

# LBT Observing Log for 2023 Nov 2/3 (MST)

C19 Observer: Andrew Cardwell

Partner Observer(s): Peter Garnivich (ND, remote)

Telescope Operator: Josh Williams

## Plan:

We begin with LUCI2 mono. (LUCI1 is unavailable)

IRAS18305 HK spectra - LUCI2 only

Switch to MODS

ND\_snr until moonrise

Switch to LBC

OSU\_monitor (I-band)

Switch to PEPSI

OSU\_BHBinaries (multiple targets), OSU\_FGKHosts (4 targets)

## Observed and completed:

LUCI: UVa\_nirjets IRAS18305

MODS: ND\_snr slits 3 and 2

LBC: OSU\_monitor I-band NGC6946, NGC 628, NGC 672, NGC 925

PEPSI:

OSU\_BHBinaries:

J0053+2135, J0039+4315, J0142+1707, J0149+2452, J0118+5240, J0107+6036,

J0219+3646, J2353+8642, J0535+7510, J0205+5011, J0309+2353, J0252+4835,

J0625+8348, J0311+6112, J1101+4751, J0534+5708, J0445+3311, J0559-1154,

J0652-0558, J0700+2552, J0929+3718, J0519+4150

J0107+0749 not observed, elevation too low

OSU\_FGKHosts: HD 89744, HIP26653

## Summary:

Productive night, LUCI, LBC, MODS, and PEPSI.

## Issues:

DX problem recurred with PEPSI a few times, requiring resetting pointing before proceeding

## Overview (times are given in UT):

22:30 Daily telescope planning meeting / Handover.

00:01 Checking the LUCI2 fieldstop position.

00:25 That took longer than expected! I started with the N30 camera and the lower left cutout on the N30 fieldstop mask was off the detector. After bringing this in I switched to the N3.75 camera. Further corrections were required here.

00:29 Bringing up MODS.

00:34 **Sunset**. MODS is up, simsnap looks fine. Opening.

00:43 Initial pointing preset.

00:46 It's still too bright. Waiting.

01:07 Preset to **UVa\_nirjets IRAS18305\_LUCI2**. Acquisition begins with luci2.20231103.0051.

| Long Slit Result |         |     |          |    |
|------------------|---------|-----|----------|----|
| X-shift:         | -1.2947 | as  | -10.8800 | px |
| Y-shift:         | 3.1452  | as  | 26.4300  | px |
| Angle:           | 0.0000  | deg |          |    |

01:16 Starting science. luci2.0055-0074.

01:23 **12 degree twilight**.

01:27 DX guider reports 1.2".

01:44 Preset to Telluric, **HIP94149**.

01:51 Multiple script issues. The script was labeled LUCI2, but was actually bino. It also had the 1" slit for acquisition, and the correct 0.5" slit for science. Fixed.

01:52 **18 degree twilight**.

| Long Slit Result |          |     |          |    |
|------------------|----------|-----|----------|----|
| X-shift:         | -10.1614 | as  | -85.3900 | px |
| Y-shift:         | 6.6235   | as  | 55.6600  | px |
| Angle:           | 0.0000   | deg |          |    |

01:56 Starting science. Luci2.0078-0081.

02:02 **Reconfiguring to MODS**.

02:34 Preset to **ND\_snr slit\_3**. Acquisition begins with mods[1-2]r.20231103.0003.

02:41 Starting science. Blind offset was applied. Mods[1-2]b.0003-0006, mods[1|2]r.0006-0009. DIMM reports 0.8".

03:33 Preset to **ND\_snr slit\_2**. Acquisition begins with mods[1-2]r.20231103.0010.

03:44 Starting science. Blind offset was applied. Mods[1-2]b.0007-0010, mods[1|2]r.0013-0016. DIMM reports 0.9".

04:00 DIMM reports 0.9".

04:36 Preset to **Feige110**, specphot. Acquisition begins with mods[1-2]r.20231103.0017.

04:39 No GS found on DX. Josh is performing a pointing correction.

04:44 Returning to science target.

04:50 Star is offset to the left of the slit in mods2. Offset of +0.8" required in x.

04:54 Starting science. Mods[1-2]b.0011-0013, mods[1|2]r.0021-0023.

05:10 MODS2b somehow fell behind by a full exposure. Taking another exposure on the other arms to keep them busy.

05:14 **Reconfiguring to LBCs**

05:32 Copointing error on first preset.

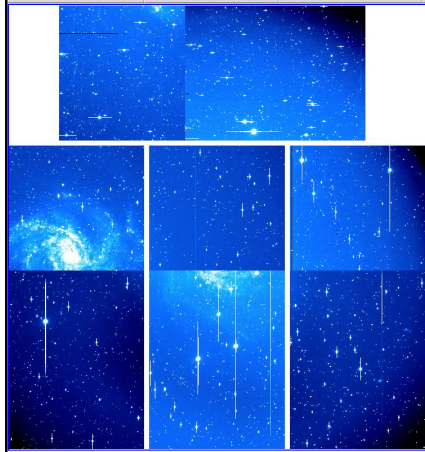
05:34 Preset to collimation field for **OSUmonI NGC6946**.

05:36 Running dohybrid. (TMS is not available.)

05:44 Collimated. Taking the copointing exposures.

05:49 Copointed. Sending science OB for NGC6946. Copointing exposures had IQ of 0.9" to 1", however the PSF quality isn't great.

05:58 Bad read on lbc, lbc.20231103.055134.fits. 0.9" in lbc exposure.



06:26 Preset to copointing field for **OSUmonI NGC628**.

06:29 Running dofpa, /X2.

06:36 Collimated, taking copointing exposures.

06:39 Copointed. Sending the science OB.

07:11 0.7" on lbcr, 0.0" on lbcb.

07:16 Preset to the copointing field for **OSUmonI NGC672**.

07:18 Starting collimation, dofpa, /X2.

07:24 Collimated. Running the copointing OB.

07:28 Copointed, sending the science OB. IQ in the copointing images was about 0.7" on both sides.

08:03 IQ largely held during the last observation, but there was degradation of PSF quality with time.

08:04 Preset to the copointing field for **OSUmonI NGC925**.

08:10 Collimated. Preset to science OB. No need to copoint as we are close to the elevation of the last target.

08:31 IQ is 0.7" on both sides.

08:34 **Reconfiguring to PEPSI.**

09:16 Preset to **OSU\_BHBinaries J0053+2135**.

09:18 Starting science.

09:26 Preset to **OSU\_BHBinaries J0039+4315**.

09:28 Starting science

09:36 Preset to **OSU\_BHBinaries J0142+1707**.

09:38 Starting science.

09:44 Preset to **OSU\_BHBinaries J0149+2452**.

09:45 Starting science.

09:52 Preset to **OSU\_BHBinaries J0118+5240**.

09:54 Starting science.

10:00 Preset to **OSU\_BHBinaries J0107+6036**.

10:02 Starting science.

10:07 Preset to **OSU\_BHBinaries J0219+3646**.

10:09 Starting science.

10:19 Preset to **OSU\_BHBinaries J2353+8642**.

10:22 Starting science.

10:25 Preset to **OSU\_BHBinaries J0535+7510**.

10:28 Starting science.

10:34 Preset to **OSU\_BHBinaries J0205+5011**.

10:38 Starting science.

10:44 Preset to **OSU\_BHBinaries J0309+2353**.

10:46 Starting science.

10:50 Preset to **OSU\_BHBinaries J0252+4835**.

10:52 Starting science.

10:56 Preset to **OSU\_BHBinaries J0625+8348**.

10:59 Different targets acquired on each side. Josh is performing a pointing check.

11:03 Returning to the science target.

11:04 Starting science.

11:09 Preset to **OSU\_BHBinaries J0311+6112**.

11:12 Starting science.

11:16 Preset to **OSU\_BHBinaries J1101+4751**.

11:19 Starting science.

11:24 Preset to **OSU\_BHBinaries J0534+5708**.

11:26 Starting science.

11:30 Preset to **OSU\_BHBinaries J0445+3311**

11:33 Starting science.

11:39 Preset to **OSU\_BHBinaries J0559-1154**.

11:42 Starting science.

11:49 Preset to **OSU\_BHBinaries J0652-0558**.

11:50 Starting science.

11:53 Preset to **OSU\_BHBinaries J0700+2552**.

11:55 GS not found on DX. Pointing check required.

11:58 Returning to science source.

12:01 Starting science.

12:07 Preset to **OSU\_BHBinaries J0929+3718**.

12:11 Starting science.

12:14 **18 degree twilight**.

12:15 Preset to **OSU\_BHBinaries J0519+4150**.

12:19 Different targets picked up on each side. Pointing check required.

12:22 Returning to the science target.

12:24 Starting science.

12:28 Preset to **OSU\_FGKHosts HD 89744**.

12:31 Starting science.

12:32 GS lost on DX, resending the preset.

12:33 No GS found on SX, preset failed. Pointing check required.

12:38 Returned to science target. GS found on both sides, then jumped off on SX!

12:43 **12 degree twilight**.

12:46 Starting science. Even with ND3 in we are having saturation issues with the guider / WFS.

12:48 Preset to **OSU\_FGKHosts HIP 26653**.

12:51 Starting science.

12:54 **End of observation**, closing the enclosure. Starting PEPSI calibrations.

13:07 Taking MODS and LBC biases. Also LUCI cals.

13:24 LBCs powered off, LUCIs safed.

13:33 **Sunrise**.

2949272716964862720 J0651-1329 06:51:43.19 -13:29:50.2 13.0 G5III D300/CD3/CD5 900  
High 1 100 -2:00 -- 00:50 0.265 2.737

3381217539262727936 J0650+2433 06:50:24.48 24:33:12.92 12.58 G8III D300/CD3/CD5  
500 High 1 100 -04:00 -- -00:50 0.358 -1.542

3383631280821336448 J0625+2418 06:25:12.75 24:18:10.69 12.33 G5III D300/CD3/CD5  
400 High 1 100 -04:40 -- -01:15 1.218 -1.100

437858962205844864 J0252+4835 02:52:43.53 48:35:58.8 12.5 F0V D300/CD3/CD5 100  
Medium 1 50 -5:15--05:30 2.179 -2.744

3101092694112117248 J0652-0558 06:52:55.69 -05:58:13.3 12.4 F1V D300/CD3/CD5 100  
Medium 1 50 -3:15--01:30 -0.694 -2.056

1905002271351786112 J2241+3820 22:41:25.05 38:20:14.6 12.8 F8V D300/CD3/CD5 200  
Medium 1 50 -2:00--04:45 -1.214 -4.871

1792673655194608256 J2146+2054 21:46:36.09 20:54:07.6 12.7 F1V D300/CD3/CD5 200  
Medium 1 50 -1:15--04:30 7.456 1.221

3394539634461265792 J0518+1737 05:18:44.56 17:37:38.6 12.6 F3V D300/CD3/CD5 200  
Medium 1 50 -4:00--03:00 0.084 -2.396

195971111380071040 J0542+4248 05:42:37.70 42:48:40.1 12.4 F1V D300/CD3/CD5 100  
Medium 1 50 -5:15--02:45 -1.936 -0.763

1849412196103825280 J2140+2943 21:40:15.39 29:43:39.2 12.3 F2V D300/CD3/CD5 100  
Medium 1 50 -1:00--04:45 3.032 -7.521

1943955838022142592 J2346+5024 23:46:58.48 50:24:20.4 12.5 F2V D300/CD3/CD5 200  
Medium 1 50 -3:15--05:30 0.829 -2.039

426402227150592000 J0107+6036 01:07:35.58 60:36:05.9 12.9 F4V D300/CD3/CD5 200  
Medium 1 50 -4:30--05:15 2.542 -6.767

4500054118987175808 J1751+1442 17:51:22.12 14:42:57.8 12.8 F9V D300/CD3/CD5 200  
Medium 1 50 02:45--04:30 -4.486 -29.76

1732906947591552768 J2108+0422 21:08:08.33 04:22:29.8 12.9 K1V D300/CD3/CD5 200  
Medium 1 50 00:30--03:15 -46.974 -46.961

1980411451728465024 J2200+5205 22:00:36.35 52:05:31.6 12.5 G5III D300/CD3/CD5 200  
Medium 1 50 -1:30--05:15 4.533 -1.404

2855079479952580224 J2355+2835 23:55:55.02 28:35:05.3 12.1 K0V D300/CD3/CD5 100  
Medium 1 50 -3:15--04:30 -29.033 -31.297

1831384362936121472 J2032+2405 20:32:15.48 24:05:59.8 12.4 F7V D300/CD3/CD5 100  
Medium 1 50 00:00--04:45 -2.253 -7.677

358483499811719040 J0205+5011 02:05:18.07 50:11:29.8 12.8 K1V D300/CD3/CD5 200  
Medium 1 50 -5:30--05:15 23.145 -69.389  
410154159702485888 J0118+5240 01:18:23.63 52:40:55.3 12.8 G8V D300/CD3/CD5 200  
Medium 1 50 -4:45--05:00 10.315 6.944  
463223016134034176 J0311+6112 03:11:12.68 61:12:16.7 12.7 K0V D300/CD3/CD5 200  
Medium 1 50 -5:45--05:15 -3.273 2.05  
110849639873977728 J0309+2353 03:09:05.01 23:53:03.6 13.0 F8V D300/CD3/CD5 200  
Medium 1 50 -4:30--04:15 7.727 -4.243  
195112255361575552 J0519+4150 05:19:36.54 41:50:19.2 12.6 G1V D300/CD3/CD5 200  
Medium 1 50 -5:00--03:00 10.173 -67.735  
4520743938539097088 J1905+2215 19:05:43.04 22:15:58.5 12.1 F2V D300/CD3/CD5 100  
Medium 1 50 01:30--04:15 -0.099 7.898  
291299525421744384 J0149+2452 01:49:31.76 24:52:39.0 12.7 K0V D300/CD3/CD5 200  
Medium 1 50 -4:30--04:30 -2.026 -32.557  
2822772117477208320 J2345+1852 23:45:55.25 18:52:39.2 12.5 K0V D300/CD3/CD5 200  
Medium 1 50 -3:15--04:30 -35.05 -18.971  
269223741414039808 J0534+5708 05:34:09.96 57:08:29.3 12.1 K0V D300/CD3/CD5 100  
Medium 1 50 -5:15--02:45 5.267 -0.799  
2067788919214102528 J2030+4048 20:30:35.62 40:48:09.0 12.7 K0V D300/CD3/CD5 200  
Medium 1 50 00:00--04:45 21.516 14.607  
2297920276319107712 J2126+8205 21:26:26.15 82:05:13.1 11.7 K0V D300/CD3/CD5 100  
Medium 1 50 00:45--07:00 18.722 14.259  
799205835109368448 J0929+3718 09:29:21.33 37:18:00.9 12.8 K2V D300/CD3/CD5 200  
Medium 1 50 -5:00---1:00 7.041 -12.708  
2301316495938325888 J2353+8642 23:53:51.45 86:42:31.1 12.0 G5III D300/CD3/CD5 100  
Medium 1 50 -3:15--08:30 -3.328 6.167  
1149849576494977536 J0625+8348 06:25:35.94 83:48:52.0 12.6 K4V D300/CD3/CD5 200  
Medium 1 50 -8:00--01:45 -134.816 -275.781  
4301142088901703168 J1945+0831 19:45:25.52 08:31:24.1 12.4 K0V D300/CD3/CD5 200  
Medium 1 50 00:45--03:30 12.41 -32.68  
2577853531566949248 J0107+0749 01:07:35.92 07:49:01.3 12.2 K0V D300/CD3/CD5 100  
Medium 1 50 -3:45--04:15 76.256 -41.418  
331166893630242304 J0219+3646 02:19:03.79 36:46:36.8 13.1 K3V D300/CD3/CD5 300  
Medium 1 50 -5:00--05:00 -24.81 -12.539  
831609885893131520 J1101+4751 11:01:31.37 47:51:04.1 12.4 K2V D300/CD3/CD5 200  
Medium 1 50 -5:30--2:45 123.793 -489.848  
91580045759824384 J0142+1707 01:42:58.08 17:07:57.5 12.5 G9V D300/CD3/CD5 200  
Medium 1 50 -4:15--03:45 307.422 -380.025  
2801946748770715520 J0053+2135 00:53:51.82 21:35:33.4 12.9 K4V D300/CD3/CD5 300  
Medium 1 50 -4:15--04:30 117.938 -53.596  
492116360644495104 J0308+6548 03:08:07.78 65:48:05.2 13.1 K5V D300/CD3/CD5 300  
Medium 1 50 -5:45--05:15 30.652 -102.196  
3381824199099388928 J0700+2552 07:00:19.88 25:52:12.7 13.0 K5V D300/CD3/CD5 300  
Medium 1 50 -4:45--01:15 -36.408 -51.701

387633236689336960 J0039+4315 00:39:37.11 43:15:38.4 13.1 K5V D300/CD3/CD5 300  
Medium 1 50 -4:00--04:45 40.971 18.519  
2998464656730762368 J0559-1154 05:59:24.36 -11:54:09.8 13.1 K5V D300/CD3/CD5 300  
Medium 1 50 -2:45--02:30 -7.362 80.275  
503037569120988288 J0535+7510 05:35:42.04 75:10:17.6 12.9 K6V D300/CD3/CD5 300  
Medium 1 50 -6:15--02:45 36.814 -179.59  
161496439688382336 J0445+3311 04:45:36.46 33:11:34.6 12.8 K7V D300/CD3/CD5 300  
Medium 1 50 -4:30--03:30 -10.554 -34.713

|            |             |              |       |        |     |      |        |
|------------|-------------|--------------|-------|--------|-----|------|--------|
| HD 89744   | 10:22:10.56 | +41:13:46.30 | 5.721 | F7.V   |     | D200 | CD III |
| 00:00:15   | CDVI        | 1x00:00:07   |       |        | 200 |      |        |
| G171-58    | 00:25:08.75 | +48:02:50.65 | 7.55  | F8     |     | D200 | CD III |
| 00:01:00   | CDVI        | 1x00:00:30   |       |        | 200 |      |        |
| HIP 26653  | 05:39:52.34 | +52:53:50.95 | 7.82  | G5V    |     | D200 | CD III |
| 00:01:30   | CDVI        | 1x00:00:35   |       |        | 200 |      |        |
| HD 51400   | 06:57:49.99 | +16:34:42.89 | 8.35  | G5     |     | D200 | CD III |
| 00:02:50   | CDVI        | 1x00:01:00   |       |        | 200 |      |        |
| HD 8291    | 01:22:18.72 | +03:30:47.26 | 8.60  | G5V    |     | D200 | CD III |
| 00:03:00   | CDVI        | 1x00:01:10   |       |        | 200 |      |        |
| HD 16270   | 02:36:00.77 | -23:31:16.76 | 8.32  | K3.5Vk |     | D200 | CD III |
| 00:03:00   | CDVI        | 2x00:00:30   |       |        | 200 |      |        |
| BD+00 5017 | 23:35:00.27 | +01:36:19.43 | 9.62  | K7     |     | D200 | CD III |
| 00:12:50   | CDVI        | 6x00:01:20   |       |        | 200 |      |        |
| BD+24 4329 | 21:08:01.90 | +25:10:34.44 | 9.81  | K6V    |     | D200 | CD III |
| 00:13:33   | CDVI        | 6x00:01:20   |       |        | 200 |      |        |
| BD+01 299  | 01:40:17.96 | +01:51:21.42 | 10.1  | K8V    |     | D200 | CD III |
| 00:20:00   | CDVI        | 4:00:04:00   |       |        | 200 |      |        |
| HD 37216   | 05:39:52.34 | +52:53:50.95 | 7.63  | G5V    |     | D200 | CD III |
| 00:01:10   | CDVI        | 1x00:00:30   |       |        | 200 |      |        |