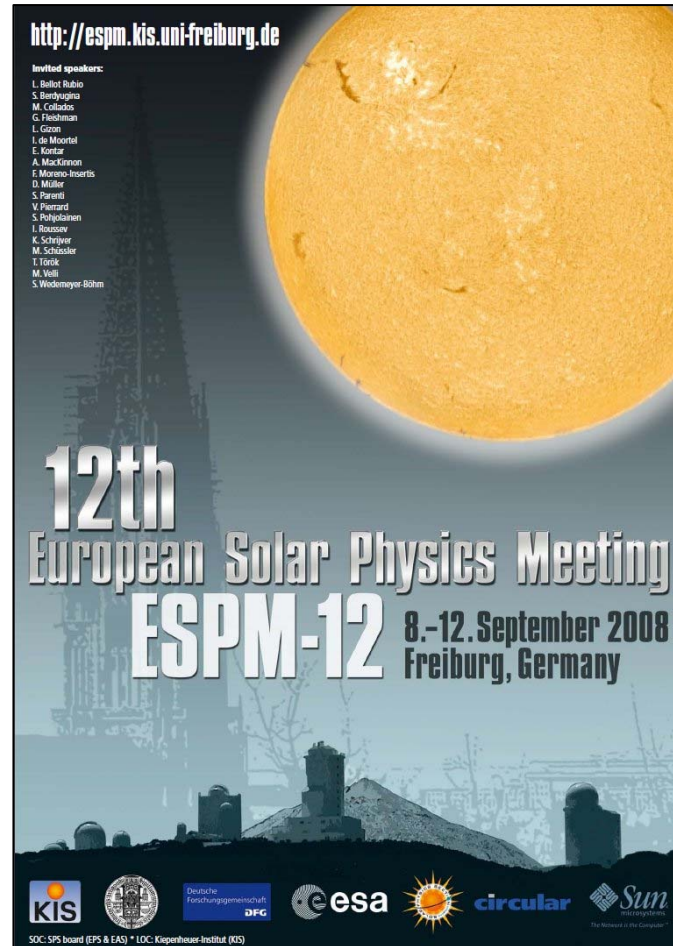


12th European Solar Physics Meeting

8 - 12 September 2008

Freiburg, Germany



Electronic proceedings

For further information on the meeting,
for all abstracts of talks and posters
as well as other articles of these proceedings,
please visit the following web site:

<http://espm.kis.uni-freiburg.de>

edited by Hardi Peter
Kiepenheuer-Institut für Sonnenphysik
Freiburg, Germany
peter@kis.uni-freiburg.de



Tuesday 17:45-18:00

Quiet Sun Mini-CMEs Observed in STEREO

Innes, D.¹; Genetelli, A.²; Attie, R.¹; Potts, H.³

¹Max-Planck-Institut fuer Sonnensystemforschung; ²Universite Paul Sabatier; ³University of Glasgow

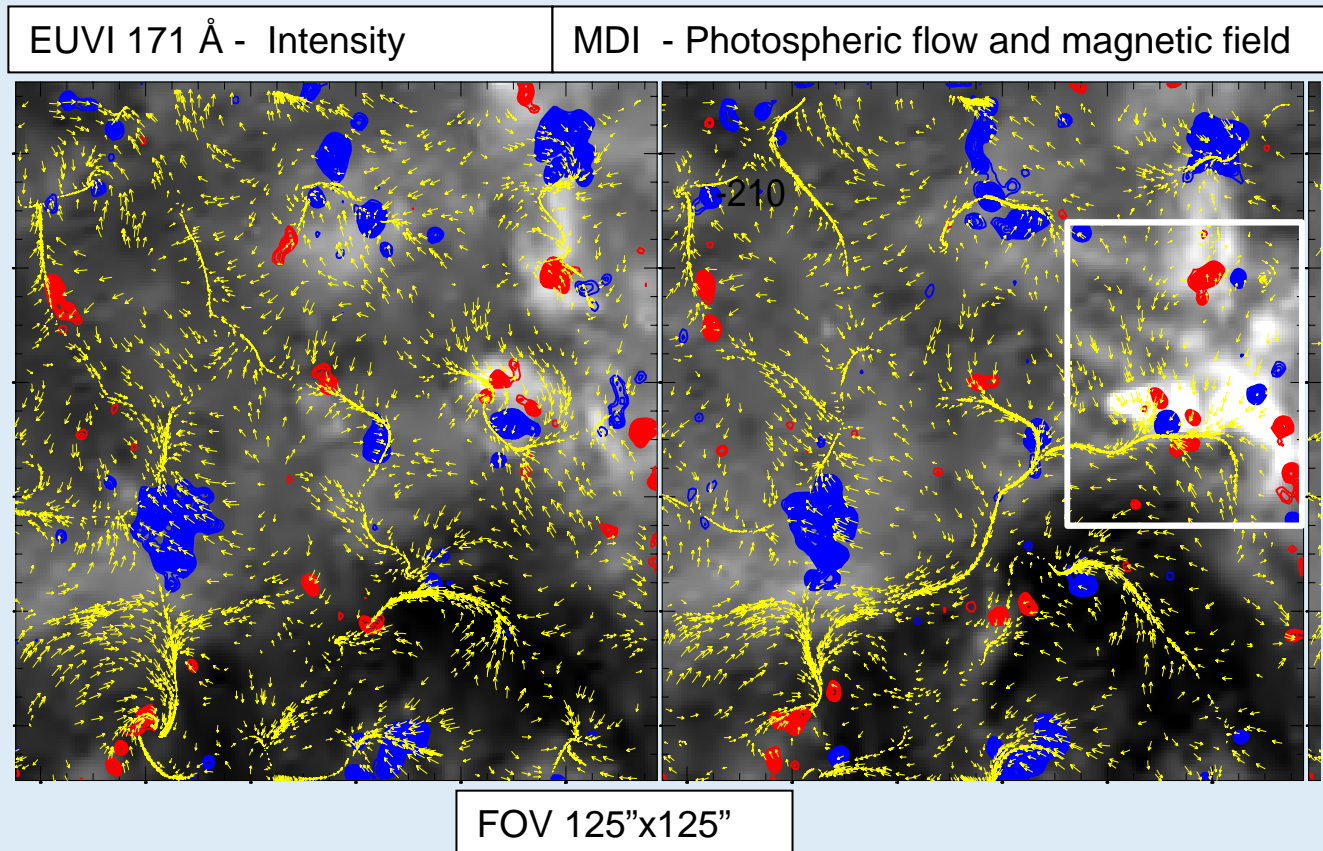
Mini-CMEs are eruptions of cool chromospheric material into the corona seen up to 50 Mm from the source. They are usually accompanied by flare-like brightenings at the onset site. The velocities are typically 20-30 km/s, but may be 5 times faster at onset.

STEREO 171 A observations of a region around a small equatorial coronal hole when it was crossing the disk center are studied over a period of 24 hours. Many events are seen. Events are generally characterized by dark clouds in the 171 images and strong brightening in the chromosphere. Selected events will be discussed with emphasis on the underlying photospheric magnetic field and photospheric flows.

Quiet Sun Mini-CMEs observed with EUVI/STEREO

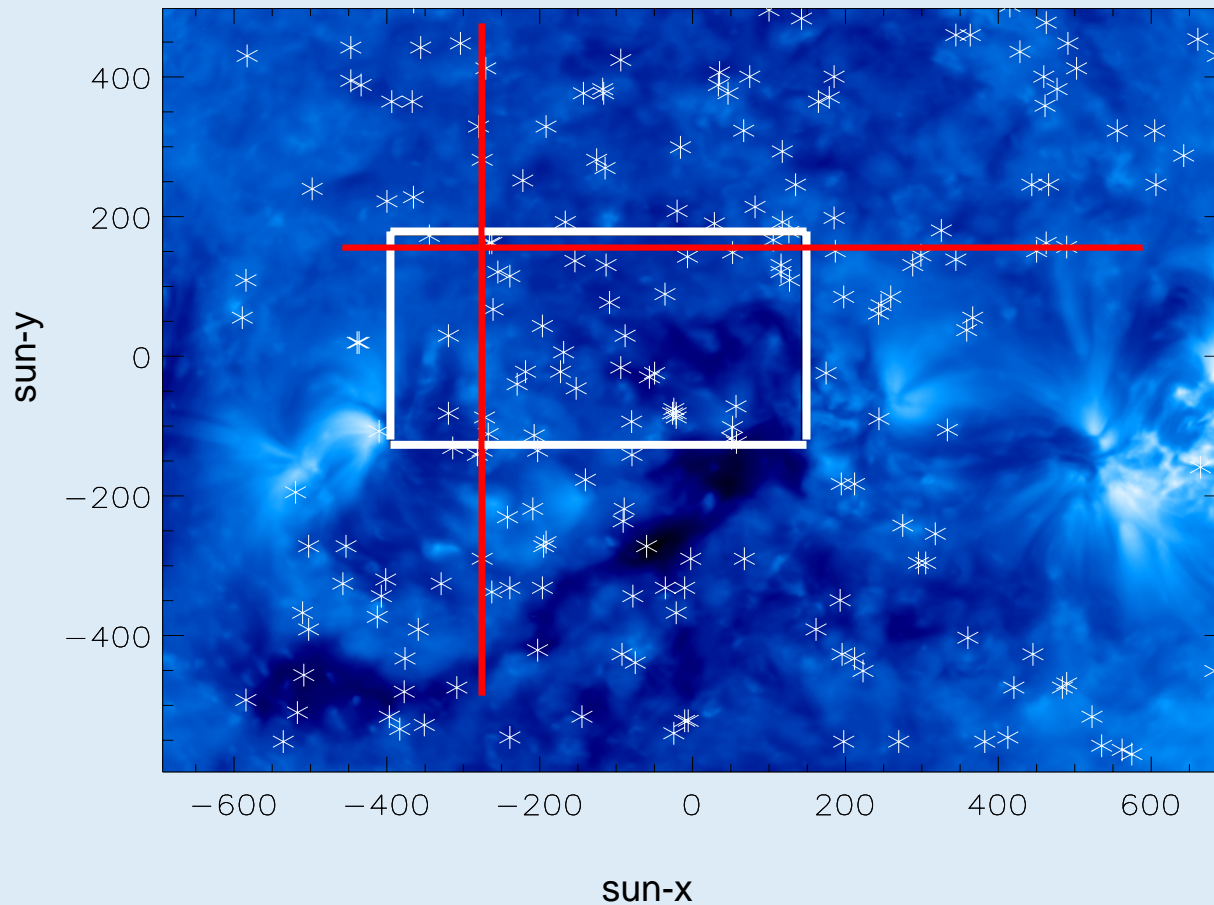
Davina Innes

Max-Planck-Institut für Sonnensystemforschung



The Region

EUVI/STEREO 171 Å - cadence 2.5 min, pixel size 1.59"
Rotated to SoHO view (6 degrees). MDI HR marked as white box



176 events in 24 hours

11 June 2007
STEREO-A

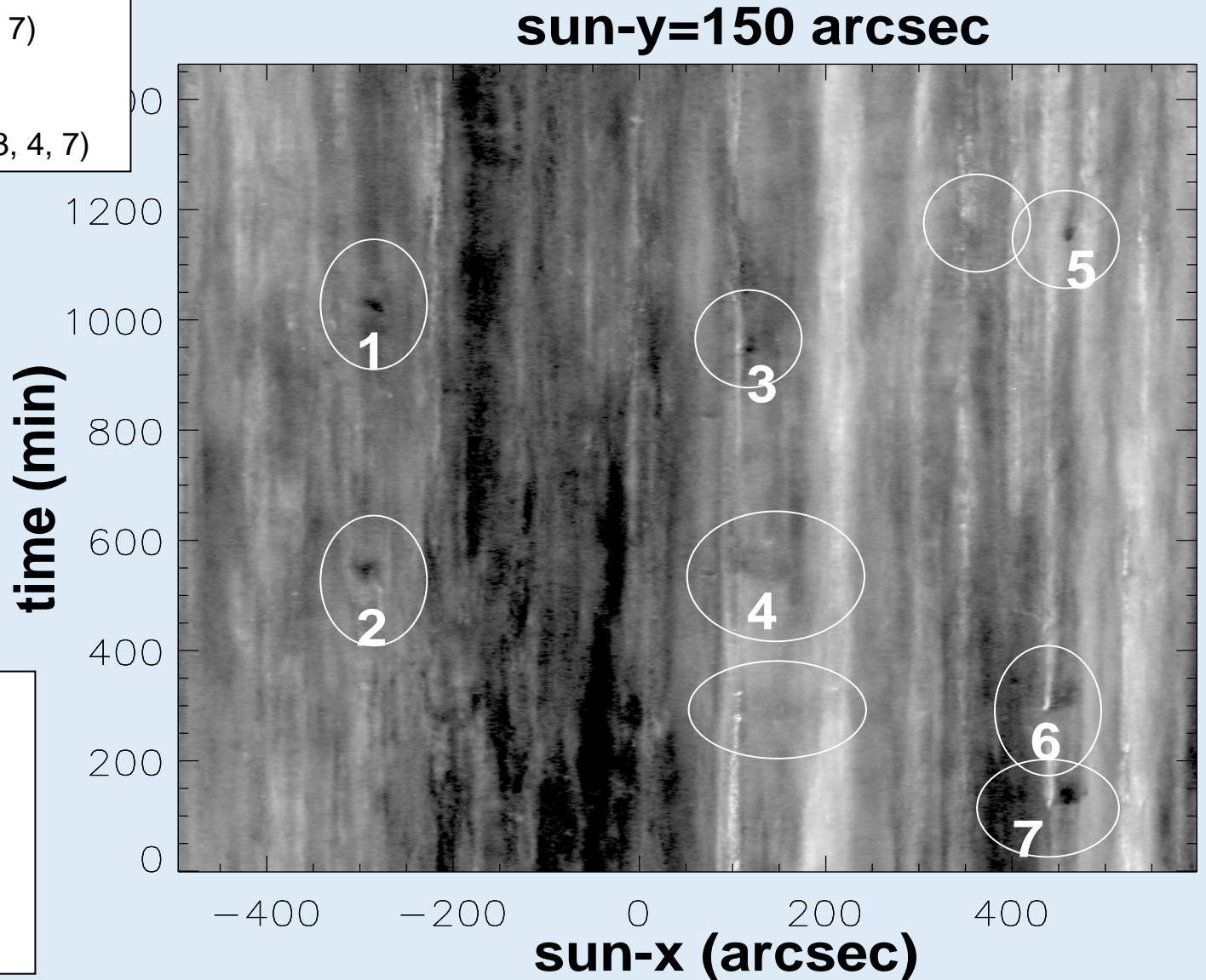
Red lines show
positions of space-
time images in next
slide

Event Characteristics

Darkening (1, 2, 3, 5, 6, 7)

Brightening (3, 6, 7)

Faint diagonal feature (3, 4, 7)



Average velocity :

dark 15 km/s

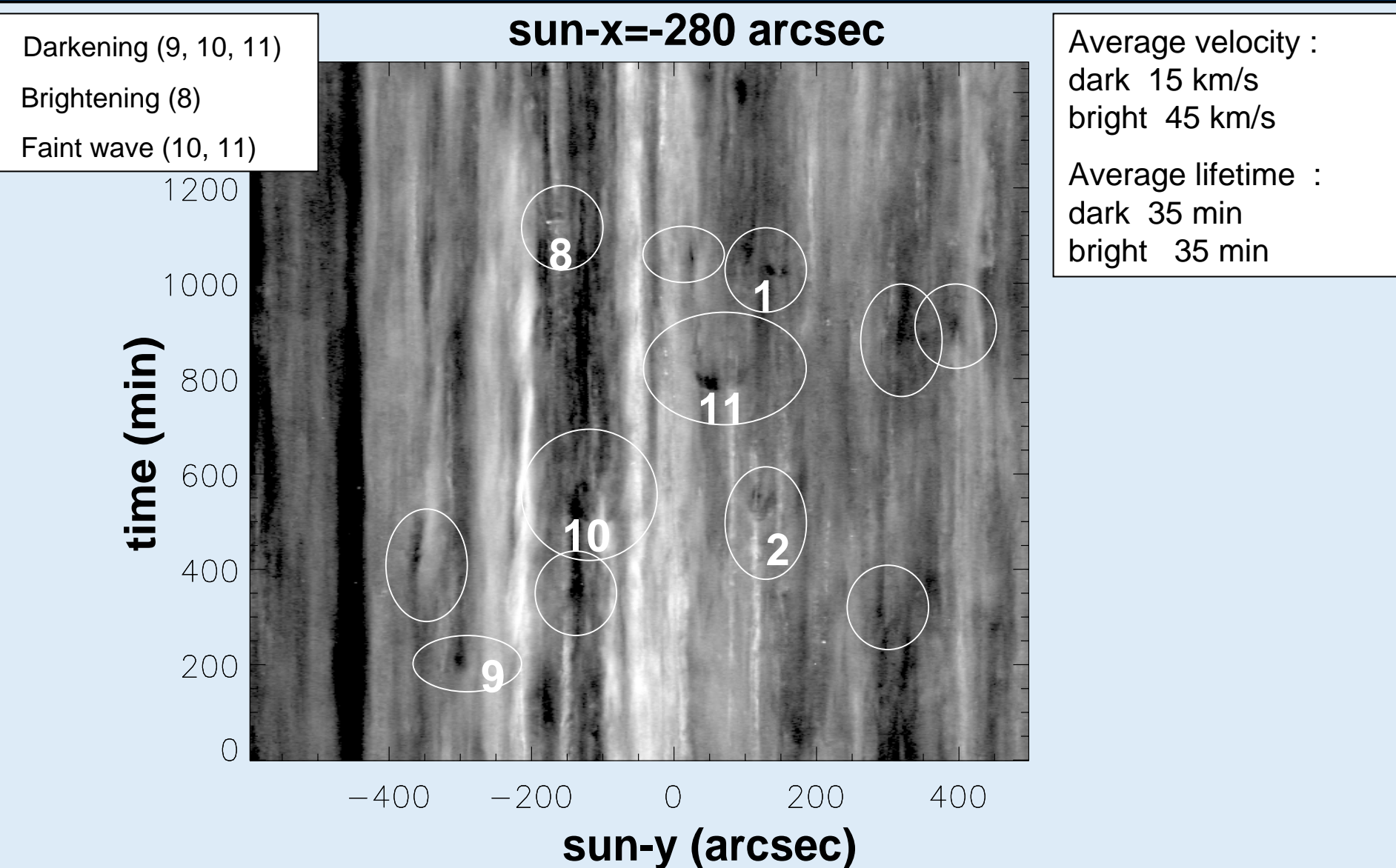
bright 45 km/s

Average lifetime :

dark 35 min

bright 35 min

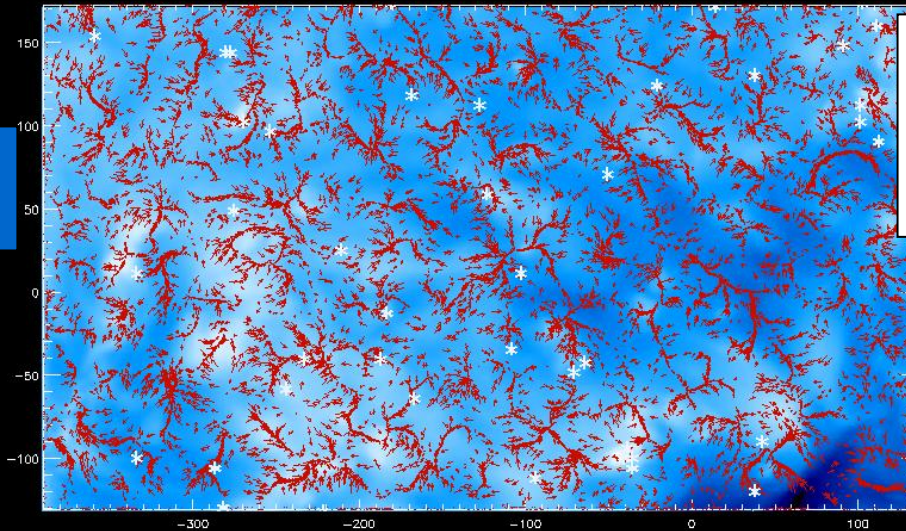
Event Characteristics



Photospheric Flows

Computed using Balltrack (Potts, Barrett & Driver, 2004, AA, 424,253)

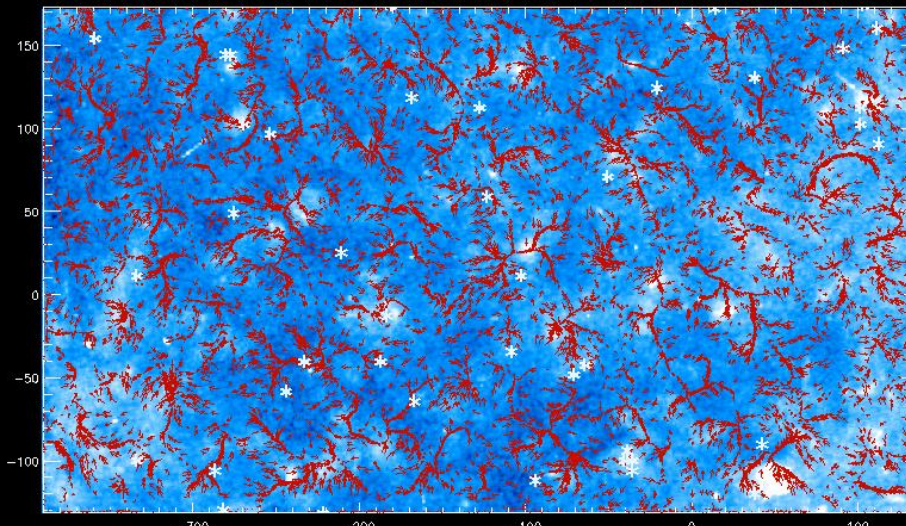
Average
intensity



Represented as red arrows
integrated with the flow.
Accumulate at junctions and
along lanes

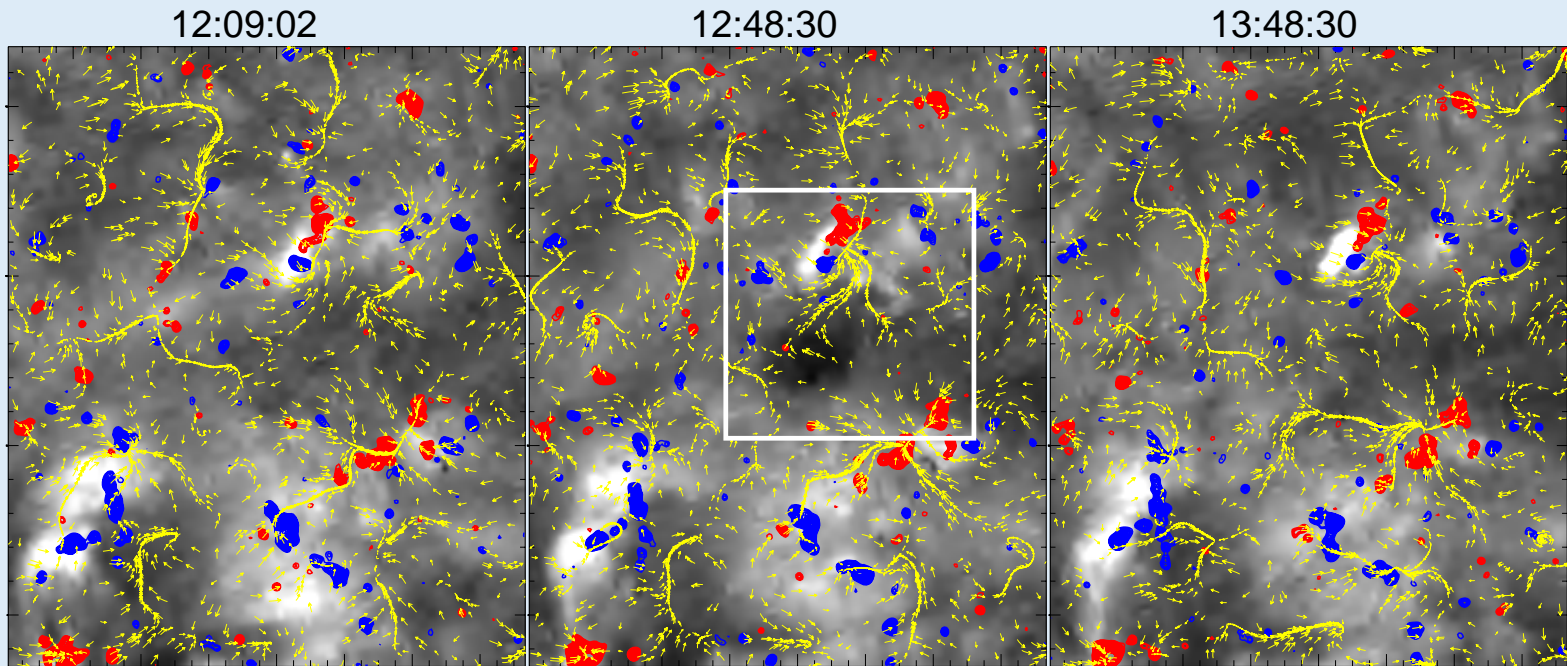
Raphael Attie's talk

Average
running
difference
divided by
average
intensity.



Brightenings along
lanes and at cell
junctions

Cloud eruption



Greyscale - EUVI 171 Å

FOV 150"x180"

Blue/Red – Positive/negative magnetic field greater than 40 G

Yellow arrows – photospheric flows

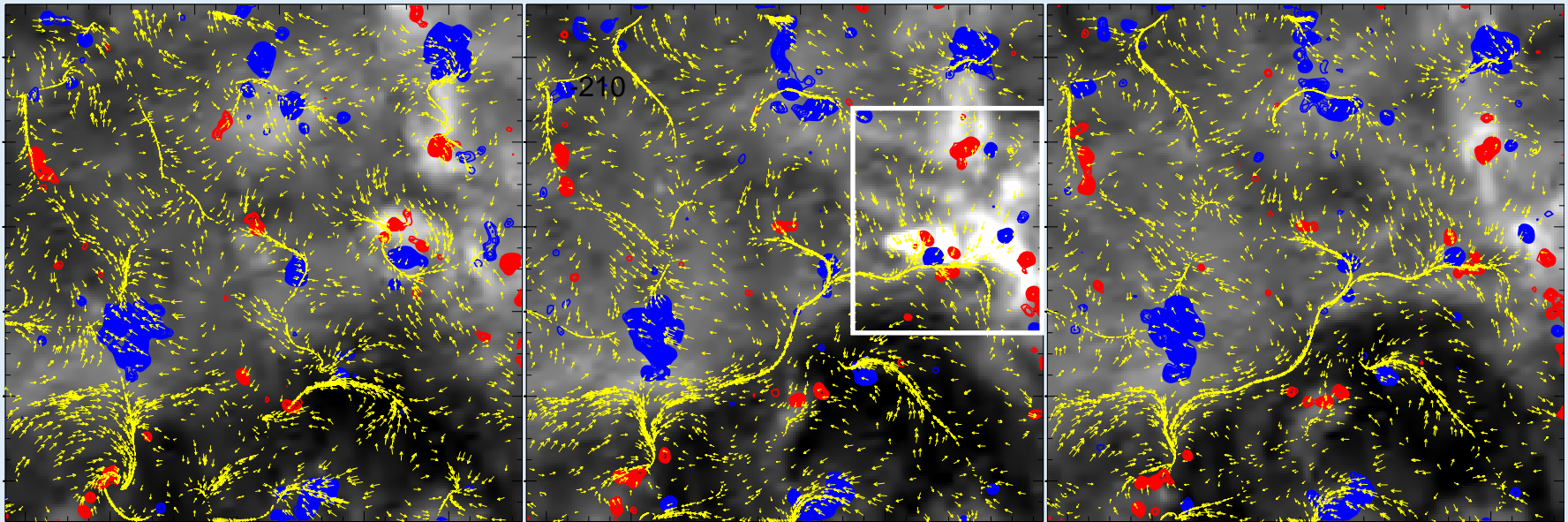
Cadence 2.5 min. Duration 3 hours 45 min

Flare eruption

13:23:30

15:26:00

15:51:00



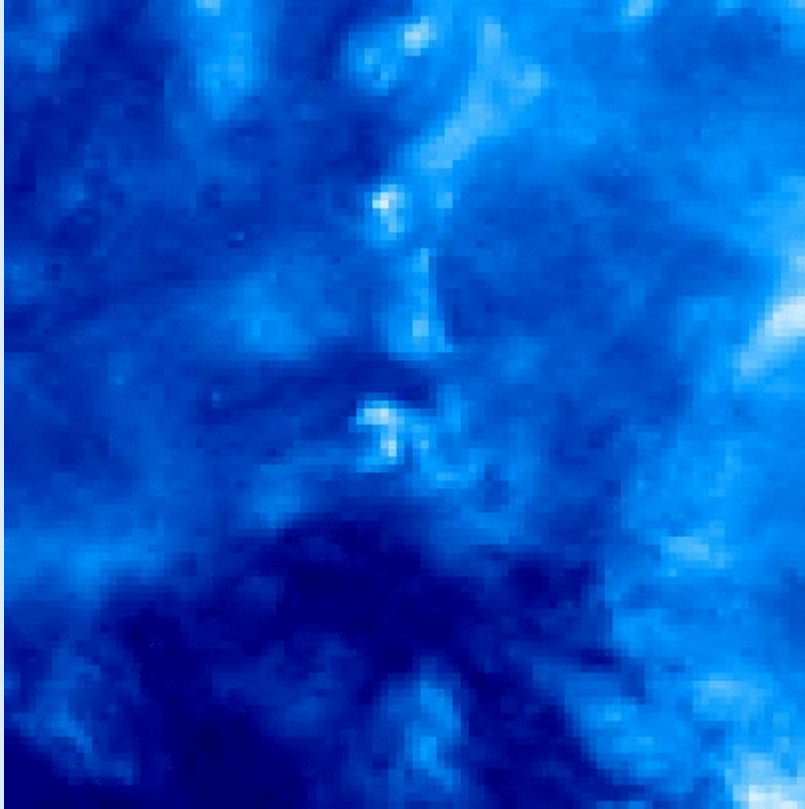
Greyscale - EUVI 171 Å FOV 125"x125"

Blue/Red – Positive/negative magnetic field greater than 40 G

Yellow arrows – photospheric flows

Cadence 2.5 min. Duration 3 hour 45 min

Wave in flare eruption



EUVI 171 Å FOV 150"x150"
Cadence 2.5 min. Duration 3 hour 45 min

Statistics Summary

176 events in 24 hours over $1200'' \times 1100''$

(1/8 solar surface)

1440 events per day

(Mini-filaments 6000 per day - Wang et al 2000, ApJ, 530, 1071)

One third have faint bright wave

Typical velocity 45 km/s, lifetime 35 min

-> distance 100 Mm

At any one time 1/30 of disk covered by waves.

Summary

?? SDO??