

# LBT Observing Log: 2025 09 30 UT

Observers: Justin Rupert, Jon Rees

Partner Observer: Jennifer Johnson

Telescope Operator: Josh Williams

## Plan:

PEPSI

1. OSU\_PASTA/TOI-4443 (taken twice, as we were moving through 12 degree twilight)
2. OSU\_PASTA/TOI-2010
3. OSU\_mpmddwarf/GaiaDR32696229496034082176
4. OSU\_mpmddwarf/HIP109939
5. OSU\_mpmddwarf/GaiaDR32722758546948770944
6. OSU\_BHBinaries/2MJ2156+2510
7. OSU\_MWAbundDisp/2MJ2349+1542
8. ND\_CEMPG4/310887123207699200
9. OSU\_BHBinaries/2MJ1924+3327
10. OSU\_PASTA/TOI-5958
11. OSU\_mpmddwarf/GaiaDR32743314157348928640
12. OSU\_mpmddwarf/HIP117774
13. OSU\_mpmddwarf/GaiaDR32738518809183057280
14. ND\_spider/1FGLJ0212
15. OSU\_MWAbundDisp/2MJ2333+0014
16. OSU\_MWAbundDisp/2MJ2242+4506
17. OSU\_MWAbundDisp/2MJ2253+3904
18. OSU\_BHBinaries/2MJ2302+3045
19. OSU\_BHBinaries/2MJ0016+5955
20. OSU\_PASTA/TOI-1581
21. OSU\_MWAbundDisp/2MJ0549+2523
22. OSU\_BHBinaries/2MJ0716+5705
23. OSU\_PASTA/TOI-1687
24. OSU\_MWAbundDisp/2MJ0300+0053
25. OSU\_BHBinaries/2MJ0658+7634
26. OSU\_mpmddwarf/GaiaDR3503852685194199680
27. OSU\_mpmddwarf/HIP24732
28. OSU\_MWAbundDisp/2MJ0240+3704
29. OSU\_MWAbundDisp/2MJ0239+4816
30. OSU\_MWAbundDisp/2MJ0208+4807
31. OSU\_MWAbundDisp/2MJ0234+0043
32. OSU\_BHBinaries/2MJ0729+0043
33. OSU\_MWAbundDisp/2MJ0400+6851

# Summary:

Overview (times are given in UT):

UV (Cals)

BCD

LUCI Darks

01:08 UT Opening enclosure

OSU

PASTA

TOI-4443 (01:43-01:59)

Toi-2010 (02:00-2:21)

mpmdwarf

GDR3 2696229496034082176 (02:21-03:35)

HIP 109939 (03:35-03:39)

GDR3 2722758546948770944 (03:39-03:59)

BHBin

2MJ2156+2510 (03:59-04:19)

MWAbund

2MJ2349+1542 (04:19-04:28)

ND

CEMPG4

310887123207699200 (04:28-04:54)

OSU

BHBin

2MJ1924+3327 (04:54-05:05)

PASTA

TOI-5958 (05:05-05:27)

mpmdwarf

GDR3 2743314157348928640 (05:27-06:00)

HIP117774 (06:00-6:03)

GDR3 2738518809183057280 (06:03-06:27)

ND

Spider

1FGLJ0212 (06:27-08:16)

OSU

MWAbund

2MJ2333+0014 (08:16-08:29)

2MJ2242+4506 (08:29-08:40)

2MJ2253+3904 (08:40-08:48)

BHBin

2MJ2302+3045 (08:48-08:59)

[2MJ0016+5955 \(08:59-09:22\)](#)

[PASTA](#)

[TOI-1581 \(09:22-09:46\)](#)

[MWAbund](#)

[2MJ0549+2523 \(09:46-09:58\)](#)

[BHBin](#)

[2MJ0716+5705 \(09:58-10:08\)](#)

[PASTA](#)

[TOI-1687 \(10:08-10:34\)](#)

[MWAbund](#)

[2MJ0300+0053 \(10:34-10:47\)](#)

[BHBin](#)

[2MJ0658+7634 \(10:47-10:56\)](#)

[mpmdwarf](#)

[GDR3 503852685194199680 \(10:56-11:16\)](#)

[HIP24732 \(11:16-11:20\)](#)

[MWAbund](#)

[2MJ0240+3704 \(11:20-11:29\)](#)

[2MJ0239+4816 \(11:29-11:39\)](#)

[2MJ0208+4807 \(11:39-11:47\)](#)

[2MJ0234+0043 \(11:47-11:57\)](#)

[BHBin](#)

[2MJ0729+0043 \(11:57-12:12\)](#)

[MWAbund](#)

[2MJ0400+6851 \(12:12-](#)

[End of night](#)

PEPSI Log:

<https://drive.google.com/file/d/16kjH93PalBhrcyH9FFaCpqqSitBc8H9Z/view?usp=sharing>

## Issues:

IT 9418: SX hung during pointing preset. GCS/IIF refused to stop. Glenn ended up aborting GCS, which killed IIF.

## Weather:

Clear skies at beginning of night. Some clouds around 7UT, eventually retreating to the horizon. Seeing was good throughout.

### Temperature at ground \*

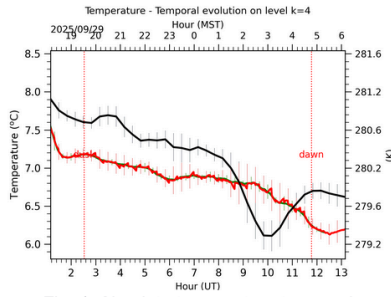


Fig. 4: Absolute temperature temporal evolution between the sunset and the sunrise at [38-62]m.

### Wind Speed at ground \*

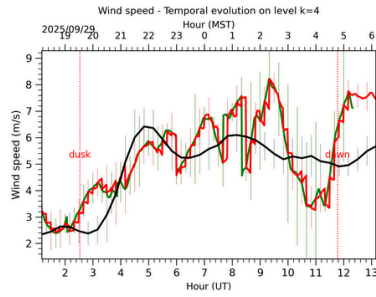


Fig. 5: Wind speed temporal evolution between the sunset and the sunrise at [38-62]m.

### Wind Direction at ground \*

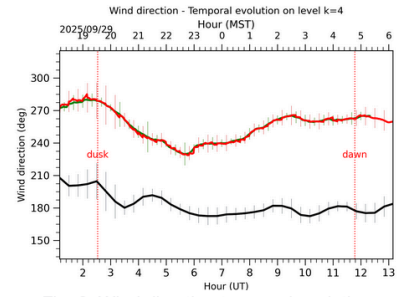
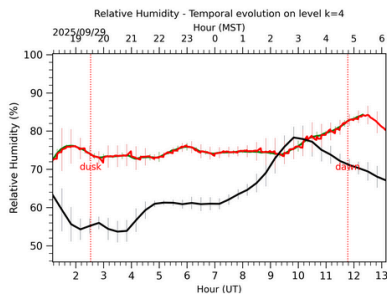
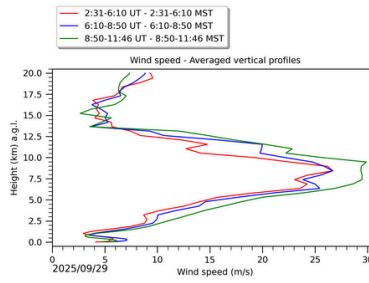


Fig. 6: Wind direction temporal evolution between the sunset and the sunrise at [38-62]m.

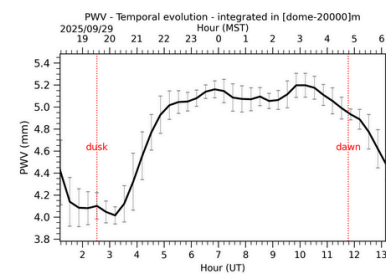
### Relative Humidity at ground \*

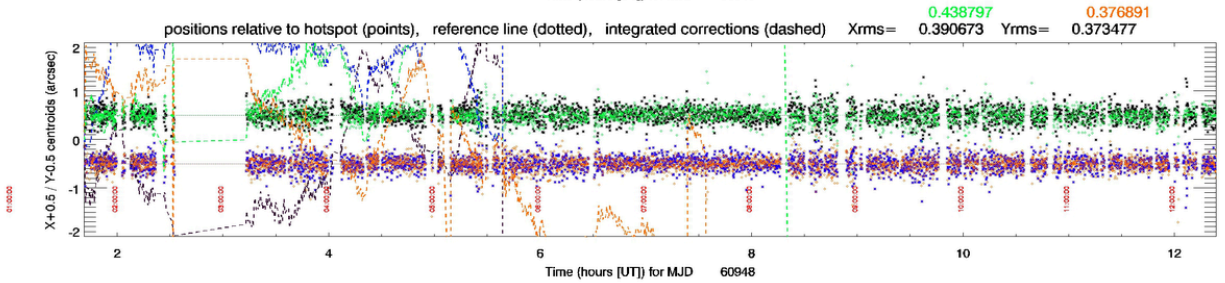
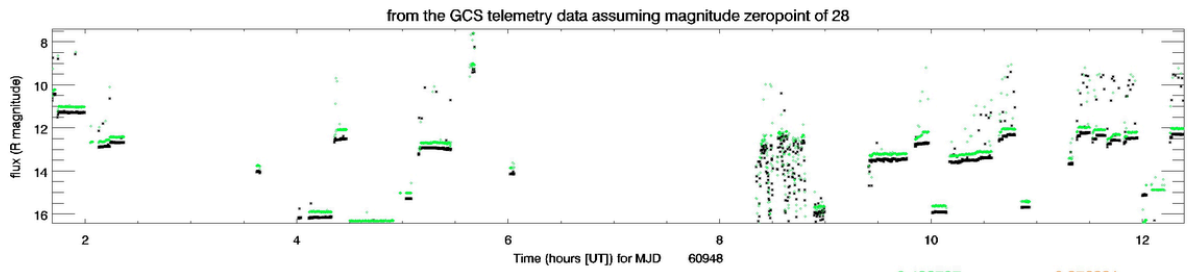
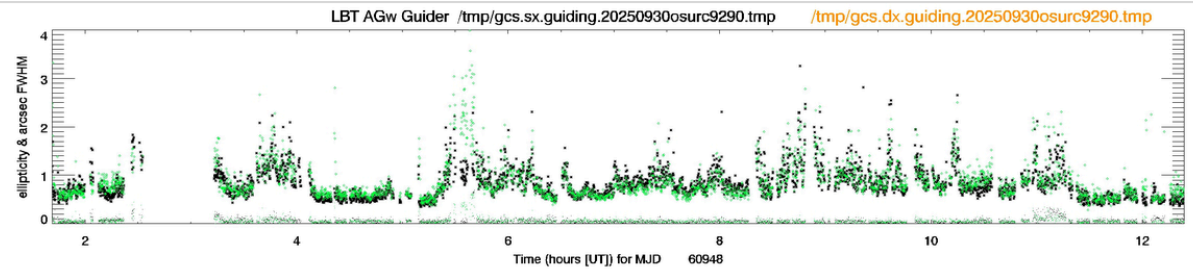
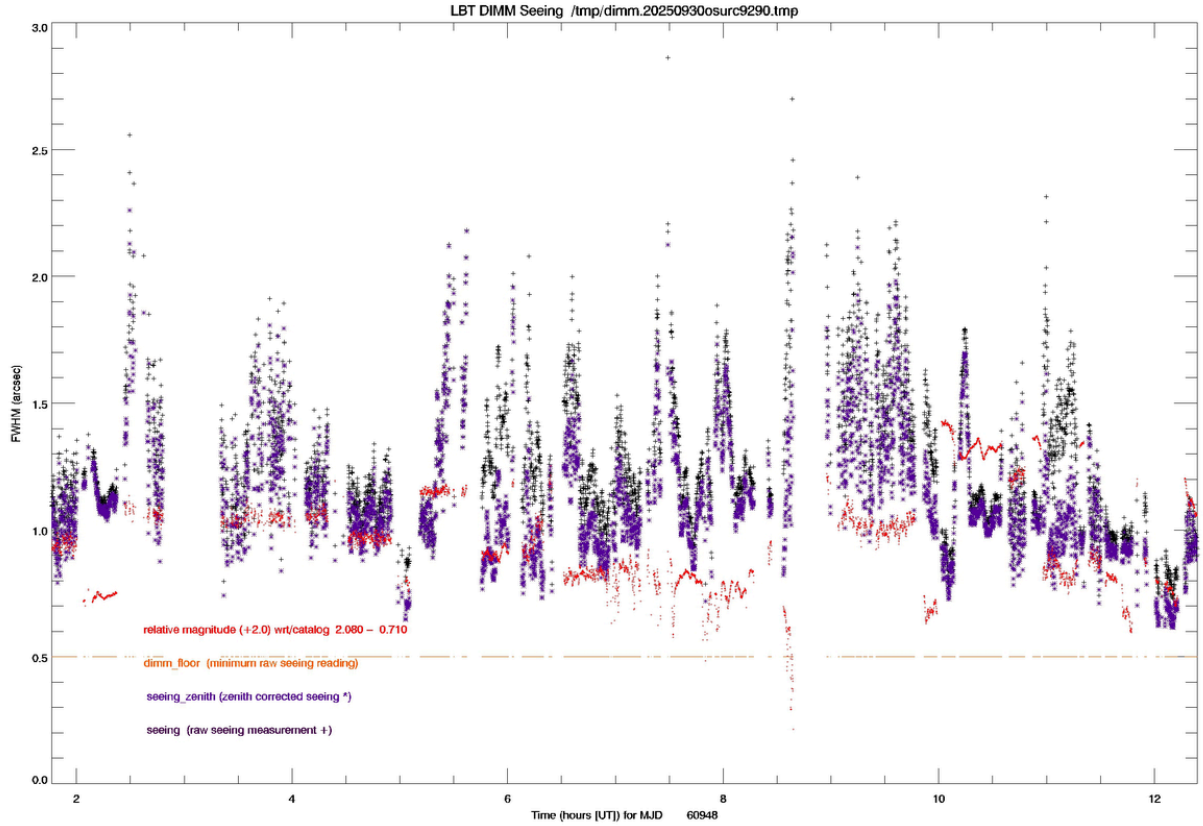


### Wind Speed vertical profiles



### Precipitable Water Vapor





## Overview (times are given in UT):

00:22 UT LBCs powered on

00:26 UT Starting LBC biases x25

00:29 UT LUCI init all

00:34 UT Setting up for LUCI darks - UV-BCD program

### UV (Cals)

BCD

LUCI Darks

00:38 UT Starting darks, UV-BCD\_LUCI\_darks\_corr.xml. Files start at luci[1|2].20250930.001

01:06 UT Did not complete darks, time to open the enclosure. 8x240s still outstanding.

01:08 UT Opening enclosure

01:08 UT Opening shutters.

01:11 UT sunset

01:24 UT Sky is clear. Humidity ~75%, wind 3m/s.

01:28 UT Pointing preset

01:40 UT Collimation preset

OSU

PASTA

TOI-4443 (01:43-01:59)

01:43 Preset.

01:45 Starting science. Seeing is 0.8" on cyclope. Clear skies. This is a mag 8 target.

01:48 UT SNR CD5:175

01:48 UT SNR CD2:163

01:50 UT SNR CD1: 165, CD6:484

01:53 UT Repeating exposures, since it's still a little before 12 deg.

01:54 UT SNR CD3:158 CD5:209

01:56 UT SNR CD2:160 CD4:256

01:58 UT SNR CD1:166 CD6:444

01:59 UT 12 degree twilight.

Toi-2010 (02:00-2:21)

02:00 Preset.

02:03 UT SX guider caught a hot pixel and failed to acquire star. Pointing check.

02:06 UT Preset. Back to target.

02:08 UT Starting science. SX FWHM 0.85", DX FWHM 0.80". 1.25" DIMM. 0.81" Cyclope. Clear skies.

02:10 UT SNR CD3:157 CD5:218

02:13 UT SNR CD2:163 CD4:245

02:21 UT SNR CD1:166 CD6: 485

mpmdwarf

GDR3 2696229496034082176 (02:21-03:35)

02:21 UT Preset sent

02:27 UT Faint on guider, not clear if we got it. Pointing check.

02:28 UT 18 degree twilight

02:29 UT Preset again

02:31 UT DX unable to find the star. Pointing check again.

02:37 SX has been hung up at the "moving probe" step of the pointing preset.

02:41 Resending preset. Didn't work. Josh is canceling the previous preset.

02:43 Resending preset. TCS still thinks something is happening on SX.

02:46 Resending preset. Didn't work. Josh is struggling to clear the initial preset on SX.

02:48 Josh will try restarting IIF. Going to zenith.

02:50 Scratch that. He's going to try restarting GCS first.

02:52 That didn't work. Moving to zenith and restarting IIF.

02:55 No dice. Calling software.

03:01 Glenn aborted GCS left, which seemed to break the hangup.

03:03 Sending a preset. We're moving.

03:05 Success! So aborting is the way out of this issue.

03:08 Heading back to target. Switching from BS1 to BS3 (16th-mag target with CD6. PReset didn't go through. Killing the pepsi software and restarting.

03:12 Sending preset. That worked.

03:16 Starting science. Seeing is 1.1" in SX guider, 1.4" on DX guider, 0.7" on cyclope. Clear skies.

03:35 SNR CD6: 43

HIP 109939 (03:35-03:39)

03:35 Preset.

03:38 UT Starting science exposure

SNR CD3:420 CD6:359

GDR3 2722758546948770944 (03:39-03:59)

03:39 UT Preset

03:43 UT Starting exposure. 1.1" FWHM blue, 1.2" FWHM red. DIMM 1.3" Cyclope ~1.2-1.3"

03:59 UT SNR CD6:37

BHBin

2MJ2156+2510 (03:59-04:19)

03:59 UT Preset sent. Missed it on DX. Pointing check.

04:05 Back to target.

04:09 UT Science exposures started. 0.9"FWHM blue, 1.0" FWHM red. DIMM 1.13". Cyclope 1.3"

04:19 UT SNR CD3:100 CD5:132

MWAbund

2MJ2349+1542 (04:19-04:28)

04:19 UT Preset

04:22 UT Starting science exposure. 0.6" FWHM blue, 0.7" FWHM red. 0.7" Cyclope.

04:28 UT SNR CD2:250 CD4:427

ND

## CEMPG4

310887123207699200 (04:28-04:54)

04:28UT Preset sent

04:31 UT Exposure started. 0.5"FWHM blue, 0.6"FWHM red. 0.95" DIMM 0.85" Alcor. Clear skies.

04:42 UT SNR CD2:70 CD4:104

04:54 SNR CD3:94 CD5:109

## OSU

BHBin

2MJ1924+3327 (04:54-05:05)

04:54 UT Preset sent

04:58 UT Pointing check

05:01 UT Resent target preset

05:02 UT Exposure started

SNR CD3:76 CD5:77

## PASTA

TOI-5958 (05:05-05:27)

05:05 UT Preset sent

05:09 UT Exposures started. 0.6" FWHM blue, 0.7" FWHM red. 0.75" cyclope

05:12 UT SNR CD3:169 CD5:200

05:16 UT SNR CD2:166 CD4:249

5:27UT SNR CD1:164 CD6:463

mpmddwarf

GDR3 2743314157348928640 (05:27-06:00)

05:27 UT Preset sent

05:29 UT Pointing check

05:36 UT Collimation looks bad on DX side, slewing to a brighter source for Josh to collimate.

05:41 UT Collimated. Slewing back to target.

05:46 UT Target still dim on WFS, but collimation looks good after using the bright star for collimation

05:46 UT Starting science exposure

06:00 UT SNR CD6:38 (CD3 not measured, basically no signal in blue as PI expected)

HIP117774 (06:00-6:03)

06:00 UT Preset sent

06:02 UT Starting exposure

06:03 UT SNR CD3:478: CD6:356

GDR3 2738518809183057280 (06:03-06:27)

06:03 UT Preset sent

06:05 UT Resent preset with BS3 beam splitter (target is faint)

06:11 UT WFS settled down. Starting science exposures. 0.9" FWHM blue, 0.9"FWHM red. 1.2" DIMM.

06:26 UT SNR CD6:43

ND

Spider

1FGLJ0212 (06:27-08:16)

06:27 UT Preset sent

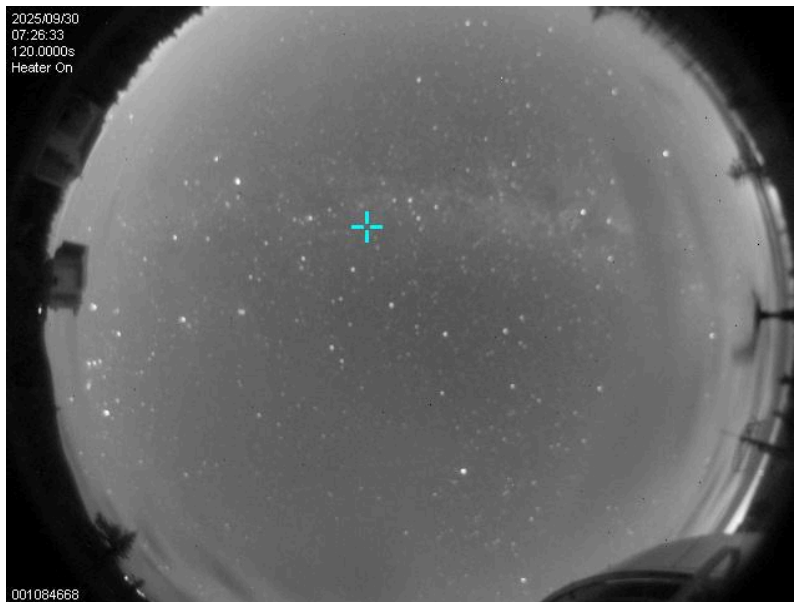
06:34 UT Exposure started. 0.95" FWHM blue, 0.9" FWHM red. 1.33" seeing DIMM, 1.09" Cyclope

06:54 UT Exp1: SNR CD2:56 CD4:83

07:02 UT Blue FWHM 0.85", Red 0.75", DIMM 1.26. Alcor 1.09

07:20 UT Exp2 SNR: CD2:56 CD4:75

07:28 UT Some thin cirrus blowing through, nothing in our part of the sky yet



07:35 UT Star drifted off the pinhole on red side, spent ~11 minutes off. Moved star back, but will take an extra exposure to make up for it.

07:57 UT SNR CD2:55 CD4:81

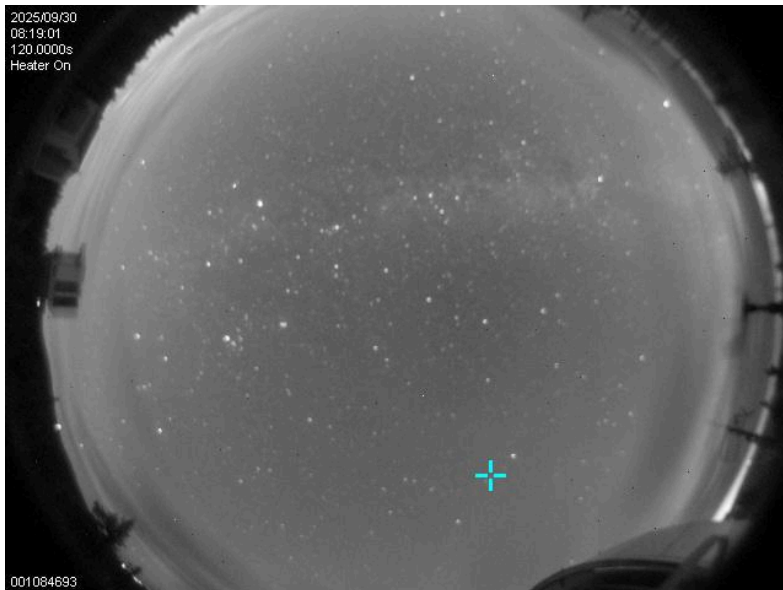
OSU

MWAbund

2MJ2333+0014 (08:16-08:29)

08:16 UT Preset sent

08:23 UT Exposure started. Blue FWHM 1.0", red FWHM 1.0", 1.24" cyclope. Some cirrus in our current location



8:29 UT SNR CD2:175 CD4: 289

2MJ2242+4506 (08:29-08:40)

08:29 UT Preset sent

08:33 UT Exposure started. Blue FWHM 0.75", red 0.75", Cyclope 0.81".

08:39 UT SNR CD2:187 CD4:330

2MJ2253+3904 (08:40-08:48)

08:40 UT Preset sent

08:42 UT Starting exposure. Blue FWHM 1.1", red 1.2", 1.6" Cyclope. Thin cirrus in this part of the sky.

08:48 UT SNR CD2:122 CD4:226

BHBin

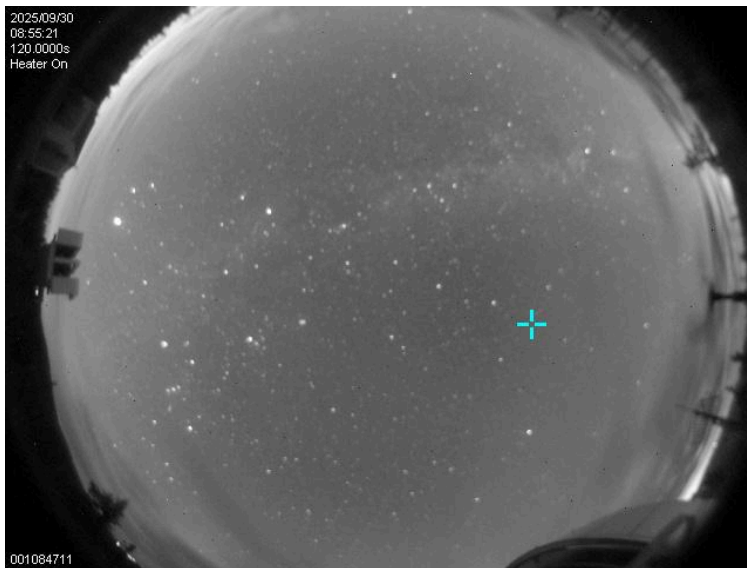
2MJ2302+3045 (08:48-08:59)

08:48 UT Preset sent

08:50 UT Pointing check

08:52 UT Resent preset

08:55 UT Exposure started. 1.4" FWHM blue. 1.5" FWHM red. Clouds slowly increasing.



08:59 UT SNR CD3:48 CD5:49. Aiming for 40.

2MJ0016+5955 (08:59-09:22)

08:59 UT Preset sent

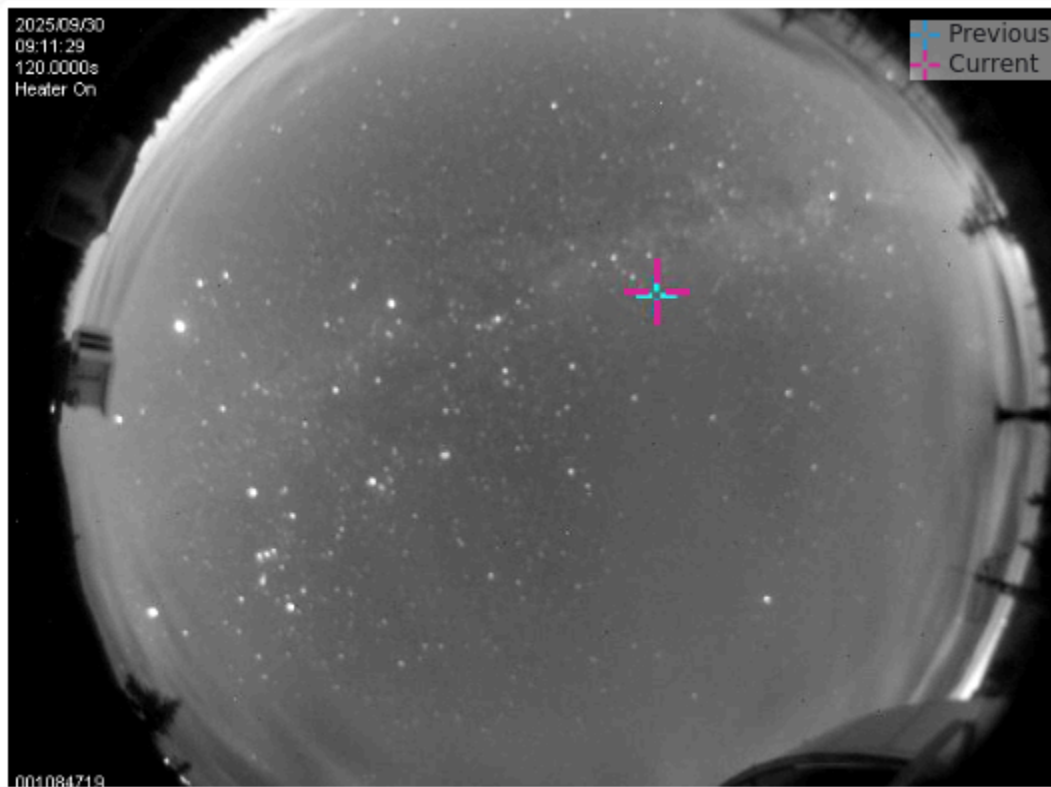
09:01 UT SX and DX guiders grabbed different targets. Pointing check.

09:05 UT Resent preset

09:11 UT SX WFS struggling, target is faint. Collimation looks good, so we'll start the exposure and monitor the SNR

09:11 UT exposure started, FWHM 1.0" blue, 1.0" red, 1.71" DIMM, 1.40" cyclope.

09:17 Clouds moving through.



09:22 UT SNR CD3:51 CD5:51

PASTA

TOI-1581 (09:22-09:46)

09:22 UT Preset sent

09:25 UT Exposure started. Blue FWHM 0.9", red 0.85", DIMM 1.54", Cyclope 1.13"

09:28 UT CD3:146 CD5:178

09:32 UT SNR CD2:146 CD4:217

09:45 UT SNR CD1:148 CD6:446

MWAbund

2MJ0549+2523 (09:46-09:58)

09:46 UT Preset sent

09:51 UT Exposure started. Blue FWHM 0.8", red 0.85", DIMM 1.14", Cyclope 1.46"

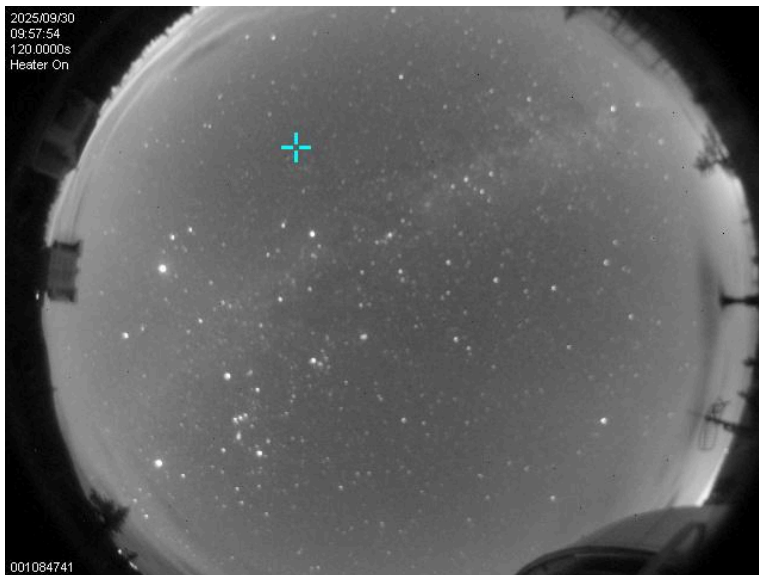
09:57 UT SNR CD 2:202 CD4:347

BHBin

2MJ0716+5705 (09:58-10:08)

09:58 UT Preset sent

10:02 UT Exposure started. Blue FWHM 0.9", red 0.85", DIMM 0.81", Cyclope 0.79". Clouds retreated to around horizon



10:07 UT SNR CD3:61 CD5:101

PASTA

TOI-1687 (10:08-10:34)

10:08 UT Preset sent

10:11 UT Exposure started. Blue FWHM 0.8" Red 0.8", Cyclope 0.84".

10:13 UT SNR CD3:131 CD5:166

10:19 UT SNR CD2:146 CD4:219

10:19 UT FWHM 0.8" Blue, 0.85" red, 1.03" DIMM, 0.84" cyclope.

10:33 UT SNR CD1:164 CD6:515

MWAbund

2MJ0300+0053 (10:34-10:47)

10:34 UT Preset sent

10:39 UT Exposure started. FWHM blue 0.8", red 0.9", DIMM 0.96", 0.85" Cyclope. Clear skies away from horizon.

10:46 UT SNR CD2:246 CD4:413

BHBin

2MJ0658+7634 (10:47-10:56)

10:47 UT Preset sent

10:52 UT Exposure started. FWHM blue 0.75", red 0.77", DIMM 1.01", Cyclope 0.89".

10:54 UT SNR CD3:65 CD5:62

mpmdwarf

GDR3 503852685194199680 (10:56-11:16)

10:56 UT Preset sent

11:01 UT Faint target, SX WFS took a while to settle

11:02 UT Exposure started, FWHM 1.1" blue, 1.1" red, 0.89" DIMM, 0.72" Cyclope.

11:16 UT SNR CD6:32

HIP24732 (11:16-11:20)

11:16 UT Preset sent

11:18 UT Exposure started. 1.0" FWHM blue, 1.1" red, 0.96" DIMM

11:19 UT SNR CD3:488 CD6:395

MWAbund

2MJ0240+3704 (11:20-11:29)

11:20 UT Preset sent

11:23 UT Exposure started. Blue FWHM 0.75", red 0.9", DIMM 1.29", 0.88" Cyclope

11:29 UT SNR CD 2:264 CD4:446

2MJ0239+4816 (11:29-11:39)

11:29 UT Preset sent

11:32 UT Exposure started. Blue FWHM 0.5", Red 0.55", DIMM 0.96", Cyclope 0.88".

11:38 UT SNR CD2:250 CD4:439

2MJ0208+4807 (11:39-11:47)

11:39 UT Preset sent

11:40 UT Exposure started. Blue FWHM 0.5", red 0.5", 0.78" Cyclope

11:47 UT SNR CD2:219 CD4:377

2MJ0234+0043 (11:47-11:57)

11:47 UT Preset sent

11:50 UT Exposure started. Blue FWHM 0.53", red 0.6", Cyclope 0.7"

11:56 UT SNR CD 2:236 CD4:397

BHBin

2MJ0729+0043 (11:57-12:12)

11:57 UT Preset sent

12:02 UT Pointing check. SX and DX grabbed different objects.

12:04 UT Resending preset. Target has a close neighbour. SX and DX each grabbed one of the pair. SX grabbed fainter of the pair, target should be the brighter one.

12:08 UT Manually positioned brighter of the pair on SX pinhole.

12:09 UT starting exposure

12:11 UT SNR CD3:80 CD5:82

MWAbund

2MJ0400+6851 (12:12-

12:12 UT preset sent

12:16 UT Exposure started. Blue FWHM 0.5", red 0.6", DIMM 0.77, Cyclope 0.76"

12:20 UT 12 deg twilight

12:21 SNR CD2:245 CD4:432

## End of night

12:22 End of night.

12:24 UT Pepsi calibrations started.

12:25 UT LUCI safed, LBCs powered off