

SPD Thomas Metcalf Travel Award Report

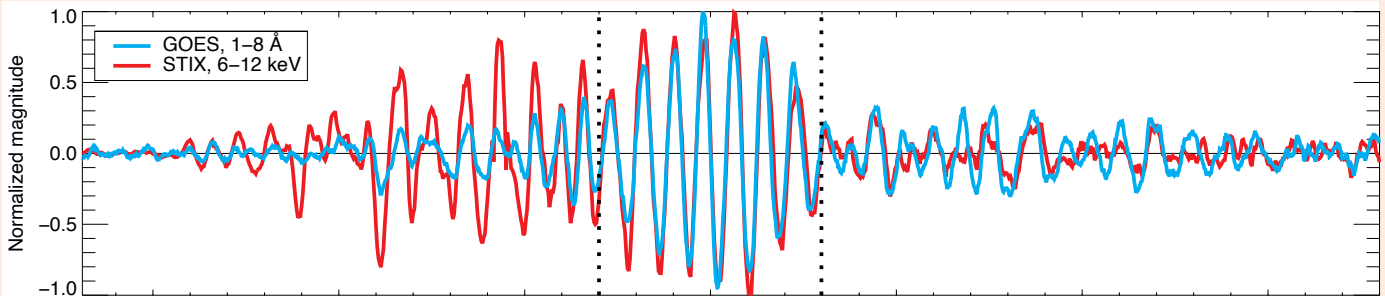
Hinode-16/IRIS-13 Meeting
Niigata, Japan, 25-29 September 2023



Dr. Ryan French

Ryan is a Brinson Prize Fellow at the National Solar Observatory (Boulder, Colorado), working in the Kazachenko group. His research primarily explores the nature of solar flares on the Sun, using imaging, spectroscopy and spectropolarimetry from telescopes on the ground and in space.

Ryan is also an avid science communicator, with a passion for communicating Sun-and-space science to the public.



Oral contribution (O-9)

IRIS and STIX Observations of Oscillations in a Solar Flare Fan

*R. French (NSO), L. Hayes (ESA), and M. Kazachenko (NSO/CU Boulder),
C. Shen (CfA) and K. Reeves (CfA)*

We present simultaneous IRIS and X-ray observations of a coronal quasi-periodic pulsations (QPPs) source, within a loop-top fan structure in the impulsive phase of a long-duration solar flare. The strikingly coherent oscillations (of period 50 seconds) were observed in thermal emission from the Solar Orbiter STIX instrument, synchronized with GOES SXR emission. We also present contemporaneous observations of the fan structure oscillations in IRIS Fe XXI intensity, Doppler and non-thermal velocity, finding QPPs with matching periods, and in phase with, the X-ray data. A new sliding raster technique is introduced to push the cadence of the IRIS spectra time series, with implications for science possible with rastering MUSE slits. To our knowledge, this dataset is the first simultaneous UV and X-ray imaging of a coronal QPP source. By combining these multi-instrument datasets, we provide new insights into the origin of QPPs in the solar corona.

*I'd like to thank both the **AAS/SPD Metcalf Travel Award Committee** and **Hinode-16/IRIS-13 SOC** for this award. Attending the meeting in Niigata prompted many valuable discussions on solar flare oscillations, and the upcoming publication will be stronger as a result.*