

Outer Planets Assessment Group - July 2006 update

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- 1 - OPAG Scientific Goals and Pathways document
- 2 - Congressional Appropriations Committee funds Europa study
- 3 - Next OPAG meeting November 7-8th in Tucson, AZ

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1 - OPAG Scientific Goals and Pathways document  
<http://www.lpi.usra.edu/opag/>

The OPAG Steering Group has written a document that sets out the scientific goals for exploration of the outer solar system and pathways for achieving these goals. It is 35 pages (i.e. much shorter than the Survey and Roadmap - each over 140 pages) and we have included lots of color graphics which we hope convey the excitement and value of exploring the outer solar system. But basically it is a policy document and we present findings aimed at NASA's Solar System Exploration Division and the Planetary Science Subcommittee of the NAC, the official advisory body to NASA. This document will be delivered to PSS at the Thurs-Fri July 6-7th meeting in Washington DC by Fran Bagenal, Chair of OPAG and member of PSS.

A couple of things to remember.....

- just because we have written a document does not mean we are done. There's lots of work to do - following up the findings, continuing evaluation of scientific priorities as new science comes in, keeping up with research on critical technologies. And missions to the outer solar system have to be sold to those who provide the funds.

- The OPAG document is very different from the MEPAG document. This is because there are many more and varied objects in the outer solar system but also because Mars exploration has a much more extensive history.

Review from PSS member (not OPAG scientist) this morning - I could not resist passing it on....

"Eloquent and stimulating! Clear statements of scientific achievement and objectives, assessment of relevant technology, recommendations for science-enabling changes to the Agency.

Every secondary-school science teacher in the country should have this primer on what we now know and how to address what we don't."

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2 - Congressional Appropriations Committee funds Europa study

See - <http://www.spaceref.com/news/viewsr.html?pid=21107>

Here are 3 OPAG-related quotes - but it is worth reading the whole thing.

Science.—The recommendation includes a total of \$5,404,800,000 for the Science Mission Directorate, an increase of \$75,000,000 above the request. Increases above the request include: \$50,000,000 for research and analysis; \$15,000,000 to initiate planning for an orbiter/lander mission to Europa; and \$10,000,000 for Terrestrial Planet Finder for continued technology development.

The National Academy of Sciences, Solar System Exploration Decadal Survey of planetary scientists concluded that the highest priority of the scientific community is an orbiter/lander mission to Jupiter's moon, Europa. One of NASA's highest priorities is to search for life on other planets, and the Decadal Survey of planetary scientists determined that Europa has the highest probability of supporting life in our Solar System because of the confirmed presence of a planet-wide ocean of liquid salt water coupled with significant ocean bottom heat energy created by tidal flexing. The chemical and heat energy created by mid-ocean volcanic vents on the bottom of Earth's oceans have created communities of living organisms that thrive in absolute darkness in conditions nearly identical to the conditions that exist on the bottom of Europa's salt water oceans. For these reasons, in last year's conference report, the Congress directed NASA to begin planning for this mission, and to incorporate it into NASA's fiscal year 2007 budget request. The recommendation includes \$15,000,000 for NASA to study and plan for a new start for the single most important outer planetary mission of the Decadal Survey. The Committee urges NASA to incorporate additional funding for a Europa mission as part of its fiscal year 2008 budget request. The Committee expects that NASA would implement this new start utilizing a purely peer review process that capitalizes on proven capabilities to plan, design and execute complex outer planetary missions.

A critical factor that will affect the future missions NASA can initiate is the availability of power sources for probes that cannot rely on solar energy because they are traveling too far from, or too close to, the Sun. An Europa mission and the Solar Probe are examples. Radioisotope Power Systems (RPS) are required for these spacecraft. For the past several years, Russia has been supplying the

plutonium-238 (Pu-238) needed for U.S. RPSs because U.S. supplies are depleted. Now, Russia's own supplies are running dry. In addition, NASA has curtailed a major part of its technology development for advanced RPS devices. Therefore, NASA, in consultation with the Department of Energy and other appropriate agencies, shall submit a report to the Committee no later than August 31, 2007 on these issues. The report shall address the status of U.S. development of advanced RPS devices; a detailed explanation of what steps are being taken to ensure an adequate supply of plutonium-238 for spacecraft missions; and an indication of how many RPSs, of what design and capabilities, will be available for use, and when, to permit effective planning for future missions.

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Next OPAG meeting - Tucson, AZ - November 7-8th.

Note that this has moved forward a day (to encourage attendance of planetary scientists visiting Tucson later in the week for the Mike Belton celebration).

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