LBT Observing Log: 2026 Jan 28 UT

Observers: Jenny Power
Partner Observer: Dom Rowan, Evan Jennerjahn
Telescope Operator: Riccardo Ansaldi

Plan:

Tonight we will plan to start with the LUCI Warhol program.. It will probably be PEPSI the rest of the night, prioritizing Io, the two M3Cluster targets and the TCrB observation. Nevermind – LUCI1 is offline, so we will instead take advantage of the good seeing to do a few LBC monitor targets before swapping to PEPSI

Did not end up doing LBC either (see issues below)
OSU_monitor/N2403 (0.22)
OSU_monitor/M82 (0.26)
OSU_monitor/M81 (0.27)
OSU_monitor/N3077 (0.24)
OSU_monitor/I2574 (0.27)

Switch to PEPSI

~~OSU_MWAbundDisp/2MJ0740+3715 (0.28)~~
~~UVa_Multistar/HIP38979 (0.13)~~
~~OSU_MWAbundDisp/2MJ0735+2716 (0.24)~~
~~OSU_MWAbundDisp/2MJ0717-0150 (0.20)~~
~~OSU_MWAbundDisp/2MJ0716-0448 (0.20)~~
~~OSU_BHBinaries/3072979835351666304 (0.28)~~
~~OSU_BHBinaries/3125722720945464576 (0.39)~~
~~UVa_Multistar/TIC317863971 (0.18)~~
~~OSU_MWAbundDisp/2MJ0849+1217 (0.20)~~
~~OSU_MWAbundDisp/2MJ0832+1502 (0.20)~~
~~OSU_MWAbundDisp/2MJ0848+2515 (0.20)~~
~~OSU_MWAbundDisp/2MJ0842+5402 (0.20)~~
~~OSU_MWAbundDisp/2MJ0836+5539 (0.20)~~
~~UVa_Multistar/HIP34214 (0.13)~~
~~OSU_BHBinaries/864979548396586880 (0.28)~~
~~OSU_MWAbundDisp/2MJ0827+4042 (0.20)~~
~~OSU_MWAbundDisp/2MJ0823+5235 (0.20)~~
~~OSU_MWAbundDisp/2MJ0822+2034 (0.20)~~
~~OSU_MWAbundDisp/2MJ0821+2333 (0.20)~~
~~OSU_MWAbundDisp/2MJ0818+2047 (0.20)~~

OSU_BHBinaries/3089372385493635584 (0.26) (didnt get this due to clouds)

Plan for restarting if there is a break in the clouds:

~~MWAbund J10065770+4832053 (0.2)~~
~~MWAbund J10491590+4436482 (0.2)~~
~~BHBinaries J10474905+4815166 (832384629268579584, 0.23)~~
~~MWAbund J11141422+4932342 (0.2)~~
~~MWAbund J10344750+2533501 (0.2)~~
OSU_MWAbundDisp/2MJ1131+4552 (0.2)

Summary:

PEPSI Log:
https://drive.google.com/file/d/1RBr02xRG3j624OG8LxVMObpfCZeoZ4zl/view?usp=drive_link

- Technical Downtime - Collimation issues (1:50-2:53)
  - OSU_monitor- N2403 (not observed)
- Reconfig (2:53-3:25)
- OSU_MWAbundDisp/2MJ0740+3715 (3:25-3:38)
- UVa_Multistar/HIP38979 (3:38-3:42)
- OSU_MWAbundDisp/2MJ0735+2716 (3:42-3:51)
- OSU_MWAbundDisp/2MJ0717-0150 (3:51-4:00)
- OSU_MWAbundDisp/2MJ0716-0448 (4:00-4:07)
- OSU_BHBinaries/3072979835351666304 (4:26-4:36)
  - Technical loss - collimation limits (4:07-4:26)
- OSU_BHBinaries/3125722720945464576 (4:36-5:02)
- UVa_Multistar/TIC317863971 (5:02-5:08)
- OSU_MWAbundDisp/2MJ0849+1217 (5:08-5:17)
- OSU_MWAbundDisp/2MJ0832+1502 (5:17-5:23)
- OSU_MWAbundDisp/2MJ0848+2515 (5:23-5:32)
- OSU_MWAbundDisp/2MJ0842+5402 (5:32-5:40)
- OSU_MWAbundDisp/2MJ0836+5539 (5:40-5:47)
- UVa_Multistar/HIP34214 (5:47-5:53)
- OSU_BHBinaries/8649795483965868800 (5:53-6:21)
- OSU_MWAbundDisp/2MJ0827+4042 (6:44-6:58)
  - Technical loss - hung GCS on SX then DX (6:21-6:44)

OSU_MWAbundDisp/2MJ0823+5235 (6:58-7:10)
OSU_MWAbundDisp/2MJ0822+2034 (7:10-7:25)
OSU_MWAbundDisp/2MJ0821+2333 (7:25-7:37)
OSU_MWAbundDisp/2MJ0818+2047 (7:37-7:50)
OSU_BHBinaries/3089372385493635584 (not observed)
Weather downtime (7:50-12:02)
MWAbund J10065770+4832053 (12:02-12:10)
MWAbund J10491590+4436482 (12:10-12:23)
BHBinaries J10474905+4815166/832384629268579584 (12:23-12:47)
MWAbund J11141422+4932342 (12:47-13:01)
MWAbund J10344750+2533501 (13:01-13:21)

Issues:

LUCI1 offline for MOS issue
LBC Blue collimation issues
GCS Hang with PEPSI

Weather:

Sub arcsecond seeing most of the night with the exception of the start of the night. Clouds, at times thick.

Overview:

23:10 Power bump

23:25 Riccardo and mountain staff have fully recovered from the Power bump. Dave powered on the Luci2 cal unit after the bump

23:36 Starting up the DX WFS for ESM observation (Warhol).
Note: The first program is an ESM spectroscopy program. ESM spectroscopy suffers from PSF drift from the pupil wobble resulting from the K mirror alignment between LUCI and the WFS. Work has been done to improve the PSF stabilization but is still being tested and is not released yet for science. This could result in the source drifting out of the slit as we track in elevation. This is a very low elevation target so the elevation change would be minimal. If we opt to observe, we should monitor source flux carefully, although this is a blind offset so source is expected to be quite faint… Dither for slit is in X and Y.

00:56 UT Change of plan, since LUCI1 is offline we are configuring for the LBCs. LBCs are powered up, test biasx2 run. Powering off WFS.

Powering up the TMS lasers, license issue, rebooting the computer.

0:54 Sunset

01:07 UT TMS lasers on. Riccardo is slewing to el 30 for opening.

01:31 Sending preset for V & I skyflats. PA0
Riccardo mentioned it is clear overhead but clouds along the horizon. They are working to get the all sky cam up

01:40 UT Sending preset for V & I skyflats. PA180
Scarmbled image: lbcb 014129

Obtained a good set at both PAs for V & I

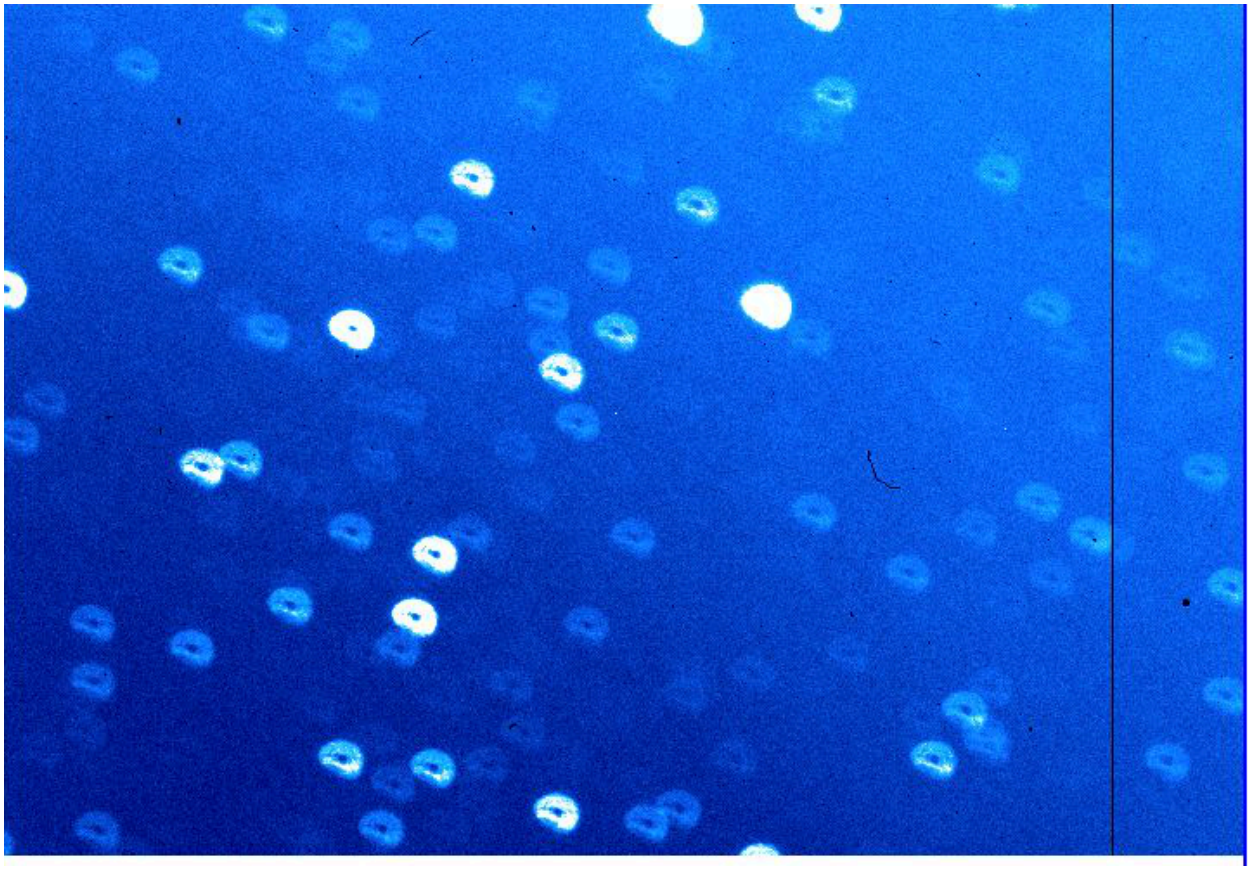
1:44 UT 12 degee twilight

Technical Downtime - Collimation issues (1:50-2:53)

OSU_monitor- N2403 (not observed)

01:50 UT Sending preset to focus field for NGC2403. LBC blue collimation looks bad. Retry resulted in huge z4 swing +/-15000.
Tried clearing optics
Pupils not identified at all. We are at low elevation. Seeing reported is >2". Trying a higher elevation field

02:07 UT Slewing to a higher elevation field for collimation. The collimation on blue looks awful. Tried putting initial -10000 z4 offset in which is clearly needed to start. We still got a large z4 swing and pupils were not identified.



We can not collimate on blue. We continually get runaways. We have tried:

- Collimating at higher elevation
- Clearing optics
- No TMS reference was in place
- Some manual collimation attempt

Pupils almost appear vignetted. Z4 oscillated +/- ~12500 when running dofpia

2:14 UT 18 degree evening twilight, LMST at evening twilight: 3 27

Reconfig (2:53-3:25)

02:53 UT Reconfig PEPSI

03:10 UT Sending preset for pointing and collimation.

OSU_MWAbundDisp/2MJ0740+3715 (3:25-3:38)

03:25 UT Preset to target
03:26 UT Starting science. Cirrus skies, seeing 0.65-0.7” on the guider, 0.77” on the DIMM.

UVa_Multistar/HIP38979 (3:38-3:42)

03:38 UT Sending preset.
03:40 UT Starting Science

OSU_MWAbundDisp/2MJ0735+2716 (3:42-3:51)

03:42 UT Sending preset
03:43 UT Starting science. Seeing is 0.64-0.67” on the guiders. Cirrus

OSU_MWAbundDisp/2MJ0717-0150 (3:51-4:00)

03:51 UT Sending preset
03:54 UT Starting science. Seeing is 0.6-0.7”, cirrus

OSU_MWAbundDisp/2MJ0716-0448 (4:00-4:07)

04:00 UT Sending preset
04:01 UT Starting science. Seeing 0.61-0.67” on the guiders. 0.6” on the DIMM Cirrus.

OSU_BHBinaries/30729798353516663O4 (4:26-4:36)

Technical loss - collimation limits (4:07-4:26)

04:07 UT Sending preset
27/01/2026 21:08:29 right PresetTelescope: PresetTelescope result status: Warning Stop{FLAO}[169] Primary mirror wavefront reached limit

04:15 UT Collimation taking a long time on the right, WFS image lost on the left. Resending preset

27/01/2026 21:15:54 right PresetTelescope: PresetTelescope result status: Warning Stop{FLAO}[170] Primary mirror wavefront reached limit
Z6 runaway

04:26 UT Finally starting science! Cirrus. 0.66’ on the guiders, 0.91” on the DIMM.

OSU_BHBinaries/3125722720945464576 (4:36-5:02)

04:36 UT Sending preset
04:38 UT Pointing check needed.
04:40 UT Sending preset back to source and starting science.

04:59 UT Seeing 0.53-0.67” on the guiders, cirrus is getting thicker.

UVa_Multistar/TIC317863971 (5:02-5:08)

05:02 UT Sending preset. Science started with 0.59-0.7” seeing, cirrus.

OSU_MWAbundDisp/2MJ0849+1217 (5:08-5:17)

05:08 UT Sending preset
05:10 UT Starting science Seeing 0.57-0.71” on the guiders. 0.91” on the DIMM. Cirrus

OSU_MWAbundDisp/2MJ0832+1502 (5:17-5:23)

05:17 UT Sending preset to next field.
05:18 UT Starting science. Seeing 0.63-0.73” on the guiders. Cirrus.

OSU_MWAbundDisp/2MJ0848+2515 (5:23-5:32)

05:23 UT Sending preset to target
05:26 UT Starting science. Seeing 0.55-0.65” on the guiders, some thicker clouds starting to move in.

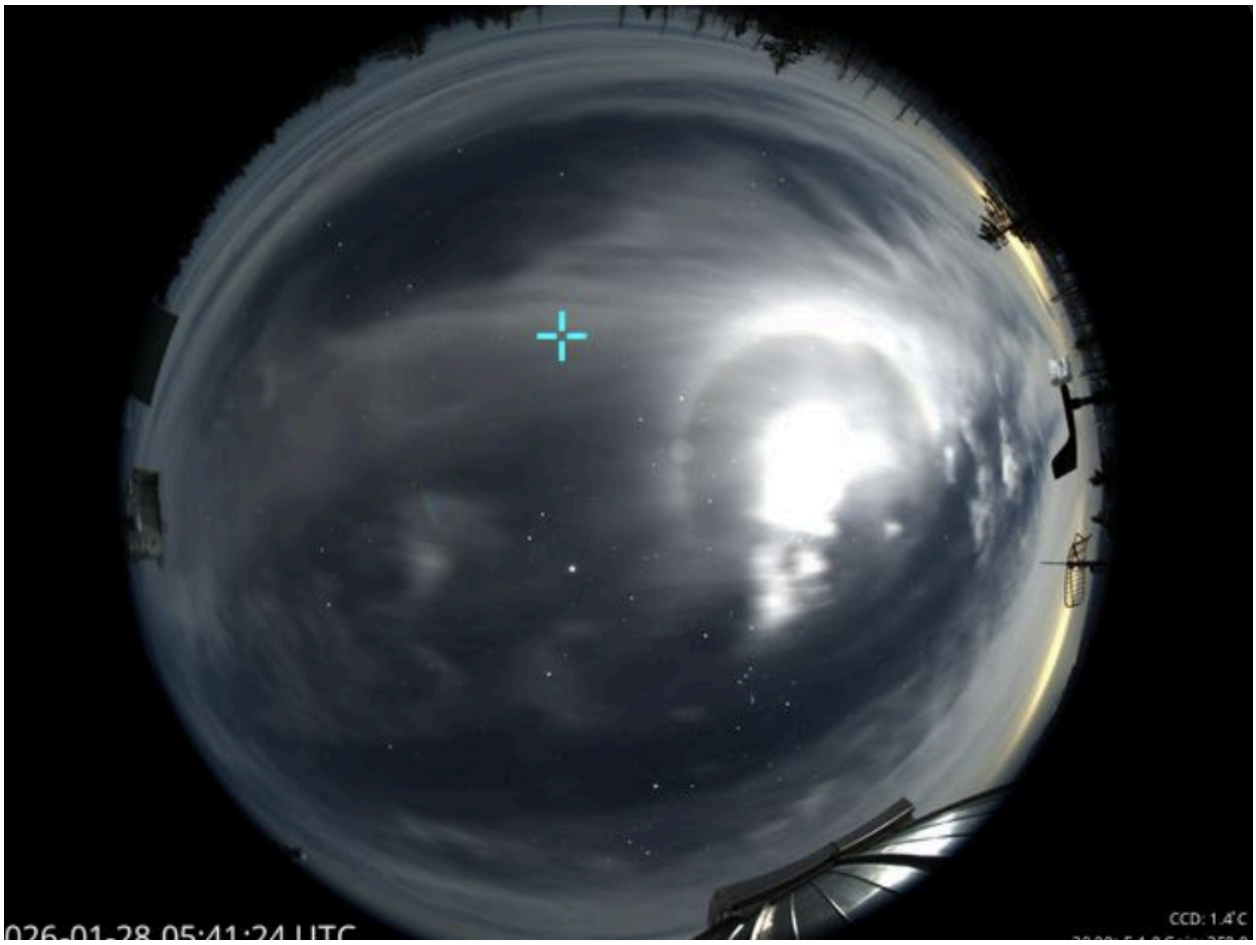
OSU_MWAbundDisp/2MJ0842+5402 (5:32-5:40)

05:32 UT Sending preset to target.

05:34 UT Starting science. Seeing 0.82” on the DIMM.

OSU_MWAbundDisp/2MJ0836+5539 (5:40-5:47)

05:40 UT Sending preset to our next target
05:41 UT Starting Science. DIMM seeing 0.85”, seeing 0.58-0.62” on the guiders. Thicker clouds are passing through now, thickest ones are south of our current pointing.



UVa_Multistar/HIP34214 (5:47-5:53)

05:47 UT Preset
05:51 UT Starting science. Seeing 0.61-0.75” on guiders, clouds.

OSU_BHBinaries/8649795483965868880 (5:53-6:21)

05:53 UT Sending preset
05:55 UT Pointing check needed
05:58 UT Resending preset.
06:00 UT Science started. We have increased the exposure time. Thicker clouds now and we want to ensure we achieve the required SNR.

06:12 UT Seeing about a magnitude of extinction. Seeing is 1” onthe DIMM and 0.76” on the guider.

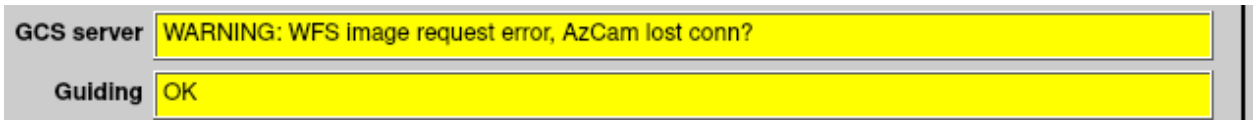
OSU_MWAbundDisp/2MJ0827+4042 (6:44-6:58)

Technical loss - hung GCS on SX then DX (6:21-6:44)

06:21 UT Sending preset.

Hung with waiting for probe movement on GCS left. Riccardo restarted GCS left and released sync preset and we were able to resume.

06:32 UT Resnding preset
06:33 UT Starting science. Seeing 0.63
Right AZcaM Lost conn. Stop and readout and we need to restart



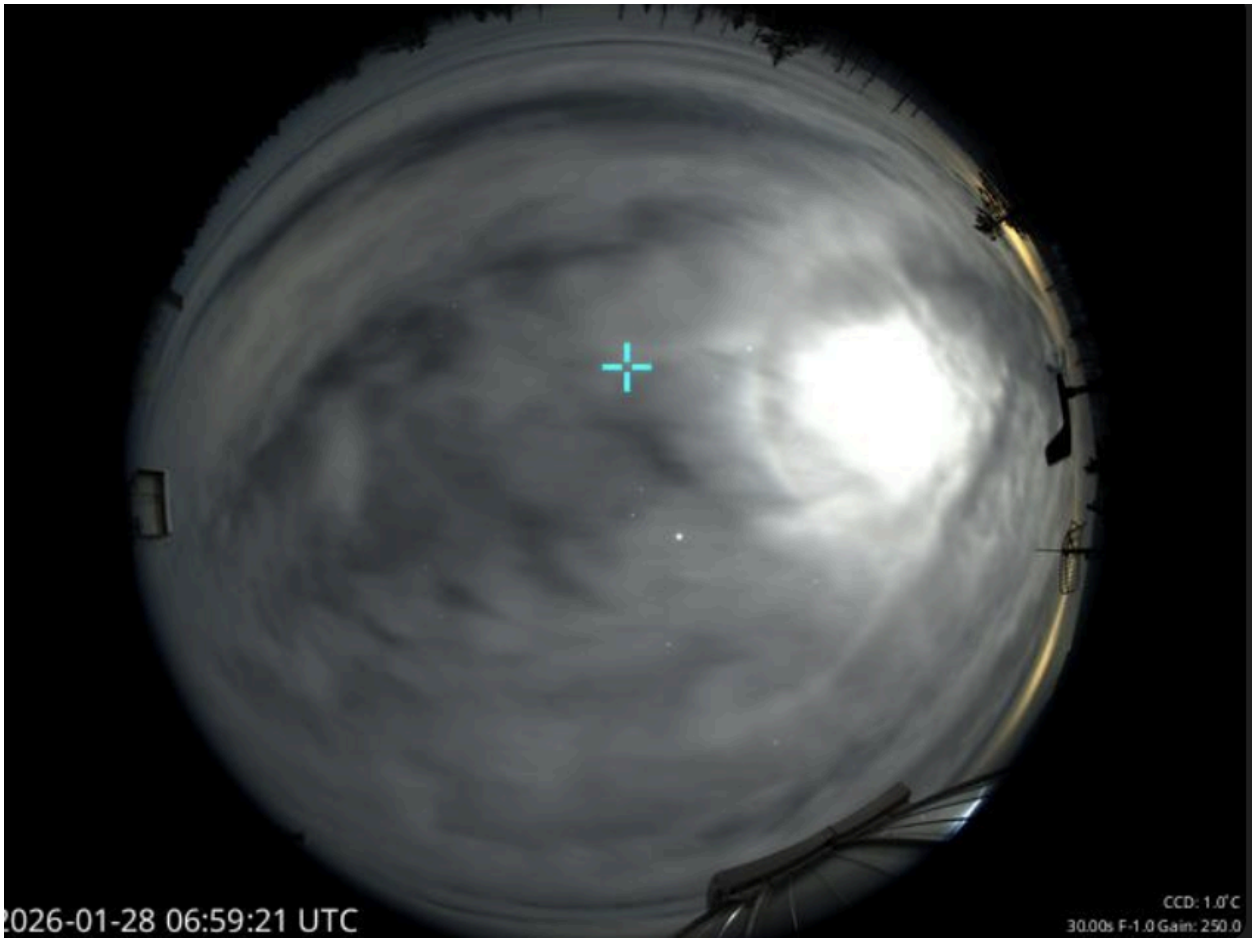
Restarting GCS right resolved.

06:44 UT restarting science.

06:50 UT SNR low because of clouds. Taking another exposure.

OSU_MWAbundDisp/2MJ0823+5235 (6:58-7:10)

06:58 UT Preset to target
07:00 UT Starting science. Taking double exposure time with these thick clouds. Seeing is 0.73” on the guiders.



OSU_MWAbundDisp/2MJ0822+2034 (7:10-7:25)

07:10 UT preset to target.
07:18 UT Exposure time was doubled again because of thick cloud cover. This seems to be allowing us to achieve the requested SNR. Seeing 0.61-0.68” on the guiders, 0.99” on teh DIMM.

OSU_MWAbundDisp/2MJ0821+2333 (7:25-7:37)

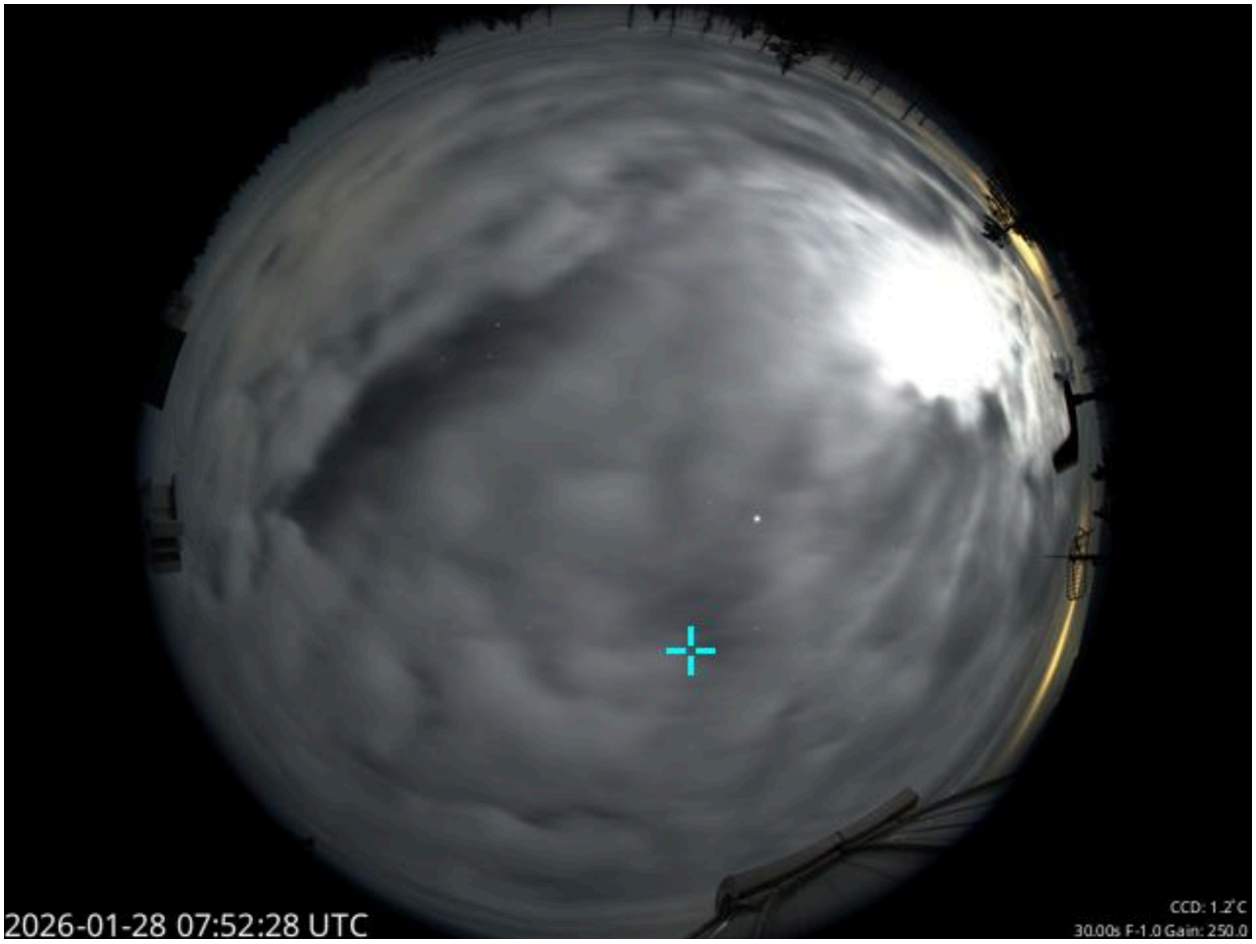
07:25 UT Preset to target. Seeing is 0.67-0.78”. Clouds. We are continuing to double exposure times.

OSU_MWAbundDisp/2MJ0818+2047 (7:37-7:50)

07:37 UT Preset to target
07:38 UT Starting science. Doubled exp time again. Seeing 0.73-0.83”. Clouds.

OSU_BHBinaries/3089372385493635584 (not observed)

07:50 UT Slewing to target
07:52 UT Clouds too thick to see target. Riccardo going out to see what conditions look like

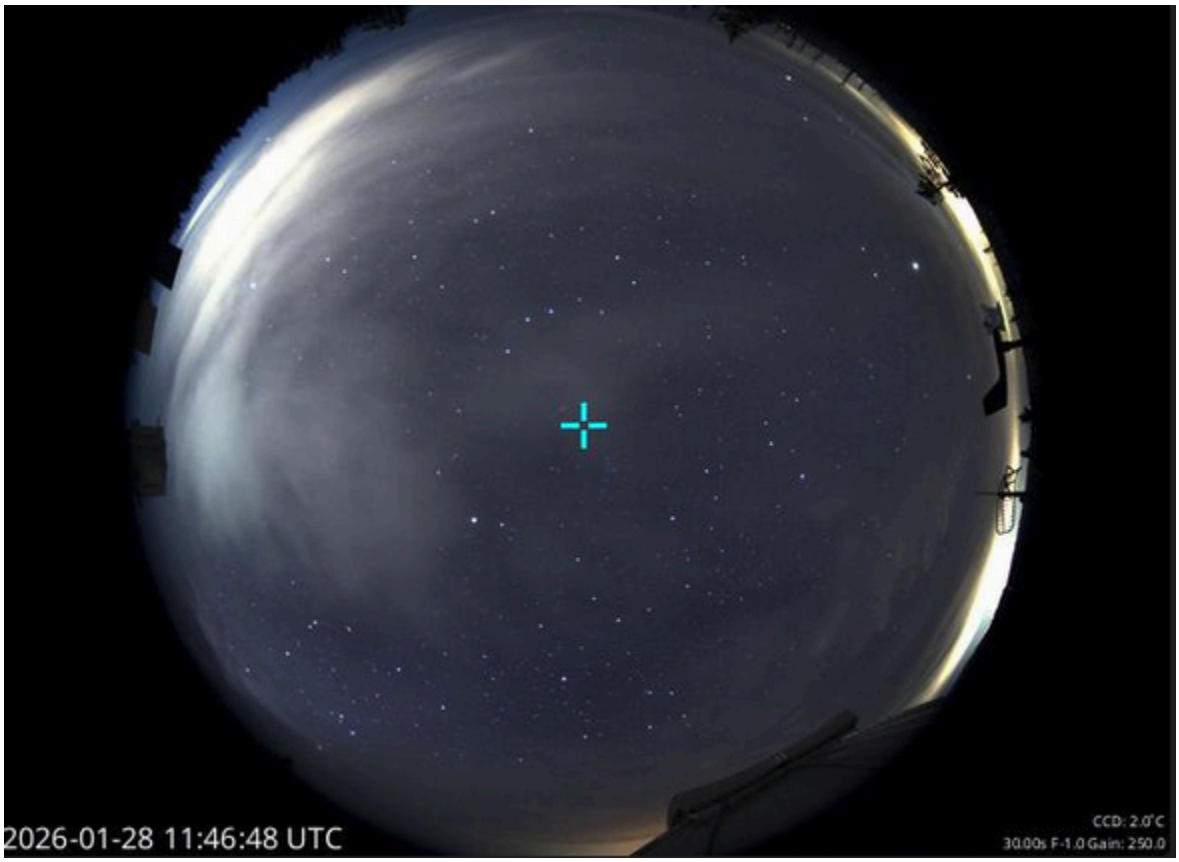


Weather downtime (7:50-12:02)

07:58 UT Closing for threatening clouds

11:41 Moonset, illumination fraction 0.824

11:47 UT Opening



MWAbund J10065770+4832053 (12:02-12:10)

12:02 UT Sending preset to target
12:04 UT Starting science. Partly cloudy, seeing 0.66-0.82” on the guiders.

MWAbund J10491590+4436482 (12:10-12:23)

12:10 UT Preset to target
12:11 UT Starting science. Seeing 0.52-0.62” on the gudiers. Partly cloudy.
12:18 UT Repeating exposures, SNR on first was below requested SNR.

BHBinaries J10474905+4815166/8323846292685795 84 (12:23-12:47)

12:23 UT Sending preset
12:25 UT WFS exp time stuck at 9s on SX and not increasing. Needs 90s to successfully WFS.
12:32 UT Starting science. Exposure time doubled. Clouds are getting pretty thick with about 1.5 mags of extinction and look to be getting worse.

MWAbund J11141422+4932342 (12:47-13:01)

12:47 UT Sending preset
12:50 UT Starting science. Seeing 0.7” on the guiders. Clouds. Exposure time is doubled to help ensure we reach SNR

12:51 18 degree morning twilight, LMST at morning twilight: 14 07

MWAbund J10344750+2533501 (13:01-13:21)

13:01 UT Sending preset
13:04 UT Pointing check needed.
13:06 UT Back to target.
13:08 UT Starting science. Guiders reporting 0.75-0.82” seeing.
13:15 UT Taking an additional 7 min exp. We are well below the SNR requirement in the first exp in CD2. This will take us to twilight.

13:21 12 degree morning twilight

14:11 Sunrise

Calibrations:
13:24 UT Running PEPSI calibrations