

1.1.4.1.1 Interchange reconnection between open and closed field lines and its role in slow wind generation

- Interchange reconnection between open and closed field lines and its role in slow wind generation (coronal hole boundaries and intermediate areas of quiet Sun). To be studied for coronal holes in different locations and at different parts of the orbit (high latitude, perihelion).

YZ: Also linked to 1.1.2.2 Does slow and intermediate solar wind originate from coronal loops outside of coronal holes?

(To be merged with 1.1.2.2 after the LTP planning exercise during SOWG#8.)

Meeting notes:

boundary crossing is the event we want to catch both IS and RS

model gives us a first rough idea on when we will cross the open/closed boundary in situ and when this plasma should have left the sun
eui/hri goes in high cadence observation well before the estimated crossing and well after: at 1min cadence ~10hrs of data can be stored internally when internal buffer is full, EU1 stops

LL data are checked to see whether we see the boundary - updates if necessary

MAG LL data are checked to find the boundary crossing - wind speed gives us estimate when the wind left the sun (only up to source surface probably)

models can be compared with these observations

we need phi for context for data analysis

extra idea: it would be great to observe the same boundary when it appears on the limb (both limbs?) with FSI and metis

• SPICE:

- Target: Coronal holes, coronal hole boundaries, quiet Sun, active regions
- Observing mode: Composition mapping (with possibility to measure Doppler velocities) and possible mosaic for connectivity
- Slit: 6" or 30" (for faster maps which the max FOV)
- Exposure time/cadence and number of X positions: 180 s, X=160 or X=32
- Field of View: 16'x11' (with the 6" slit), 16'x14' (with the 30" slit)
- Number of repetitions of the study: 2 (using the 6" slit) or 10 (using the 30" slit)
- Observation time: 16 hours (8 hours per study using the 6" slit or 1.6 hours per study using the 30" slit)
- Key SPICE lines to be included: Ne VIII 770 Å, Ne VIII 780 Å, Mg IX 706 Å, O II 718 Å, O IV 787 Å, O V 760.4 Å, O V 761 Å, O VI 1032 Å, O VI 1037 Å, Ne VI 999 Å, Ne VI 1010 Å, Mg VIII 772 Å, Mg VIII 782 Å, C III 977 Å, Fe III 1017 Å - 2 profiles and 13 intensities or 4 profiles and 11 intensities (maximum of 15)
- Observing window preference: High and low latitude, perihelion
- Other instruments: EU1, PHI, SoloHI
- Comments: *The choice of lines, and also the number of intensities and profiles, is flexible, although the sum of the intensities and profiles is constrained to a maximum (e.g 15 for composition mapping). While varying the number of intensities and profiles, within the maximum, has no effect on the duration of the study, it will have an effect on the telemetry.*

Duration:

Other constraints: