

IHOP_Submission

Title of Proposed Observation:

[SOOP: Filament] Prominence at the west limb

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SSC Point of Contact: General: Adam Kobelski, Jessie Duncan (NASA/MSFC) / Tetsuya Watanabe (NAOJ) / Bart De Pontieu (LMSAL), SOT -- Marc DeRosa/Dick Shine (LMSAL), XRT -- Katharine Reeves/Paola Testa (SAO), EIS -- Sarah Matthews/Len Culhane (UCL/MSSL)

Main Objective:

We will use the Earth alignment of Solar Orbiter to obtain complementary information from Hinode and IRIS

Scientific Justification:

This is an equivalent version of HOP 460, but this time having Solar Orbiter and Hinode on similar line of sight. The Earth alignment of Solar Orbiter is an exceptional opportunity to have a complete dataset in terms of temperature coverage (SPICE with cool lines, large FOV, EIS with hotter lines, IRIS with cool lines and high resolution), Doppler information and composition. In case of flare/eruption, extra information will be provided by XRT. SOT can provide the magnetic field at the prominence footpoints. The data will be used also to measure the small scale structure and dynamics of prominences, to better understand formation and energy transport.

Dates: The Solar Orbiter filament SOOP will start running on October 5 2025 at 19:45 UT and end on October 6 at 18:00 UT.

Time window: We request full coverage. If this is not possible, we give priority to October 5 from 20:30-22:00 UT, and October 6 8:00-12:00 UT. These will cover the high resolution observation of Solar Orbiter. We will coordinate with DKIST and SST. Exact Timing to be decided.

Target(s) of interest: Prominence at the west limb

SOT requests:

A "normal map" with the highest spatial resolution (0.16" pixels) in this case in order to have a chance at resolving the photospheric field. This will be a difficult observation, so it is a lower priority

EIS requests:

EIS is the most important Hinode instrument for these observations. Would like to use Study ID 615 with the acronym Large_CH_Map_v2. The raster is HOP177_CH_v2. Data volume is 115 Mbits.

XRT requests:

Observations that would be useful if the prominence erupts

IRIS requests:

We have been discussing the program with the IRIS team.

During the EUI high cadence time (TBD) we would like a high cadence program. We are discussing the details with the IRIS team. Outside of those times we would like

3410611752 | Very large coarse 32-step raster 62x175 32s Mg II h/k Deep x 15 Spati | 521.63 | 185.99 | 0.42 | 16.3+/-0.0 | 522+/-0 | 0.0+/-0.0 | 0.0+/-0.0 | 16.3+/-0.0 | 0.0+/-0.0

Additional instrument coordination:

Solar Orbiter: SOOPR_BOTH_HRES_HCAD_Filaments,

<https://s2e2.cosmos.esa.int/confluence/spaces/SOSP/pages/444397703/Solar+Orbiter+Planning+-+for+c+oordination+with+external+parties>

https://s2e2.cosmos.esa.int/confluence/spaces/SOSP/pages/475936954/R_BOTH_HRES_HCAD_Filaments

Also coordinating with the SST and DKIST

Previous HOPs:

HOP 460. A paper submitted

Additional remarks:

Susanna Parenti will be on vacation for much of August so please include Terry Kucera on any emails.