

BIG DOME

Name:

Astronomical Observation Lab

2023 – 2024

Notebook

**ANTON PANNEKOEK
OBSERVATORY**



Date	Subject	Pages

Time(Date)	Target	Exposures	Remarks	By whom (person student no.)
19.35	Setup	-	Set temp 1°C	Mars
19.44	Tungsten Flats	10x4s	tun-flat-4s	
19.46	Tung + LED Flats	10x2s	tun-led-flats-2s	
19.52	Tung + LED Flat Dark	10x2s	tun-led-flat-dark -2s	
19.54	Tungsten Flat Dark	10x4s	tun-flat-dark-4s	
19.56	Bias	10x0s	bias_0s	
20.32	Vega	-	Couldn't find it, was 20 arcsecs east <u>before</u> meridian flip	
20.36	Adjust Focus	-	Focus: 35460 for FLI camera	
20.44	Adjust Focus	-	Focus: 32420 for 174MM Mini	

Date: 17/10 Subject: Observation Team Mars

Time of observation	Target	Exposure	Remarks	By whom (or extra notes)
20.52	ThAr	1x4s	'vega_thar-before-4s'	Mars
20.07	Vega	5x20s	'vega_50s' • star moving a lot (by seeing) see 'pinhole_vega'	
21.10	ThAr	1x4s	'vega_thar_after_4s'	
21.40	P Cygnus/ SAO 69773		binning on H to # PinholeFLI find it, use Simpler fx = 569 map (Y=522, bin=4)	
22.00	ThAr	1x4s	'pcyg_thar_before-4s'	
22.02	P Cygnus/ SAO 69773	1x600s 1x600s 1x oversaturated	'pcyg_600s' 10e3 had a peak of 18m counts, practically must make continuous adjustments	star moving continuously, most make continuous adjustments
22.24	P Cyg	7x200s 6x300s	'pcyg_300s' to capture 1- α out to be data, oversaturation useless, so stopped	600s turned out to be useless, so stopped
22.56	ThAr	1x4s	'pcyg_thar_after-4s'	
23.16	ThAr	1x4s	'saturn_thar_before-4s'	
23.17	Saturn	10x300s	'saturn_300s' more light poll. near end of exposing.	
00.14 (18/10/2023)	Saturn-ring	1x600s	'saturn_ring_600s' object below 19,1°, light poll. becoming an issue, so fewer exp	

Date: 18/10 Subject:

Time	Target	Exposure	Remarks	By whom (or extra notes)
00.28	ThAr	1x4s	'saturn_thar_after-4s'	Mars
00.30	ThAr	(x4s)	'Titan_thar_before-4s'	
00.35	Titan	0x600s	'Titan_600s' (not) too low alt. and too cloudy, see titan-issue	
—	ThAr	0x4s	'titan_thar_after-4s' moved to next stern to next stern to Not needed, Titan exp. not made	avoid wasting time on this obj.
00.58	ThAr	1x4s	'io_thar_before_4s'	
00.59	Io	1x600s	'io_600s'	
01.11	ThAr	1x4s	'io_thar_after_4s'	Mars (finished before switch)

Date:

Subject:

Groups have switched

members: Keersten, Wielke, Roos

supervisor: Omar

first object \rightarrow Jupiter

2.02 - Jupiter is found

moons of Jupiter were visible
but looked like "donuts" as
they were not in focus

Chosen moon to observe \rightarrow Ganymede

The Eshel clicks loudly every time it
takes a picture! :)

Change of plans: Ganymede is hard
to find so we are starting with Jupiter.

We found Jupiter and are using that
as reference to find Ganymede

2.20 - Ganymede has been found!

Test exposure \rightarrow 20s 1000 counts
300s 2800 counts

We are going to make 10 min exposures

2.34 - We are going to make a measurement

calibration, ThAr, 1 time, 4s (because
object, Ganymede, 3 times, 600s Rashid says)

"Tante truis verlicht alles hier" ~ Omar

2.39 - ~~dome~~ is verplaatst dome needed
to be moved so we lost target.
Observation has been voided.

Date:

Subject:

2.42 - second try at same observation
of Ganymede

2.55 - one measurement went well but
after that we lost our object
now we will try again for the
other two measurements

3.05 - resuming measurements

"We werden keihard afleut" ~ Roos

3.24 - we are starting to see glow
around Jupiter \rightarrow indicating clouds

3.26 - extra ThAr calibration (4s)

The next target we want to observe
is Mirach!

It is getting more and more clouded so
we can only observe objects with high
magnitudes.

We have found Mirach and are going
to position our telescope

"Live Laugh Mirach" ❤

We saw a blob next to Mirach and do
to that googled if it was a double star \rightarrow it was not
an optical

The blob went away and we don't know why

Mirach test 60s 4000 counts

3.45 - measurement we gonna make

Calibration ThAr, 1 time, 4s
object, Mirach, 6 times, 300s
Calibration, ThAr, 1 time, 4s

4.16 - measurements are done

Date: Subject:

the next object we want to observe
is Betelgeuse.

It is a very bright star so we can find
it whilst it is getting more cloudy

4.08 - we have found Betelgeuse

Test measurement: 1s 700 counts
10s 2000 counts
60s 7000 counts

4.34 - measurements we make

Calibration ThAr, 1 time, 4s
Object Betelgeuse, 1 time, 300s
Calibration, ThAr, 1 time, 4s

We have finished observation and are
putting on the dark

The darks we need:

- 10 x 300s
- 10 x 600s
- 10 x 20s

Xxx team Jupiter, het was ons eer

Date: 01/12/23 Subject:

Starting Time	Frames	exposure time x number of frames	Remarks
17:00	Tungsten flat Tungsten LED	4s x 10	
17:30	Tungsten LED flat Tungsten Darks	2s x 10	
	Tungsten LED flat darks	2s x 10	
	Bias	0s x 10	
18:00	ThAr	4s x 1	
	Jupiter	60s x 1	
	ThAr	4s x 1	
19:10	ThAr	4s x 1	Clouds → 50m break
	Ganymede	10m x 1	Inference from above movement of the other dome.
	ThAr	4s x 1	
19:30	ThAr	4s x 1	
	Europa	10m x 1	
	ThAr	4s x 1	
19:50	ThAr	4s x 1	
	Callisto	10m x 1	Slight interference from in-dome mowing. Trouble with centering on pole hole.
	ThAr	4s x 1	
20:05	ThAr	4s x 1	
	Rings Nebula pole hole pointing 1	20m x 1	Early focus: 32427 FLE focus: 35460 Toward south-east, high pollution, possible.
	Th Ar	4s x 1	

Date: 01/12/23 Subject:

20:53 ThAr 43x1

Ring Nebula,
pointing pinhole 2 10m x1
Starting to get cloudy.
It's covered by clouds

ThAr

22:30 Called it quits because of extensive
cloud coverage.

Date: 06/12/23 Subject:

Observing today are Mercury and Saturn, starting at 17:00
Callisto.

17:30 ThAr 1x4s

Jupiter 1x60s

ThAr 1x4s

• Europa

Io.

• Ganymede

Clouds at 17:55, went
downstairs TLI focus

32430

32460

18:30 clouds are gone in front of 1M7 eShu focus
now setting up observations of 1M7

19:00 ThAr 1x4s Pinhole Pointing 2, walking in dome
small interference.

M57 pinhole
pointing 2 1x10m

ThAr 1x4s

19:30 ThAr 1x4s New pinhole pointing 3 screenshot.

M57 pinhole
pointing 3 1x10m

ThAr 1x4s

Mouse stopped working, slight delay of 15 minutes, after blowing
the cartridge off the USB controller worked again.

20:15 ThAr 1x4s

Io 1x10m Walking on stairs

~~ThAr~~ Jupiter Europa: Jupiter is for a few seconds
in capture

~~ThAr~~ Jupiter Europa 1x60s

20:40 ThAr 1x4s

Ganymede Europa 1x600s

~~ThAr~~ Ganymede

Date: 06/12/23 Subject:

- 20:50 ThAr 1x4s
 Europa 1x 10m Pinhole centering went wrong
 → 1x5min guarantee East and West control stopped working. Exposure helped.
 Spectrum of Europa was unstable (checked 4-5 times & few others) therefore no new photo of Europa will be taken
- ThAr 1x4s
 21:05 Callisto 1x1min Jupiter 1x 1min No further Remarks
- 21:15 ThAr 1x4s
 Callisto 1x10min voor de opname is de mount geset, voor de Belichtheid.
 opinie reagende de EW kijkt niet lekker
 → 30 sec verloren
 → nogmaals ~20 sec verloren.
- 21:40 Not found MI in Finder yet
- 22:15 Closed coverge, Went downstairs
- 22:30 Bias 10x0s
- Flats Tungsten 10x4s
 Tungsten
 Tungsten LED flats 10x2s
- FA left
 23:45 Tried getting ~~the~~ MI, just got cloudy, need sharpener for painter.
- 23:55 Closed off
- Darks 10x4s
 10x60s
 10x10m
- Folder Darklibrary / Brennlibrary
 Done at 01:50

Date: 07/12/23 Subject:

Michael next morning [11:20]

Last night darks unusable (files marked as such)

→ coolers turned off ($T \approx 135^\circ\text{C}$)

→ gain set to 248 instead of 111

→ only darks ~~were~~ used this, data, flats & bias all have in

making new darks [11:30]

10x 4s

10x 60s

10x 600s

done around [13:30]

closed at [13:40]

Date: 08/01/
2024

Subject:

Stephanie's observatie. FLI

FLI

CALIBRATION *		#frames	exp[s]
16:34	Hα filter	10	70
S	OIII	10	5
T	z'	10	10
I	SII	10	10
N	r'	10	7
H	i'	10	2
	g'	10	1
16:54	L	10	1

Start minimaal 15 min voor
zonsondergang voor herculaan
DOEL: 10 frames per filter à 1 of 5 sec
 $\sim 50k$ counts

bias	10	-
darks	10	1
dark	10	2
dark	10	5
dark	10	10
dark	10	60
dark	10	120

object/science frames
zijn 60 of 120 seconden

10:10 handmatig focussen
 → eerst horen (home knop)
 → pet point 35260
 FWHM te groot (15 pixels?)

focus op 35398 FWHM 1.6 pixels?
 13" (?) bimini?

focal length van telescoop
 moet nog aangepast worden
 aan de instellingen
 pinpoint astigmatism wilde
 vandaag niet meer werken.

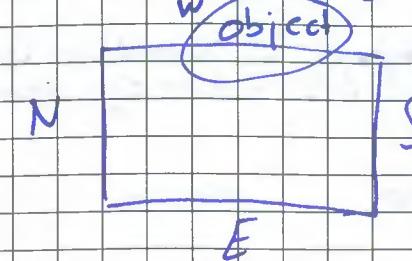
pixel scale 0.53"



Date:

Subject:

Objecten staan na slewing half uit beeld



20:50 PAC man Nevel NGC 281

filters	#frames	exp[s]
Hα	30	120
OIII	15	120
SII	15	120

21:25 FWHM ~ 6 pixels
 FLATNESS ~ 0.3 door de 120 sec smeerd de
 buel wel beetje uit.
 Toch ook tussen 60 sec/moife
 liefst < 0.15

21:42 FWHM ~ 7.2 pixels
 flatness ~ 0.1

22:36 FWHM ~ 5.7 pixels
 flatness ~ 0.1

23:00 FWHM ~ 6.8
 flatness ~ 0.1

Het was helder weer met flink wat wind en windstoten.

* even stond nog in het pad. FLATS mislukt!
 Check dit voordat je begint!

sidewinder (via apo control
 of op de telescoop zelf)

* door handmatig focus alleen op L = verkeerde focus
 voor andere filters.

CALIBRATIE FRAMES GENOMEN

voor normaal is kwartier voor zonsondergang
te laat! Alle filter zijn daardoor 'uitgesloten'

local time	filter	count	exposure time [s]
17:00	u'	10	10
17:09	Hx	10	10
17:13	OIII	10	5
17:19	SII	10	10
17:24	z'	10	10
17:30	i'	10	5
17:34	r'	10	10
17:39	g'	10	10
17:44	I	10	10

compar
~50k
~25k
?
~30k
~35k
~50k
~45k
~45k
~35k

17:50	bias	10	0
	dark	10	5
↑	dark	10	10
	dark	10	60
	dark	10	120

tijdens dark done + klep dicht

+ bias

aangezet en gaan eten

~19:00 telescope gerichtet op HD 13995 in persei
bij 2 perse cluster

FOCUSMAX g' filter V-Curve gemacht

fit:	left	right
slope	-0.05105	-0.055099
position	35527.7	35519.9
intercept	7.86	

Daarna heeft FOCUSMAX NIET MEER GEWERKT

→ met maximale voor de andere filter focus gevonden (laagste waarde waar de fit wilde niet lichter)

Focusmax heeft correction error en zet dat af en toe uit.

docht stand

filter

g'	35415 -23
r'	35538
i'	35415 -23
z'	35433 -5
u'	nod found → had pixel 20s met 20 sec exp.
Hx	35404 -34
SII	35568 +30
OIII	35402 -36
Hp	35436 -2
I	35445 +7

21:30 alles afgesloten.

20

Date:	09/01/2024	Subject:	Mercury/Saturn observation night
-------	------------	----------	----------------------------------

Second joint observation night of Mercury and Saturn			
17:30	Tungsten-Flat	10x 2s	Data user decides which exposure to use.
	Tungsten LED flat	10x 4s	
		10x 2s	See above
		10x 4s	
	Bias	10x 10s	
	Darks	10x 2s	
		10x 4s	
18:00	Jupiter	Focus FLI	35s 42s
	ThAr-b	10x 4s	Focus estab 32s 60s x: 2209 y: 2094
	Jupiter	1x 60s	pinhole cords as seen by FLI
	ThAr-a	10x 4s	Callisto
18:15	ThAr-b	10x 4s	Ganymede
	Europa	1x 10 min	
	ThAr-a	10x 4s	Io
19:00	ThAr-b	10x 4s	Jupiter
	Ganymede	1x 10 min	Europa
	ThAr-a	10x 4s	ThAr-b Jupiter is missing
19:20	ThAr-b	10x 4s	
	Callisto	1x 10 min	
	ThAr-a	10x 4s	
20:00	ThAr-b	1x 4s	
	P-Cyg	1x 10 min	
	ThAr-a	1x 4s	

21

Date:		Subject:	
20:30	ThAr-b	10x 4s	
	Io	1x 10 min	
	ThAr-a	10x 4s	
	ThAr-b	10x 4s	
	Ganymede	1x 10 min	
	ThAr-a	10x 4s	
21:30	ThAr-b	10x 4s	
	Callisto	1x 10 min	
	ThAr-a	10x 4s	
21:50	ThAr-b	10x 4s	
	Europa	1x 10 min	
	ThAr-a	10x 4s	
~22:00	Crab	1x 10 min	Test exposure, no clear spectral lines, stars blurred moving on.
00:00	Crab nebula		
	ThAr-b	10x 4s	
	Crab nebula	1x 10 min	
	Pinhole 1		
	ThAr-a	10x 4s	
00:30	ThAr-b	10x 4s	
	Outer pinhole	1x 10 min	
	Pinhole 2		
	ThAr-a	10x 4s	

After this, we tried to get the Crab nebula, however we did try a way of pointing the telescope and keeping the position of the pointer constant. We took the FLI pinhole coordinates and took screenshots of the pinhole position in the FLI and on the other cameras to be able to acquire all stars. For good measure we also saved the fit file of the FLI picture.

Date: Subject:

Break			
02:00	ThAr-b	10x 4s	
Oven pinkie		1x 10 min	
pointing 3			
ThAr-a		10x 4s	
02:40	ThAr-b	10x 4s	
Oven pinkie		1x 10 min	
pointing 4			
ThAr-a		10x 4s	
03:50	ThAr-b	10x 4s	Not very much upside in terms of lines. Worth looking at don't invest too much time in it.
Jellyfish pinkie		1x 10 min	
pointing 1			
ThAr-a		10x 4s	
Break			
Tried to find Cat's Eye Nebula to no avail.			
05:30	ThAr-b	10x 4s	
Owl Nebula		1x 10 min	Very faint, might not be any good lines
pinkie pointing 3			
ThAr-a		10x 4s	
06:00	Decided to close down for the night		
Dark			
		10 x 10 min	
		10 x 1 min	
		10 x 4s	
		10 x 2s	

Date: 19/2/24 Subject: FOCUS VALUES

filter	position	1/2 Plx dia	
		EWMM	FWM
L	35409		
+0.6	35415	5.05	(~1.3")
·	35421	5.15	
?	35413		
Z	35417	5.5	
+0.5	35449	5.93	
-3	35412	5.25	
-13	35372	5.45	
	35379	5.50	
	35417	5.29	
Hd	35358	5.05	
-55	35370	5.00	
+7	35422	5.08	
	35438	5.25	
	35431	5.67	
	35460	5.63	
+5	35420	5.26	
	35403	5.72	
	35400	4.94	1.2

↑ Δ

m3 in g', r', i' 60 sec x 10 frames
 nos flats remain (-10°C cooler FCI)
 darks 10 frames 60 sec

Date: 4-3-2014 Subject:

Observer plan

ARVID BRUGMAN TIES BLOKKER NIELS VERDAIJER			
17:30 / 18:00	Plan maken	tiles r	
18:00	kalibratie frames maken		
20:00 (zunverduisterd)	Begun observatie 1	Transit Esoplaet	
21:30 / 23:00	Transit		
1:00	einde observatie 1		
1:30	Begin Observatie 2	N6C4449	Felle Ha, R, S
VERHOUDING 2:1:1			
30 min. 15 min. 15 min			
4:00	einde observatie	Net zoals	
6:00 / 6:30	Einde observatie 2	dese	
(conclu. cluster met (R, I, g) 2:1:1)			
6:30 / 8:15	Kalibreren		
	Plan ↑		

Date:

Subject:

18:37 calibratie: met Elle licht

Hα 5 flats 10 sec

r 10 flats 2 sec

g 10 flats 2 sec

L 10 flats 2 sec

Schemerig, blauwe lucht geen wolken

18:41 r 10 flats 10 sec
1-5 flats ster links middel/onder
kleine wolk door vliegtuig18:46 L 10 flats 5 sec
2-10 ster in het midden ☀18:47 L 10 flats 5 sec
ster zit er omheen

19:22 Focus pos: 35915 NM

19:29 Begin zoeken last -9-20
Handmatig coörd's invullen

FLATNESS 0.03

1,8" 35915

Focus 3 sec ging niet helemaal lekker, V-curve goed
maar niet goed

laagste waarde 35417

Gemiddeld waarde full well depth H-max = 21

20:05 De ster volt breder het beeld

Counts F 12.000
G 6.000

Date: 4-3-2024 Subject: HAT-P-20 b TRANSIT observation.

MAX 14549
 FLATNESS 0.088
 20:55 RASIFIED ZEGT 1205 i.Pv 60s
 21:05 MAX 24119
 FLATNESS 0.028
 21:22 Ingens begint dies in koepel
 21:38 Naar Boven - ARV:d wisselt dies om
 21:40 Meridianaal flip
 21:48 Posmeridiaan -0001-71205.610
 21:53 op Frame N73 scoort max pixel counts
 om 600g.
 21:59 Frame N75 weer lager.
 21:59 Frame N77 FWHM: 2.603"
 22:02 Frame N78 FWHM: 1.890" FLATNESS 0.064
 22:06 FnN710 FWHM: 4.405" FLATNESS 0.38
 \ misschien weggooien
 22:18 FnN715 (10s) + Aardig moge FLATNESS
 22:29 FnN718 FWHM 2.286" FLATNESS 0.019
 22:27 Niels wisselt ARV:d ab
 22:28 FnN720 FWHM 2.229" FLATNESS 0.026
 Omringende sterren hebben nu ook
 goede FLATNESS.
 22:30 FnN726 Omringende sterren met her
 FLATNESS ~0.40

Date: 4-3-2024 Subject: HAT-P-20 b TRANSIT observation

22:48 FnN730 HAT-P-20b FWHM 1.862" FLATNESS 0.022
 FnN731 FWHM 2.718" FLATNESS 0.429
 22:54 FnN733 FWHM: 1.912" FLATNESS 0.015
 22:56 FnN739 e: FWHM: 3.812" FLATNESS: 0.406
 Alles is een ellips.
 22:59 FnN735 weer ROND
 23:06 FnN739 FWHM: 1.715" FLATNESS: 0.412
 23:10 FnN791 FWHM: 1.909" FLATNESS: 0.199
 max counts ~70k
 23:15 Dies verliest zich af.
 23:23 MAX 20702
 FWHM 2.640"
 FLAT 0.244 FnN797
 23:31 MAX 25269
 FWHM 2.017"
 FLAT 0.042 FnN751
 23:39 MAX 28631
 FWHM 1.966"
 FLAT 0.103 FnN755
 23:51 MAX 16197
 FWHM 3.050"
 FLAT 0.456 FnN760

28

Date: 4-3-2024 Subject: end Transiel + Coma cluster

12:00 ARvid wisselt Ties af
 00:30 FR NR 80 FWHM 1.713" flatness 0.002
 Alles zieken goed oio
 00:32 PRNR 81 FWHM 2.981" flatness 0.405
 00:35 PRNR 82 was weer beter.
 00:56 ~45 geladen op rust in de zoeksg.
 01:00 Klaar opnamen expo planes TRANS
 → 1:10 Niels wisselt ARvid af.
 01:27 Begin opnames van de coma cluster.
 we hebben ongeveer hier minder gepakt
 -1:15 we doen M, L, g, L ieder 60)
 om en om alles 25x
 voor in totaal 100min exposuur
 $L, g, r = 211:1$
 01:38 De beste ster: FWHM: 5.143"
 1:40 PRNR 3 FWHM: 9.373" flatness: 0.268
 / felste ster.
 1:49 Aardig hoge flatness ~0.4
 1:56 Hoge flatness blijft doorgaan.
 2:00 FR NR 7L6052 v hoge flatness
 misschien weggevoerd.
 FR NR 8n605 flatness ~0.7 naar weg.
 2:05 Tie wisselt Niels af.

29

Date: 5-3-2024 Subject: coma cluster observatie

02:07 groter plek verschuiving 009 s
 oot niet goed 010
 in 1x 15" bewogen uit het mets
 02:24 4.852" 0.100 0011
 2600
 02:31 5.455" 0.006 0014
 3003
 02:51 beeld bewoog omhoog 0017
 dan niet zo goed.
 03:05 er komen wolken over het
 observatie punt
 0020-L1* Coma-cluster
 03:09 2,1" ontdekt
 L: 01031 3800 3600
 23-r wolk er voor
 03:14 gestopt met metingen van wolken
 g1 Fotos gemaakt
 03:18 we zijn begonnen met darkframes
 10 frames van 170 seconde elke

Date: 5-3-2024 Subject: Samenvatting 1

We zijn de avond begonnen met het calibreren van de telescoop.

5 H α flats van 10 seconde, 10 R flats 2 seconde, 10 g flats 2 seconde en 10 I flats van 2 seconde. Helaas stond de TL-buis nog aan tijdens deze flats.

Daarna hebben we 5 flats van R filter van 10 seconde gemaakt en 10 L filter flats van 5 seconde dit keer zonder TL buis.

Daarna hebben we dark frames genomen, 10 2 seconde flatfield, 10 5 seconde flatfield dark, dark en 10 10 seconde flatfield dark en 10 60 seconde darks.

Daarna zijn we naar het object gegaan 2 uur voor de ingress begonnen, 20:30 begonnen dus tot 1 uur, ongeveer 2 uur na ingress. Laagste paars metingen waren met 60 seconde shutter.

Aanbevelingen

3:45 Bewolking is opgedraaid begin glow naan NGC 4499

3:57 Begonnen met observeren

H α , g', m' in 2:1:1

60s lights.

||| Eros 10s tussen 9:00 en 9:10 zit door frame met jarrell 10
endoor sowieso 10s over H α |||

9:05 Niels had alvast afgesnijfd.

9:16 Flatness OK.

4:55 Ties wisselt Niels af

M

Date: 5-3-2024 Subject: Samenvatting 2

18:00 calframes

- 5 H α flats 10s
- 10 m' flats 2s } } TL-buisen zonden aan
- 10 g' flats 2s }
- 10 L flats 2s }

- 5 r' flats 10s } zonden TL buis.
- 10 L flats 5s }

Focus: 35415 → auto focus ging maar

20:24 - Begin opname Ha-p-20 b 60s exposures 7" filter.

20:55 - overschakel op 120s exposures 7"

21:40 - Meridian flip, hierna abercor

01:00 - Einde observeren pos. meridian flip

1:28 - coma cluster: m' L, g', L Rollen ieder 60s.
(du) L, r', g': 2, 1, 1

3:14 gestopt observer veren wegens bewolking

3:18 10x 120s dark frame

3:45 bewolking opgedraaid.

3:52 Begonnen NGC 4499 zelde filters - R=5:0 als coma.

Date: 5-3-2024 Subject: NGC 4449 observatie

NGC 4449 00:16 r wolf
00:17 g wolf

05:17 beetje bewolkt weer
geen sterren te zien vanaf de koepel

5:38 00:23 r wolken wachten

5:43 heel slecht veel wachten

Date: 06/03/24 Subject: Planning Measurements

Groep A Observing Night

M44

g' 30'
r' 30'
i' 45'
z' 45'

} 2 min per job

(18:45 - 20:15 - 22:45)

(g' → 5'' subexp)
(r' → 10'')
(i' → 10'')
(z' → 10'')

MS1

L 60'
H-α 60'

→ new plan: coma cluster
L filter
2 min 15 sec
120 x 60 sec

NGC 4449

H-α 60'
r' 60'
g' 60'

→ start op (na ms1), rend avond
coma cluster

Plans i', u', Hα + more
dark bias

Date: 06-03-24
18:45

Subject: Flats nemen

Flats nemen van de ^{g'} filter, het was al te donker voor R- of ^{i'}
10 maal 5 seconden ^{g'} filter
10 maal 5 seconden L filter

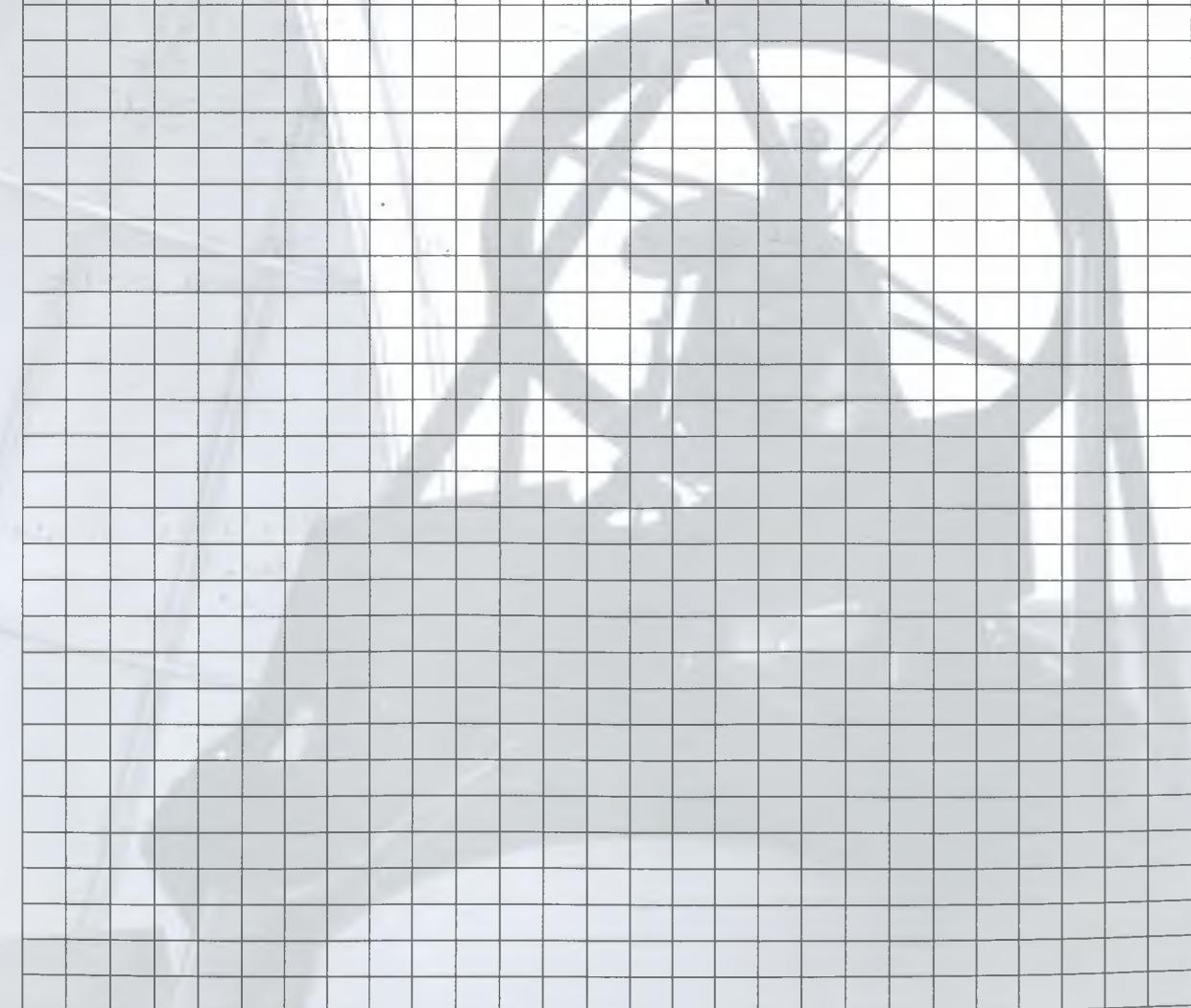
- Durch frames voor de flats: 10×1 minuut

12:37 Regrammen met focussen op M44.

Focus: 35447

Nieuw: 35477

Final focus: 35384



Date: []

Subject: []

M44 Measurements

r' (84'')

r' (60')

g' (5'')

g' (60'')

i' (5'')

i' (60'')

z'

z' (60'')

* beeld verschoven → focus geschoven
frames geslopt, beeld horstig

22:22 → weer beeld verschoven, we wachten tot
de meridian flip en dan zetten we hem
weer recht.

22:36 Meerdere filos gedaan, verhuisde
verder en frames maken
naar ~ frame 25

23:20 gesloten met kijken naar M44, alle frames
afgenomen

23:30 → Start observatie NGC 4669

01:05 → Stop geret door verplaatsing object bij foto
92. Optieven vanaf foto 15. Dus tot 1' in Builkader
Nieuwe foto's in mag. groep 2

2:28 Door meridian telescoop optiek verplaatst.

3:47 licht benut, frame 72

Ochtend:

1er voltooid: L, g, r, i, z, H_α, H_β, O III, SII

Date: Subject:

3:51 Cal. Frames maken

Bias 10x ~~45~~

Darks 10x 45

Dark 10x 5s

4:53 Begonnen met Coma cluster losse sterren
in L 60s voor 60 afbeeldingen

05:20 Clouds → 2 frames object not visible

filtering NGC 4449:

r' 60" → 61 frames

g 60" → 61 frames

H- α 60" → 99 frames

~03:47 clouds

0047-g60 (03:48)

object not visible

Date: Subject:

Samenvatting (06/03/2024)

- M44
 - r' 74" → 30 frames
 - 60" → 30 frames
 - 5" → 30 frames
 - 60" → 30 frames
 - i' 75" → 30 frames
 - 60" → 45 frames

- NGC 4449
 - r' → 60" → 61 frames
 - g' → 60" → 61 frames
 - H- α → 60" → 99 frames

- Coma cluster → L → 60" → 27 frames

Calibration frames

- 10x bias
- 10x darks 60"
- 10x darks 4"
- 10x darks 5"

Clouds

03:45 - 04:45

04:55 - 05:25

Date:

7/3/25

Subject:

waarnemennacht Arie, Roan, Tammy

18:00	FLATS NEMEN
	Filtres
*	H _K
	H _B
II	5 sec
III	5 sec
	10 frames
	10 frames

Flats u lageren omdat dan H-B filters
narrow (zie boven *)

Breed: U, Z, I, R, G, L

19:00 Darks en flats nemen:

Darks 10 frames per tijd.

2", 3", 4" ~~5"~~, 5" en 60"

Bias: 10 frames

~~Hoofd ons de waargenomenen:~~

Waarnemplan

m99 $\begin{cases} G' \rightarrow 5'' 30f \text{ en } 60'' 60f \\ R' \rightarrow 4'' 30f \text{ en } 60'' 60f \\ I' \rightarrow 5'' 30f \text{ en } 60'' 60f \end{cases}$

m99 een ander deel dan 06/03/2025. We gaan een stukje boven dat eerder waargenomen gebied.

Daarna cat's eye:

NGC 6593 $\begin{cases} G' \rightarrow 60'' 30f \\ R' \rightarrow 60'' 30f \\ I' \rightarrow 60'' 30f \end{cases}$

Date:

Subject:

Daarna Irisnevel:

$\begin{cases} G' 60'' 30f \\ R' 60'' 30f \\ L 60'' 30f \end{cases}$

We nemen voor cat's eye en irisnevel eerst L, ~~G'~~ dan G' en R'.

20:00: gestart met m99. Locatie:

RA 08h 50m 00.0s

Dec +19° 40' 00"

35373 Focus

20:24

(vanwege ander beeld)
er is besloten om i' op 5" te
zetten en r' en g' op 4"

20:35 gestart met m99 afbeelden

meridian flip om 20:20

- m99-0003_r60s.fit was eivormig

- FWHM startte rond 1,8" en is naar 2,5" gesprongen
rond frame 5. Daarna weer terug naar 1,8" bij frame 5.

- m99-0007_g60s.fit lijkt dubbele sterren te hebben

- m99-0007_r60s.fit is volledig van plek veranderd.

→ nu ten verplaatsen

verhard om:

eerst alle harte afnemen 21:10

Date: Subject:

21:13 doorzetten met forte exposures

21:14 M44-0006-r45
is bewogen

6-g4s lichtelijk bewogen

21:20 ~~steven~~ tijden een klein beetje te bewegen ~~na~~ na elk frame

21:22 18-r45 / i45

18-g4s

19-g4s

zijn verschoven vanaf frame 18

21:28 dikkere wolken

21:35 nog een keer corrigeren
dik vanaf f21 weer goed

21:47 Klein wolkje

M44-0008-r60s.fit eivormig

M44-0009-i60s.fit ook

Date: Subject:

meting FWHM

0009-i60 1,8-2,3

0010-g60 2,4-2,5

0010-r60 1,9-2,0

0010-i60 3,0+ ← Bewogen koepel

0011-g60 2,3-2,5

0011-r60 2,5-2,6

0011-i60 2,8

0012-g60 2,3

0012-r60 2,8

0012-i60 2,4

0013-g60 2,8

0013-r60 1,8

0013-i60 2,0

0014-g60 2,2-2,4

0014-r60 1,9

0014-i60 1,8-2,0

0015-g60 2,4

0015-r60 1,9

0015-i60 2,4

0016-g60 2,5

0016-r60

0016-i60

42

Date: Subject:

The Answer to the Ultimate Question of Life, the Universe, and Everything

22:24 coords:

RA: 8h 40m 59,4s

Dec: 20° 04' 53" J

meridian skip

22:33 geflipped vanaf frame

15-16

22:36 focus aanpassen

zelf focus ster kiezen

22:42 nieuwe focus: 35409

22:48 buitendeuren foepel
waren dichtgedaan
(door andere mensen :))

* check g focus (laag)

frame 16 → was ooit nog wat verschoven
 was goed → → check of g frame goed zit regaa-
 grater exposure tijd op, 7
 200 seconden ...
 hoe 200.

was ooit nog wat verschoven

niets gevonden, maar
wellicht toch ergens?

43

Date: Subject:

23.41 Koepel verschoven

m94-0035-i605.fit hoge FWHM 3,0+.

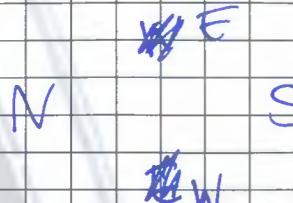
00:08 was lichte styling in
FWHM vooral bij i'00:10 lichter toename in flatness
door verschuiving koepel (?)00:13 i' blijft hoge flatness hebben
f37

00:17 gaat weer beter met i'

00:24 f40 - i60 s niet zo
funny uit00:26 FWHM is aan de hoge
kant

00:33 nieuwe focus: 35382

00:46 f44 - i605
afname flatness

- 01:00 we gaan de telescoop op Cat's eye richten (NGC 6543)
- 
- 01:11 begonnen met autoscane van NGC 6543
- 03:00 Alle data voor Cat's eye nevel verzameld dus we gaan door naar Irisnevel
- 03:15 Dataverzameling Irisnevel gestart. Irisnevel bij 60'' frames worden overaldeels overbelicht dus lagere belichtingstijd is nodig voor verdere informatie over het centrum van de nevel
(nog huidige opnames)
- 03:59 idee voor straf: kortere exposures en opnieuw focussen
- 05:00 60s frames klaar, alles hoger dan 7'' is overbelicht in het centrum
- 05:06 WR nemen afbeeldingen met belichtingstijden van 7''. Hierbij hebben we wel nieuwe darks nodig.

- 05:35 - WR hebben M2 geprobeert met single. 120'' belichting geeft het meeste detail.
- Bij lichte zonsopkomst hebben we een dark frame bij 7'' genomen.

Samenvatting: (07/03/24 - 08/03/24)

$$\begin{aligned} \text{M44} & \left\{ \begin{array}{l} G' - 5'' \rightarrow 30f \\ G' - 60'' \rightarrow 98f \\ R' - 4'' \rightarrow 30f \\ R' - 60'' \rightarrow 98f \\ I' - 4'' \rightarrow 30f \\ I' - 60'' \rightarrow 98f \end{array} \right. \end{aligned}$$

$$\begin{aligned} \text{Cat's eye} & \left\{ \begin{array}{l} G' - 60'' \rightarrow 30f \\ R' - 60'' \rightarrow 30f \\ L' - 60'' \rightarrow 30f \end{array} \right. \\ \text{NGC 6543} & \left\{ \begin{array}{l} R' - 60'' \rightarrow 30f \\ L' - 60'' \rightarrow 30f \end{array} \right. \end{aligned}$$

$$\begin{aligned} \text{Iris Neb.} & \left\{ \begin{array}{l} G' - 7'' \rightarrow 23f \\ G' - 60'' \rightarrow 30f \\ R' - 7'' \rightarrow 23f \\ R' - 60'' \rightarrow 30f \\ L - 7'' \rightarrow 24f \\ L - 60'' \rightarrow 30f \end{array} \right. \\ \text{NGC 7023} & \left\{ \begin{array}{l} R' - 7'' \rightarrow 23f \\ R' - 60'' \rightarrow 30f \\ L - 7'' \rightarrow 24f \\ L - 60'' \rightarrow 30f \end{array} \right. \end{aligned}$$

Date: Subject:

Calibration frames:

Darks el1K 10f: 2", 3", 4", 5", 7", 60"

Bias 10f

Flats: (alles op 07/03/2024)

H α 10f 18:07 5"H β 10f 18:11 3"

S II 20f 18:14 tot 18:18 9"

O II 10f 18:19 9"

H γ 10f 18:22 5"

u' 10f 18:25 5"

z' 10f 18:28 4"

i' 10f 18:37 2"

r' 10f 18:39 2"

g' 10f 18:42 2"

L 10f 18:46 2"

Date: Subject:

17:50	u'	flatframe	\rightarrow heat per night dark-obj.-flat-u ..	2 sec	10x
17:54	H α		let up!	4 sec	10x
17:57	O III			1 sec	10x
17:59	S III			2 sec	10x
18:02	H β			2 sec	10x
18:04	z'			1 sec	10x
18:07	w'	mag och 6000		5 sec	10x
<hr/>					
18:10	I'			1 sec	10x
" : 32	z'			1 sec	10x
" : 38	g'			1 sec	10x
" : 41	L			1 sec	10x

Darkframes \rightarrow (18:51) - (19:07)

Exposures: 1 sec, 2 sec, 4 sec, 5 sec, 60 sec

Repeats: allemaal 10x

Focus telescoop (20:07)

$\frac{1}{2}$ flux dens: Posi: } focus 1
7.01 35429

optieknuw (1050nm op een ander stel \rightarrow)

$\frac{1}{2}$ flux dens: Posi:
7.62 35408

Date: [] [] Subject:

WaarnemPlan

18:12
Planning observeren8-3-24 tot 9-3-24
(ang. 20:00) (ang. 06:00)

Object 1: M51

filters: tijd:

L ~80 min

H α ~30 min

Object 2: Coma cluster

L * if possible

B ~90 min

R ~90 min

I *

Object 3: Iris nevel

Start 00:00

I ~30 min

H α ~90 min

Object 4: Cats eye

H α ~120 min

Start waarnemen 20:40

L 60s

30 repeats

H α 60s

30 repeats

max 21.993 20:48

FWHM 1.847"

flatness 0.133

max 16.708 20:59

FWHM 2.208"

flatness 0.196

Date: [] [] Subject:

Begonnen met waarnemen Coma cluster
om 22:05max 48.74 22:09
FWHM 2.8494"
flatness 0.053

Bias Frames !!!

Bij het gr' filter zijn de FWHM wat hoger
dan bij de groene rode. $\pm \sim 2.6 - 2.8$.

koepel bij staan (22:36)

frame gr' 13,14 en 214 misschien
verschalen

22:48 frame gr' 18 en r' 19

hebben een wat hogere FWHM

00' \rightarrow 22:51

max 71.09

FWHM 3.2085"

flatness 0.037

frame gr' 20

blijft rond dit niveau

voor een paar frames

22:54 r' 21

FWHM 2.8822" } terug naar eerder
niveau. (moelijk een
slechter was af beweging?)

Date: Subject:

23:03 frame 27 g'
 max 3578 } 28 2' zelfde niveau/
 FWHM 3.422" } 4x's hoger.
 flatness 0.012

28 f' FWHM maar 2.8 niet als
 29 2'. Weer terug naar ander niveau.
 36 2' 23:29
 max 10190 } waarde van 1 specifieke ster
 FWHM 7.241" } de andere sterren
 flatness 0.668 } onder de 3 (FWHM)
 ↗
 Aanwijzing waarschijnlijk door een hot pixel
 De rest van de seeing was rond de
 2,0" dus opnieuw focusen.
 We stoppen bij 2' 29 en g' 30.
 frames:
 18.18 353gg

Date: Subject:

waarnemen Iris nevel

Nieuwe Focus

Pos 353 dd dia 6.08 Seeing van 1.8"

begonnen om 00:41 De seeing is niet super
goed deze avond. Roos
Boven de 2.5". Ook komen
er wolken aan.

Het zou fijn zijn als
andere groepen ook data
verzamelen in i' en Ha

00:55 Vincent zit in de koefel en merkt op dat
hij wolken ziet

Houdt hier rekening mee bij frame

i': 142 - 34 4-11
 Ha: 11 - 34 Het ligt nu iets helderder
maar nog wel bewolkt. Ook
komen er nog steeds wolken aan

01:48 Het bleef even een bijtje helder, maar er
lijken weer wolken aan te komen in

01:56 Het is weer bewolkt. Houdt rekening met

i': 17 - 22
 Ha: 51 - 66

02:23 23 I' FWHM \approx 2.5 - 2.6

02:33 FWHM blijft netjes rond en onder
de 2.5 (25 i'), wolken zijn weer weg.

Date: Subject:

Coma Cluster tweede waarneming 03:13
Na meridiaan flip

$$4,7 \times 0,5 \text{ cm}$$

$$r': 68 - 39 = 51 \text{ frames}$$

$$g': 60 - 38 = 52 \text{ frames}$$

FWHM $\approx 200''$ 03:15 r'

In frame 2 r' zit lichtstreep door opname
(mogelijk satelliet)

FWHM $\approx 2.1''$ 03:21 r' frame

FWHM $\approx 2.4''$ 03:34 g'r'

FWHM $\approx 2.9''$ 03:48 g' 15

FWHM $\approx 2.4''$ 03:52 g' 17

FWHM $\approx 2.7''$ 04:01 g' 21 geswitched

FWHM $\approx 2.9''$ 04:05 r' 22

error -4 fit filter error wheel 04:09

filter wheel error -4

FWHM $\approx 2.9''$ 04:14 r' 24

er zit een streep in g' 30

05:00 lichte bewolkking te zien

2ond frame r' 844 - 48

g' 44 - 48

einde observeren van coma cluster
(05:21)

Date: Subject:

begin observeren cat's eye nebula (05:34)

We zitten in de astronomische schemering,
dus helles met heel veel ligh, we proberen het ver-
ong (05:55)

Samenvatting observatie nacht 8-3-29 \rightarrow 9-3-24

object: exposure time: aantal frames: filter:

05:00 M51 60 sec 25 L

05:00 M51 60 sec 24 H α

05:00 Coma cluster 60 sec 39 r'

05:00 Coma cluster 60 sec 30 g'

05:15 I218 Nevel 60 sec 90 t/ha

05:20 I218 Nevel 60 sec 30 i'

05:20 Coma cluster 60 sec 52 r'

05:20 Coma cluster 60 sec 52 g'

05:35 Cat's Eye 60 sec 20 H α

bias frames ook genomen (10 x)

Date: 18-04-2024 Subject: ASCOMP Testing - Rembrandt Puppet

- 15.08 • Today, I am testing my automated ASCOMP script for observation, and learning the ropes for working with the scope.
- I also made a workflow sheet to use for everything, which I will leave here, with maybe a few adjustments
- 15.13 • While setting everything up, I could not power the filter wheel using the gray power extension box, so I used the black one.
- 15.19 • I will only 'observe' NGC188 and NGC7419 for this test, as those are circumpolar, and I edited 'Observation 20240412.txt' accordingly
- 15.24 • Beginning automated observation.
- 15.26 (NGC188) • Scope settle time 3-4 seconds
- Dome slew rate and extra exposure time match
 - Saving 5 images working images completely overexposed, which is logical as it's daytime.
- 15.30 • u' band and r' band images are correctly named.

Date: 18.04.2024 Subject: ASCOMP Testing - R.R.

- 15.32 (NGC7419) • Transition to next target completely smooth.
- Images are being taken.
 - NGC7419 → NGC188 slew is correctly categorised in terms of slew times in the file, so I can test extra well if scope and dome slews are correct
- 15.39 (NGC188)
- | | | |
|--------------|---------|----------------------------------|
| Scope slew | 14.8 s | Compare with script calculations |
| Scope settle | 4.64 s | |
| Dome slew | 14.45 s | |
- ~~15.39 (NGC188)~~
- | | |
|-------------|--------|
| Dome settle | 6.35 s |
|-------------|--------|
- There were 5.05s between the scope settle beep and when the dome started moving and the exposure started.
- 15.42 It's very windy today :)
- 15.43 Everything nominal, and was the same (NGC7419) here.
- 15.50 (NGC188) • I aborted testing, everything worked (to my surprise), and I started to ~~do~~ shut down operations (for now, I'll be back) Abort of automated tomorrow script as simple as killing the terminal if opened, forgot to manually run on celer, next time I'll know though
- 15.56 • Everything off (except pc), leaving the dome

Date: 19-04-2024 Subject: ASCOMP Testing - R.R.

13.30 I left the updated workflow sheet in the dome, and I also took 10 Bias and 10 Dark (30s) frames.

13.45 Closed everything.

Date: 21-04-2024 Subject: 1st real observation - R.R.

20.40 Started everything up.

20.45 Taking u' and r' flats: skewing scope to zenith, scope on east side of mount.

- 30 x u' flats : 20.450 to 20.56
- 30 x r' flats : 21.06 to 21.13 (overexposed before this time)

• u': ~25k - 15k counts (first peak v.s. last peak)

• r': ~50k - 20k counts some r' flats seem to 'move', where the peak of intensity shifts in the FOV

21.12 First star visible as white streak across FOV, might remove these flats.

21.15 Started taking background flux images, alternating u' and r' band, 30s long. Set repetition to 100 times, but I'll likely stop when counts reach around 1900, which is the background in already taken test images for u' but also r', but not sure yet.

r': 14k - 17.5k counts in 30s

u': 3700 - 3400 counts in 30s

r': 5200 - 4800 counts - 30s

u': 2330 - 2290 counts - 30s

r': 3370 - 3200 counts - 30s

u': 2064 - 2056 counts - 30s

21.37 When both images in r' and u' are roughly flat, I'll go over to auto-observing.

Date: 21-04-2024 Subject: 1st real observation - R.R.

- 21.50 Both u' and r' images of background flux have little to no difference in center and edge counts, so I'm altering '20240421.txt' to begin observing for the scheduled 21:59 observation of target 'NGC4147'
- 21.47 (Side note while waiting) Saw the first star streak in u' band which was also visible in r' band, but brighter, so I can almost start observing.
- 21.55 Had a small issue slewring the scope, it was busy, but I disconnected and reconnected it, and
- 22.00 Dome not slewring, so I'm restarting it. Dome wasn't officially fully open yet according to ACE, but it is now.
- 22.01 Reconnected everything, scope slews, dome slews as well, which is awesome. Starting observations from target #016 - Messier 92
- 22.06 u' doesn't seem there is enough flux for images (yet?)
r': stars detected!
- 22.10 Dome settle time + added to code seems (slow to NGC4147) to work and be long enough to settle

Date: 21-04-2024 Subject: 1st real observation - R.R.

- 22.12 Still not seeing anything in u' band, and clouds blocked the view
- 22.15 (NGC188) There are a few stars in u' band (~5) and for now no cloud obstruction
- 22.21 In the image taken while the dome slews and settles, the stars aren't all too deformed. I was expecting streaks, but it just becomes elliptical.
- 22.24 Stars seen in u' ~~in r'~~ are oversat. in r', so shorter exposures in r' might be better.
- 22.30 I changed ALL r' band exposure lengths from 30s to 15s to prevent overexposure. (Now starting from #023 - NGC4147 (and also for better sampling in the future))
- 22.46 I hate clouds.
- 22.53 Barely see any stars in 30s u', so I'll try 60s.
- 23.00 It works, so I'm doing 4x60s u' + 4x15s r' starting on #026 - NGC188
- Starting frame: 00066.fit

Date: 21-04-2024 Subject: 1st real observation - R.R.

- 23.25 Palomar 3 is probably too dim in UV
- 23.30 I seems the FOV is arcming off, no idea why.

23.35 Taking a break

23.45 Got back, and I discovered that the input given may not translate correctly:

- NGC7419 (00139-u - 00147-r)

- Txt: 22h 54.3m, +6d 48.9m
- Jnow scope: 22h 54m 18s, +6d 48m 55s
- J2000 scope: 22h 53m 20s, +6d 47m 08s
- Controller: 22h 53m 22s, +6d 47m 05s

stellarium

J2000:
22h 54m 18s, The given RA/Dec are seen as Jnow, but
~~+6d 48m 57s~~ it shows to J2000 coordinates, which are not
Jnow:
22h 53m 15s, the same.
+6d 47m 20s

00.48 Refocused to 35414 from shifted 35444

01.06 To test the RA/Dec, I slewed to ~~Mizar~~ α Lyr, i.e. Vega:

- Wiki: 18h 36m 56s, +38d 47m 01s
- Jnow: 18h 37m 45s, +38d 48m 17s
- J2000: 18h 36m 56s, +38d 47m 58s
- Controller: same as J2000

01.14 I discovered a button to select either Jnow or J2000, and trying with NGC7419 resulted in the above

Date: 22-04-2024 Subject: 1st real observation - R.R.

01.20 I found an option in the Telescope setup to use J2000 coordinates, which was unchecked. I checked this and tried NGC7419 again, which changed the controller values to:

- 22h 54m 17.9s
- +6d 48m 54s

Which is exactly correct

01.29 Now I can see a dense cluster on the bottom of the FOV in r' band

01.32 NGC188 is now visible (I think)

01.43 NGC1502 visible on top of the FOV, and with more precise input it still doesn't show,

01.55 Telescope J2000 checkbox unchecked and a manual slew to NGC1502 gives the same result as checked and with the auto-script, but checked AND manual slew goes to the target and gets it dead on;

Controller: 04h 09m 59.6s
+6d 23m 47s

Wiki: 04h 07m 48.96s
+6d 19m 55.2s

so with it checked, Jnow values from stellarium fit, and this value in the script WORKS

02.27 A lot of cloud cover, I'm signing off.

02.31 Closed everything! Night

Date: 22-04 Subject:

kalibratieframes

~ kalibratieframes:

60% zonlicht

We zien wat grote beweging. De licht is niet strak blauw, maar een beetje wit gebrukt

genaamde
M42

we hebben 10 frames, 4 seconden, [SII] gemaakt

10 frames, 2 seconden, O[III]

10 frames, 4 seconden, H α 20:40 Tijdens het maken van kalibratieframes was het best wel bewerkt

10 frames, 1 seconde, I

10 frames, 1 seconde, R

Maak flats: 1, 2, 4, 60 seconden

geen beweging

10x flats r van 1s (43k)

10x flats g van 1s (53k)

10x flats L van 1s (51k)

covers dicht

10x flats 1s

10x flats 2s

10x flats 4s

10x flats 60s

Date: 22-04 Subject:

M51, Cat's eye

Plan van vannacht (22-04)

22:15 - 00:00 M51 Ha

00:00 - 02:00 Cat's Eye Ha

02:30 - 05:00 Veil Nebula Ha, O[III]

zie volgende bladzijde.

Set point maan foto:

Set Point: 35420

→ gestopt om 00:05

M51

Set Point: 35372

inbeeld: 00:00 Oost naar boven
West naar onder

Ziet een groot onderdeel, gedraaid op oosterzijde

22:18

Foto ingesteld op 60 exposure x 80, bin=1

Lage beweging niet bij M51

Frame FWHM: 2.5 FWHM (normaal)

Frame 1:

Frame 2: Rond frame is mogelijk grotere FWHM

Frame 5, 5.6 Frame 5.5 iets grotere FWHM ook 5.8, 5.9, 6.0

Cat's Eye Vesta NGC 6543

Ha, 60s exposure, 120 repeats, bins = 1 FWHM: 2.9"

Begin: 00.15 Eind:

→ 00.21: Komt wat beweging langs, rond frame 6

00.15:

00.28: frame 11 raser, 12?, 14?, 16?

00.31:

rond frame 10

00.31:

wolken zo goed als weg, rond frame 10.

Frame 22,

Hoge FWHM, 32, 54, 82, 85, 86, 87, 88, 96

De FWHM zit vrijwel constant rond de 3.

Wolken: 86, 87, 95,

Date: 22-04 Subject: NGC 6960 (Veil Nebula)

02:45 We gaan van het Veil Nebula het object NGC 6960 bekijken. Wij kiezen deze uit, omdat er niet specifiek is aangegeven welke objecten een voorkeur hebben.

Het was bewolkt, een wit plaatje.
Dit duurde tot ongeveer half 1.

03:30 geswitched, hebben het object gevonden. De pointing stond verkeerd
(moest nog flink gezocht worden)
naar object

Hebben een FWHM van 1.772'' (rond)

De filters werden automatisch af gewisseld
tussen H α en OIII. Exposure time per frame 60 s
~~en bin = 1~~

Ha & O3 Frame 19 raar waarschijnlijk door wolk.
Frame 20 ook, odc: 21, 22, 23, 31

Flats odkond: (nog wat sterren zichtbaar) 06:02
(lucht licht niet helemaal evenal)

L	5 s	48 h	06:02
g	5 s	46 h	06:05
r	5 s	50 h	06:10
i	3 s	40 h	06:13
z	5 s	44 h	06:27
H α	9 s	38 h	06:32
O[III]	5 s	43 h	06:34
U	5 s	48 h	06:49
S[II]	4 s	48 h	06:52
Ha	5 s	44 h	06:55

Date: 22/04/2024 Subject: Samenvatting 22-23 /04/2024

Samenvatting van de nacht 22-04 → 23-04
Object exposure time frames filter

22:58 - 00:05

M51 60 s 63 H α

00:16 - 02:06

NGC 6543 60 s 103 H α
(Cat's eye)

04:01 - 05:03

NGC 6960 60 s 34 H α
NGC 6960 60 s 34 O[III]
(deel van Veil nebula)

Tussen 02:06 en 04:01 was er veel bewolking,
dus we hebben een hele tijd geen foto's kunnen maken.

Calibration frames:

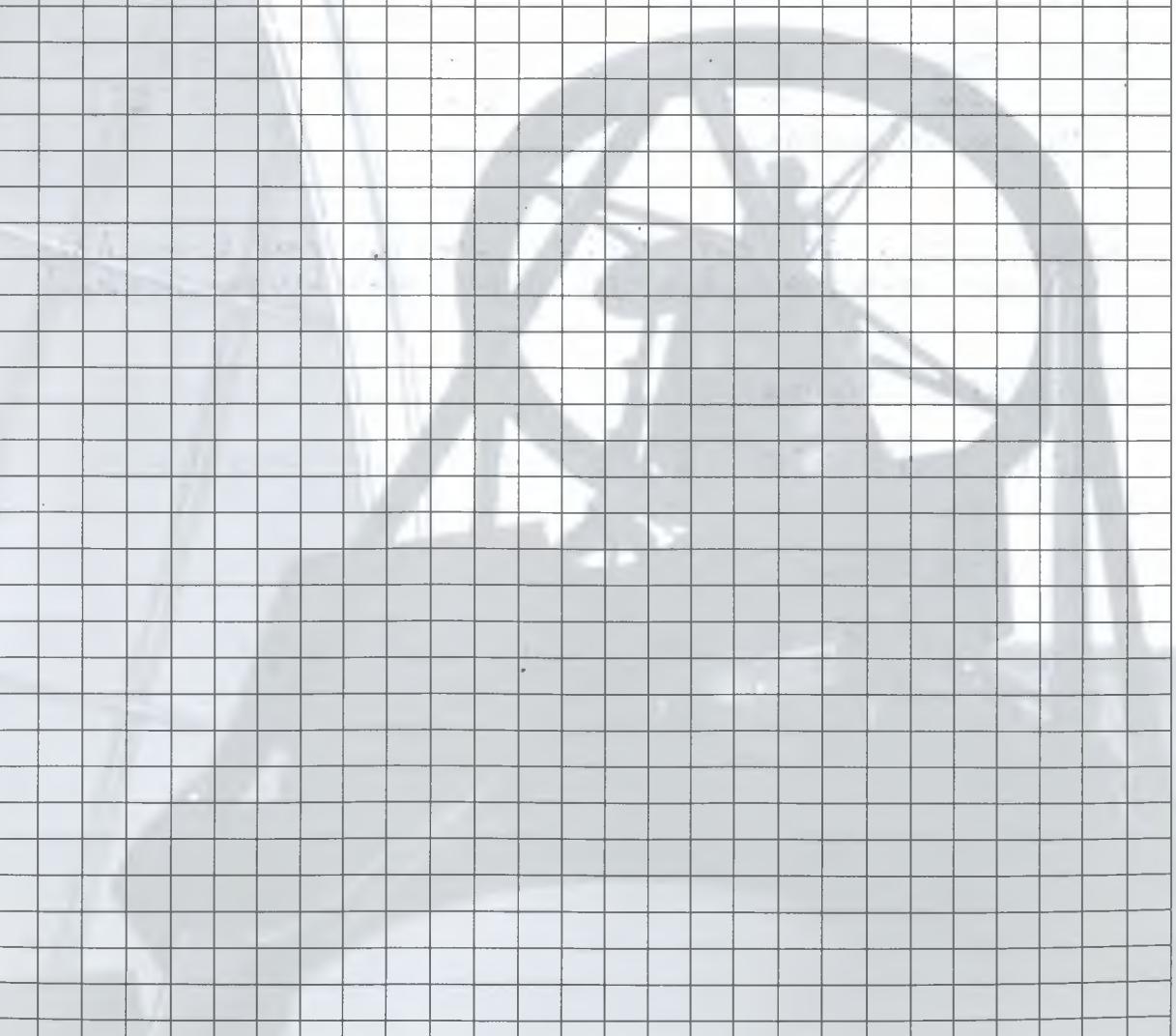
10x darks voor 1, 2, 4 en 60 seconden.

Ochtend Flats

L, g, r, i, z, u, H α , O[III], SII, H α

Date: 26-04-2024 Subject: Tightened screws.

15.25 I have retightened the screws holding the camera and focuser in place, eliminating light leaks (probably), and I also turned off EAGLE in preparation for the maintenance power outage 30-04-2024.



Date: 26-04-2024 Subject: Second ASCOMP Test - Rembrandt Puppel

- 20.10 Wind is strong and it's cloudy, but this should pass around 22:00.
I started everything up and checked if everything was functional, which things were.
- 20.16 I uploaded a fresh script to use which should be close to ideal.
- 20.28 Made some calibration frames, as I'm waiting for clear skies.
 $30 \times 15s + 30 \times 30s + 30 \times 60s$ darks, $-20^{\circ}C$
saved in '20240428 / 20240428_calibration'
+ 30x bias
- 21.35 There are still plenty of clouds, but I'm going to try and see if my script now slews correctly.
- 21.42 Tried making flats in r' but it's already too dark.
- 21.45 Running script, beginning at NGC7419
- 21.48 NGC188 perfectly in view, so after checking the next one goes well, NGC1502, I know it works.
- 22.05 IT WORKS!! NGC1502 perfectly in view
Now I can confirm my script works, and it is possible to use it even when it's not fully dark.
- 22.10 SAME FOR M38, perfect - way less stars in UV, more than expected

68

Date: 28-04-2024 Subject: Second ASCOMP Test - R.R.

69

Date: 28-04-2024 Subject: Second ASCOMP Test - R.R.

nice

- 22.32 Planning time is at 22.24.32, time is 22.32
tracking this to see if my scheduled times
go too fast or too slow. (delta is ~7m30s)
- 22.38 Current time 22.38.15, plan: 22.30.59, NGC4147
delta is 7m16s ahead of schedule
[Target is off, check Jnew coordinates]!
~~Should point at~~
- 22.46 Current time 22.46.39, plan: 22.37.34, M92
delta is 9m01s ahead, increase of 1m45s
Target in FoV, albeit at the bottom and not center
Worth checking
- 22.54 Current time 22.54.15, plan: 22.44.26, NGC7419
1 cycle complete
delta is 9m49s ahead, increase of 48s
target halfway between center and FoV edge
FWHM: $r' = 2.1 - 2.3$ arcsec, $u' = 2.7$ arcsec
- 23.01 Current time 23.01.39, plan: 22.51.02, NGC188
delta is 10m37s ahead, increase of 48s
Target slightly off-centre
FWHM: $r' = 1.7 - 1.9$ arcsec, $u' = 2.8 - 3.0$ arcsec
- 23.09.11 Current time 23.09.14, plan: 22.56.55, NGC1502
delta is 12m19s ahead, increase of 1m42s
Target slightly off-centre
2 images are useless, target moved, now perfectly
centered, RA/DEC not changed by this
FWHM: $r' = 2.1 - 2.3$ arcsec, $u' = 2.8 - 3.0$ arcsec

- 23.16 Current time 23.16.16, plan 23.03.12, M38.
delta is 13m04s ahead, increase of 45s
Target on upper edge of FoV, also got
'stuck' for 2 r' frames, now almost centered
- 23.23 23.23.06, plan: 23.09.12, Palomar 3
delta is 13m54s ahead, increase of 50s
- 23.30 23.30.34, plan: 23.15.58, own cluster
1 cycle time tracked
delta is 14m36s ahead, increase of 42s
total delta of a cycle: ~7 minutes
FWHM: $r' = 1.8 - 2.0$ arcsec, $u' = 2.5 - 3.0$ arcsec
- 23.35 Taking a break to drink something
23.55 Got back.
00.07 The script seems to have stopped, and
(NGC7419) rerunning the script won't activate.
00.13 I restarted MaxIM^{DL}, and now the
script runs again. Starting from NGC188
#036;00:09.21
- 00.45 NGC4147, first out of view, now just inside of
FoV, perhaps after meridian flip?
- 02.00 M107 just below FoV, check coordinates
Also, some clouds are appearing from the south
u' band data lost to cloud cover
- 02.17 Clouds are advancing, lost 1 image of M107 in u'

Date: 29-04-2024 Subject: Second ASCOMP Test - R.R.

- 02.20 The XONE logo is ridiculously bright, it might interfere with observations.
- 02.33 Clouds seem to have vanished.
- 02.40 Reached the same amount of targets after restarting, but everything still works, so the thing just after midnight was probably a freak event. (Hopefully)
- 02.48 Taking a break to eat and drink something and to warm up my feet. Saw 1 cloud right above the dome, but small.
- 03.00 Get back
- 04.08 Last time, I began taking flat frames around sunset and took background flux images until an hour after sunset, so now I will have to do this in reverse order for sunrise, which will begin in roughly an hour, ~05.10
- 04.13 M107 now visible on the edge of the FOV due to a meridian flip.
- 04.21 M92 no longer in FOV, also due to flip
- 04.36 I can see blue-ish skies near the horizon, so it may be time soon to switch to background flux
- 05.02 Seeing an increase in background counts.
- 05.05 SNR for bright stars in UV decreasing fast.
~~20-30% decrease~~
- 05.18 Doing NGC1502 for a sustained period to see changes around stars during sunrise.
Background: r' = 3600-3750 counts to 3900-3700 in a minute

Date: 29-04-2024 Subject: Second ASCOMP Test - R.R.

- 05.22 u' band data is barely visible, switching to zenith background flux measurements soon
- 05.32 Switching to zenith background flux measurements
NGC1502 ~~not~~^{barely} visible in either u' or r' band.
r' band: 11k counts
- 05.50 Now making flat frames in zenith
- All data saved in "C:\DATA\20240428\"
- 05.50 : 27x10s flat r' band
- 06.12 : 30x10s flat u' band
- 06.22 : 30x10s dark flats
- 06.30 Shutting everything down and turning off EAGLE for tuesday

Date: ~~08-05-2009~~ Subject: ~~S&D COMP 1 RR~~ groep 6
Cat's Eye

08-05-2009

1e jaars project

~~08:20~~ ~~THE SONGS~~ Hugo is ingevallen langs de rivier met zijn achtervolger.

Michael flats om ~20:00

10x	Hα	2s	36K counts
10x	Hβ	1s	43K "
10x Hγ 1s 46K "			
10x	OIII	1s	50K
10x	SII	2s	46K
<hr/>			
10x	Z'	1s	36K
10x	U'	2s	92K

heldere lucht
met aken toe wolkjes

KALIBRATIE: Yaron / Siebe / Delano

Dark frames: 8

- 10x 1 seconde
- 10x 2 seconden
- 10x 60 seconden

Bad field frames: 3

21:30 → Er hangt lichtje sluiervrouweling

- 10x R-filters 2 seconde → duidig Manne Hand ±30K
- 10x G-filters 2 seconde 24K
- 10x L-filters 2 seconde 24K

Bias frames: 8

Vega zoeken:

05° oost/west

0,25° noord/zuid

Date: 08/05/24 Subject: 1e jaars project groep 6
Cat's Eye

35456

Posing focus handmatig
(35441 → 1.9" ~ 2.1")

Set point 35441

23:37 → We zijn begonnen met waarnemingen van NGC 6543

23:54 → Streep op frame 19

23:56 → We zien verticale strepen op frame 21 en 22.

23:58 → FWHM noteren:
(ster) ~ 1.7"

00:05 → Streep op frame 33 (verticaal rechts midden)

00:12 → FWHM noteren:
~ 1.5" komt ook voor in dark frames

00:32 → Delano lost Siebe af in de trouwgel

00:36 → FWHM noteren:
~ 1.7"00:48 → FWHM noteren:
~ 1.5"01:04 → FWHM noteren:
~ 1.5"

01:23 → ~ 1.4"

01:28 → ~ 1.4"

01:43 → 120 frames O3 opgenomen
wisselen van waarnemingsobject:
+ Veil Nebula

Delano aflossen, Yaron gaat nu

02:02 → Veil Nebula in kaart brengen:
halve graad op Oost-West richting,
iets verschoven in Noord-Zuid richting.

Date: 09/05/14 Subject: 1^e jaars project groep 6

VEIL NEBULA: NGC 6995

H-α & OIII
filters

02:23 → 20 minuten erover gedaan
Om Veil nebula te vinden.
Focus was nog goed.

Begonnen met foto's maken.

02:32 → FWHM noteren:

~1,9"

02:37 → FWHM noteren:

~2,9" frame 0006

02:55 → FWHM noteren:

~2,108"

03:07 → Telescoop verschoven
frame: 0019 - 0020

Nog een keer handmatig verschoven
frame: 0020 - 0021

03:26 → FWHM noteren:

~2,3"

03:42 → FWHM noteren:

~2,1"

03:51 → Driehoekje/referentiesternen verwijderen

Telescoop verschoven
frame: 0039

FWHM noteren:

~1,9"

04:29 → ~1,4"

Date: Subject:

04:51 → frame 63 O3

structuur nauwelijks nog te
onderscheiden van achtergrond.
frames niet super waardevol
Variat hier? (erigen oordeel)

04:53 → totaal aantal frames: 128
64 frames per filter
opname stopgezet

05:38 → KALIBRATIE flat: BROAD

L → 2 seconden 10x 57K
G → 2 seconden 10x 47K
R → 2 seconden 10x 28K

06:00 → KALIBRATIE flat: NARROW

OIII → 5 seconden 10x 41K
Hα → 5 seconden 10x 21K

06:08 → KALIBRATIE DARK:

Hα → 5 seconden 10x
OIII → 5 seconden 10x

Date: 11-05-2024 Subject: ASCOMP BSc Project - Rembrand Ruppert

- 21.04 Reporting for duty
- 21.13 Preparing to take flat frames and after going through the automation. It is cloudy, so flats might not work at sunset
- 21.21 18 Made 20x10s u' flats
- 21.42 Made 20x10s r' flats
- 21.49 Made 20x10s g' flats, and now it's dark enough to begin automation using ASCOMP
- 21.56 Started automated imaging, path: C:/DATA/20240511
- 22.11 18 M38 seems to be quite close to the moon, so that can give interesting data, even at 14% moon.
- 22.26 u' band M48 images seem empty, might be clouds
- 22.13 Before finishing the cycle, the program crashed, as well as when I tried to start it again
- 23.22 Rebooted EAGLE, and now it seems to work again
- 23.25 Restarted automated imaging from when it got stuck.
- 23.29 Going down for a drink.
- 00.47 Everything still going well, no weird issues happening/recurring
- 00.50 Crescent moon covered by thin clouds, might be an issue soon
- 00.54 Scope is low, might be aiming ~~at~~ clouds. (Palomar)

Date: 12-05-2024 Subject: ASCOMP BSc Project - R. R.

- 00.55 FWHM is higher than usual, might have to do with cloud cover. (Palomar), image ~ 2^m7-u
- 01.00 Scope now slewed to much higher altitude, Unknown Star Group and FWHM back down to 1.5 arcsec, so no cloud issues here.
- 01.02 Moon now ~~is~~ almost totally cloud covered, barely visible (smudge-like)
- 01.55 Still no sign of an aurora
- 02.22 Saw a weird one time artifact. Looked just like an overexposed star, but a small diameter and in u' band, and disappeared in the next frames.
- 02.34 Tried to shoot NGC 6888, but couldn't see it, so moved back to the automated program.
- 02.39 Went down to grab some painkillers for a headache and a drink.
- 04.02 Starting to get brighter, seeing an increase in background flux
- 04.32 Now that the sky is a bit brighter, thin cloud layers can be seen, which might have been there part of, or the entire night.
- 05.10 Entering final twilight phase, still running the automation. From background flux medians, the flat order should be g'r'u'
- 05.19 20x10s g' flats | 05.27 20x10s r' flats | 05.48 u' flats 20x10s
is set. too bright, misjudged
- 05.56 Closed everything in the dome
- 06.22 Downloaded all data and closed everything except EAGLE downstairs

Date: 13/05/2004 Subject: Paarschots girls planning

Group 7

- ~ 23:00 we beginnen met M51; filters H-alpha en L filter
H-alpha - 1 uur 30 minu
L-filter - 30 minu
- ~ 1:00 Weer veel observeren
filters G R I.
alle 3 filters 30 minuten
- ~ 2:30 klaar?
↳ proef planning via volgende pagina's
voor wat er echt gevonden was :)
- temperatuur -20°C en niet -10°C
- 4,3 5 4 3 3 secundair
4 Ha SII MS OII filter
- 3 1 1 1 1
z i r g h
- eerst op single zetten daarna filter veranderen
start → testen
- daarna continuous en start drukken
- autogate minima niet stoppen en bij 50.000
drukken

Date: Subject: aan het calibrieren; flats

- Modeel leert de sensor heel veel vogels
- light → data }
onderste 3 → calibrieren } andere options
} weinig
- 2 bovenaanzicht
- focusen handmatig → waar: 3543.9 actual
- het leert ons niet om efficiënt te raderen :/
een beetje
er is enigszins bewerking, ook voor de voorspelling.
- 3548.2 → best position for focus
- onder 3 hoog f-in low }
onder 0.3 flatness } opleveren dat dit goed is
- satelliet op M51 0021 dus dat foto niet meer gebruiken
- ~~msl-00131~~ satelliet
fish-eye
- msl-00120 oall heeft misschien wolk!
- msl-0020-habos er kunnen wolken over FWHM is ook nog de normaal
- msl-00121 onbruikbaar door een wolk!
- msl-00122 onbruikbaar want satelliet
- msl-00131 onbruikbaar want wolk
files in goede map doen!
filter → kernel-filter → ok → screen stretch compensieren

Date:

Subject:

met tweede object begonnen:)

"demonstratieve richt is nu bewerkt"

Fr
ixa!
xa!

- schrijf stappen en hun coördinaten op om fig te maken
helemaal links te zien wat een star is.

- rechts iets rechts (2326, 3223) } der west
- links (726, 3147) } Gaußian
- onder M51 (2137, 2934) } aan

Tens voor Cesár & ik in de koepel kwam zitten maar de het op een aantal punten is het mooi helder geworden.

- 2:14 met tweede object NGC 7023

- 2:31 problem NGC in het midden te krijgen
zomertijd 9 R en 1 filter elke 30 minuten

We hebben voor de nevelen nu twee keer de cyclus aangezet. Daardoor zijn er nog 6 foto's genomen van de eerste cyclus.

Vanaf 01:15 zijn er geen wolken gevreesd.

NGC 7023 - 00:00 - 160s: ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ bij dit frame was dat het frame een beetje "duur" onder!!!

Date:

Subject:

Samenvatting:

Waargenomen objecten zijn M51 en NGC 7023

Om 11 uur wouden wij beginnen met waarnemen maar vanwege wolken werd dit uiteindelijk 12 uur.

Object	exposure time	frames	filter
M51 (00:00-02:10)	60 s	90	H-alpha X
		30	L
NGC 7023 (02:10-04:00)	60 s	30	B, g
		30	R
		30	I

Bij het waarnemen van het eerste object waren er een paar wolken tussen 00:00-01:00. Hierdoor moesten we later beginnen met de objecten waarnemen en zijn er op een paar frames wolken te zien. De rest van de nacht was volledig helder. Vanaf 01:00 geen wolken te zien.
Vanaf een frame (aangegeven in logboek) verschaf het frame.

Calibration frames

u	H-alpha	SII	H-Delta	OIII	z	i	r	g	L
4,3 seconden	5 Sec.	4 Sec.	3 Sec.	3 Sec.	3 Sec.	1 Sec.	1 Sec.	1 Sec.	1 Sec.

10 x dark voor 1, 3, 4, 5 en 60 seconden

naam praktikant:	Elo en Milan	groep	8
samengewerkt met:	TA MICHAEL + Stephanie	datum	18/5/2024

camera temperatuur op -10°C . Dit stand op -20°C .
 Let op bij data reducione!

stars & flatfielding

Hα frames # 0001 - 0010 met bewolking! 10 frames 1 sec

→ even wachten tot de wolk weg is.

of serie maken? 20:10 - 0011 - 0029 ook niet bruikbaar

→ mij op ander stuk.

57 k counts 2 sec 10 frames Hα → beter

nos 10 frames voor zekerheid

check frames 0020 - 0039 voor bruikbare frames

run 0030-0039 zien er goed uit.

O III 1 sec 10 frames ~50 k counts max

[Tellen 0001 Hα 25
 +/m 0020 Hα 25]

20:30 Z' 1 sec 10 frames ~50 k counts

8' i' 1 sec 10 frames ~42 k counts

g' 1 sec 10 frames ~48 k counts.

r' 1 sec 10 frames ~43 k counts

L' 1 sec 10 frames ~46 k counts

BIAS 2 sec 10 FRAMES
 darks 1,2,60 sec 10 FRAMES

WAARNEMINGENBLAD

blz.	exp.	
naam praktikant:	groep	
samengewerkt met:	datum	

21:30

werkplan:

- 21:30 → 23:00 calibreren
 23:00 → 01:00 waarnemen ~~met~~ cat-eye.
 01:00 → 04:00 waarnemen veel neblala.

maan:

100x Actual: 35512 naar beneden minder scherp

CAT eye:

ACTUAL: 35506

GROFFE FOCUS 35507 - 35489

35496 SCHERMET TUSSEN 1.8 EN 2.4

10X 60sec g'enR' en 15x 60sec g'enR'

00:05 Alles goed 1.9 - 2.2

00:13 1.7 - 2.0

1.5X 60sec g'enR'

00:19 1.9 - 2.2

00:24 2.1 - 2.4

00:30 2.1 - 2.5

00:36 1.8 - 2.0

00:42 2.0 - 2.4

00:48 1.9 - 2.2

5X 60sec g'enR')

00:54 1.9 - 2.1

WAARNEMINGENBLAD

blz.	exp.	
naam praktikant:	groep	
samengewerkt met:	datum	

VRIJL NEBULA (NGC 6955)

01:29 tot nu grote bewolkingen gehad
nu begonnen met zetten nevel-

01:40 Nevel gevonden focus 1.9 ~ 3
tot 300x 60s H α en OIII

01:55 1.8 - 2.4 kleinere apparatuur genomen \rightarrow lagere waarden

02:03 2.1 - 2.4

02:10 1.9 - 2.3

02:18 1.9 - 2.4 ♀ keer gebukt op E om ophog te gaan

02:27 2.1 - 2.3

02:36 1.9 - 2.3

"

02:43 2.1 - 2.4

02:49 1.7 - 2.0 s keer omhoog

wissel aan paarse programma (wollen koken)

03:00 1.6 - 2.0

03:10 1.4 - 1.7

03:16 0038 - H α FIT 3XE gedrukt tijdens opname
(ONBRUIKBaar)

1.6 - 2.0

03:26 2.0 - 2.4

03:34 1.6 - 2.0

03:45 wissel

Verschil tussen O-III en

03:54 2.2 - 2.5

H-2 van org 0.1

04:09 2.1 - 2.4

maar doch minder veel

(file 60) vanaf hier beginnt schering in rechter

04:18 2.3 - 2.8

04:28 2.6 - 2.9

04:38 2.8 - 3.0

04:45 afvinden observatie

valt niet meer zichtbaar.

naam praktikant:	Rembrand Ruppert	groep	
samengewerkt met:	-	datum	19-05-2024

21.13 Fired everything up, moved own data (folders 20240421, 20240428, 20240511) to the aporras.

21.22 u' band 10s exposures under 60k counts, no clipping, making $20 \times 10s$ flats in u' band ($\sim 40k - 55k$ counts)

21.41 Moon is at 84% full tonight, passes the meridian at roughly 22:50 CEST

21.58 Began the ASCOMP-RSM script, to get clipped data going into sub-65k counts for background changes around sunset, u' almost at that point, r' no idea

22.08 Stopped automated run to take $20 \times 10s$ r' flats. Resumed after this immediately at 22.14 (already at $\sim 7h - 15k$ counts)

22.16 First image that looks like it can be platesolved, $\sim 40m$ after sunset, in r', u' seems a little noisy still, brightest star at 5500 counts background around 4000, and less stars visible compared to r' (RA/DEC = 10h58m57s / 52d14m51s)

22.22 For tonight, NGC5634 is the closest object to the moon in angular distance, r' band image moved (mount bug)

22.44 Got a heart attack because I thought the camera wasn't exposing anymore, but I was just checking the screen perfectly in between exposures :)

23.04 NGC1502 u' band ~~not~~ moved, so redoing that exposure.

naam praktikant:	Renbrand Ruppert	groep	
samengewerkt met:	-	datum	19-05-2024

23.34 NGC1502 had a mount move glitch in u' , so retaking this exposure.

23.53 M92 had a mount move glitch in r' , retaking r' and u'

00.20 \uparrow same again

00.28 Targets in the north now have a u' background flux of 1907/1908, and the target 10° from the moon had 1911/1912, so a slight increase due to the moon's reflected sunlight

00.37 FWHM dropped from 1.8" to 2.7" in the northeast direction. I suspect it's cloud cover on its way, next target was 1.8" again.

00.42 ~~NGC4147~~ NGC4147 and NGC5634 still show an increase in background flux of +4-5 counts, so this must be moon-related

00.48 Same bug as at 23.53 and 00.20, again with M92, no clue why, retried the target and succeeded, but next M92 might have the same issue, or it might be after X slews.
#049

00.51 Going down for a drink and hayfever meds.

01.01 Seeing a LOT of cloud cover coming in from the north, already obstructing view of NGC1502 at ALT 25.35°, only seeing the brightest 2 stars in r' , and nothing in u' .

01.09 FWHM now 2.1" all-round, might be due to incoming clouds.

01.13 Cloud cover from the north now straight overhead.

01.16 Image 182-u might be affected by cloud cover.

naam praktikant:	Rembrandt Ruppert	groep	
samengewerkt met:	-	datum	20-05-2024

01.18 Clouds now stretch from east to west, covering the whole northern sky

01.20 The mount glitch probably has to do with slewings 10 times, as it happened 4 times in 49 slews, and might have for #059, but not visible due to cloud cover.

01.36 I'm continuing to let the script run a few cycles with clouds, and check how the forecast looks. Might take some new darks

01.48 Small gap in cloud cover, not sure if this will show in data.

01.51 NGC188 in r' visible ~~in~~, u' as well, but next target covered again

02.10 There seem to appear more gaps in cloud cover, but the data is still obstructed, and forecasts say it will only get worse.

02.19 244_r shows good data, but 245_u seems obstructed again.

02.30 Slightly bigger gap in cloud cover, but not much

02.44 268_r and 269_u look okay, but more clouds incoming

03.20 #099: The stars are moved, so the mount glitch does seem to happen every 10 slews, at least with the automated script I'm using.

03.30 Cloud cover is back and with no openings, worse than before and doesn't seem to clear up anymore

blz.	exp.	HSCOMP-RSM
naam praktikant:	Rembrandt Ruppert	groep
samengewerkt met:	-	datum 20-05-2024

04.18 Ran script until cycle completed - NGC188, ^{#117} closed dome in case of drizzles and started dark sequence:

20x60s + 20x15s darks
+ 20x10s darkflats

After starting this sequence, I went down to warm up and have a drink.

04.45 I was hoping to get some sunrise data after the clouds had passed, but it began to rain (good thing I closed the dome) and the clouds aren't leaving, so I'm setting everything to home position, and after darks are done I'm closing up shop ~~and~~ download the gathered data, and head home.

05.11 Shutting off upstairs.

05.15 Started data transfer, data stored in "C:/DATA/20240519"

05.38 Transfer complete, going home.

	blz.	exp.	
naam praktikant:	Sam van Leeuwen	groep	8
samengewerkt met:	TATFOOT + Stephanie	datum	23-5

FIATS

	<u>belichting</u>	<u>counts</u>	<u>Tijd</u>
U: 3 sec	49 K	20:55	
H _A : 4 sec	45 K	20:57	
S(II): 3 sec	49 K	21:00	
H _B : 2 sec	45 K	21:04	
O(III): 2 sec	50 K	21:05	
Z: 2 sec	46 K	21:08	
I: 2 sec	46 K	21:09	
R: 3 sec	49 K	21:56	
G: 2 sec	48 K	22:00	
L: 2 sec	44 K	22:06	

Gedra: 5 sec 36 K 22:09

Bias: 0 sec 10 FRAMES 22:15 ~~10K~~

DARKS: 2, 2, 3, 4, 5, 60 sec 22:30 10 FRAMES
alle filters met belichting: 2, 3, 4, 5 en 6 sec

naam praktikant:	Sam	groep	8
samengewerkt met:	Flot	datum	23/5

Obj-WaarnemingsplanObjectTijdFilters

Veil Nebula 00:30 Hz OIII

NGC4449 23:30 Hz "gt"

We beginnen met het inbergsellen van de relescoop door hem te kalibreren op een ster. Daarna beginnen we met de (NGC4449) waar te nemen voor 1 uur.

Daarna gaan we de Veil Nebula waarnemen voor 1 a 2 uur

NGC 4449

coördinaten

1228.19.46 440436,04

1228.11.12 440876,81

Het is te hoge dus de data is waarschijnlijk niet goed genoeg om te kunnen gebruiken.

Het inbergsellen doen we door een ster te meten met de breedte van die met de diameter van de breedte

Pos = 35469 met Dia 4,8

point root 3550

naam praktikant:	Sam	groep	8
samengewerkt met:	Floor	datum	24/5

een FWHM van ongeveer 1.6
nr Emissie.

FWHM

Frame 0004 heeft iets grotere een gem 2.3
Frame 0006 gem. 1.6
Frame 0007 gem. 1.8

vanaf frame 0008 wolkken. 00:55uur

NGC 6995

We gingen de Veil Nebula observeren.
het was te bewolkt vanaf 00:45uur.

coördinaten: $31^{\circ} 22' 42.0''$
20h 57m 18.7s

01:30 lucht weer geopend

20 54 59.6 + 31 20 40.2

naam praktikant:	Saem	groep	8
samengewerkt met:	FLOOR	datum	23/5

62:15 H2 60 sec exposure waarnemen
02:11

Het is een beetje hevig.

Waarde 2

KWOTELPT Fw H17

F. 1 1.9 - 2.4

F. 2 1.8 - 2.1

F. 3 1.8 - 2.0

F. 4 2.0 - 2.4

F. 5 2.0 - 2.2

F. 6 1.6 - 1.8

F. 7 1.5 - 2.0

F. 8 1.3 - 1.5

F. 9 1.3 - 2.3

F. 10 1.5 - 1.8

F. 11 1.4 - 1.9

02:30 F. 12 1.6 - 2.1

F. 13 1.8 - 2.0

F. 14 1.4 - 1.9

F. 15 1.6 - 2.1

F. 16 1.3 - 2.0

F. 17 1.3 - 2.0

F. 18 1.3 - 2.1

03:00 F. 19 1.5 - 1.9

F. 20 1.7 - 2.1

F. 21 1.7 - 2.0

F. 22 1.7 - 2.1

F. 23 1.5 - 2.0

} extra hevig

F. 32 2.4 - 3

hier wordt het
meer merkbaar

WAARNEMINGENBLAD

	blz.	exp.	
naam praktikant:	Sam	groep	8
samengewerkt met:	Floor	datum	24/5

Samenvatting observatie nacht 27/5 - 24/5

Object: exposure time: Frames: Filter:

23:30 maan 3 sec 1 Ha

00:30

1 NGC4449 60 sec 8 L

01:45

wolken tussen 00:45 - 01:30

02:00

1 NGC6995 60 sec 35 Ha

03:40 NGC6995 60 sec 35 O(III) Ha

Drie frames 10x genomen

Dark frames van 2, 3, 4, 5 en 60 sec genomen x10

03:40 eind van observeren