U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON
SCIENCE, SPACE, & TECHNOLOGY
Opening Statement

Chairwoman Kendra Horn (D-OK)
of the Subcommittee on Space and Aeronautics

Joint Subcommittee Hearing:
Space Weather: Advancing Research, Monitoring, and Forecasting Capabilities
Wednesday, October 23, 2019

Good afternoon, and welcome to our witnesses. I look forward to your testimony. I'm pleased be working with you, Madame Chair, on this important joint hearing on "Space Weather: Advancing Research, Monitoring, and Forecasting Capabilities."

This is a timely hearing, because it allows us to talk about the connection between what we do in space and our everyday lives on Earth. Our activities in space enable not only scientific discovery and exploration, but also banking, telemedicine, natural resource management, and so much more. The orbiting spacecraft above—the weather, communications, GPS, and Earth observing systems–are a critical part of our national infrastructure.

Solar phenomena—or space weather— such as solar flares, the solar wind, and geomagnetic storms of energized charged particles, however, can disrupt our ground and space-based technologies and infrastructure.

Space weather can affect everything from electrical power systems, satellites, aircraft, and spacecraft operations (including human spaceflight operations), and other ground and space-based systems. In short, severe space weather events pose significant threats to our infrastructure, and in turn, to our economy, national security, and society.

Currently, NASA heliospheric research satellites and a NOAA-NASA-Air Force operational satellite collect observations used in space weather modeling and prediction. NASA's Advanced Composition Explorer and the joint European Space Agency-NASA SOHO mission launched over 20 years ago, along with other NASA spacecraft such as STEREO and the Solar Dynamics Observatory, provide critical information in forecasting solar eruptions and their movement through the heliosphere.

However, those systems are aging, and we will have gaps in space weather data once they reach the end of their operating lifetimes. We must develop the next generation systems for space weather observations.

As a first step, however, we need to understand at a national level what space weather observations and systems are needed; we need a strategy. Because we are only at the early stages of our ability to predict and forecast space weather. Improving our current capabilities will require a strategy and investments in basic research, observations, models, and the ability to transition research and models into operational use.

The National Academies 2013 solar and space physics decadal survey stated, "Achievement of critical continuity of key space environment parameters, their utilization in advanced models, and application to operations constitute a major endeavor that will require unprecedented cooperation among agencies in the areas in which each has specific expertise and unique capabilities."

Making advances in space weather will require a coordinated effort among researchers, operational institutions, government, academic, commercial, and international entities. The role and perspectives of academia are essential in this effort. While we were unable to include that perspective today due to unforeseen circumstances as Chair Fletcher noted, it's important to recognize the importance of academia in advancing our space weather capabilities.

Madame Chair, the nation's efforts to address the threats of space weather demonstrate the ways in which our investments in NASA and basic research benefit our society. In the case of space weather, these investments are integral in ensuring the safety and operations of our critical infrastructure on the ground and in space.

I look forward to hearing from our witnesses on what is needed to advance our nation's understanding and our ability to monitor, predict, and forecast space weather.
Thank you and I yield back.