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November 18, 2010

Mr. Charles F. Bolden, Jr., Administrator
Office of the Administrator
NASA Headquarters
Washington, DC 20546-0001

Dr. Steven Chu, Secretary of Energy
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

The Honorable John D. Rockefeller, IV, Chairman
Committee on Commerce, Science and Transportation
United States Senate
Washington, DC 20510

The Honorable Bart Gordon, Chairman
Committee on Science and Technology
House of Representatives
Washington, DC 20515

Dr. Steven E. Koonin
Undersecretary for Science
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Dr. William Brinkman
Director, Office of Science
U.S. Department of Energy
1000 Independence Ave., SW
Washington, DC 20585

Dr. Edward J. Weiler
Associate Administrator
Science Mission Directorate,
NASA Headquarters
Washington, DC 20546-0001

Dear Mr. Bolden, Dr. Chu, Chairman Rockefeller, Chairman Gordon, Dr. Koonin, Dr. Brinkman, and Dr. Weiler:

The Astronomy & Astrophysics Advisory Committee (AAAC) is charged in part to assess and make recommendations regarding the status of activities of the NSF, NASA, and DOE as they relate to cooperative national programmatic activities in astronomy and astrophysics and space exploration. At its 2010 October 7-8 meeting, the AAAC was briefed on the Pu-238 production restart project status, an activity involving NASA and DOE coordination.

The manmade radioactive isotope Pu-238 can be used to generate electricity due to the heat emitted by its radioactive decay. Encapsulated in a radioisotope thermoelectric generator (RTG), this vital element is necessary for powering probes

sent to the outer reaches of the solar system, a research area where the US can clearly claim significant international leadership.

A National Academies Report, entitled "Radioisotope Power Systems: An Imperative for Maintaining U.S. Leadership in Space Exploration," issued in 2009, articulated the critical need for this element to maintain US leadership in space exploration. Among the findings and recommendations made in this report were: a) immediate action is required to begin producing Pu-238 as it will take about 8 years from initiation to full production of the required 5 kg/year; and b) cooperation between the DOE and NASA, with support from the President and funding from Congress, would be required to fulfill this vital need.

The AAAC is concerned that delays in the restart of this production effort hinder not only the ability for the US to conduct NASA planetary missions to the outer solar system, but may well impede development and implementation of future astrophysics missions requiring significant power resources operating in deep space beyond Earth orbit. Delay of restart adds increased cost and schedule delays to the development of NASA planetary science missions. Reliance on Pu-238 from international sources, such as the Russians, is challenging. The AAAC is concerned that resumption of domestic Pu-238 RTG production has not yet occurred and that the dialogue necessary to effect resumption has been inconclusive.

The AAAC urges that, in consultation with Congress, prompt action be taken and appropriate budgetary resources be identified through cooperative coordination between DOE, NASA, and, if applicable, other federal agencies (i.e., NNSA, Dept. Homeland Security), to enable the Pu-238 project production restart for deep space mission applications.

Sincerely yours, on behalf of the Committee,

Kim Griest,
Chair, Astronomy and Astrophysics Advisory Committee

cc: Senator Bill Nelson, Chairman, Subcommittee on Science and Space, Committee on Commerce, Science and Transportation, United States Senate
Senator Byron Dorgan, Chairman, Subcommittee on Energy and Water Development, Committee on Appropriations, United States Senate
Representative Peter J. Visclosky, Chairman, Subcommittee on Energy and Water Development, Committee on Appropriations, House of Representatives
Representative Gabrielle Giffords, Chairman, Subcommittee on Space and Aeronautics, Committee on Science and Technology, House of Representatives
Dr. Subra Suresh, Director, National Science Foundation
Dr. Cora Marrett, Acting Deputy Director, National Science Foundation
Dr. Jon Morse, Director, Astrophysics Division, NASA Headquarters
Dr. Patricia Dehmer, Deputy Director, Office of Science, U.S. Department of Energy
Dr. Dennis Kovar, Associate Director, HEP, U.S. Department of Energy
Dr. Carl Wieman, Associate Director for Science, Office of Science & Technology Policy, Executive Office of the President
Dr. Edward Seidel, Assistant Director, Mathematical & Physical Sciences Directorate, National Science Foundation
Dr. James Ulvestad, Director, Division of Astronomical Sciences, National Science Foundation
Dr. Raynor Taylor, Astrophysics Division, NASA Headquarters
Dr. Kathleen Turner, Program Manager, Office of High Energy Physics, U.S. Department of Energy
Dr. Philip Puxley, Program Director, Division of Astronomical Sciences, National Science Foundation
Mr. Greg Gershuny, Assistant to Dr. Carl Wieman, Office of Science & Technology Policy
Dr. J.D. Kundu, Program Examiner, DOE, Office of Management and Budget
Dr. Celinda Marsh, Program Examiner, NASA, Office of Management and Budget
Dr. Brian Dewhurst, Program Examiner, NASA, Office of Management and Budget
Dr. Joel Parriott, Program Examiner, NSF, Office of Management and Budget

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