WG3: SXR and EUV Response to Flare Heating

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- Originally proposed as the RHESSI-SDO group
- Actual instruments presented included: SDO/AIA, SDO/EVE, SDO/HMI, Hinode/XRT, FOXSI, SOHO/LASCO, Kanzelhohe, TRACE, GOES, SORCE, PROBA2/LYRA, …

- Session 1: **DEMs** (Aswathi, Motorina, Su, Hernandez-Perez)

- Session 2: **Hydrogen emission** (Joint with WG1&WG6; Kleint, Kotrc, Kasparova, Heinzel)

- Session 3: **Chromospheric Evaporation** (Joint with WG1; Ning, Battaglia, Gomory, Fleishman)

- Session 4: **Active Regions** (Holman, Ishikawa, Thalmann, Veronig)

- Session 5: **QPP & Energetics** (Hayes, Dennis, Aschwanden, Warmuth)

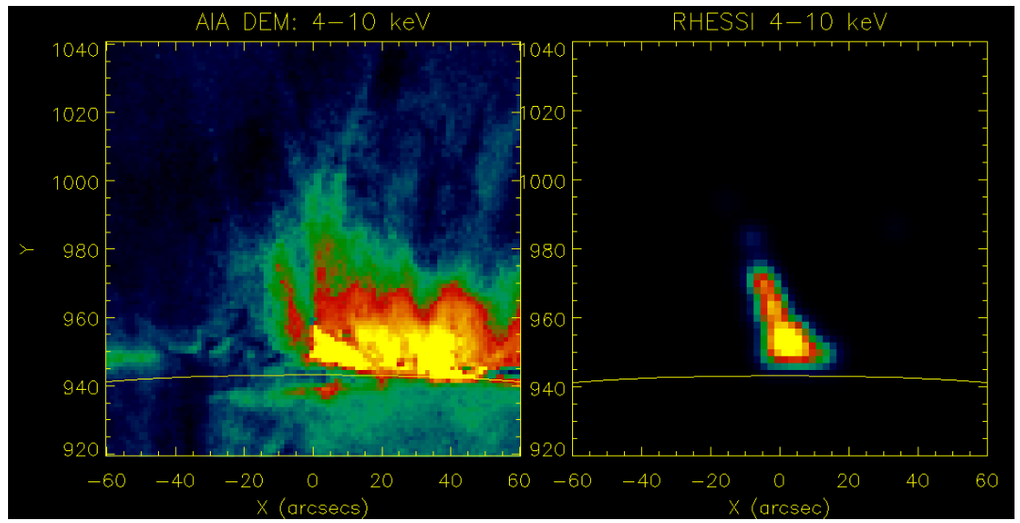
- Session 6: **Misc.** (Kawate, Kuhar, Joshi, Caspi, Milligan)

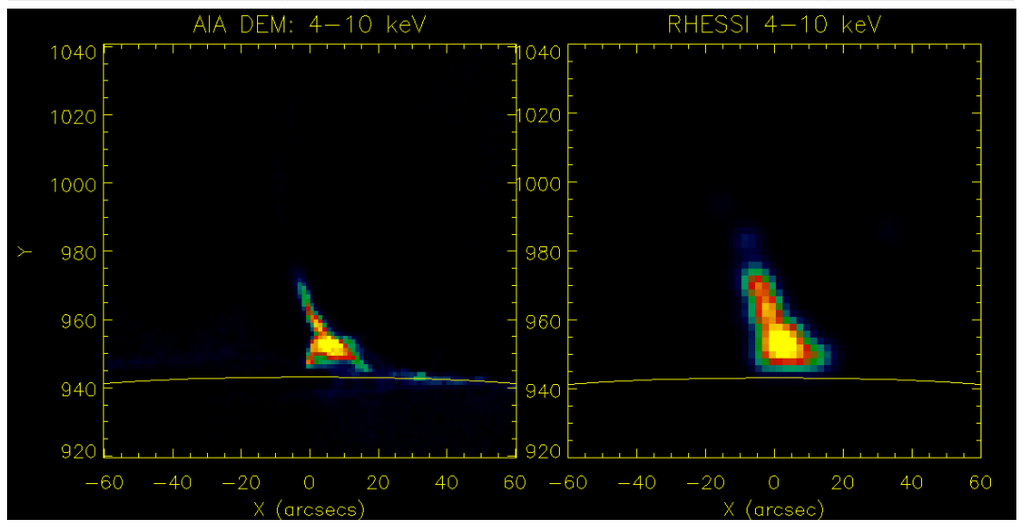
Improved DEM solutions - Su

Problems: limited/incomplete knowledge of lines/filters, inaccurate temperature response and errors on data, spatial resolution

Solution: iteratively modify DEM peaks at high temperatures and change the order in which the code calculates the DEM

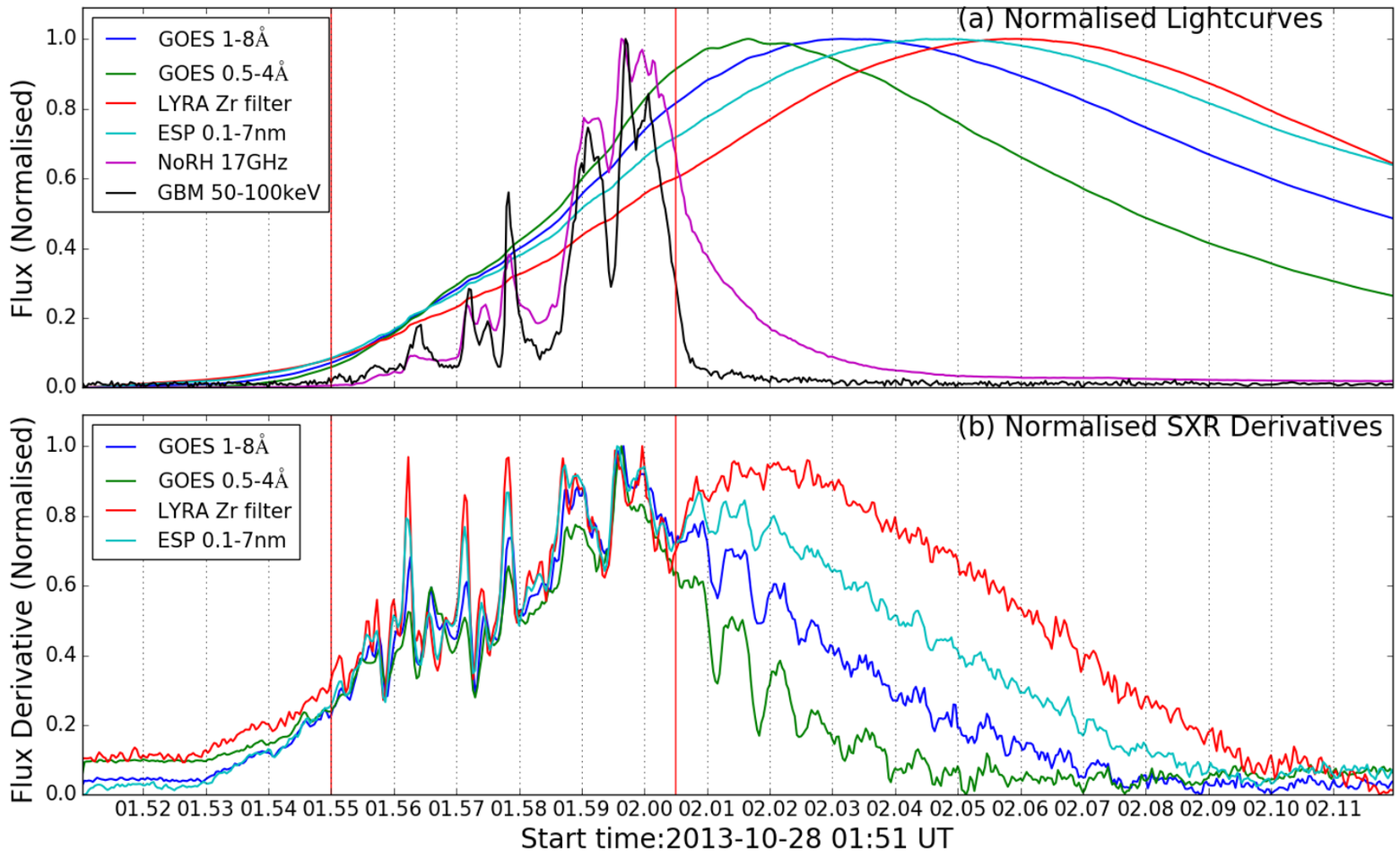
Old method





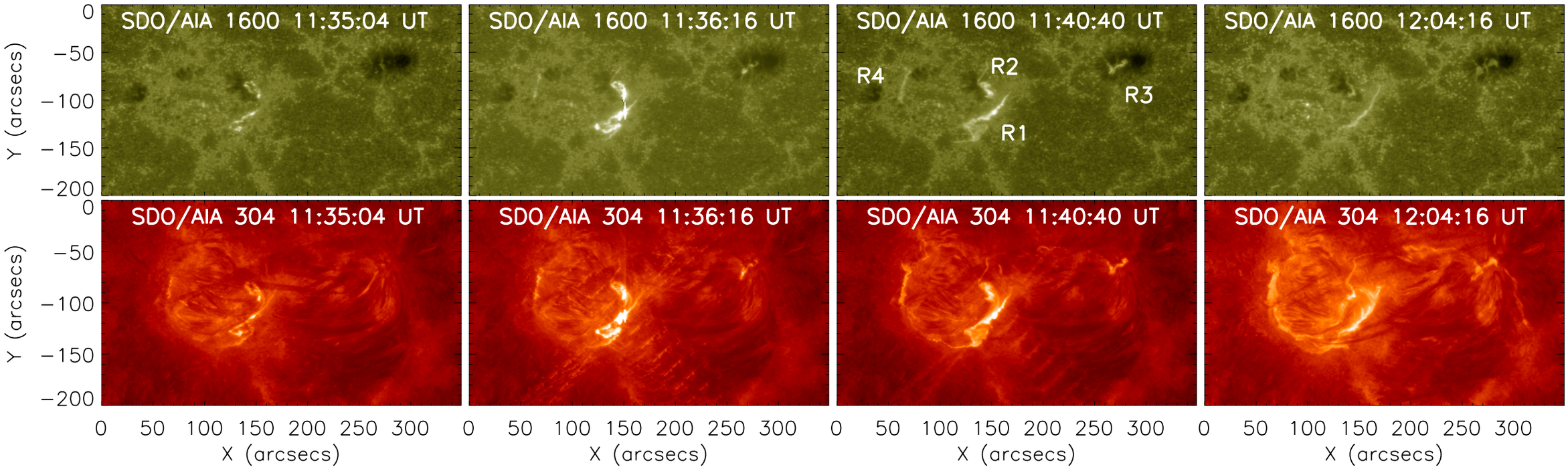
New method

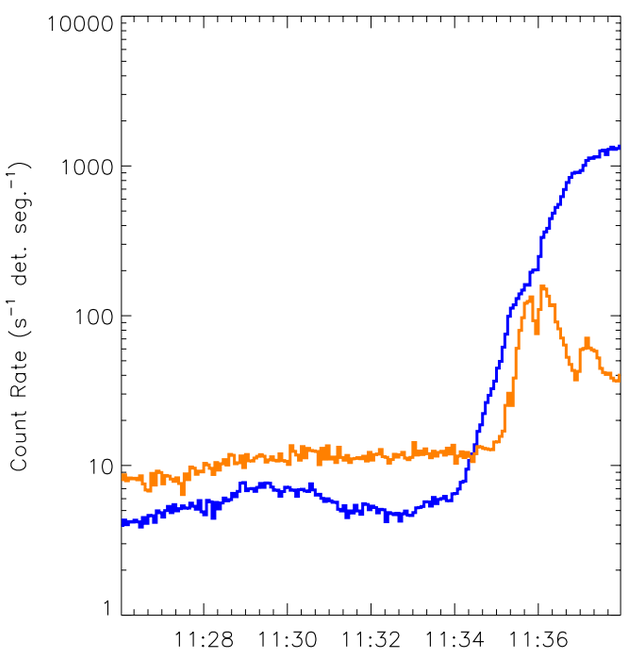
Multi-wavelength Detection of QPPs - Hayes

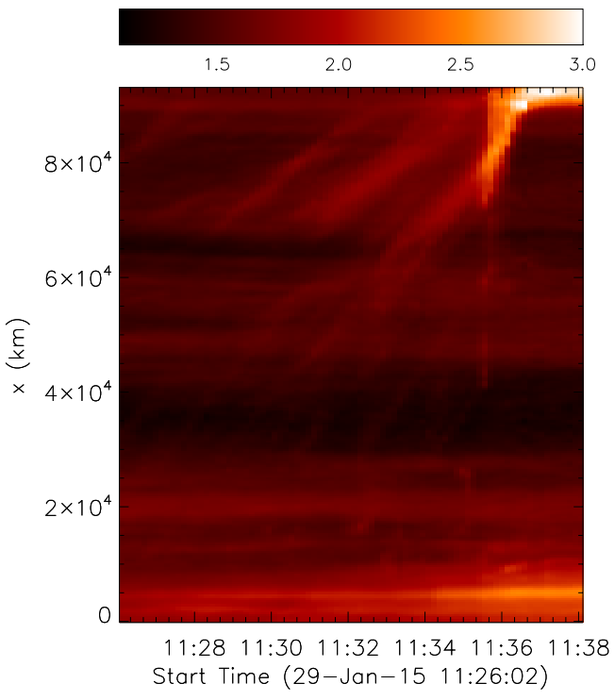


Fluctuations correlated across multiple instruments/ wavebands in both nonthermal (~20s) and thermal (~60s) emission. Nonthermal pulsations due to episodic reconnection. Thermal ones due to sausage/kink mode oscillations.

Studies of a Circular Ribbon - Hernandez-Perez

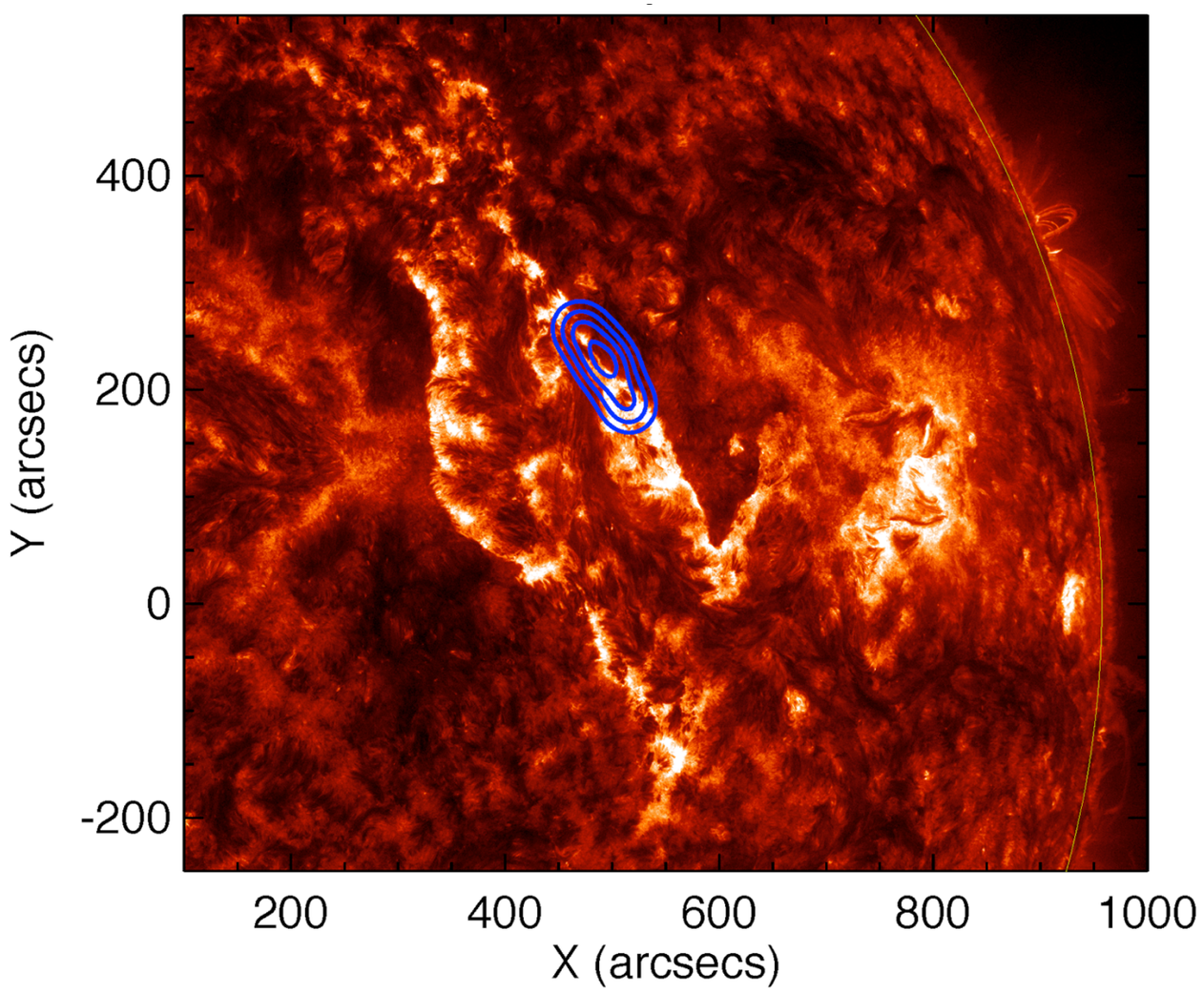


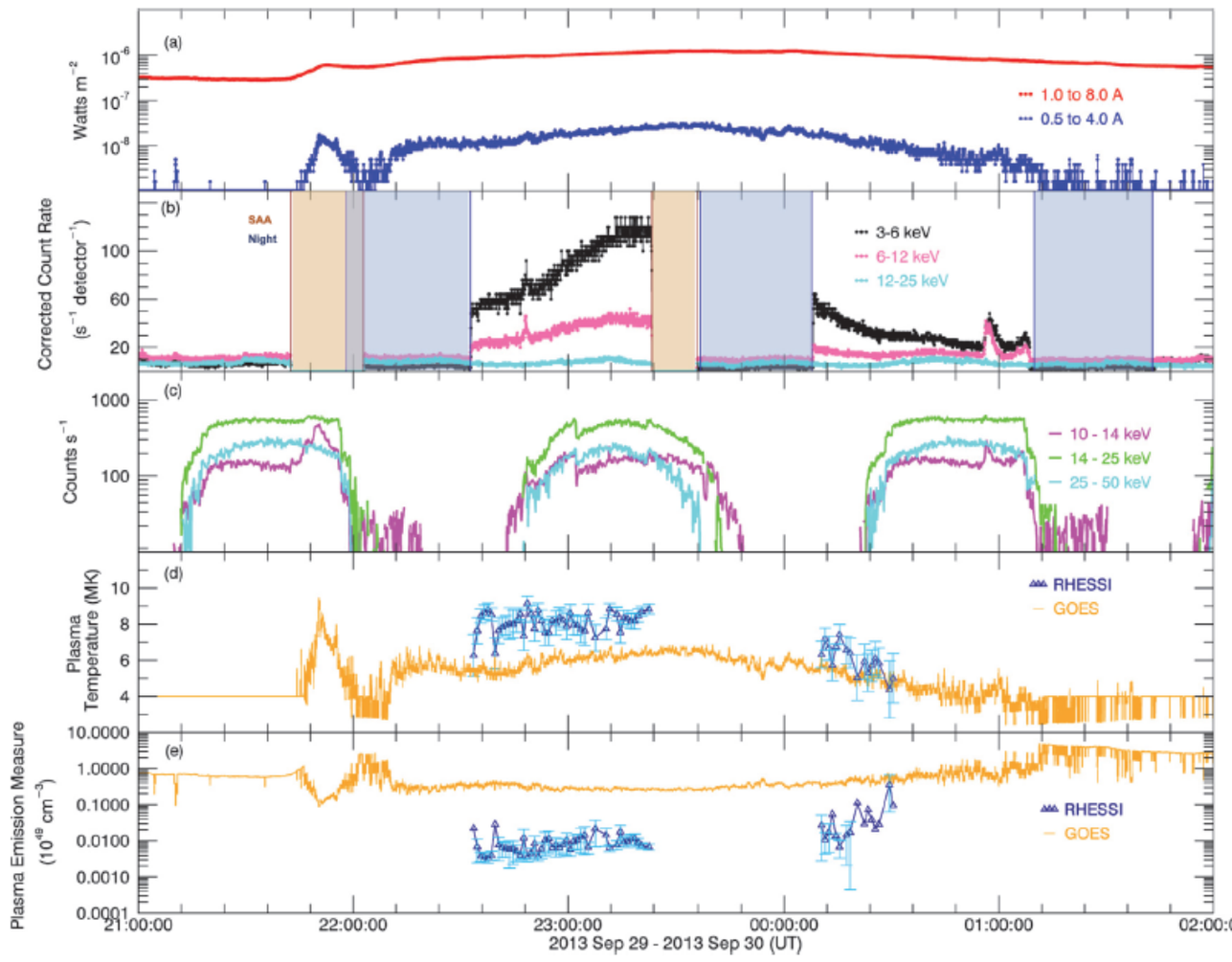




Time-slice plots showed blobs propagating towards the outer footpoints prior to flare onset - but no HXR

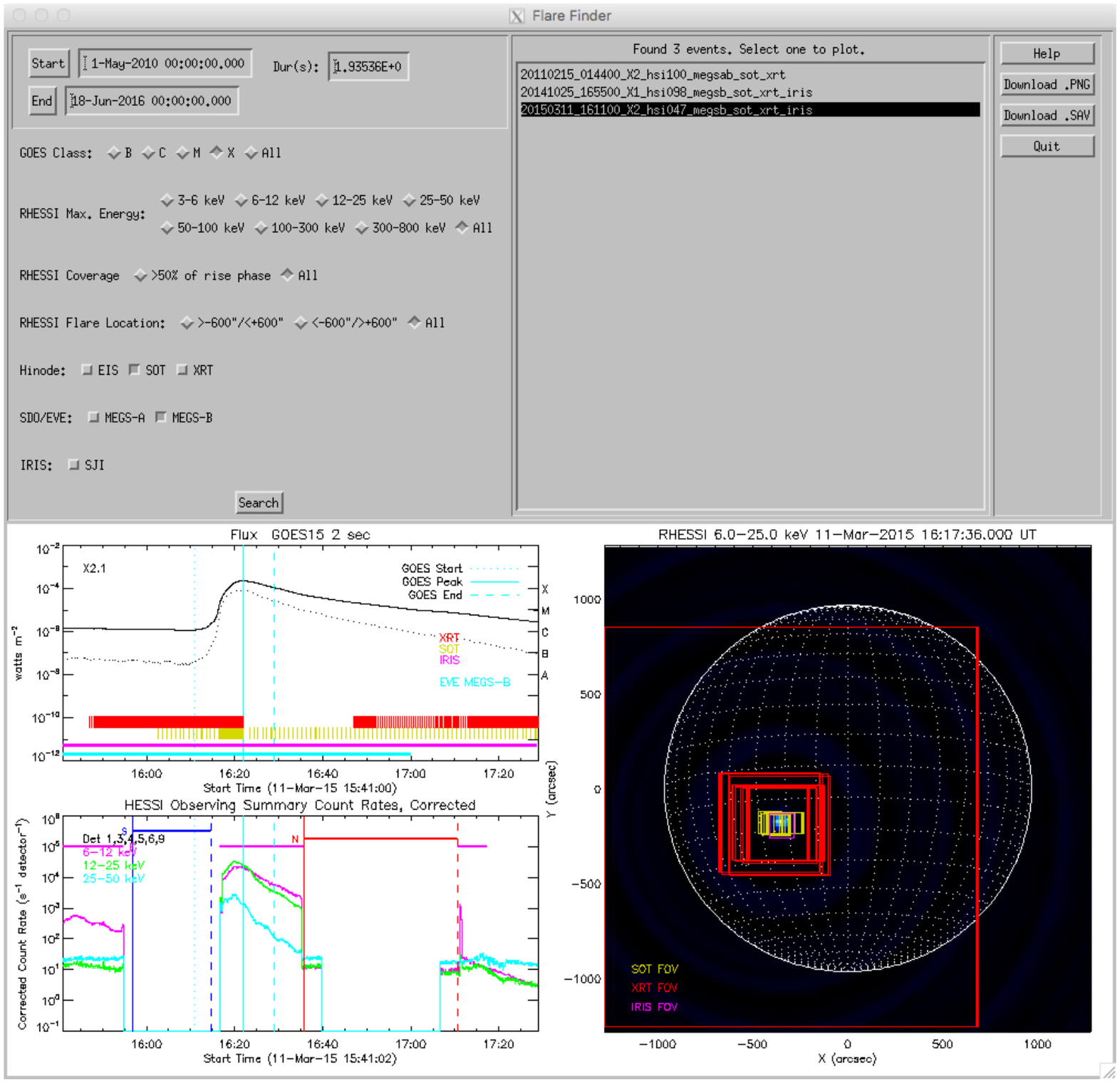
X-ray emission from Filament Eruptions Outside ARs - Holman





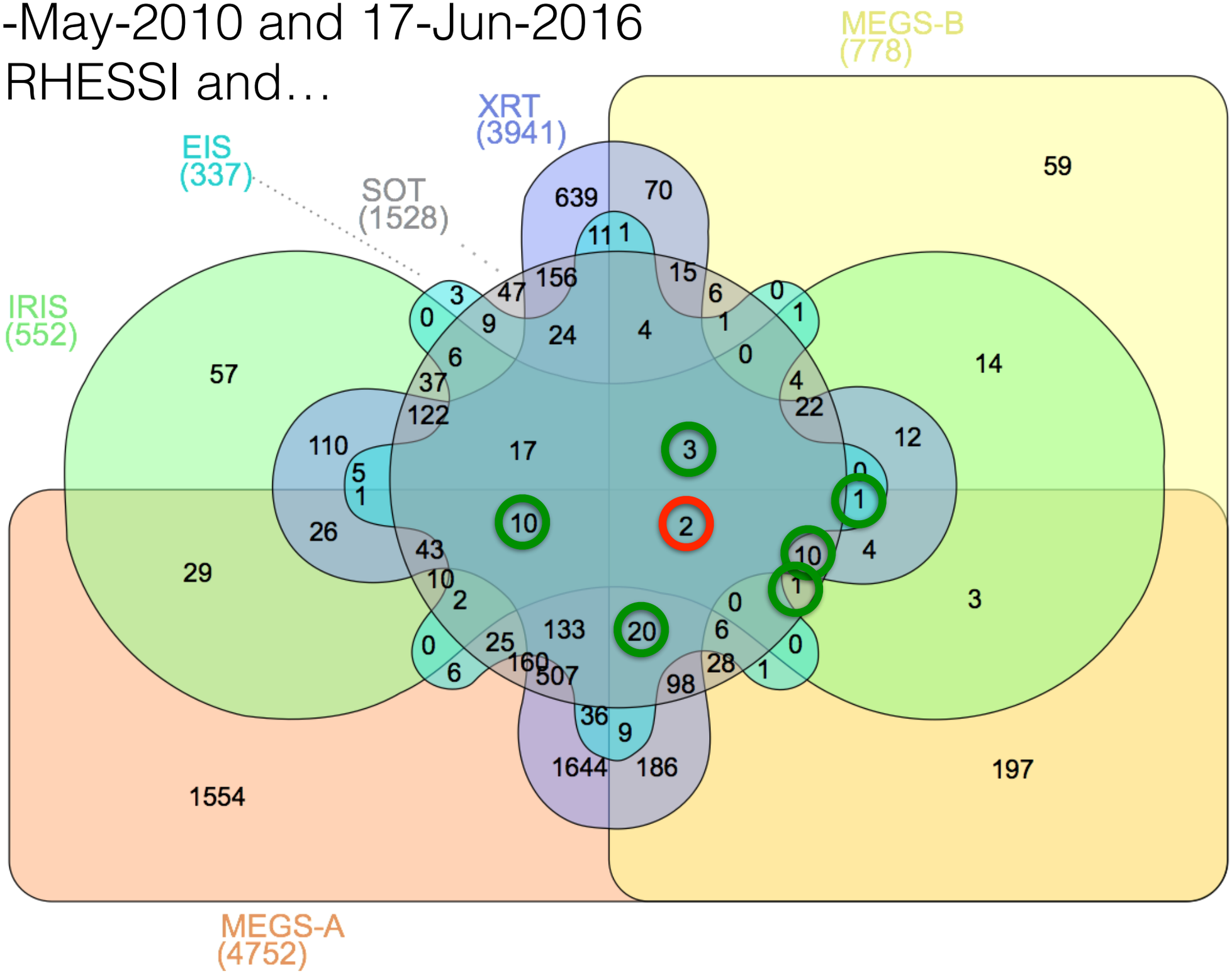
Filament eruption resulted in hot (6-8 MK) plasma due to secondary reconnection with strong dipole field

Widget-based search tool now in SSWIDL - Milligan (IDL>solar_flare_finder).



Number of flares jointly observed between 1-May-2010 and 17-Jun-2016 by GOES, RHESSI and…

www.interactivevenn.net



Total number of GOES flares = 12,254

Total number of RHESSI flares = 6,761

=all 8 instruments

=any 7 instruments