Night Log for UT 20230708

Partner observers: Donald Terndrup, OSU, Robert Taylor
Service Observer: Jenny Power
Telescope Operator: Steve Allanson

Plan:

Start with MODS, end with LUCI.

Summary:

Irregular seeing at first, with gradual improvement through the night.

Calibrations:
Dual Grating Standard GD153
ND_blugals - j1407
OSU_XMDs_MODS - WD1919
OSU_XMDs_MODS - WD1713
OSU_XMDs_MODS - WD1911
OSU_XMDs_MODS - WD2117
OSU_XMDs_MODS - WD2126
UM_JulyCNe_Luc1 - V1405Cas
Calibrations:

Issues:

Telescope nudges continue to be an issue:

```
[lbto@obs1 ObserverSupport]$ ./nudgepredict.py -d 20230708 -e 12 -b 9
./nudgepredict.py script version of 31-May-2023
5195577599.0  end MJD sec for the end of this UT day
60133  end MJD day
5195534400.0  end MJD sec corrected for endhour  12.0
5195502000.0  start MJD sec using backhour  9.0
20230708  is the day to be plotted.
3.0  start hour using backhour  9.0  end hour  12.0
These UT start times will have a nudge if the telescope is tracking.
```

03:26:18
04:00:26
04:34:34
05:08:42
05:42:50
06:16:58
06:51:06
07:25:14
07:59:22
08:33:30
09:07:38
09:41:46
10:15:54
10:50:02
11:24:10
11:58:18

Overview:

1:45 Steve has configured and checked out the telescope, authorized MODS MODS

1:15 SimSnap done with MODS. Steve is executing the test preset.

1:28 Taking some cals

Calibrations:

MODS 8K bias:
mods[½]{r/b}.20230708.0003-0007

MODS 3K Bias:
mods[½]{r/b}.20230708.0008-0012

From MODS library v10.25:
MODS Dual Grating 1” Long Slit Flats
mods[½]b.20230708.0013-18
Mods[½]r.20230708.0013-18

MODS Dual Grating 1.2” Long Slit Flats
mods[½]b.20230708.0019-24
mods[½]r.20230708.0019-24

1:34 Checking out LUCI’s. Taking some test images and aligning field stops.

We discovered at opening that the approproate OBs for tonight had not been uploaded. The OB's appear to have been last updated Jun 9th. We contacted Chris Kochanek by phone and obtained the new OBs and put them in the directory July_OBs. This directory has everything except the OSU_Monitor scripts and finding charts; we can use the ones previously there because they are good for this run also.

Moved July_OBs to /lbt/data/old_homes/osurc/July_OBs then simlinked on both OBS1 and OBS2
ln -sib /lbt/data/old_homes/osurc/July_OBs/ JulyOBs

Events tonight:

2:34 Steve is opening the chamber

2:36 Sunset

Dual Grating Standard GD153

3:09 Preset to GD153 for acquisition. SOme clouds to the south, mostly clear overhead. Seeing ~0.9" on the guiders.

MODS1:
Computed Slit Alignment Offset:
  dX = -1.005 arcsec
  dY = 12.874 arcsec

MODS1 Offset Command:
  offsetxy -1.005 12.874 rel

MODS2:
Computed Slit Alignment Offset:
  dX = 3.269 arcsec
  dY = 8.924 arcsec

MODS2 Offset Command:
  offsetxy 3.269 8.924 rel
Additional offset:
MODS2 Offset Command:
  offsetxy 0.497 -0.022 rel
Waiting for twilight to start science.

3:33 12 degree evening twilight. Starting script for GD153 Dual grating science. Seeing is 0.8-0.9” on the guiders. Will do the .obs scripts twice since maybe the first image had a bright background.

3:44 Readout delay mods2b
mods[½]b.20230708.0025-27
Mods[½]r.20230708.0028-30

3:51 Seeing is ~1.2”, mostly clear.

4:05 mods2b readout delay.

ND_blugals - j1407

4:07 Sending preset to j1407.acq.
4:09 Sent to j1319 by accident. Cancelled and resent to correct source.
4:10 18 degree evening twilight

MODS2 does not have an IMCS lock but is still taking acq images.
MODS1 is in an odd state saying that it can not expose because it is already exposing. It took the source image but not the mask. Resent MODS1 while acquiring MODS2:

MODS2:
Computed Slit Alignment Offset:
  dX = 3.505 arcsec
  dY = 8.644 arcsec

MODS2 Offset Command:
  offsetxy 3.505 8.644 rel

Additional -0.2 in X

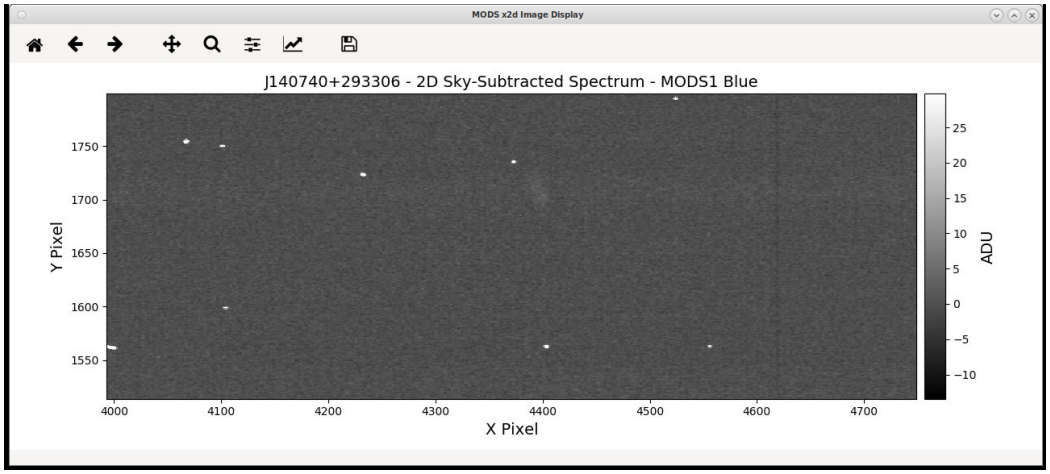
MODS1:
Computed Slit Alignment Offset:
  dX = -0.683 arcsec
  dY = 11.266 arcsec

MODS1 Offset Command:
  offsetxy -0.683 11.266 rel
Additional -0.12 in X

4:30 Starting j1407. Seeing is 0.7-0.9” on the guider. Mostly clear.

mods1b.20230708.0031-34
Mods1r.20230708.0039-42
mods2b.20230708.0031-34
Mods2r.20230708.0038-41

5:10 Seeing is bouncing between 0.9-1.2”, clear. Emission line in the blue around 4400A (excuse the poor stretch)



OSU_XMDs_MODS - WD1919

5:21 Sending preset to WD1919. Big azimuth move.
MODS1:
Computed Slit Alignment Offset:
  dX = -0.214 arcsec
  dY = 11.514 arcsec

MODS1 Offset Command:
  offsetxy -0.214 11.514 rel
Additional:
Computed Slit Alignment Offset:
  dX = -0.620 arcsec
  dY = -0.117 arcsec

MODS2:
Computed Slit Alignment Offset:
  dX = 3.625 arcsec
  dY = 8.091 arcsec

MODS2 Offset Command:

offsetxy 3.625 8.091 rel

MODS1 images took a long time to show up although said they were completed and readout on MODS dashboard and file incremented.

5:36 Starting science on WD1919. Seein 0.85-1” on the guiders. Clear.
mods1b.20230708.0035-37
Mods1r.20230708.0046-48
mods2b.20230708.0035-37
Mods2r.20230708.0044-46

OSU_XMDs_MODS - WD1713

5:55 Preset to WD1713

MODS1:
Computed Slit Alignment Offset:
  dX = -0.331 arcsec
  dY = 11.749 arcsec

MODS1 Offset Command:
  offsetxy -0.331 11.749 rel
Additional:
MODS1 Offset Command:
  offsetxy -0.465 0.097 rel

MODS2:
Computed Slit Alignment Offset:
  dX = 3.187 arcsec
  dY = 8.225 arcsec

MODS2 Offset Command:
  offsetxy 3.187 8.225 rel
Additional:
MODS2 Offset Command:
  offsetxy 0.194 -0.254 rel

6:02 Starting science. IMCS lock failed on both sides, mods2 succeeded on retry. MODS1 succeeded after quite some time.
mods1b.20230708.0038-40
Mods1r.20230708.0052-54

mods2b.20230708.0038-40
Mods2r.20230708.0050-52

6:13 Seeing 1.1-1.2” on the guiders, 1.2” on the DIMM. Clear

6:15 Restarting modsDisp. Mods1 red images are not updating in mods1 disp although they are appearing in newdata or are taking a very long time to appear.

6:19 MODS1 red readout delay.

OSU_XMDs_MODS - WD1911

6:23 Preset to WD1911

MODS1
Computed Slit Alignment Offset:
  dX = -0.092 arcsec
  dY = 11.610 arcsec

MODS1 Offset Command:
  offsetxy -0.092 11.610 rel
Additional
MODS1 Offset Command:
  offsetxy -0.900 -0.136 rel

MODS2:
Computed Slit Alignment Offset:
  dX = 3.528 arcsec
  dY = 7.659 arcsec

MODS2 Offset Command:
  offsetxy 3.528 7.659 rel

6:32 Starting science on WD1911 Seeing 1.1-1.25” on the guiders, clear. 1.44” on the DIMM
6:33 Moon rise, illuminated fraction 0.582.

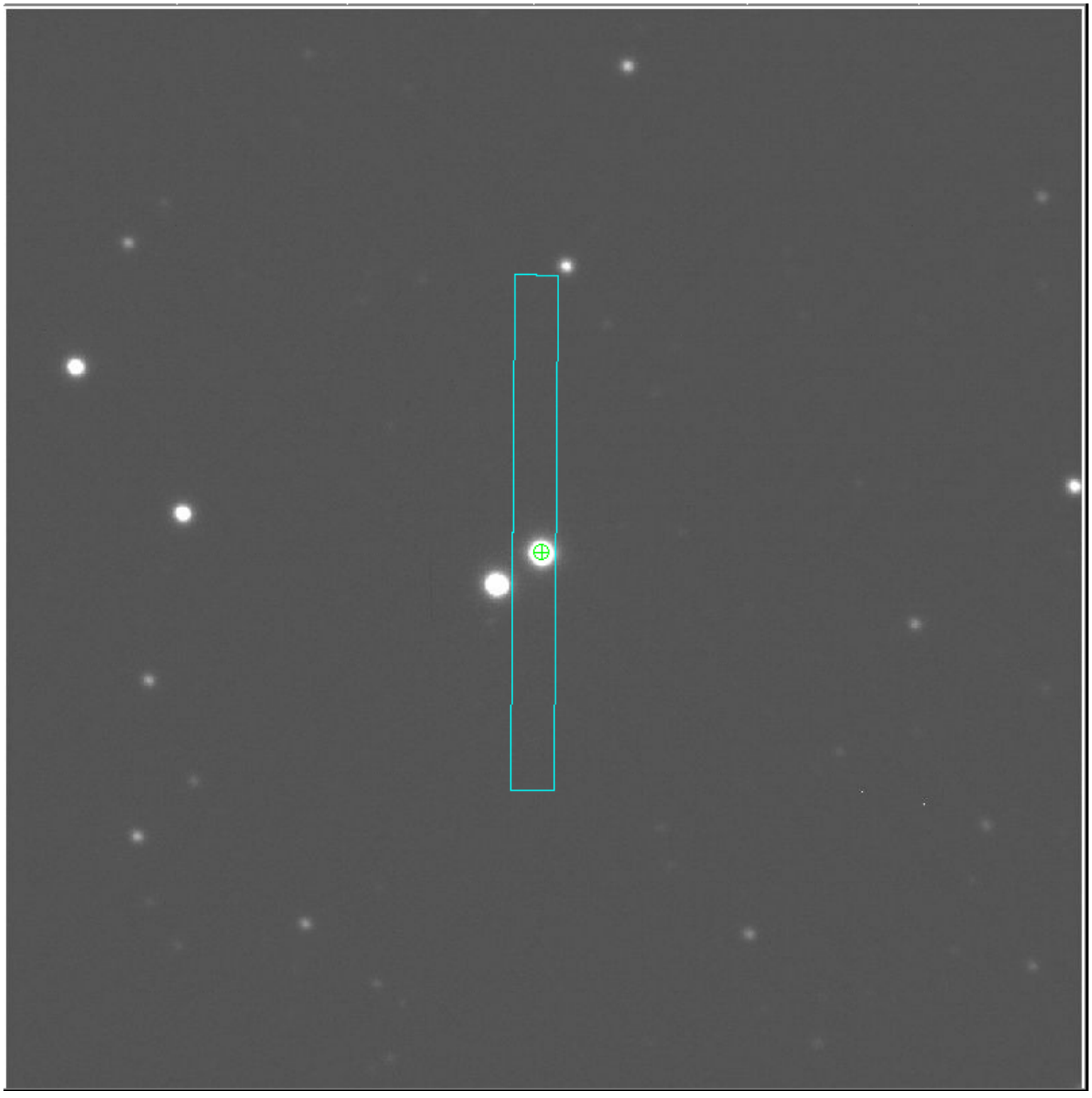
mods1b.20230708.0041-43
Mods1r.20230708.0058-60
mods2b.20230708.0041-43
Mods2r.20230708.0057-59

6:40 Seeing appears to be deteriorating 1.05-1.4” on the guider, 1.34” on teh DIMM.

OSU_XMDs_MODS - WD2117

6:50 Preset to WD2117. Seeing is variable, 1.0-1.7”

Two targets of comparable brightness: [**Note added**: observers picked the correct star; the wrong star at left at ~8 o’clock has the little faint companion visible at 6-o’clock].



MODS1:
Computed Slit Alignment Offset:

dX = -1.305 arcsec
dY = 13.667 arcsec

MODS1 Offset Command:
offsetxy -1.305 13.667 rel

Adjustment
MODS1 Offset Command:
offsetxy -0.284 -0.109 rel
Overshot:
MODS1 Offset Command:
offsetxy 0.383 0.084 rel

MODS2:
Computed Slit Alignment Offset:
dX = 2.873 arcsec
dY = 9.572 arcsec

MODS2 Offset Command:
offsetxy 2.873 9.572 rel

Adjustment:
MODS2 Offset Command:
offsetxy 0.605 0.166 rel

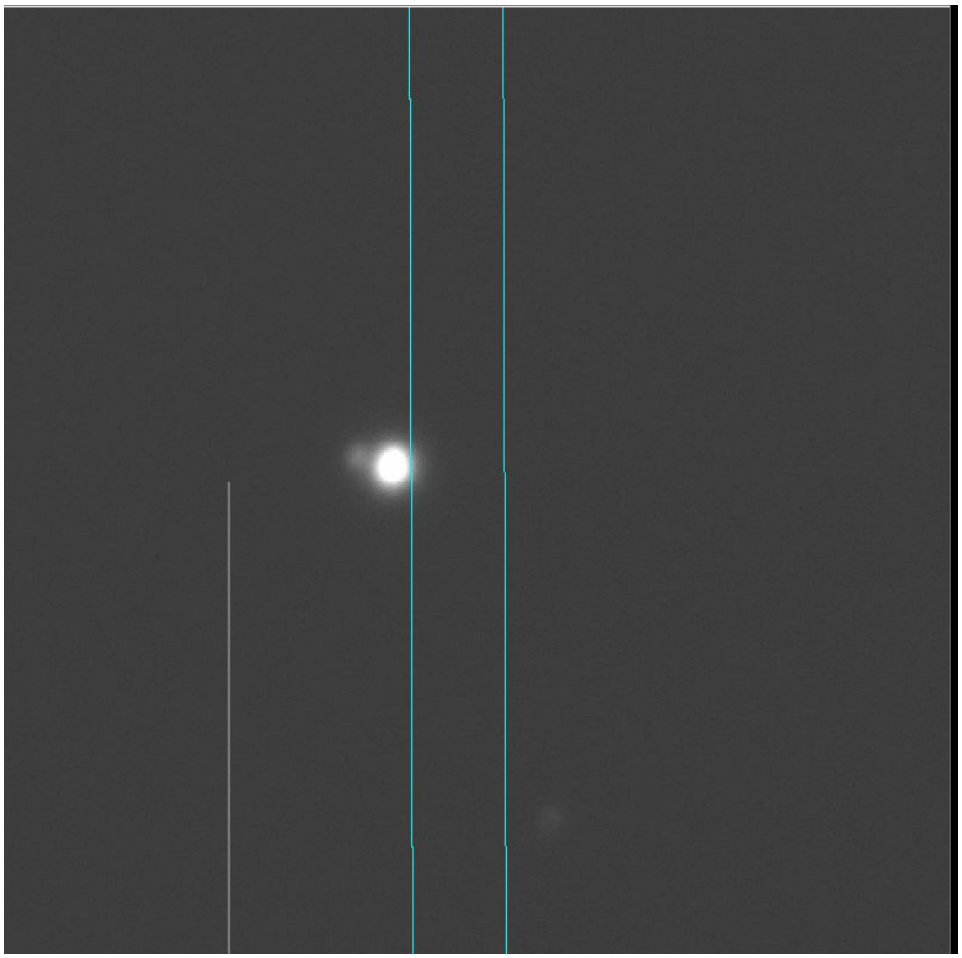
7:05 Starting science on WD2117
mods1b.20230708.0044-46
Mods1r.20230708.0065-67
mods2b.20230708.0044-46
Mods2r.20230708.0063-65

7:08 Seeing 1.44” on the DIMM, 1.0-1.3” on the DIMM, clear

OSU_XMDs_MODS - WD2126

7:19 Preset to WD2126
7:23 MODS1 red inst config time out

Target is a binary: [**Note added**: apparently the WD’s proper motion moved it closer to a star that used to be farther away, rats! Will remove this target from future programs]



Lots of image motion between acquisition images making centering tricky.

MODS1
Computed Slit Alignment Offset:
  dX = -0.636 arcsec
  dY = 11.311 arcsec

MODS1 Offset Command:
  offsetxy -0.636 11.311 rel
Adjust:

Computed Slit Alignment Offset:
  dX = 0.155 arcsec
  dY = -0.031 arcsec

MODS2:
Computed Slit Alignment Offset:
  dX = 3.127 arcsec
  dY = 8.634 arcsec

MODS2 Offset Command:
  offsetxy 3.127 8.634 rel
Adjust:
MODS2 Offset Command:
  offsetxy 0.208 -0.899 rel
MODS2 Offset Command:
  offsetxy 0.227 0.212 rel

7:33 Starting science on WD2126

mods1b.20230708.0047-49
Mods1r.20230708.0071-73
mods2b.20230708.0047-49
Mods2r.20230708.0072-74

7:38 Seeing is 1.3-1.9” on the guider, 2” on the DIMM

7:45 Readout delay on mods1 red.

7:48 Reconfiguring to LUCI1. Moving the 0.75” longslit into the FPU while we are at zenith and reconfiguring.

UM_JulyCNe_Luc1 - V1405Cas

8:00 Steve pointed near science target and collimated

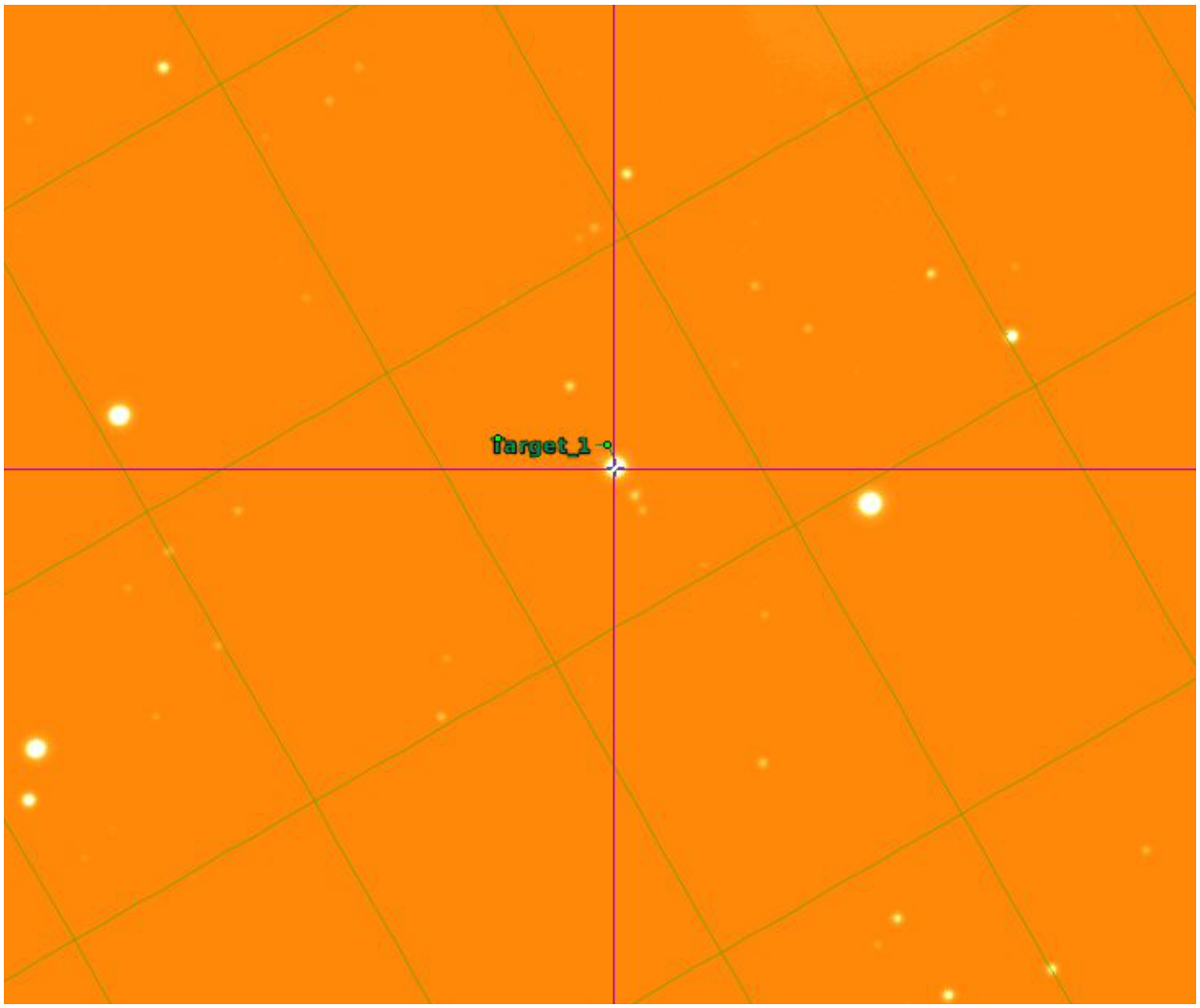
8:04 Sending script for V1405Cas. Seeing is 0.83” on the guider. Clear

Long Slit Result

X-shift:	0.0990	as	0.8400	px
Y-shift:	0.0188	as	0.1600	px
Angle:	0.0000	deg		

reset LS | calculate | send

Poor finder. THe finder should be in a comparable band to the acquisition. But we were able to verify the field with confidence.



Additional 0.1 offset overshot, -0.05 perfectly aligned.

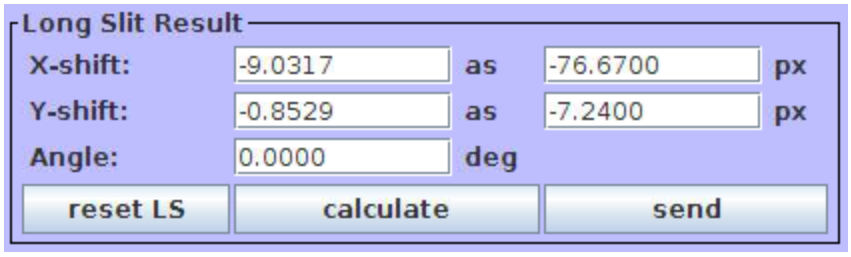
8:21 Starting science on V1405Cas
HKspec: luci1.20230708.0014-33
Very bright!, Bright emission line around 2-microns 43K peak counts.

8:41 Seeing 0.93” on the guider. Clear.

9:00 Seeing is 0.6-0.75” on the guider.

9:09 Starting zJsec on V1405Cas, Seeing 0.74-0.84” on the guider.
zJspec:luci1.20230708.0034-53

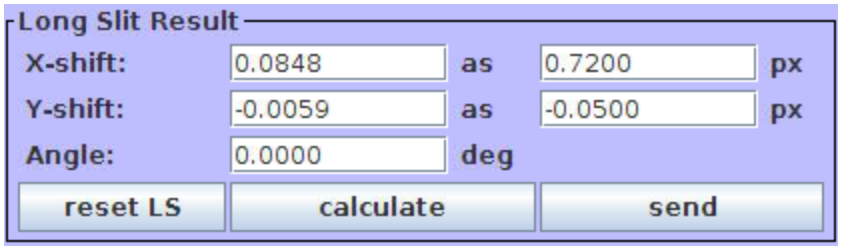
9:58 Slewing to Telluric: HD223580



10:03 Starting science on telluric for V1405Cas: HD223580
HK Spec: luci1.20230708.0057-64

10:09 starting zJspec. Seeing 0.65” on the guider.
zJspec: luci1.20230708.0065-72

10:16 Preset back to primary science V1405 Cas
Rerunning on V1405 Cas again since we are a bit ahead and have about 20 min to 18 degree, and an hour to 12 degree. There were 2 very bright emission lines that were about 45K counts in good seeing conditions. We are cutting the exposure time down to 90sec and adjusting the dither to an ACBD pattern to mitigate potential impacts from persistence.
Used the OT provided but this appears to have had a different guide star



10:25 Starting science on V1405Cas with 90sec exposure time and ACBD dither pattern.
Seeing is 0.58” on the guider. Obtaining 14 exposures in HKSpec
HKspec luci1.20230708.0077-90

10:39 18 degree morning twilight

10:43 Seeing is 0.59” on the guider. Clear

10:55 Starting zJspec, 90sec ACBD pattern. Seeing 0.77” on the guider.
zJspec luci1.20230708.0091-104

11:16 12 degree morning twilight

11:24 Complete V1405 Cas, safed luci1 and steve is closing us up.

12:14 Sunrise

Calibrations:

11:40 Starting some MODS and LUCI calibrations

From the MODS library v10.25

MODS 5” Longslit Flats
mods1b.20230708.0050-55
Mods1r.20230708.0074-76
mods2b.20230708.0050-55
Mods2r.20230708.0075-77

MODS Dual Grating Slitless Pixel Flats
mods1b.20230708.0056-65
Mods1r.20230708.0077-81
mods2b.20230708.0056-65
Mods2r.20230708.0078-82

MODS Dual Grating Arcs
mods1b.20230708.0066-68
Mods1r.20230708.0082-84
mods2b.20230708.0066-68
Mods2r.20230708.0083-85

LUCI1 N1.8 G200 @1.17 zJspec 0.75” Longslit Arcs and Flats
zJspec luci1.20230708.0105-122

LUCI1 N1.8 G200 @1.93 HKspec 0.75” Longslit Arcs and Flats
HKspec luci1.20230708.0123-140

LUCI1 Darks to be completed another day: 90s MER to be added