

March 2, 2018

The Honorable Lamar Smith
The Honorable Eddie Bernice Johnson
House Committee on Science, Space, and Technology
2321 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Smith and Ranking Member Johnson:

I am writing you today with a grave concern for the technological future of NASA. Unfortunately, the President's FY19 NASA Budget request guts the very research and technology development that is needed to accomplish the bold missions the Budget includes.

Specifically, the proposed re-organization of the "Space Technology Mission Directorate" into "Human Exploration" within NASA is among the most devastating long-term aspects proposed. Past history has shown that large development programs and technology development activities cannot and should not exist together, as a small hiccup in the development programs eats the budget of the basic research and technology advancement needed to accomplish more in space. In fact, when integrated in this manner approximately a decade ago, NASA's space technology activities were eviscerated.

Most striking, the Administration is proposing this re-organization without any discussion with Congress, industry or the university community, and without a NASA Administrator in place. This can only be described as an egregious over-reach by political appointees without an appreciation for the long-standing scope of the Agency. This proposal contradicts Title 7 of the space policy put forward by Congress and signed by President Trump in March 2017. Burying this proposed organizational change in the FY19 budget request, while simultaneously proposing other major cancelations and changes to the NASA portfolio, is an attempt to curtail community discussion of the importance of the Space Technology Mission Directorate to the nation's future in space.

In order to halt this re-organization until further deliberations can take place, I suggest writing a letter from Members to the Administration – much like the [letter](#) from Senators Cruz and Nelson about the International Space Station cancelation.

There are 4 over-arching reasons that this proposed re-organization should be stopped:

- 1) **Space Technology Works:** Over the past decade, Space Technology has demonstrated that a portfolio approach is critical to technology development. In this manner, technology is matured from concept to flight demonstration to mission infusion. There are multiple examples of space technology products being matured and infused into the Agency's missions, including mission-critical advancements in thermal protection systems, space communications, aerodynamic decelerators, and advanced chemical, solar electric and nuclear propulsion technology that are advancing Orion, the Agency's science missions, and its future human exploration goals.
- 2) **NASA's Breadth in Missions:** At its core, NASA is a technology Agency, and a symbol of U.S. technological superiority in the world. As such, NASA must have the capability to invest in the nation's future. The goal of Space Technology is to mature and infuse disruptive technology solutions into the nation's future space missions. Such investments are outside the mission-focused horizons of the HEO and Science mission directorates. There are significant cultural, workforce development, and practical reasons to manage technology development activities distinct from major spaceflight hardware development programs. These programs, which have different goals and timelines, are well

served by distinct management approaches. The Agency's Science and Exploration missions are linked in their common need for advanced technology. Focusing NASA's technology efforts solely on human lunar exploration is effectively a ~\$200M cut to the Science Mission Directorate's future.

3) **Hurting the NASA Workforce:** There are too many good people at the NASA Centers doing technology development to not have a champion at the highest levels. This proposed re-organization will curtail innovation at the NASA Centers. Space Technology is an investment in the core capabilities of the NASA Centers. It is the major source of funding to keep the Centers on the cutting edge and grow new capabilities. Without these investments, the NASA Centers will cease to innovate and the Agency will ultimately be left behind. Without being on the cutting edge itself, NASA will become unable to objectively evaluate disruptive solutions put forward by industry and academia that could dramatically impact our future in space.

4) **We Need a Forward Leaning Space Program:** This move is the same as that made in the 2005 timeframe. That 2005 decision is the primary reason NASA's leadership in technology development is just now starting to come back. NASA and the nation need a space technology program that is the envy of the world, not one buried within the bowels of the bureaucracy. At a time in which China, Europe, Russia, India and multiple countries in the Middle East are increasingly investing in space technology, the U.S. should make its investments in this arena more, not less, visible.

Space Technology has been previously authorized by multiple Congresses in a bipartisan manner (2010, 2012, 2017), appropriations have been relatively stable, and technology products are flowing into future Agency and industry missions. This proposed change will ultimately cut off this critical technology pipeline and lead to an Agency that is left-behind in the space arena, a domain which is increasingly sophisticated and being impacted by global technology disruption.

Space technology leadership is more important today than it was a decade ago, and such investments will be even more important for our nation's future in space. The proposed movement of the Space Technology Mission Directorate into Human Exploration will curtail our nation's leadership in space technology, adversely impacting the economic competitiveness, national security and quality of life impacts so important to our society and our leadership position in the world.

Please use your oversight authority of NASA to halt any plans for a re-organization of its four mission directorates (HEOMD, SMD, ARMD and STMD) until Congress has time to consider this matter, industry and the university community have been consulted, and a NASA Administrator is appointed, confirmed by Congress, and in place as the leader of the Agency.

I would be happy to discuss this matter with you further at any time.

Sincerely,



Bobby Braun

Dean of the College of Engineering and Applied Science, University of Colorado Boulder
Former NASA Chief Technologist, 2010-2011

cc:

The Honorable Brian Babin, Chairman, Subcommittee on Space
The Honorable Ami Bera, Ranking Member, Subcommittee on Space