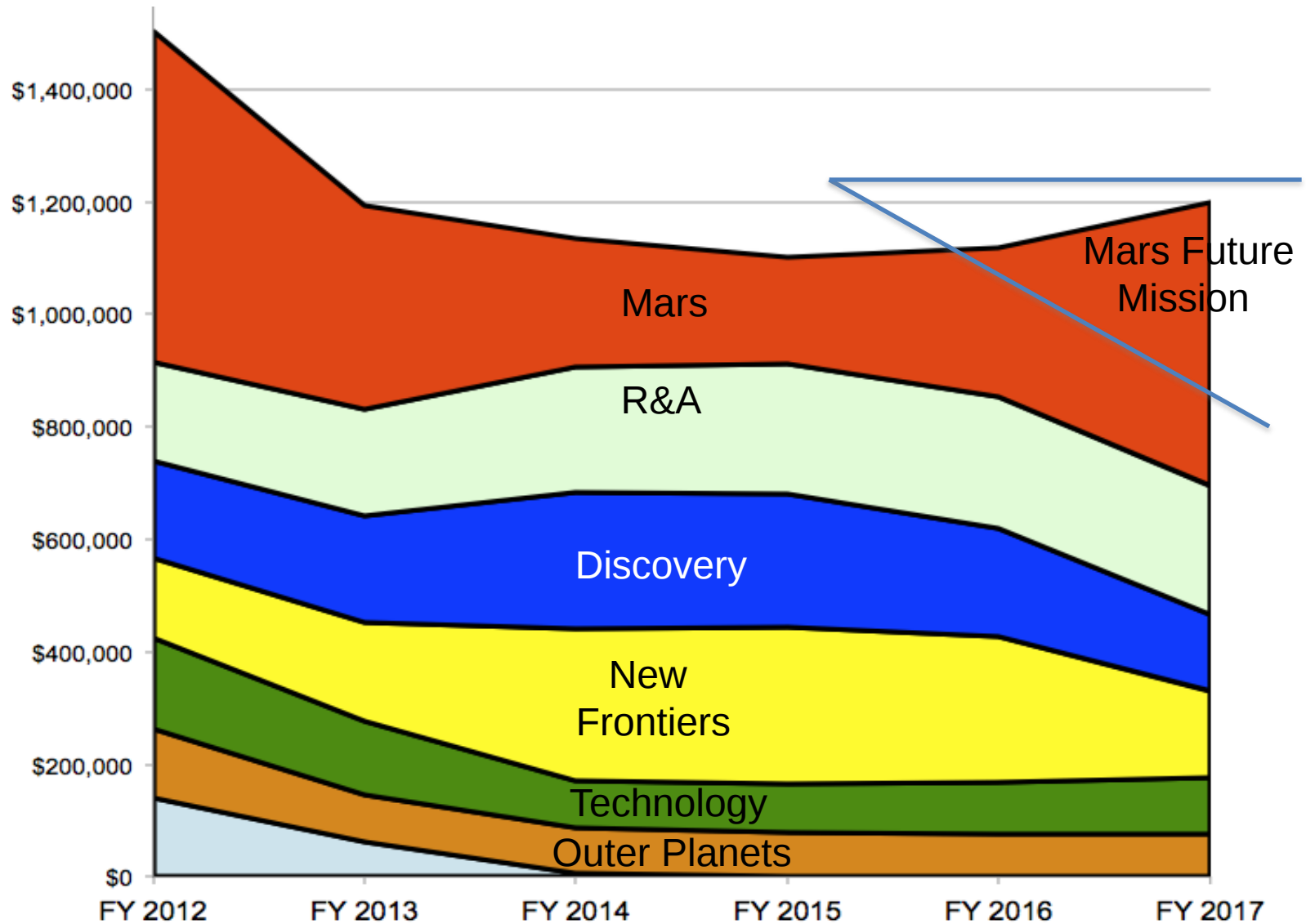
- Planetary Budget
- Mars 2020 mission
- R&A status and plans
- MESSENGER Senior Review
- Personnel Changes

President's FY13 In-Guide Budget

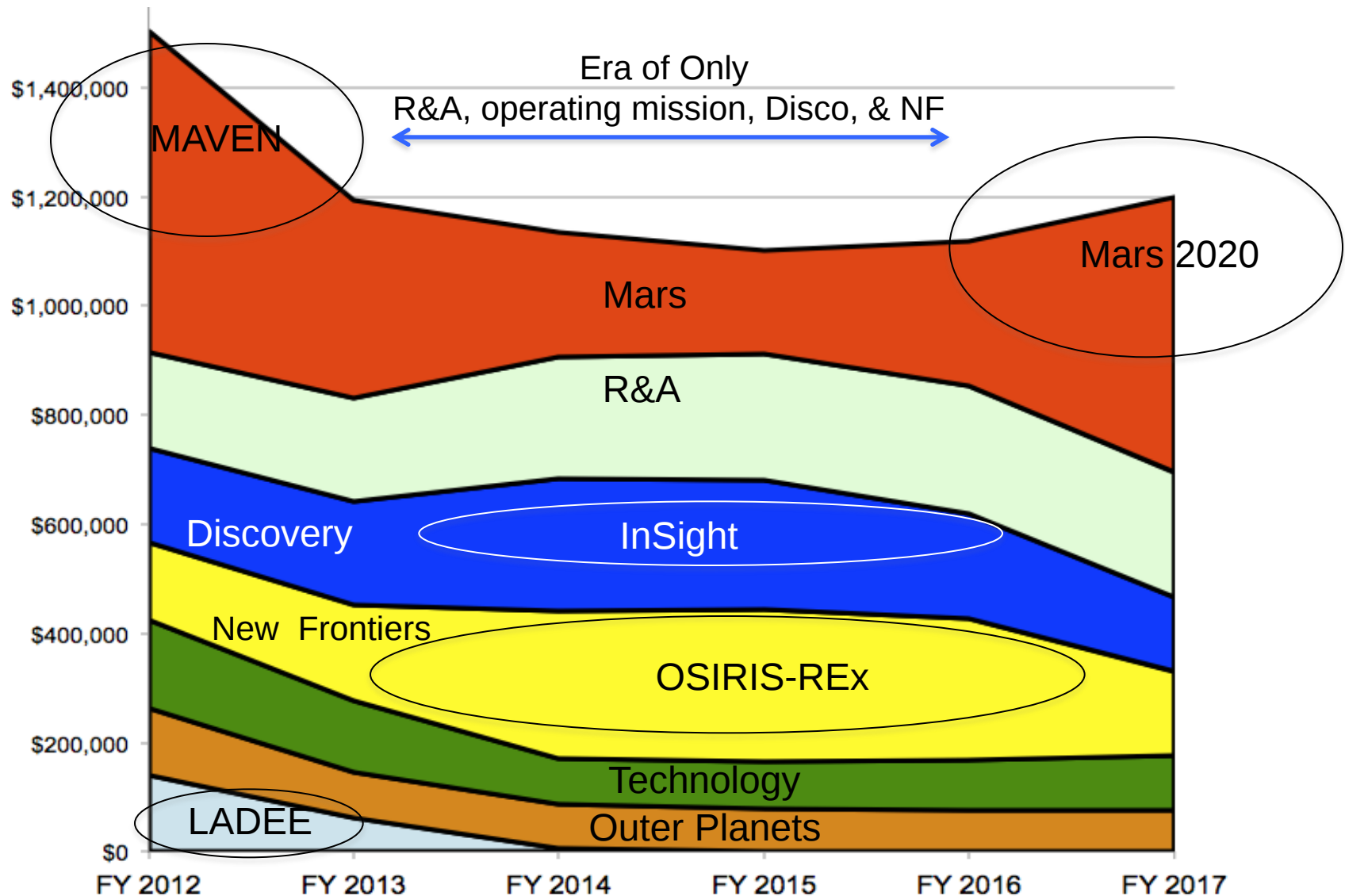
Planetary Science Division	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Planetary Research	\$174,087	\$188,546	\$222,544	\$233,377	\$231,683	\$230,339
Lunar Quest	\$139,972	\$61,469	\$6,167	\$0	\$0	\$0
Discovery	\$172,637	\$189,556	\$242,162	\$235,643	\$193,771	\$134,335
New Frontiers	\$143,749	\$174,967	\$269,802	\$279,598	\$259,912	\$155,085
Mars Exploration	\$587,041	\$360,804	\$227,722	\$188,671	\$266,885	\$503,086
Technology	\$161,899	\$132,902	\$84,557	\$85,867	\$90,915	\$99,624
Outer Planets	\$122,054	\$84,041	\$80,782	\$78,796	\$76,238	\$76,314
	\$1,501,439	\$1,192,285	\$1,133,736	\$1,101,952	\$1,119,404	\$1,198,783

- For FY13 Congress has passed a “Continuing Resolution”
- Under the CR PSD's FY13 budget is \$1.19B
 - 21% decrease from FY12 level

President's FY13 In-Guide Budget



President's FY13 Budget - Missions



Mars Future Missions

Timeline of Key Events in 2013

- February – President's FY13 budget contains an unspecified mission in the Mars Exploration program with significant funding starting in FY16
 - Charge: find an acceptable mission or lose the money
- March – A Mars Program Planning Group (MPPG) was chartered
 - Representative from SMD, HEOMD, and Space Technology
- Late March – LPI community workshop
- August/Sept. – MPPG presentations to NASA and NAS-CAPS
- September - Mars Program Planning Group (MPPG) final report was delivered to NASA
 - Integrated with other Agency factors to create a Mars future mission Plan
- Sept – October - Mission formulation
- Nov-December – Internal presentations & final Administration approval
- December – Rollout of the Mars 2020 Rover at AGU; Call for SDT members
 - <http://mepag.jpl.nasa.gov/Announcements/index.html>

This Decade's Exploration of Mars

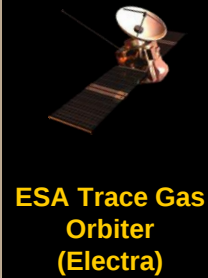
**Operational
2001-2012**



2013



2016



2018

ESA ExoMars
Rover (MOMA)



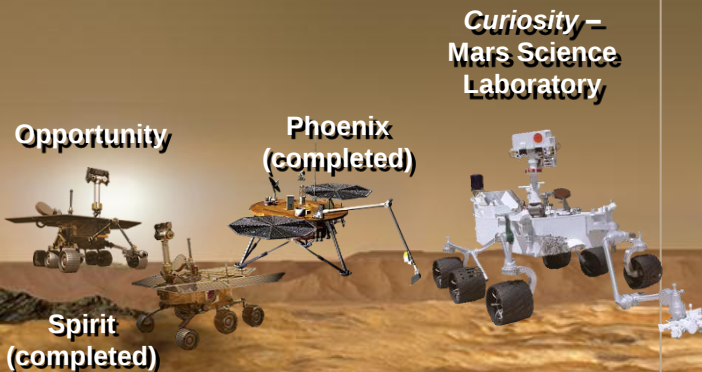
2020

2020
Science Rover



2022

Future
Planning



Mars Exploration Program- Next Steps

Key Components of the In-Guide Plan:

- 1.Support MAVEN and Mars extended missions through 5-year budget horizon
- 2.Provide Electra telecom relay and engineering support for ESA's 2016 Trace Gas Orbiter and Entry, Descent and Landing (EDL) Demonstration Module
- 3.Provide critical components to the Mars Organic Molecule Analyzer (MOMA) experiment plus engineering/telecom support for ESA's 2018 ExoMars rover
- 4.Initiate Science Rover mission for 2020 launch:
 - Leverage MSL design, residual hardware, and experienced team— reduces cost/cost risk
 - Build on MSL/Curiosity results by investigating a new site for possible bio-signature preservation in full geologic context
 - Expand EDL capability and accuracy (improves access to compelling landing sites)
 - Provide OCT/Space Technology Program and HEOMD opportunities to participate
 - Provide opportunities for international collaboration

Mars 2020 Rover Overview

- Scientific Intent of the 2020 Rover Mission

Conduct mobile surface-based science at a site selected for its ability to preserve evidence of life, and prepare for the future return of samples per the NRC Planetary Decadal Survey

- Payload acquisition through an open, competitive process
 - Community-based Science Definition Team (SDT)
 - ✓ Open letter to the community for membership in SDT
 - Establish mission science objectives in priority order
 - Draft example payload/instrument suite as proof of concept
 - Identify opportunities for contributed Human Exploration and Operations Mission Directorate payloads and technology infusion and/or demonstrations
 - Propose threshold objectives/measurements
 - Announcement of Opportunity (AO) derived from SDT findings
 - Release in early summer 2013
 - Open to international contributions

Research and Analysis Program

PROGRAM	FY10	FY 11	FY 12	FY13
AstroCuration	4.473	5.509	5.807	5.800
Near-Earth Objects	5.800	7.848	20.425	20.500
Planetary Data System	10.120	11.504	13.609	13.267
Cassini Data Analysis (CDAP)	4.035	5.527	5.870	5.300
Outer Planets Research (OPR)	7.922	11.998	10.007	10.100
Mars Fundamental Research Program	7.091	7.601	8.767	8.429
Mars Data Analysis Program (MDAP)	7.737	8.375	9.073	9.033
Mars Phoenix DAP	0.000	1.093	0.549	0.000
Sample Ret Lab Inst & Data Anlys (SRLIDAP now LARS)	3.947	10.693	8.312	9.069
Discovery Data Analysis (DDAP now PMDAP)	2.094	2.516	2.921	0.000
Messenger Participating Scientist Program	1.146	2.240	2.090	0.000
DAWN Participating Scientist Program	0.555	1.670	1.559	0.000
Planetary Geology & Geophysics (PGG)	10.044	12.116	10.760	12.600
Cosmochemistry (COSMO)	11.670	12.331	15.121	14.000
Planetary Astronomy (PAST)	9.963	9.045	9.030	8.500
Planetary Atmospheres (PATM)	8.753	8.915	8.190	7.900
Planetary Major Equipment	0.000	1.89	2.585	1.500
Planetary Instrument Def & Dev (PIDDP)	10.086	8.503	5.634	8.900
Origins of the Solar System (ORIGINS)	5.267	5.272	7.118	5.300
Planetary Protection	3.190	2.512	2.600	2.400
Astrobio Sci & Tech for Expl Planets (ASTEP)	6.157	9.530	7.550	12.000
Astrobiology Inst Development (ASTID)	6.805	7.684	5.755	8.000
National Astrobiology Institute (NAI)	19.875	20.790	22.189	23.200
Exobiology/Evolutionary Biology (EXO)	14.744	16.52	14.802	15.700
Planetary R&A (misc)	13.201	3.307	4.530	4.800
Venus Express	1.080	1.056	1.080	1.000
NASA Lunar Science Institute (NLSI) and follow on Institute	11.535	13.859	9.291	11.000
Lunar Advanced Science & Exploration Research (LASER)	4.325	6.878	7.418	10.049
Moon and Mars Analog Mission Activities	0.714	0.580	0.711	0.700
Planetary Science US Participating Investigator Program	0.752	0.712	0.305	0.000
Neo-Wise/NEO	1.800	0.660	0.276	0.000
Mars Multi-Mission DA & Data Products	1.126	0.274	0.054	0.000
Mars Instrument Development Prog (MIDP)	2.677	1.051	0.000	0.000
New Horizons at Jupiter Data Analysis Program	1.234	1.188	0.000	0.000
Lunar Reconnaissance Orbiter Participating Scientist (LRO PSP)	1.290	0.866	0.000	0.000
Hayabusa Participating Scientist Program	0.259	0.304	0.000	0.000
MER Participating Scientist Program	4.172	0.000	0.000	0.000
GRAIL Guest Scientist Program			0.750	0.000
Outer Planets Supporting Research (1 Year, non-recurring)			22.500	
Total R&A Budget	205.639	222.417	247.239	229.047
Overall Planetary Budget	1,364.400	1,446.180	1500.000	1188.685
R&A as % of Budget	15.1%	15.4%	16.5%	19.3%

Yearly Totals

FY03: \$152M

FY04: \$177M

FY05: \$185M

FY06: \$163M

FY07: \$149M

FY08: \$180M

FY09: \$207M

FY10: \$206M

FY11: \$221M

FY12: \$247M

FY13: \$229M

(Planned)

Current Status of R&A Program

- PSD's budget between FY12 &13 planetary reduced by 21%
 - Greatest reductions occurring in Flight program with much reduced participation in ESA's Mars 2016 & 2018 missions delay of Discovery and New Frontiers Programs next missions
- An additional reduction in the Planetary Science in FY13 of 8% may also occur due to Sequestration Legislation kicking in early CY2013
- Current funding is under a Continuing Resolution
 - Obtain partial funding on a monthly basis
 - PSD Policy - Funding distribution: Flight programs before R&A programs

PSD R&A Management Principles

- The PSD is following closely previous recommendations and findings of the Planetary Science Subcommittee (PSS)
- The following are the PSD R&A management principles:
 1. FY13 funding targets have been provided to all program officers (PO) for each of the PSD ROSES program elements. These targets will be posted on the NASA SARA website.
 2. All POs will meet current ongoing grants commitments before new selections can be made.
 3. Awards will be made and announced beginning one month after the review panels have met.
 4. Award announcements will be either: selected, not selected, or selectable.
 5. Proposals in the selectable category will be selected as funding becomes available throughout the fiscal year. This means that selection rates for a program will increase as additional selections are announced.

MESSENGER Senior Review

Update on MESSENGER XXM Request

Background

- MESSENGER completed its Primary Mission in March 2012
- MESSENGER had a Senior Review
 - Based on the known fuel - proposed a one (Earth) year extension
 - Extended mission was accepted - operations through March 2013 EOM
- MESSENGER transitioned to 8-hour orbit as part of the XM in March 2012
 - Revised fuel budget analysis now estimates final impact on ~Aug 22, 2014

Current Status

- MESSENGER requested an out of sequence SR to take them to EOM
- A new SR will occur using previous multi-mission guidelines
- Draft Schedule:
 - January 2013 – Release of guidelines for XXM to the Project
 - March 2013 – Proposal due and panel convened
 - April 2013 – Decision is made and project is notified

Personnel Changes

- Mars Exploration Program Director - Doug McCusition is retiring at end of December 2012
 - Jim Green, Acting Director MEP
 - Lisa May, Lead Program Executive
 - Michael Meyer, Lead Program Scientist



<http://solarsystem.nasa.gov/yss>

Questions?