

## EIS Core Team Studies

### Week beginning 9<sup>th</sup> November

As of 7<sup>th</sup> November 11:35 UT, the disk is largely free of activity apart from the small AR 10973 near the West limb. An extended N- polar CH (EIT/195 Å) has now developed. There is also a S-located on-disc CH approaching the West limb.

- 0\_a. Continue with SYNOP001 at Sun-centre during each XRT SYNOP.
- 0\_b. SYNOP002 to be run Mondays on Sun-centre QS; once per week.
- 0\_c. EIS participation in mission co-alignment studies as required
- 0\_d. GSFC EUNIS rocket flight for EIS absolute calibration currently scheduled for Tuesday 6 November 2007; single launch window: 18:00 UT – 18:40 UT.  
Schedule gives Hinode freedom from SAA during EIS raster #3. First possible backup date is 13<sup>th</sup> November
- 0\_e. Test SYNOP 003 (Harry Warren) when it becomes available
- 0\_f. Do not run HPW001\_FULLCCD\_v2 due to compression problems.

### 1. Second week of SUMER campaign – **November, 9 to November, 16**

- Enrico Landi at ISAS, EIS planner and Davina Innes at MPI, Lindau, SUMER campaign coordinators
- Hinode support envisaged for approx 12 hours/day.
- See <http://www.mps.mpg.de/homes/theissen/scr/planning/index.html>

HOP 45A – SUMER campaign #13 - Waves in front of/back side of (north/south) polar jets

(11/10; 11/11; 11/12; 11/16) Imada and Teriaca

HOP 39 - SUMER campaign #9 - Characterize Fast & Slow S Wind Source Regions (11/10; 11/12; 11/16), Landi, Miralles, Wilhelm

HOP 32 - SUMER campaign #4 - The magnetic structure of macrospicules (11/10), J.G. Doyle, (North pole)

HOP 49 - SUMER campaign #10 - Doppler Shifts in X-ray Jets (TOO) (11/11), D. Innes

HOP 40 - SUMER campaign #3 - coronal hole (11/11), S. Kamio et al.,

HOP 31 - SUMER campaign #7 - Coronal holes boundary (11/12; 11/14; 11/16) M. Madajarska

HOP 48 - SUMER campaign #6 - Chromos Heating, 3-D structure/evolution of filaments/prominences

(11/13; 11/15), D. Innes

HOP 27 - SUMER campaign #5 –  $T_e$ ,  $n_e$  and 3-D structure of active region loops, (11/13; 11/15), D. Innes

HOP 51 - SUMER campaign #12 - Multi temperature observation of the Quiet Sun (11/13; 11/15), K. Matsuzaki

HOP 45 - SUMER campaign #2 - Detection of waves in the solar atmosphere (11/13; 11/15), Teriaca et al., Disc CH or North or South pole CH

HOP 47 - SUMER campaign #11- Moss Observations (11/14) S. Patsurakos

### 2. G. Doschek: Observations of a polar coronal hole.

- run HPW001\_FULLCCD\_RAST
- point on disc in CH with as much slit as possible above limb
- run if time available within SUMER campaign constraints

3. H. P. Warren; Obtain velocity calibration observations;
  - off-limb followed by disc centre rasters
  - run HPW001\_FULLCCD\_RASTER; - run unless recently completed
4. van Driel-Gesztelyi, Baker, Culhane; On-disc Coronal Hole at limb
  - multi-wavelength jet imaging for lower latitude on-disc CH
  - 40 arc sec slot raster for jet velocities and light curves,
  - Study HPW007\_QS\_SLOTW\_v2, ID: 43
  - observe CH interior inside and at limb when S. CH reaches limb
  - run if time available within SUMER campaign

Should suitable activity develop, give high priority to:

5. (HOP 19) Gerry Doyle – Search for Fast Magnetoacoustic Waves in AR Loops
  - Loop Density Measurement
  - arm\_fastslot\_waves and arm\_loop\_ne
  - AR near disc centre with resolvable loops
  - ideally studies run sequentially but at least on the same AR

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Week beginning 16<sup>th</sup> November and beyond

6. (HOP 52) Walsh, Plunkett et al - Multi-point, high cadence EUV observations of the dynamic solar corona a) waves, b) dynamic brightenings
  - joint observation with STEREO/SECCHI (also SOHO/EIT, TRACE)
  - probably **two** three hour slots; one on 19 or 20 Nov (week # 47) and one on 29 or 30, Nov (week #48); thus on two days total; exact timing TBD **soon** (!)
  - **AR, if available**, use context raster study 178 - ardiagn\_hcadrast with COOL\_AR\_MOVIE (ID #186);10s exposure, 40" slot
  - **otherwise QS at disc centre**
  - Study 210 : quiet\_sun\_studies\_slot; Slot: 40", Exposure: 60s, FOV: 40" x 512"
  - Study 211: quiet\_sun\_studies; Slit: 2", Exposure: 60s, FOV: 80" x 384"
  - Overall plan for QS:
  - Run quiet\_sun\_studies (211) before SOP for context.
  - Run quiet\_sun\_studies SLOT study (210) repeated N times during SOP.
  - Run quiet\_sun\_studies (211) after SOP for context.
7. K. Dere - Observations of a disk coronal hole
  - Study kpd01\_qs\_1slit\_55stp\_1ac\_60s (ID: 147); run five times,
  - move pointing 55 arcsec between rasters to cover CH and surroundings.
  - continue to run raster at center of CH; long observation set of one or more days
  - run after SUMER campaign when suitable CH is back near disc centre
8. H. Mason, Sterling, Young - Temperature Structure of AR at the Limb
  - TOO for suitable AR
  - determine AR thermal structure and density as f(height) above AR core
  - AR close to limb; core just inside and most structure above limb
  - two/three runs of program on different days for each AR; max of three ARs
  - run CAM\_AR\_LIMB\_v1 ; 2" slit, 45sec exposure, full length slit, 6' wide raster, run time: 2.5 hours; AS to specify SOT observation; Run week of Nov 19th
  - XRT: Al/mesh and Ti/poly, short- and long-exposure pairs, XRT select exposure time; FOV 512" x 512", 1x1-pixel binning, four images (one/filter) per min.

9. H. Warren: Quiet limb observations from just inside limb to well outside the limb.
  - Quiet limb raster with HPW001 (v1) at East and West limbs
  - one or two day period; absolute wavelength calibration; need more observations
  - run with Peter Young's study "QS\_atlas\_off-limb"
  
10. J. Mariska: Limb observation for line broadening and diagnostic line ratios above the limb.
  - sequence of sit-and-stare observations that can be summed; - sit-and-stare to be repeated as several locations above the limb; 10, 20, 30 arcsec
  - raster from inside the limb to well above with relatively long exposure times using GAD002\_AR\_RAST, or HPW\_004\_QS\_RAST, IUU\_QS\_SNS\_001
  
11. (HOP 37) Ineke de Moortel – High Cadence Studies of Propagating Waves in Coronal Loops
  - context raster and high cadence slot raster; Study ID 183
  - observe quiescent non-flaring loop on disc or limb
  - context raster followed by repeated high-cadence slot rasters
  - SOHI CDS and TRACE to co-point for high-cadence target
  - run if suitable structures; de Moortel to comment on TRACE role
  
12. Studies of transient brightenings in quiet Sun regions
  - aimed at better understanding short timescale activity in the quiet Sun
  - HPW005\_QS\_SLOT\_60m or HPW006\_QS\_SLOT\_120m, for slot raster movies
  - run frequently; need to assess data output/science return
  
13. Coronal Hole – Study of Narrow Velocity “Plumes” – P. Young
  - narrow plume-like structures seen in velocity, not in intensity maps
  - was run in week of 21st Sept, assess outcome
  
14. Quiet Sun - Search for Small Coronal Holes – P. Young, C. DeForest
  - small dark QS features seen in SECCHI/EUVI data
  - may be small coronal holes
  - optimum visibility in combined STEREO images
  - not seen with TRACE and EIT
  - about 1-3 supergranules in size and fairly common in QS.
  - EIS spectra to check velocities/densities; compare with normal CH - -
  - large format raster to maximise detection probability
  - run: ar\_velocity\_map\_v2 (duration: 5hr 40min)
  - was run in week of 21<sup>st</sup> Sept, assess outcome
  
15. Quiet Sun sit-and-stare observations.
  - quiet Sun short timescale activity
  - IUU\_QS\_SNS\_001, preceded by HPW\_004\_QS\_RAST, for context