



KINEMATIC CHARACTERISTICS OF THE M5.4 SOLAR FLARE

R. Vašková ¹, A. Kučera ¹, A. Veronig ², P. Gömöry ¹, J. Rybák ¹

¹ Astronomical Institute of the Slovak Academy of Science in Tatranská Lomnica, Slovakia

² Institute of Physics, IGAM, University Graz, Austria

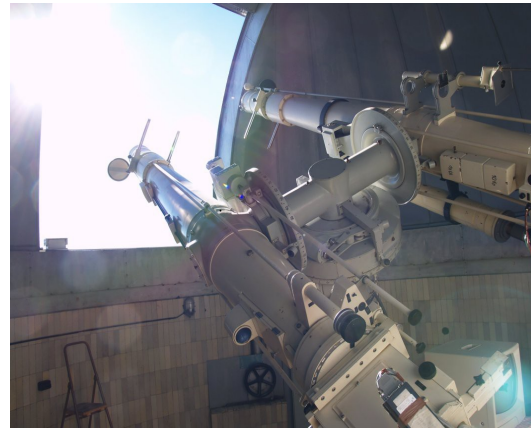


Astronomical Institute of Slovak Academy of Sciences in Slovakia



1.3m Cassegrain-Nasmyth telescope

Skalnate Pleso Observatory (1 751 m)



Two identical 20/300 cm coronagraphs with CoMP-S (Coronal Multi-Channel Polarimeter)

Lomnický Peak Observatory (2 632 m)

OBSERVATIONS

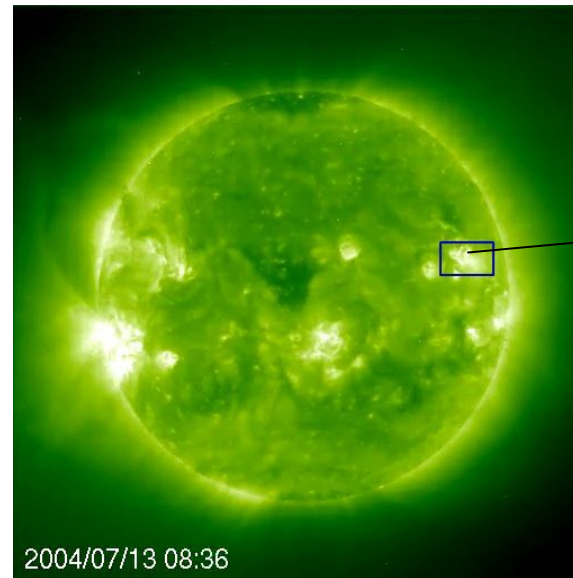
- multispectral observations are gained
- all phases of the solar flare including preflare phase are covered

Coordinated:

- H α and WL images VTT
- SOHO/CDS spectra
- SOHO/EIT images
- TRACE images

Supplementary:

- SOHO/MDI int., mag.
 - RHESI x-ray
 - Mitaka
 - Big Bear
 - Haleakala
 - GOES X-ray
 - Zurich, Irkutsk, Potsdam radio
- } full Stokes mag.



AR 10646 with EIT Fe XII 19,5nm

Solar flare M5.4
($5.4 \times 10^{-5} \text{ Wm}^{-2}$)
accompanied by
filament
eruption and
CME
was observed
in 13th June
2004.

FLARE DURATION: 08:40-09:40 UT

CME mag. field formation

CME acceleration

Corona

From transition region to corona

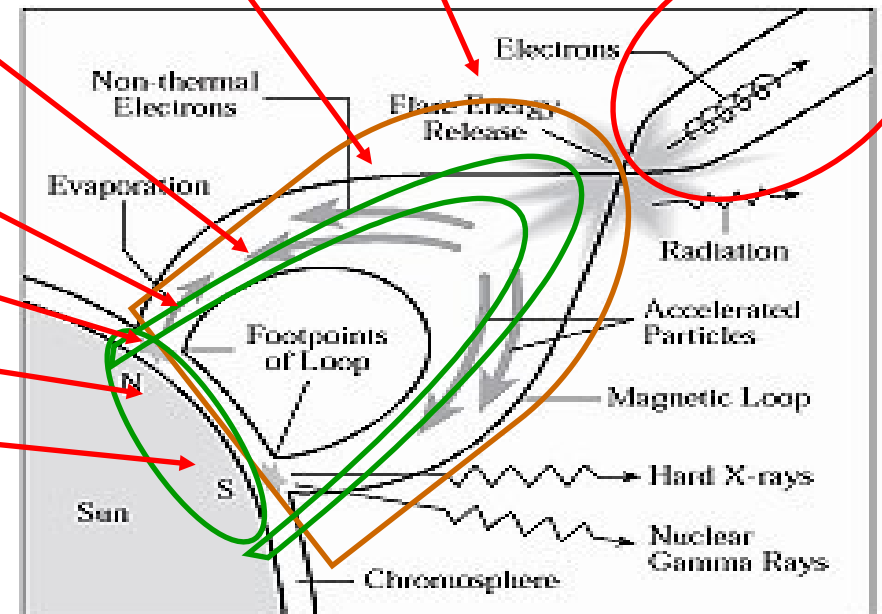
Transition region

Upper chromosp.

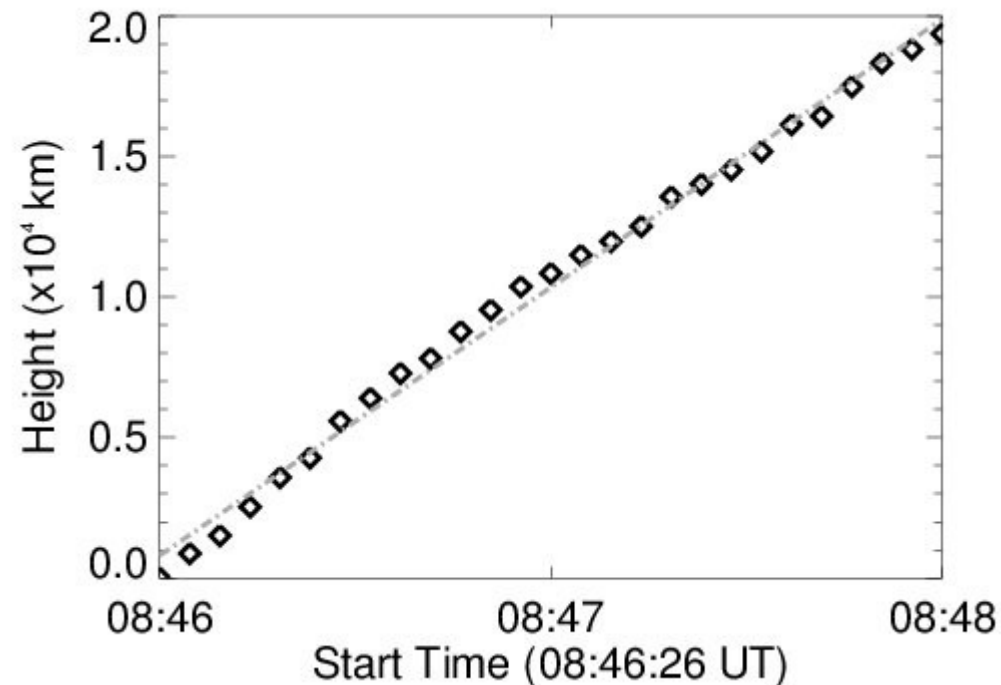
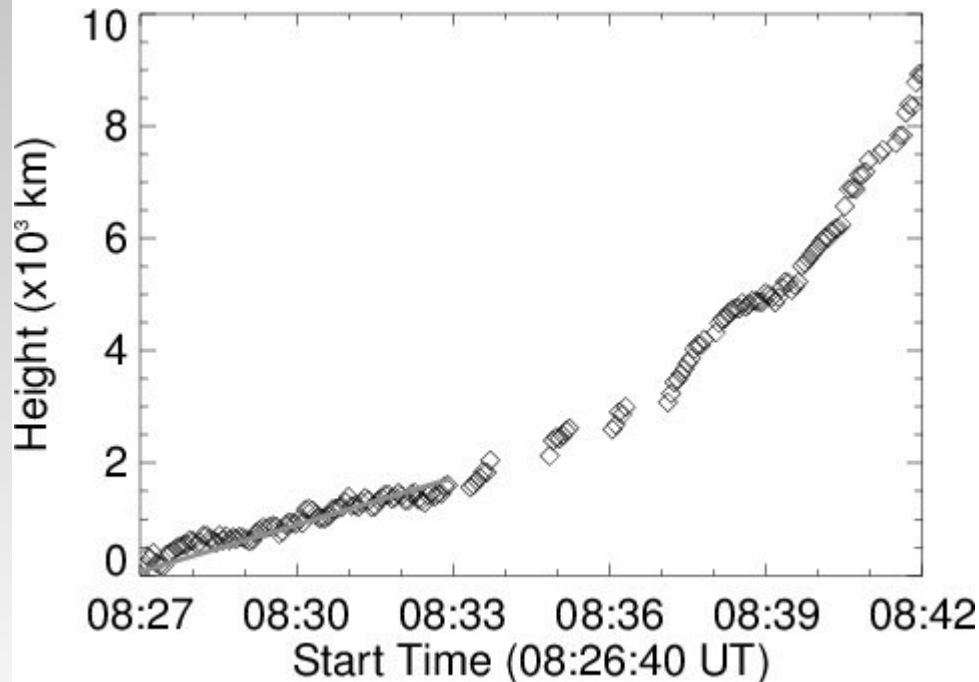
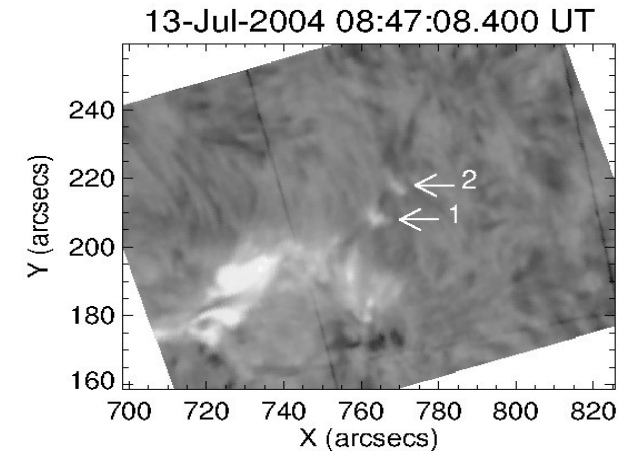
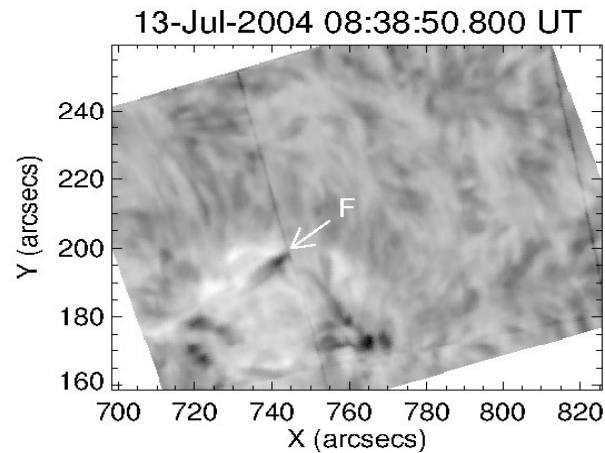
Lower chromosp.

Photosphere

Photosphere mag. field

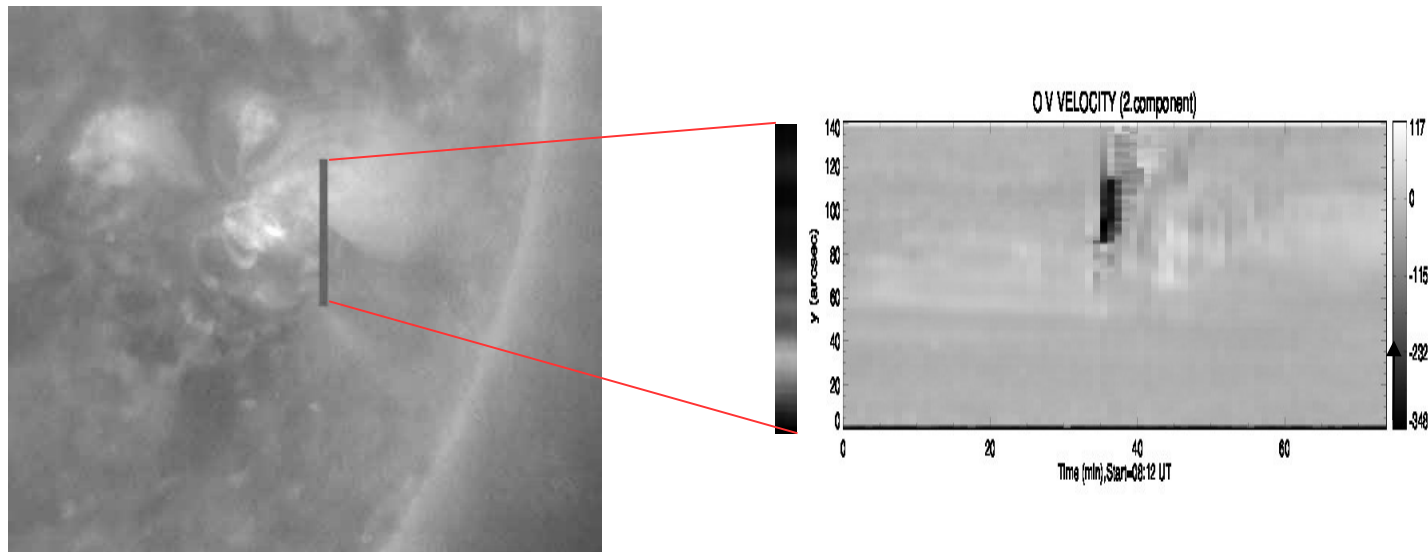


H α images from Vacuum Tower Telescope in Tenerife, Canary Islands

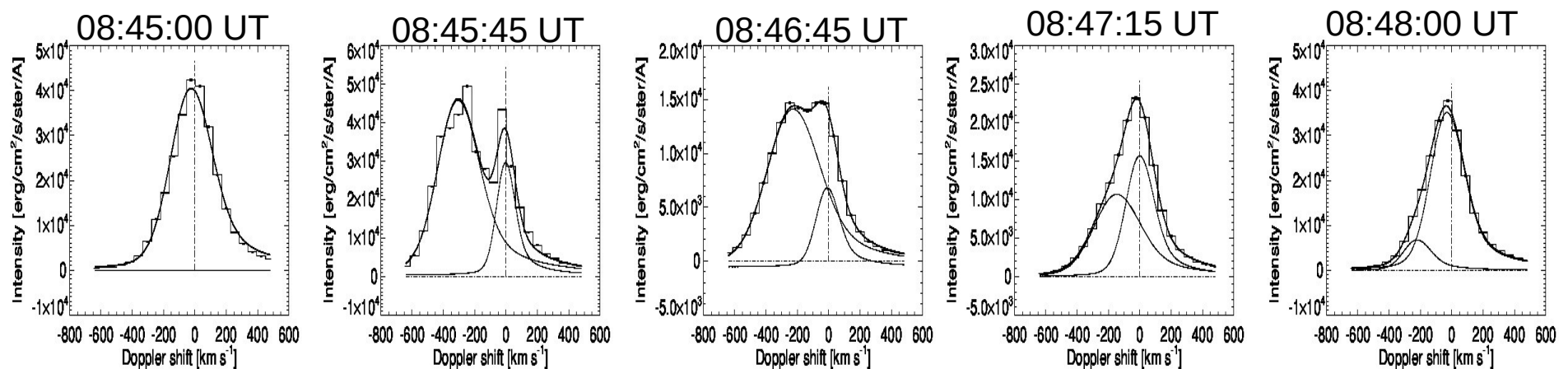


Velocity in the plane-of-sky for filament $\sim 4,8$ km/s and for moving plasma structures ~ 170 km/s

6 EUV spectra from Coronal Diagnostic Spectrometer (CDS) onboard SOHO satellite



EIT with the CDS slit position, OV EUV line ($\lambda = 62.97$ nm, $T \approx 2.5 \times 10^5$ K)



Line-of-sight velocity of upward moving coronal plasma $\sim$ up to 340 km/s