

Object

Common Name	North America Nebula
Alternate Name	Caldwell 20
Visual Magnitude	4
Distance ► Object	2590 ly
Apparent Size	120 × 100 arcmin
Object R.A.	20h 59m 17.1s
Object DEC	+44° 31' 44"
WikiLink	https://en.wikipedia.org/wiki/North_America_Nebula

NGC7000



20220930_NGC7000_ASI294_0001_1280.jpg

Link ► Picture	NGC7000_20220930
Description	Emission Nebula
Constellation	Cygnus

Picture Data

Work Status	PostProcessed	Quality	***
Format	Photo	Picture Center R.A.	20h 59m 58.506s
Tot./Act. Frames/Pane	10 10	Picture Center DEC	+44° 31' 39.732"
H / V Panes	2 2	H/V FoV [°]	1,8268 1,2434
Exp. [s] / Frame	300	Above horizon [°]	79°
Total Time / Pane [min]	200,00 50,00		

Camera Data

Camera Angle [°]	294,4	ASI294MC Pro	
Gain or ISO	120	Pixel Pitch [µm]	4,63
		Camera Temp. °C	-10

Observation Data

Observation Start	2022-09-30T20:48:23 UTC+/- +1h	Observation End	2022-10-01T00:31:14
Observation Site	DE GÖ MBR	Site Elevation /Bortle	182 5
Province	NDS	Site Coordinates	51° 34' N, 9° 56' E

Sky & Moon

Sky Quality	1,41	Outside Temp. °C	7
Seeing Index 1	4	Seeing Index 2	2
Moon Phase	1st quarter	Moon Age [d]	4,5
Moon Percent %	27	Distance ► Target	349°
MoonRise	12:58:00	MoonSet	20:52:00

Optical Config.

	Config04c		L:1_E:100_C:1_O:-_T:83.9_F:UHC2
Lens or Scope	TSO APO 90/600	FocalLength [mm]	599
Type Of Build	APO Triplet Refractor	Diameter [mm]	90
Brand	TS-Optics	Aperture / f-stop	6,66
Additional Optics	-	DawesLimitLink	1,74 Arcsec
Filter	Omegon UHC 2"	Optical Scale ["/px]	1,595

Other Hardware & Software

GuideScope	Microspeed 50/200	Mount	iOptron iEQ45 Pro
GuiderHW	ASiAirPro	SessionControl	ASiAirPro
GuiderSW	NONE	PostProcessingSW	PixInsight

More ...

Work Folder <file:///F:\FotosLibrary\Astro\2022%20Astro\NGC7000\20220930>

Remarks This was my first attempt to capture a mosaic picture of 4 partially overlapping images. The sky quality was declining during the capturing process and is easily visible: the lower right section was the first set of pictures, then came the lower left, then the upper right and finally the upper left. In the upper left the haze became clearly visible, if you look at the bright star ξ Cyg at the upper left that is surrounded by a big halo. The four pictures have

been stacked from 10 pictures, each with an exposure time of 300s.

The stitched final picture has a size of 2.84 x 1.89 deg. The overlapping was planned to be 20% with a camera orientation of 247.9°, but was mistakenly set to 307.6° resulting in a not entirely overlapping pictures leaving black edges that had to be cut out by rotating and cropping the stitched image. Star integration and post-processing was done with PixInsight using the steps described on

<https://astroguide.starlust.de/html/ProcessingMosaicImages.html>

The final processed pictures indicated 2 problems with the equipment:

- a) stars are not shown as dots but look like asterixes, although an APO triplet refractor was used and the lense was cleaned before usage. Either the lense or the new 2" UHC filter are the reason for this effect (another cleaning required?)
- b) all stars have a smaller twin shadow star on their right this may be an indication of problems with backlash, guiding or tracking.