

**Space Science Seminar**  
**Thursday, 2017 November 16**  
**10:30 a.m.**  
**NSSTC/2096**

**A Solar Physics Feature Database  
and  
Magnetic Energy Coupling Studies**

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Host: Patrick Champey

Essential for many outstanding solar physics problems is elucidating the dynamic magnetic to radiative energy coupling of its atmosphere. The present-day status of our "solar physics feature database" (SPFD) — which provides high-cadence broad spectra radiative and line-of-sight (LOS) magnetic flux observations of diverse large-scale, solar atmospheric plasma conditions and coronal magnetic field environments across long time baselines — will be discussed first. We will then revisit our May 2010 - May 2013 SPFD study (Orange et al., ApJ 2016, 833, 257), which indicated that constricted spectra analyses and assumptions of a single generation mechanism could explain previous discrepancies in results derived from simplified scaling laws relating global solar atmospheric properties. Finally, we will build upon this work's suggestion that the linkage of solar atmospheric energy coupling favored a plasma-heating connectivity of dominant (magnetic) and diffuse components. In particular, we will leverage energetic redistribution vantage points, provided by the SPFD, to assess feedbacks of self-similar generation and diffuse unresolved emission, and diagnose their interplay, within diverse, large-scale, thermodynamic, and magnetic field environments.

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