



COMMITTEE ON
SCIENCE, SPACE, AND TECHNOLOGY
REPUBLICANS Frank Lucas, Ranking Member

Opening Statement of Environment Subcommittee Ranking Member Roger Marshall

Joint Environment and Space & Aeronautics Subcommittee Hearing - *Space Weather: Advancing Research, Monitoring, and Forecasting Capabilities*

October 23, 2019

Thank you, Chairwoman Fletcher, for holding this important hearing today on the topic of space weather. I also want to thank our witnesses for being here this afternoon and sharing their expertise on this important topic.

Space weather is a term many people have not often heard. The term refers to the interaction of solar activity with technology and life on Earth as well as in orbit. This is by no means a new phenomenon, as we have records of solar activity going back more than 150 years. However, our need to forecast this phenomenon has become more critical as our utilization of space-based technology has increased.

When I consider the importance of space weather research to Kansans, I think about the potential negative impacts solar activity could have on our farmers and ranchers. The agriculture sector is usually among the first of industry who adapt new and innovative technologies to improve their operations.

Kansas farmers in particular have been at the forefront of adapting precision agricultural practices. Precision agriculture refers to the use of technologies such as GPS and unmanned aerial vehicles to make decisions related to planting crops and implementing conservation practices.

The use of these technologies helps our farmers make better informed decisions about the timing and location of planting crops in order to minimize irrigation and the use of fertilizer and pesticides. I've seen firsthand the improvements in productivity and crop yields for our farmers and ranchers who utilize these techniques. None of these would be possible without the use of GPS and satellite imagery, which are vulnerable to solar weather incidents.

Accurate weather forecasting is another concern for our farmers. Knowing precisely when to plant crops can help significantly reduce input costs for farmers, which in turn reduces costs for consumers. An especially severe space weather event has the potential to damage our

orbiting weather satellites, which in turn would significantly reduce the accuracy of our weather forecasts needed to help our farmers make informed decisions.

A final area of concern for rural Kansans is the potential impacts a geomagnetic storm could have on our electrical grid. We have a basic understanding of the potential disruptions a severe event could have on our power grid, resulting in blackouts which would affect hospitals, schools, businesses, and our farmers. What we still need is a more advanced knowledge of how to prevent or mitigate the damages a space weather caused black out could have on critical infrastructure.

I look forward to hearing from our witnesses on how we can ensure rural Kansans and all Americans are prepared for these events. Thank you, Chairwoman Fletcher, I yield back.

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