

LBT Observing Log: 2025 10 01 UT

Observers: Justin Rupert

Partner Observer: Peter Garnavich

Telescope Operator: Riccardo Ansaldi

Plan:

PEPSI

OSU_mpmddwarf/HIP109452 -done

OSU_BHBinaries/2MJ2109+3446 -done

OSU_MWAbundDisp/2MJ2256+3921 -done

OSU_BHBinaries/2MJ2306+2935 -done

OSU_PASTA/Kepler-96 -done

OSU_MWAbundDisp/2MJ2236+0105 -done

OSU_MWAbundDisp/2MJ2223+5215 -done

OSU_mpmddwarf/HIP109452 -done

OSU_mpmddwarf/GaiaDR32735235426942979200 - match with HIP109452 -done

OSU_mpmddwarf/HIP113465 -done

OSU_mpmddwarf/Gaia DR3 2644931059485692928 - match with HIP113465 -done

OSU_PASTA/TOI-6250 -done

Switch to LUCI AO seeing about 0.9"

UVa_Disk/UVa_Disk

OSU_MWAbundDisp/2MJ2319+1551 -done

OSU_MWAbundDisp/2MJ2322+1112 -done

OSU_MWAbundDisp/2MJ0023+7428 -done

OSU_MWAbundDisp/2MJ2317+1047 -done

OSU_MWAbundDisp/2MJ2315+1136 -done

Switch to LUCI AO seeing about 0.8"

UVa_Disk/UVa_Disk

OSU_MWAbundDisp/2MJ2256+3921 -done

OSU_PASTA/TOI-6652 -done

OSU_MWAbundDisp/2MJ0233-0107 -done

OSU_MWAbundDisp/2MJ0232-0053 -done

OSU_MWAbundDisp/2MJ0215+0026 -done

OSU_MWAbundDisp/2MJ0145+1449 -done

OSU_PASTA/HD9446 -done
OSU_MWAbundDisp/2MJ0037+5041 -done
OSU_MWAbundDisp/2MJ0035+5105 -done
OSU_MWAbundDisp/2MJ0154-0229 -done
OSU_MWAbundDisp/2MJ0151-0029 -done
OSU_MWAbundDisp/2MJ0139-0043 -done
OSU_PASTA/TOI-6109 0.75hr -done
OSU_mpmddwarf/GaiaDR33236226968132728704 -match with HIP24555 -done
OSU_mpmddwarf/HIP24555

OSU_BHBinaries/2MJ0402+7407 0.24hr

Summary:

Overview (times are given in UT):

Close

TOO

Tyc 5709-354-1 (01:36-02:08)

OSU

Mpmddwarf

HIP109452 (02:08-02:12)

BHBin

2MASS J21091664+3446284 (02:12-02:24)

MWAbund

2MASS J22563761+3921334 (02:24-02:37)

BHBin

2MASS J23065956+2935043 (02:37-02:43)

PASTA

Kepler-96 (02:43-03:28)

MWAbund

2MASS J22361669+0105062 (03:28-03:38)

2MASS J22231666+5215027 (03:38-03:47)

Mpmddwarf

HIP 109452 (03:47-03:52)

GDR3 2735235426942979200 (03:52-04:16)

HIP 113465 (04:16-04:20)

GDR3 264493105948569298 (04:20-04:38)

PASTA

TOI-6250 (04:38-04:58)

TOI-6074 (04:59-05:09)

UVa

Disk

[IRAS 23077+6707 \(06:01-06:53\)](#)

OSU

MWAbund

[2MASS J23190184+1551038 \(07:10-07:22\)](#)

[2MASS J23220965+1112488 \(07:22-07:29\)](#)

[2MASS J00234451+7428232 \(07:29-07:38\)](#)

[2MASS J23172101+1047359 \(07:38-7:50\)](#)

[2MASS J23152450+1136019 \(07:50-07:57\)](#)

UVa

Disk

[IRAS 23077+6707 \(08:09-08:50\)](#)

OSU

MWAbund

[2MASS J22563761+3921334 \(09:06-09:14\)](#)

PASTA

[TOI-6652 \(09:14-\)](#)

MWAbund

[2MASS J02333134-0107232 \(09:29-09:38\)](#)

[2MASS J02320633-0053963 \(09:38-09:45\)](#)

[2MASS J02153830+0026413 \(09:45-\)](#)

[2MASS J01450063+1449450 \(09:51-09:59\)](#)

PASTA

[HD 9446 \(09:59-10:14\)](#)

MWAbund

[2MASS J00370160+5041350 \(10:14-10:25\)](#)

[2MASS J00355436+5105191 \(10:25-10:33\)](#)

[2MASS J01541472-0229582 \(10:33-10:39\)](#)

[2MASS J01513900-0029037 \(10:39-10:46\)](#)

[2MASS J01393478-0043152 \(10:46-10:53\)](#)

PASTA

[TOI 6109 \(10:53-11:37\)](#)

Mpmdwarf

[GDR3 3236226968132728704 \(11:37-11:55\)](#)

[HIP 24555 \(11:55-11:58\)](#)

BHBin

[2MASS J04025278+7407578 \(11:58-\)](#)

PEPSI Log:

<https://drive.google.com/file/d/1Akbaglqdl8AAcfAZrKltaPh69ugJiSdg/view?usp=sharing>

Issues:

IT 9403 Two RFBG rotator faults soon after reconfiguring to LUCI.

Gopt signal dropped a couple times during AO operations.

A few instances of hotspot guiding issues with PEPSI on DX.

GCS seemed to hang on the DX side at the end of the night. Aborting GCS and cycling IIF worked.

Weather:

Clear skies and calm winds all night.

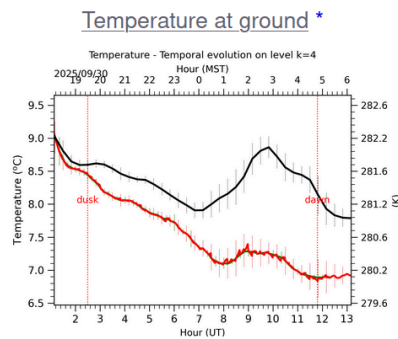


Fig. 4: Absolute temperature temporal evolution between the sunset and the sunrise at [38-62]m.

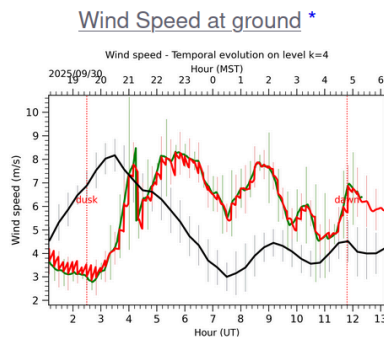


Fig. 5: Wind speed temporal evolution between the sunset and the sunrise at [38-62]m.

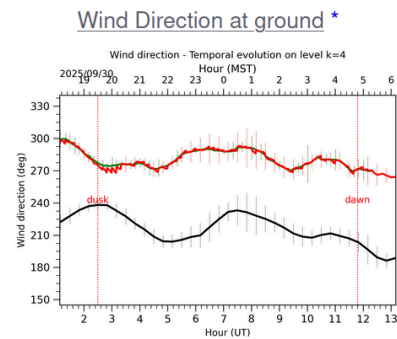
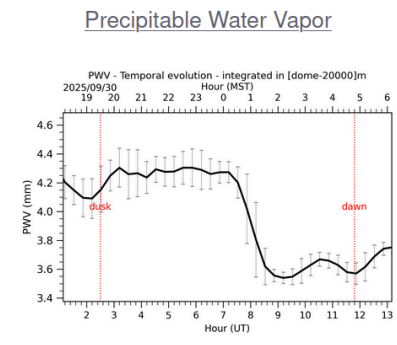
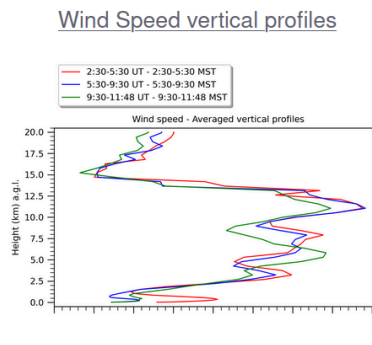
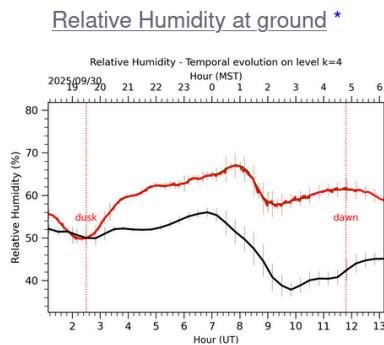
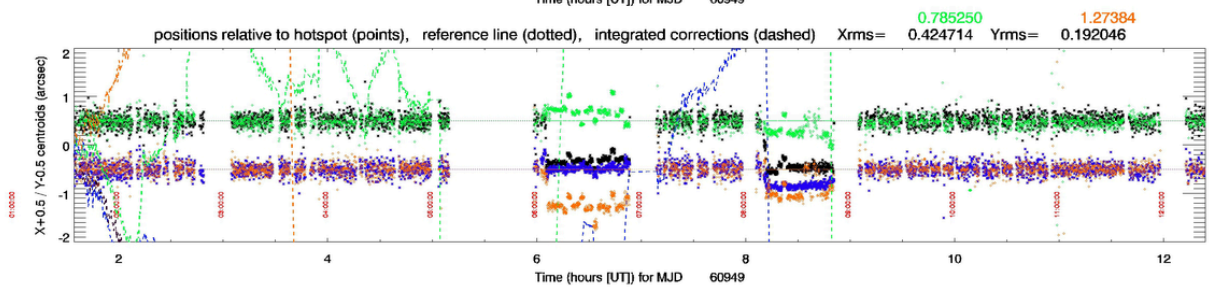
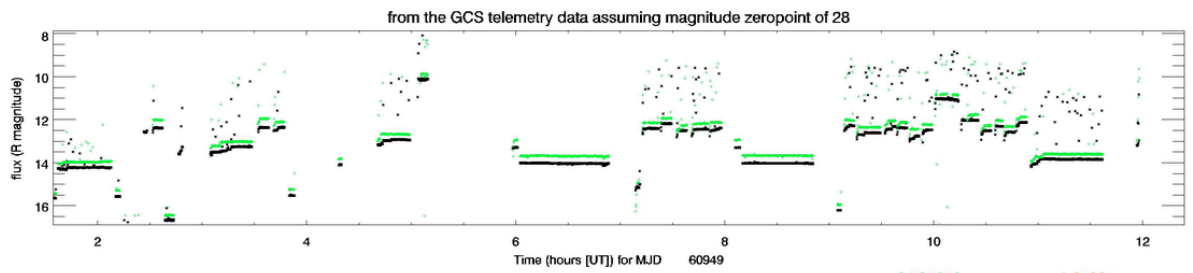
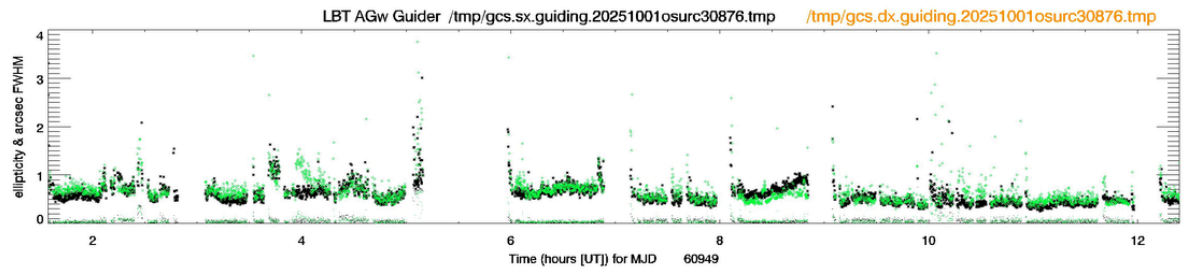
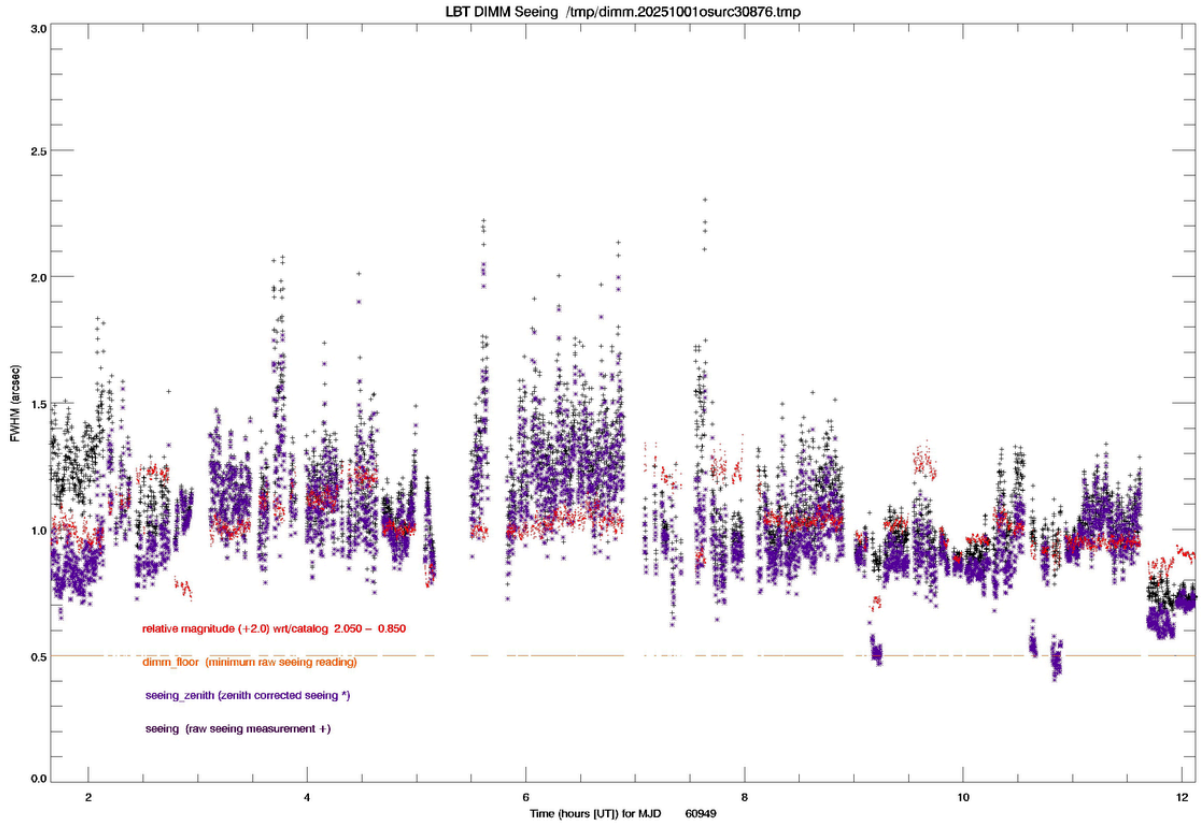


Fig. 6: Wind direction temporal evolution between the sunset and the sunrise at [38-62]m.





Overview (times are given in UT):

23:56 Initializing LUCIs.

23:57 Running UVa_Disk darks.

00:23 Running remainder of the darks for the UV_BCD program.

01:13 Opening shutter doors

01:18 Pointing check.

01:21 Too bright. Going to something dimmer.

Close

TOO

Tyc 5709-354-1 (01:36-02:08)

01:36 Sending preset.

01:37 Starting science. Seeing is 0.8" on guiders, 1.1" on cyclope. Clear skies.

01:58 12-degree twilight

02:07 SNR: CD3 137, CD5 238.

OSU

Mpmdwarf

HIP109452 (02:08-02:12)

02:08 Preset.

02:11 Starting science. Seeing is 0.8" on guiders, 1.3" on DIMM. Clear skies.

02:12 SNRL CD3 296, CD6 256

BHBin

2MASS J21091664+3446284 (02:12-02:24)

02:12 Preset.

02:17 Starting science. Seeing is 0.9" on SX guider, 0.8" on DX guider, 1.4" on DIMM. Clear skies.

02:24 SNR: CD3 71, CD5 83.

MWAbund

2MASS J22563761+3921334 (02:24-02:37)

02:24 Preset.

02:27 18-degree twilight. Pointing check.

02:30 Back to target.

02:32 Starting science. Seeing is 0.6" on guiders, 0.9" on DIMM. Clear skies.

02:37 SNR: CD2 257, CD4 535.

BHBin

2MASS J23065956+2935043 (02:37-02:43)

02:37 Preset.

02:40 Starting science. Seeing is 0.6" on guiders, 1.0: on DIMM.

02:43 SNR: CD3 76, CD5 83.

PASTA

Kepler-96 (02:43-03:28)

02:43 Preset.

02:48 Pointing check. We're at EL 81.

02:58 Back to target. Unwrapping AZ.

03:05 Starting science. Seeing is 0.6" on guiders, 0.8" on cyclope. Clear skies.

03:07 SNR: CD3 181, CD5 254.

03:12 SNR: CD2 174, CD4 311.

03:28 SNR: CD1 174, CD6 608.

MWAbund

2MASS J22361669+0105062 (03:28-03:38)

03:28 Preset.

03:33 Starting science. Seeing is 0.6" on guiders, 0.9" on DIMM. Clear skies.

03:38 SNR: CD2 260, CD4 539

2MASS J22231666+5215027 (03:38-03:47)

03:38 Preset.

03:42 Starting science. Seeing is 1.1" on guiders, 1.2" on DIMM. Clear skies.

03:47 SNR: CD2 215, CD4 484.

Mpmdwarf

HIP 109452 (03:47-03:52)

03:47 Preset.

03:50 Starting science. Seeing is 0.6" on guiders, 1.2" on DIMM.

GDR3 2735235426942979200 (03:52-04:16)

03:52 Preset.

03:58 Waiting on collimation. Mag 16 target (like the other science targets of this program).

04:00 Starting science. Seeing is 0.7" on guiders, 1.1" on DIMM. Clear skies.

04:16 SNR: CD3 63, CD6 54

HIP 113465 (04:16-04:20)

04:16 Preset.

04:19 Starting science. Seeing is 0.5" on guiders, 1.2" on DIMM. Clear skies.

GDR3 264493105948569298 (04:20-04:38)

04:20 Preset.

04:22 Starting science. Seeing is 0.6" on guiders, 1.1" on DIMM. Clear skies.

04:38 SNR: CD3 63, CD6 54.

PASTA

TOI-6250 (04:38-04:58)

04:38 Preset.

04:41 Starting science. Seeing is 0.6" on guiders, 1.1" on DIMM. Clear skies.

04:43 SNR: CD3 181, CD5 253.

04:46 SNR: CD2 175, CD4 312.

04:58 SNR: CD1 172, CD6 596.

TOI-6074 (04:59-05:09)

04:59 Preset. AZ unwrap.

05:04 Missed it on DX, but it's there and bright. Resending preset on right side.

05:06 Starting science. Seeing is 0.9" on guiders, 1.1" on DIMM. Clear skies. SNR: CD3 167, CD5 230.

05:07 SNR: CD2 176, CD4 305.

05:09 SNR: CD1 170, CD6 565. **Reconfigure to bino LUCI.**

05:17 RFBG rotator fault on first preset. Riccardo is going to zenith to resolve.

05:19 Field stop alignment.

05:28 Pointing check.

05:37 Having trouble seeing anything on DX guider. Going to a bright target on-axis.

05:39 Another RFBG rotator fault.

05:48 Back to the pointing target. Got it on SX, not DX.

05:54 Got it on DX now. Trying off-axis, different target.

05:57 Got it. Collimation check.

UVa

Disk

~~IRAS 23077+6707 (06:01-06:53)~~

Luci1: 131-146

Luci2: 16-31

06:01 Preset.

06:12 Starting science. Seeing is 0.6" on guiders, 1.1" on DIMM. Clear skies.

Image No. (Filter)	LUC 1 X	LUCI1 Y	LUCI2 X	LUCI2 Y
Luci1.0131 (H)	8.2	6.5		
Luci2.0017 (K)			8.48	6.62
0137 (H)/0022 (K)	9.63	7.97	9.84	7.48
0140 (H)/0025 (K)	10.36	8.59	10.98	9.37
0141 (J)/0026 (z)	11.57	11.54	15.53	10.2

0144 (J)/0029 (z)	11.84	10.52	14.53	11.46
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06:16 IQ Check: X=8.2 (0.123"), Y=6.5 (0.098") on LUCI1.

06:18 IQ Check: X=8.48, Y=6.62 on LUCI2.

06:30 IQ Check: X=9.63, Y=7.97 on LUCI1, X= 9.84, Y=7.48 on LUCI2.

06:41 Seeing blew up to 2" very briefly. DIMM is reading 1.0"-1.5" otherwise.

06:53 We're stopping here. Seeing isn't improving. **Reconfiguring to PEPSI.**

07:01 Pointing check.

07:06 Collimation preset.

OSU

MWAbund

2MASS J23190184+1551038 (07:10-07:22)

07:10 Preset.

07:13 Starting science. Seeing is 0.6" on guiders, 1.2" on DIMM. Clear skies. Looks like PEPSI was still set up for the previous target in the Spectrograph Control Interface. I think that stems from trying to send the target info to PEPSI@LBT while reconfiguring. So images pepsir.20251001.031 and pepsi6.20251001.036 say they're TOI-6074 images, but they are not. Resending preset.

07:16 Starting science.

07:22 SNR: CD2 237, CD4 503

2MASS J23220965+1112488 (07:22-07:29)

07:22 Preset.

07:23 Starting science. Seeing is 0.6" on guiders, 1.0" on DIMM.

07:29 SNR: CD2 256, CD4 555.

2MASS J00234451+7428232 (07:29-07:38)

07:29 Preset.

07:33 Starting science. Seeing is 0.6" on guiders, 1.1" on DIMM.

07:38 SNR: CD2 209, CD4 468.

2MASS J23172101+1047359 (07:38-7:50)

07:38 Preset.

07:45 Starting science. Seeing is 0.6" on guiders, 1.0" on DIMM.

07:50 SNR: CD2 250, CD4 504.

2MASS J23152450+1136019 (07:50-07:57)

07:50 Preset.

07:52 Starting science. Seeing is 0.5" on guiders, 1.0" on DIMM.

07:57 SNR: CD2 242, CD4 515. **Reconfiguring to bino LUCIs.**

08:02 Pointing check.

08:06 Collimation check.

UVa

Disk

~~IRAS 23077+6707 (08:09-08:50)~~

Luci1: 147-153

Luci2: 32-38

08:09 Preset.

08:16 Starting science. Seeing is 0.6" on SX guider, 0.4" on DX guider, 0.9" on DIMM. Clear skies.

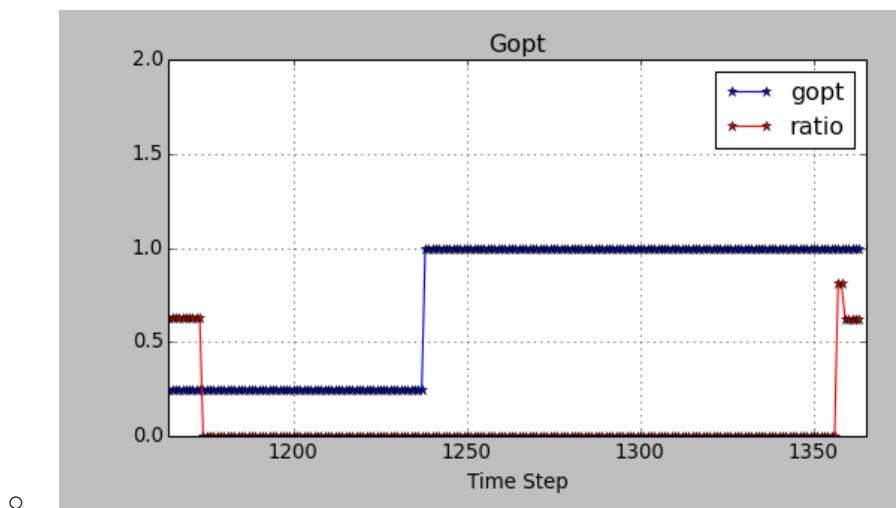
Image No. (Filter)	LUC 1 X	LUCI1 Y	LUCI2 X	LUCI2 Y
0147(H)/0032(K)	6.45	5.58	6.19	5.8
0150(H)/0035(K)	6.28	6.4	11.44	6.85
0151(H)/0036(K)	8.03	6.73	8.15	8.53
0152(H)/0037(K)	9.2	10.81	9.79	5.96

08:26 Got some elongation on DX (image no. 0035). Doug says he's seeing odd corrections on the AO side. Pausing LUCI script and re-optimizing AO.

08:28 Re-taking this dither to see how AO is doing.

08:31 0036 is rounder, but also bigger. That could just be seeing.

08:39 The Gopt signal seems to have gone away. Doug is going to re-close the loop.



08:44 Continuing script. DIMM is reading 1.2" but has been hovering around 1.0".

08:50 Going to quit while we're behind. Target is at $z=1.4$ and setting and the seeing is more above 1" than below (on top of some Gopt funny business). **Reconfiguring to PEPSI.**

08:59 Pointing check.

09:04 Collimation check.

OSU

MWAbund

2MASS J22563761+3921334 (09:06-09:14)

09:06 Preset.

09:08 Starting science. Seeing is 0.8" on guiders, 0.7" on cyclope. Clear skies.

09:14 SNR: CD2 261, CD4 542.

09:21 SNR: CD2 174, CD4 308.

PASTA

TOI-6652 (09:14-)

09:14 Preset.

09:16 Starting science. Seeing is 0.5" on guiders, 0.9" on DIMM. Clear skies.

09:17 SNR: CD3 182, CD5 253.

09:18 SNR: CD2 174, CD4 308.

09:29 SNR: CD1 168, CD6 586.

MWAbund

2MASS J02333134-0107232 (09:29-09:38)

09:29 Preset.

09:32 Starting science. Seeing is 0.5" on guiders, 0.7" on cyclope. Clear skies.

09:38: SNR: CD2 249, CD4 532.

2MASS J02320633-0053963 (09:38-09:45)

09:38 Preset.

09:39 Starting science. Seeing is 0.5" on guiders, 1.0" on DIMM. Clear skies.

09:45 SNR: CD2 260, CD4 524.

2MASS J02153830+0026413 (09:45-)

09:45 Preset.

09:46 Starting science. Seeing is 0.5" on guiders, 0.6" on cyclope. Clear skies.

09:51 SNR: CD2 229, CD4 450.

2MASS J01450063+1449450 (09:51-09:59)

09:51 Preset.

09:53 Starting science. Seeing is 0.4" on guiders, 1.0" on cyclope. Clear skies.

09:59 SNR: CD2 244, CD4 499.

PASTA

HD 9446 (09:59-10:14)

09:59 Preset.

10:01 Starting science. Seeing is 0.7" on guiders, 0.5" on cyclope. Clear skies.

10:01 SNR: CD3 186, CD5 255.

10:02 Lost the target on DX. Resending preset on DX. (pepsir 045, pepsib 050 affected)

10:04 Restarting OB.

10:05 SNR: CD3 183, CD5 252.

10:06 SNR: CD2 178, CD4 310.

01:09 Lost the target on DX again (pepsib 053 pepsir 048 affected). Sending a DX acquire preset to correct pointing.

10:10 Sending DX active preset. Repeating CD1/CD6 pair.

10:14 SNR: CD1 168, CD6 574

MWAbund

2MASS J00370160+5041350 (10:14-10:25)

10:14 Preset. Didn't get it on DX. Resending DX only.

10:17 Looks like DX gding is trying to grab something else. Sending a DX acquire preset to adjust pointing.

10:18 Resending DX active preset.

10:20 Starting science. Seeing is 0.6" on guiders, 1.1" on DIMM. Clear skies.

10:25: SNR: CD2 289, CD4 599.

2MASS J00355436+5105191 (10:25-10:33)

10:25 Preset. Sent as DX only. Resending as bino.

10:27 Starting science. Seeing is 0.4" on guiders, 0.8" on DIMM. Clear skies.

10:33 SNR: CD2 244, CD4 499.

2MASS J01541472-0229582 (10:33-10:39)

10:33 Preset.

10:35 Starting science. Reduced exposure time to two minutes. Seeing is 0.4" on guiders, 0.7" on cyclope. Clear skies.

10:39 SNR: CD2 161, CD4 336.

2MASS J01513900-0029037 (10:39-10:46)

10:39 Preset.

10:41 Starting science. Seeing is 0.4" on guiders, 0.7" on cyclope. Clear skies.

10:46 SNR: CD2 231, CD4 474.

2MASS J01393478-0043152 (10:46-10:53)

10:46 Preset.

10:47 Starting science. Seeing is 0.7" on guiders, 0.6" on cyclope. Clear skies.

10:53 SNR: CD2 279, CD4 579.

PASTA

TOI 6109 (10:53-11:37)

10:53 Preset.

10:56 Starting science. Seeing is 0.5" on guiders, 1.0" on DIMM. Clear skies.

11:01 SNR: CD3 172, CD5 240. Target was off the pinhole for ~70 seconds of this. Will repeat at the end.

11:08 SNR: CD2 168, CD4 304.

10:32 SNR: CD1 162, CD6 598. Repeating CD3/5.

11:37 SNR: CD3 178, CD5 252.

Mpmdwarf

GDR3 3236226968132728704 (11:37-11:55)

11:37 Preset.

11:42 Starting science. Seeing is 0.5" on guiders, 0.6" on DIMM. Clear skies.

11:52 18-degree twilight

11:55 SNR: CD3 61, CD6 54.

HIP 24555 (11:55-11:58)

11:55 Preset.

11:57 Starting science.

11:58 SNR: CD3 661, CD6 542

BHBin

2MASS J04025278+7407578 (11:58-)

11:58 Preset.

12:03 Prest seems to be hung. Resending. Still hung. Riccardo is clearing some things on his end.

12:05 Resent. DX seems to be hung on "Stopping guiding." Riccardo is aborting GCS.

12:07 Resending. Still no. It was flagged as a duplicate request. Riccardo is restarting IIF now.

12:08 Killing and restarting PEPSI software.

12:10 Resending. The telescope started moving but the preset was canceled. Sent again while moving. Seems fine...

12:14 Starting science, Seeing is 0.6" on guiders, 0.7" on DIMM. Clear skies.

12:21 12-degree twilight

12:23 SNR: CD3 71, CD5 85. Closing and running PEPSI cals.