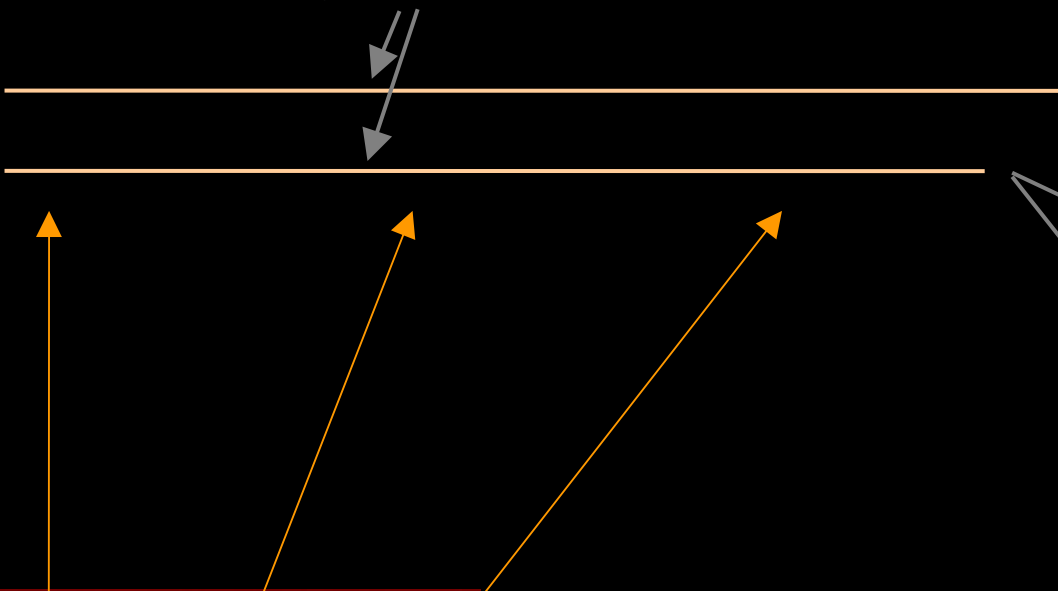


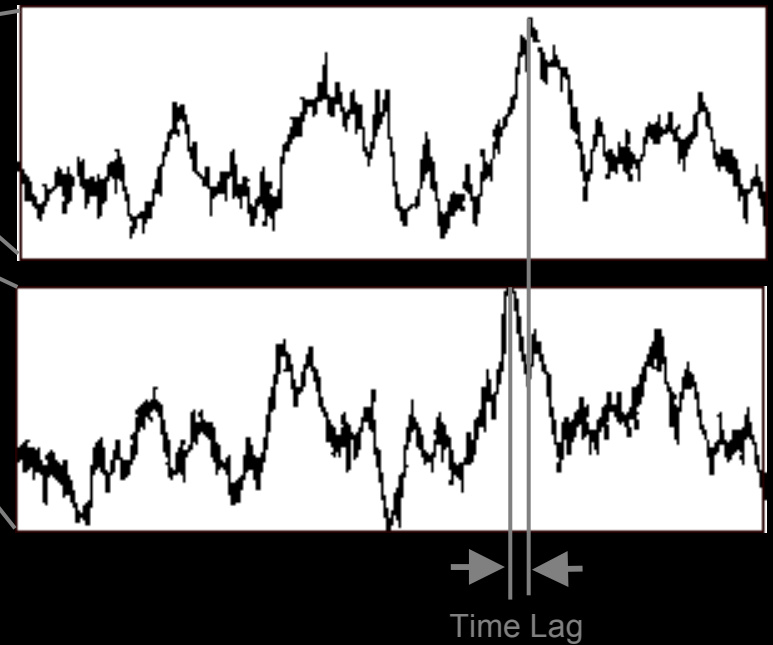
Interplanetary Scintillation: First Comparisons

Richard Fallows

Line of sight to radio source



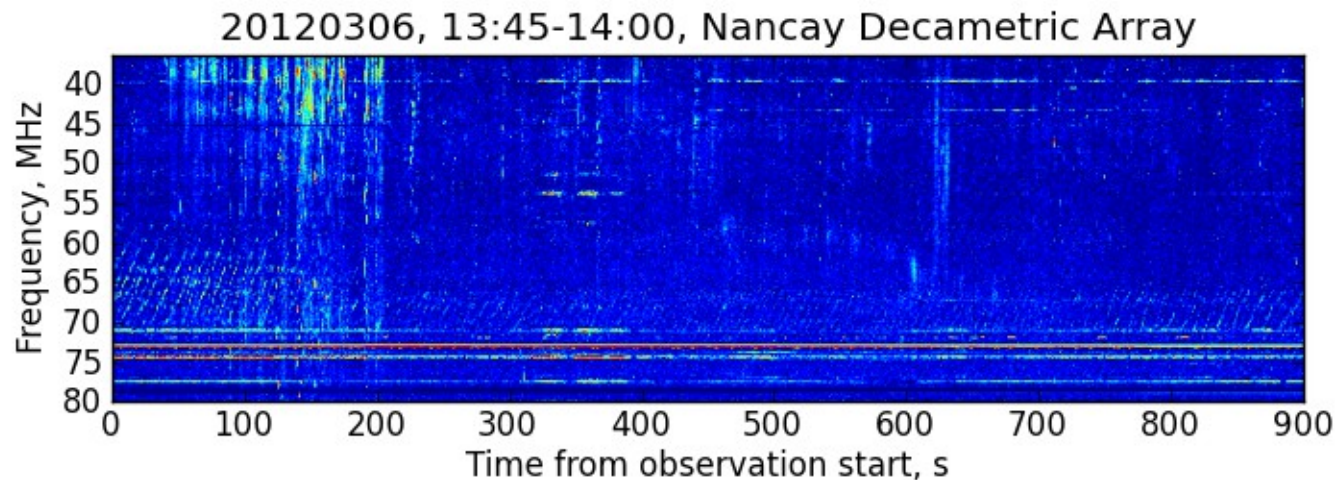
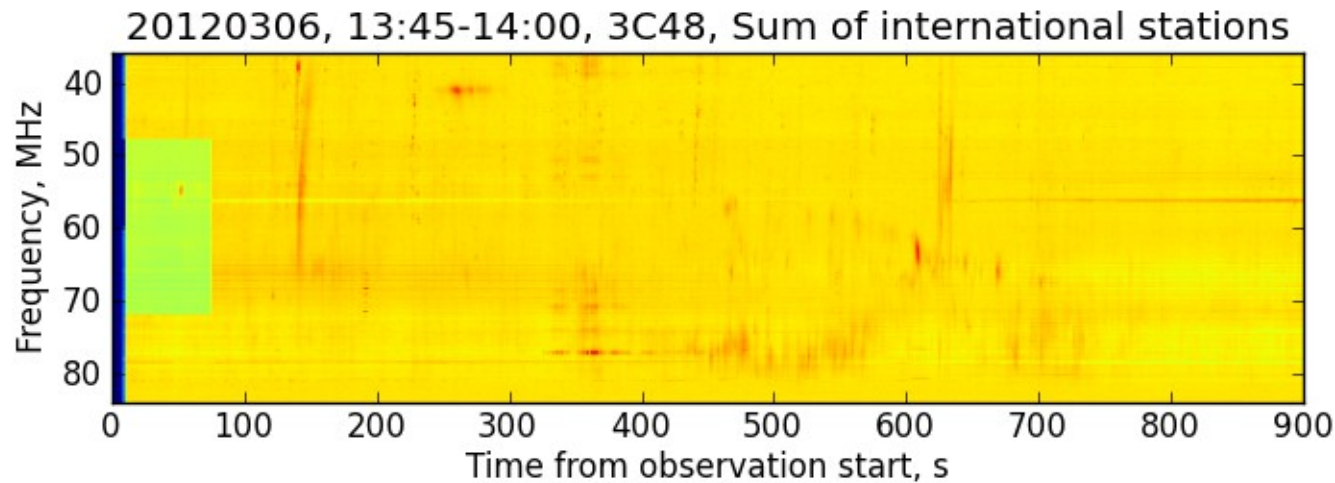
Scintillation due to turbulent-scale density variations in the Solar Wind



Simultaneous measurements by two antennas show similar patterns of scintillation.

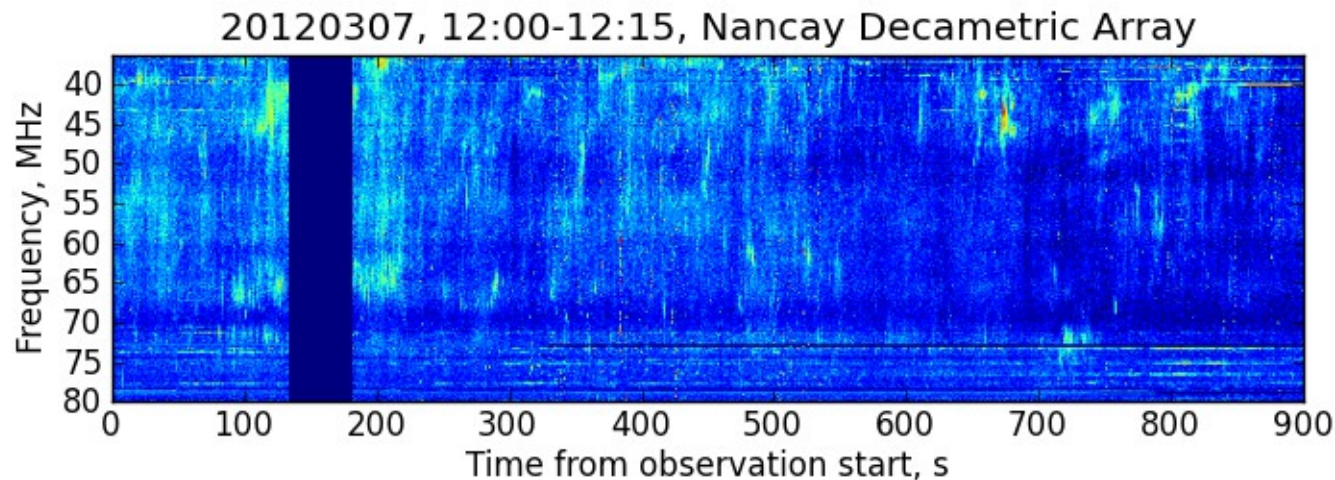
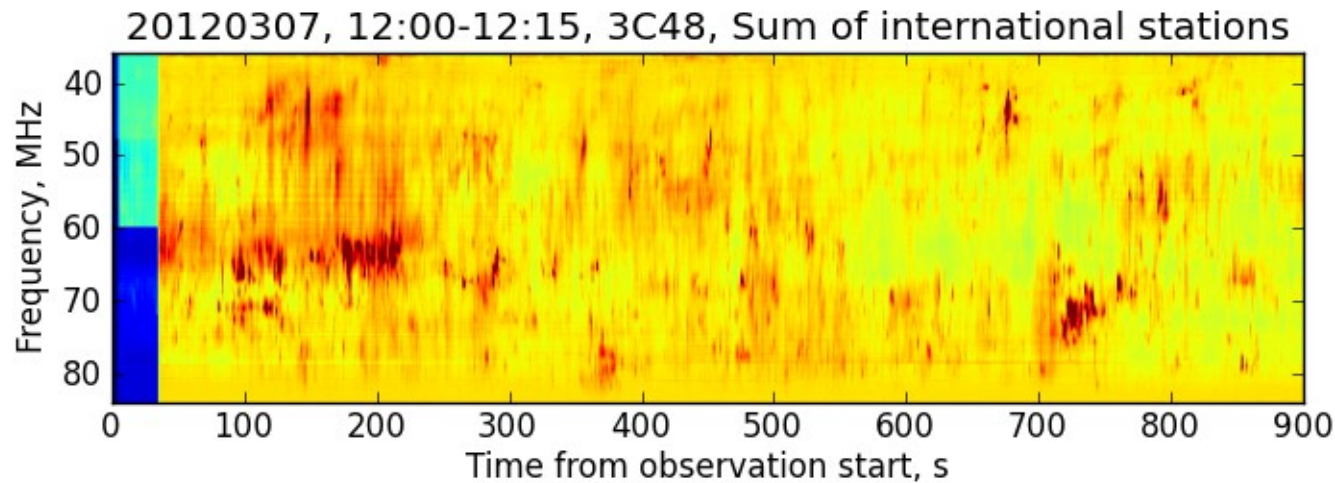
Time-lag for maximum cross-correlation gives estimate of solar wind outflow speed.

Solar Flare Activity - Comparison with Nancay Decametric Array



LOFAR IPS data averaged down to match resolution of Nancay (1.24s).

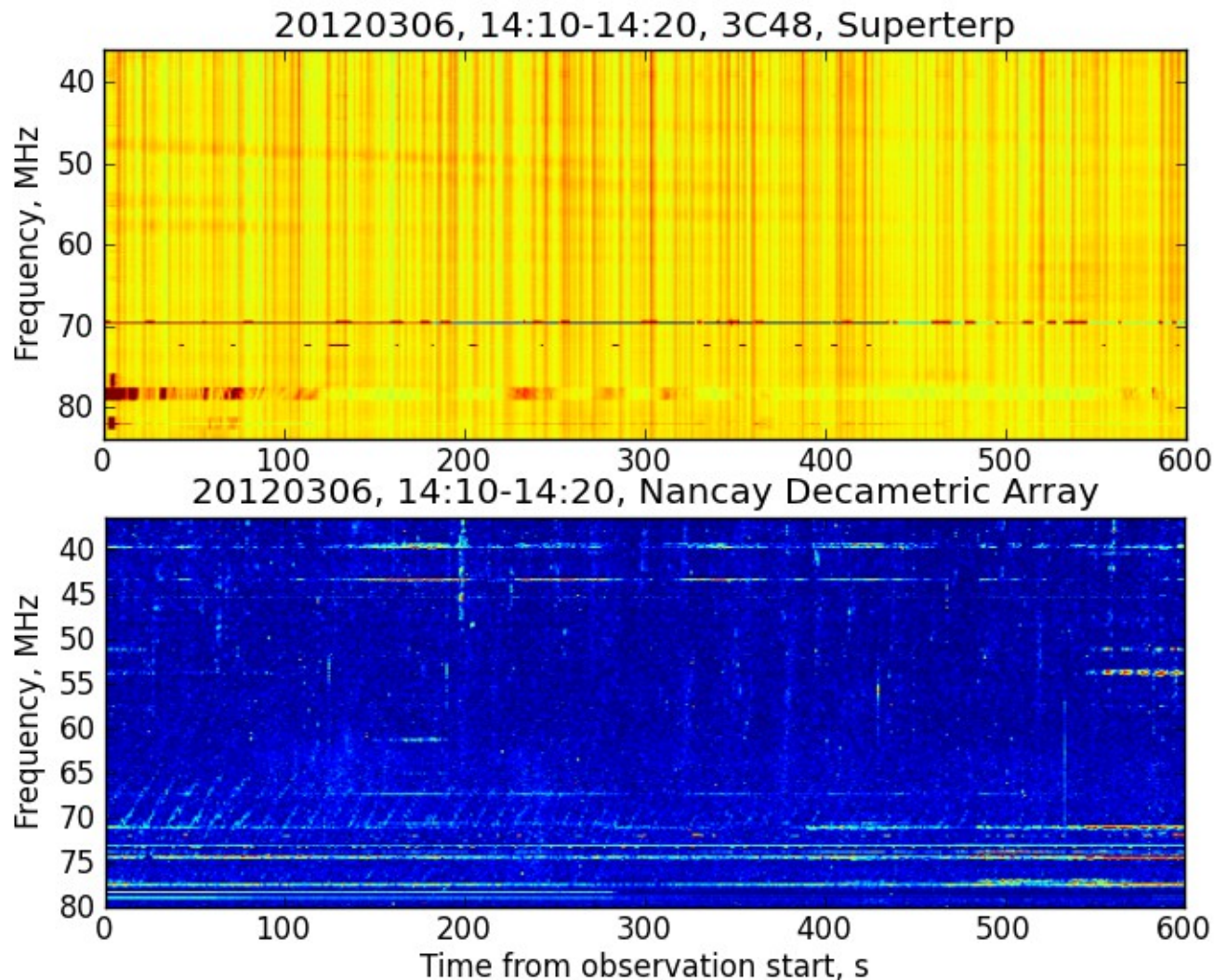
Solar Flare Activity - Comparison with Nancay Decametric Array



LOFAR IPS data averaged down to match resolution of Nancay (1.24s).

A lot of radio activity seen by both instruments.

Solar Flare Activity – Comparison with Nancay Decametric Array



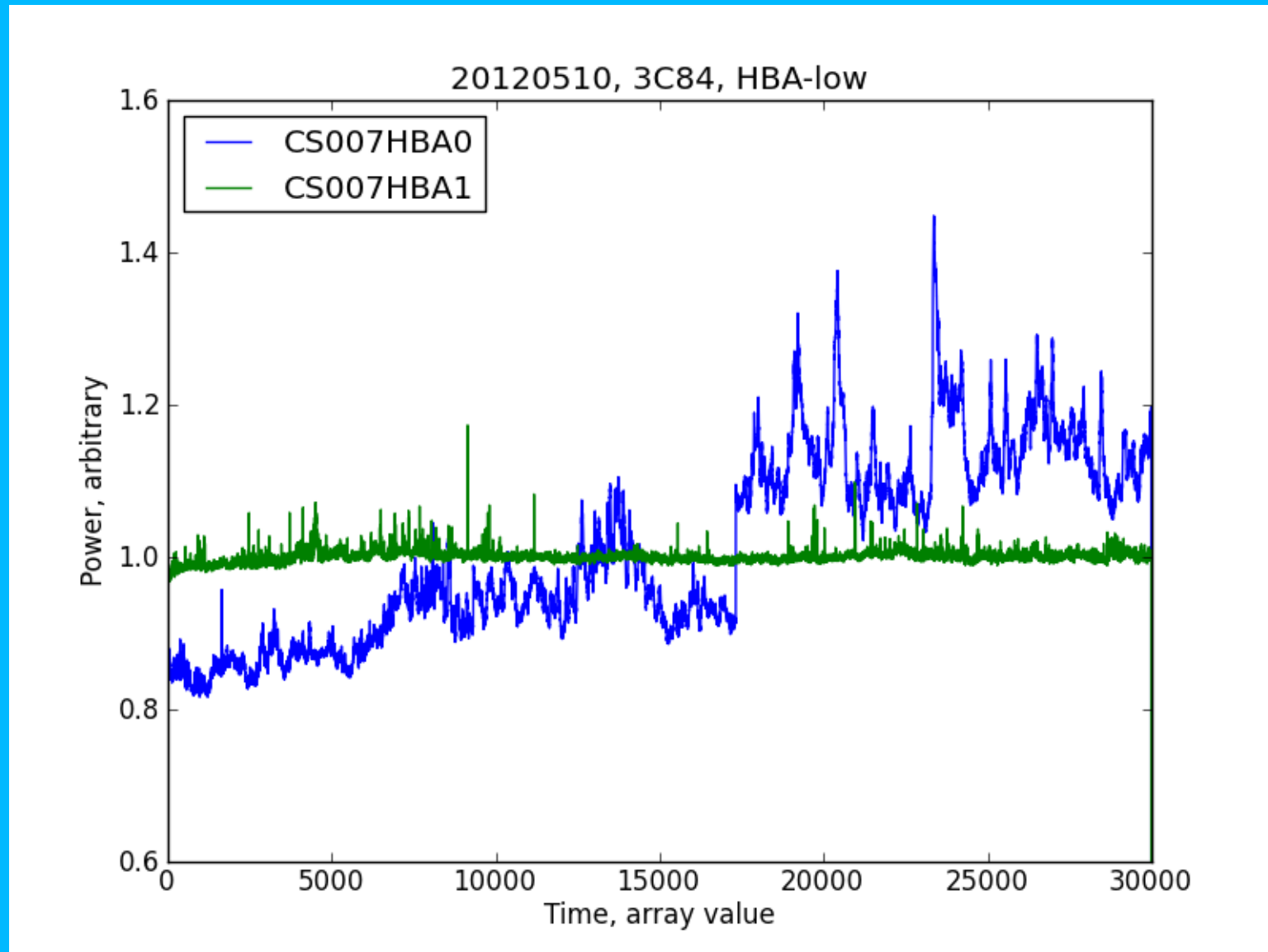
LOFAR IPS data averaged down to match resolution of Nancay (1.24s).

IPS signal (vertical stripes) seen very clearly in Superterp, as it should be, and no sign of the Sun!

Solar Flare Activity – CS007

Time series' of observation of 3C84 taken with Superterp in Fly's Eye mode show evidence of some solar activity in CS007HBA0.

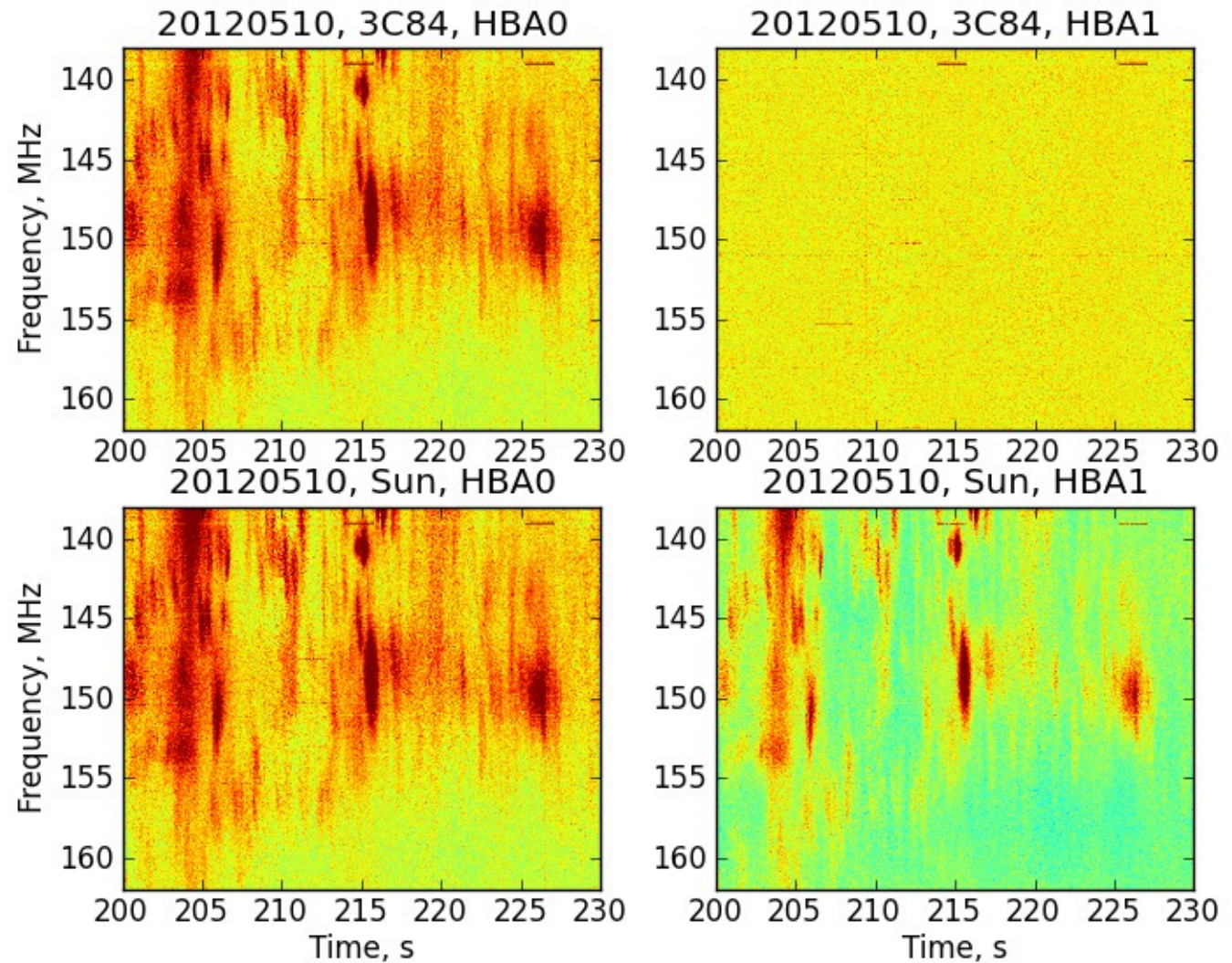
Little sign of activity in other stations, including CS007HBA1.



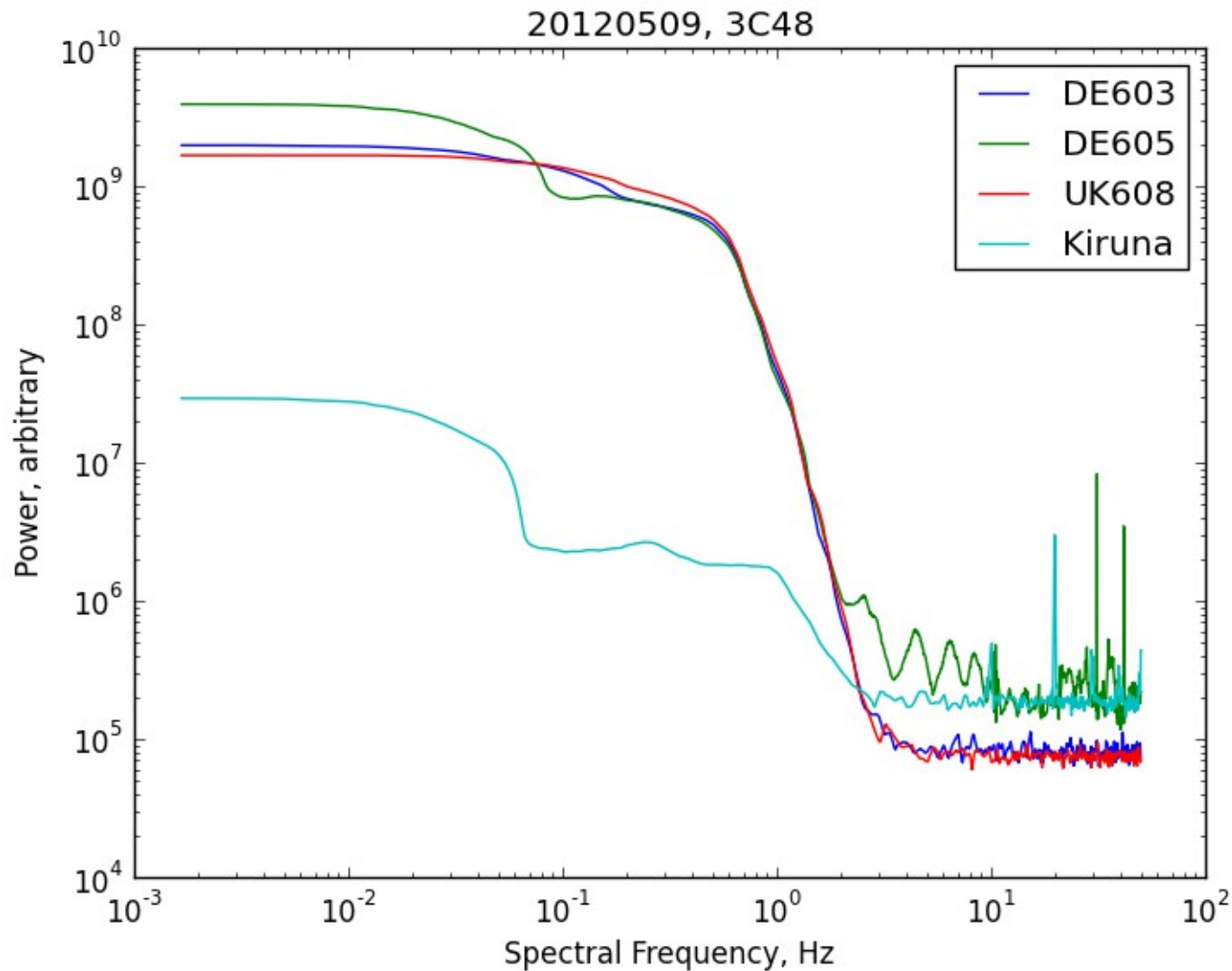
Solar Flare Activity - CS007

Second beam
pointed at the
Sun for all early
May IPS
observations:

Dynamic spectra
confirm that Sun
is seen in
CS007HBA0.



EISCAT Comparison

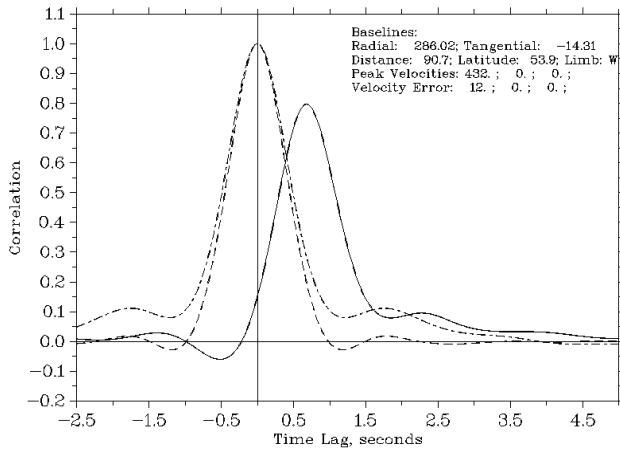


Observation of 3C48:
20120509
06:35 to 06:45 UT

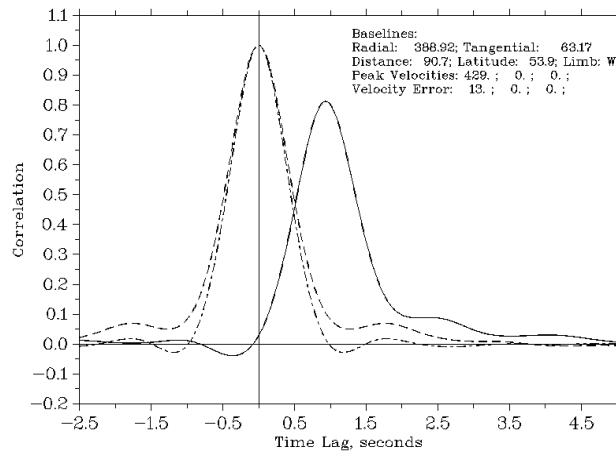
Plot of power
spectra from
different stations

EISCAT Comparison

20120509 : 06:34:00 : 0137+331 : D603-D605



20120509 : 06:34:00 : 0137+331 : D605-U608

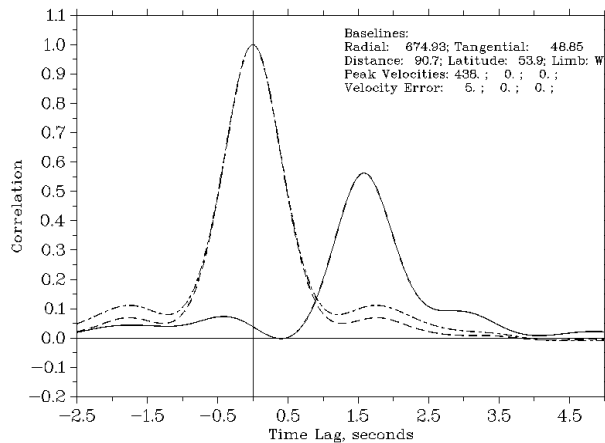


Observation of 3C48:
20120509
06:35 to 06:45 UT

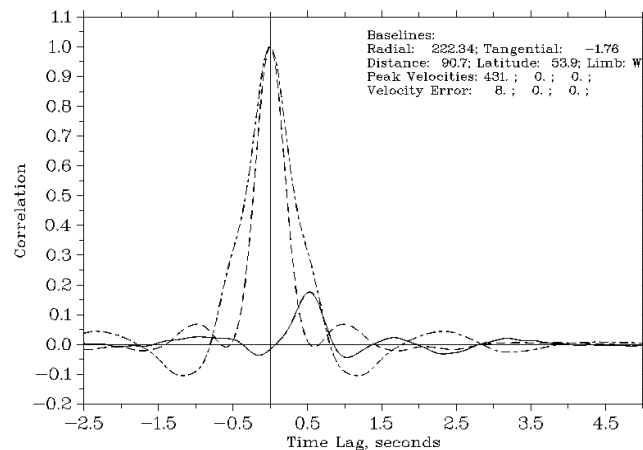
Top left:
DE603-5
Speed 432 km/s

Top right:
DE605-UK608
Speed 429 km/s

20120509 : 06:34:00 : 0137+331 : D603-U608



20120509 : 06:34:00 : 0137+331 : Sdky-Kirn



Lower left:
DE603-UK608
Speed 436 km/s

Lower right:
Kir-Sod
Speed 431 km/s

- Comparisons with full-resolution data from the Nancay Decametric Array confirm solar flare activity seen in March IPS observations.
- In observations in May, a second beam was placed on the Sun:
 - Approximately half the observations affected by flare activity.
 - CS007HBA0 strongly affected in one observation, other Superterp stations not affected as strongly.
- First comparisons of cross-correlation functions with EISCAT:
 - Estimated solar wind speeds match exactly!