Small Bodies Assessment Group

Report to Planetary Science Subcommittee

December 4, 2009

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Planetary Science Institute

Presented by Hal Weaver, JHU Applied Physics Laboratory

Jul 14 - Sep 4 Decadal community white papers organized

Near-Earth Objects - M. Nolan (Arecibo Obs.) + 57
Asteroids - D. Britt (UCF) + 68
Comets - H. Weaver (JHU/APL), K. Meech (U. Hawaii) + 59
Small Satellites - B. Buratti (JPL) + 31
Dwarf Planets - W. Grundy (Lowell), W. McKinnon (WU) + 31
Centaurs/Small Irregular TNOs - Y. Fernandez (UCF) + 35
Interplanetary Dust - A. Espy (U.Florida), A. Graps (SWRI) + 35

139 Participants, 65 Institutions
(20 non-US Participants from 16 non-US Institutions)

Sep 9	WP presentation to Primitive Bodies Decadal Panel (MVS)
Oct 7	SBAG Workshop at DPS on WPs and decadal priorities (~45 attendees)
Oct 22-27	Decadal priorities poll (ranking WP priorities) 159 respondents (15 non-US) Summary and raw data delivered to the Primitive Bodies Decadal Panel

All SBAG decadal materials are posted at www.lpi.usra.edu/sbag

Second SBAG Workshop

Nov 18-19, 2009

Boulder, CO

- 40 participants + ~8 via Webex
- NASA Reports (NEO, Discovery & New Frontiers)
- Mission reports relevant to small bodies (including SB-targeted missions, Cassini, and Astrophysics missions)
- Roadmap section discussions
- Technology needs for current and future missions
- Role of SB in human exploration (Augustine Report)

Second SBAG Workshop

Findings (Draft)

- Uncertainties in Discovery and New Frontiers AO timing makes planning for solar system missions very difficult and discourages the continued significant investment of time and money by scientists, industry partners, and centers.

- The planetary community has an increasing need for large telescopes with the continuing discoveries of distant small bodies in our solar system. There should be an assessment of options, including the acquisition of more NASA guaranteed time, and even facilities, necessary to meet this need.

Second SBAG Workshop

Findings (Draft)

- The ability to do radar imaging of NEOs and main-belt asteroids is an inexpensive way of obtaining important data that would otherwise require much more expensive flyby missions. This capability needs to be maintained. It is supportive of both robotic and human exploration efforts.

- Electric propulsion allows missions that would be flagship (chemical) to be undertaken within a Discovery cost profile. However, NASA has focused its investment on systems optimized for infrequent large missions. NASA needs to invest in making commercial EP systems that are optimized for Discovery class missions generally available.