



ADVANCING EARTH  
AND SPACE SCIENCE

25 April 2018

Dear Congressman Perlmutter:

On behalf of the American Geophysical Union (AGU) and its 60,000 members, I am writing to reaffirm our endorsement of the Space Weather Research and Forecasting Act (H.R. 3086). We're encouraged that the House Science, Space, and Technology Committee is prioritizing this critical issue.

Given the economic and opportunity costs associated with space weather, we support the bill's approach of creating a national, coordinated plan to advance our understanding of the relationship between the sun and Earth and to ensure the development of new technologies and forecasting capabilities to mitigate the threat posed by space weather. The National Research Council estimates that a severe space weather event has the potential to inflict \$1-2 trillion dollars of economic and societal damage in the first year alone and impact more than 130 million people. To recover from such an event could take from 4-10 years.<sup>1</sup> Moreover, space weather fluctuations are not limited to rare catastrophic events but regularly impact our society and economy. It's estimated that the average economic impact of moderate geomagnetic events on the electric power grid in the U.S. is \$7 to \$10 billion per year.<sup>2</sup> Additionally, a moderate space weather event, if it were to disable the Global Navigation Satellite System (GNSS) for even one hour, would cost end-users, such as our energy and transportation sectors, \$4 to \$8 million in losses.<sup>3</sup>

We appreciate the bill's recognition that a partnership between industry, academia, and federal agencies is needed to further our understanding and capacity to address the impacts of space weather. As a community dedicated to advancing the understanding of Earth and space science, we applaud the bill's intent to further scientifically-informed action towards disaster preparation, mitigation, response, and recovery.

AGU looks forward to working with you as this legislation advances.

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<sup>1</sup> National Research Council (2008) *Severe Space Weather Events: Understanding Societal and Economic Impacts: A Workshop Report*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/12507>.

<sup>2</sup> Schrijver, C. J. (2015), Socio-Economic Hazards and Impacts of Space Weather: The Important Range Between Mild and Extreme, *Space Weather*, 13, 524–528, doi:[10.1002/2015SW001252](https://doi.org/10.1002/2015SW001252).

<sup>3</sup> Abt Associates (2017), Social and Economic Impacts of Space Weather in the United States, Report for NOAA, <https://www.weather.gov/media/news/SpaceWeatherEconomicImpactsReportOct-2017.pdf>.



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With best wishes,

A handwritten signature in black ink that reads 'Christine W. McEntee'.

Christine W. McEntee  
CEO/Executive Director  
American Geophysical Union

CC  
Chairman Lamar Smith  
Ranking Member Eddie Bernice Johnson