OSURC night log UT 2022 December 27

Observers: Dave Thompson, Olga Kuhn
Lead partner observer: Donald Terndrup*
Telescope operator: Josh Williams

* = from home

Summary:

PEPSI all night, with interruptions for clouds. We obtained more spectra than requested, with longer exposure times, in hopes that cloud-attenuated observations will have adequate S/N.

Observations completed:

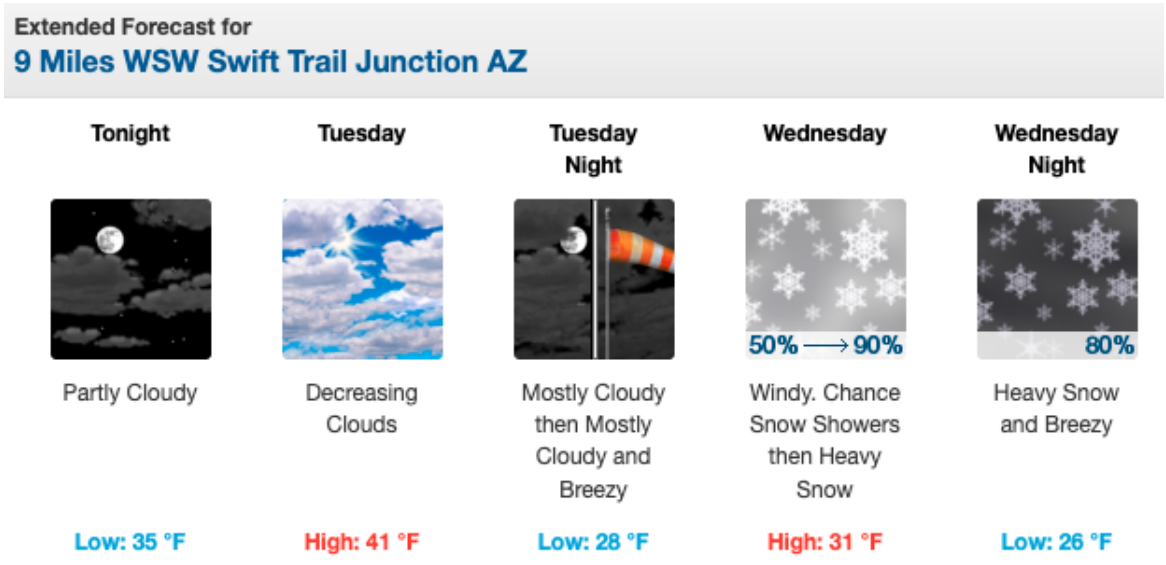
- UM_Nova V1405 Cas
- OSU_BHBinaries/2MJ0015+38
- OSU_BHBinaries/2MJ0635+18
- OSU_BHBinaries/2MJ0933+34
- OSU_BHBinaries/LAMOSTJ1046+10

Attempted but failed:

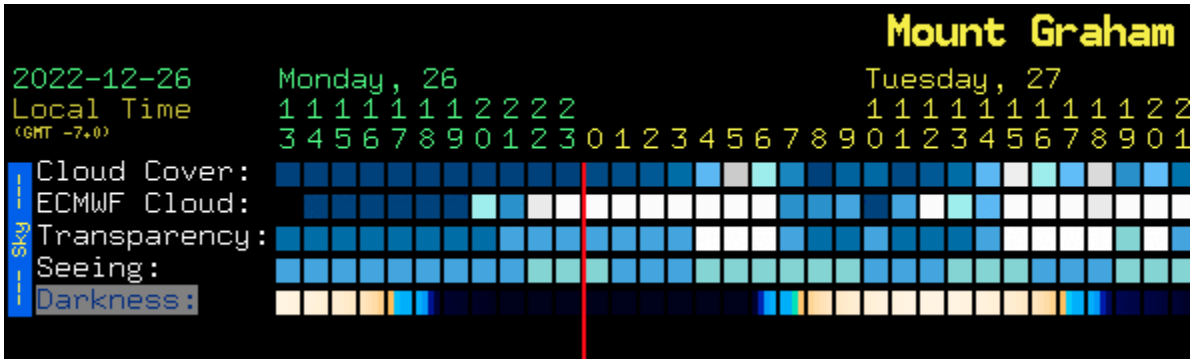
- OSU_BHBinaries/2MJ1409+51

Weather:

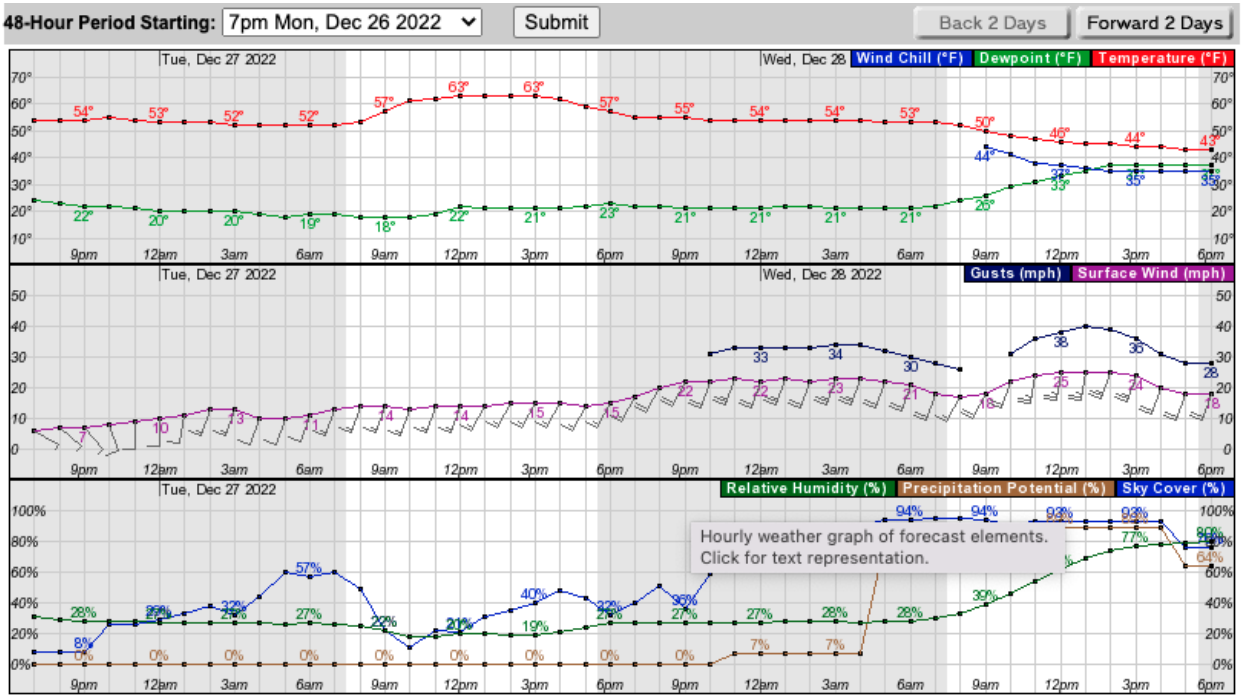
Increasingly cloudy at sunset. Probably getting worse:



Latest clear sky forecast:



Hourly projection from NOAA:



Plan

With clouds about, we will start with bright targets on PEPSI. There are not a lot of targets early on, so we will do some of the early ones more than once to pass the time while other targets rise. Conditions at sunset are not good enough for LBC.

Observations

All times are UTC unless noted

UM_Nova V1405 Cas

UT 01:05 - Begin with a single exposure of 5 minutes to verify proper target from presence emission lines and to verify that the bright emission lines are not saturated.

UT 01:16 - Then 2 x 1800 sec.

Image number	Exposure time
20221227.010	300 sec
11 - 12	1800 sec

During 1st exposure (#11) transparency dropped ~0.4mag
Good seeing, 0.6”.

Images 0 through 9 are calibration frames.

OSU_BHBinaries/2MJ0015+38

Move to target at UT 02:20. Start spectra at UT 02:35. Do 2 x 1800 sec, images 13-14.

Clouds are thicker.

OSU_BHBinaries/2MJ0635+18

Move to target at UT 03:38. Will take repeated exposures until the next target is available. Images 15 - 17.

More than a factor of two variation in guide star flux. Seeing 1.2” on guider, 1.4” on DIMM and is variable.

OSU_BHBinaries/2MJ0933+34

Move at UT 05:23. Target is still relatively low, and clouds are thick in this direction. The clouds are too thick to acquire the target, so we'll wait.

UT 07:58. It is a little clearer toward the target, so we lined up and are getting a spectrum. This is in image 18, with 45 min exposure. Second exposure aborted a couple minutes in as we have no guide star at the moment.

UT 09:45 - obtained a second spectrum, with clouds obscuring the star especially at the end of the exposure. Guider @ 8sec, WFS @ 90s exposures.

OSU_BHBinaries/LAMOSTJ1046+10 = Gaia DR3 3869650535947137920

Moved to this star at UT 10:35. No guide star, but clearer band possibly approaching. Started UT 10:53. Spectrum is in image 20. Then we started another exposure (#21), but halted it in order to try to get in one last star tonight.

OSU_BHBinaries/2MJ1409+51

UT 12:26 Start observing. Got about 19 minutes before it clouded up. Will call this "attempted but failed".