

Object

Common Name	Dumbbell Nebula
Alternate Name	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

M27



20230924-222057_M27_ZWOASI294_0001-01-1Z_720.jpg

Link ► Picture	M27_20230924
Description	Planetary Nebula
Constellation	Vulpecula

Picture Data

Work Status	Planned	Quality	****		
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 Data

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

Sky & Moon

Sky Quality	1,74	Outside Temp. °C	11
Seeing Index 1	3	Seeing Index 2	1
Moon Phase	2nd quarter	Moon Age [d]	9,4
Moon Percent %	73	Distance ► Target	UNKNOWN
MoonRise	17:25:00	MoonSet	02:12:00

Optical Config.

TS1624rAS294	TS1624rAS294E75T78		
Lens or Scope	TS1624	FocalLength [mm]	1624
Type Of Build	Ritchey-Chretien Reflector	Diameter [mm]	203
Brand	TS-Optics	Aperture / f-stop	8,00
Additional Optics		DawesLimitLink	1,45 Arcsec
Filter	-	Optical Scale ["/px]	0,588
Focuser	2.5" Rack + Pinion	EAF Position	6203
Focuser Position	18,05		

Other Hardware & Software

GuideScope	ZWO120	Mount	iOptron iEQ45 Pro
GuiderHW	ASIAIR	SessionControl	ASIAIR
GuiderSW	ASIAIR	PostProcessingSW	PixInsight

More ...

Work Folder	2023\20230924-220122_M27_GOE-MBR
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

ASIAIR rotation measurement: 266,93°

Astrometry.net rotation measurement:

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

5. Post Processing

Image selection, registration, background improvement and color correction were done in PixInsight (Post Processing using PixInsight (starlust.de)).

No further image post processing was required.

No color or hue changes have been applied; the final image is showing natural colors.

6. Lessons Learned

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

7. Main logfile entries

n.a.