

Curt Niebur, Ph.D.
NASA Headquarters

February 19, 2021

Dear Curt,

Thank you for joining the Mercury Exploration Assessment Group on February 3, 2021, to discuss the New Frontiers 5 (NF-5) Second Community Announcement, dated November 5, 2020. The MExAG community appreciates the thoughtful approach to gathering feedback on the major parameters of NF-5 well in advance of the release of the final Announcement of Opportunity and we hope this practice continues for future calls.

The NF-5 mission themes were established long before the incorporation of MExAG, with a Mercury theme not yet included among the options. As such, the MExAG community's feedback focuses on the process of identifying acceptable NF mission themes rather than advocating specific changes to any of the major parameters outlined in the Second Community Announcement.

MExAG is concerned that the process of defining NF mission themes lacks a mechanism for incorporating new discoveries made over the course of many years. Specifically, the current timing and cadence of the NF program results in every other announcement and selection cycle approximately paralleling the Decadal Survey process (which has identified most, though not all, NF destinations and themes). As a consequence, NF calls, particularly those made at the end of the period represented by a given Decadal Survey report, lack a defined process to be responsive to discoveries over nearly the previous decade. The NF-4 AO that was released in the first half of the decade covered by *Vision and Voyages*, however, included a new theme that was not present in that Decadal Survey report, "in response to scientific advances, programmatic considerations, and congressional direction" [CAPS, 2020]. The *Options for the Fifth New Frontiers Announcement of Opportunity* [CAPS, 2020] report assessed themes identified in *Vision and Voyages* as well as the theme added by NASA in NF-4 (due in part to its scientific and programmatic merit). Given the NF-4 precedent, an important opportunity was missed in the Statement of Task for the CAPS [2020] report: an assessment of whether discoveries in the decade since the writing of *Vision and Voyages* merited other destinations being considered for NF-5. That MESSENGER revolutionized our understanding of Mercury early in the decade covered by *Vision and Voyages* is an example of the kinds of discoveries that such an assessment by CAPS could have evaluated.

New Frontiers is a vital program for pushing the boundaries of knowledge and exploration of our Solar System. It would be best served by a theme identification process that is clearly articulated, transparent, well-vetted, and capable of being responsive to new discoveries. The Decadal Survey process should continue to be the primary mechanism for identifying these themes as it includes both community-scale input and cost-aware prioritization mechanisms. However, it is important for there to be a clear and inclusive approach for assessing whether scientific discoveries made out of sync with the cadence of NF calls and Decadal Survey reports merit inclusion as themes for the second NF call in a given decade.

On behalf of the MExAG community,

Steve

Steven A. Hauck, II
Chair, Mercury Exploration Assessment Group