ObservationReport

all measures in mm | ObservationID 0158 on 2022-10-28 02:53

Object	M42				
Common Name	Orion Nebula				
Alternate Name (s)	NGC1976				
Visual Magnitude	4				
Distance ▶Object	1400 ly				
Apparent Size	85,0x60,0'				
Object R.A.	05h 36m 28.67s				
Object DEC	-05° 26' 08,2"				
WikiLink	https://en.wikipedia.org/wiki/Orion_Nebula				

20221028_M42_ASI294_0158-04WM.jpg

Link ▶Picture	M42_20221028
Descpription	Bright Nebula
Constellation	Orion

Picture Data					
Work Status	Published		Quality	*****	
Source Format	Photo		Picture Center R.A.	05hr 35' 10"	
Tot./Act. Frames/Pane	30	30	Picture Center DEC	-05º 16' 27"	
H / V Panes	1	1	H/V FoV [°]	1,8268	1,2434
Exp. [s] / Frame	180		Above horizon [°]	0	
Total Time / Pane [min]	90,00	90,00	View Direction	N	

Camera Data	ZWO		ASI294MC-Pro	ZWOASI294	
Camera Angle [°]	183,6		Pixel Pitch [µm]	4,63	
Gain or ISO	120		Camera Temp. °C	17	

Observation Site					
Observation Start	2022-10-28T02:53:46	UTC+/- +h	Observation End	2022-10-28T04:26:21	
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	4,5	%	Moon Rise | Set		
Outside Temp. °C	17		Moon Age [d]	2,6	
Moon Phase |% Illum.	UNKNOWN	8 %	Moon ▶Target Dist.	145.6º	

Optical Configuration	TS600AS294		TS600ASI294T252		
Lens or Scope	TSO APO 90/600		Focuser	M90 TS600 Rack + Pinion	
Type Of Build	APO Triplet Refractor		Focuser Position [mm]	0,00	EAF Steps 0
Brand	TS-Optics				
Addtional Optics	M63 WO Rotator		Optical Factor	1	
Filter	-		FoL norm|actual [mm]	599	
Diameter [mm]	90		DawesLimitLink	1,74 Arcsec	
Aperture / f-stop	6,66		Optical Scale ["/px]	1,595	

Other Hardware & Software			
GuideScope	Omegon 50/200	Mount	iOptron iEQ45 Pro
GuiderHW	ASiairPro	SessionControl	ASiairPro
GuiderSW	ASiairPro	PostProcessingSW	BlurXTerminator, NoiseXTerminator, PS, LrC, PixInsight

More ...	
Work Folder	2022\20221028_M42_0158_La-Palma-Jardin
Comment	
Remarks	1. Session Planning The same planning was used as on the 27th for M42 which failed due to instrument

problems.
Used Telescopius.com to plan for the coordinates and camera rotation.
Planned center coordinates: RA: +05h 36' 01&quot DEC: -05° 16' 35"
Panes: 1x1
Planned session times: 02:45h to 04h16h (estimated)
Target position:

- at session start (02:45h): elevation 47° at 139° SE
- at session end: (04h16h estimated) : elevation 55° at 174° S

The Telescopius pane plan was exported and re-imported to an ASIAIR plan.

2. Location and sky

Sky quality: 22% low clouds, 0% middle and high clouds, sky quality: 1.09 (Index 1: 4, index 2: 3)

I took the images on the terrace of our bungalow at the La Palma Jardin facility located in Celta - El Paso - La Palma (Canary Islands) in Spain at 450 m above sea level during the late night using an ASIAIR plan that was generated using the Skyatlas function of ASIAIR to center the target. The manual camera rotation was already adjusted during the earlier night. Unfortunately the sky properties where not too good, we had extremely high air humidity (>88%) and a dew point only 1° below the actual temperature resulting in sudden fog formation, but apparently the situation improved during the night, although the humidity is visible around the brighter stars in this image.

3. Session Results

This time the guiding and tracking worked as expected with a quite good resulting picture. As M42 is a quite bright object it should be considered to make more but shorter exposures in order to prevent overflows in camera cell capacities.

4. Post Processing

Image selection, registration, background improvement, color correction and color stauration changes were done only in PixInsight (Post Processing using PixInsight (starlust.de) . No color or hue changes have been applied; the final image is showing natural, but enhanced colors.

- Version 20221028_M42_ASI294_0158-00: After post processing in PixInsight
- Version 20221028_M42_ASI294_0158-01: same master light frame, but added some more post processing in Photoshop and Lightroom (Selective Color Boosting Using Photoshop (starlust.de) and image sharpness)
- Version 20221028_M42_ASI294_0158-04 was additionally enhanced with NoiseXTerminator and BlurXTerminator and released on March 12, 2024.

5. Plate Solve and Camera Rotation

As the initial camera oration is 0° and the planned rotation 90°E , the camera was rotated left (counter clock-wise) by 90° to achieve optimal target during the setup preparation, as advised by Telescopius.com.

The resulting camera rotation turned out to be:

- 176° E of N (according to plate solving using astrometry.net)
- 3.73916 (according to ASIAIR plate solving)

that means instead of rotating the camera by 90° left (or east) I shouldn't have rotated the camera at all - which is odd.

6. Main logfile entries

2022/10/27 21:06:32 Plan M42 Start
2022/10/27 21:06:32 [Autorun|Begin] M42 Start

2022/10/27 21:06:32 Wait 5h39min9s
2022/10/28 02:45:42 [AutoCenter|Begin] Auto-Center 1#
2022/10/28 02:47:01 Solve succeeded: RA:5h36m12s DEC:-5°15'36" Angle = 3.56196, Star number = 134
2022/10/28 02:47:01 [AutoCenter|End] The target is centered
2022/10/28 02:47:10 Shooting 30 light frames, exposure 180.0s Bin1
2022/10/28 02:47:10 [AutoFocus|Begin] Run AF before Autorun start, exposure 2.0s Bin1, temperature 19.4℃
2022/10/28 02:49:39 Auto focus succeeded, the focused position is 20655
2022/10/28 02:50:45 Exposure 180.0s image 1# … 5#
2022/10/28 03:05:50 [Guide] Dither
2022/10/28 03:06:52 Exposure 180.0s image 6# … 10#
2022/10/28 03:21:57 [Guide] Dither
2022/10/28 03:22:58 Exposure 180.0s image 11# … 15#
2022/10/28 03:38:03 [Guide] Dither
2022/10/28 03:39:04 Exposure 180.0s image 16# … 20#
2022/10/28 03:54:09 [Guide] Dither
2022/10/28 03:55:10 Exposure 180.0s image 21# … 25#
2022/10/28 04:10:15 [Guide] Dither
2022/10/28 04:11:16 Exposure 180.0s image 26# … 30#
2022/10/28 04:26:22 [Guide] Stop Guiding
2022/10/28 04:26:22 Stop Tracking
2022/10/28 04:26:22 Plan M42 Finish
2022/10/28 04:26:22 Turn Off Cooling
2022/10/28 04:26:55 Mount GoTo Home POS
2022/10/28 04:26:55 Stop Tracking
2022/10/28 04:27:51 EAF back to zero position failed
2022/10/28 04:27:51 Shutdown ASIAIR
Log disabled at 2022/10/28 04:27:52
Log closed at 2022/10/28 04:27:52