CoMP-S+UJ2P observations

Work in the period 2025/06/18 – 2025/09/22 + plans

JR

LSO meeting, TL, 2025/09/23

CoMP-S & UJ2P: observations

- **2025/06/18 – 2025/09/22:** obs_prog_007: attempt/real – 0/0, obs_prog_010: attempt/real - 2/24 (prog_007 – 854+656 lines: 0)
- Statistics:

LSO day type	Number of days
Away	10
Present	2
Ready	51
Standby	10 - 4@lso (2 obse + 2 present)
Tests	0
Attempts	2
Real obs	24
Unprepared	**12**
Ready+	**81**

CoMP-S & UJ2P: observations

- **2025:**

Legend: away, present, ready, standby, testing, attempt, - real observations

2025	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
1		MT	MT	MT/JR	JAjr/MT	MT	ZV	MT	JR				
2		MT	MT		MT	MT	ZV	MT	JR				
3		MT/ZV	MT/ZV		MT	MT	ZV	MT	JR				
4		ZV	ZV	JR	MT		ZV	MT/JR	JR				
5		ZV	ZV	JR	MT			MT/JR	JR				
6	JR	ZV	ZV	JR	MT MT	JR	-/JR	JR	JR				
7	JR	ZV/JR	ZV/JR	JR	MT/JAjr	JR	JR	JR	JR				
8	JR	JR	JR	JR	JAjr	JR	JR	JR	JR				
9	JR	JR	JR	JR/-	JAjr	JR	JR	JR	JR				
10	JR	JR	JR		JAjr	JR	JR	ZV	JR				
11	JR	JR	JR		JAjr/JR	JR	JR	ZV	JR				
12	JR	JR	JR		JR	JR	JR	ZV	JR				
13	JR	JR	JR	-/ZV	JR	JR	JR	ZV	JR				
14	JR JAjr	JR	JR	ZV	JR	JR	JR	ZV	JR				
15	JR/JAjr	JR	JR	ZV	JR	JR	JR/ZV	ZV	JR				
16	JAjr	JR	JR	ZV	JR	JR	ZV		JR				
17	JAjr	JR	JR	ZV/JR	JR	JR/-	ZV		JR				
18	JAjr		JR	ZA/JR	JR	JAjr	ZV		JR				
19	JAjr	JAjr	JR/JAjr	JR	JR	JAjr	ZV/MT	JAjr	JR				
20	JAjr/ZV	JAjr	JR/ JAjr	JR	JR	JAjr		JAjr	JR				
21	ZV	JAjr	JAjr	JR	JR	JAjr		JAjr	JR				
22	ZV	JAjr	JAjr	JR/JAjr	JR	JAjr		JAjr	JR				
23	V/R/JAj	JAjr	JAjr	JAjr	JR	JAjr	JAjr	JAjr	JR				
24	ZV/JR	JAjr	JAjr	JAjr	JR/JAjr	JAjr/MT	JAjr	JAjr	MT				
25	JR	JAjr/MT	JAjr/MT	JAjr	JAjr	MT	JAjr	JAjr	MT				
26	JR	MT	MT	JAjr	JAjr	MT	JAjr	JAjr/MT	MT				
27	J R	MT	MT	JAjr	JAjr/MT	MT	JAjr	MT	MT				
28	JR	MT	MT	JAjr	MT		JAjr	MT	MT/JAjr				
29	JR/MT	X	MT	JAjr	MT		JAjr/MT	MT	JAjr				
30	MT	X	MT	JAjr	MT	ZV	MT	MT	JAjr				
31	MT	X	MT	X	MT	X	MT	MT/JR	X		X		

CoMP-S & UJ2P: observations

- **LSO operation modes:** standby (B) and duty stay (L); B or BL record according reality

LOMNICKÝ ŠTÍT OBSERVATORY – DUTY STAYS TIMETABLE 2025

L – the duty stay, l = possible day, B = standby, U = IEP guarding, ? = kind request/TBD, D - vacations, C – conference, S – business trip, N – illness, X – impossible to stay at LSO
- an observing campaign, - the ODD, - a non-existing day, - the LSO group meeting, - the cable car maintenance, - school holidays, - internship program

09 2025	V					S	N						S	N	V					S	N						S	N			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
AMBROZ jr																												L	L	L	
RYBÁK	BL	BL	BL	B	B	B	B	B	B	L	L	L	L	L	L	L	L	L	L	L	L	L	L								
TREMBÁČ																								L	L	L	L	L			
VASHALOMIDZE	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S				C	C	C	C					
AMBROZ sr																								L?	L?	L?					
UEF	SS	SS	SS	SS	SS	SS	SS	SS	SS	SS/-													RL	RL							

CoMP-S & UJ2P: observations

- **Modes:** standby (B) and duty stay (L) – SHMU forecast: meteogram +

  Air humidity forecast:

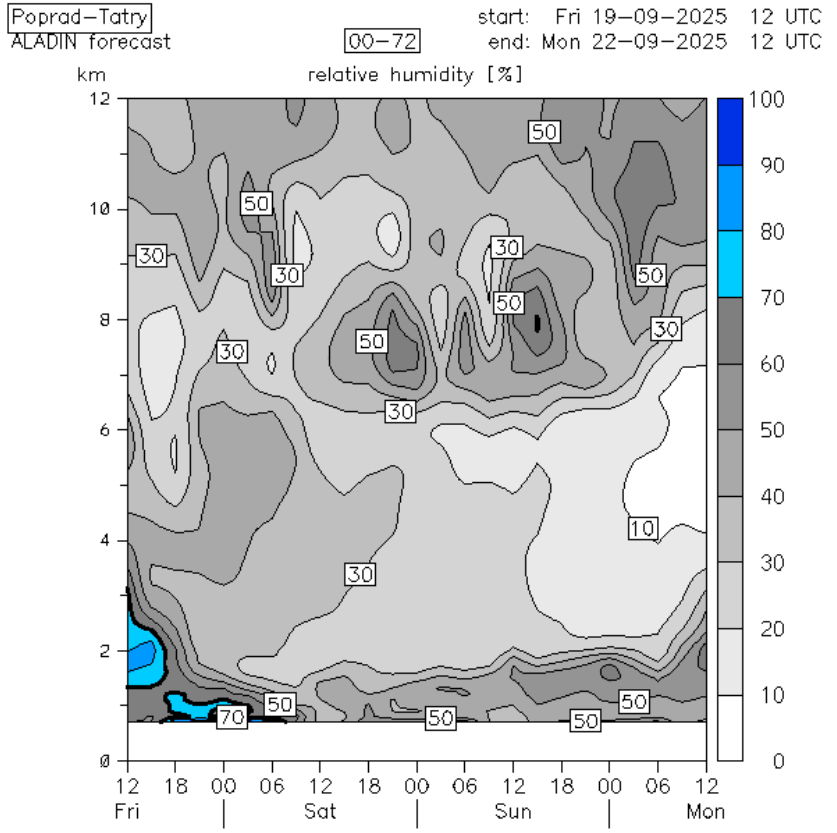
  condensation typically at 50% ?

  blue = clouds

PseudoTEMP - časové rezy

Predpoveď na 19.09.2025 až 22.09.2025

Vyberte mesto: Poprad Kombinácia: relat. vlhkost



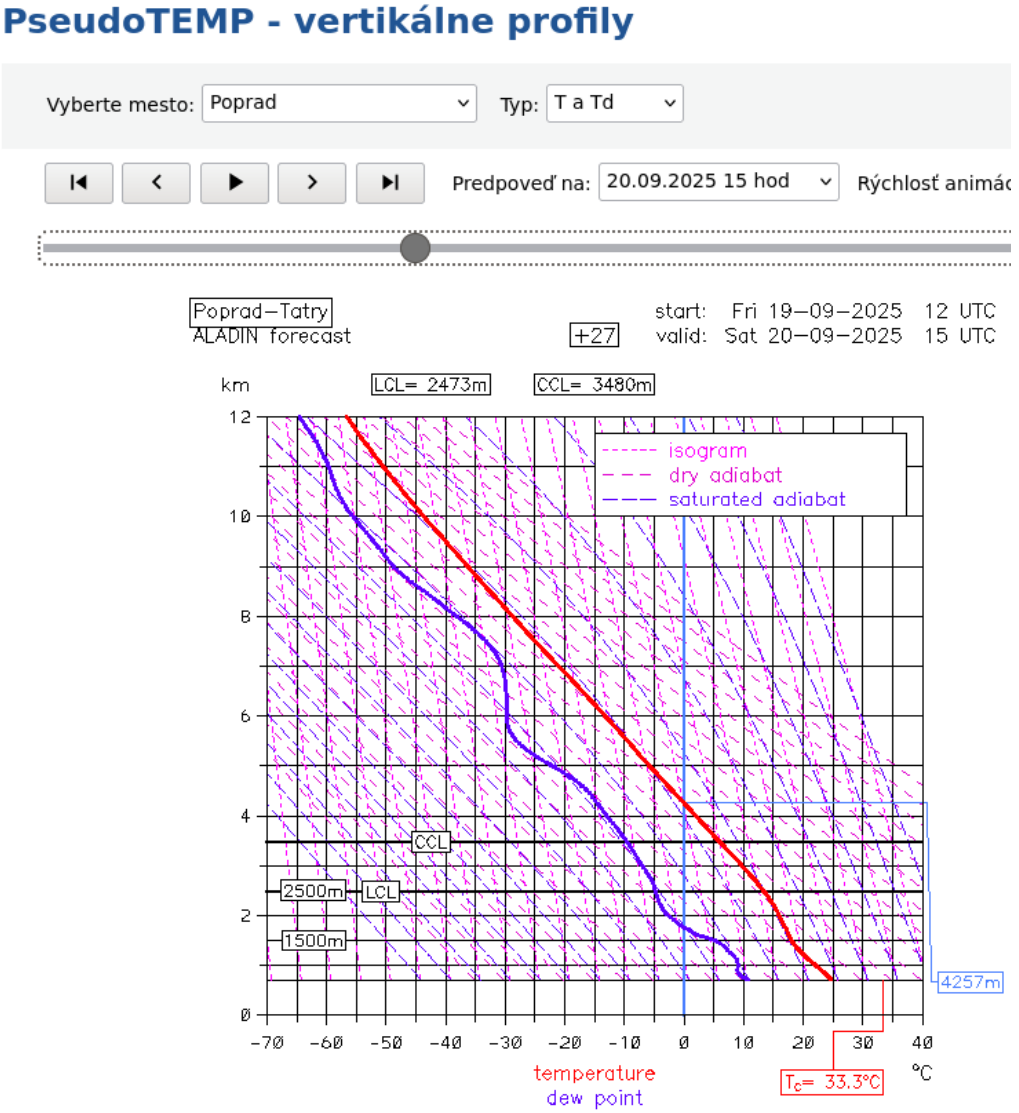
CoMP-S & UJ2P: observations

- **Modes:** standby (B) and duty stay (L) – SHMU forecast: meteogram +

  Vertical profile forecast:

  several things to understand…

  LCL, CCL, TS, TC + lines



CoMP-S & UJ2P: observations

- obs_prog_007:
  - different line combinations
- **obs_prog_010:**
  - **No ToO email requests – ZV ?**
  - **JR, JAjr or MT: decisions - “interesting” targets subjectively**
- obs_prog_008:
  - no ToO emails requests from MZ
- obs_prog_011: 656+637
  - Proposal → Test runs JR

CoMP-S & UJ2P: observations

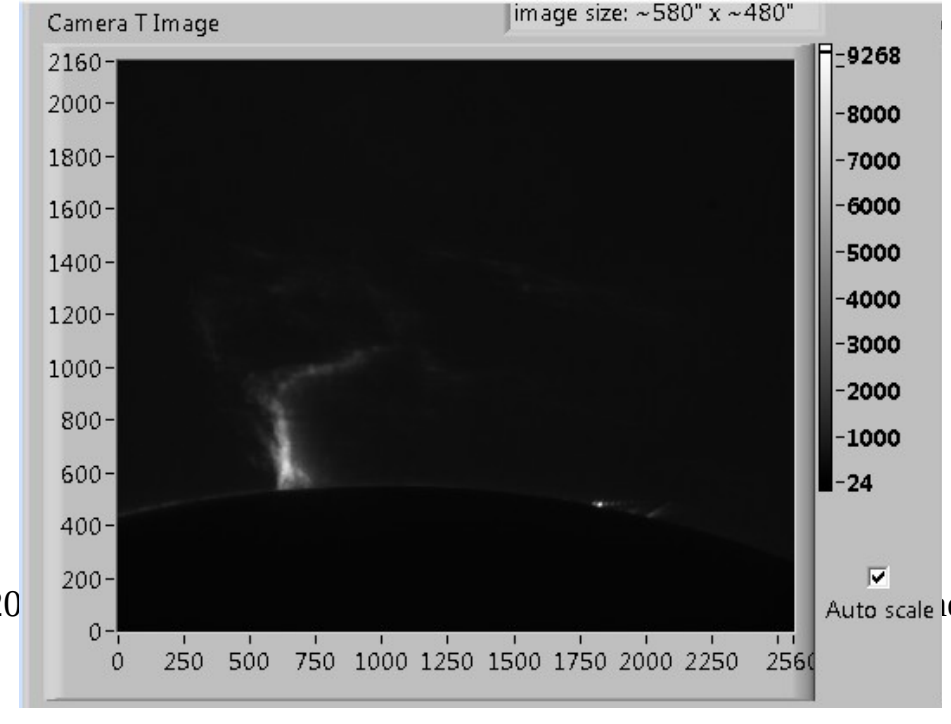
- obs_prog_010 - **examples**:
  - 07/03: an eruptive prom
  - 07/14: a quiescent prom
  - 08/13: coronal rain
  - 08/20: an eruptive prom and an active prom + coronal rain
  - 09/02: a nonAR quiescent prom 1 day after eruption
  - 09/12: AR jets, loops

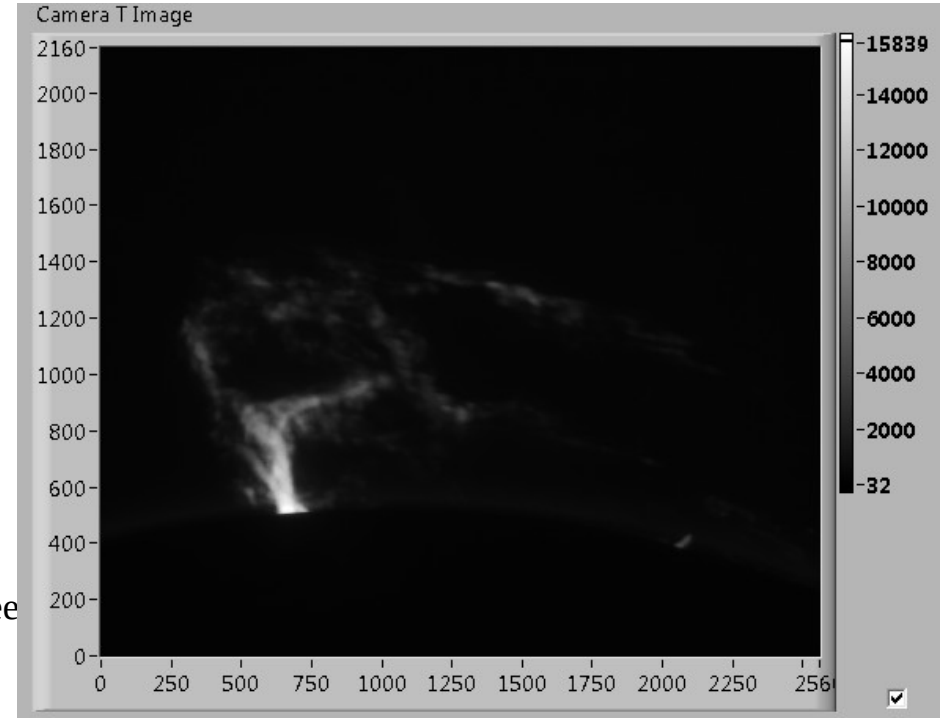
CoMP-S & UJ2P: observations

- obs_prog_010 – example: 2025/07/03 - an eruptive prom
  - ZV, active prom, PA=80°, 854+656, OBSE: 03:55-05:43 + 06:10-07:31 UT, TOTAL TIME: 03:32-07:56 UT, clear sky, 11.3°C VAR 4m/s → 13.6°C NW 5-8 m/s, good → low/moderate contrast/seeing

    large and high prominence with a lot of activity (post-eruptive one)

    SDO/AIA 304 movies: blobs → loop footpoint – **right target of program?**





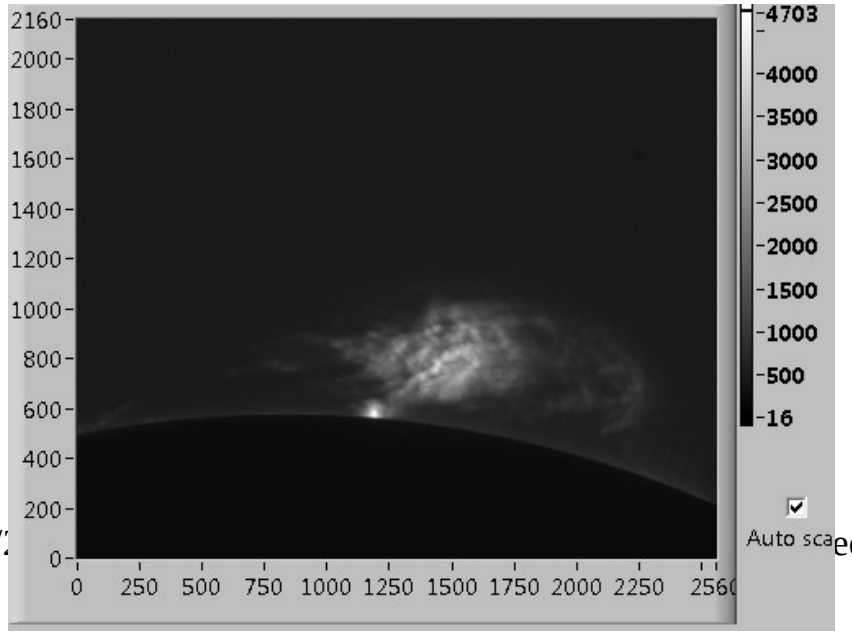
CoMP-S & UJ2P: observations

- obs_prog_010 – example: 2025/07/14 - a quiescent prom
  - ZV, quiscent prom, PA=230°, 854+656, OBSE: 04:00-04:58 + 05:06-05:39 UT, TOTAL TIME: 03:58-06:35 UT, clear sky, small white halo around the Sun (SHMU 7.0°C, 71%, IEP 7.4°C, W 10/4 (05:40 1st clouds from bottom…), moderate contrast/seeing

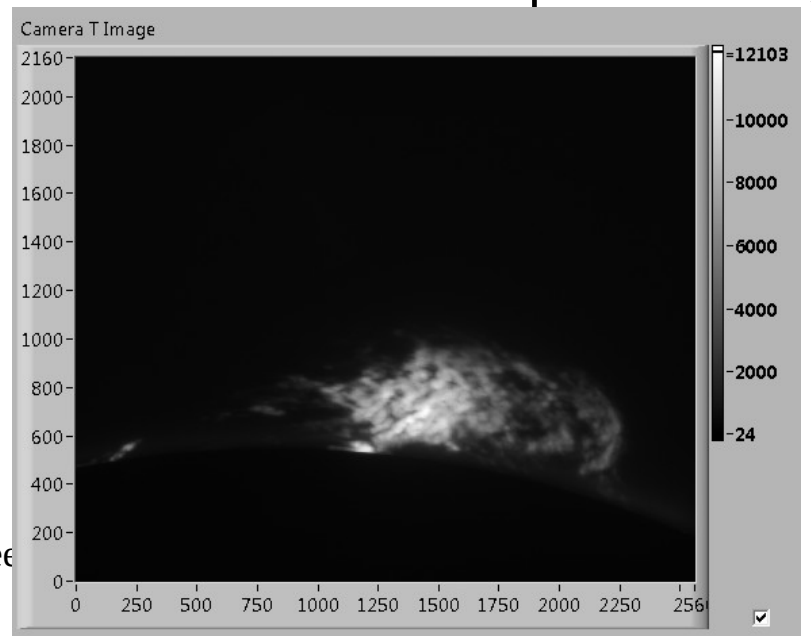
    large and high prominence with some local motions (no coronal rain)

    not exactly the target the observing program is intended for

854 live image



656.25 nm data acquisition image

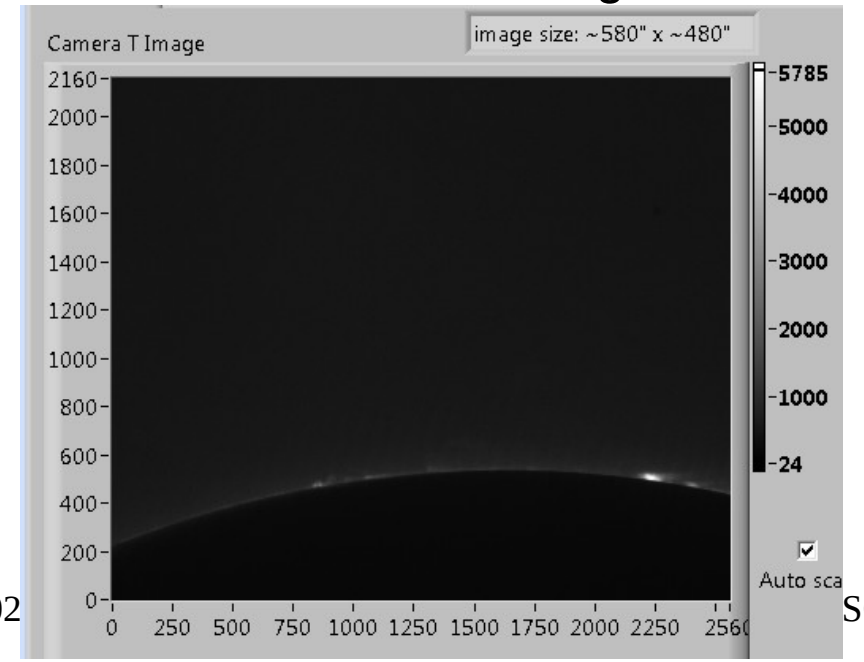


CoMP-S & UJ2P: observations

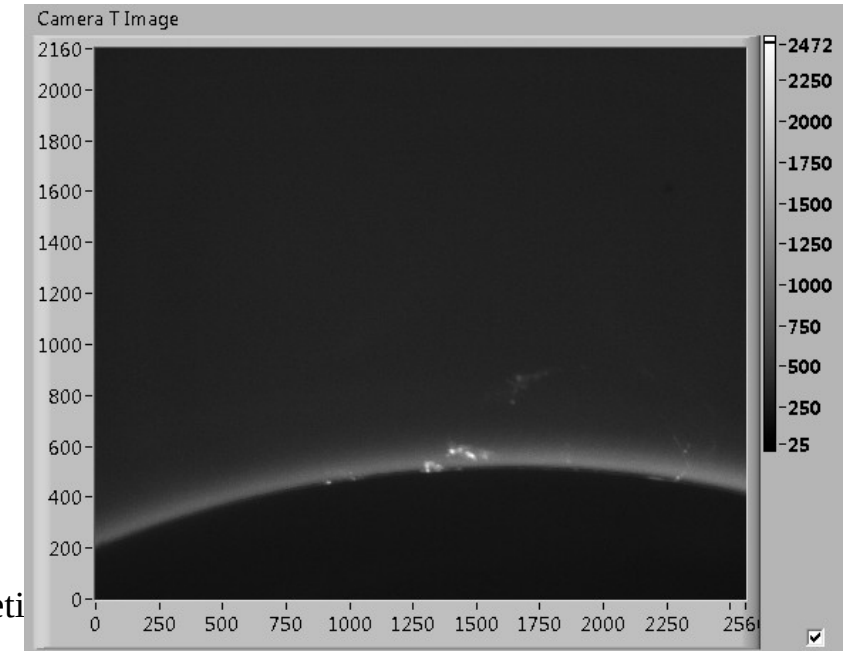
- obs_prog_010 – example: 2025/08/13 - coronal rain
  - ZV, active prom, PA=90°, 854+656, OBSE: 05:07-06:56 + 07:14-07:36 UT, TOTAL TIME: 04:50-08:03 UT, clear sky, 05:02 12.8°C, VAR 2m/s, moderate contrast/seeing

    high loops with coronal rain - **right target of program?**

854 live image



656.25 nm data acquisition image



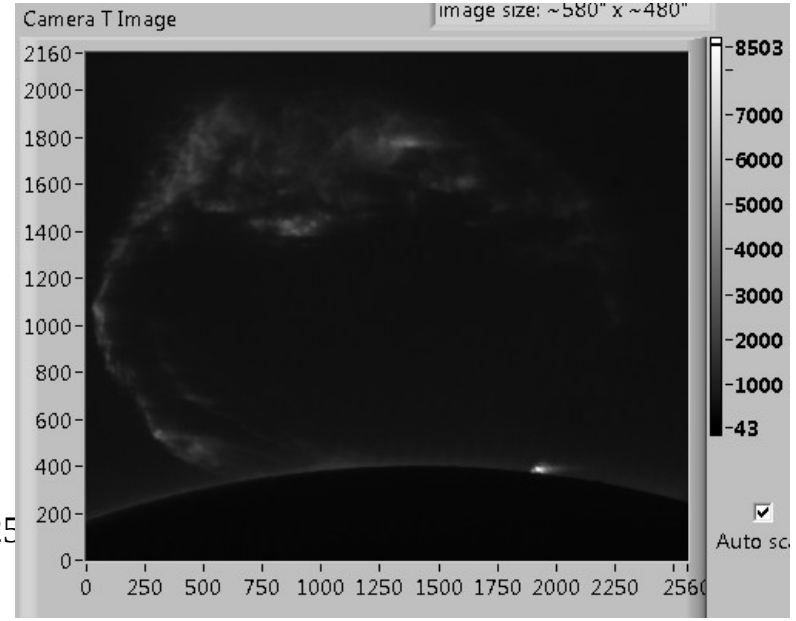
CoMP-S & UJ2P: observations

- obs_prog_010 – example: 2025/08/20 -
  an eruptive prom and an active prom + coronal rain
  - JAjr, (eruptive prom and) AR-related active prom + coronal rain, PA=(120°) + 45°, 854+656, OBSE: 05:22-06:36 UT, TOTAL TIME: 03:45-07:12 UT, clear sky, low-moderate contrast/seeing

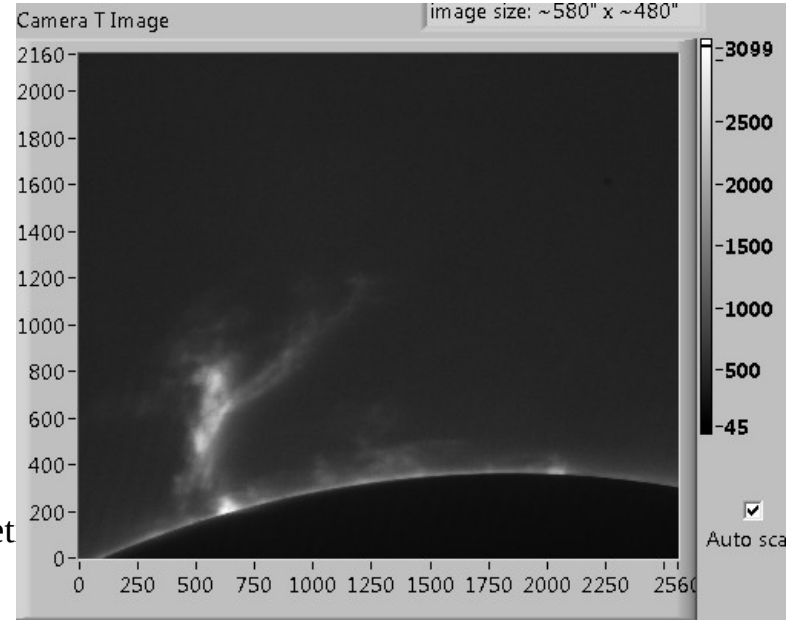
    PA=120° after eruption (no data taken) → 45°

    Large and high prom with coronal rain - **right target of program?**

854 live image - PA=120°



854 live image - PA=45°

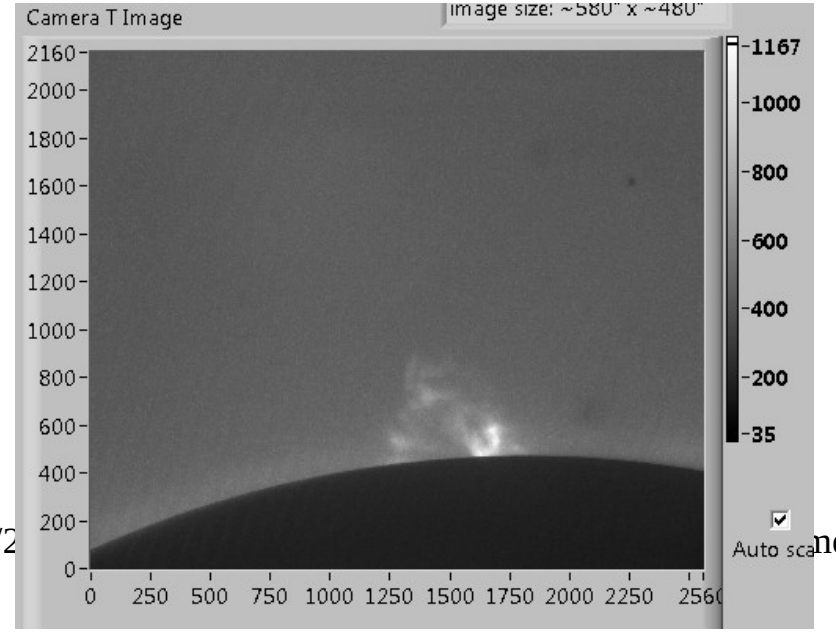


CoMP-S & UJ2P: observations

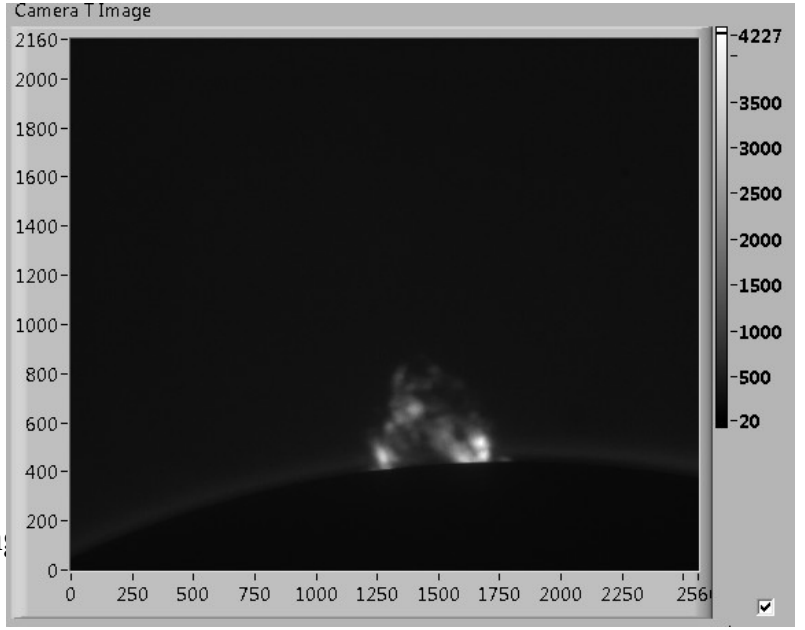
- obs_prog_010 – example: 2025/09/02 -
  nonAR quiescent prom 1 day after eruption
  - JR, quiescent prom, PA=25°, 854+656, OBSE: 05:22-07:00 UT, TOTAL TIME: 05:07-07:25 UT, clear sky, some small cirrus clouds, strong wind, dust flying, 8.2°C, 54%, W 15/9 m/s, moderate-good contrast/seeing

    not exactly the target the observing program is intended for?

854 live image



656.25 nm data acquisition image

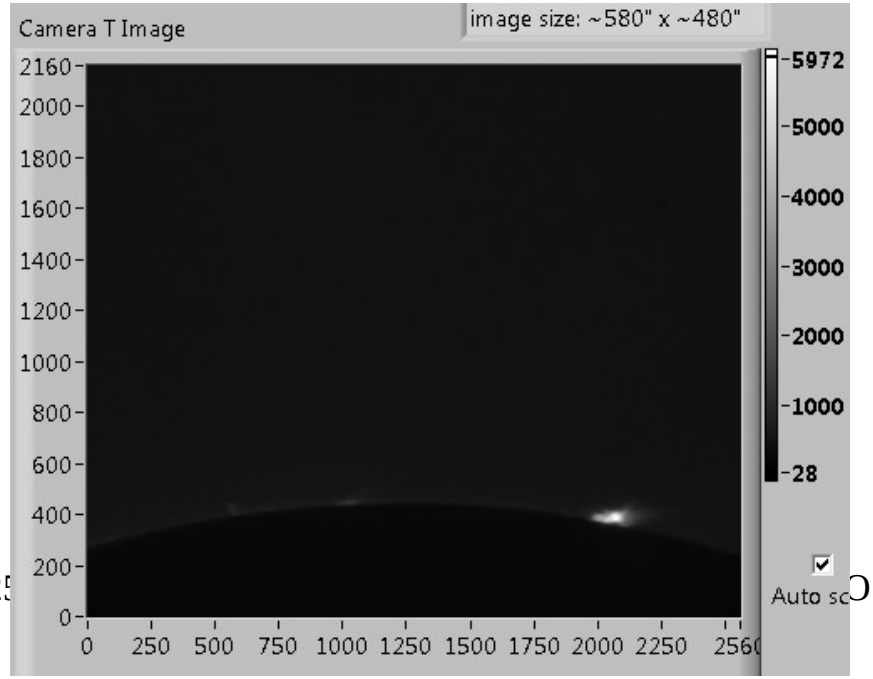


CoMP-S & UJ2P: observations

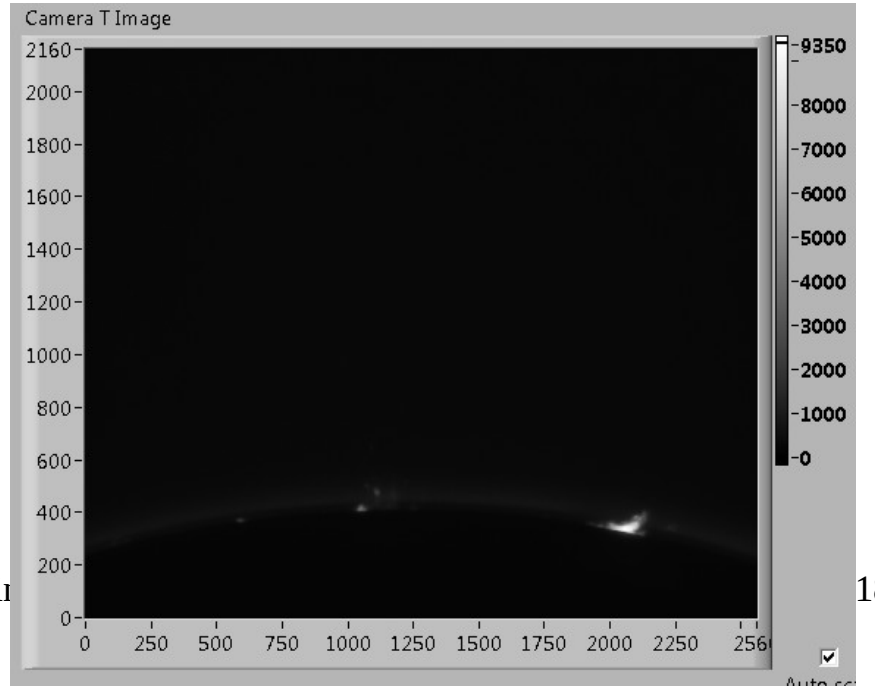
- obs_prog_010 – example: 2025/09/12 - AR jets, loops
  - JR, PA=293°, 854+656, OBSE: 05:51-06:29 UT, TOTAL TIME: 05:38-06:49 UT, almost clear sky but with weak cirrus on the sky, 4.4°C 70% N 3 m/s, low-moderate contrast/seeing

    not exactly the target the observing program is intended for?

854 live image



656.25 nm data acquisition image



CoMP-S & UJ2P: observations

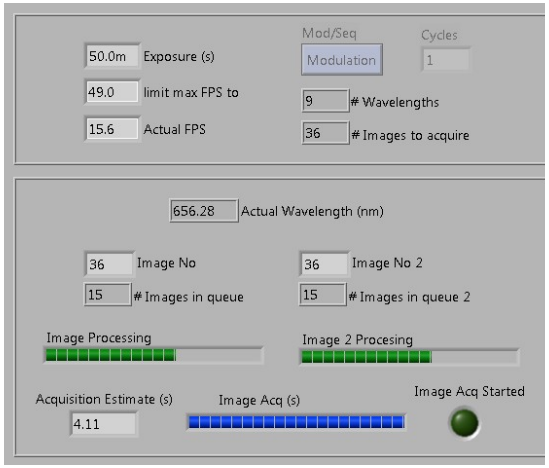
- obs_prog_010 – **the right target**:
  - Possible model types: Quiescent prom, Active prom, AR loops, Coronal rain
  - Criteria:
    - large/high enough
    - Active prom (AR-related but also non AR-related) or AR loops more favorable than a quiescent prom
    - Coronal rain – the top
    - Target of other instruments/satellites: the highest priority
  - Suggestions:
    - Omit the quiescent prom (if possible)
    - Target above the limb but also nearby the limb (eruption?)
    - Try to check for a twist (probability to erupt)
    - GONG H alpha + SDO/AIA 304 channel

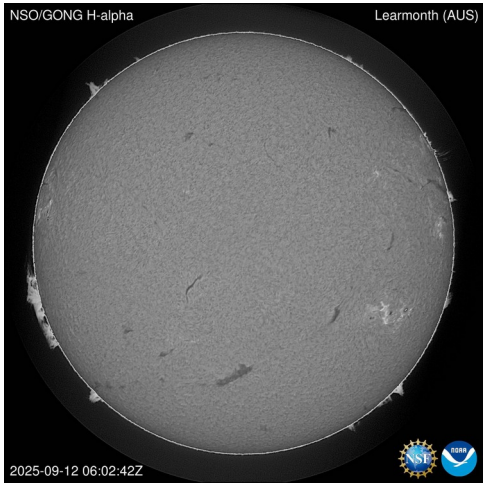
CoMP-S & UJ2P: observations

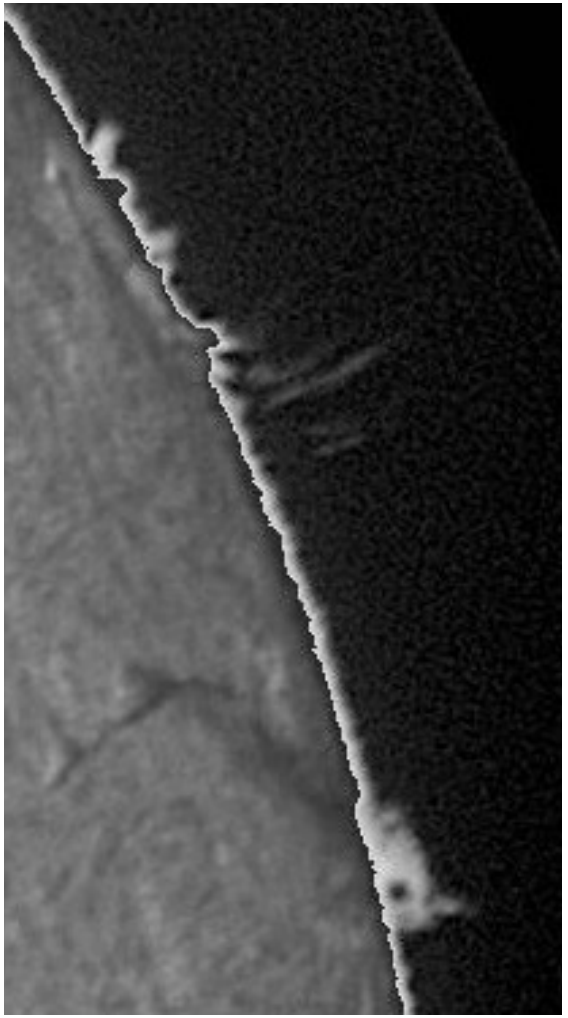
- obs_prog_010 – **the target selection**:
  - GONG H alpha ~ LSO/(cor+CoMP-S) 656 line – 09/12
  - GONG Data viewer
  - SDO/AIA images viewers
  - checking SolO, PSP, IRIS, or Max Millenium targets/campaigns

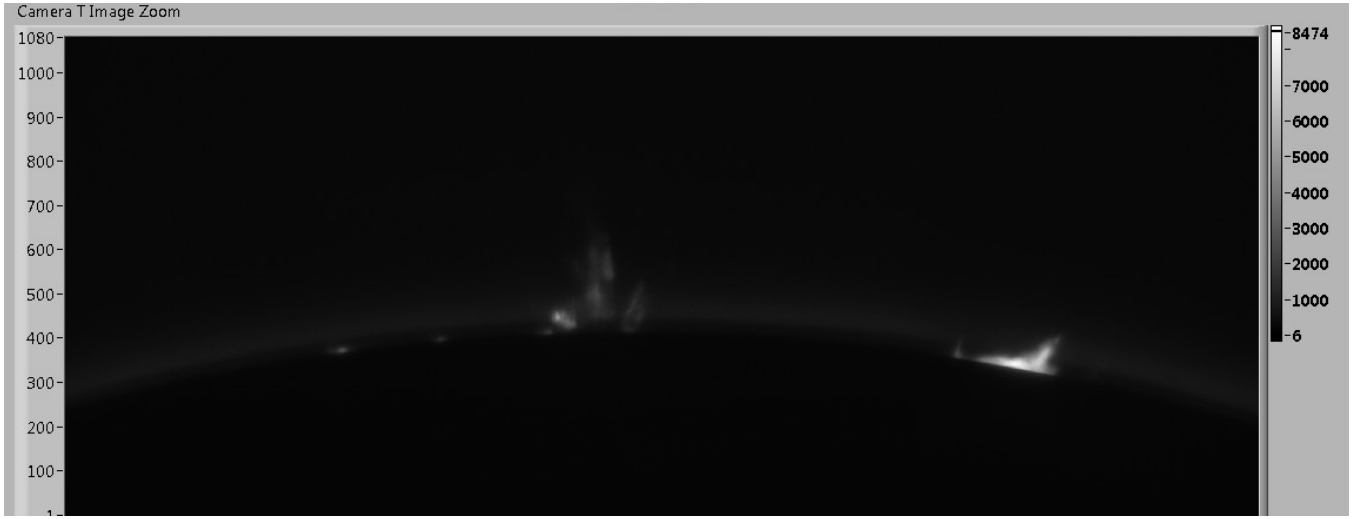
CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: GONG ~ LSO/CoMP-S 656 line – 09/12: GONG small/large view with zoom (only under very good condition) but not so impressive CoMP-S live image with the default automatic dynamic scale









CoMP-S & UJ2P: observations

- obs_prog_010 – CoMP-S binned, compressed image/video similar or better – again not so impressive CoMP-S live image. Reasons:
  - LV SCMP code: automatic dynamic range of intensities for display
  - Data handling products: compressed, intensity scale adapted but visibility of faint emission is dependent on other (bright features)
- Attempts to do the image display better has to be made - JR+MH

CoMP-S & UJ2P: observations

- CoMP-S obs_prog_010 656: handling possibilities – a small test of an alternative

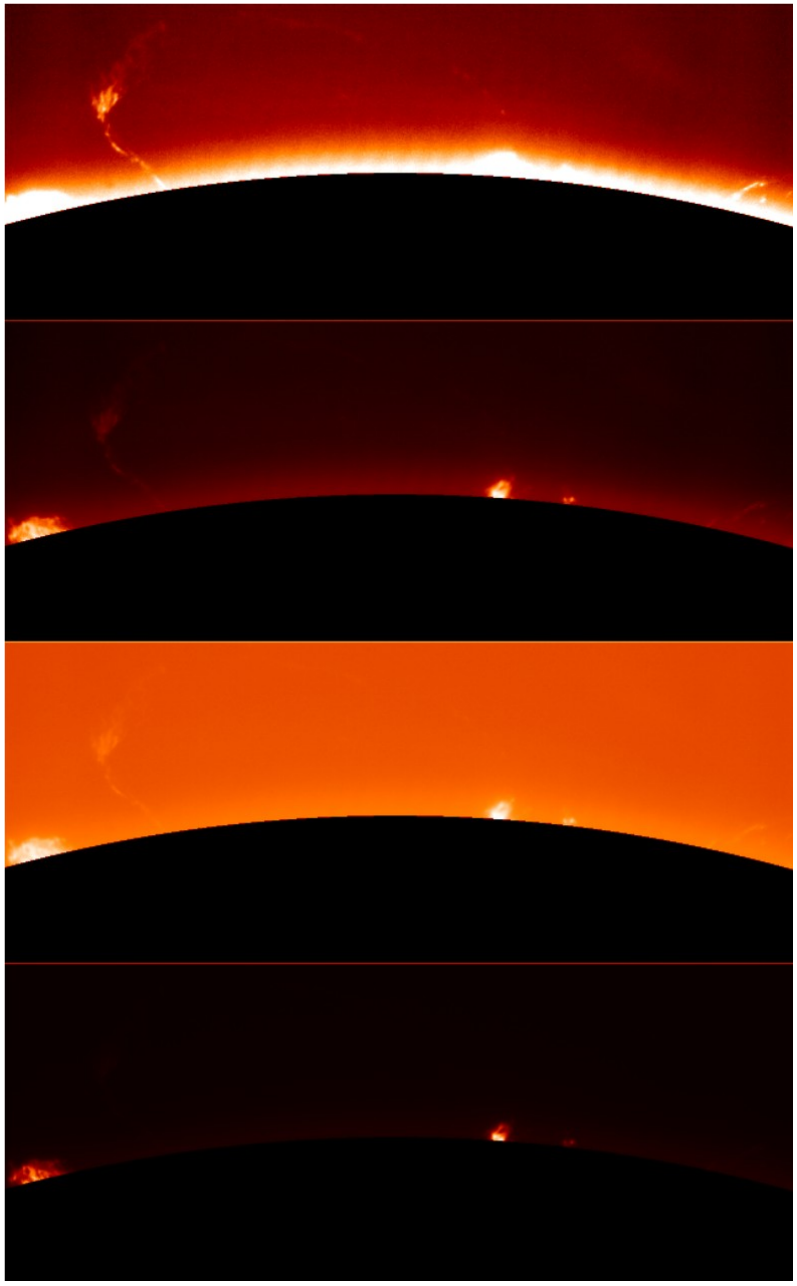
  intensity [counts]

  a = alog10(intensity)

  scale [min,max] → [0,1]

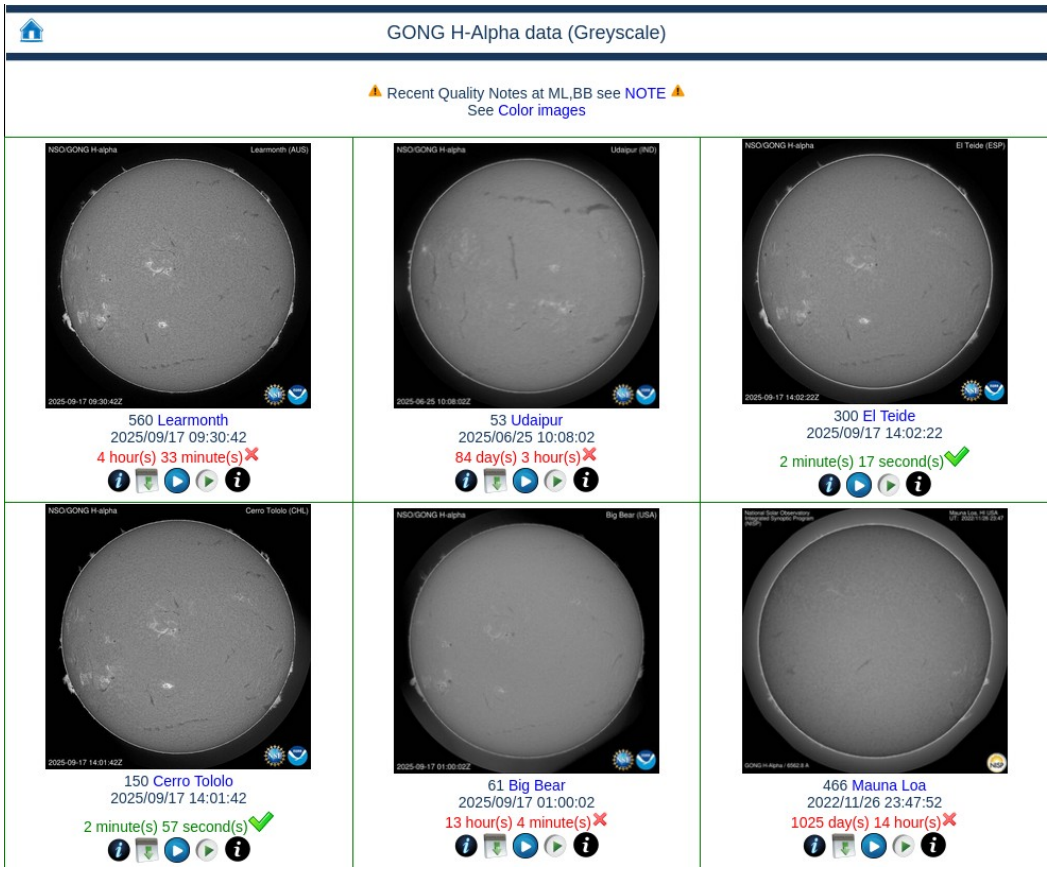
  similar for alog, sqrt,…

  result: linear → X and scaled between minimum outside the moon mask and e.g. the limb intensity



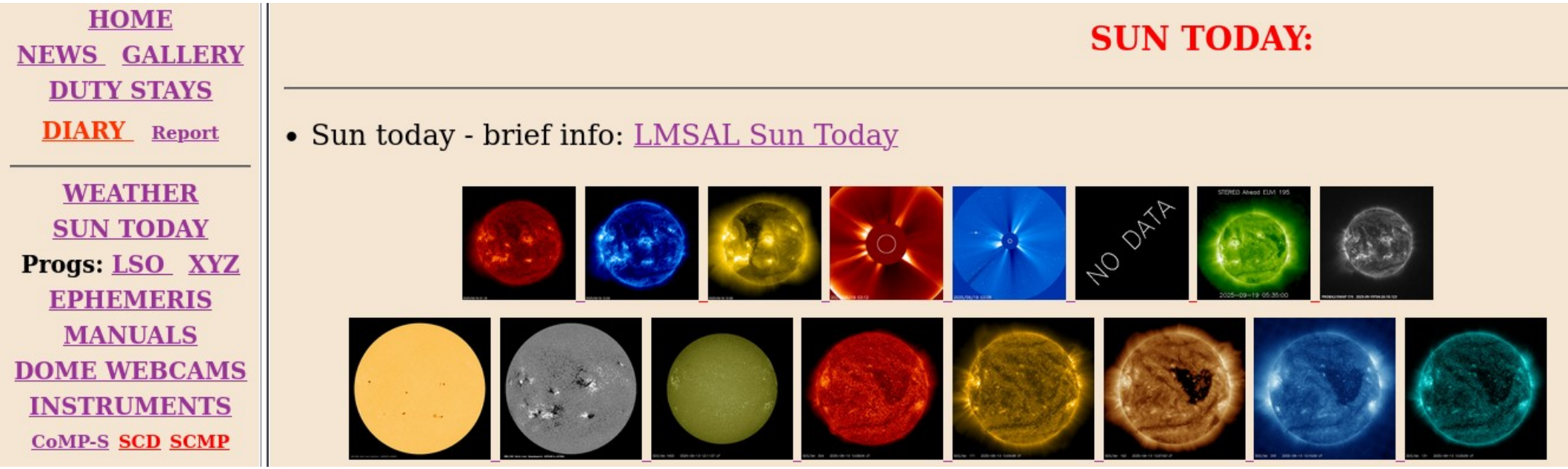
CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: GONG Data viewer 



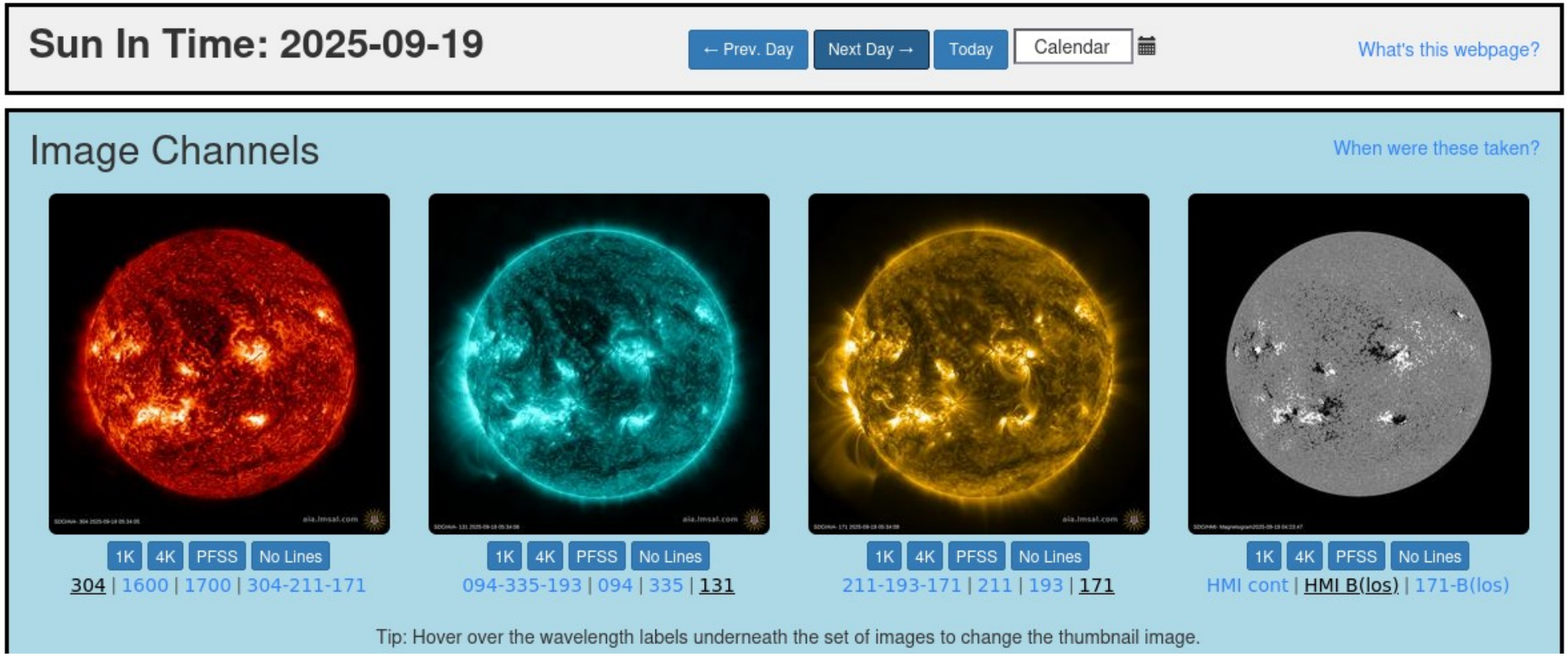
CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: SDO/AIA data viewers
  - LSO intranet - Sun today: thumbnails with links to the SDO/AIA images
  - Images as folders prepared in browser at PC in the astro-office
  - (at the moment no working due to the data posting server problem)



CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: SDO/AIA data viewers
  - LSO intranet - Sun today:
    - Link (at the top) to webpage "LMSAL Sun today" - contrast enhanced, also 4K, a strange navigation...

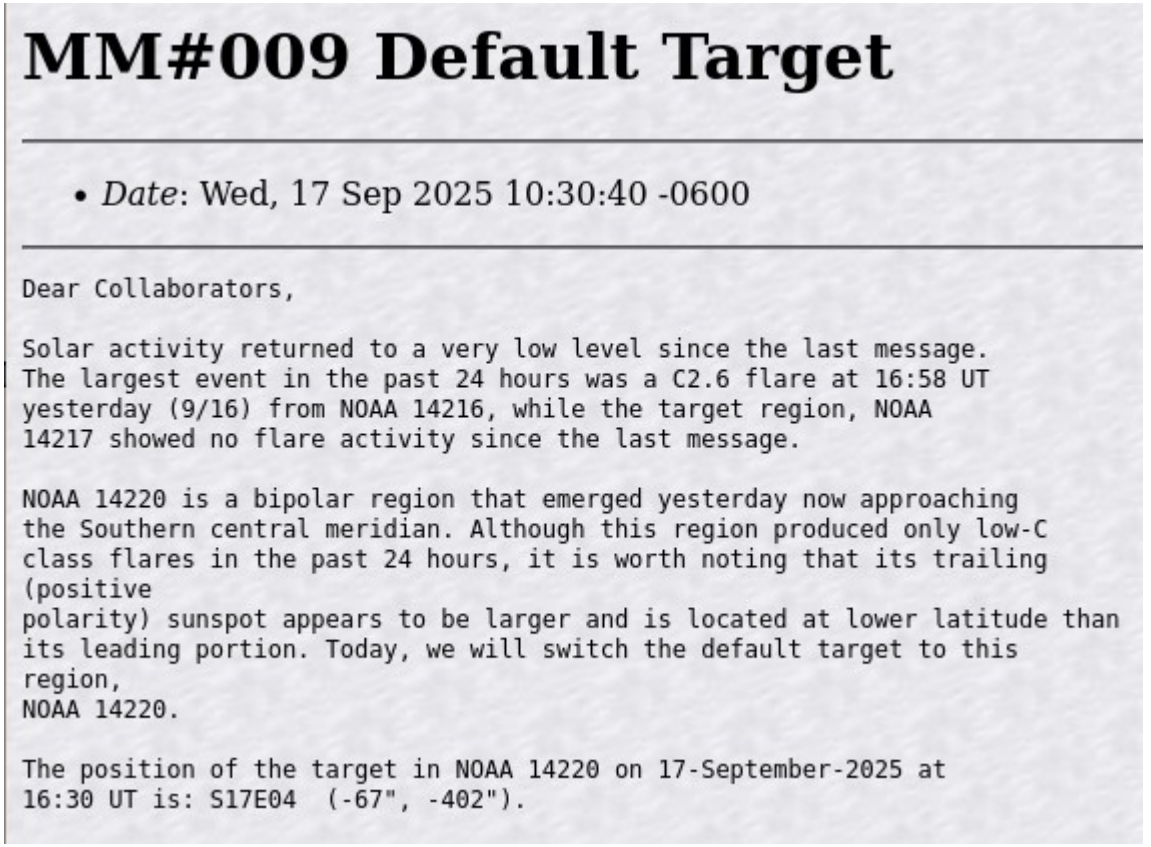


CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: joining targets/campaigns
  - Max Millenium targets/campaigns
  - IRIS
  - SolO
  - PSP
  - ?

CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: joining Max Millennium - daily emails



MM#009 Default Target

- *Date*: Wed, 17 Sep 2025 10:30:40 -0600

Dear Collaborators,

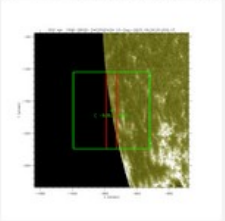
Solar activity returned to a very low level since the last message.
The largest event in the past 24 hours was a C2.6 flare at 16:58 UT
yesterday (9/16) from NOAA 14216, while the target region, NOAA
14217 showed no flare activity since the last message.

NOAA 14220 is a bipolar region that emerged yesterday now approaching
the Southern central meridian. Although this region produced only low-C
class flares in the past 24 hours, it is worth noting that its trailing
(positive
polarity) sunspot appears to be larger and is located at lower latitude than
its leading portion. Today, we will switch the default target to this
region,
NOAA 14220.

The position of the target in NOAA 14220 on 17-September-2025 at
16:30 UT is: S17E04 (-67", -402").

CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: joining IRIS planning

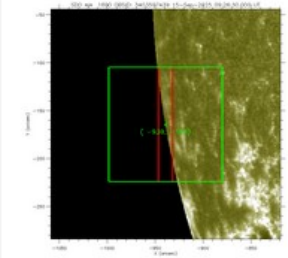
Overview	Where	Raster
2025-09-15 09:26:30-10:52:30 	SolO Coordination: SPICE OBS 3403507439: Large sparse 16-step raster	
	x,y: -939",-164" Max FOV: 15"x119" Target: QS Nearby Events	

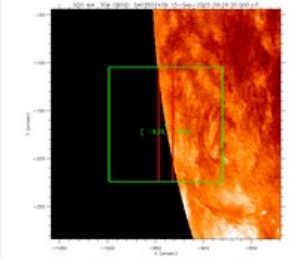
IRIS: SolO Coordination: SPICE

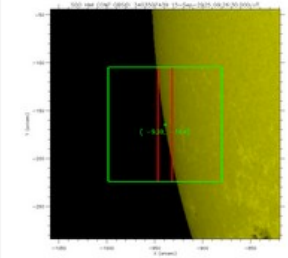
2025-09-15T09:26:30 to 2025-09-15T10:52:30

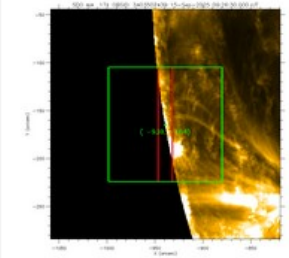
Program: OBS 3403507439: Large sparse 16-step raster 15x120 16s Si IV Mg II h/k Deep x 4 FUV spectrally rebinned x 4 SJI cadence 3x faster
Target: QS
xcen=-939 **ycen=**-164
Instrument: IRIS
Description: SolO Coordination: SPICE
60 repeats of OBSID 3403507439 - Large sparse 16-step raster 15x120 16s Si IV Mg II h/k Deep x 4 FUV spectrally rebinned x 4 SJI cadence 3x faster
IRIS roll: 0.0 degrees
IRIS planner pointing: (-939.0 arcsec, -164.0 arcsec)
OBS duration: 5160.0 seconds = 60 repeats x 86.0 seconds/repeat
OBS data volume: 967.5 megabytes = 7740.0 megabits = 5160.0 seconds * 1.5 megabits/second

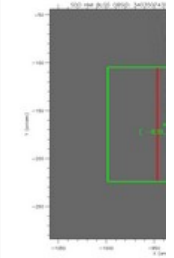
Projected Pointings:

1600 

304 

HMI Continuum 

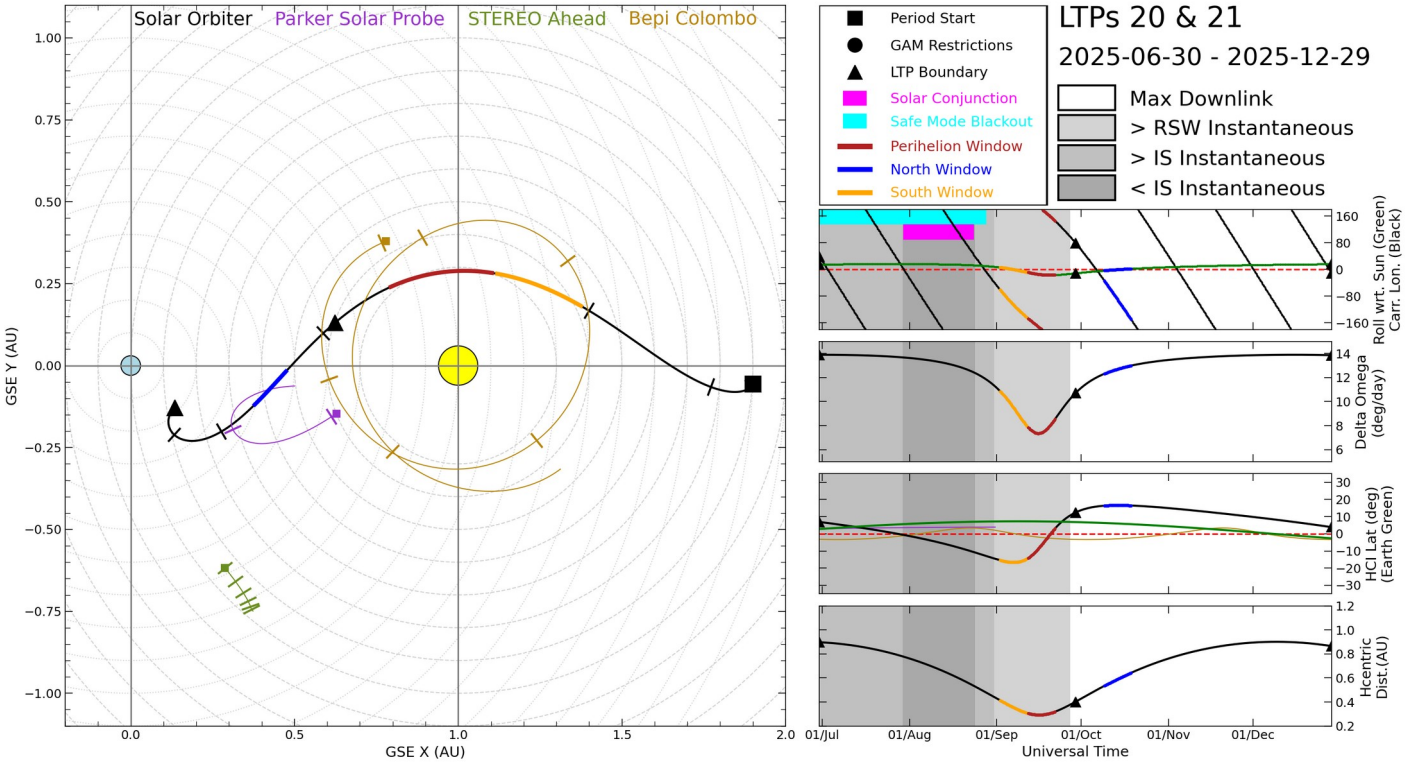
171 

HMI Blos 

CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: joining SolO

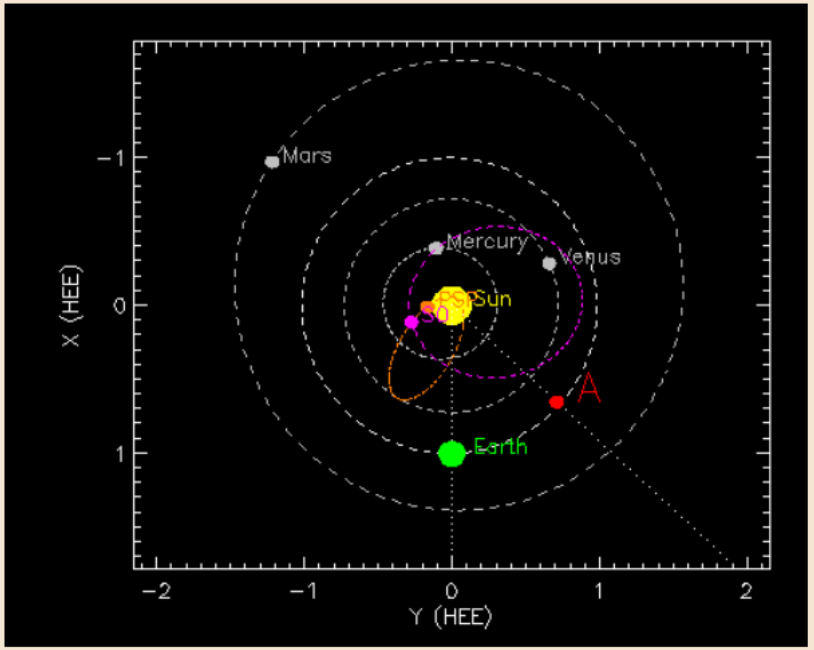
- Solar Orbiter (SolO): planning + orbit plots (reference article), where is SolO
  - 2024/01-06 orbit: plot, movie
    LSO support: period [MM/DD-MM/DD - limb]: 03/11-03/21 - SW limb, 03/21-04/06 - SE, 04-06-04/16 - NE
  - 2024/07-12 orbit: plot, movie
    LSO support: period [MM/DD-MM/DD - limb]: 09/22-10/29 - E
  - 2025/01-06 orbit: plot, movie
    LSO support: period [MM/DD-MM/DD - limb]: 03/17-04/25 - SW limb, 03/22-05/01 - NW
  - 2025/07-12 orbit: plot, movie
    LSO support: period [MM/DD-MM/DD - limb]: 09/01-09/09 - SE limb, 09/19-09/22 - NE, 10/09-10/19 - NW



CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: joining all ? (SolO + PSP + STEREO A)

- **PLANNED OBSERVATIONS OF OTHER OBSERVATORIES/SATELLITES:**
  - Where are all solar satellites now - Solar Mach: link to app
  - Where are all solar satellites now - Solar Mach - 3D: link to app
  - Where are all solar satellites now - SOL24 (https://sol24.net/data/where_is_stereo.gif)

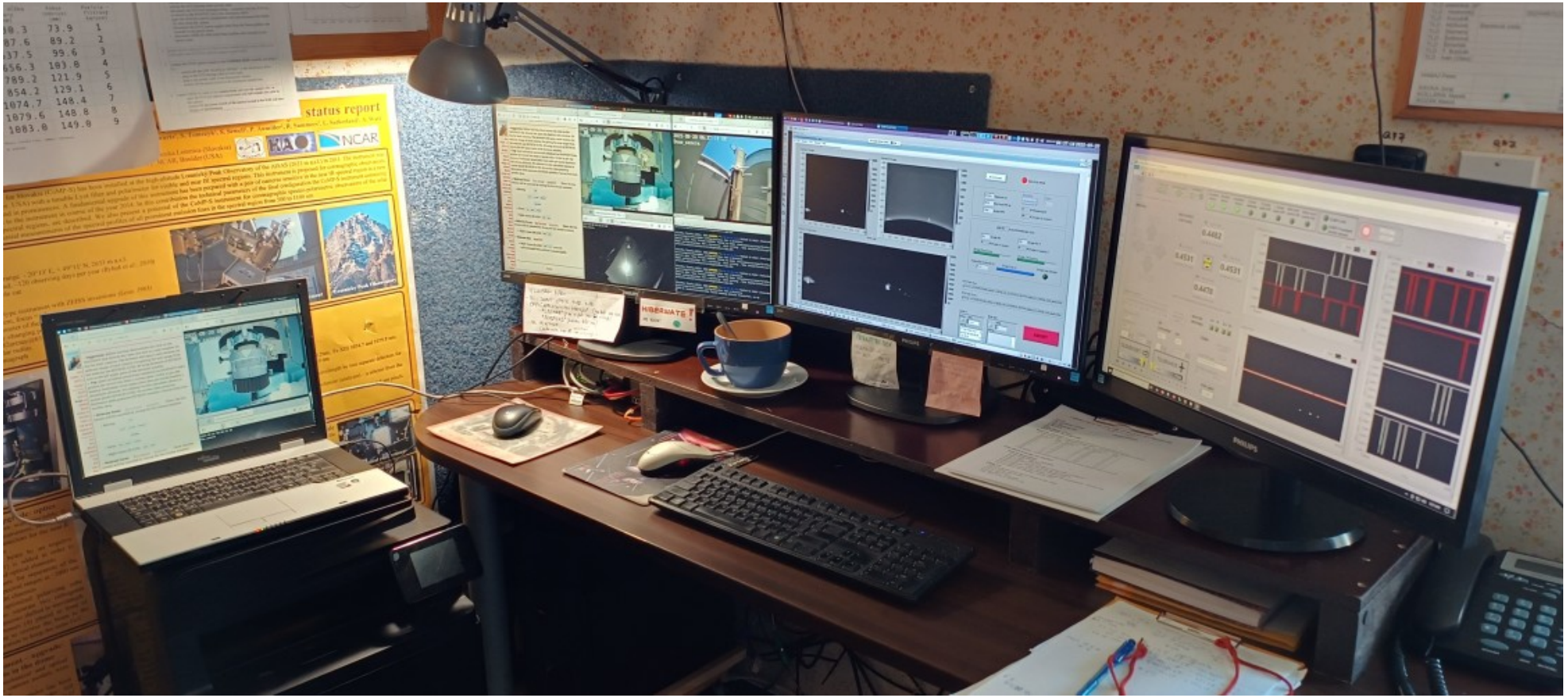


CoMP-S & UJ2P: observations

- obs_prog_010 – target selection: joining all ? (SolO + PSP + STEREO A)
  - Possible improvements:
    - detail timing/pointing of the SolO imaging instruments
    - ?

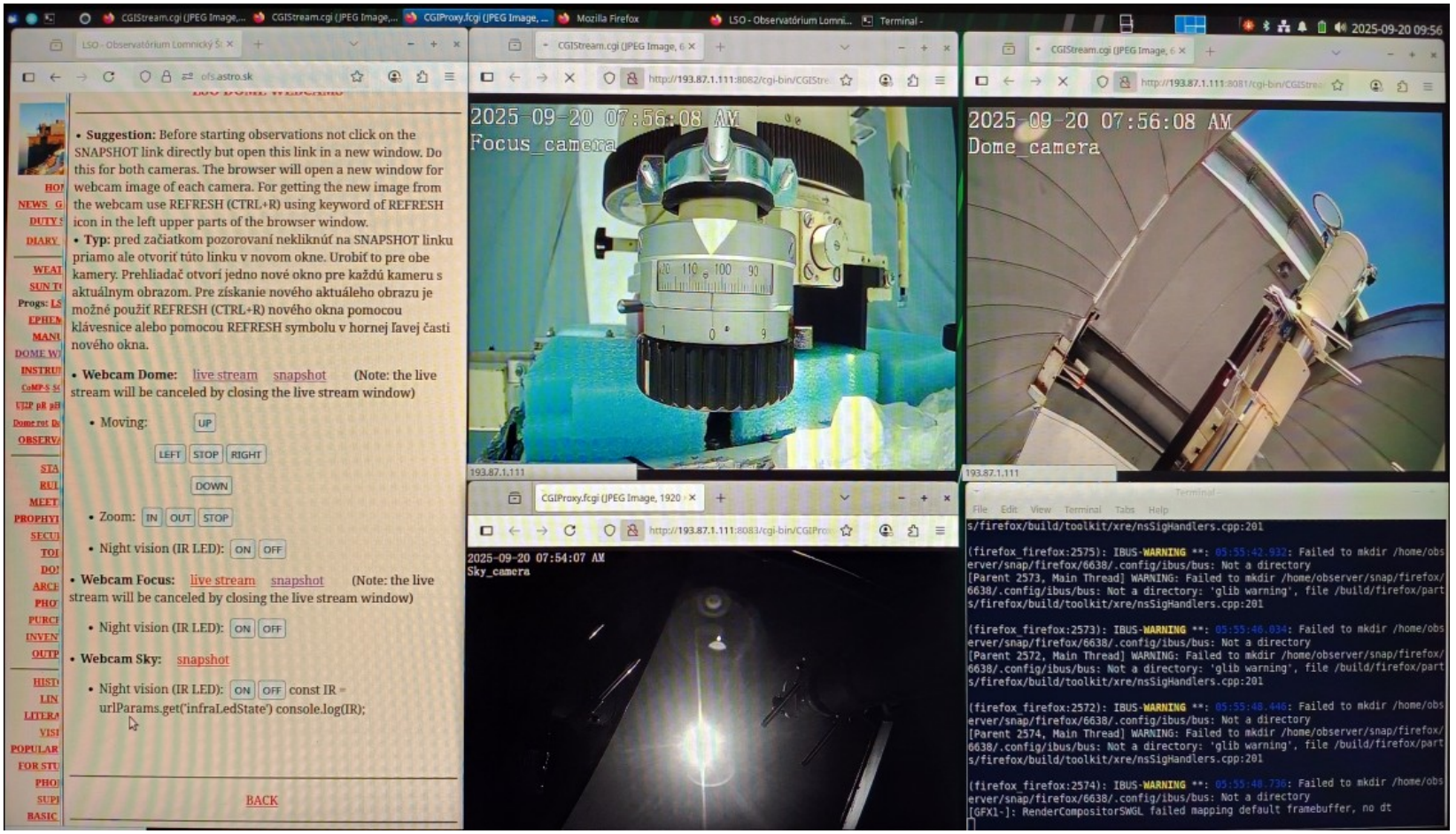
CoMP-S & UJ2P: observations

- Remote operation from the astro-office: **LSO notebook** to display the web cameras in the dome on a separate monitor (snapshot, live)



CoMP-S & UJ2P: observations

- Remote operation from the astro-office: **LSO notebook** to display the web cameras in the dome on a separate monitor (snapshot, live)



CoMP-S & UJ2P: observations

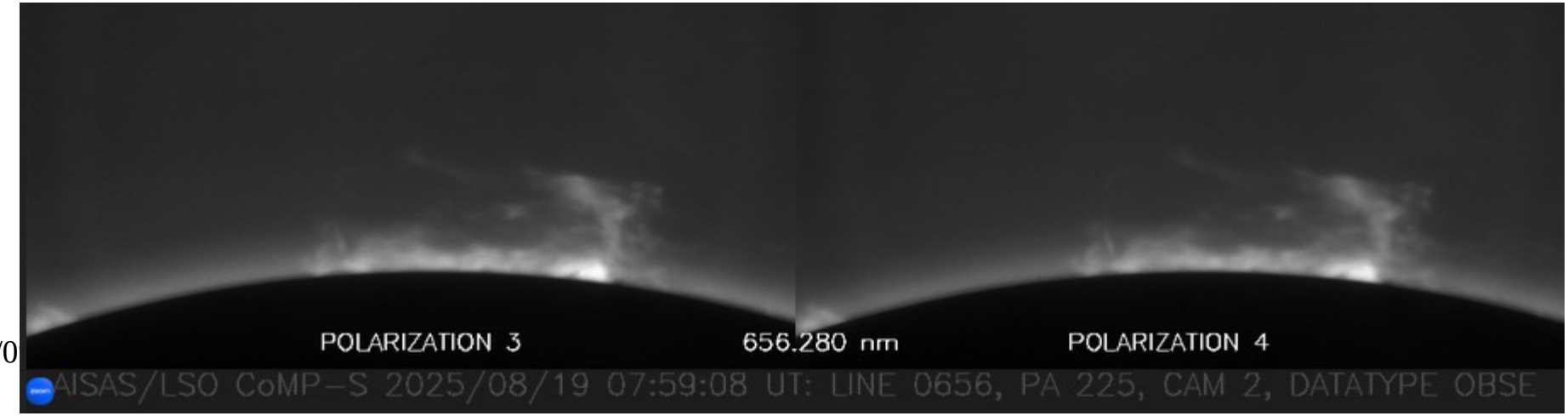
- **Experience:**
  - Good eclipse adjustments (symmetry along the limb, counts ~1000 only), no over-exposures, underexposures or offsets noticed
  - CoMP-S + AISAS Mechanisms + SCMP 6.2.1 – no error in 8 JR observing days in September
  - Usage of 2 mouses – #1: CoMP-S+UJ2P+Internet+log_file editing + #2: LSO webcams: click at #1 instead of #2 is kept in a buffer! It might cause positive reply on question for confirmation of the AISAS Mechs action!
  - Still problem with following the eclipse in the morning even Sun h > 10 degrees
  - Your experience ?

CoMP-S & UJ2P: observations

- **Acknowledgment to JAjr:**
  - 2025/08/19:

```
OBSERVATIONS :
Description of observations:
CoMP-S obs_prog_010:
- 854+656 lines
- PA=125 degrees
- object: prom
- OBSE time : 07:52-09:06
- Total time: 06:55-09:33
- DARK, MEAS, TARG, ABSO, OBSE
- image quality: moderate/good contrast, low/moderate seeing
- DECISION: real observations
```

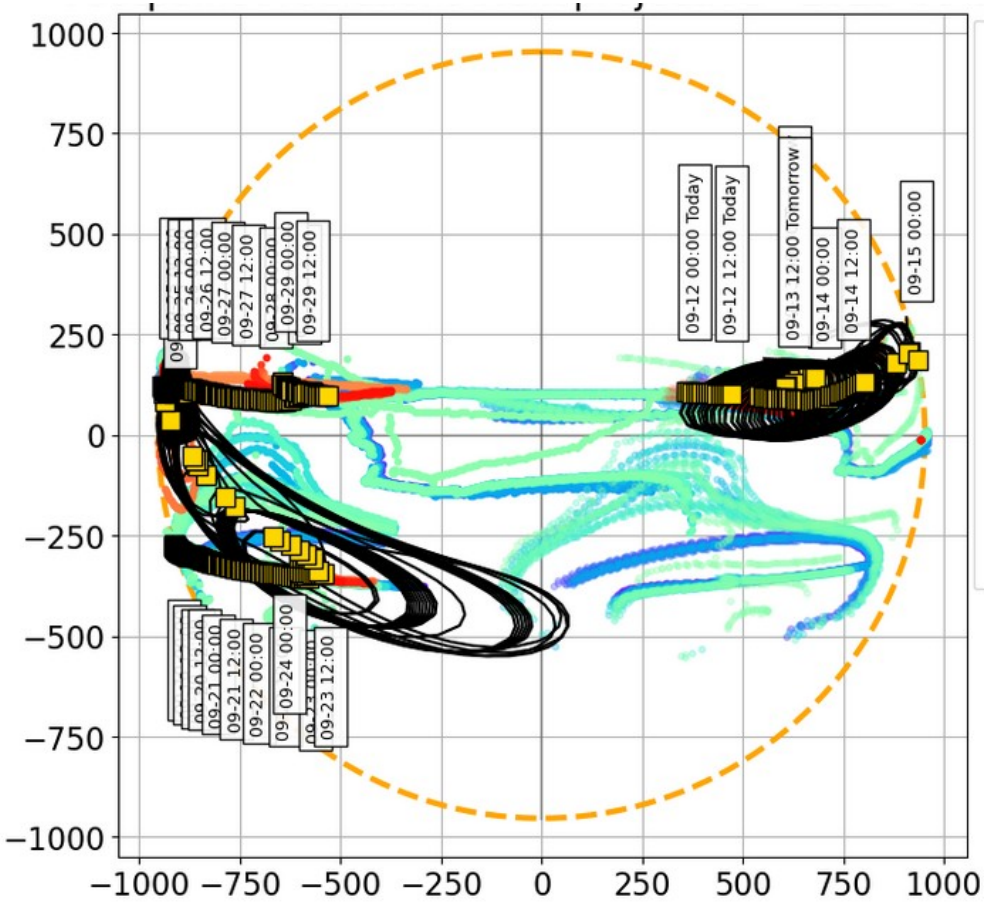
the very first day of his duty stay (arrival to LSO ~06:10 UT)



CoMP-S & UJ2P: observations

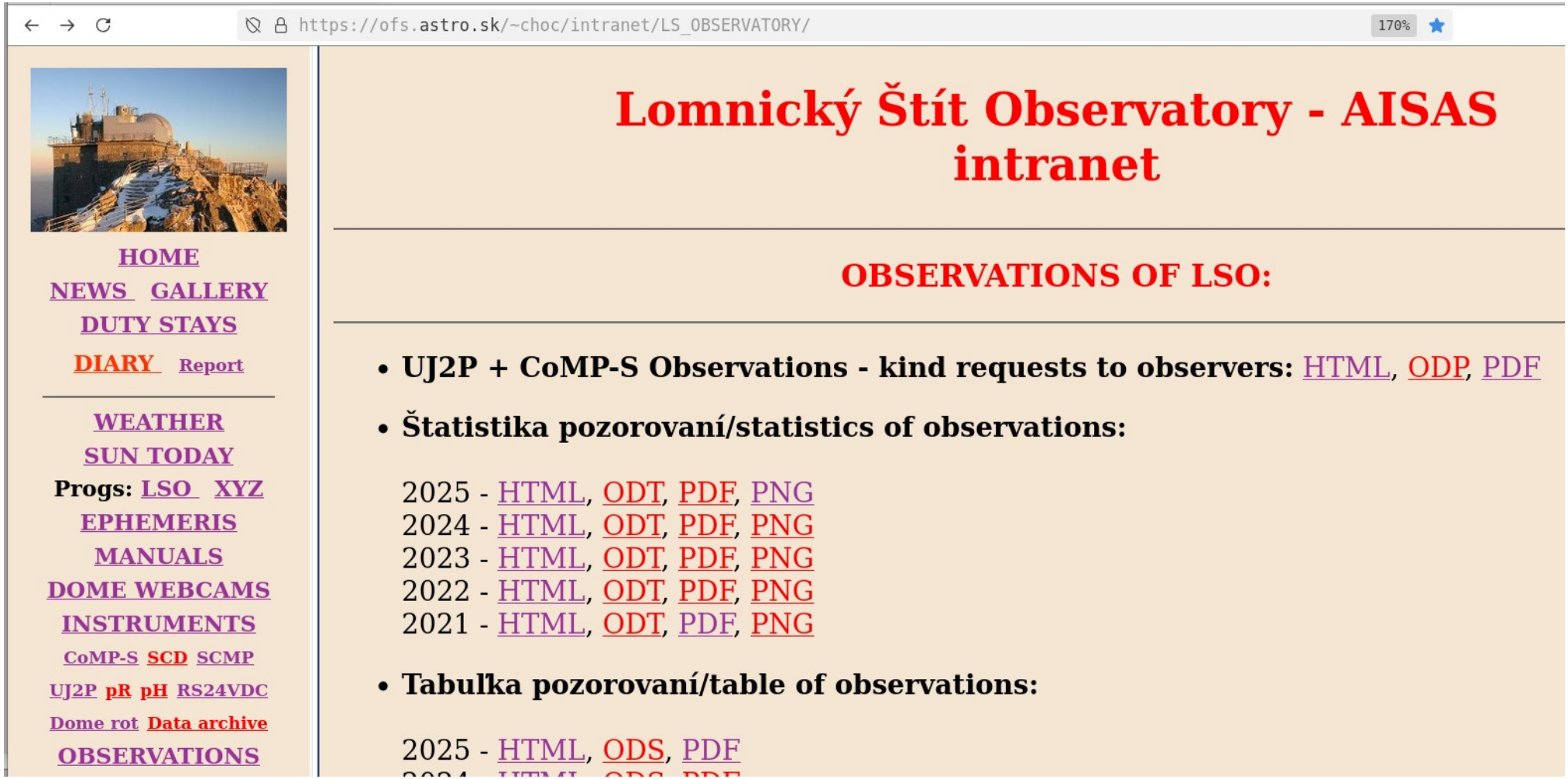
- PSP encounters coordinated campaigns – LSO support:
  - PSP encounter #25, perihelion – 2025/09/15, 20:22 UT, West limb, approach of ~14 solar radii (6.5 % of 1 AU)
  - LSO target areas: 2025/09
    - 12-15 - W limb PA = ~280°
    - 18-21 - E limb PA = ~120°
    - 25-26 - E limb PA = ~80°
  - LSO observations (so far):
    - 09/15 (PSP+STEREO A)
    - 09/18+20+21 (PSP+SolO)

    + MT 25-26/09 PA=80° ?



CoMP-S & UJ2P: observations

- UJ2P + CoMP-S Observations - kind requests to observers posted: LSO intranet → OBSERVATIONS or Kind requests to observers



CoMP-S & UJ2P: observations

The latest additions:

- 2025/09/19 – JR: **Usage of 2 mouses** – #1: CoMP-S+UJ2P+ Internet+log_file editing + #2: LSO webcams: click at #1 instead of #2 is kept in a buffer! It might cause positive reply on question for confirmation of the AISAS Mechs action!
- 2025/09/19 – JR+JAjr: When power switch at the HC side wall is switched ON (or OFF) the **CoMP-S Watlow display** at the rare side of the CM is loosing connection to Watlow control unit displaying the **‘no_dev’** information. The Watlow control of the CoMP-S heating/cooling and temperature data sending to LabVIEW SCMP code is working in the meantime. To restart the display, please, switch the CoMP-S heating switch in the RS24VDC box in the electro-office OFF and ON. It should start again after some minutes.
- What to add?

CoMP-S & UJ2P: observations

- SolO "target" check: location of information → period – limb preference, plot & movie
  - Location: Progs: XYZ
  - SolO "target" plot → none till Oct, 10, then **Oct 10-Oct 19 period (JR)**

HOME
NEWS GALLERY
DUTY STAYS
DIARY Report

WEATHER
SUN TODAY
Progs: LSO XYZ
EPHEMERIS
MANUALS
DOME WEBCAMS
INSTRUMENTS

- **PLANNED OBSERVATIONS OF THE COORDINATION ACTIVITIES:**
  - Max Millennium Observing Plan
- **PLANNED OBSERVATIONS OF OTHER OBSERVATORIES/SATELLITES:**
  - Solar Orbiter (SolO): planning + orbit plots (reference article), where is SolO
    - 2024/01-06 orbit: plot, movie
      LSO support: period [MM/DD-MM/DD - limb]: 03/11-03/21 - SW limb, 03/21-04/06 - SE, 04-06-04/16 - NE
    - 2024/07-12 orbit: plot, movie
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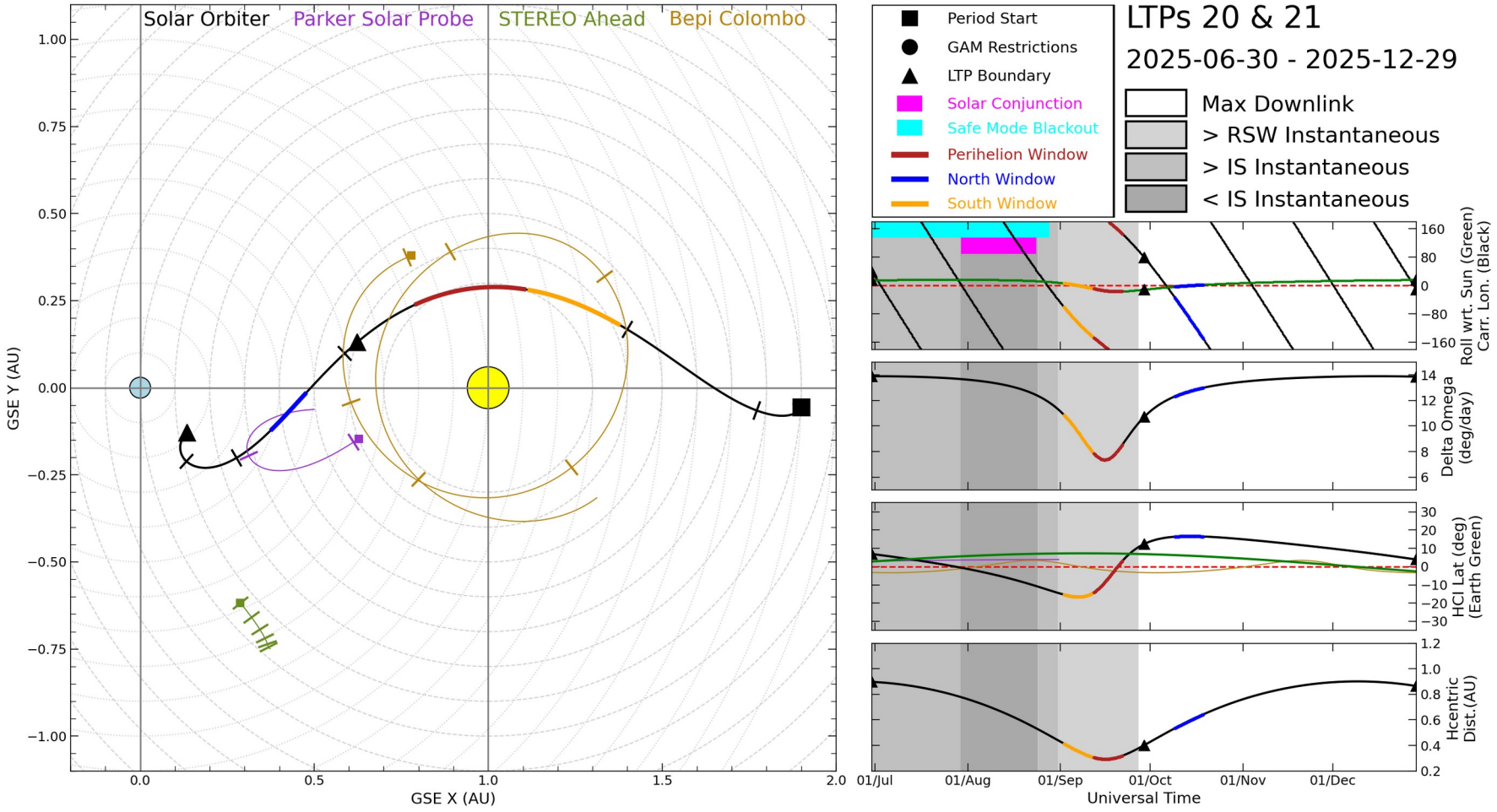
    - 2025/01-06 orbit: plot, movie
      LSO support: period [MM/DD-MM/DD - limb]: 03/17-04/25 - SW limb, 03/22-05/01 - NW
    - 2025/07-12 orbit: plot, movie
      LSO support: period [MM/DD-MM/DD - limb]: 09/01-09/09 - SE limb, 09/19-09/22 - NE, 10/09-10/19 - NW

CoMP-S & UJ2P: observations

- SolO "target" plot → none till Oct, 10, then **Oct 10-Oct 19 - close to Earth + ~17° to N from ecliptic** (solar disk center latitude +6°)



CoMP-S & UJ2P: observations

- **The actual observing plan:**

THE LSO OBSERVING PROGRAMS:

- **ACTUAL OBSERVING AND TESTING PROGRAMS OF THE LSO** (since 08/12//2022):
  - priority 1: coronagraph R + UJ2P prototype + pointerR + CoMP-S: **CoMP-S_obs_pro_010: STATISTICAL STUDY OF BEHAVIOUR OF THE PROMINENCES ON THE SOLAR LIMB IN RELATION TO THE STABILITY OF PROMINENCE AND THEIR POSSIBLE SUBSEQUET ERUPTION - 656,854 - ToO - Target of Opportunity - Zurab Vashalomidze**
  - priority 2: coronagraph R + UJ2P prototype + pointerR + CoMP-S: **CoMP-S_obs_pro_008: SPEKTROPOLARIMETRIA PROTUBERANCII - 587+656 (HSFA-2@Ondrejov + CoMP-S@LSO) ToO - Target of Opportunity - Maciej Zapior**
  - priority 3: coronagraph R + UJ2P prototype + pointerR + CoMP-S: **CoMP-S_obs_pro_009: SPEKTROPOLARIMETRY OF THE CORONA - 656 - JR only**
  - priority 4: coronagraph R + UJ2P prototype + pointerR + CoMP-S: **CoMP-S_obs_pro_007: SPEKTROPOLARIMETRY OF THE CORONA and PROMINENCES - 854, 656, 637, 587**
  - priorita 5: coronagraph R + UJ2P prototype + pointerR + CoMP-S: **CoMP-S_TEST_003: UJ2P SYSTEM PROTOTYPE WITH PR - JR,MT only**
  - priority 6: coronagraph R + UJ2P prototype + pointerR + CoMP-S: **CoMP-S_TEST_004: CHIP calibration data acqusition with pR - JR only**
  - priority 7: coronagraph R + CoMP-S:: **SCMP LV code testing - JR,MH only**
  - priority 8: coronagraph R + UJ2P prototype + pointerR + CoMP-S: **CoMP-S_TEST_001: optimum positions testing of ANDOR PI stages - JR only**
  - priority 9: coronagraph R + UJ2P prototype + pointerR + CoMP-S: **CoMP-S_TEST_002: coronagraph R obj. lens focus testing for CoMP-S - JR only**

CoMP-S & UJ2P: observations

- Things or ideas to be discussed?