C19 Observer: Andrew Cardwell (From obs1, x2go session 51)
Partner Observer(s): Chris Howk (ND, Remote), Annalisa Citro (UM, Remote)
Telescope Operator: David Gonzalez-Huerta

Plan:

Use LBC and MODS once the LBT is back online. Seeing forecast is >1arcsec, so will observe programs that can handle these conditions, change if improvement.

LUCI and PEPSI are unavailable.

Summary:

Clear and poor seeing, typically 1.5” to 2”. Lost about 9 hours (between sunset at 10UT) due to recovery from the power problem on the rotating part of LBT that took us offline last night.
By 10UT only SX was operational so could only use MODS1 and LBCB; DX was still offline although MODS2/LBCR were operational. PEPSI was offline.

Mountain crew did a heroic job recovering given the number of systems that presented problems.

MODS: Hz 44 and OSU_ASASSN/SDSSJ1430, Needed to repeat the script for this target 3 times to mitigate impact of poor seeing and lack of MODS2.

Stopped at UT13:35.

Issues:

AGW2 focus check is pending.
For PEPSI blue arm only CD3 is available.
4160V Breaker failed last night, recovery too until about 10UT then only SX was operational.
LUCI will be unavailable tonight.

Weather:

Mostly but poor seeing (1.5-2 arcsec) once we opened at about 10UT. Clouds threatened by mostly held off.

Overview (times are given in UT):

22:00 Daily telescope planning meeting.

22:14 Breaker recovered, but it will take some time to bring up and test all telescope and instrument systems.

23:56 Recovery work is ongoing, and not entirely smoothly despite everyone's best efforts. We do not expect to open at sunset.

00:53 - **Sunset**

01:43 - **12-degree twilight**

02:13 - **18-degree twilight**

03:54 Current update provided by John Hill:

> Power for the rotating building has been restored.
> Critical - MCSPU (jet) GPS receiver has lost signal, so we don't have a valid IRIG time for the telescope servos.
> Critical - MCSPU (jet) - Elevation Servo won't start
> LBCs need LN2 (waiting for elevation motion)
> half critical - LDG Rotator needs Accopian power supply reset
> half critical - MODS1 Blue HEB needs reset (probably simple, we just haven't got there)
> half critical - DX Primary 7VDC power supply failed
> half critical - RFBG Rotator has TBD issues - will debug on Saturday (LUCI2 offline)
> Pending - MODS1 checkout
> OK Done - MODS2 checkout
> OK Done - MODS filled with LN2
> OK Done - LBCs checkout
> OK Done - Bogies breaker tripped
> OK Done - HBS High Pressure Alarm, was in PUMP_LOCAL mode with extra pump
> OK Done - PLC card replaced on Level 9 to allow shutter doors to open.
> OK Done - SHARK-NIR filled with LN2 - SHARK is awaiting instrument checkout
> OK Done - Backup air compressor engaged for PEPSI Chamber
> In progress - LBTI is pumping all night (not available)
> In progress - LUCIs are both in cooldown mode all night (not available)

05:33 Further updates: Work on the GPS issue is progressing. If we can open soon we would have SX only, so LBCB or MODS1.

07:33 Both MODS are fully recovered, but until the DX primary is recovered we can only use MODS1.

08:00 The facsum does not appear to be updating. Bringing the telescope down to attempt to open the enclosure.

08:07 Opening the enclosure. Time on tcs1 is off by about 14 mins, on tcs2 it's off by 5.5 hours. We'll have to fix this.

08:27 Restarting the TCS.

08:29 We have an issue, RA/DEC are not being calculated correctly.

08:57 The UT times we are setting will not remain synced across the various TCS computers and telescope subsystems…

09:31 Progress is slow, despite all our best efforts.

10:05 **Attempt to observe**: Attempting a target. We will start with a specphot, HZ44. The OSA is taking us to a nearby bright star for pointing correction and collimation.

10:14 Preset to Hz44.

10:16 SX guider reports 1.8”.

10:20 Starting science. mods1r.20230128.0003-0005, mods1b.20230128.0001-0003. We have an almost 4C temperature difference between the primary and external temperature.

10:36 Preset to SDSSJ1430, OSU_ASASSN.

10:39 Guiding failed to lock due to poor (>2-arcsec) seeing, sending the preset again.

10:40 Got it on the second try. SX guider reports 1.9-arcsec.

10:48 Starting science. Mods1r.20230128.0009-0020, mods1b.20230128.0004-0015.

11:04 Clear spectra in the first exposures, including some emission features in both the blue and red.

11:37 First pass on script completed, starting a second pass.

12:01 Seeing remains poor, 1.5 to 2-arcsec.

12:25 Starting a third pass. Seeing values from the guider have been trending down, clouds have held off.

12:52 **18-degree twilight.**

13:17 Final pass completed

13:20 Preset to GD152, specphot

13:22 **12-degree twilight**

13:28 Starting science. Mods1r.20230128.0023, mods1b.20230128.0016.

13:37 Giving up after one spectra. It’s too bright already. Closing up.

13:38 Putting both mods to sleep.

14:12 Sunrise