

LBT Observing Log: 2026 May 09 UT

Observers: Jenny Power

Partner: Dominick Rowan

Telescope Operator: Steve Allanson

Plan:

Start with MODS XMDs:

- ~~MODSPhotCal/gd153~~
- ~~OSU_XMDs_MODS/J1407~~
- ~~OSU_XMDs_MODS/J1116~~

Swap to LBC

- Monitor
 - ~~N3627~~
 - ~~N4826~~
 - ~~N4736~~
 - ~~N5474~~

Swap to PEPSI

~~OSU_PANTERA/4607078038213603712~~

~~OSU_PANTERA/4492635198637928448~~

~~OSU_PANTERA/2081194611664742144~~

~~MWAbund/J16001507+2807036~~

~~MWAbund/J16064558+2221542~~

Summary:

[MODS](#)

[MODS Calibrations](#)

[SpecPhot GD153](#)

[OSU_XMDs - J1407](#)

[OSU_XMDs - J1116](#)

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OSU_PANTERA

[Gaia DR3 4607078038213603712](#)

[Gaia DR3 4492635198637928448](#)

OSU_MWAbund

[J16001507+2807036](#)

LBC skyflats:

<https://scienceops.lbto.org/lbc/calibrations/twilight-sky-flats/>

Skyflats in all filters have been taken recently.

LBCB Flats:

- [B-Bessel](#) - 20260418
- [USpec](#) - 20260416
- [V-Bessel](#) - 20260416

LBCR Flats

- [R-Bessel](#) -20260418

PEPSI log:

<https://drive.google.com/file/d/11DQLPFBLvJO05QkDGiBPmryhMsCaUn9E/view?usp=sharing>

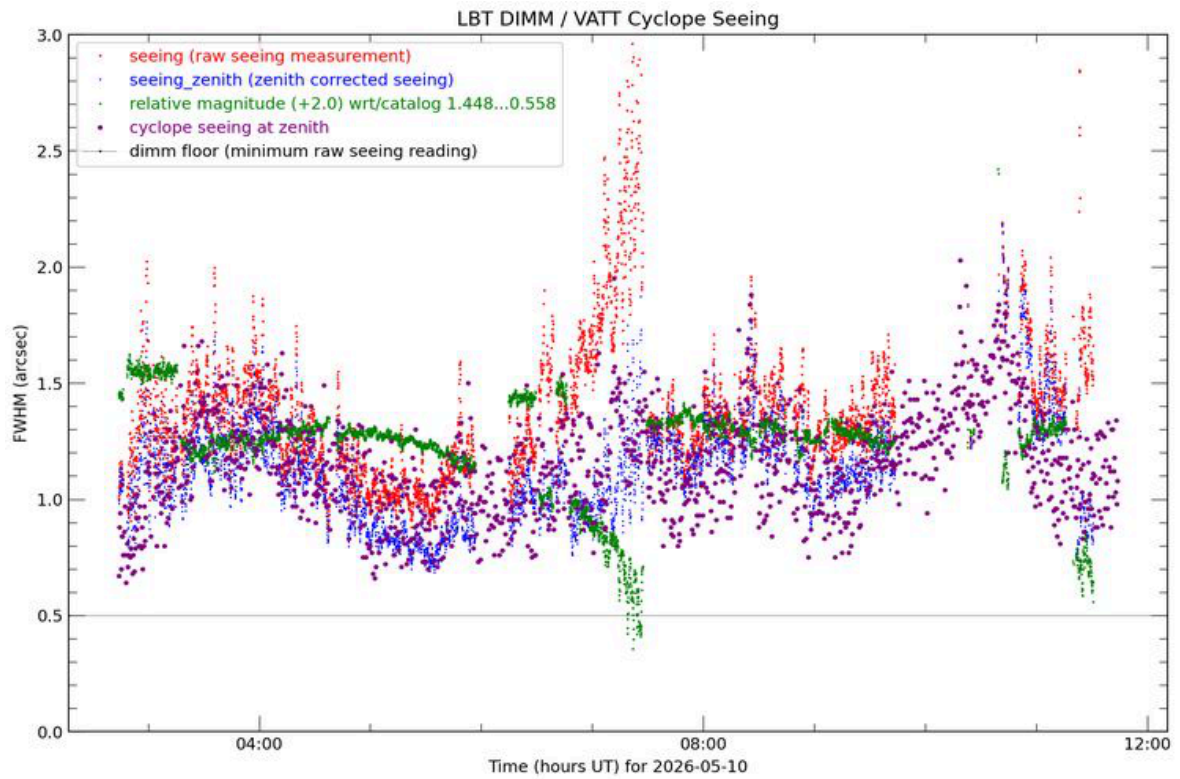
Issues:

TMS remains unavailable.

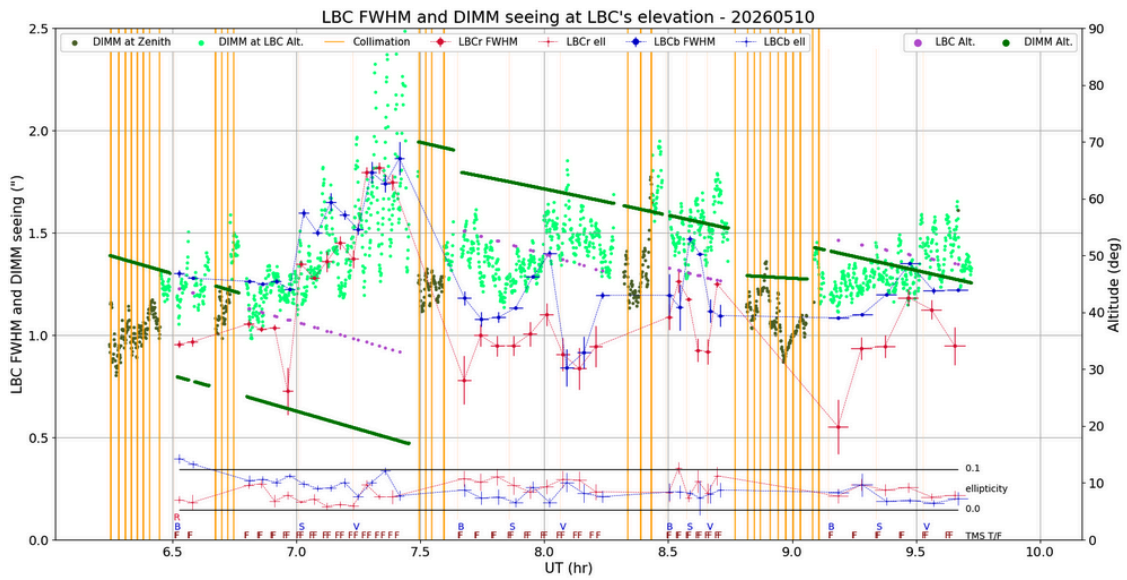
ETC to Achieve SNR issue explained by variable/poor seeing at the end of the night. Binned pinhole guiding masked how bad the seeing really was but the DIMM and Cyclope plot clearly show it had deteriorated during the PEPSI window. Using the DIMM seeing in the ETC returns approximately the achieved SNR value.

Weather:

Clear night with NW winds. Seeing: variable



LBC IQ plot:



Overview:

00:56 UT Steve has configured the telescope for MODS1 science and completed his telescope checkouts. Starting some calibrations.

MODS

MODS Calibrations

8K biases mods1[r/b].20260510.0001-5

3K biases mods1[r/b].20260510.0006-10

execMODS --mods1 grslitflats_1.0_m1.txt

- mods1r.20260510.0013-18
- mods1b.20260510.0013-18

execMODS --mods1 grlamps_m1.txt

- mods1r.20260510.0019-21
- Mods1b.20260510.0019-21

execMODS --mods1 grpixflats_m1.txt

- mods1r.20260510.0022-26
- Mods1b.20260510.0022-31

execMODS --mods1 grslitflats_5.0_m1.txt

- mods1r.20260510.0027-29
- Mods1b.20260510.0032-37

01:15 UT LUCI's initialized and Field stop alignments verified on LUCIs

02:02 UT Steve is opening shutter doors. Conditions are clear with winds ~10m/s from the NW. Outside temperature 10.7C.

02:10 UT MODS1 in observing mode with probes homed.

02:12 UT sunset

02:29 UT Steve is doing pointing checks near our first target, still a bit bright for collimation. Seeing is 0.73" on Cyclope. Conditions clear.

02:37 UT We are collimated, seeing is 0.86" on the guider. We are going to wait a bit longer before moving to the standard.

SpecPhot GD153

02:46 UT Sending preset to gd153 for acquisition. Seeing 0.79" on the guider, 0.97" on Cyclope.

Computed Slit Alignment Offset:

dX = -0.837 arcsec

dY = 11.952 arcsec

MODS1 Offset Command:

offsetxy -0.837 11.952 rel

Additional: MODS1 Offset Command:

offsetxy 0.088 0.116 rel

02:53 UT Aligned, waiting until 12 degree for science.

03:02 UT Sending gd153 dual grating config science.

- execMODS --mods1 -b DualGrating gd153.obs

Seeing is 0.99" on the guider, 1.26" on cyclope, 1.27" on the DIMM, clear.

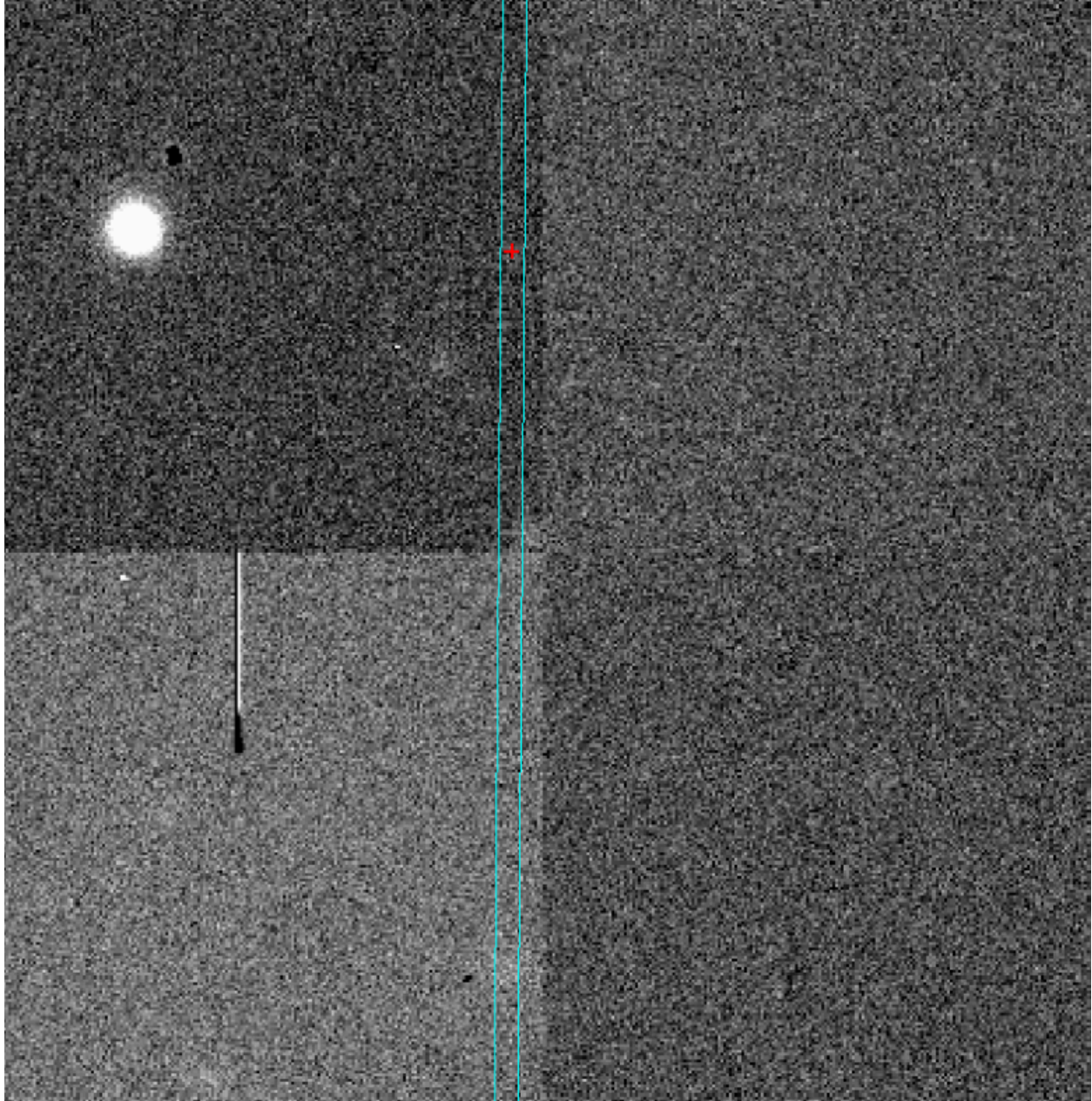
03:06 UT 12 degree evening twilight

- Mods1r.20260510.0033-35
- mods1b.20260510.0038-40

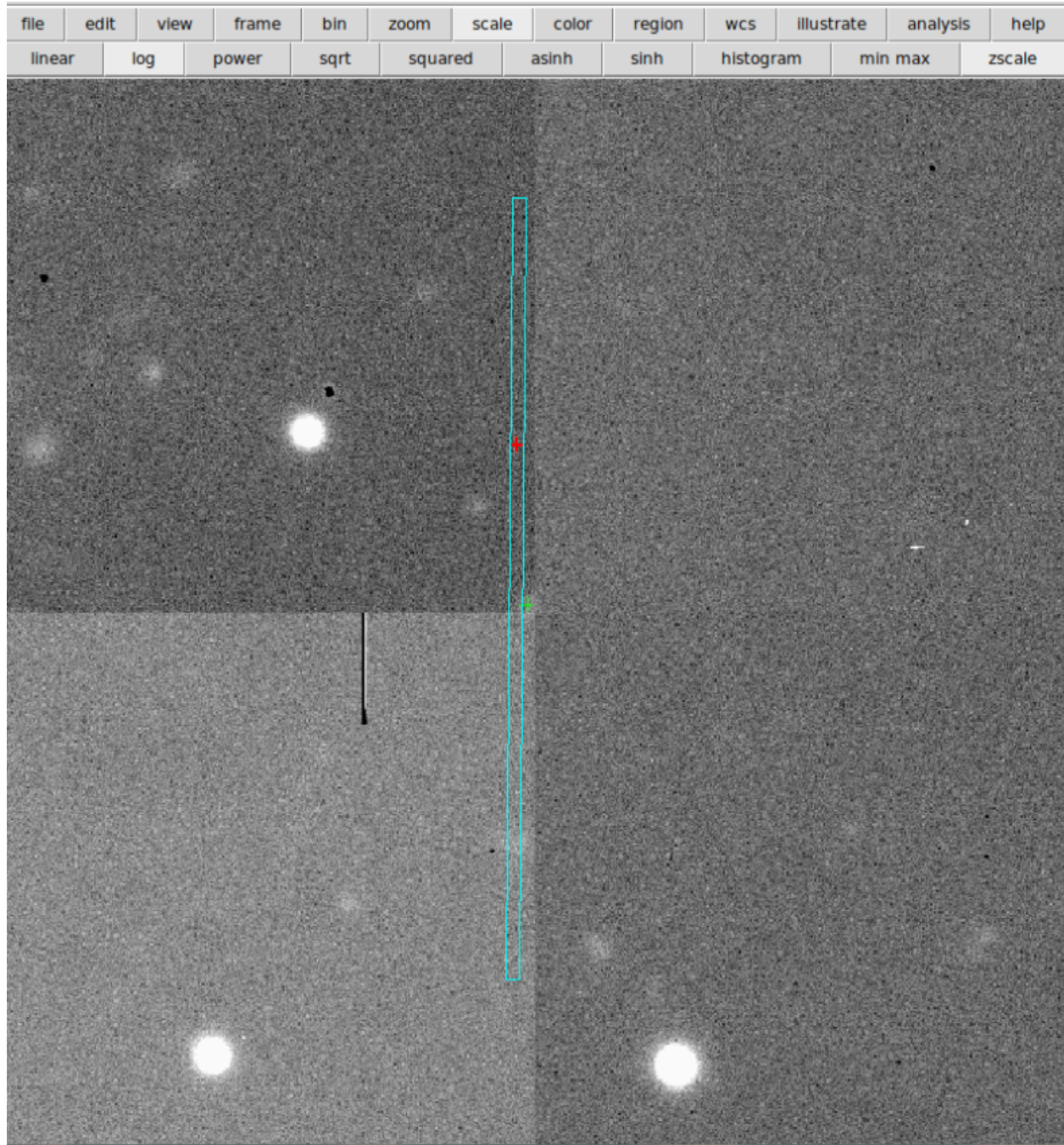
03:11 UT Conditions clear, NW winds ~7m/s, temps 9.9C, seeing 0.94 on the DIMM, 1.3" on Cyclope.

OSU_XMDs - J1407

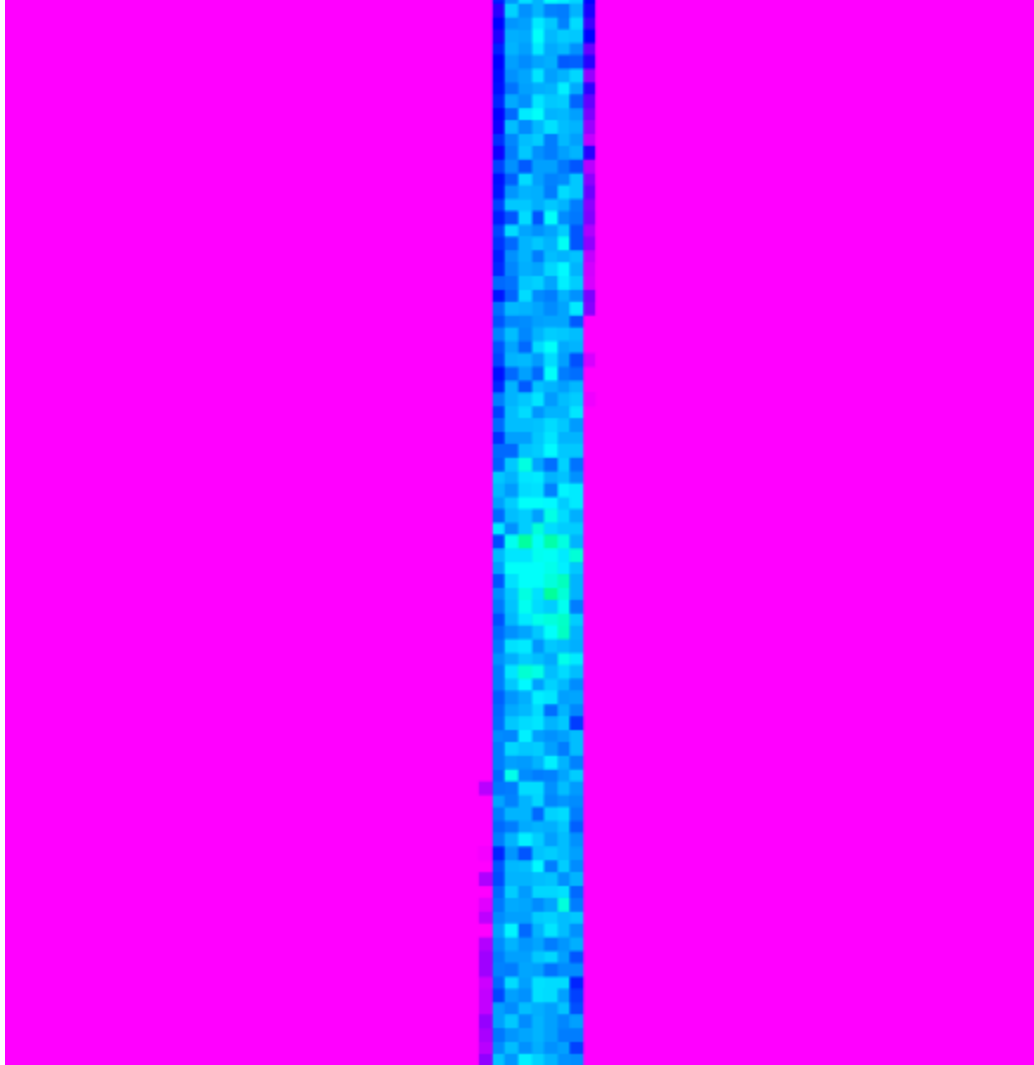
03:15 UT Sending acquisition acqMODS --mods1 J1407.UTC0330.acq



03:23 UT Object is there but not clear. I'm taking a longer acquisition image exposure to better centroid. With double the exposure time (120s) we were able to identify the object more easily:



Looks as well centered as I think we can do



03:32 UT Starting science on J1407.

- mods1r.20260510.0040-43
- Mods1b.20260510.0041-44

Seeing averaging 1.1" on the guider, 1.23" on the DIMM, 1.25" on Cyclope.

03:40 UT 18 degree evening twilight, LMST at evening twilight: 11 33

03:52 UT Lots of bright emission lines. Seeing is variable, good overall with a few moments where it blows up. Averaging 1.2" on the guider.

04:31 UT Seeing averaging 0.96" on the guider. 1.08" on the DIMM. Clear.

OSU_XMDs - J1116

04:37 UT Sending acquisition : acqMODS --mods1 J1116.UTC0500.acq

Seeing is 0.8" on the guider.

Computed Slit Alignment Offset:

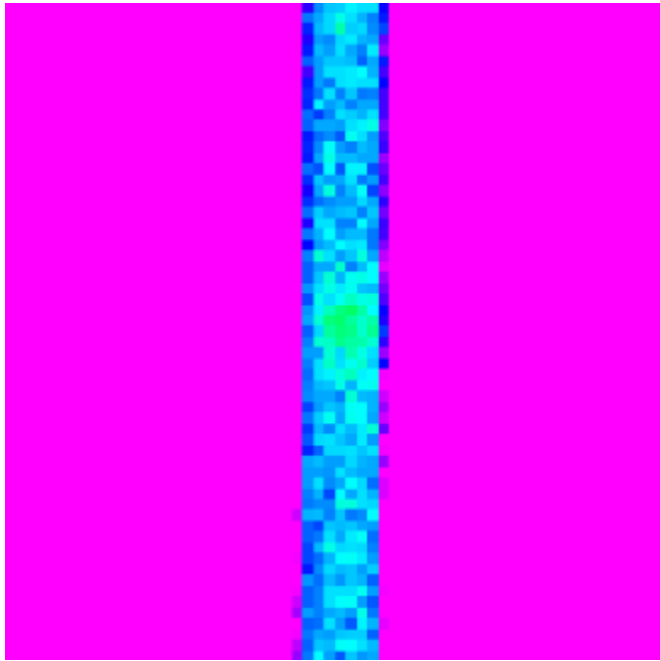
dX = -0.263 arcsec

dY = 11.828 arcsec

MODS1 Offset Command:

offsetxy -0.263 11.828 rel

This target was easier to make out in the 60 sec exposure



04:49 UT Starting science. Seeing is 0.64" on the guider. 0.93" on the DIMM and 1.32" on Cyclope.

- mods1r.20260510.0047-50
- Mods1b.20260510.0045-48

05:08 UT Lots of bright emission lines. There is a bright star in the lowest slit segment (not saturated). Seeing averaging 0.7" on the guider.

05:10 UT Red did not start the second exposure, hung on on write image, although already displayed in modsDisp. modsr is now 200s behind blue.

05:38 UT Seeing is 0.7" average on the guider. 0.84" on the DIMM, 0.74" on cyclope.

LBC

05:57 UT Done with the MODS1 observations. Reconfiguring for the LBC's

05:58 UT Putting MODS1 to sleep.

06:04 UT Running an LBC 2xbias during reconfig after power up.

OSU_Monitor

N3627

06:12 UT Sending preset for collimation. Running dohybrid.

Blue:

?	Computed Aberrations (nm)							(arcsec)		blue2026-05-10.Log
	Defoc (Z4)	Ast0 (Z5)	AstV (Z6)	ComaV (Z7)	ComaH (Z8)	Sph1 (Z11)	Sph2 (Z22)	Est. seeing	Est. WIQ	Filename
---	-1050	0	0	0	0	600	0	----	----	dofpia_sph3_adjustment
●	3490	0	0	-527	144	0	0	0.50	1.40	lbc.20260510.061506.fits
●	-3276	-90	-226	262	-216	-16	10	0.94	1.30	lbc.20260510.061658.fits
●	276	-112	-152	-67	-37	-151	-40	1.05	0.18	lbc.20260510.061835.fits
●	-35	-56	-54	32	-85	2	-7	1.01	0.09	lbc.20260510.062002.fits
●	193	-2	-146	73	110	33	-2	1.11	0.13	lbc.20260510.062130.fits
●	-465	-6	105	-103	234	-78	-11	1.17	0.24	lbc.20260510.062259.fits
●	524	-156	48	-36	-317	-45	18	1.15	0.27	lbc.20260510.062428.fits
---	878	0	0	0	0	-501	0	----	----	dofpia_sph3_adjustment

Red:

?	Computed Aberrations (nm)							(arcsec)		red2026-05-10.Log
	Defoc (Z4)	Ast0 (Z5)	AstV (Z6)	ComaV (Z7)	ComaH (Z8)	Sph1 (Z11)	Sph2 (Z22)	Est. seeing	Est. WIQ	Filename
---	-875	0	0	0	0	500	0	----	----	dofpia_sph3_adjustment
●	10229	0	0	-787	-504	0	0	0.50	4.05	lbc.20260510.061501.fits
●	1551	-75	-216	-1228	-97	55	-33	0.74	0.83	lbc.20260510.061652.fits
●	-275	65	-78	-16	-14	176	-29	0.75	0.18	lbc.20260510.061828.fits
●	458	67	-162	-193	170	-31	-7	0.71	0.23	lbc.20260510.061957.fits
●	-276	102	151	221	-196	81	15	0.79	0.20	lbc.20260510.062125.fits
●	-256	-63	131	45	-49	116	-10	0.74	0.16	lbc.20260510.062253.fits
●	-186	157	-172	-40	114	40	8	0.78	0.14	lbc.20260510.062423.fits
---	610	0	0	0	0	-348	0	----	----	dofpia_sph3_adjustment

06:25 UT Sending copointing

Radial star offsets from rotator centers: BLUE 19.0" and RED 22.6"

lbrangebal:

COPOINTING: B=62653 R=62648

Pointing updates: delta_IE = -19.26", delta_CA = 0.31"

Mirror updates: dX(mm) dY(mm) dRX(") dRY(")

SX: 0.42 0.12 2.68 -8.94

DX: -0.37 -0.09 -1.99 8.04

06:29 UT Starting science. Seeing is 0.76" on Cyclope. Conditions clear.



06:35 UT The collimation looks bad on the blue, quite elliptical.

06:37 UT Checked second image and it also looks poor. We are rerunning collimation.

06:39 UT Running dof pia again.

Blue

---	-1050	0	0	0	0	600	0	----	----	dofpia_sph3_adjustment
●	1552	83	128	168	90	-26	-16	1.24	0.62	lbc.20260510.064024.fits
●	-144	-20	-226	-204	1	46	0	1.21	0.15	lbc.20260510.064155.fits
●	357	109	-239	37	42	-52	-12	1.15	0.18	lbc.20260510.064324.fits
●	-273	65	58	-53	65	-38	1	1.13	0.14	lbc.20260510.064451.fits
---	869	0	0	0	0	-496	0	----	----	dofpia_sph3_adjustment

Red:

---	-875	0	0	0	0	500	0	----	----	dofpia_sph3_adjustment
●	1318	-152	144	168	-125	27	-5	0.86	0.54	lbc.20260510.064019.fits
●	415	100	61	-271	120	-174	6	1.01	0.25	lbc.20260510.064150.fits
●	-478	101	-206	262	-82	46	9	0.96	0.25	lbc.20260510.064320.fits
●	-234	-104	-3	-176	-2	88	-6	0.82	0.16	lbc.20260510.064448.fits
---	636	0	0	0	0	-363	0	----	----	dofpia_sph3_adjustment

06:46 UT Sending back to science

07:15 UT Seeing has jumped up, now 1.36-1.5" on cyclope, and reflected in the images with about 1.5" IQ. Hopefully this is just a brief bubble.

07:25 UT Image IQ up to 1.8" but variable and oscillating. Hopefully a different pointing will improve things.

N4826

07:27 UT Sending preset for collimation

Blue

---	-1050	0	0	0	0	600	0	----	----	dofpia_sph3_adjustment
●	2060	-133	80	135	-177	-117	-20	1.16	0.83	lbc.20260510.072942.fits
●	400	-77	39	42	21	-55	0	1.19	0.18	lbc.20260510.073118.fits
●	149	-80	79	-70	-135	-37	-6	1.16	0.13	lbc.20260510.073246.fits
---	883	0	0	0	0	-505	0	----	----	dofpia_sph3_adjustment

Red:

---	-875	0	0	0	0	500	0	----	----	dofpia_sph3_adjustment
●	1727	31	-110	175	133	-97	-10	0.98	0.70	lbc.20260510.072938.fits
●	550	213	47	-31	326	-200	-13	0.97	0.31	lbc.20260510.073113.fits
●	-119	55	42	-12	-254	-57	-4	0.92	0.15	lbc.20260510.073241.fits
---	695	0	0	0	0	-397	0	----	----	dofpia_sph3_adjustment

07:34 UT Copointing

Radial star offsets from rotator centers: BLUE 3.1" and RED 5.3"

lbcrangebal:

COPOINTING: B=73542 R=73538

Pointing updates: delta_IE = -2.39", delta_CA = -4.26"

Mirror updates: dX(mm) dY(mm) dRX(") dRY(")

SX: 0.07 0.05 1.10 -1.48

DX: -0.02 -0.01 -0.13 0.44

07:38 UT Starting science. Seeing has calmed down. 1.02" on cyclope, 1.12" on the DIMM

08:12 UT Seeing 1.25" on teh DIMM and 0.92" on Cyclope..

N4736

08:16 UT Sending preset for collimation.

Blue:

---	-1050	0	0	0	0	600	0	----	----	dofpia_sph3_adjustment
●	-812	124	-70	283	153	-11	-6	1.11	0.36	lcb.20260510.082010.fits
●	-60	-28	87	-74	35	51	1	1.15	0.10	lcb.20260510.082320.fits
---	879	0	0	0	0	-502	0	----	----	dofpia_sph3_adjustment

Red:

---	-875	0	0	0	0	500	0	----	----	dofpia_sph3_adjustment
●	-689	-18	128	76	-32	0	22	1.44	0.29	lbc.20260510.082006.fits
●	-166	-190	19	111	-92	31	14	0.88	0.13	lbc.20260510.082314.fits
---	672	0	0	0	0	-384	0	----	----	dofpia_sph3_adjustment

08:25 UT Sending copointing

Radial star offsets from rotator centers: BLUE 14.8" and RED 14.2"

lbrangebal:

COPOINTING: B=82552 R=82545

Pointing updates: delta_IE = 10.36", delta_CA = 9.24"

Mirror updates: dX(mm) dY(mm) dRX(") dRY(")

SX: 0.08 -0.02 -0.50 -1.81

DX: -0.04 0.05 1.13 0.91

08:28 UT Starting science. Seeing is 1.21" on Cyclope.

08:30 UT Moonrise, illuminated fraction 0.454

08:40 UT Still nice an dark



10:51 UT 18 degree morning twilight, LMST at morning twilight: 18 45

N5474

08:44 UT Sending preset for copointing.

Radial star offsets from rotator centers: BLUE 3.6" and RED 3.7"

lbcrangebal:

COPOINTING: B=84611 R=84608

Pointing updates: delta_IE = -3.93", delta_CA = 0.43"

Mirror updates: dX(mm) dY(mm) dRX(") dRY(")

SX: 0.08 0.05 0.99 -1.70

DX: -0.05 0.01 0.23 0.99

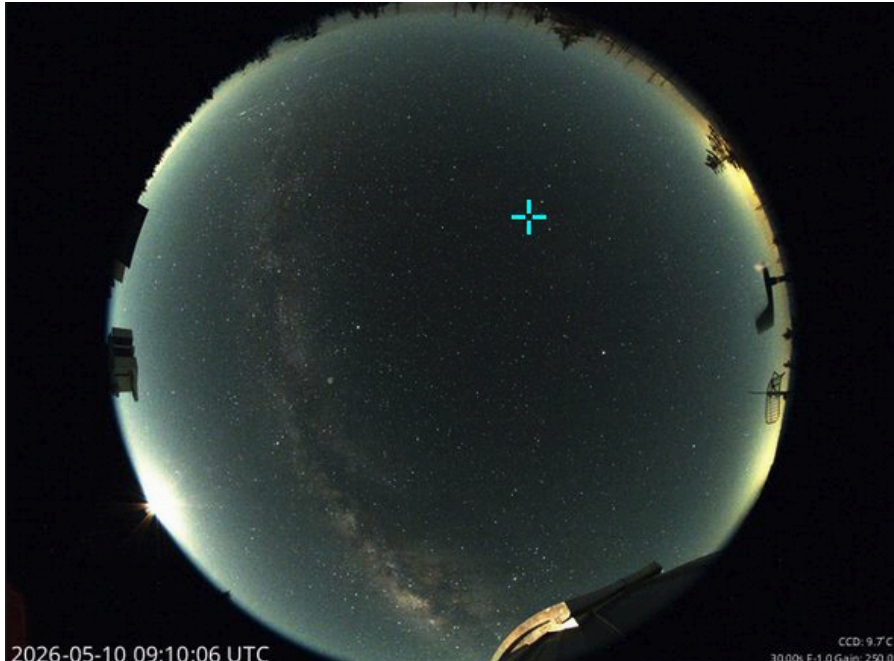
08:48 UT running dofpa

08:53 UT running it again with x2, only 1 pupil found on the red and the collimation was struggling to focus. There are fainter pupils that can be picked up with double the exposure time. Not a great copointing (too bright) or collimation field, unbalanced, too few stars of reasonable brightness.

09:04 UT Collimation continued to struggle. Created a new collimation field and restarting. The other field was imparting spherical and focus and did not look like we would get a good solution.

LBC FPIA LOG MONITOR @ LBTO - v4.1										
?	Computed Aberrations (nm)							(arcsec)		blue2026-05-10.Log
	Defoc (Z4)	Ast0 (Z5)	AstV (Z6)	ComaV (Z7)	ComaH (Z8)	Sph1 (Z11)	Sph2 (Z22)	Est. seeing	Est. WIQ	Filename
●	-33	77	-118	143	-141	45	10	1.26	0.13	lbc.20260510.085215.fits
---	943	0	0	0	0	-539	0	----	----	dofpia_sph3_adjustment
---	-1050	0	0	0	0	600	0	----	----	dofpia_sph3_adjustment
●	225	-159	37	93	34	-151	-9	1.09	0.17	lbc.20260510.085442.fits
●	1056	-241	85	-60	-102	-248	-41	1.31	0.46	lbc.20260510.085637.fits
●	95	-9	-144	107	219	-183	-13	1.29	0.19	lbc.20260510.085824.fits
●	-224	-106	-108	-88	-28	30	-13	1.16	0.13	lbc.20260510.090011.fits
---	886	0	0	0	0	-506	0	----	----	dofpia_sph3_adjustment
---	-1050	0	0	0	0	600	0	----	----	dofpia_sph3_adjustment
●	-444	51	-93	-75	-46	37	-1	1.12	0.20	lbc.20260510.090455.fits
●	125	47	150	-41	37	22	-7	1.08	0.11	lbc.20260510.090627.fits
---	836	0	0	0	0	-477	0	----	----	dofpia_sph3_adjustment
red2026-05-10.Log										
?	Computed Aberrations (nm)							(arcsec)		red2026-05-10.Log
	Defoc (Z4)	Ast0 (Z5)	AstV (Z6)	ComaV (Z7)	ComaH (Z8)	Sph1 (Z11)	Sph2 (Z22)	Est. seeing	Est. WIQ	Filename
●	-783	56	102	57	18	225	8	1.06	0.35	lbc.20260510.085210.fits
---	783	0	0	0	0	-447	0	----	----	dofpia_sph3_adjustment
---	-875	0	0	0	0	500	0	----	----	dofpia_sph3_adjustment
●	1240	37	-105	86	-194	-346	-78	0.88	0.55	lbc.20260510.085437.fits
●	545	-79	24	0	34	-165	-28	0.83	0.25	lbc.20260510.085633.fits
●	689	62	-15	-24	94	-266	-51	0.85	0.33	lbc.20260510.085819.fits
●	313	86	30	59	-226	-178	-53	0.71	0.21	lbc.20260510.090005.fits
---	567	0	0	0	0	-324	0	----	----	dofpia_sph3_adjustment
---	-875	0	0	0	0	500	0	----	----	dofpia_sph3_adjustment
●	-1098	-175	34	151	179	293	0	0.85	0.49	lbc.20260510.090450.fits
●	71	-80	126	-10	85	130	-10	0.75	0.13	lbc.20260510.090619.fits
---	587	0	0	0	0	-335	0	----	----	dofpia_sph3_adjustment

09:07 UT Starting science. Seeing is 1.01" on the DIMM, 1.05" on Cyclope.



PEPSI

09:43 UT Reconfiguring to PEPSI

10:03 UT Sending pointing and collimation preset near our first target.

10:09 UT Seeing 1.15" on the guiders

OSU_PANTERA

Gaia DR3 4607078038213603712

Exposure time doubled as per PI request to ensure desired SNR is achieved in the blue

10:09 UT Sending preset for science. Seeing 1.38" on Cyclope.

10:11 UT Starting science Seeing 1" on the guiders, 1.2" on cyclope, clear.

SNR CD3/CD5 75/129

SNR CD2/CD6 70/148

Gaia DR3 4492635198637928448

Exposure time doubled as per PI request to ensure desired SNR is achieved in the blue

10:44 UT Preset to target. Unwrap so this will take a few minutes.

10:50 UT Starting science. Seeing is 1.3" on the guiders. 1.72" on the DIMM and 1.32" on cyclope.

SNR CD3/CD5 66/106 (even with doubling we did not achieve desired SNR in the blue)
SNR CD2/CD6

11:00 UT Seeing is 1.08" on the guiders. 1.32 " on the DIMM, 1.29" on Cyclope, clear.

~~Gaia-DR3-2081194611664742144~~

Exposure time doubled as per PI request to ensure desired SNR is achieved in the blue
11:16 UT Presetting. Whoops too close to the rising sun.

OSU_MWAbund

J16001507+2807036

11:18 UT Sending Preset

11:19 UT Steve is tuning pointing.

11:20 UT Presetting back to target.

11:21 UT Starting science.

SNR CD2/CD4 195/359

11:25 UT 12 degree evening twilight

11:30 UT Closing up.

11:45 UT Starting LBC biases. Taking PEPSI cals in parallel.

12:19 UT sunrise