Phillip
Chamberlin
CU/LASP
Chih-Ting Hsu, NCAR
Nick Arge, NASA/GSFC
Shaousui Xu, Berkeley
Mark Vincent, Maverick Analysis
Thomas Berger, NCAR
Edward Thiemann, CU/LASP
Shea Hess Webber, Stanford
Laura Balmaceda, George Mason
Sijie Yu, NJIT
Shah Bahauddin, CU/LASP
Nick Pedatella, NCAR
Liying Qian, NCAR
Jenny Rodriguez Gomez, CUA, NASA
Fazlul Laskar, CU/LASP
Jeff Thayer, CU
Todd Huksema, Stanford
Bin Chen, NJIT
Meiqi Wang, NJIT
Bennet Schwab, Berkeley
Natasha Flyer, Flyer Research
Nathaniel Holland, CU
Poster
Solar Extreme-Ultraviolet (EUV) flux is a dominant heating and ionization source for the Ionosphere – Thermosphere – Mesosphere (ITM) system. Studies of the ITM often rely on the F10.7 index (solar radio flux at the wavelength of 10.7 cm) as a primary solar driver. However, it is currently known that this index does not directly describe the solar input in the EUV wavelength range below 102.5 nm that is directly responsible for much of the ionization of the thermosphere.

EUV data from numerous satellite observations (e.g., SOHO/SEM, TIMED/SEE, SDO/EVE, GOES/EXIS), new indices (e.g., S10.7, Y10.7, Mg II, Lyman-Alpha) and new proxies from solar irradiance models (SIP, E10.7, FISM2 EUV, CODET) have become available within the last two decades. These indices and proxy measures can better characterize solar energy input to the thermosphere than the traditionally used F10.7 index.

The overarching goal of this FST is to develop the ability to reliably specify and predict the effects of solar variability on the ITM system. Specific objectives include: 1) identifying new and/or improved EUV indices for driving model predictions of ITM structure; 2) improved understanding of how particular portions of the EUV spectrum influence specific aspects of ITM structure (e.g., ionospheric profile shape, thermospheric composition, density, or temperature); and 3) exploring new EUV observations characterizing the interactions between the ionosphere and thermosphere. Studies that validate predictions of ITM properties in response to rapid variations in EUV (e.g., from solar flares) will be necessary to evaluate the success of alternatives to F10.7.
Poster session day
Tuesday, April 28, 2026
Poster location
19
Meeting homepage
2026 Space Weather Workshop
Download to PDF