C19 Observer: Andrew Cardwell (From obs1, x2go session 50).
Partner Observer(s): Anusha Pai (OSU), Peter Garnavich
Telescope Operator: Josh Williams.

Plan: We start with MODS.

Summary: High winds and humidity prevented observation for most of the night. One target Mrk71, was completed. KKH46 was also attempted, but issues finding the GS, and then the very low surface brightness of the target prevented it from being acquired and observed.

Issues: LUCI1 camera wheel error (IT 8183)
LUCI2 Geirs choked and needed to be restarted. (IT8768)
SX GS could not be found (IT 8772)

Weather:High winds, high humidity.

Overview (times are given in UT):

00:04 Waking MODS, starting calibrations. Winds are Currently well over the shutdown limit, it is unlikely that we will open at sunset.

00:06 Running simSnap.

00:15 Looks good! MODS dual grating 0.8” slit flats. Mods[1|2][b|r].20221114.0003-0008.
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00:24 Sunset. Remaining closed due to high winds.

00:42 MODS dual grating 1.0” slit flats. Mods[1|2][b|r].20221114.0009-0014.

01:14 12 degree twilight.

01:28 MODS dual grating 1.2” slit flats. Mods[1|2][b|r].20221114.0015-0020.

01:43 18 degree twilight.

01:49 MODS dual grating 2.4” slit flats. Mods[1|2][b|r].20221114.0021-0026.

02:18 MODS dual grating 5.0” slit flats. Mods[1|2][b|r].20221114.0027 - mods[1|2]b.20221114.0032, mods[1|2]r.20221114.0029.

03:00 MODS dual grating slitless flats, mods[1|2]b.20221114.0033-0042, mods[1|2]r.20221114.0030-0034.

03:37 96% humidity, -8.5C. We expect the enclosure to ice up quickly. Taking MODS imaging lamp flats, mods[1|2]b.20221114.0043-0053, mods[1|2]r.20221114.0035-0049.

04:17 100% humidity, -8.6C, winds still gusting over the shutdown limits.

06:11 Wind is still over the shutdown limits, humidity 100%, outside temp -9.5C.

06:57 Reconfiguring to LUCI bino, putting MODS to sleep. The humidity is down to 83%, but we have ice on the allsky camera and the wind is still gusting over the shutdown limit. If we can open later LUCI will be needed.

07:00 Iniit_all on both LUCIs.

07:20 Field stops aligned on both LUCIs.

07:28 The humidity has dropped to 51%, and the ice has cleared from the allsky camera, however the wind is still over shutdown limits.

09:39 Conditions have improved enough to open.

09:51 We will start with the telluric for Mrk71, after pointing and collimation.

10:03 Temperature alarm from the LUCI2 ROE. We will have to stop and have someone check it out on the telescope.

10:27 Opening again.

10:43 We are pointed and collimated. Preset to HIP32549, telluric for Mrk71. Acquisition begins with luci[1|2].20221114.0004. Guiders report 2” to 2.5”.

10:47 Readout error on luci2, restarting geirs.

10:49 Recovered, resuming acquisition. IT8768 updated.

10:53 Acquisition confirmed, starting science. Luci[1|2].0008-0011.

10:55 Peak flux in the spectra are a little low for a telluric. Taking the science steps over again for later co-addition.

10:57 Preset to Mrk71, acquisition begins with luci[1|2].0012. The wind appears to be trending up again.

11:08 Acquisition confirmed, scarting science. Luci[1|2].0016-0021. Guiders report around 2”.

11:21 Bright emission lines and a continuum trace in the first pair subtraction.

11:30 The seeing has settled a little, SX guider reports 1.5” to 1.8”, DX guider reports 1.3” to 1.5”. The difference is likely due to wind direction and thermals on the telescope. At the point we opened we had a 6C temperature difference.

11:42 Preset to UM_XMD target KKH46. LUCI LS. Acquisition begins with luci[1|2].0022.

11:43 LUCI1 camera wheel error while moving from N1.8 to N3.75. Recovering.

11:46 We didn’t get both GS, Josh is making a pointing correction.

11:49 Preset to science target again.

11:51 No GS on SX. Josh is looking into it.

12:06 We are still struggling, multiple pointing corrections have failed to correct the issue. Checking on the OT the GS is well within the GS patrol field, and we see no error to suggest the probe is unable to reach position.

12:20 Preset again, but with a different GS selected. That worked, but I have no idea why. I’ll submit an IT on this. (IT submitted, 8772).

12:24 18 degree twilight.

12:26 The science target is too faint to acquire, we can identify the field from the stars in it, but not the target of interest. We can not continue, Calling the night, closing the enclosure. The acquisition exposures have IQ of about 1.2”.

12:45 Taking LUCI cals for Mrk71. luci[1|2].0025-0042.

12:53 12 degree twilight.

13:43 Sunrise.