



Small flares during the 2009 solar minimum

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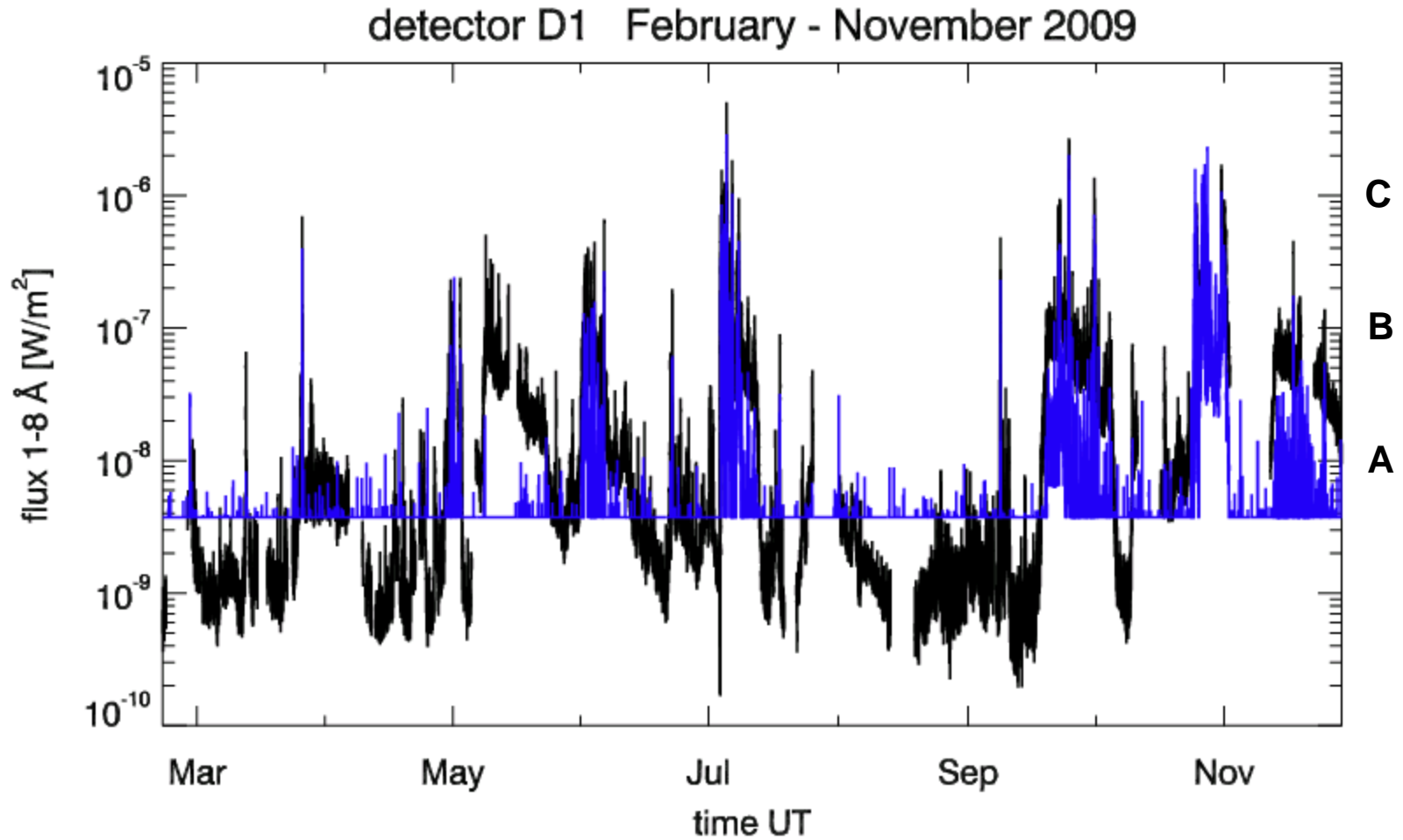
M. Gryciuk, B. Sylwester, J. Sylwester, S. Gburek

Space Research Center of Polish Academy of Sciences,

Wrocław, Poland



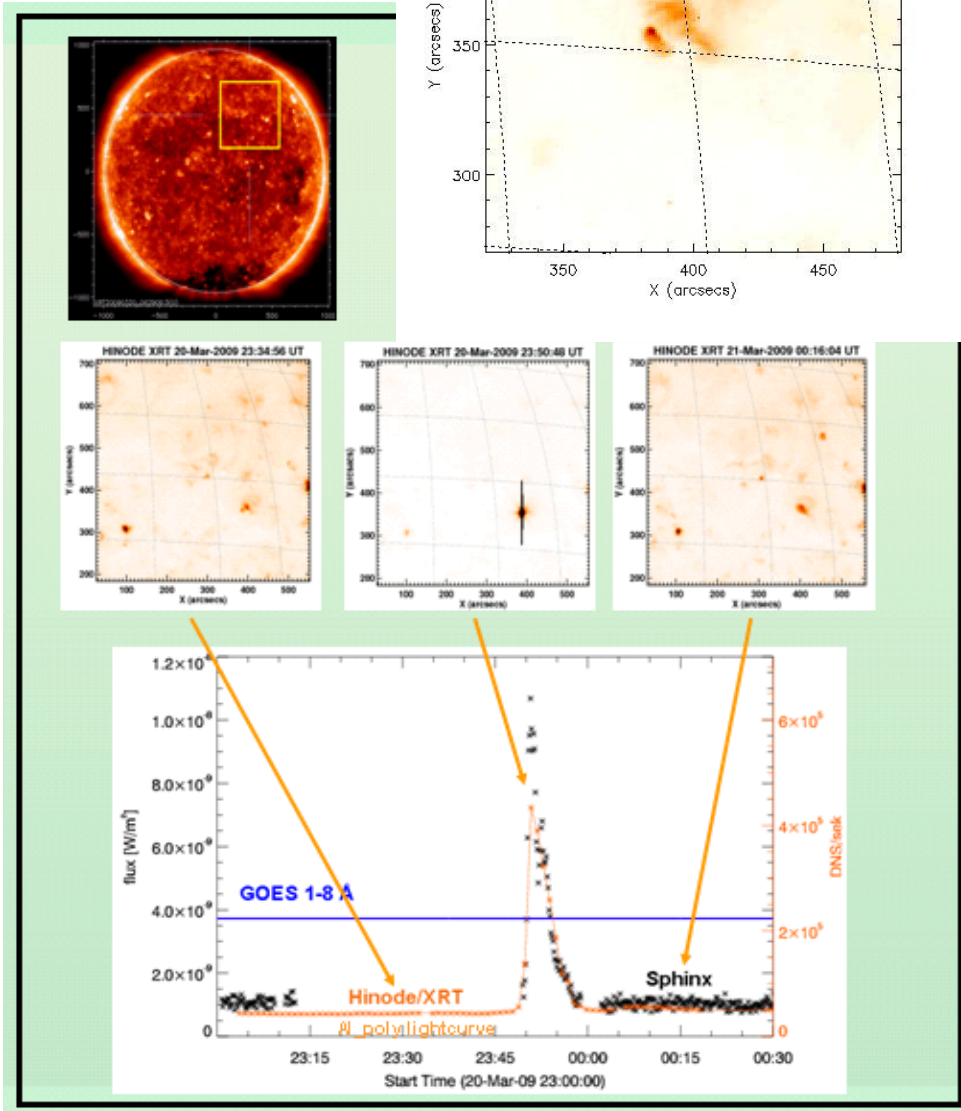
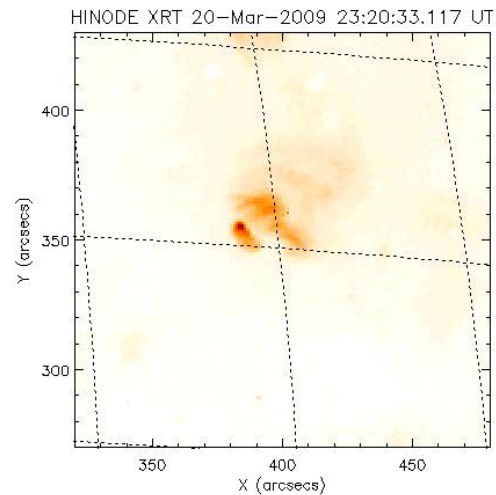
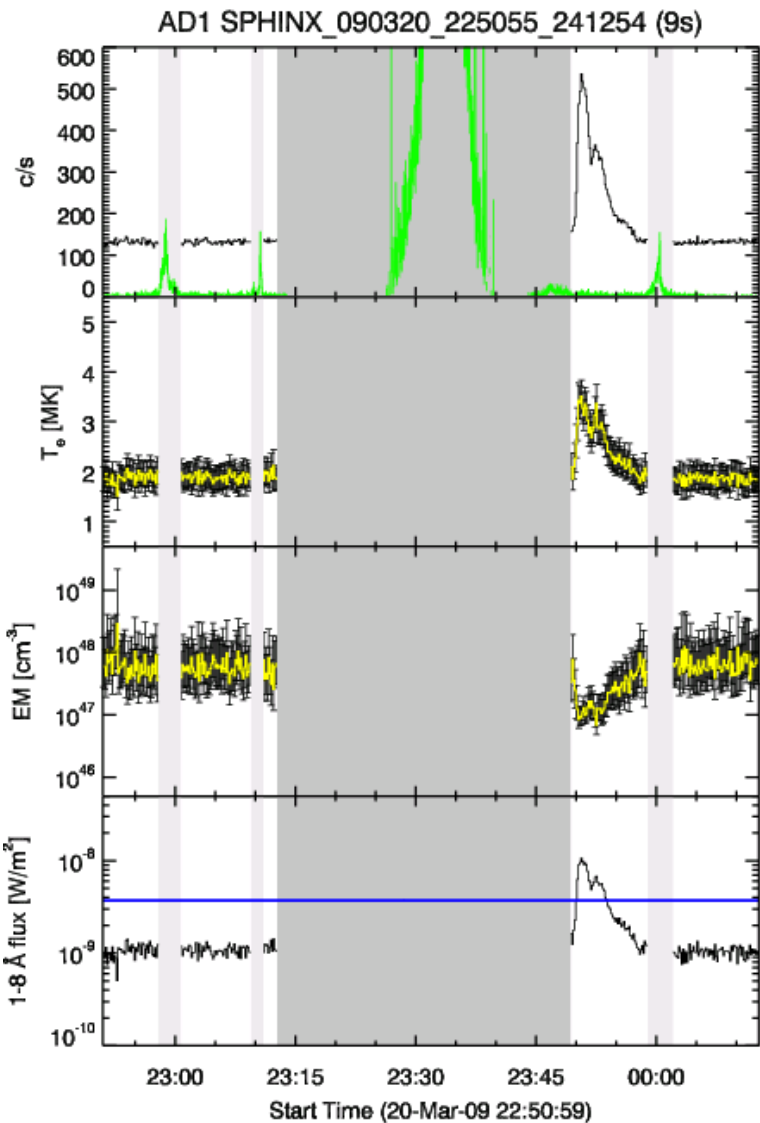
SphinX D1 and GOES



GOES 10 threshold = $3.7e-09$ W/m² 3.7 S
D1 minimum = $\sim 2.0e-10$ W/m² 3.6 Q

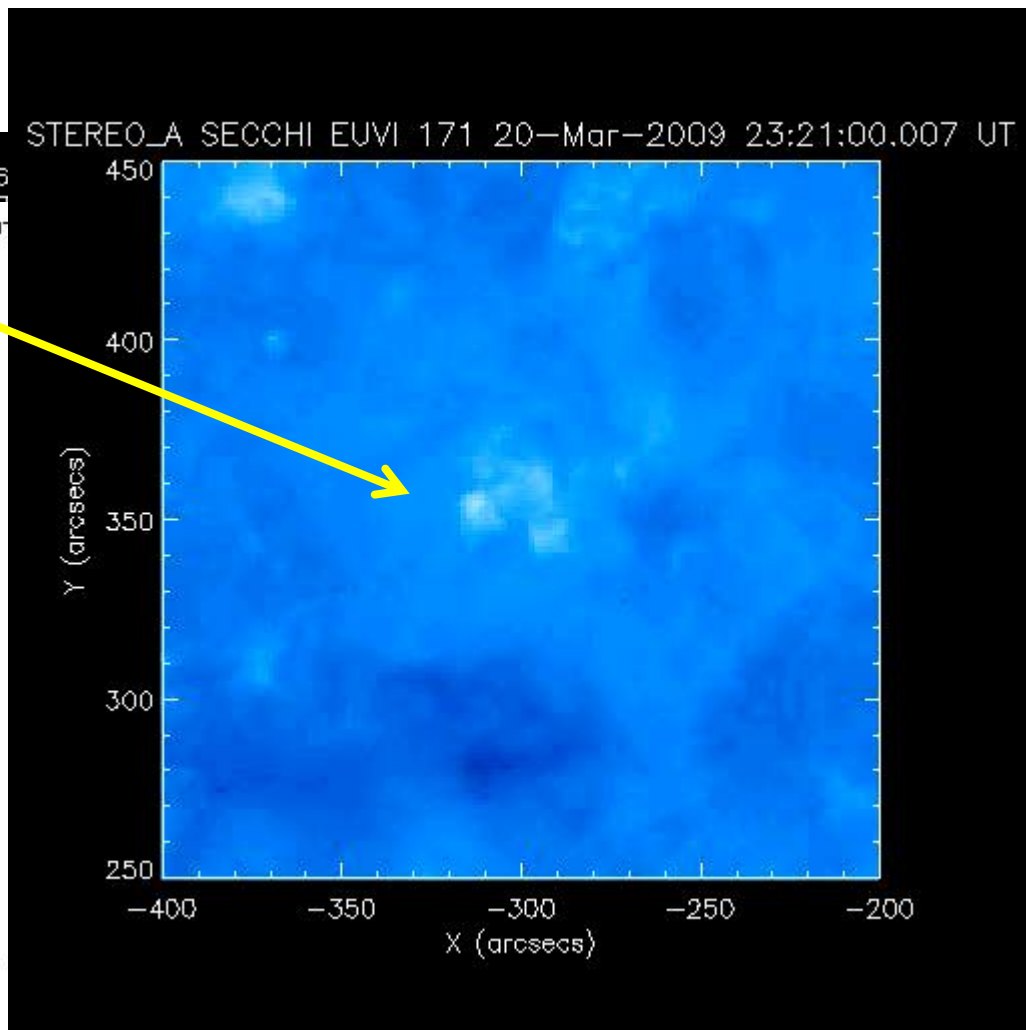
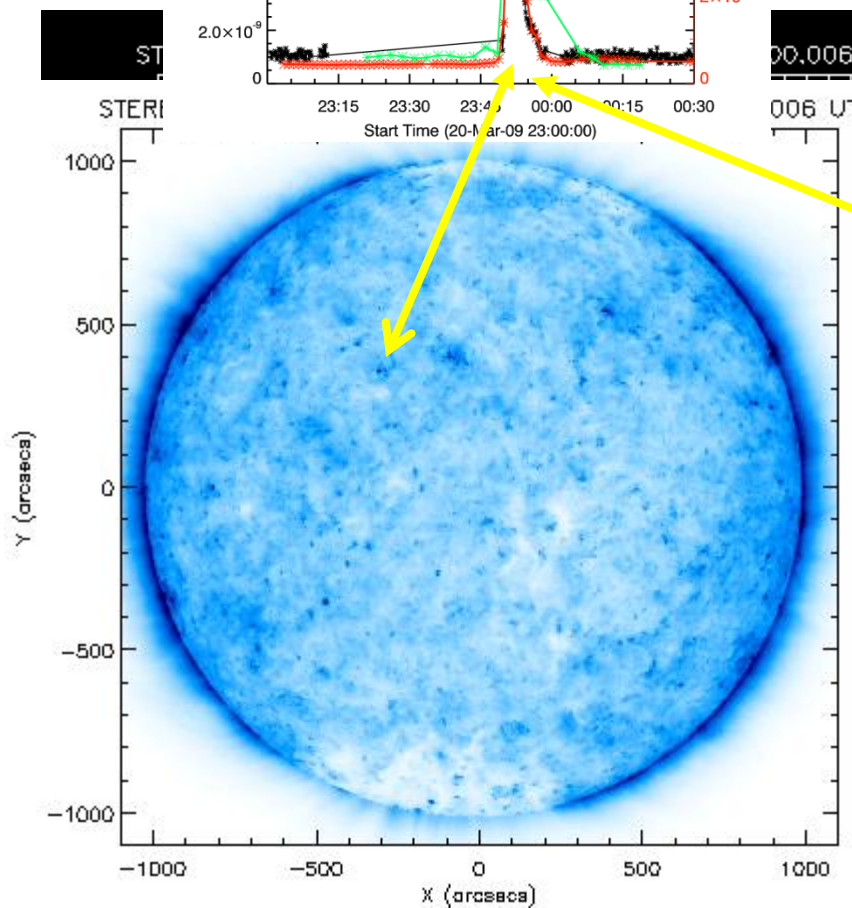
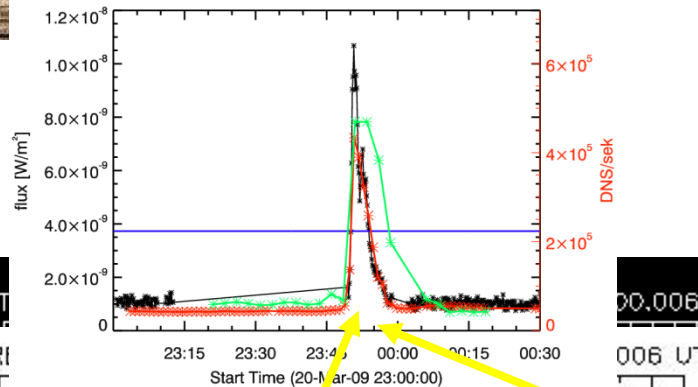


20-Mar-09 A1.1 flare in BP



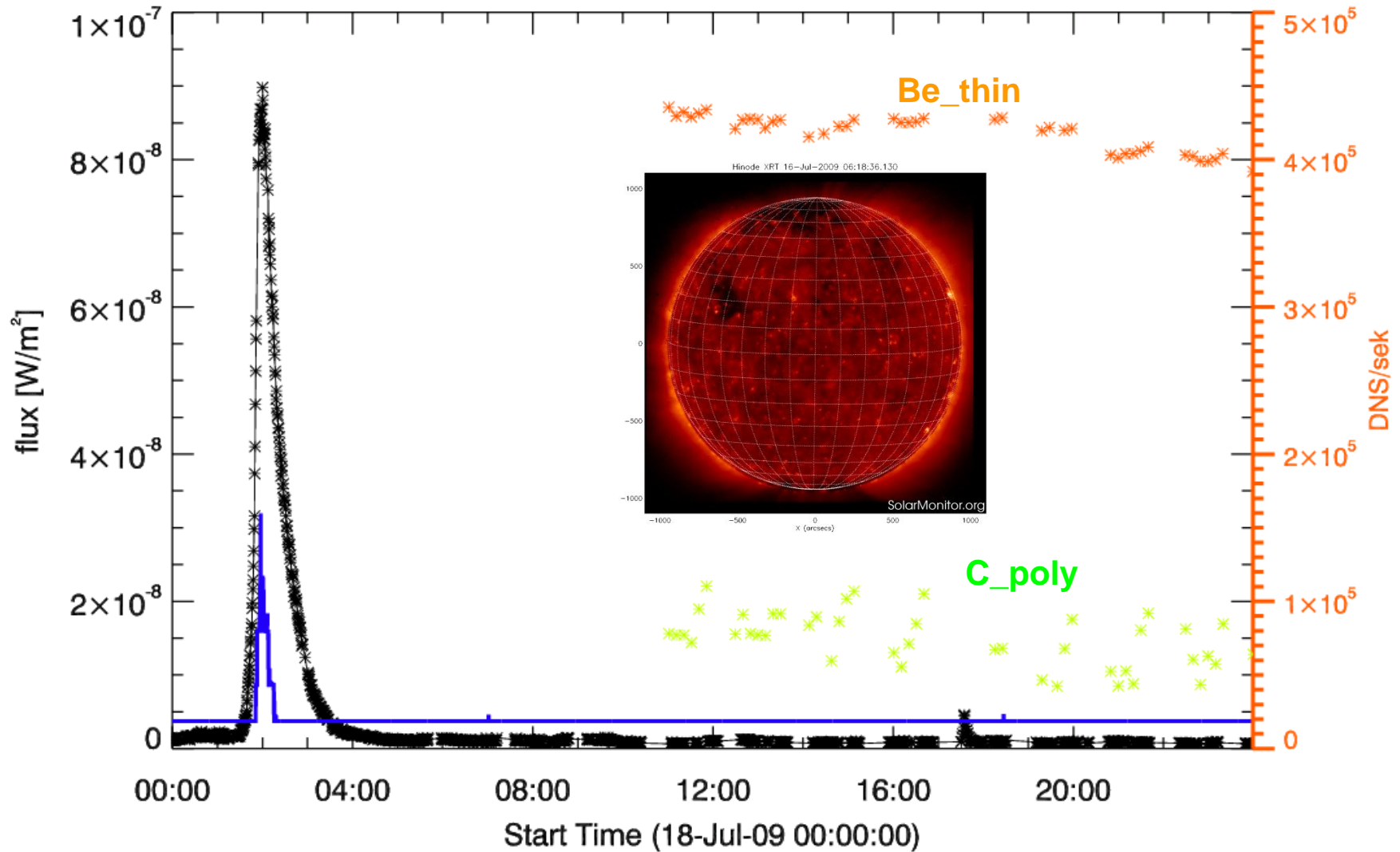


20-Mar-09 A1.1 flare in BP StereoA



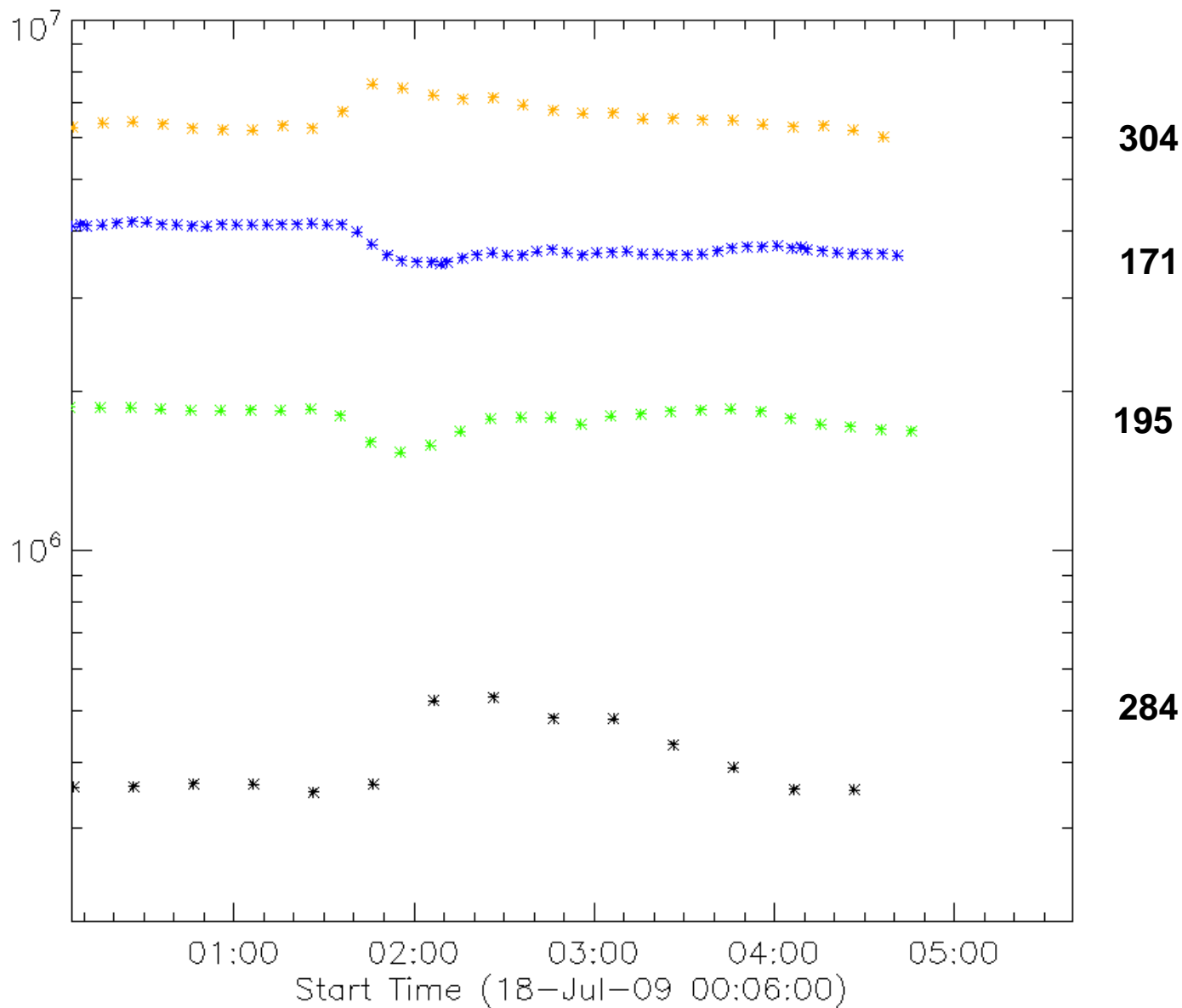


18-Jul-09 A9 flare





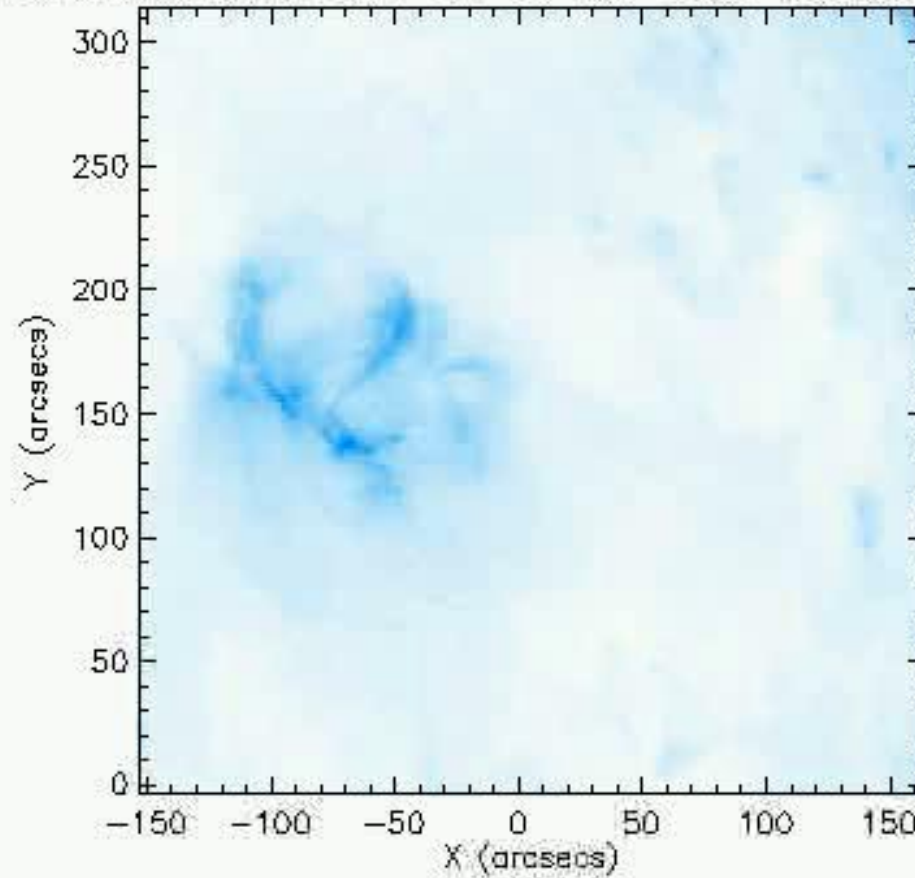
18-Jul-09 StereoA





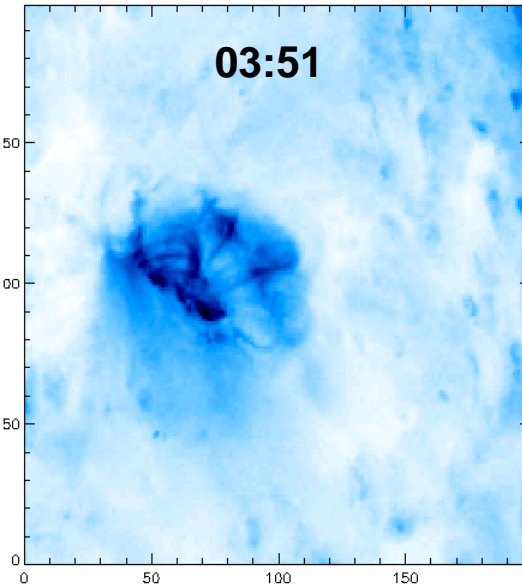
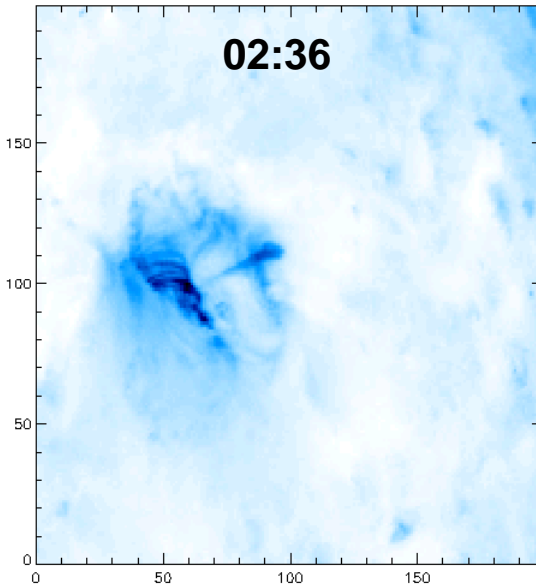
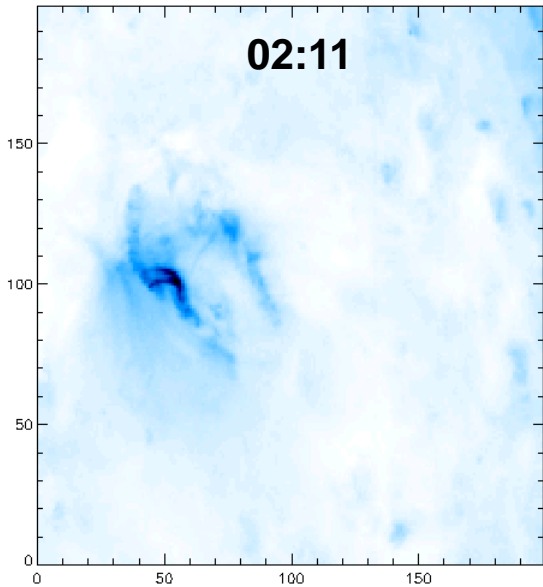
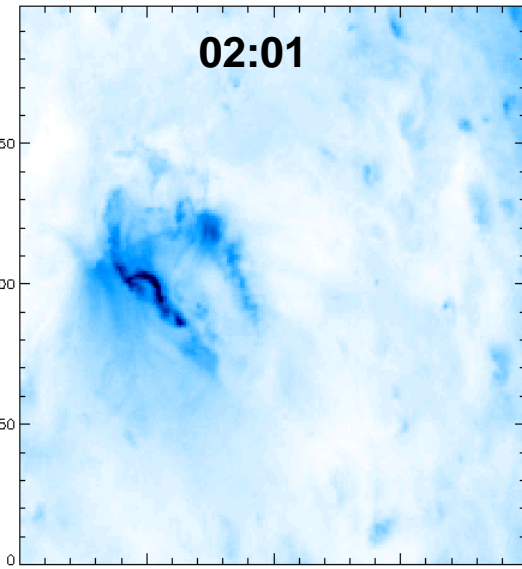
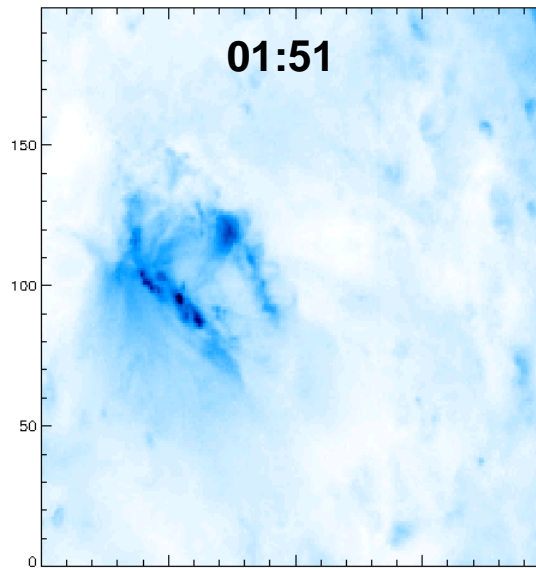
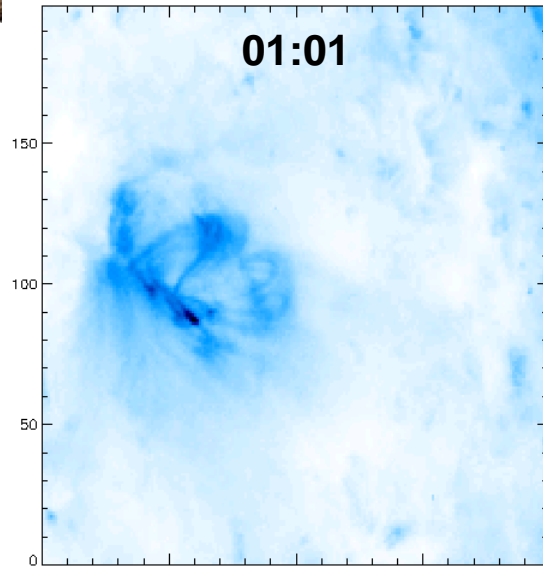
18-Jul-09 StereoA

STEREO_A SECCHI EUVI 171 18-Jul-2009 00:06:00.008 UT





18-Jul-09 StereoA

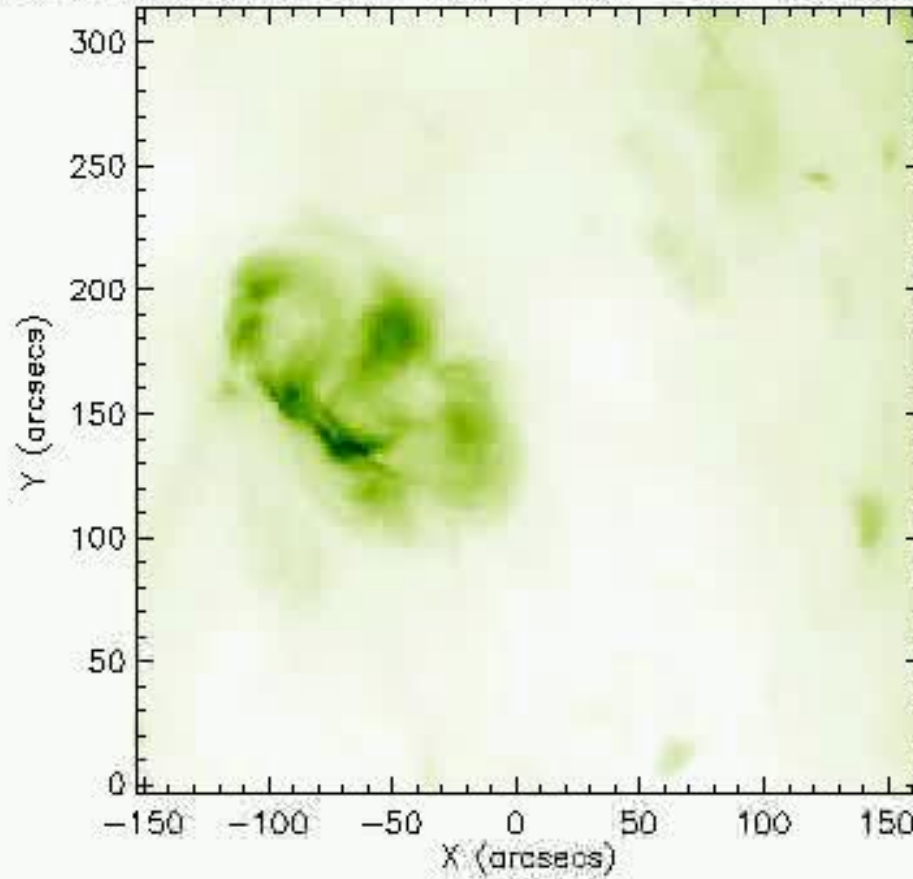


171



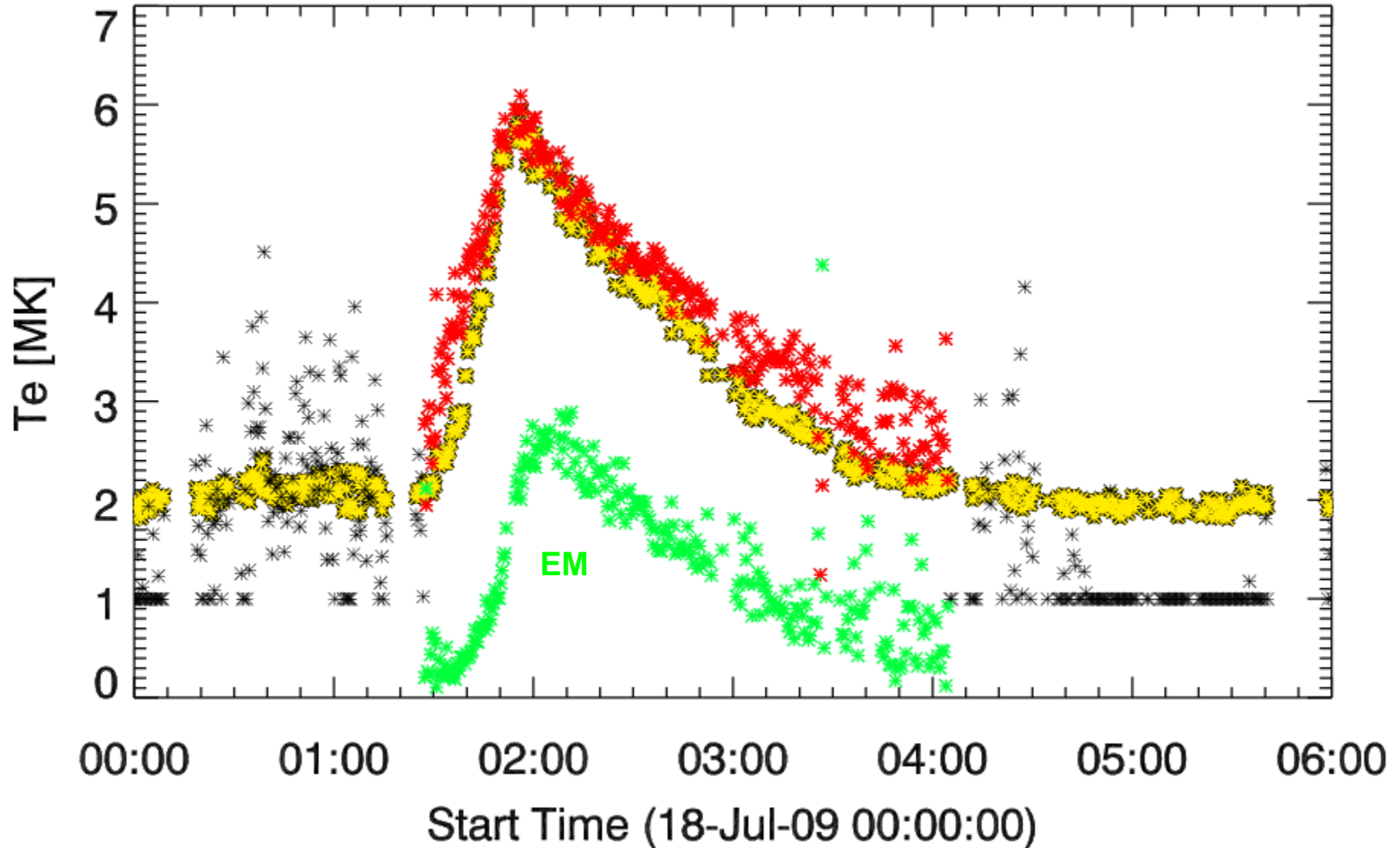
18-Jul-09 StereoA

STEREO_A SECCHI EUVI 195 18-Jul-2009 00:05:30.005 UT



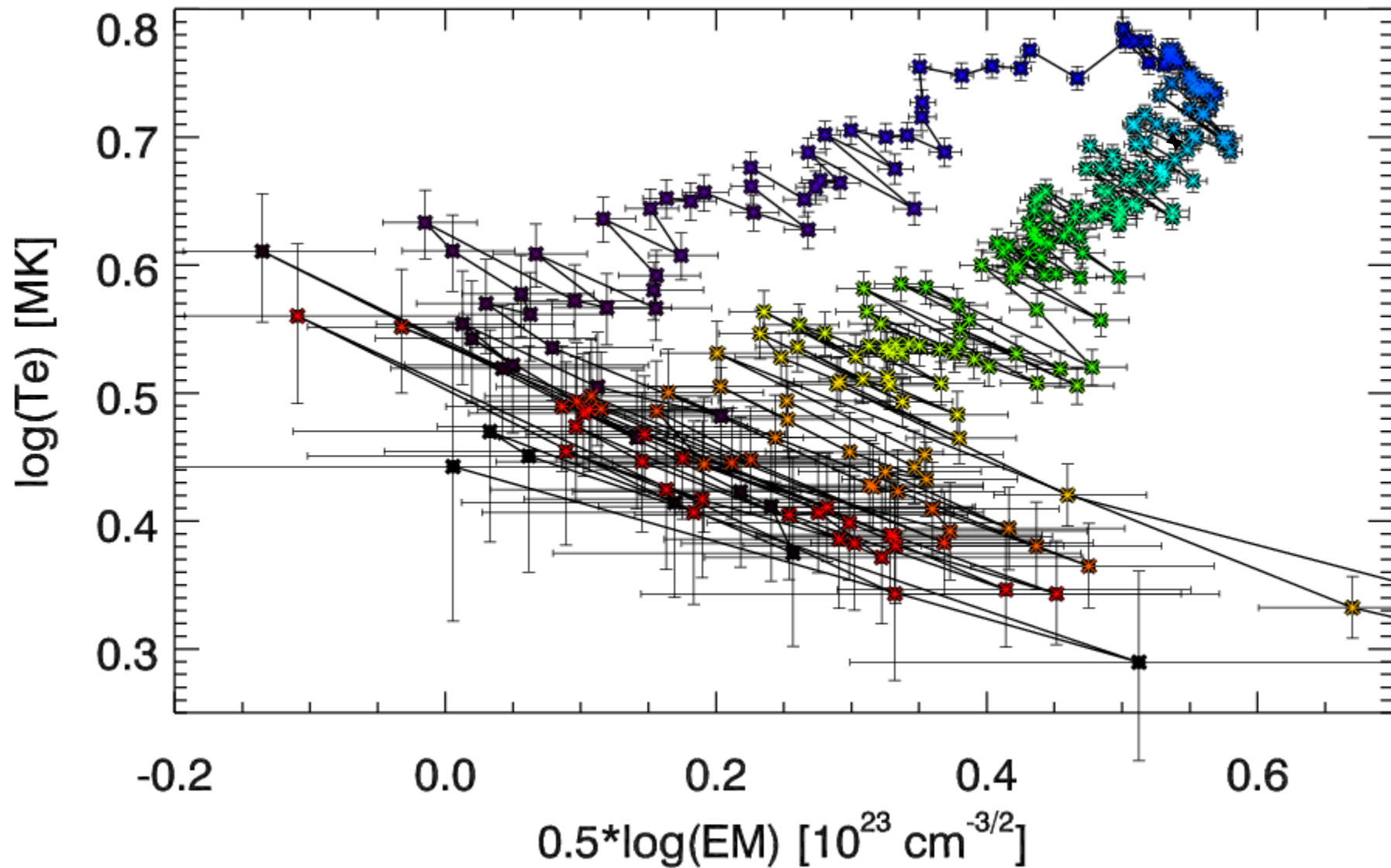


18-Jul-09 A9 flare



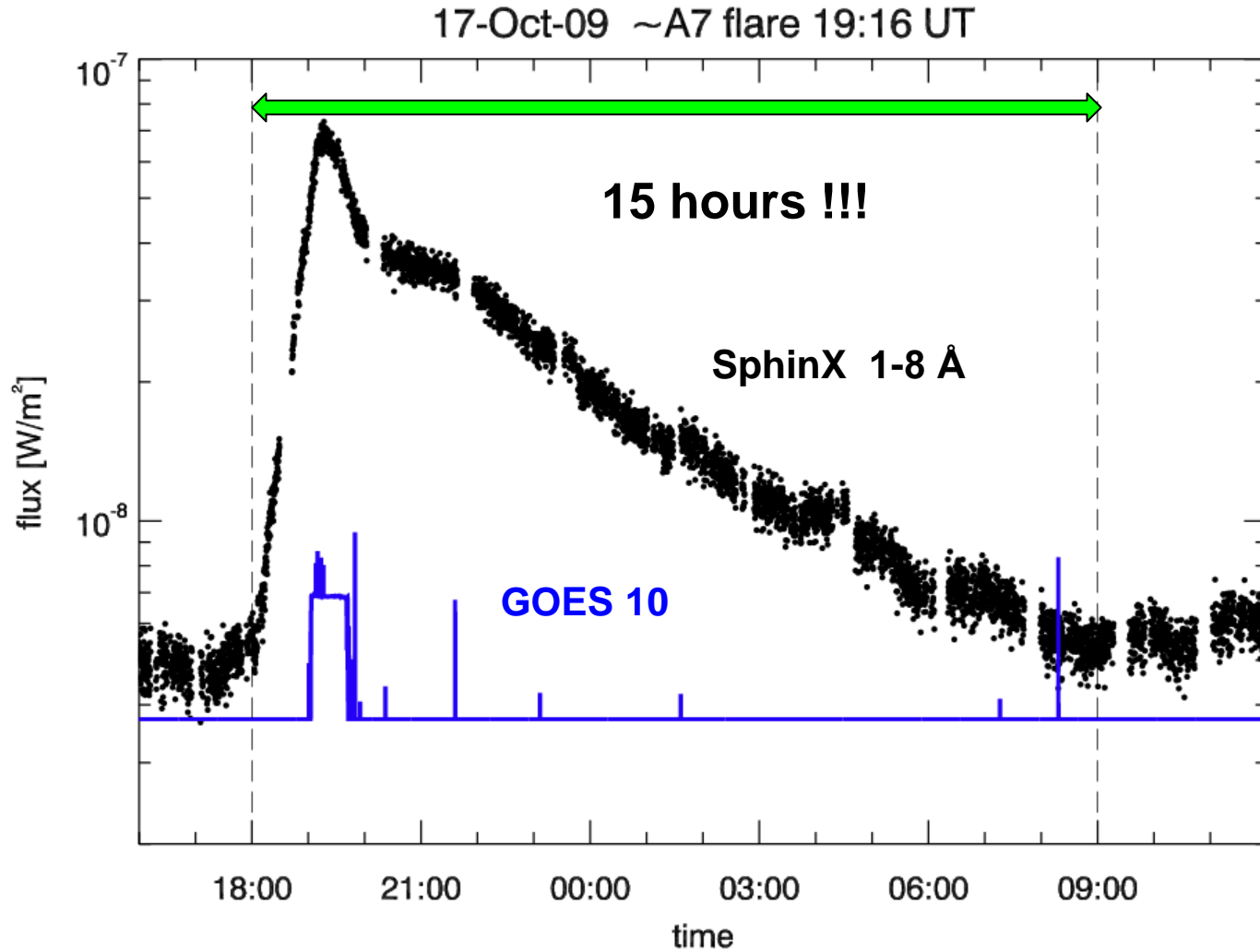


18-Jul-09 A9 flare



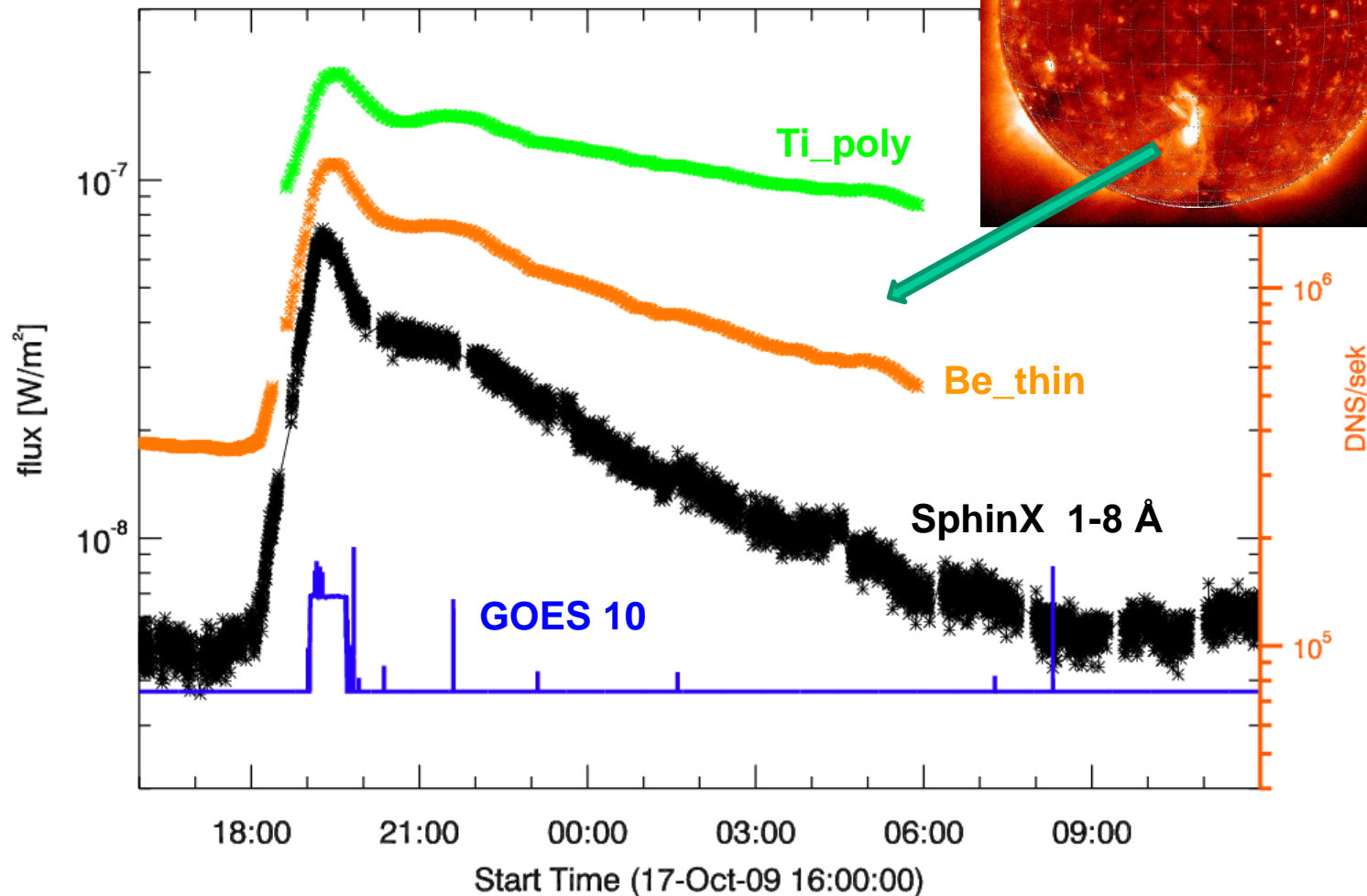


17-Oct-09 LDE



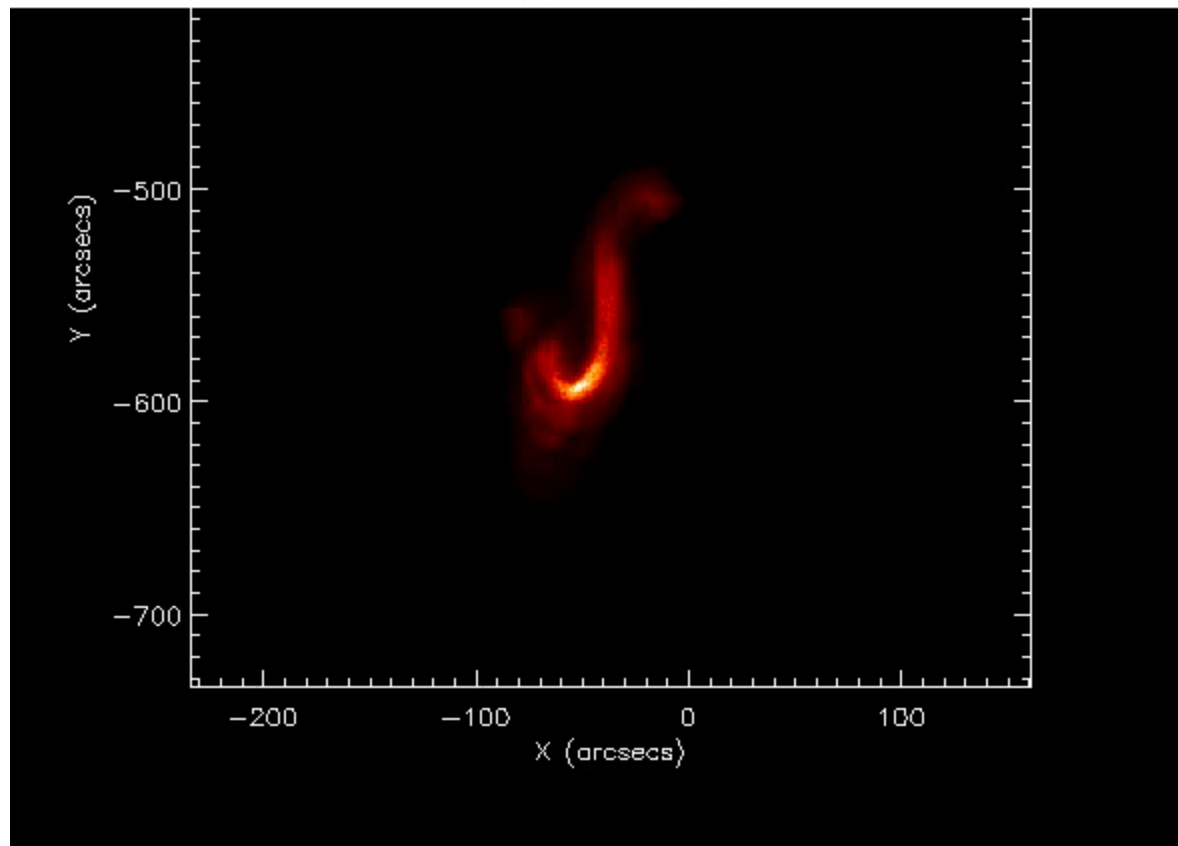
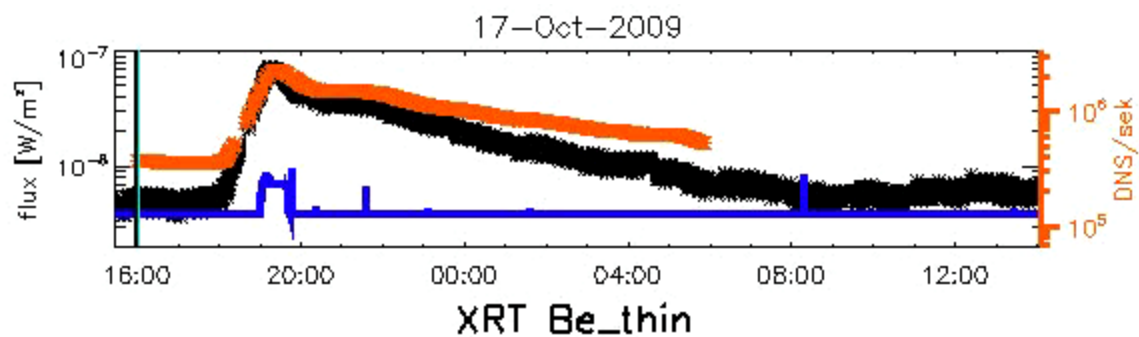


17-Oct-09 Hinode/XRT





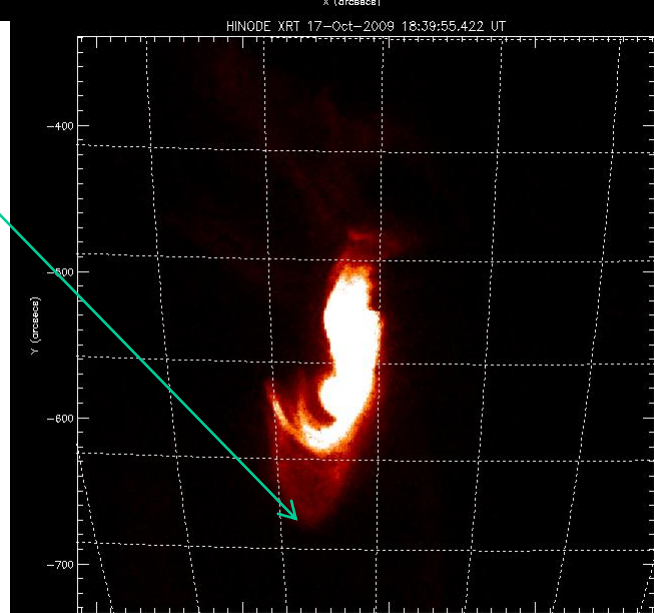
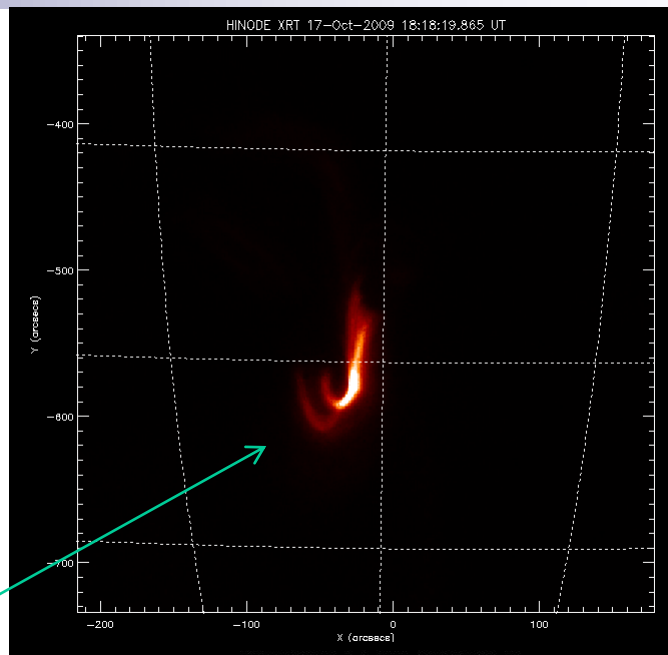
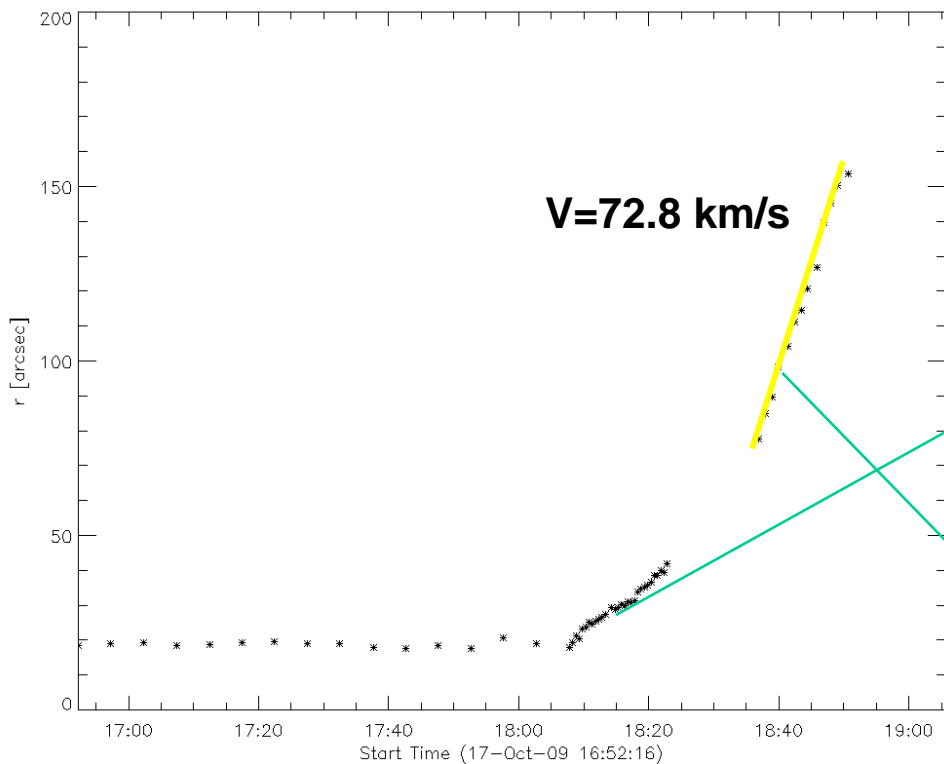
17-Oct-09 Hinode/XRT





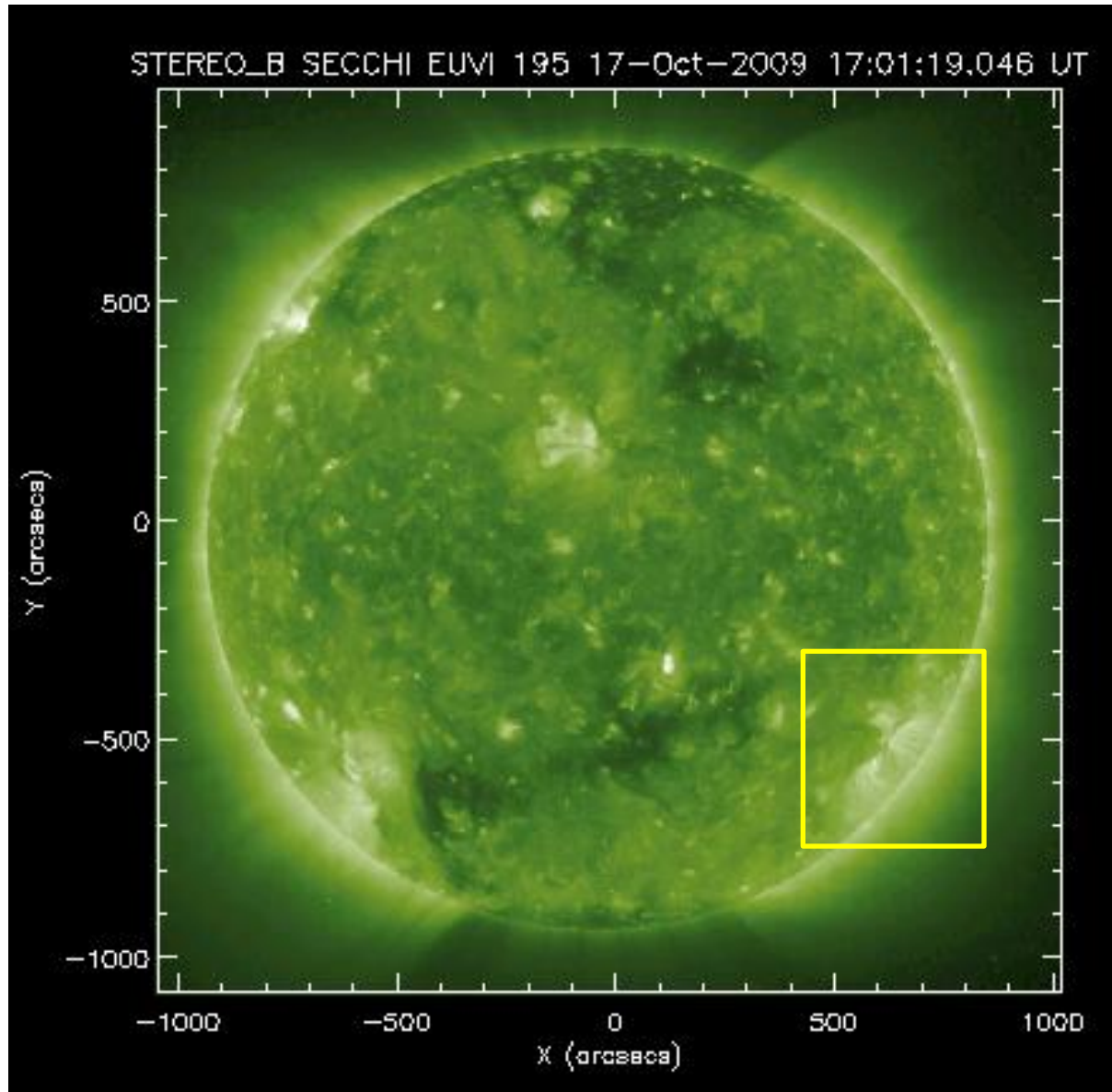
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XRT Be_thin



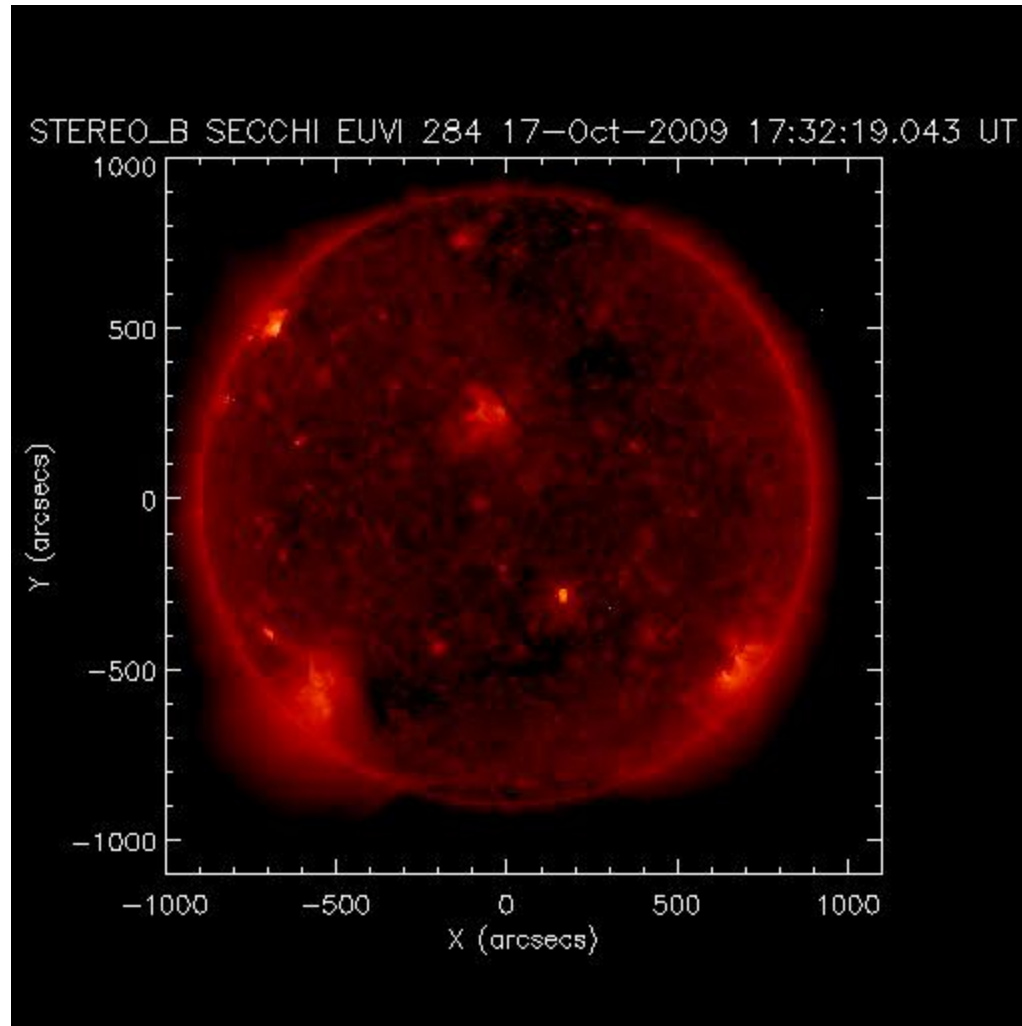


17-Oct-09 StereoB



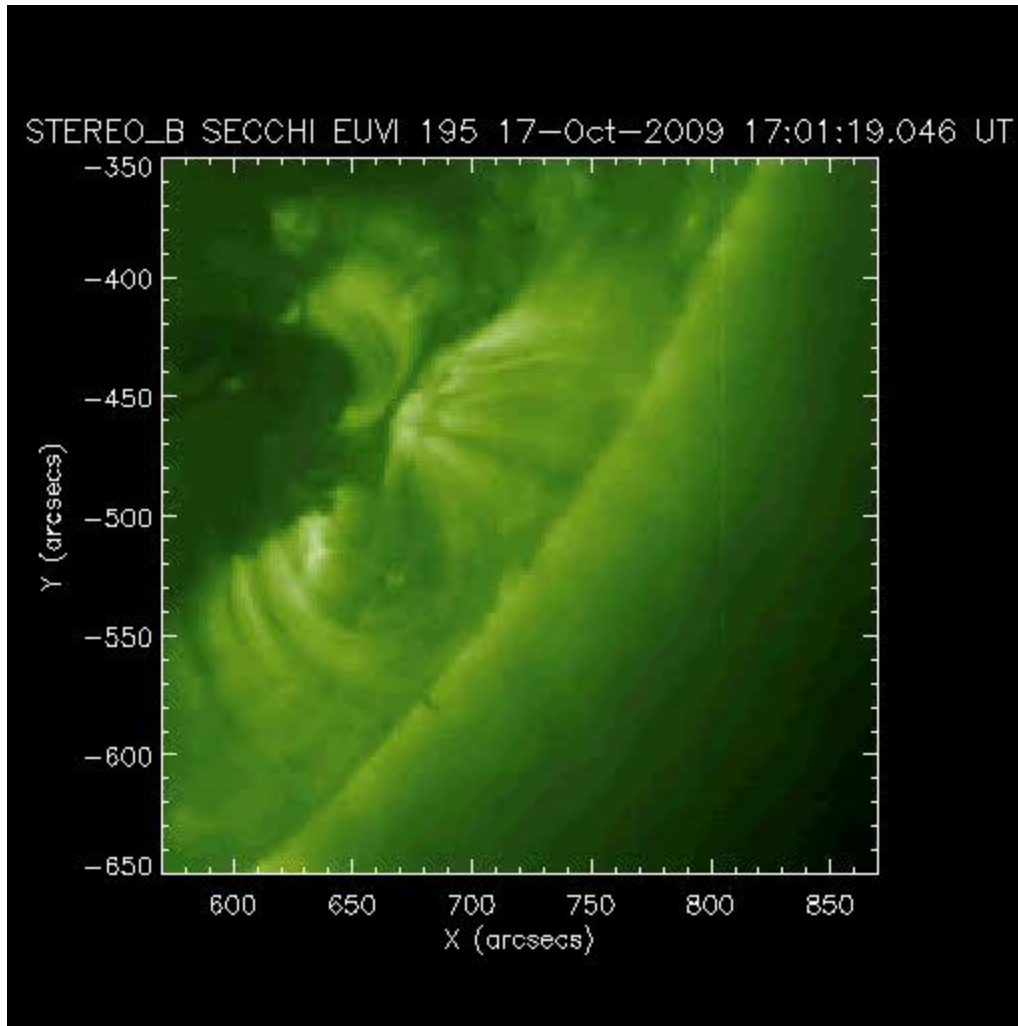


17-Oct-09 StereoB



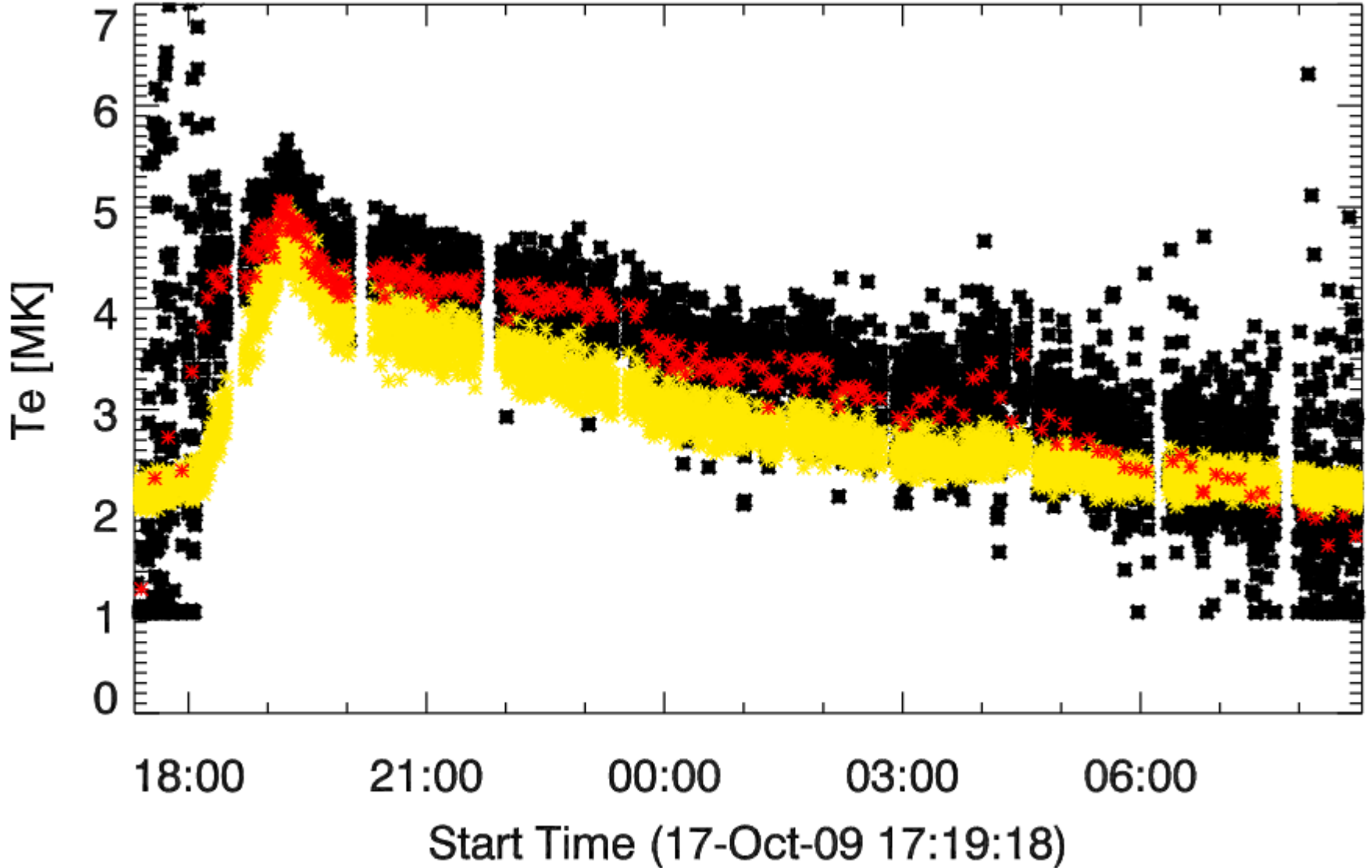


17-Oct-09 StereoB



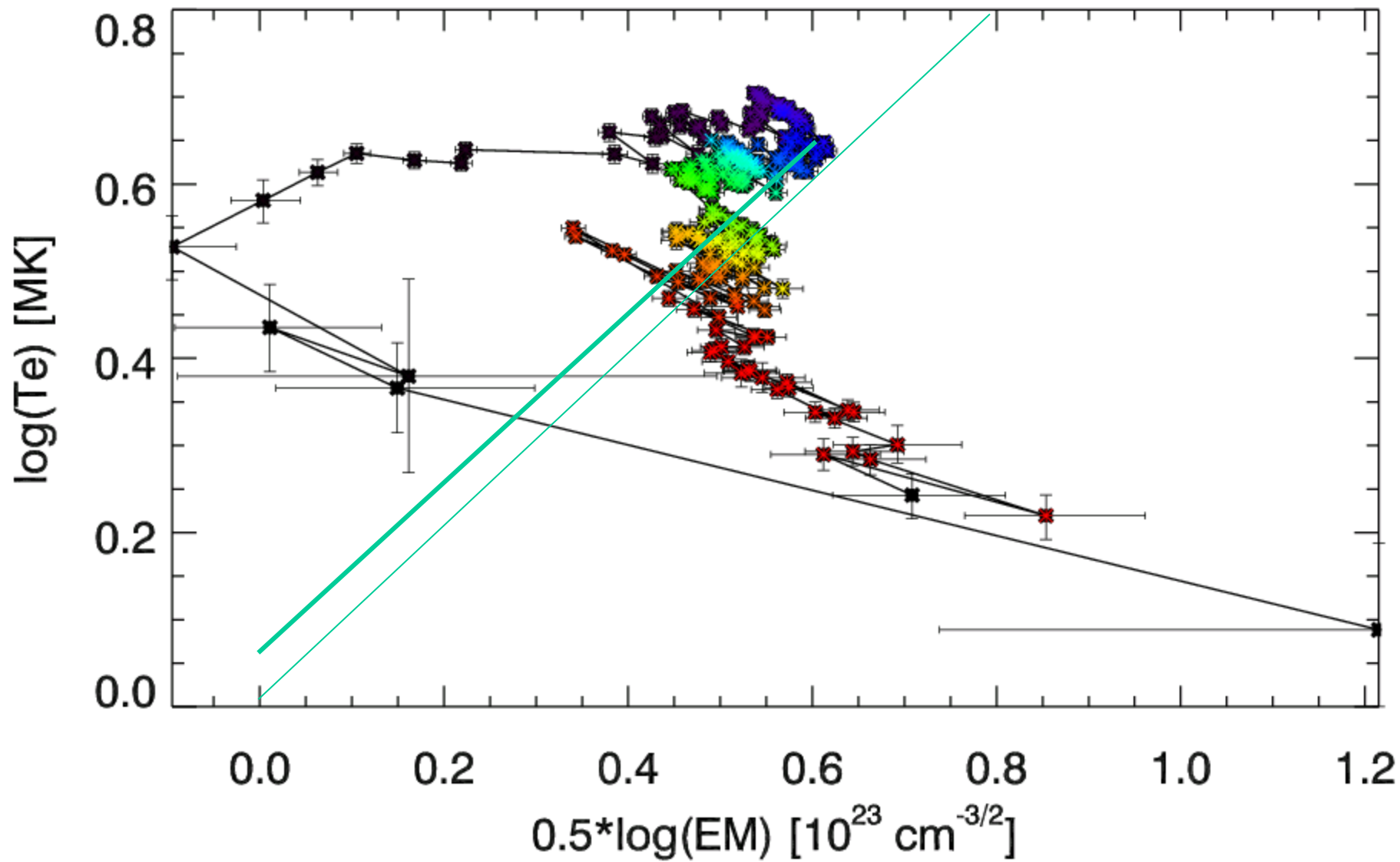


17-Oct-09 LDE





17-Oct-09 LDE





conclusions

- In spite of the extremely low level of solar activity a plenty of small X-ray events are observed in SphinX data.
- Small flares differ from their larger counterparts on some characteristics e.g of size, Te, EM **but not time scales!!!**
- SphinX temperatures of analyzed small flares do not exceed 4-6 MK
- Morphology of small flares can be as complicated as the larger ones
- Even small flares indicate for an ejection of plasma during the evolution.