



Space weather refers to the variations in the space environment between the Sun and Earth. Violent and drastic changes on the Sun, such as Coronal Mass Ejections (CMEs), can cause space weather storms. Besides triggering beautiful auroras, these space weather storms can significantly impact ground and space-based technological systems such as electric power grids, spacecraft, aviation, and the Global Positioning System (GPS). With the increasing dependence of humanity on high-tech systems, it is important to study the causes and effects of space weather storms to allow for preparation and timely response. This presentation will provide an overview of space weather, its history, and how it impacts our technological society. It will also include an overview of space weather forecasting methods and techniques, and describe how we use satellite observations and simulations in near-Earth space to understand space weather effects.

Amani Reddy received her B. Tech. Degree in Electronics and Communications Engineering from the Jawaharlal Institute of Technology, Hyderabad, in 2005. She received her M.S. in Electrical and Computer Engineering in 2007, and Ph.D. in Engineering in 2015, both from the University of Alaska Fairbanks (UAF). Following her Ph.D., Dr. Reddy worked as a post-doctoral Fellow (2015-2019) in the Waves Lab at the University of Alaska Fairbanks. She is currently working as a research Assistant Professor in the Institute of Northern Engineering at UAF. Her research has been funded by grants from NASA, A A

the Earth's magnetosphere, ground and space-based very low frequency wave injection experiments, and observation-simulation studies of Earth's magnetosphere. Dr. Reddy has extensive experience in the analysis of waves and particle data from spacecraft such as IMAGE, DMSP, OGO 1, Van Allen Probes, and wave propagation simulations using ray tracing program. She pioneered the studies relating quiet and storm time variations in magnetospheric field-aligned electron and ion densities to changes in the thermospheric conditions. She has authored or co-authored three extensive papers in a journal of geophysical research, space physics, four IEEE proceedings, and several conference abstracts. She presented research results at many international conferences, workshops, and NASA focus science team meetings.

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