LBT Observing Log: 2025 Feb 27 UT

Observers: Jenny Power
Partner Observer: Mark Whittle, Yifan Zhou
Telescope Operator: David Gonzalez Huerta

Plan:

Start with MODS.
Here's a plan – assuming the seeing is reasonable:

Target	visit	star time
~~Standard: g191b2b~~	0.3 hr	start UT 2.1
~~OSU SCAT 2024pjl~~	1.1 hr	start UT 2.5
~~OSU lmcsat U4426-dw1~~	1.7 hr	start UT 4.1
~~OSU lmcsat U4115-dw2~~	1.7 hr	start UT 5.9
~~UM XMD SBS1135~~	1.3 hr	start UT 7.7
~~UVa SDSS 1411~~	2.4 hr	start UT 9.1
OSU XMD SBS 1437	1.3 hr	start UT 11.6 [incomplete]
Standard: gd153	0.4hr	start UT 12.6 [not observed]
12 degrees at		UT 13.0

Summary:

Issues:

Mate window manager on robs1 got itself in a weird state during the acquisition of our last target, freezing the remote desktop session with MODS. Glenn investigating. (IT9291)

Only a partial attempt at OSU XMD SBS1437 was possible because of this technical issue, completing half of the open shutter time. The specphot was obtained at the start of the night only.

Weather:

Clear with seeing ~1” most of the night. A few bubbles up to 1.4” that were short-lived. Seeing improved to sub-arcsecond at times. Clear all night.

Overview (times are given in UT):

00:28 UT LBC SAMP vs XPA issue experienced yesterday was investigated. The RB_Science_xpa version was placed in the path as investigations continue. This version worked well last night.
LBC’s and MODS are up and ready.

00:52 UT Chris is topping up mods2r now. We will not have time for any calibrations before sunset.
00:54 UT The right primary mirror panicked while idle.

01:05 UT MODS 2 red vacuum better after evening fill:

01:07 UT Taking LBC biases. MODS2 simsnap inst config failed first time but took images, then timed out second time. Eventually took ok.

01:19 UT Sunset

SpecPhot - G191B2B (twilight-2:20)

01:58 UT Sending acquisition preset to G191B2B
MODS1:Computed Slit Alignment Offset:
  dX = -0.647 arcsec
  dY = 11.436 arcsec

MODS1 Offset Command:
  offsetxy -0.647 11.436 rel

Additional:
Computed Slit Alignment Offset:
  dX = 0.148 arcsec
  dY = -0.119 arcsec

MODS1 Offset Command:
  offsetxy 0.148 -0.119 rel

MODS2:
Computed Slit Alignment Offset:
  dX = 3.749 arcsec
  dY = 7.933 arcsec

MODS2 Offset Command:
  offsetxy 3.749 7.933 rel

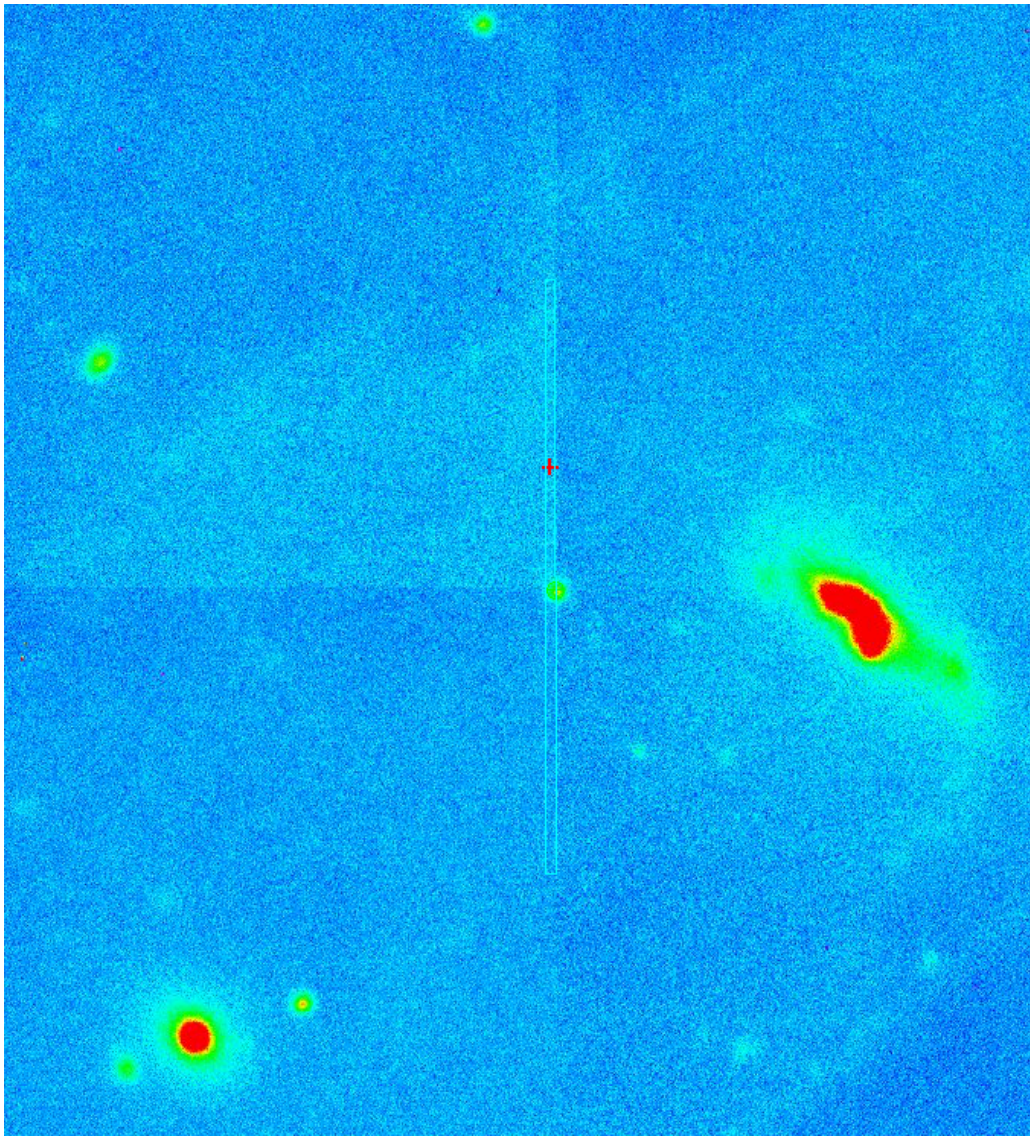
02:06 UT Starting science on G191B2B. DIMM reporting 1.12, guider reporting 1”

02:08 UT 12 degree evening twilight

OSU_SCAT

2024pjl (2:20-3:50)

02:20 UT Acquisition preset. PA was set to 30 degrees. We verified the GS for UT0:300 was suitable for UT02:30 and adjusted the PA from 36 to 30 for the slightly earlier start time. We also set the slit image to 20 seconds and acquisition images to 90s.



MODS1:
Computed Slit Alignment Offset:
  dX = -0.621 arcsec
  dY = 12.412 arcsec

MODS1 Offset Command:
  offsetxy -0.621 12.412 rel

MODS2:
Computed Slit Alignment Offset:
  dX = 3.928 arcsec
  dY = 6.841 arcsec

MODS2 Offset Command:

offsetxy 3.928 6.841 rel

02:36 UT Starting science on 2024pjl_LS.obs. Seeing 1.1” on average on the guiders.

02:36 UT 18 degree evening twilight

Downtime (User Err) (3:50-3:55)
03:50 UT Sending preset, oops wrong target

OSU_lmcscat

UGC4426_dw1 (3:55-5:37)

03:55 UT Sending preset to correct target. PA set to 212 and new GS selected to avoid vignetting.
MODS1:

Computed Slit Alignment Offset:
dX = -0.049 arcsec
dY = 11.632 arcsec

MODS1 Offset Command:
offsetxy -0.049 11.632 rel

MODS2:
Computed Slit Alignment Offset:
dX = 4.099 arcsec
dY = 8.459 arcsec

MODS2 Offset Command:
offsetxy 4.099 8.459 rel

04:07 UT Starting science on UGC4426_dw1. Seeing 0.96”

UGC4115_dw2 (5:37-7:25)

05:37 UT PA set to 50 to match the midpoint of this observation. New GS selected. Sending preset.

Computed Slit Alignment Offset:
dX = -1.036 arcsec
dY = 11.831 arcsec

MODS1 Offset Command:
offsetxy -1.036 11.831 rel

Computed Slit Alignment Offset:
dX = 3.390 arcsec
dY = 8.709 arcsec

MODS2 Offset Command:
offsetxy 3.390 8.709 rel

05:50 UT Starting science. We had a seeing bubble during acquisition up to 1.6” but seeing has calmed back down. This seeing bubble appears to have corresponded to a shift in wind direction and a drop in temperature. Conditions remain clear and seeing is back down to 1.05-1.2” on the guider, 1.3” on the DIMM.

06:34 UT Noted some “Primary mirror collimation position error” on the left side. This error appears benign and David can not trace the source. It stopped at 06:31:19.723
Seeing looks good on the sides holding around 0.9” on the left and 0.95” on the right.

07:01 UT Seeing is 0.86” on the DIMM and an average of 0.8” on the guiders. Clear conditions.

UM_XMDs_MODS

SBS1135 (7:25-11:41)

07:25 UT Sending acquisition script for SBS1135, Sent wrong PA but corrected on route. SBS1135_UT0730_V2.acq with PA -165. Note that the slit image is the same exp time as the source image at 60sec. Seeing is 0.7” ont he guiders.

MODS1:
Computed Slit Alignment Offset:

dX = -1.383 arcsec
dY = 12.342 arcsec

MODS1 Offset Command:
offsetxy -1.383 12.342 rel

MODS2:
Computed Slit Alignment Offset:
dX = 2.969 arcsec
dY = 8.693 arcsec

MODS2 Offset Command:
offsetxy 2.969 8.693 rel

07:42 UT Starting science. Seeing 0.8-0.9” on the guiders, 1” on teh DIMM. Conditions remain clear with low winds.

07:57 UT Seeing deteriorated a bit, 1.1-1.3” on the DIMM, 1-1.1” on the guiders.

08:13 UT Halpha on mods2r is super bright, around 56K. We are opting to keep the PI’s set exposure time.

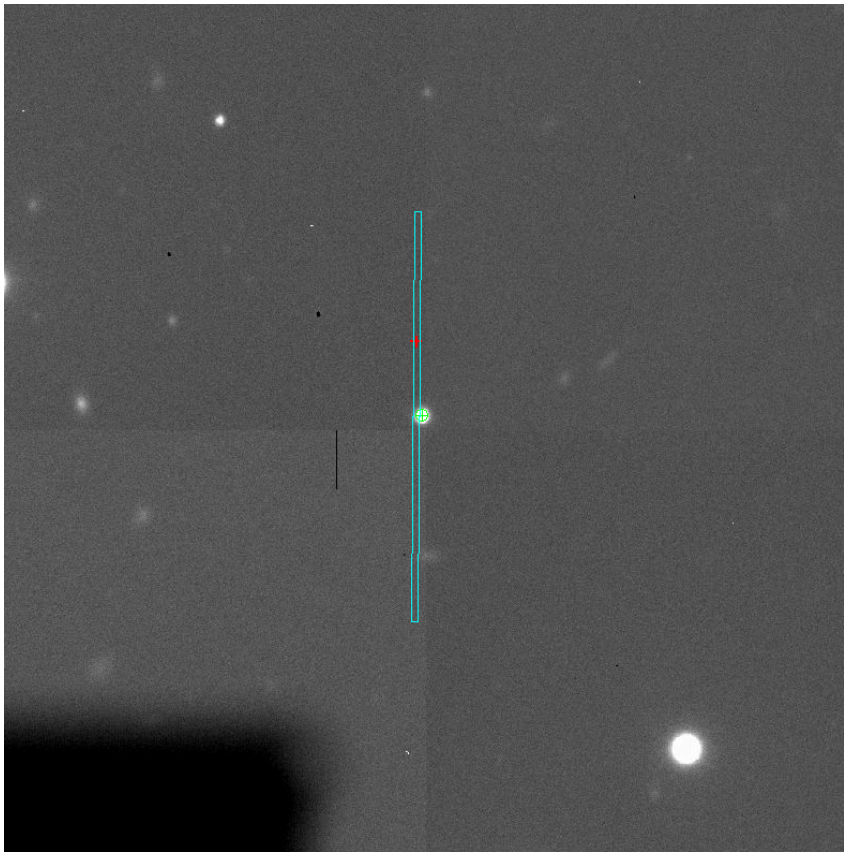
08:40 UT Seeing is deteriorating. We have bouts of 2” periodically

UVa_WDBD

08:51 UT Preset sent, huge slew.

08:55 UT Guide star outside FoV. Looking at script.

09:01 UT Scripts corrected and resent : acqBinoMODS sdss1411_09:00_V3.acq.txt, PA 135. Seeing looks better, 1.05” on the guiders.



MODS1:
Computed Slit Alignment Offset:
  dX = -0.743 arcsec
  dY = 10.780 arcsec

MODS1 Offset Command:
  offsetxy -0.743 10.780 rel

Additional: -0.11 in X on mods1 needed

MODS2:
Computed Slit Alignment Offset:
  dX = 3.446 arcsec
  dY = 7.811 arcsec

MODS2 Offset Command:
  offsetxy 3.446 7.811 rel

Kept image numbers the same for mods1 and mods2

MODS1 overshot, so sending +0.07” back. It looks like we overshot by the amount previously sent…

09:18 UT Starting science.

09:23 UT MODS2 failed to start

MODS2 scripts failed, but mods2 scripts continued without issue.
>> instconfig dual grating
** ERROR: Command 'instconfig dual grating' timed out after 90 seconds
** Abort, Retry, or Ignore? >
** sdss1411.obs aborted with errors at line 6 command 'instconfig dual grating'
   ... clearing instconfig state flags ...
DONE: refresh MODS2 InstConfig flag cleared

** Binocular MODS2 script aborting on fatal error.

Ran mods2 with execMODS --mods2, but mods2 is about 4 min behind mods1.

09:31 UT Seeing averaging 1” on the guiders, appears to be improving.

10:32 UT Seeing 0.75-0.9” ont he guiders and 0.9” on the DIMM. Conditions remain clear.

11:29 UT mods1r is almost a full exposure ahead of mods2b so I am taking an extra exposure.

OSU_XMD

11:41 UT Sending acquisition preset for SBS1437_UT1130.acq.

11:45 UT Pointing check needed.

SBS1437 Partial (11:48-11:59, 1218-12:57)

11:48 UT Resending preset to target. Seeing 0.7” on the guiders.

Red inst config timeout during acquisition on mods1. Retry successful.

MODS2:
Computed Slit Alignment Offset:
  dX = 3.064 arcsec
  dY = 8.524 arcsec

MODS2 Offset Command:
  offsetxy 3.064 8.524 rel

Technical Loss (11:59-12:18)

11:59 UT x2Go Mate robs1 locked up and froze session (IT9291). The session is unresponsive but is updating in real-time. Working to resolve. Glenn is coming online to assist.

12:18 UT Brought up everything on robs1, second session #51 after killing the mods Guis and moving them over. The alignment was partially completed to manually complete the long slit alignment of the SBS1437 source.

MODS1:
Computed Slit Alignment Offset:
  dX = -1.396 arcsec
  dY = 12.391 arcsec

MODS1 Offset Command:
  offsetxy -1.396 12.391 rel

Additional -0.8 on MODS2 needed for centering.

12:24 UT Starting science. Seeing is 0.8”

12:28 UT 18 degree morning twilight

12:54 UT Seeing has been good, around 0.8” but has just started to deteriorate to 1.1-1.2” on the guider.. We will not be able to complete this program with twilight quickly approaching. We will stop and readout at 12 degree.

12:57 UT 12 degree morning twilight

Images were read out approximately half way so instead of 1200sec:
mods1b.20250227.0038.fits SBS 1437+370 **606.9**
mods1r.20250227.0054.fits SBS 1437+370 **610.9**
mods2b.20250227.0037.fits SBS 1437+370 **613.6**
mods2r.20250227.0054.fits SBS 1437+370 **612.4**

13:45 UT sunrise

Calibrations:

MODS2 grslitflats_2.4_m2.txt: blue already acquiring data error. And things were in an odd state, red never took. Decided to rerun

Cal (1x1bin Dual Grating)	m2b	m1r	m2b	m2r	Notes
grslitflats_2.4	39-44	55-60	45-50	58-63	Mods1 IMCS lock fail, retry success
grslitflats_1.0	45-50	61-66	51-56	64-69	
grslitflats_5.0	51-56	67-69	57-62	70-72	
grlamps	57-59	70-72	63-65	73-75	