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abstract
More than any other country, the United States is reliant upon space assets. More broadly, our civilization has inadvertently but markedly increased its vulnerability to threats the space environment poses to those assets. Space weather—changes in the space environment due to solar events—has a demonstrated ability to disrupt high-frequency communications, jam GPS signals, and cause electrical power blackouts on an unprecedented scale. Awareness of this global vulnerability is heightened during the current solar maximum, drawing the attention of the top scientific and political leadership of the United States and the United Kingdom, as well as of nations around the world. Debris poses a similar enhanced threat. The 2007 Chinese ASAT test and the 2009 Iridium-Cosmos collision have greatly increased the risk posed to space assets and accelerated international efforts on this issue. There is growing recognition that no one nation has either the resources or the geography to overcome these threats alone—international cooperation is required. Per the President’s direction, the State Department is leading U.S. engagement with the international community on these issues. Utilizing government and private sector science and technology expertise, the Department is building trust and promoting confidence, enabling data sharing, and developing best practices that will decrease civilization’s vulnerability to these natural and manmade threats to the space environment.

biosketch
Dr. James N Head is Systems Engineer and Innovation Engine Program Manager at Raytheon. He has worked a variety of defense aerospace programs, numerous research and develop activities, and many new business capture efforts. He has won and executed NASA contracts on planetary spacecraft technology development, one of which led to the 2013 LADEE mission to the moon. He has multiple patents and invention disclosures in missile and spacecraft design. In 2012 Dr. Head completed two-years as an AAAS Science and Technology Policy Fellow, hosted at the Office of Space and Advanced Technology at the U.S. Department of State in Washington, D.C. His portfolio covered space situational awareness, principally space weather, space debris, and near-earth asteroids. Dr. Head represented the State Department in the U.S. interagency process and developed and deployed new government policy related to international cooperation in space weather research and operations. He represented the United States in international fora, including the United Nations and the U.S.-EU Space Security Dialogue. His leadership in international venues was recognized with a State Department Superior Honor Award.