

OSURC Nightlog 20211005 UT

Observer*: Olga Kuhn

Lead Partner Observer*: Jack Neustadt (OSU)

Other Partner Observers*:

Special Assistants*: none

Telescope Operator: David Gonzalez Huerta (LBT)

*** = from home**

Plan:

The forecast looks pretty bad, with chances of showers and thunderstorms. Nevertheless, the plan is to start with LUCI to try to recoup the imaging that could not be completed last night.

oct 04

[x] UVa_nirjets/NGC7538_IRS9 UTC 02:00 - 03:15 (imaging)
[1/2] UVa_nirjets/IRAS22171 UTC 03:20 - 04:50 (imaging)
[] switch to MODS UTC 04:50 - 05:20
[] ND_j2055/j2055 UTC 05:25 - 06:55
ALT:
[] UVa_nirjets/??? UTC 04:55 - 06:25
[] switch to MODS UTC 05:30 - 07:00
[x] ND_GAIAQSO/j0038 UTC 07:00 - 07:45
[x] standard UTC 07:50 - 08:10
[x] OSU_ASASSN/J023227 UTC 08:15 - 08:45
[] OSU_ASASSN/ASASSN15ti UTC 08:50 - 11:20
[] standard UTC 11:20 -

Summary:

Despite the dismal forecast, the clouds held off for much of the night.

Altogether, we lost 5.5 hours to the weather: 04:44-06:20 and 08:29-12:24

but when open, we were able to observe two LUCI imaging fields and 2 MODS targets plus a spectrophotometric standard.

With LUCI:

UVa_nirjets/NGC7538_IRS9 in the 3 pairs of filters: BrG+H2, J+H and PaB+FeII that were impacted by clouds last night (K+K was observed last night). This was followed by

UVa_nirjets/IRAS22171 in 3 pairs of filters: K+K, BrG+H2 and J+H - clouds came and the PaB+FeII series had to be aborted.

With MODS:

ND_GAIAQSO/j0038

Feige110 (dual) and

OSU_ASASSN/J023227

Issues:

There was one script issue which we had not noticed earlier - the acquisition and the science script for j0038 used a different slit and it was unclear which one was intended.

No instrument or telescope issues.

Weather:

When we opened, the ambient temperature was ~8 deg C, wind speeds ~ 13 m/s and RH ~ 82%. Warmer than last night and the wind speeds are a bit higher.

The clouds and rain that had been forecast held off for hours. We delayed opening at sunset, but still opened just 1 minute after 12-deg twilight (01:52), but we lost a total of 5.5 hours to the weather:

04:44-06:20

08:29-12:24 (12-deg)

By 11, the humidity rose to >90% and later reached 99.9%.

Preparations:

luci[1|2].20211005.0NNN.fits

mods[1|2][b|r].20211005.NNNN.fits

lbc[b|r].20211005.HHMMSS.fits

Overview (times are given in UT):

01:32 Clouds and humidity above the limits are delaying opening. RH has come down below 90% however it is still hovering around 85%.

LUCI Darks

Program	DIT	NDIT	readmode	savemode	L1	L2	comments
UVa_nirjets	2.51	20	LIR	integrated	1-5	1-5	
UVa_nirjets	10	6	LIR	integrated	6-10	6-10	
darks for twilight sky flats	2.51	1	LIR	integrated	11-30	11-30	
	2.51	5	LIR	integrated	31-40	31-40	* see note below
UVa_nirjets	10	6	LIR	integrated	41-50	41-50	**
UVa_nirjets	2.51	20	LIR	integrated	51-53	51-53	aborted since conditions may allow opening

* just a few taken in the evening 20211004 with NDIT=5, and NDIT really does not have to be exactly as it was for the data - the dark can be scaled by NDIT.

** few more since we have time and since sometimes the first dark in a series looks different from the rest.

01:53 David is opening the enclosure. There is some cirrus overhead and on the horizon, but most of the sky looks clear on the allsky.

UVa_nirjets/NGC7538_IRS9

02:12 Pointing correction made and initial collimation near the source. FWHM on the guiders is ~1.2-1.3".

We'll sky K+K since it was done in good conditions last night, but will take the 3 other filter pairs. One K+K image will be taken since the item in the script sequence that contains the preset will configure for K+K and take an image.

UT		L1	L2	
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	K+K	54	54	
	BrG+H2	55-69	55-69	BrG ~0.85" but elongated (??) H2 ~ 0.85" also but rounder
02:44-03:02	J+H	70-80	70-80	J ~1" and H ~ 0.85-1", L1 72 elongated
03:02-03:29	PaB+Fell	81-95	81-95	PaB ~ 1.1" and Fell ~ 0.85", but the seeing is varying now.

02:55 The guide star FWHM is sometimes puffing up to 1.5", but for the most part ~1-1.2"

03:10 The guide star FWHM is puffing up a little more, to ~2 sometimes. This is during the PaB+Fell.

UVa_nirjets/IRAS22171

03:30 Slewing to IRAS22171

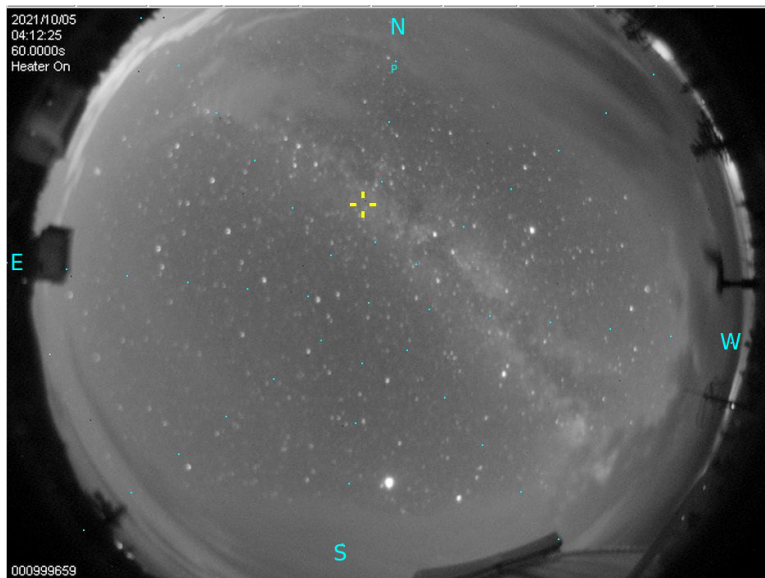
UT		L1	L2	Comments
3:33-3:50	K+K	96-106	96-106	1st L1 image elongated, but 97 looks better and FWHM ~ 0.75"
3:50-4:17	BrG+H2	107-121	107-121	images have FWHM 1.1" but vary - seeing is varying.
4:17-4:35	J+H	122-132	122-132	
4:36-04:44	PaB+Fell	133-136*	133-136*	133 FWHM ~

				6.6/6.1 pix (0.8"/073") Had to abort series because of clouds.
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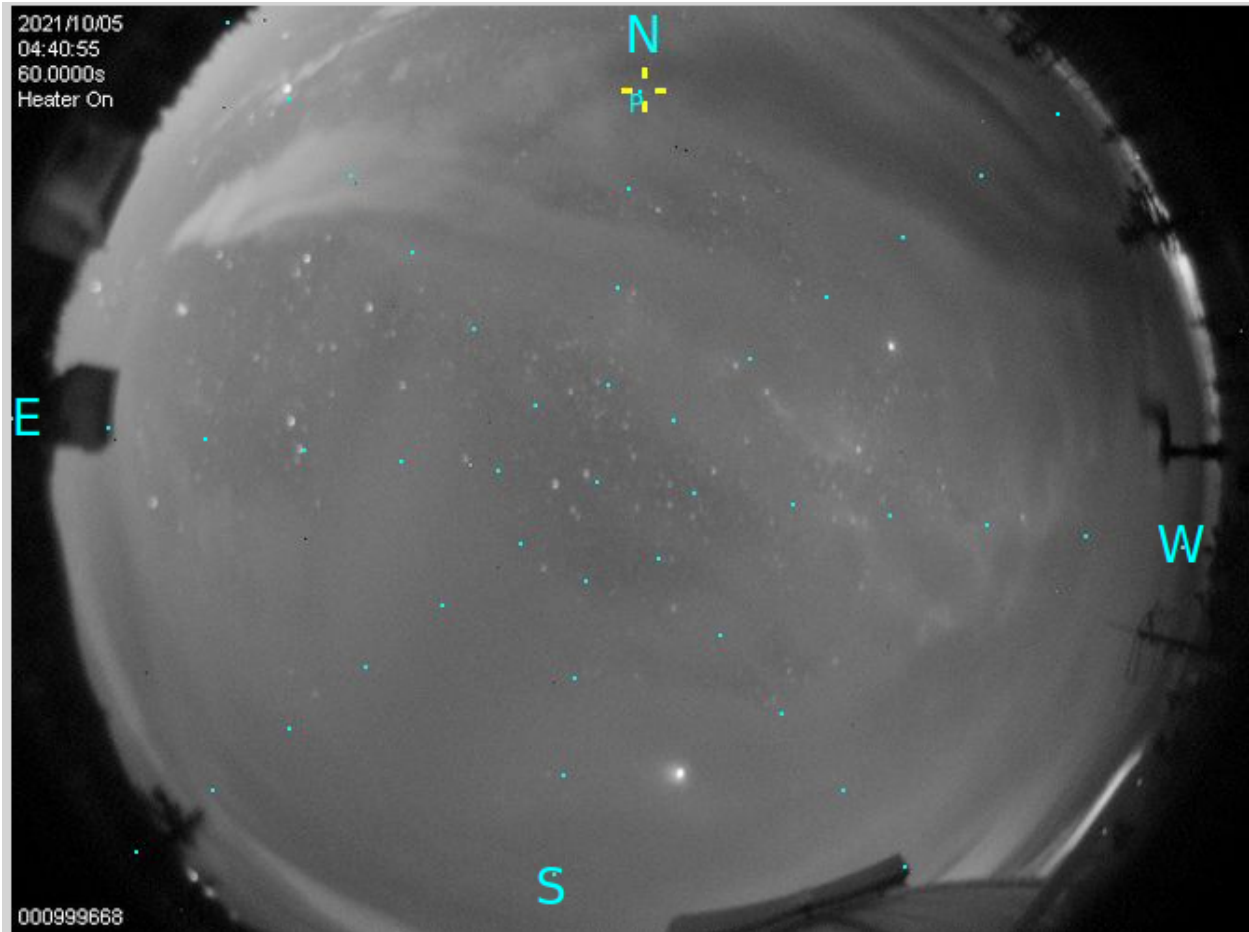
* The offset after 136 failed as the guide star disappeared. I paused the script and David is closing - the clouds look threatening.

04:00 The seeing has started to trend upwards - more puffs to 1.5-2" noted in the guider images. This is during the BrG+H2 series. There is more cloud coverage also.

04:16 All-sky image from this time (at the end of the BrG+H2 and beginning of the J+H series).



04:44 David is closing. We lost the guide star and the clouds that are coming may produce precipitation.



Reconfiguring LUCI → MODS

06:20 Reopened.

ND_GAIAQSO/j0038

06:37 acqBinoMODS j0038.acq

We noticed that the acq script uses the 0.6" slit but the science script, the 1" slit.
Tried to contact the PI, but opted to acquire with the 1" slit.

m1r: 5 & 6 → offsetxy -0.291 11.123 rel → 7

m2r: 7 & 8 → offsetxy 3.794 8.493 rel → 9 → dx = -0.184" → 10 dx = -0.123" → 11

During the acq, the FWHM on the guide stars is 1.25-3" on average.

07:03 execBinoMODS j0038.obs

UT start	m1b	m1r	m2b	m2r
07:04	3-5	10-12	3-5	10-12

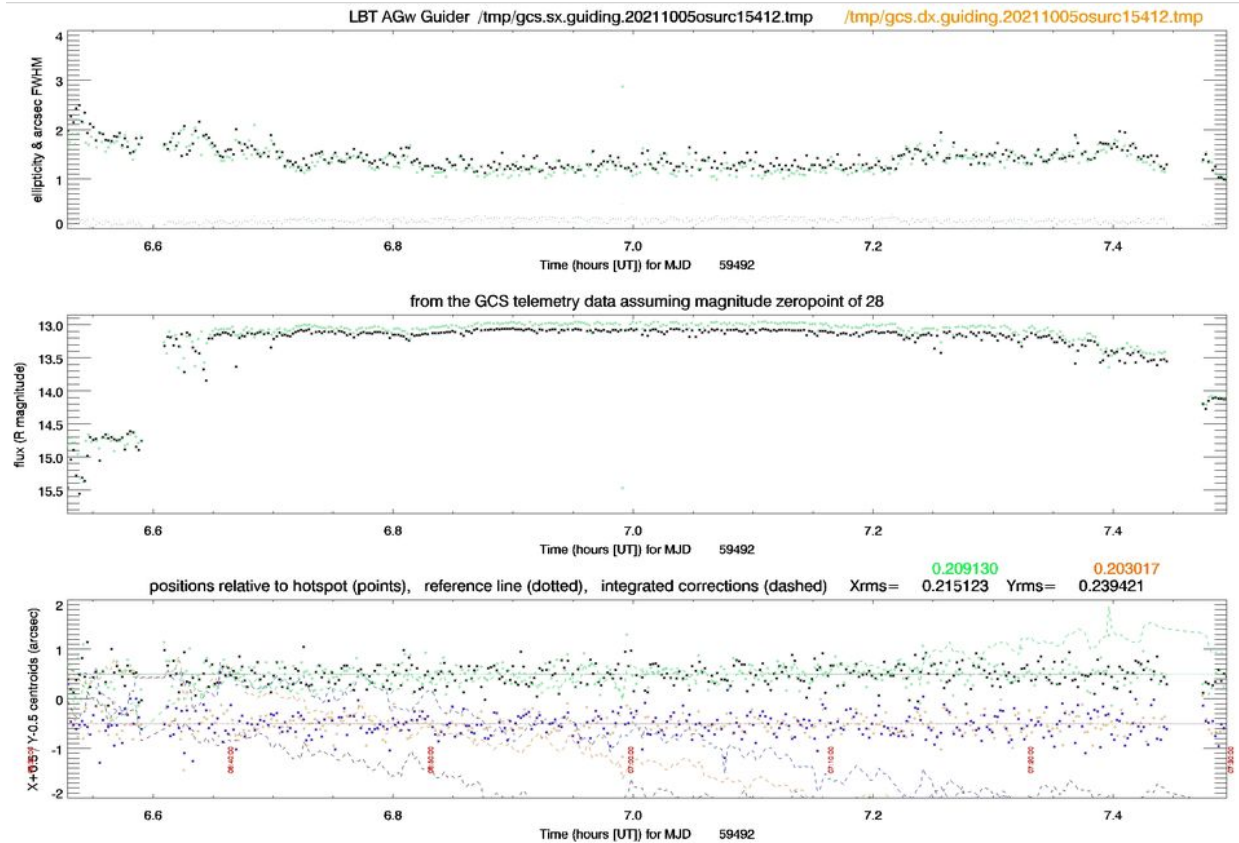
07:27 Finished

When we looked at the OT file, it became more clear that the 0.6" slit was probably what was intended. In the MODS component of the acquisition in the OT, the 0.6" slit had been chosen, but then the 1" slit remained in the instrument iterator

The screenshot displays the 'Base Sequence Component' configuration window. On the left, a tree view shows the hierarchy: 'Gaia QSO candidate confirmation' > 'NGC253: J003802-234541' > '[1] J003802-234541 Science' > 'Sequence'. The main panel on the right is titled 'Base Sequence Component' and contains a table with the following data:

Observation Item	Class	FPU Mask	Red Exp Time (s)
001	Acquisition	Longslit 0.60 arcsec	15.0
002	Acquisition	No Mask	60.0
003	Acquisition	Longslit 1.00 arcsec	60.0

It seems like the slit chosen in the MODS component was overwritten by the script used in the instrument iterator when the script was generated.



Guide star flux and FWHM over the period when j0038 was observed.

Feige 110

07:27 acqBinoMODS feige110.acq

m1r: 13 → -1.217 12.003 → 14

m2r: 13 → 3.173 8.611 → 14 → 0.123 -0.038 → 15 (still a bit to the left, but ok).

07:39 execBinoMODS feige110_dualGrating.obs

UTstart	m1b	m1r	m2b	m2r	FWHM on guiders
07:40	6-8	15-17	6-8	16-18	1.1"

07:40 mods1r imcslock failed - ok upon retry. Elev = 44 deg and rotangle = -120.

07:52 finished

OSU_ASASSN/J023227

07:52 acqBinoMODS J023227.acq

m1r: 18 & 19 →offsetxy -0.313 10.459 rel → 20 → dx = -0.307 → 21

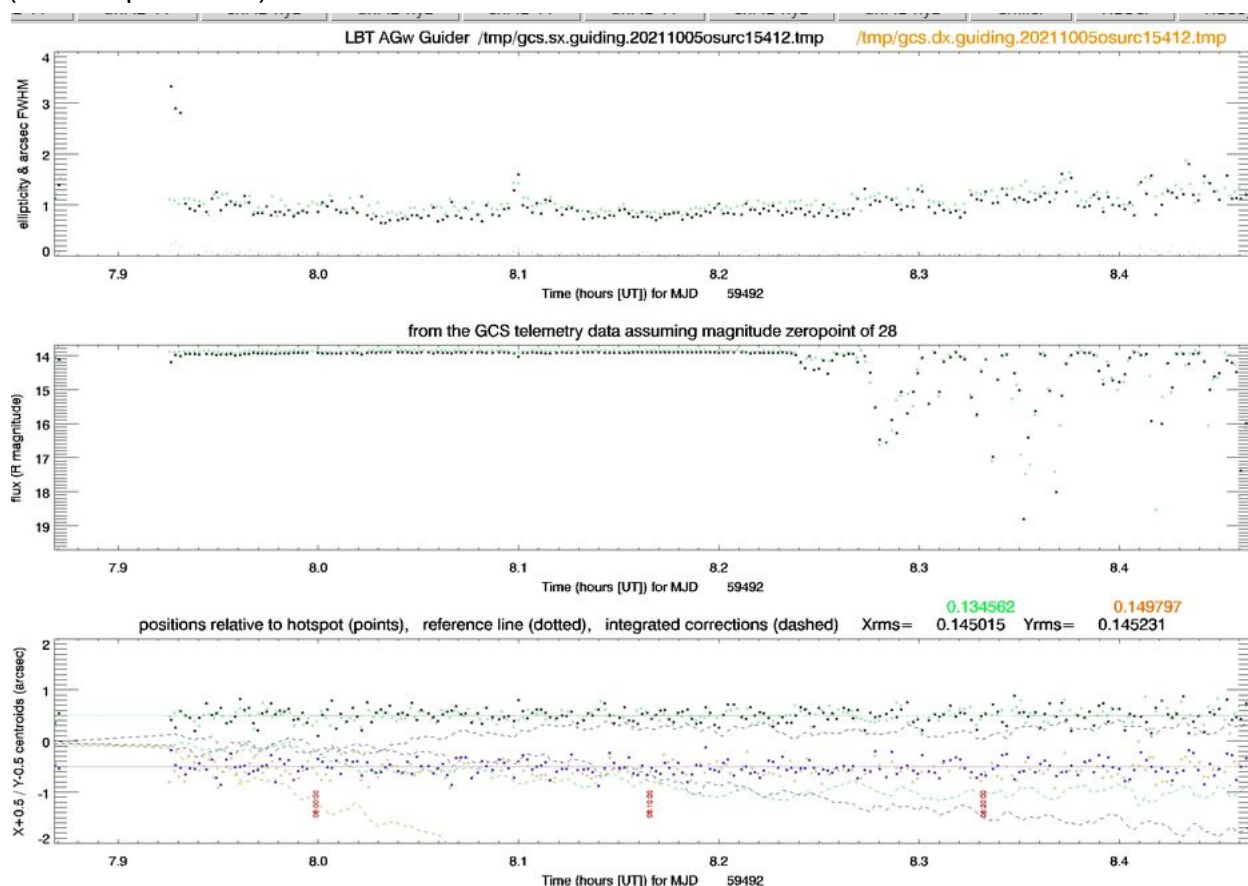
m2r: 19 & 20 →offsetxy 4.004 8.148 rel → 21 →dx = -0.184" → 22 → dx= 0.123" → 23

08:06 execBinoMODS J023227.obs

UT start	m1b	m1r	m2b	m2r	FWHM
08:06	9-	22-	9-	24-26	0.95/1.05"

08:16 Clouds are once again coming over.

08:22 They are significantly impacting the 3rd 5-min integration. Guide star flux is up and down (see LBTplot below).



08:29 David is closing up due to threatening clouds.

11:05 Skies have been complete overcast for a while, but now the RH has risen to >90%

11:13 RH >~95% now.

Taking some MODs 5" slit flats

Additional MODS Closed-Dome Calibrations

	m1b	m1r	m2b	m2r
5" dual grating slit flats	12-14, 15-17	25-27	12-14, 15-17	27-29
1K red-only flats		28-32		30-34
1K biases	18-22	33-37	18-22	35-39

m2b: The last images got stuck 16-22. In modsDisp (robs), they did not show up even after "blue fitsflush", however they were transferred and appear in /newdata and in the Repository..

LUCI Closed-Dome Calibrations

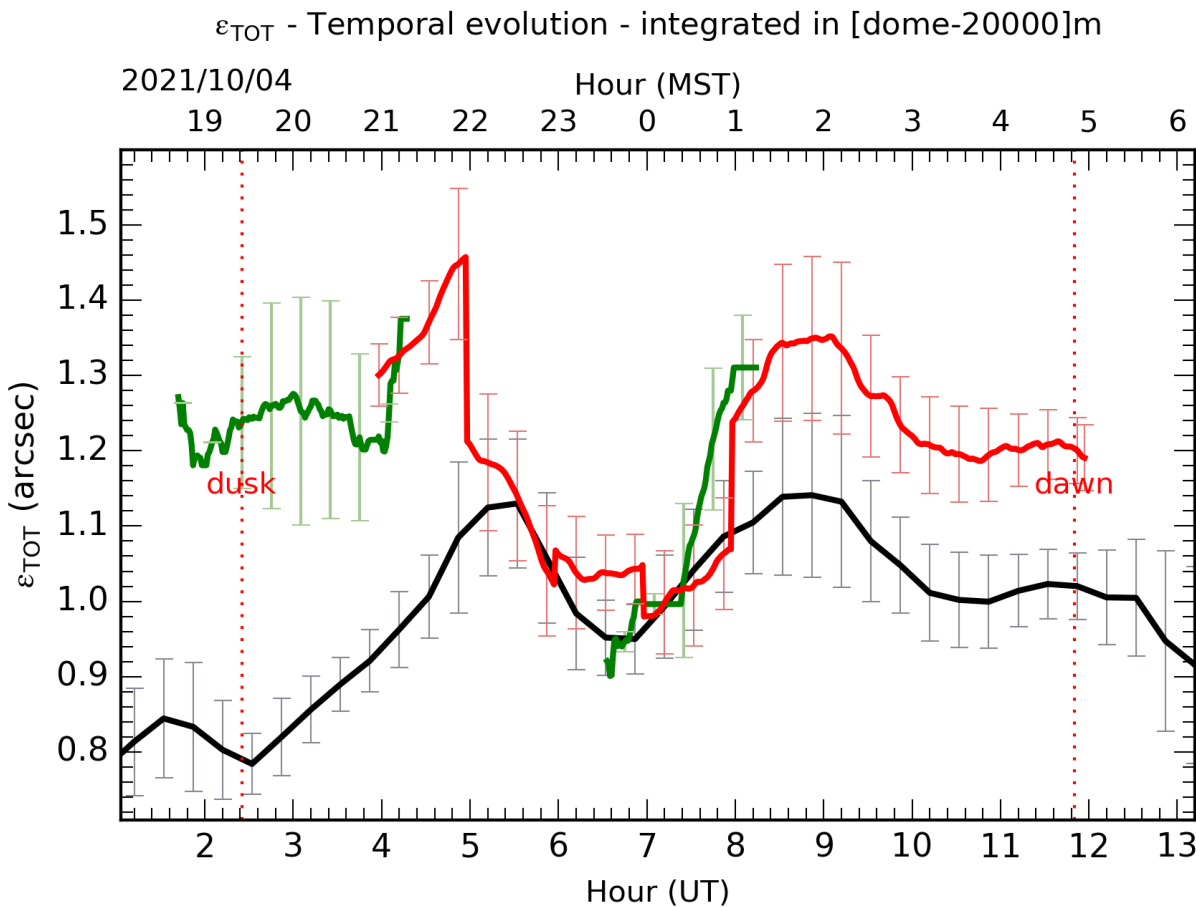
Repeating the closed dome flats we took yesterday morning (there did not appear to be a shift in the field, but we have time to obtain more calibrations while closed).

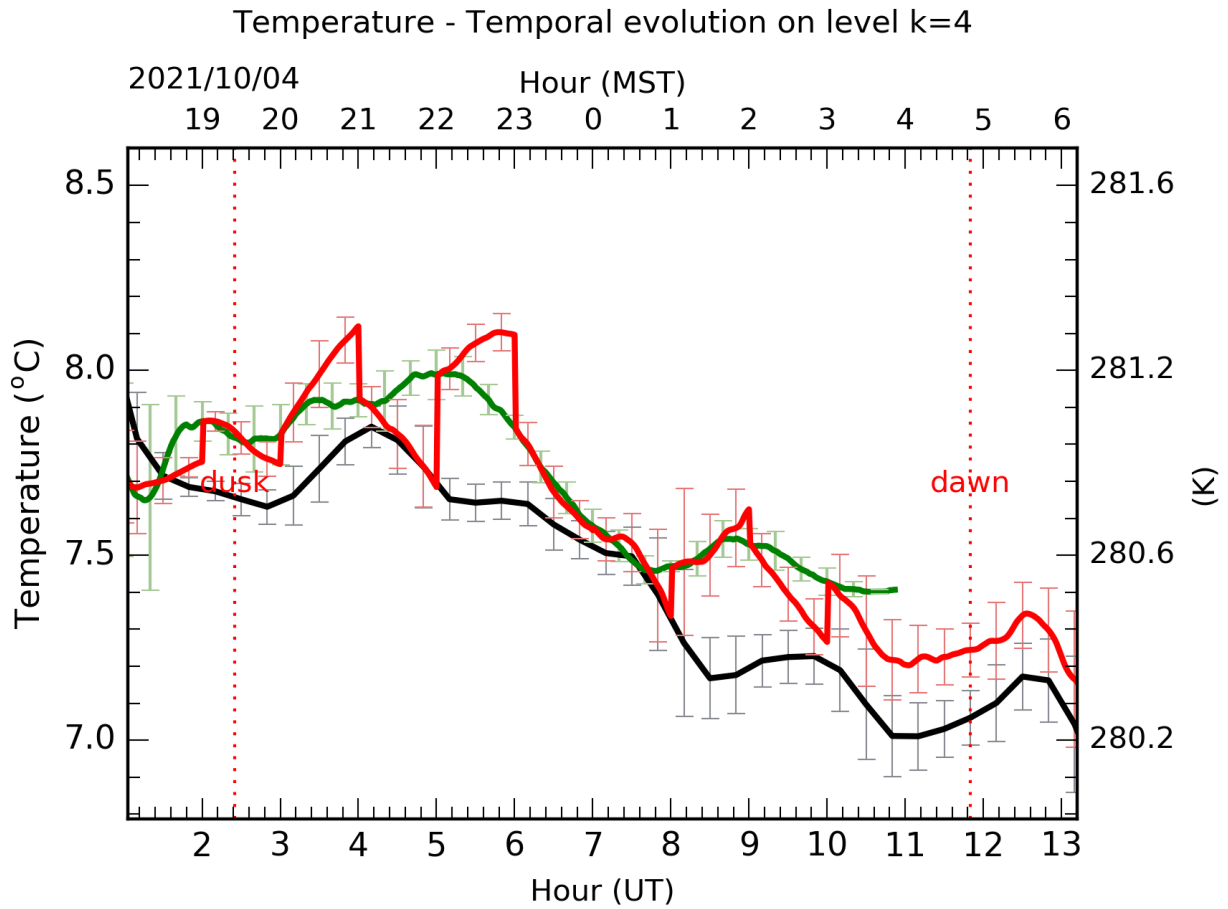
	L1	L2			
K+K	137-141 142-146	137-141 142-146	lamp off lamp on	23k per DIT (L2) but this uses the min DIT and faintest lamp, Halo3	rotators were not in their park positions
BrG+H2	147-151 152-156	147-151 152-156	lamp off lamp on		
K+K	157-161 162-166	157-161 162-166	lamp off lamp on	rotators are now in their park positions	
BrG+H2	167-171	167-171	lamp off		

	172-176	172-176	lamp on		
J+H	177-181 182-186	177-181 182-186	lamp off lamp on		
PaB+FeII	187-191 192-196	187-191 192-196	lamp off lamp on		

05:00 Just passed 18-deg twilight and RH is at 99.9% Calling it a night.

ALTA predictions





LBTplot

The SX (black) and DX (green) guide star FWHM and flux are plotted below.

