

LBT Observing Log: 2025 10 02UT

Observers: Justin Rupert, Ilya Ilyin
Partner Observer: Dom Rowan, Evan Jennerjahn
Telescope Operator: Riccardo Ansaldi

Plan:

Start with ToO target
At twilight, go to PETS target
Fill rest of the night with remaining PEPSI programs

PETS ends at ~11:30 local

BHBinaries/J21165406-0037200 (13min)
BHBinaries/J21100980+3605537 (15min)
BHBinaries/J00011343+2156114 (14min)
BHBinaries/J02342656-0046144 (14min)
BHBinaries/J02414212-0051398 (14min)
BHBinaries/J02434876+0015581 (15min)

OSU_mpmddwarf/HIP10512 (7min)
OSU_mpmddwarf/GaiaDR35178278280210028416 (25min)
OSU_mpmddwarf/HIP10054 (7min)
OSU_mpmddwarf/GaiaDR3555604876447153024 (22min)

OSU_PASTA/HD17674 (12min)

BHBinaries/J23072730+3656286 (23min)
BHBinaries/J01465015-0155442 (10min)
BHBinaries/J01165295+0537090 (13min)
BHBinaries/J02524616-0140067 (17min)
BHBinaries/J02434876+0015581 (15min)
BHBinaries/J02570070-0314470 (20min)
BHBinaries/J00225268+5248326 (16min)
BHBinaries/J03321943+7352490 (18min)

Fill remaining time with MWAbund
MWAbund/J05565418+3202121 (10min)
MWAbund/J08121387+2909431
MWAbund/J08153052+3809109
MWAbund/J08260770+2745167

Summary:

Overview (times are given in UT):

Keles

[BD+05 4868 \(01:23-01:56\)](#)

OSU

PETS

[TOI 1431 \(01:56-06:33\)](#)

BHBin

[2MASS J21165406-0037200 \(06:33-07:20\)](#)

[2MASS J21100980+3605537 \(07:20-07:35\)](#)

[2MASS J00011343+2156114 \(07:35-07:52\)](#)

[2MASS J02342656-0046144 \(07:52-08:08\)](#)

[2MASS J02414212-0051398 \(08:08-08:20\)](#)

[2MASS J02434876+0015581 \(08:20-08:35\)](#)

Mpmdwarf

[HIP 10512 \(08:35-\)](#)

[GDR3 5178278280210028416 \(08:44-09:11\)](#)

[HIP 10054 \(09:11-09:23\)](#)

[GDR3 555604876447153024 \(09:23-09:43\)](#)

PASTA

[HD 17674 \(09:43-09:52\)](#)

BHBin

[2MASS J23072730+3656286 \(09:53-10:17\)](#)

[2MASS J01465015-0155442 \(10:17-10:27\)](#)

[2MASS J01165295+0537090 \(10:27-10:42\)](#)

[2MASS J02524616-0140067 \(10:42-10:57\)](#)

[2MASS J02434876+0015581 \(10:57-11:13\)](#)

[2MASS J02570070-0314470 \(11:13-11:36\)](#)

[2MASS J00225268+5248326 \(11:36-11:54\)](#)

[2MASS J03321943+7352490 \(11:54-12:14\)](#)

PEPSI Log:

https://drive.google.com/file/d/1bpXvKe_IsErw0Vg8GAUPtnBkSZ7bxmV7/view?usp=sharing

Issues:

IT 9418: GCS and IIF hung on preset. This occurred three times tonight, with various remedies to fix it (aborting GCS, cycling IIF, re-authorizing).

Weather:

Another night of clear skies and calm winds.

Temperature at ground *

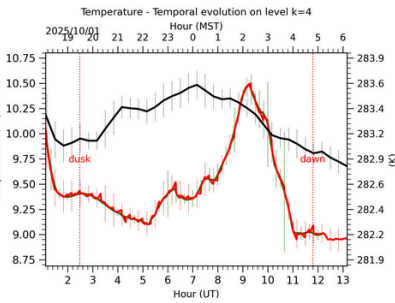


Fig. 4: Absolute temperature temporal evolution between the sunset and the sunrise at [38-62]m.

Wind Speed at ground *

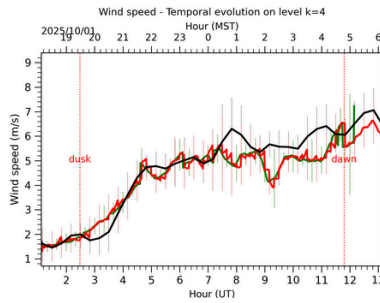


Fig. 5: Wind speed temporal evolution between the sunset and the sunrise at [38-62]m.

Wind Direction at ground *

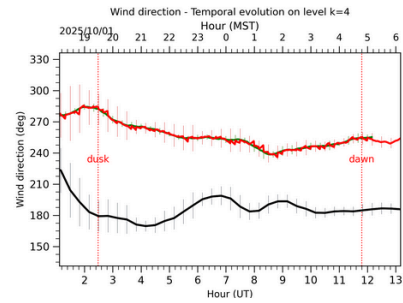
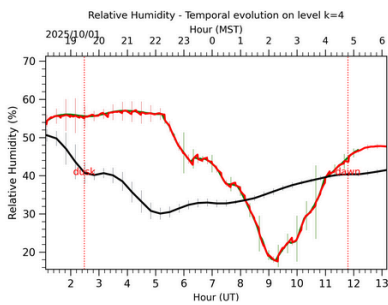
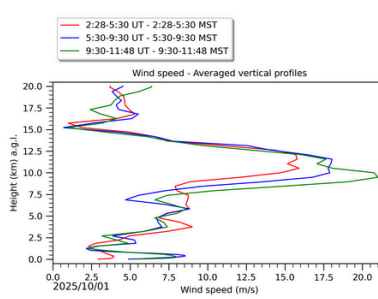


Fig. 6: Wind direction temporal evolution between the sunset and the sunrise at [38-62]m.

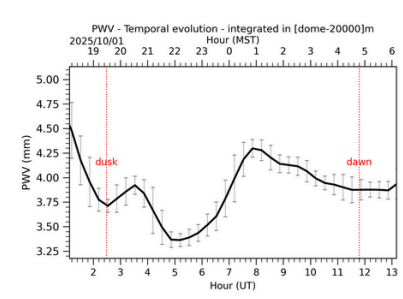
Relative Humidity at ground *

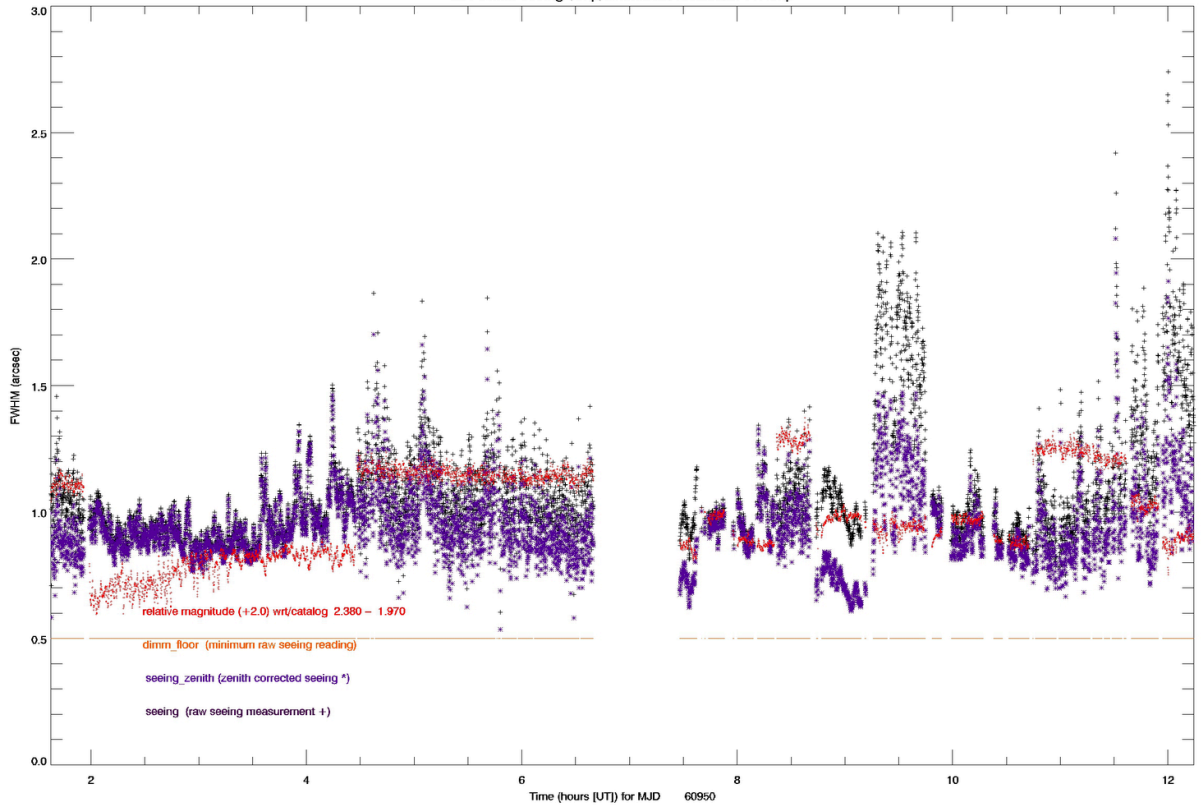


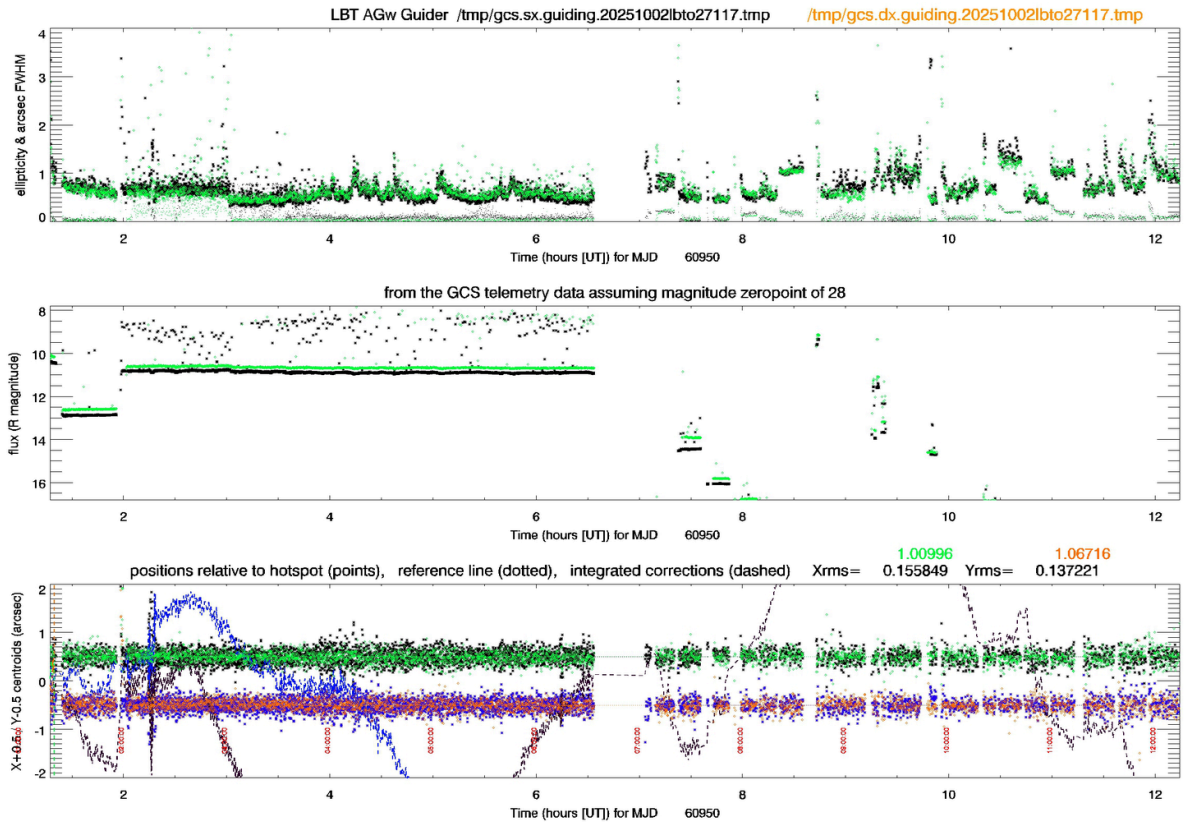
Wind Speed vertical profiles



Precipitable Water Vapor







Overview (times are given in UT):

01:09 Open.

01:17 Pointing check.

01:20 Got it, but it fell off the DX pinhole. Double checking pointing.

Keles

BD+05 4868 (01:23-01:56)

01:23 Preset.

01:34 Starting science.

01:43 Seeing is 0.7" on SX guider, 0.6" on DX guider. Clear skies.

01:56 SNR: CD3 188, CD5 335.

OSU

PETS

TOI 1431 (01:56-06:33)

01:56 Preset.

01:57 12-degree twilight.

02:01 Starting science. Seeing is 0.7" on SX guider, 0.6: on DX guider. Clear skies.

02:25 18-degree twilight.

03:08 Seeing 0.4" on guiders, 1.0" on DIMM. Clear skies.

03:57 Seeing is 0.6" on guiders, 1.0" on DIMM. Clear skies.

04:16 Seeing ballooned to 1.4" on DIMM. Guiders are at 1.0" now. Clear skies.

04:25 Seeing back down to 0.6" on SX guider, 0.7" on DX guider, 1.1" on DIMM.

05:05 Seeing blew up to 1.8" on DIMM. Clear skies.

05:16 Seeing is 0.5" on SX guider, 0.6" on DX guider, 1.1" on DIMM.

BHBin

2MASS J21165406-0037200 (06:33-07:20)

06:33 Preset.

06:37 Looks like we're hung on the preset. Nothing to cancel on Riccardo's side, like before..

06:40 Riccardo has aborted GCS. Trying again. No dice.

06:43 Riccardo restarted IIF. Cycled the PEPSI software and sent again. Still no.

06:46 Both aborted GCS and restarted IIF. Still no.

06:55 Re-authorizing both sides as PEPSI to try to clear everything.

06:58 That worked! Finally off to target. AZ unwrap, of course.

07:03 Missed it on DX. Pointing check.

07:08 Back to target.

07:11 Starting science. Seeing is 0.7" on guiders and cyclope.

07:20 SNR: CD3 71, CD5 81.

2MASS J21100980+3605537 (07:20-07:35)

07:20 Preset.

07:22 Not sure DX grabbed the correct target. Pointing check.

07:24 Back to target.

07:25 Starting science. Seeing is 0.5" on guiders, 1.0" on cyclope.

07:35 SNR: CD3 158, CD5 353.

2MASS J00011343+2156114 (07:35-07:52)

07:35 Preset.

07:37 It was a right only. Resending as binocular.

07:39 Pointing check.

07:42 Back to target.

07:43 Starting science. Seeing is 0.5" on guiders, 0.8" on cyclope. Clear skies.

07:52 SNR: CD3 118, CD5 159

2MASS J02342656-0046144 (07:52-08:08)

07:52 Preset.

07:55 Missed it on SX. Pointing check.

07:58 Back to target.

07:59 Starting science. Seeing is 0.7" on guiders, 0.8" on cyclope. Clear skies.

08:08 SNR: CD3 66, CD5 101.

2MASS J02414212-0051398 (08:08-08:20)

08:08 Preset.

08:11 Starting science. Seeing is 0.5" on guiders, 1.3" on DIMM. Clear skies.

08:20 SNR: CD3 71, CD6 78.

2MASS J02434876+0015581 (08:20-08:35)

08:20 Preset.

08:24 Starting science. Seeing is 1.0" on guiders, 1.1" on DIMM. Clear skies.

08:35 SNR: CD3 63, CD5 73.

Mpmdwarf

HIP 10512 (08:35-)

08:35 Preset.

08:36 Hung again. Canceling preset. Nothing happens.

08:37 Stopping GCS. GCSL stopped, GCSR did not.

08:36 Aborting GCSR. Bringing it back up. Preset still active on SX.

08:39 Resending preset.

08:40 From pepsi terminal:

02/10/2025 01:39:52 left BinocularControl: BinocularControl result status: Warning
BinocularControl SYNCPRESET command ignored: Duplicate request

right BinocularControl: BinocularControl result status: Warning BinocularControl SYNCPRESET command ignored: Duplicate request

02/10/2025 01:40:31 iif sx: bin=3

02/10/2025 01:40:31 left Binning: SetGuidingBinning result status: Error Authorize busy

02/10/2025 01:40:31 iif sx: filter=2

02/10/2025 01:40:32 left SetAGWFilter: SetAGWFilter result status: Error Authorize busy

02/10/2025 01:40:32 iif sx: bin=3

02/10/2025 01:40:32 left Binning: SetGuidingBinning result status: Error Authorize busy

02/10/2025 01:40:32 iif sx: filter=2

02/10/2025 01:40:33 left SetAGWFilter: SetAGWFilter result status: Error Authorize busy

08:41 Re-authorized on both sides. Resending preset. That worked.

08:44 Starting science. Seeing is 1.0" on guiders and DIMM. Clear skies. SNR: CD3 438, CD6 375.

GDR3 5178278280210028416 (08:44-09:11)

08:44 Preset.

08:48 Going to BS5 .

08:51 WFSing is hung on SX. Nope, it's WFSing. Just took a while.

08:52 Starting science. Seeing is 0.6" on guiders, 1.1" on DIMM. Looks like BS3 was put back in when I started exposing.

09:11 SNR: CD3 63, CD6 51.

HIP 10054 (09:11-09:23)

09:11 Preset.

09:15 WFS are saturating. Putting in ND3 (was ND2).

09:16 Dropping WFSing exposure time.

09:17 Now it's struggling to collimate. I see that the next target (16 mag) has been uploaded to PEPSI@LBT (I guess at accidently did that at some point). Resending preset.

09:22 Starting science. Seeing is 1.0" on guiders, 1.6" on DIMM. Clear skies.

09:23 SNR: CD3 454, CD6 424.

GDR3 555604876447153024 (09:23-09:43)

09:23 Preset.

09:24 Missed it on DX. Pointing check.

09:25 DX preset to target.

09:28 Startings science. Seeing is 0.7" on guiders, 1.3" on DIMM. Clear skies.

09:43 SNR: CD3 63, CD6 51.

PASTA

HD 17674 (09:43-09:52)

09:43 Preset.

09:44 Sent it as DX only. Resending binocularly.

09:47 Missed it on SX. Pointing check.

09:48 Back to target.

09:50 Starting science. Seeing is 0.4" on guiders, 1.1" on DIMM. Clear skies. SNR: CD3 187, CD5 252.

09:51 SNR: CD2 175, CD4 302.

09:52 SNR: CD1 176, CD6 566.

BHBin

2MASS J23072730+3656286 (09:53-10:17)

09:53 Preset.

09:57 Starting science. Seeing is 0.7" on guiders, 0.6" on cyclope.

10:17 SNR: CD3 69, CD5 98.

2MASS J01465015-0155442 (10:17-10:27)

10:17 Preset. Pointing check.

10:19 Prest to target.

10:21 Starting science. Seeing is s0.6" on guiders, 1.1" on cyclope.

10:27 SNR: CD3 71, CD5 81.

2MASS J01165295+0537090 (10:27-10:42)

10:27 Preset.

10:33 Starting science. Seeing is 0.9" on DIMM. Guider images are elongated, but the RMS WFE is <200. We're at airmass 1.4.

10:42 SNR: CD3 63, CD5 78.

2MASS J02524616-0140067 (10:42-10:57)

10:42 Preset.

10:45 Starting science. Seeing is 0.5" on guiders, 0.9" on DIMM. Clear skies.

10:57 SNR: CD3 74, CD5 96.

2MASS J02434876+0015581 (10:57-11:13)

10:57 Preset.

11:02 Starting science. Seeing is 1.1" on guiders, 0.9" on DIMM. Guider images are elongated. Airmass 1.3.

The image displays two screenshots of the GCS (left) 5.8 - GUI 2.1 (on tcs1.mountain.lbto.org) interface. The top screenshot shows the 'left' guider view with a star in a blue circle. The bottom screenshot shows the 'right' guider view with a star in a blue circle. Both screenshots include a 'WFS Views' section with a grid of stars and various data points. The status bar at the bottom of each screenshot indicates the AGW, GCS server, Guiding, WFS, and AGw unit status.

Top Screenshot (Left Guider):

- FWHM: 0.88, Ellipticity: 0.22
- CCD Temp: -46.9 C
- Avg FWHM: 0.91, Secs Ago: 28
- Guide Window/Bln Factor: 128/4, Flux: 7799
- WFS FWHM: 1.19, FWHM Sig: 0.276
- RMS WFE: 654
- CCD Temp: -28.4 C, Secs Ago: 43
- RMS Cnts: [blank], Avg Cnts: [blank]
- AGW: AIPAGW7 AIP_PEPSIPFU, Tracking Mode: Sidereal, Time to Limit: n/a
- GCS server: OK
- Guiding: GS elongated @ low WFS RMS!
- WFS: OK
- AGw unit: OK

Bottom Screenshot (Right Guider):

- FWHM: 1.04, Ellipticity: 0.21
- CCD Temp: -39.2 C
- Avg FWHM: 1, Secs Ago: 18
- Guide Window/Bln Factor: 128/4, Flux: 9696
- WFS FWHM: 1.02, FWHM Sig: 0.209
- RMS WFE: 332
- CCD Temp: -58.9 C, Secs Ago: 33
- RMS Cnts: [blank], Avg Cnts: [blank]
- AGW: AIPAGW8 AIP_PEPSIPFU, Tracking Mode: Sidereal, Time to Limit: n/a
- GCS server: OK
- Guiding: GS elongated @ low WFS RMS!
- WFS: OK
- AGw unit: OK

11:13 SNR: CD3 63, CD5 76.

2MASS J02570070-0314470 (11:13-11:36)

11:13 Preset.

11:14 Hung preset again. Clearing sync preset.

11:16 Resending preset. It says it failed on both sides, but the telescope kept moving to the target.

11:17 Resending preset. That worked.

11:20 Starting science. Seeing is 1.1" on guiders, 1.2" on DIMM. Clear skies.

11:36 SNR: CD3 66, CD5 81.

2MASS J00225268+5248326 (11:36-11:54)

11:36 Preset.

11:41 Starting science. Seeing is 1.0" on guiders, 1.3" on DIMM. Clear skies.

11:53 18-degree twilight.

11:54 SNR: CD3 63, CD5 78.

2MASS J03321943+7352490 (11:54-12:14)

11:54 Preset.

11:59 Starting science. Seeing is 1.3" on guiders, 1.6" on DIMM. Clear skies.

12:08 Seeing is 1.0" on guiders, 1.5" on DIMM.

12:14 SNR: CD3 66, CD5 83. Closing and running PEPSI cals.

12:21 12-degree twilight.