

Filament channels and EUV-filaments (proposal for THEMIS/MSDP observations in 2004)

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It was found recently that dark filaments observed in EUV-lines (SOHO, TRACE) are more extended in comparison to their H-alpha counterparts (Heinzel et al. 2001 and Schmieder et al. 2002). This fact has stimulated a complex investigation of such structures. Two principal questions are now the subject of debate: Are these structures reaching high altitudes like their H-alpha parts (Heinzel et al. 2002, Schwartz et al. 2004)? And do they contain a cool material (Aulanier and Schmieder 2002) or are just a signature of coronal voids ? We plan new observations in order to support a concept of spatially extended EUV-filaments which contain an extra cool mass, in addition to mass of H-alpha structures. This extra mass can be important for CMEs mass loading. These multi wavelength observations will be combined by modeling effort done in Ondrejov by the Heinzel group.

Method of observations

- Magnetography of the photosphere with THEMIS/MSDP and SoHO/MDI, from which the coronal magnetic field will be extrapolated.
- $H\alpha$ (Ca II) spectroscopic imaging with the Meudon/MSDP (THEMIS/MSDP) from which the cool chromospheric filament will be identified. A large quiescent filament with its center to limb transit is suitable.
- EUV observations with SOHO/CDS (JOP 17 EFINAR I and EFINAR II programs)
- TRACE 171 or 195 Å with a low cadence 60 sec, with WL and 1600 Å context images

Observing time for the campaign

8 days for having the center to limb observation of the filament
(This time could be allocated before or after the time allocated to the proposal on *Moving magnetic features* of E. Pariat (PI))

Coordinated instruments

1. **THEMIS mode MSDP** Na I D1 5896 and 8542 CaII (IV or IQUV) simultaneously, and H α separately
2. **THEMIS mode MTR** (if the change to the mode MTR is possible one or two times during the campaign) lines 6302 FeI, 5896 Na I, 8542 CaII or 6562 H α with the grid, slit=1 arc sec , with 1 camera.
3. **Solar tower of Meudon /MSDP** H α line spectropolarimetry
4. **TRACE:** EUV filament channel at 171 or 195 Å and context images for coalignment (network in 1600 Å and sunspot in WL).
5. **CDS:** JOP 17 with EFINAR 1 ot 2
6. **MDI:** full active region magnetic maps for coronal extrapolation.

References

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