

FINDINGS FROM THE 11/19/09 SBAG MEETING

Finding: Uncertainties in Discovery and New Frontiers AO timing makes planning for solar system missions very difficult. It needs to be recognized that competitive proposals require substantial lead-time before the proposal deadline (often a year or more) in order to design a worthwhile mission. By the time an AO is released with a 90 day due date, proposals are in advanced stages of development and substantial investments have been made in both time and money by scientists, industry partners and NASA centers. Missions are generally designed around science to be conducted at specific targets. Targets move. Significant shifts in mission timeframes can result in the loss of mission opportunity and that substantial investment. Having a reliably predictable AO and mission timeframe would give confidence to the process and support the generation of quality proposals.

[SBAG was gratified to hear that the DRAFT Discovery AO was finally released on 2009 December 9 (roughly 6 months later than originally expected). But our community is still anxiously awaiting the release of the FINAL AO, and we encourage NASA to expedite that release for the reasons cited above.]

Finding: Radar imaging of NEOs and main-belt asteroids has proven to be a cost-effective way of obtaining detailed information on the physical properties of these objects that is supportive of future robotic and human exploration efforts. We encourage NASA to work with the NSF (which currently provides most of the funding for the Arecibo radar imaging) to find a way to maintain this important capability.

Finding: NASA is investing in an electric propulsion system (NEXT) that is optimized for Flagship and potentially New Frontiers class missions. There is no generally available system that is optimized for Discovery class missions. The great value of electric propulsion technology is being demonstrated by the Dawn mission - a Discovery mission that would otherwise be Flagship class but for the efficiency of electric propulsion thrusters. Electric propulsion greatly expands the suite of science that can be undertaken by Discovery missions. Unfortunately, the propulsion system used by Dawn is not reproducible. Results from industry and government studies highlight the significant cost reductions possible with a low-power Hall thruster system. This system could potentially be based on either existing commercial Hall thruster technology or ongoing NASA investments. Either option requires additional investments (PPU development, life testing, etc.) in order to field a system by the ~2012 Discovery opportunity. We encourage NASA to seek ways to make optimized propulsion technology systems available to all Discovery program proposers in the next AO.