

Highlights of Space Weather Services/Capabilities at NASA/GSFC Space Weather Center

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The importance of space weather has been recognized world-wide. Our society depends increasingly on technological infrastructure, including the power grid as well as satellites used for communication and navigation. Such technologies, however, are vulnerable to space weather effects caused by the Sun's variability.

NASA GSFC's Space Weather Center (SWC) (http://science.gsfc.nasa.gov//674/swx_services/swx_services.html) has developed space weather products/capabilities/services that not only respond to NASA's needs but also address broader interests by leveraging the latest scientific research results and state-of-the-art models hosted at the Community Coordinated Modeling Center (CCMC: <http://ccmc.gsfc.nasa.gov>).

By combining forefront space weather science and models, employing an innovative and configurable dissemination system (iSWA.gsfc.nasa.gov), taking advantage of scientific expertise – both in-house and from the broader community – as well as fostering and actively participating in multilateral collaborations both nationally and internationally, NASA/GSFC space weather Center, as a sibling organization to CCMC, is poised to address NASA's space weather needs (and needs of various partners) and to help enhancing space weather forecasting capabilities collaboratively. With a large number of state-of-the-art physics-based models running in real-time covering the whole space weather domain, it offers predictive capabilities and a comprehensive view of space weather events throughout the solar system. In this paper, we will provide some highlights of our service products/capabilities. In particular, we will take the 23 January and the 27 January space weather events as examples to illustrate how we can use the iSWA system to track them in the interplanetary space and forecast their impacts.

Keywords: Space Weather, Community Coordinated Modeling Center