

Planetary Science Division Update

*Presentation at the
Planetary Science Subcommittee*

James L. Green
Director, Planetary Science Division

October 2, 2008

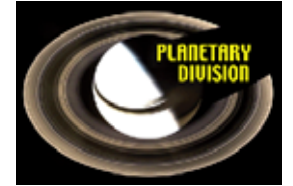


Outline

- Division Overview - Jim
 - Administration
 - Upcoming Opportunities & Selections
 - Mission Status and Plans
 - PSS Recommendations
- Mars Program Overview - Doug
- MSL Cost Overrun Status & Plans - Jim



Administration



- New Personnel:
 - Mary Voytek (USGS detailee) - Astrobiology
 - Tibor Kremic (GRC detailee) - Assistant for Flight Program
- Hiring status at Hq has slowed down may be months before PSD obtains approval for new hires (ie: Astrobiology...)

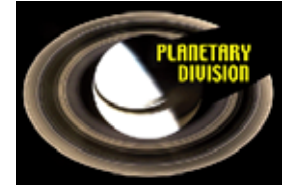


Academy Studies

- Congress: NASA will fund National Academy studies:
 - R&A - Balance with missions
 - Radioisotope Power System Requirements & availability of Plutonium
 - NEO - address issues in the detection and mitigation
 - Jointly requested by NASA and NSF
- NASA directed:
 - Science Opportunities Enabled by NASA's Constellation System
 - Planetary Protection for Mars Sample Return
- Charge to the Academy for next Planetary Decadal to be delivered by end of 2008
 - Will be jointly requested by NASA & NSF
 - Task under development
 - Expect Academy to start process late this year or early next



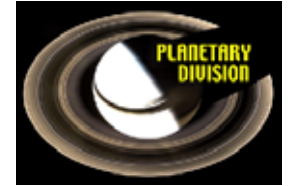
Decadal Task Overview



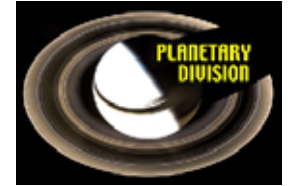
- An overview of planetary science—what it is, its relationship to other scientific endeavors, and why it is compelling
- A broad survey of the current state of knowledge of the solar system
- An inventory of the top-level scientific questions that should guide flight programs and supporting research programs
- Recommendations on the optimum balance among small, medium, and large missions and supporting activities
- A discussion of high value technology development needs
- A prioritized list of major flight investigations to be initiated over the decade 2011-2020
- Recommendations for supporting research required to maximize the science return from the flight investigations
- Covers Solar System including the Mars & Moon
- Extrasolar planets are covered in the Astrophysics Decadal



Upcoming 2008 Opportunities

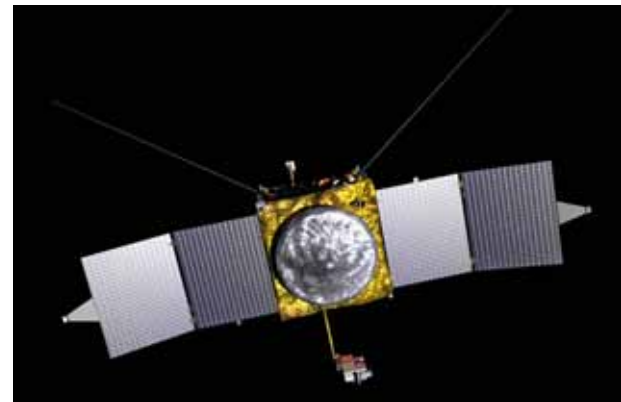


- Lunar Advanced Science and Exploration Research
 - ESMD is not participating in the 2008 ROSES call but will maintain their 2007 ROSES commitments
- NASA Lunar Science Institute Nodes
 - 32 proposals received
 - ESMD will be part of the selection and fund at least one node
- Stand-Alone Mission of Opportunity Notification (SALMON)
 - Released: September 3, 2008
 - Preproposal conference held: September 26, 2008
 - Each proposal opportunity has its own due date
- New Frontiers #3 AO - current schedule
 - Draft release: October 2008
 - Final release: January 2008
- Discovery - under review

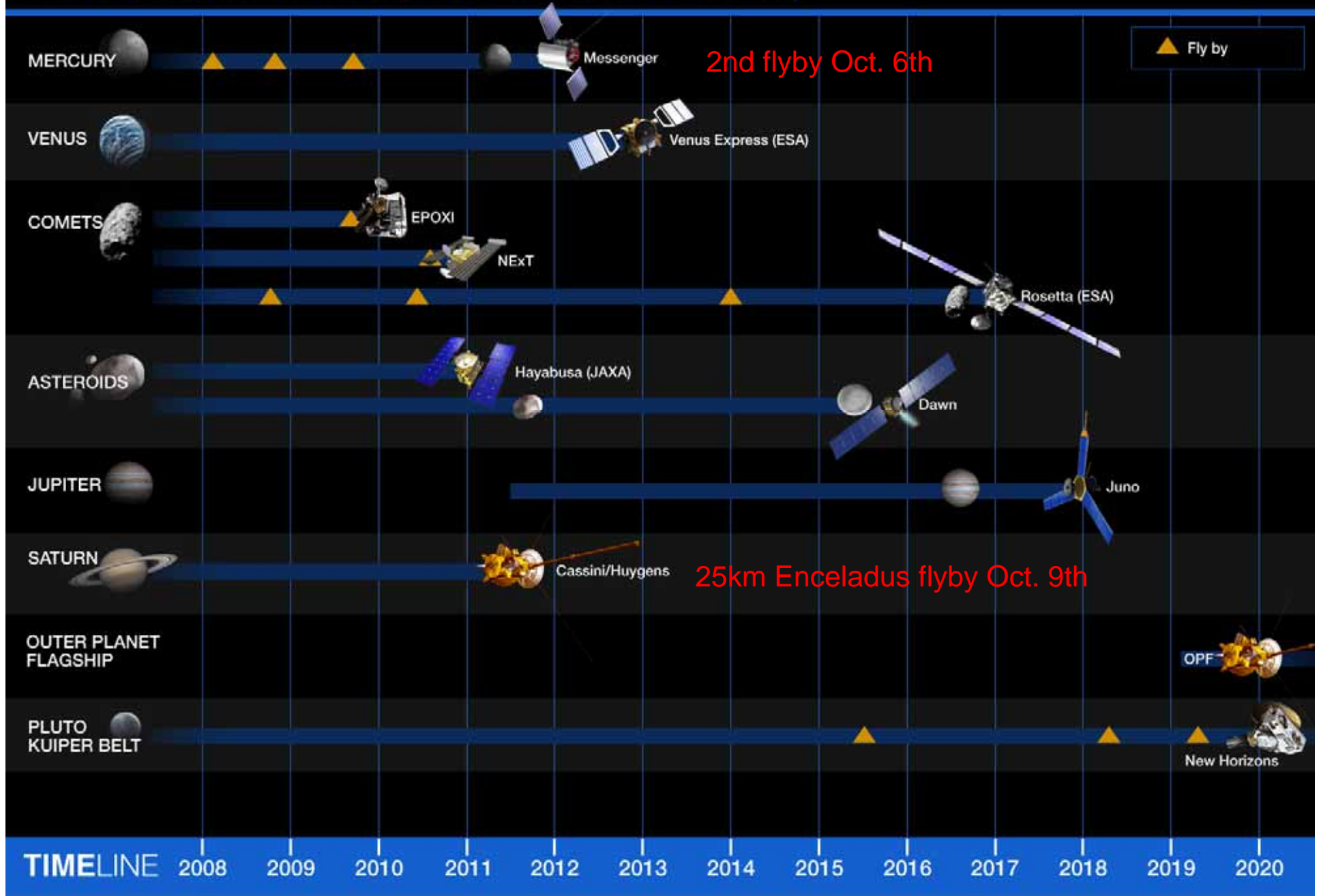


Recent Selections

- Mars Atmosphere and Volatile EvolutionN (MAVEN)
 - Launch in ~November 2013
- Astrobiology CAN #5
 - 10 selections (5 new 5 returning teams but 2 with new PIs)
27% success rate
 - Obtained contributions from Astrophysics and Earth Science Divisions
 - Press release today!

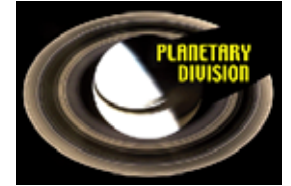


Planetary Missions (Non-Mars, Non-Lunar) timeline





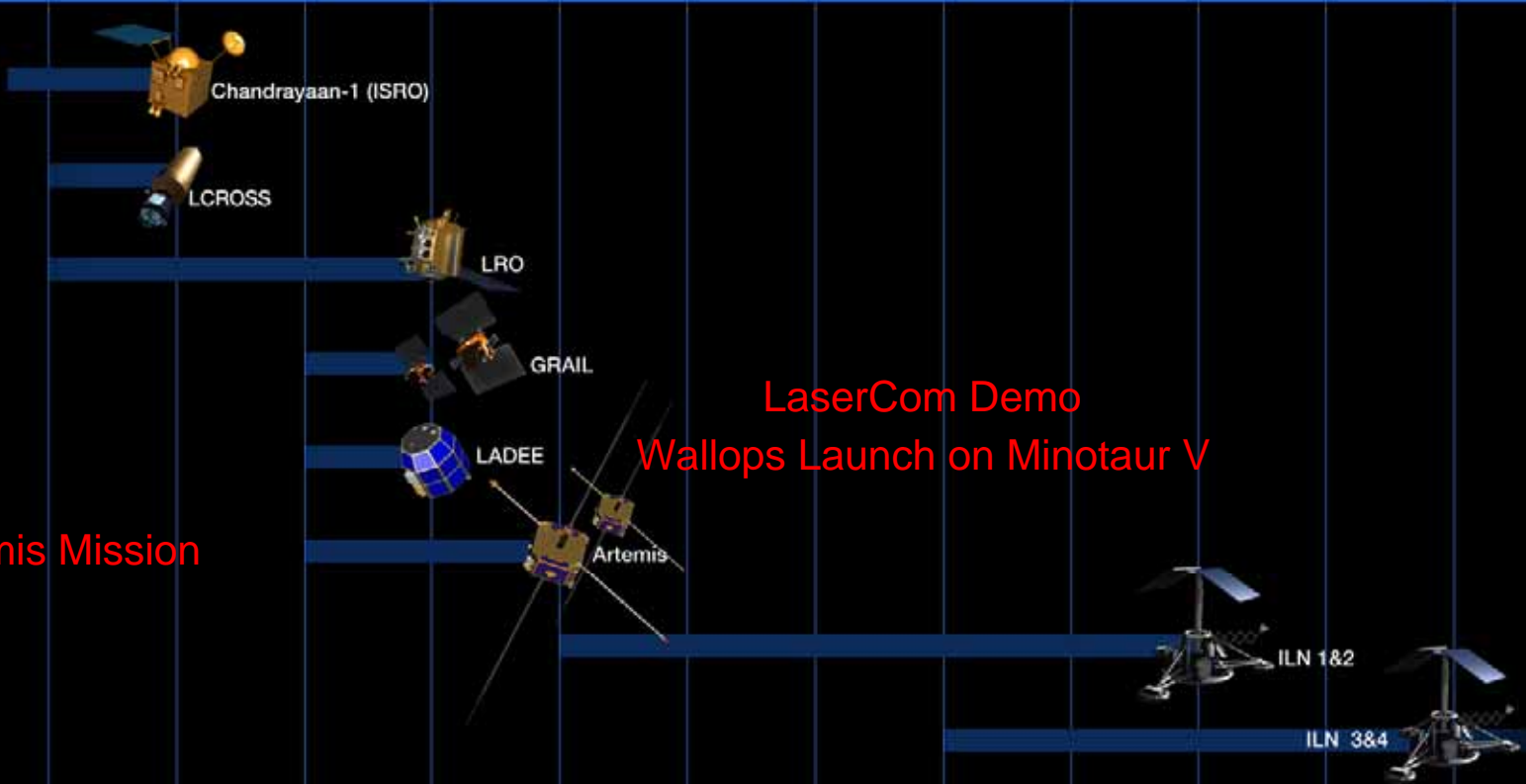
OPF Studies



- NASA-ESA joint studies of Jupiter System and Saturn System Science
 - Studies to concentrate on costing the “sweet spot” science missions
 - Align schedule with ESA: 2018-2022 launch date
- New schedule for delivery of studies is Nov. 3
- After delivery complete technical evaluation
- Presentation to NASA/ESA in January 2009
- One destination will go forward as a NASA/ESA effort
 - ESA: Continue as a part of the larger Cosmic Visions selection process
 - NASA: technical risk reduction and budget planning

Lunar Mission timeline

MOON



TIMELINE

2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020



PSS Findings and Recommendations



PSS recommendations

- R1: Breath of Decadal Committee
 - Reported this to COMPLEX (Aug. 20)
- R2: Over the next two years NASA refine cost estimates and candidate mission timelines for MSR
 - See Doug McCuiston's presentation
- R3: Rover mobility be considered a minimum requirement for sortie missions to the Moon
 - See Gordon Johnston's OSEWG presentation
- R4: Develop a plan in the near future to test and validate aerocapture system technologies
 - See David & Michelle's presentation on Friday



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”



SALMON: Types of Missions of Opportunity



- Traditional MoOs
 - Investigations involving participation in non-NASA space missions (ie: science instrument, technology demonstrations, hardware components ...)
- U.S. Participating Investigator
 - Co-Investigator (non-hardware) for a science or technology experiment to be built and flown by an agency other than NASA
- New Science Missions using Existing Spacecraft
 - Investigations that propose a new scientific use of existing NASA spacecraft (ie: NExT, EPOXI ...)
- Small Complete Missions
 - Science investigations that can be realized within the specified cost cap (includes all phases from access to space through data publication)
- Focused Opportunities
 - Investigations that address a specific, NASA-identified flight opportunity