LBT Observing Log: 2025 Feb 25 UT

Observers: Alex Becker
Partner Observer: Tawny Sit (OSU), Rick Pogge (OSU, on-call)
Telescope Operator: Steve Allanson

Plan:

MODS long slit program
12-deg dusk: 0207 UT
- Flux standard G191B2B and run exposures before 18-deg twilight
- ND_bgcmi, ~2.5 h - can start at 0230 UT (5min before 18-deg twilight)
- UVa WD1032 ~2.5h – start at 0500UT
- OSU_XMDs SBS1159 ~1.5h – start at ~0730 UT
- UM_XMDs WISEAJ1205 ~1.5h – start at ~0900 UT
- Standard GD153 – ~1030 UT
- OSU_SCAT 2024igg ~1.5h – start at ~11 UT

18-deg dawn: 1230 UT
12-deg dawn: 1258 UT

Summary:

Completed two time-series programs, ND_bgcmi and UVa_WDBD WD1032.
Completed two long-slit spectral targets: OSU_XMDs SBS1159 and UM_XMDs WISEAK1205
Only partial data for OSU_SCAT sn2024igg because of numerous problems, see notes.

Issues:

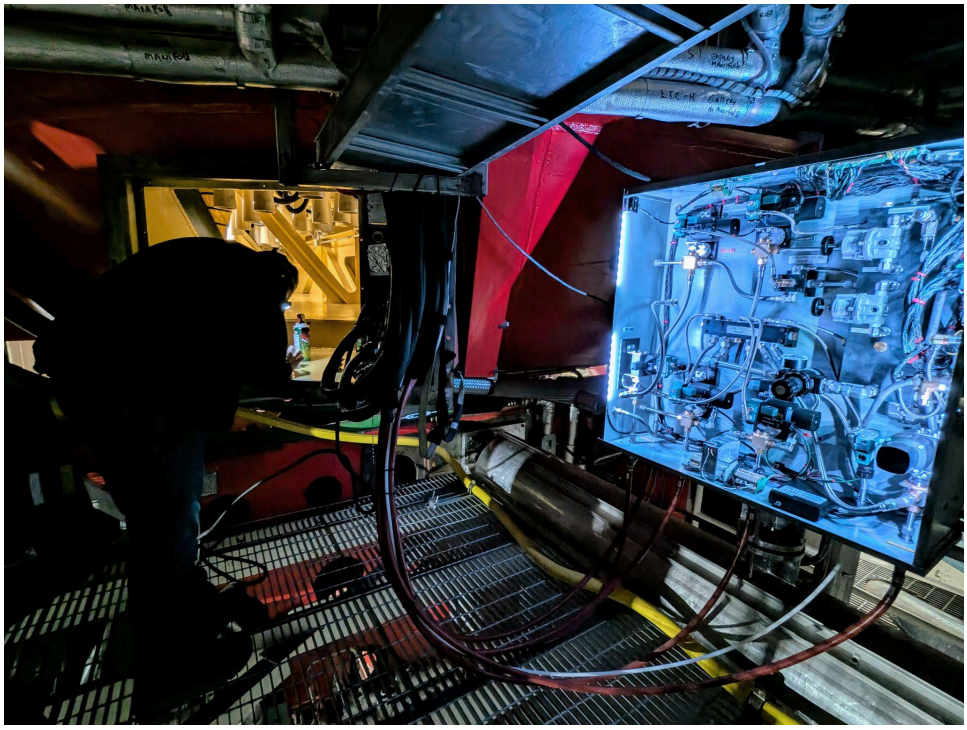
Problems with the DX primary mirror at the start and end, MODS2R dewar ran out of LN2 at the end causing warm-up. Last observation was lost to a combination of DX M1 safing and the dewar warm-up.

Weather:

Some clouds at sunset quickly dissipated, seeing was subarcsecond most of the time.

Overview (times are given in UT):

01:12 UT DX Primary mirror work continues. Blown fuse has been identified. They have located a spare and have replaced it. They are attempting to raise the mirror now.



01:45 We are open. Pointing check and initial collimation

MODS

Std

G191b2b

Partly cloudy
02:00 acqBinoMODS g191b2b.acq

modsAlign -r mods1r.20250225.0003.fits
MODS1 Offset Command:
  offsetxy -0.535 11.140 rel

modsAlign -r mods2r.20250225.0003.fits
MODS2 Offset Command:
  offsetxy 3.756 8.228 rel

02:06 execBinoMODS g191b2b.obs

ND_bgcmi

bgcmi

02:21 acqBinoMODS bgcmi_pa-20.acq

modsAlign -y 11 mods1r.20250225.0008.fits mods1r.20250225.0009.fits
MODS1 Offset Command:
  offsetxy -0.888 10.937 rel

modsAlign -y 9 mods2r.20250225.0008.fits mods2r.20250225.0009.fits
MODS2 Offset Command:
  offsetxy 3.204 8.154 rel
  manual adj x 0.125

02:33 execBinoMODS bgcmi.obs

02:42 We lost the preset on SX for an unknown reason. We have to start over again.
2 spectra taken on both mods

02:44 acqBinoMODS bgcmi_pa-20.acq

modsAlign -y 11 mods1r.20250225.0013.fits mods1r.20250225.0014.fits
MODS1 Offset Command:
  offsetxy -0.711 11.185 rel
  manual adj x -0.2

modsAlign -y 9 mods2r.20250225.0014.fits mods2r.20250225.0015.fits
MODS2 Offset Command:
  offsetxy 3.138 8.045 rel

02:55 execBinoMODS bgcmi.obs
FWHM still ~0.8” one the guider, clear

04:00 Seeing stable ~0.75”

04:55 Exposures got quite a bit out of sync. MODS1R ~5min ahead of MODS1B.
Seeing now ~0.9”

05:17 I will take one xtra exposures on MODS1R as it is so far ahead. Slso one more exposure on mods2r

UVa_WDBD

WD1032

05:33 Preset
We picked up two different guide stars. Pointing check as one would be close to the guide probe limit

05:40 Preset
acqBinoMODS WD1032_0500_new.acq.txt
modsAlign -y 11 mods1r.20250225.0058.fits mods1r.20250225.0059.fits
MODS1 Offset Command:
  offsetxy -0.573 12.254 rel
  manual adjustment x -0.2”

modsAlign -y 9 mods2r.20250225.0058.fits mods2r.20250225.0059.fits
MODS2 Offset Command:
  offsetxy 3.779 8.407 rel

05:52 Starting science script
Seeing 0.6”-0.7” on the guider

07:45 Seeing 0.45” on the guider

OSU_XMDs

SBS1159

08:07 acqBinoMODS SBS1159_UT0800.acq

modsAlign -y 11 mods1r.20250225.0073.fits mods1r.20250225.0074.fits
MODS1 Offset Command:
  offsetxy -1.128 10.583 rel
  manual adj x -0.2"

modsAlign -y 9 mods2r.20250225.0072.fits mods2r.20250225.0073.fits
MODS2 Offset Command:
  offsetxy 3.123 7.405 rel

08:23 execBinoMODS SBS1159.obs
GCS ~0.5”

UM_XMDs

WISEAJ1205

09:32 acqBinoMODS WISEAJ1205_UT0930.acq
INSTCONFIG red imaging timed out. Update GUI and retry

modsAlign -y 11 mods1r.20250225.0080.fits mods1r.20250225.0081.fits
MODS1 Offset Command:
  offsetxy 0.190 11.345 rel
dX -0.07

modsAlign -y 9 mods2r.20250225.0078.fits mods2r.20250225.0079.fits
MODS2 Offset Command:
  offsetxy 4.566 8.064 rel

09:45 execBinoMODS WISEAJ1205.obs
Seeing ~0.6”

OSU_SCAT

We are more than 30 minutes behind. Going to the next science target first and a standard star afterwards

2024igg

Seeing 0.5

10:55ish acqBinoMODS 2024igg_UT1100.acq
There is a faint point source at approximately the right position I would expect. Centering algorithm does not work

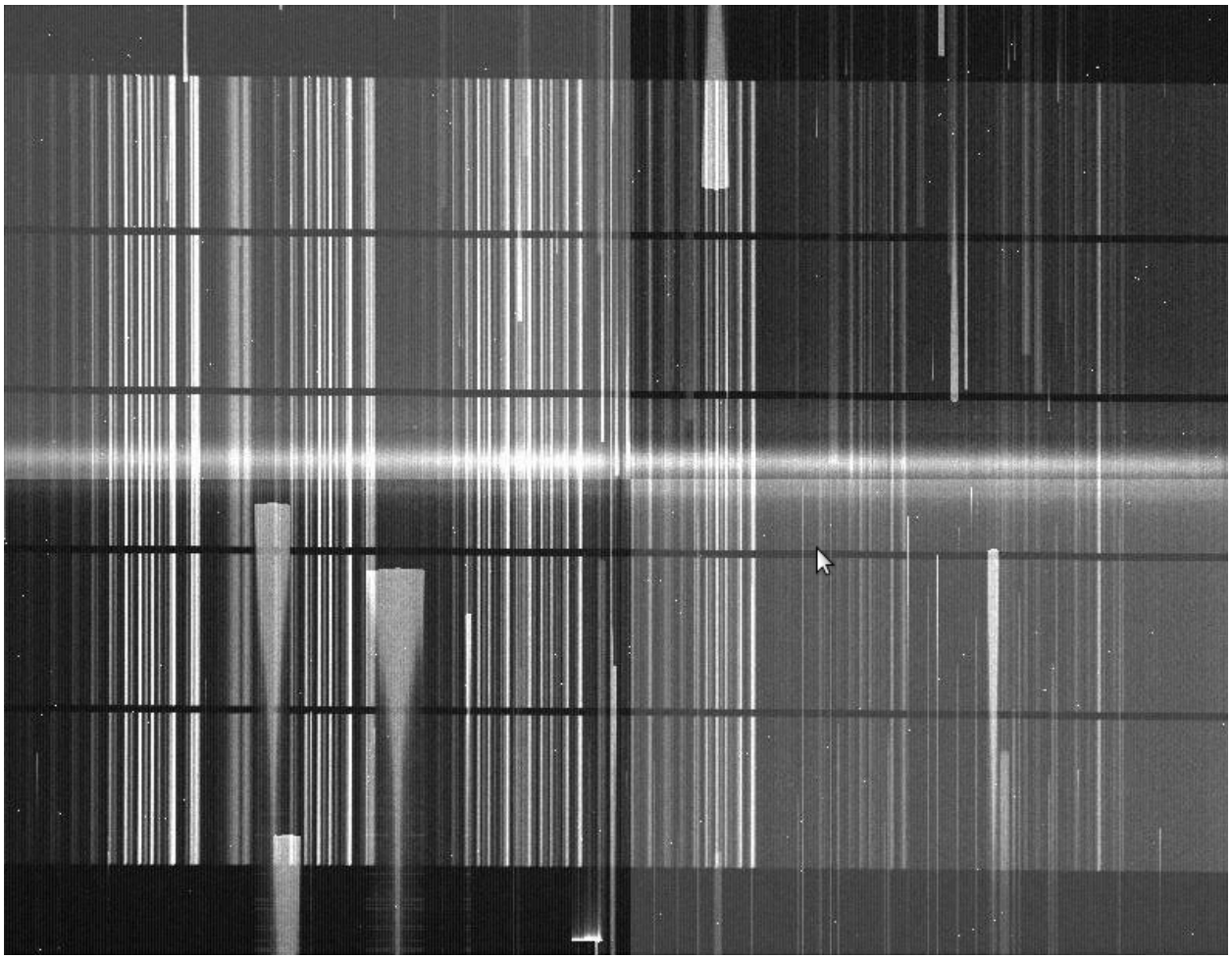
modsAlign -y 11 mods1b.20250225.0065.fits mods1b.20250225.0066.fits
MODS1 Offset Command:
  offsetxy -1.139 11.202 rel
  dx +0.06

modsAlign -y 9 mods2b.20250225.0065.fits mods2b.20250225.0066.fits
MODS2 Offset Command:
  offsetxy 2.870 6.951 rel
  dX +0.06

11:15 execBinoMODS 2024igg_LS.obs
Trace in blue and red

11:55 DX M1 panicked. Stopped second exposure on MODS2 5 min early.

However, mods2r20250225.0085.fits might have a readout issue. It looks like saturation effects, but we didn't have any saturation… (but the acquisition image did…)



Waiting for mods1 to finish the exposure before we recover the primary mirror.

12:00 MODS1 done with 2/4 exposures. Moving to zenith to recover DX M1.
It is the same issue we thought to be resolved after replacing the blown fuse in the afternoon. So we have either blown the fuse again or it was something else…

12:12 acqBinoMODS 2024igg_UT1100.acq
Lets try to do this fast!

mods1b..9973.fits has a weird readout column in the upper left quadrant.

12:35 We think we have found the issue with MODS2R. The dewar is out of LN. Vacuum 7.41E+00 torr, -50.9C, LN2Tank -120.2C.
We will stop the observations completely so the mountain crew can take care of it as soon as possible. Warming started at 11.57 UT just at the same time where the M1 panicked.
Stopped after 10/20 minutes

Readout of M2R is unusable