

# ObservationReport

all measures in mm

ObservationID 0297 on 2023-11-10 20:30

<b>Object</b>	<b>NGC281</b>
Common Name	Pacman Nebula
Alternate Name (s)	LBN616
Visual Magnitude	7,4
Distance ► Object	4100 ly
Apparent Size	25x30'
Object R.A.	00h 54m 05.17s
Object DEC	+56° 43' 09.09"
WikiLink	<a href="https://en.wikipedia.org/wiki/NGC_281">https://en.wikipedia.org/wiki/NGC_281</a>



20231110\_NGC281\_ASI294\_0297-01WM.jpg

Link ► Picture	<a href="#">NGC281_20231110</a>
Description	Bright Nebula
Constellation	Cassiopeia

## Picture Data

Work Status	Published	Quality	****
Source Format	Photo	Picture Center R.A.	0h54m20s
Tot./Act. Frames/Pane	100 100	Picture Center DEC	+56°44'58"
H / V Panes	1 1	H/V FoV [°]	1,8268 1,2434
Exp. [s] / Frame	30	Above horizon [°]	0
Total Time / Pane [min]	50,00 50,00	View Direction	N

## Camera Data

<b>ZWO</b>	<b>ASI294MC-Pro</b>	<b>ZWOASI294</b>	
Camera Angle [°]	-91,7869	Pixel Pitch [µm]	4,63
Gain or ISO	120	Camera Temp. °C	-10

## Observation Site

Observation Start	2023-11-10T20:30:17 UTC+/- +h	Observation End	2023-11-10T21:26:19
Observation Site	ES La Palma Jardin	Site Elevation /Bortle	470 3
Province	La Palma	Site Coordinates	28° 38' 52.0" N, 017° 53' 4

## Sky & Moon

Sky Index   Total Clouds	2,8 6 %	Moon Rise   Set	04:42:00 16:43:00
Outside Temp. °C	19	Moon Age [d]	27,1
Moon Phase  % Illum.	4th quarter 6 %	Moon ► Target Dist.	UNKNOWN

## Optical Configuration

<b>TS600AS294</b>	<b>TS600ASI294T252</b>		
Lens or Scope	TSO APO 90/600	Focuser	M90 TS600 Rack + Pinion
Type Of Build	APO Triplet Refractor	Focuser Position [mm]	59,23 EAF Steps 20420
Brand	TS-Optics	Optical Factor	1
Additional Optics	M63 WO Rotator	FoL norm actual [mm]	599
Filter	-	<a href="#">DawesLimitLink</a>	<a href="#">1,74 Arcsec</a>
Diameter [mm]	90	Optical Scale ["/px]	1,595
Aperture / f-stop	6,66		

## Other Hardware & Software

GuideScope	ZWO 30/120 mini	Mount	EQ6R-PRO
GuiderHW	ASIAIR	SessionControl	ASIAIR
GuiderSW	ASIAIR	PostProcessingSW	LrC, PixInsight

## More ...

Work Folder [2023\20231110\\_NGC281\\_0297\\_La-Palma-Jardin](#)

Comment

Remarks

### 1. Session Planning

Used Skysafari for planning (view limited to northern directions)

### 2. Location and sky

Acceptable, but light high veil clouds

### 3. Session Results

Despite the protective cap, the camera sensor was slightly dirty, which only became visible after shooting flat frames, but the problem could be eliminated during image processing.

### 4. Plate Solving and Camera Rotation Results

ASI AIR rotation measurement: 91.7869°

Astrometry.net rotation measurement: Up is 271.3 degrees E of N (identical with 91,3°)

Plate Solve result (ASI AIR): Solve succeeded: RA:0h54m20s DEC:+56°44'58" Angle = -91.7869, Star number = 2552

### 5. Post Processing

#### PixInsight Core 1.8.9-1 Ripley (x64)

- WBPP (WeightedBatchPreprocessing 2.5.9), computing time on my old laptop: 04:48:25.6 for 100 light frames
  - Master dark: MasterDark20\_030.0s\_TS600AS294\_gain120\_20231111.fit
  - Master flat: Master\_Flat20\_TS600AS294\_NoFilter\_DirtySensor\_20231111.fit (file was not used although it was provided)
  - Master Bias: MasterBias50\_1.0ms\_20230704-103931.fit (file was not used although it was provided)
  - BN (Background Neutralization) with Working Mode: Target Background = 0.0
  - STF (Screen Transfer Function) + MLT (Multiscale Linear Transform) to create a final version and export to .jpg
- **Lightroom** was used on the jpg picture for a slight increase in color dynamics and color saturation

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

### 6. Lessons Learned

Always clean the sensor before use!

Although the EAF position found by ASI AIR was 20006, there were still 414 step left after a GoTo 0, then setting the position to 5000 and applying a new GoTo 0 command. Looks like the start position was not exactly at 0, has to be checked next time. As a result, the focus position could be 20.420 for this configuration (and not 20006 as determined by ASI AIR).

### 7. Main logfile entries

Log enabled at 2023/11/10 20:23:15

2023/11/10 20:23:15 Plan NGC281 Start

2023/11/10 20:23:15 [Autorun|Begin] NGC281 Start

2023/11/10 20:26:25 [AutoCenter|Begin] Auto-Center 1#

2023/11/10 20:26:25 Mount slews to target position: RA:0h54m18s DEC:+56°45'15"

2023/11/10 20:26:30 Exposure 2.0s

2023/11/10 20:26:33 Plate Solve

2023/11/10 20:26:36 Solve succeeded: RA:0h54m22s DEC:+56°39'7" Angle = -91.7893, Star number = 2550

2023/11/10 20:26:36 [AutoCenter|End] Too far from center, distance = 8%(0.102514°)

2023/11/10 20:26:38 [AutoCenter|Begin] Auto-Center 2#

2023/11/10 20:26:38 Mount slews to target position: RA:0h54m18s DEC:+56°45'15"

2023/11/10 20:26:43 Exposure 2.0s

2023/11/10 20:26:46 Plate Solve

2023/11/10 20:26:50 Solve succeeded: RA:0h54m20s DEC:+56°44'58" Angle = -91.7869, Star number = 2552

2023/11/10 20:26:50 [AutoCenter|End] The target is centered

.....

2023/11/10 20:26:59 [AutoFocus|Begin] Run AF before Autorun start, exposure 5.0s Bin1, temperature 21.0°C

2023/11/10 20:26:59 Find Focus Star

2023/11/10 20:27:22 Find Focus Star: detect and calculate star size 6.7 , EAF position 20135

2023/11/10 20:27:22 Calculate V-Curve

...

2023/11/10 20:29:38 Calculate Focus Point: detect and calculate star size 3.2 , EAF position 20006  
2023/11/10 20:29:38 Auto focus succeeded, the focused position is 20006  
2023/11/10 20:29:38 [AutoFocus|End] Auto focus succeeded  
2023/11/10 20:29:41 [Guide] ReSelect Guide star  
2023/11/10 20:29:41 [Guide] Start Guiding  
2023/11/10 20:29:43 [Guide] Guide Settle  
2023/11/10 20:29:46 [Guide] Settle Done  
2023/11/10 20:29:46 Exposure 30.0s image 1#  
2023/11/10 20:30:17 Exposure 30.0s image 2#  
2023/11/10 20:30:48 Exposure 30.0s image 3#  
...  
2023/11/10 21:25:48 Exposure 30.0s image 100#  
2023/11/10 21:26:19 [Guide] Stop Guiding  
2023/11/10 21:26:19 [Autorun|End] Finish Autorun  
2023/11/10 21:26:19 Plan NGC281 Finish  
2023/11/10 21:26:19 Turn Off Cooling  
2023/11/10 21:26:19 [Guide] Stop Looping  
2023/11/10 21:26:19 Stop Tracking  
2023/11/10 21:26:20 [Guide] Stop Tracking failed  
2023/11/10 21:26:20 Stop Tracking  
2023/11/10 21:26:20 [Guide] Stop Tracking failed  
2023/11/10 21:26:47 Mount GoTo Home POS  
2023/11/10 21:26:47 Stop Tracking  
2023/11/10 21:26:47 [Guide] Stop Tracking failed  
2023/11/10 21:26:47 Stop Tracking  
2023/11/10 21:26:47 [Guide] Stop Tracking failed  
Log disabled at 2023/11/10 21:26:47