

SBAG Community Poll

Primitive Bodies Decadal Priorities

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Background

In support of the NRC Planetary Science Decadal Survey in general and in particular the Primitive Bodies Decadal Panel, chaired by J. Veverka, the Small Bodies Assessment Group (SBAG) organized a series of community white papers to help identify top-level science issues and priorities across seven subdisciplines spanning the populations comprising primitive bodies. These papers were submitted to the Primitive Bodies panel on September 5, 2009, in time for their first meeting on September 9-11, 2009, and are posted at <http://www.psi.edu/decadal>. In the future they will be archived at <http://www.lpi.usra.edu/sbag>.

The subdiscipline priorities identified in the above white papers were used to construct a poll for ranking these priorities across all of primitive bodies and to collect additional information. The poll was opened on October 22, 2009 and was closed at noon (Pacific) on October 27, 2009, in order to submit the poll results and data to the Primitive Bodies panel prior to the beginning of their second meeting on October 28-30, 2009.

The Poll

The Primitive Bodies Decadal Priorities Poll was captured from the surveymonkey website on which it was hosted into the accompanying file poll.pdf. Every question requesting a ranking of priorities also offered an alternative of “Other” in which a person could insert an alternative priority and rank it as desired. No degenerate rankings were allowed (i.e., different options could not be given the same ranking). In addition, the order of options was randomized for each person accessing the poll to mitigate the effect of option order on the outcome.

After every question requiring a ranking, the respondent was also given an opportunity to submit a comment of any length. This allowed for any objections or other thoughts to be expressed and captured.

Respondent information and poll information were kept separate. Respondent information was collected in order to monitor any spam (there as none) and to understand the distribution of participants and their institutions.

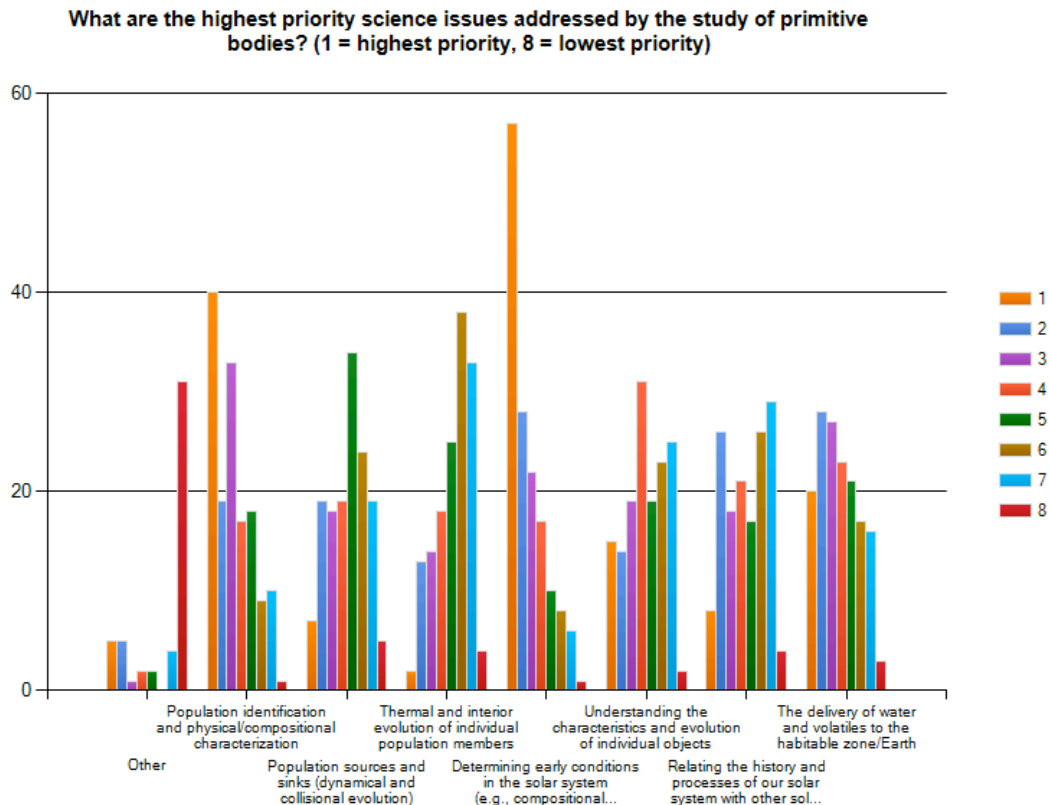
Respondents

159 people responded to the poll. Of these, 15 were from non-US institutions. They are listed in participants.xls. A casual scan of institutes with more than 5 participants include NASA centers (14), JHU/APL (13), PSI (11), JPL (9), UCLA (8), SWRI (6), University of Maryland (5), and University of Arizona (5).

Poll Results

A SurveyMonkey-generated summary of the poll results are provided in poll_summary.xls. The raw data is provided in poll_data.xls. The following is a brief description of the outcomes primarily of those questions requiring a ranking of priorities.

#4. *What are the highest priority science issues addressed by the study of primitive bodies? (1=highest priority, 8=lowest priority).*

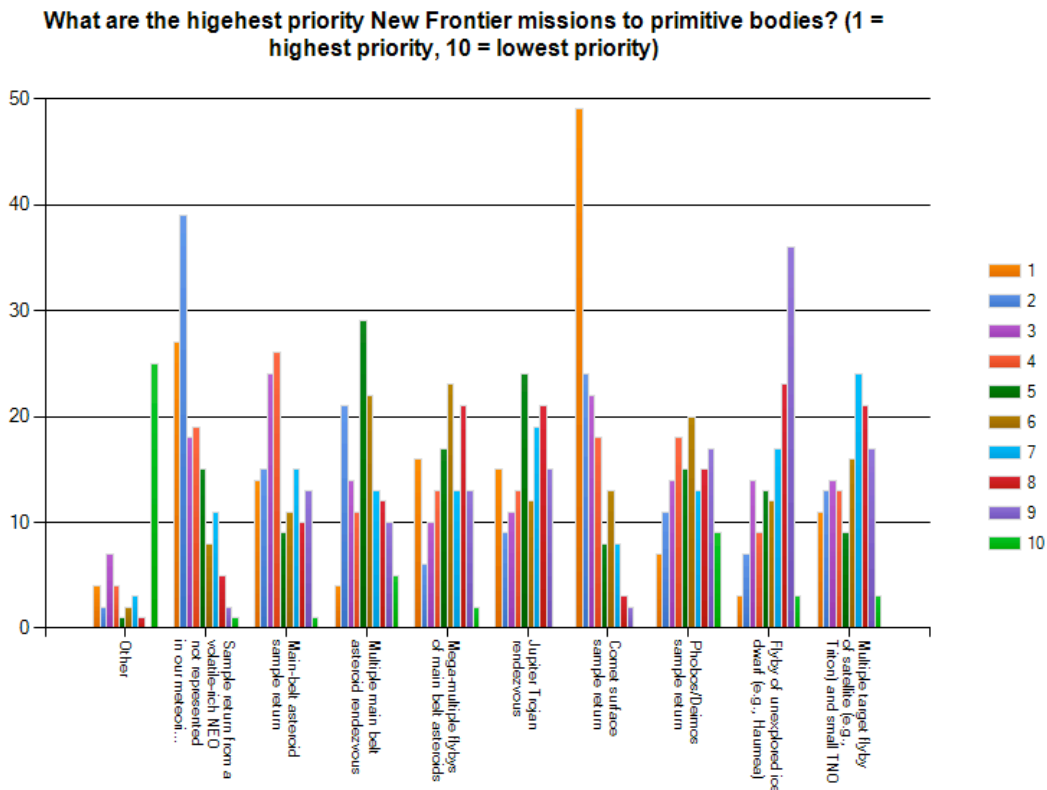


“Determining early conditions in the solar system” is the clear favorite with “Population identification and physical/compositional characterization” in second for the top ranking.

#6 - What are the highest priority Fladship missions to primitive bodies (1 = highest priority, 2 = lowest).

Only a Cryogenic Comet Nucleus Sample Return mission was specifically identified in the options. It was confirmed by more than 75% of the question respondents as the top priority in this mission class.

#8 - What are the highest-priority New Frontiers missions to primitive bodies? (1=highest priority, 10 = lowest priority)

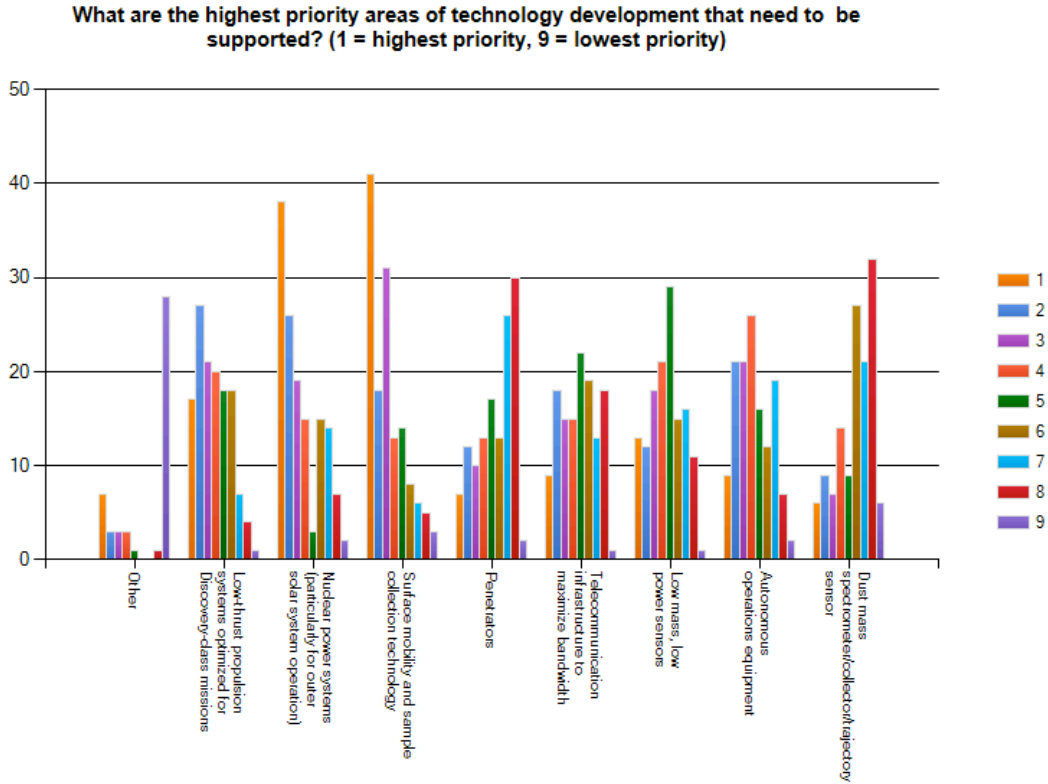


“Comet surface sample return” was the clear top priority, followed by a “Sample return from a volatile-rich NEO no represented in our meteorite collection.” In fact, together these two missions garnered 47% of the votes cast for 1st and 2nd ranking in the New Frontiers class.

#10 - What are the most important science goals that can be addressed by Discovery-class missions?

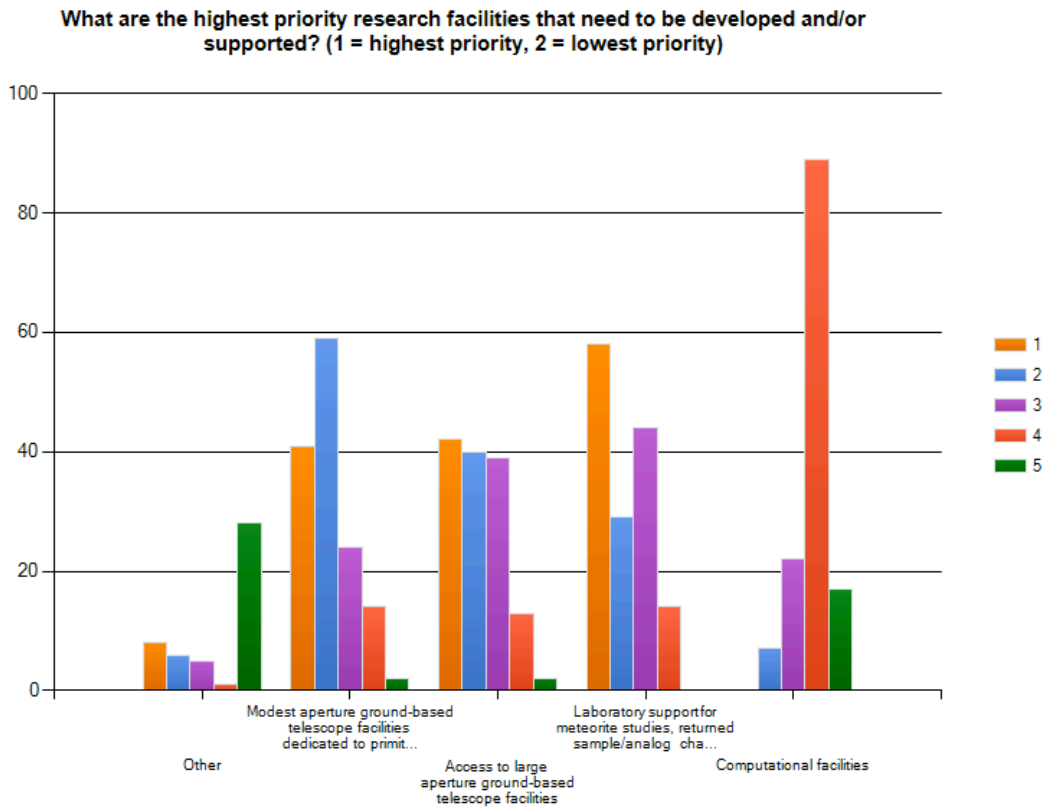
The 76 responses to this question spans the range of topics covered in #4 and more detailed topics. It gives one a sense of the rich potential of Discovery-class missions to primitive bodies. We are not about to run out of options.

#11 - What are the highest priority areas of technology development that need to be supported? (1 = highest priority, 9 = lowest priority)



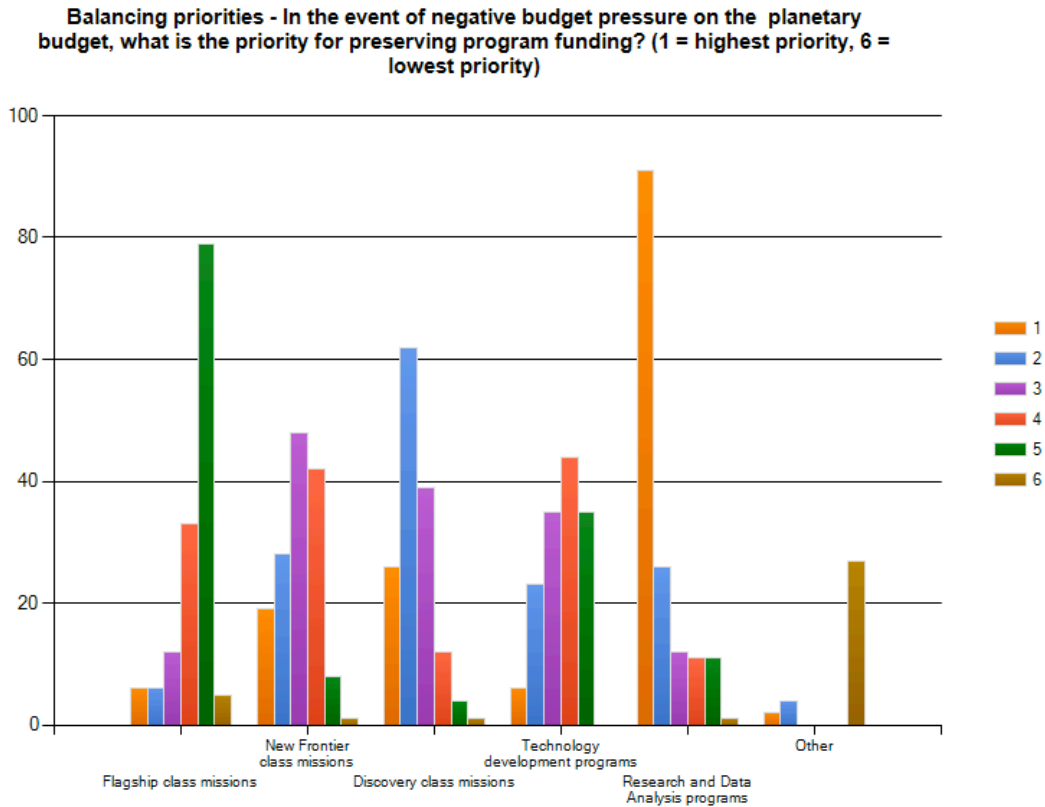
Consistent with the focus on sample return missions as a priority for New Frontier class missions, there was a clear feeling that “Surface mobility and sample collection technology” is a high priority for technology development. A close second in ranking is “Nuclear power systems (particularly for outer solar system operation).” This recognizes that a significant fraction of our primitive body populations that we desire to study reside in the outer solar system where nuclear systems are essential for future missions.

#13 - What are the highest priority research facilities that need to be developed and/or supported? (1 = highest priority, 5 = lowest priority)



Again consistent with a desire for sample return missions, “Laboratory support for meteorite studies, returned sample/analog characterization” was the top choice, but close behind in priority were telescopic facilities for primitive bodies search and characterization (consistent with the second ranked priority science question in #4).

#15 - *Balancing priorities - In the event of negative budget pressure on the planetary budget, what is the priority for preserving program funding? (1 = highest priority, 6 = lowest priority)*



Research and data analysis programs are overwhelmingly viewed as the last programmatic area one should consider cutting when budgets are compressed, followed by the Discovery program. It is notable that in times of financial difficulty, Flagship missions are given very low priority.