

ObservationReport

all measures in mm

ObservationID

0300

on

2023-09-24 22:01

Object	M27
Common Name	Dumbbell Nebula
Alternate Name (s)	NGC 6853
Visual Magnitude	7,4
Distance ► Object	1360
Apparent Size	8.0' × 5.6'
Object R.A.	20 00 38.520
Object DEC	+22 47 50.64
WikiLink	https://en.wikipedia.org/wiki/Dumbbell_Nebula



20230924_M27_ASI294_0300-01WM.jpg

Link ► Picture	M27_20230924
Description	Planetary Nebula
Constellation	Vulpecula

Picture Data

Work Status	Published	Quality	****		
Source Format	Photo	Picture Center R.A.	19h51m57s		
Tot./Act. Frames/Pane	81	81	Picture Center DEC	+08°55'42"	
H / V Panes	1	1	H/V FoV [°]	0,6739	0,4586
Exp. [s] / Frame	10	Above horizon [°]	0		
Total Time / Pane [min]	13,50	13,50	View Direction	N	

Camera Data

ZWO	ASI294MC-Pro	ZWOASI294	
Camera Angle [°]	266,93	Pixel Pitch [µm]	4,63
Gain or ISO	120	Camera Temp. °C	-10

Observation Site

Observation Start	2023-09-24T22:01:22 UTC+/- +1h	Observation End	2023-09-24T22:20:57	
Observation Site	DE Göttingen MBR	Site Elevation /Bortle	182	5
Province	NDS	Site Coordinates	51° 34' N, 9° 56' E	

Sky & Moon

Sky Index Total Clouds	1,7	0	%	Moon Rise Set	17:25:00	02:12:00
Outside Temp. °C	11	Moon Age [d]	9,4			
Moon Phase % Illum.	2nd quarter	73	%	Moon ► Target Dist.	UNKNOWN	

Optical Configuration

TS1624AS294r	TS1624ASI294rT235				
Lens or Scope	TSO RC 203/1624	Finder	M90 2.5" Rack Pinion Foc		
Type Of Build	Ritchey-Chretien Reflector	Finder Position [mm]	19,39	EAF Steps	6203
Brand	TS-Optics	Optical Factor	1		
Additional Optics	-	FoL norm actual [mm]	1624	1602,253	
Filter	-	DawesLimitLink	1,45	Arcsec	
Diameter [mm]	203	Optical Scale ["/px]	0,588		
Aperture / f-stop	8,00				

Other Hardware & Software

GuideScope	ZWO 30/120 mini	Mount	iOptron iEQ45 Pro
GuiderHW	ASIAIR	SessionControl	ASIAIR
GuiderSW	ASIAIR	PostProcessingSW	LrC, PixInsight

More ...

Work Folder [2023\20230924_M27_0300_GOE-MBR](#)

Comment Collimation test session

Remarks **1. Session Planning**

This image was taken to test the collimation status of the TSO RC203/124 telescope, because the telescope was decollimated and also had a wrong back focus length of 251.64mm instead of 254mm and a plate solve measured focal length of 1641mm instead

of 1624mm due to a wrong mirror spacing. The calculated mirror distance error before collimation was +0.39mm.

2. Location and sky

Fairly good

3. Session Results

The mirror distance could be partially corrected (new back focus=255.11mm instead of 254 and focal length=1597mm instead of 1624mm. The calculated mirror distance error is now -0.19mm, the distance correction was a bit overdone and will be corrected during the next observation session.

Also, the stars on the right side of the image look quite round, while the stars on the left side look egg-shaped. There is still a misalignment between the primary and secondary mirrors.

4. Plate Solving and Camera Rotation Results

ASI AIR rotation measurement: 266,93°

Astrometry.net rotation measurement:

Plate Solve result (ASI AIR): Focal length = 1597 mmm after collimation

5. Post Processing

Image selection, registration, background enhancement and color correction were done in PixInsight.

Some minor saturation correction was done in Lightroom.

No color or hue changes were made; the final image has natural colors.

6. Lessons Learned

More steps are required to correct the collimation problem of the telescope

7. Main logfile entries

n.a.