

ObservationReport

ObservationID

0410

on

2025-10-02 20:38

all measures in mm



Main Object	NGC6946
Common Name	Fireworks Galaxy
Alternate Name	C12
Visual Mag. Size	9,60 16'x11,2'
Distance	25,2 Mly
Object R.A. DEC coord.	20h 34m 52.3s +60° 09' 14"
Description	Galaxy
Constellation	Cepheus
Other Objects	



20251002_NGC6946_ASI2600_0410-01WM.jpg

StarImage Link	OID0410
Telescopius Link	telescopius.com ngc-6946
Wikipedia Link	https://en.wikipedia.org/wiki/

Image Properties

Work Status	PostProcessed	Rating	***
Source Format	Photo	Picture Center R.A.	05h 34m 23.312s
Tot./Act. Frames/Pane	40 31	Picture Center DEC	-38° 56' 48.871"
H / V Panes	1 1	FoV measured H/V [°]	11.7' 7.78'
Exp. [s] / Frame	180	Above horizon [°]	74°
Total Time / Pane [min]	93,00 93,00	View Direction	NW313°
Camera Data	ZWO Optical	ASI2600MCAir	ZWOASI2600
Camera Angle [°]	225,5	Pixel Pitch [µm]	3,761
Gain or ISO	100	Camera Temp. °C	-10

Observation Site

Observation Start	2025-10-02T20:38:45 UTC+/- +1h	Observation End	2025-10-02T22:58:49
Observation Site	DE Göttingen Weende	Site Elevation / Bortle	182 4
Province	NDS	Site Coordinates	51° 34' N, 9° 56' E

Sky & Moon

Sky Index Total Clouds	2,8 0 %	Moon Rise Set	17:41:00 02:03:00
SQM Outside Temp. °C	20,09 5	Moon Age [d]	11
Moon Phase % Illum.	2nd quarter 79 %	Moon ► Target Dist.	UNKNOWN

Optical Configuration

Lens or Scope	TSO RC 203/1624c	Mechanical Focuser	M90 TS1624 Rack Pinion Focus
Type Of Build	Ritchey-Chretien Reflector	Electronic Focuser	☒
Brand	TS-Optics	Focuser Position Steps	3941 [mm] 12,98
Additional Optics	M54 ZWO ASI CAA Rotator	▶ Optical Factor	1
Filter	-	FoL norm actual [mm]	1609 1609
Diameter [mm]	203	DawesLimitLink	<u>1,46 Arcsec</u>
Aperture / f-stop	7,93	Optical Scale ["/px]	0,482

Other Hardware & Software

GuideScope	ASI2600 Guide Sensor	Mount	iOptron iEQ45 Pro
GuiderHW	ASIAIR	SessionControl	ASIAIR
GuiderSW	ASIAIR	PostProcessingSW	PixInsight, GraXpert, BlurXTerminator, NoiseXTerminator, StarXTerminator

More ...

Work Folder	2025\20251002_NGC6946_0410_WEENDE
Comment	Fireworks Galaxy (NGC 6946)
Remarks	1. Session Planning

No big planning, just selected a target that was easy to spot and high enough above the horizon. First time visited NGC 6949, the Fireworks Galaxy. Goal was to test the TSO RC 203/1624 carbon after the latest collimation.

2. Location and sky

Not very favorable: very strong jet stream, high humidity (~80%) and the nearly 80% moon lighting up the sky.

3. Session Results

A problem occurred after meridian flip: the process always declared the flip to have failed although stars have been detected and the target was apparently centered (see log entries below). The plan was then stopped after 5 attempts and successfully restarted without any further problems. Reason unknown.

```
2025/10/02 21:06:29 Stop Tracking
2025/10/02 21:06:30 [Meridian Flip|Begin] Wait 4min11s to Meridian Flip
2025/10/02 21:10:40 Meridian Flip 1# Start
2025/10/02 21:10:43 [AutoCenter|Begin] Auto-Center 1#
2025/10/02 21:10:43 Mount slews to target position: RA:20h35m26s DEC:+60°14'54"
2025/10/02 21:11:18 Exposure 2.0s
2025/10/02 21:11:24 Plate Solve
2025/10/02 21:11:28 Solve succeeded: RA:20h30m5s DEC:+60°16'15"
Angle = 172.487, Star number = 81
2025/10/02 21:11:29 [AutoCenter|End] Too far from center, distance = 118%(0.664027°)
2025/10/02 21:11:31 [AutoCenter|Begin] Auto-Center 2#
2025/10/02 21:11:31 Mount slews to target position: RA:20h35m26s DEC:+60°14'54"
2025/10/02 21:11:36 Exposure 2.0s
2025/10/02 21:11:42 Plate Solve
2025/10/02 21:11:47 Solve succeeded: RA:20h35m26s DEC:+60°15'17"
Angle = 172.59, Star number = 73
2025/10/02 21:11:47 [AutoCenter|End] Too far from center, distance = 1%(0.0064423°)
2025/10/02 21:11:49 [AutoCenter|Begin] Auto-Center 3#
2025/10/02 21:11:49 Mount slews to target position: RA:20h35m26s DEC:+60°14'54"
2025/10/02 21:11:53 Exposure 2.0s
2025/10/02 21:11:59 Plate Solve
2025/10/02 21:12:04 Solve succeeded: RA:20h35m27s DEC:+60°14'53"
Angle = 172.594, Star number = 80
2025/10/02 21:12:04 Angle 164.238->172.594/Degree
2025/10/02 21:12:04 [AutoCenter|End] The target is centered
2025/10/02 21:12:04 Meridian Flip 1# failed
2025/10/02 21:12:04 Wait 1min to Meridian Flip
...
2025/10/02 21:17:16 Solve succeeded: RA:20h35m25s DEC:+60°14'46"
Angle = 172.42, Star number = 80
2025/10/02 21:17:16 Angle 164.238->172.42/Degree
2025/10/02 21:17:16 [AutoCenter|End] The target is centered
2025/10/02 21:17:16 Meridian Flip 5# failed
2025/10/02 21:17:16 Wait 1min to Meridian Flip
2025/10/02 21:17:26 Stop Autorun Manually
2025/10/02 21:17:26 [Meridian Flip|End] Cancel, Meridian Flip failed
2025/10/02 21:17:26 Start Tracking
2025/10/02 21:17:27 [Guide] ReSelect Guide star
2025/10/02 21:17:29 [Guide] Start Calibrating
2025/10/02 21:17:31 [Guide] Select Guide Star failed, no star found
2025/10/02 21:17:31 [Guide] Stop Guiding
2025/10/02 21:17:32 [Autorun|End] Pause Autorun
2025/10/02 21:17:32 Pause Plan Ngc6946
Log disabled at 2025/10/02 21:17:32
Log enabled at 2025/10/02 21:19:42
2025/10/02 21:19:42 Plan Ngc6946 Start
2025/10/02 21:19:43 [Autorun|Begin] NGC 6946 Start
2025/10/02 21:19:45 [AutoCenter|Begin] Auto-Center 1#
2025/10/02 21:19:45 Mount slews to target position: RA:20h35m26s DEC:+60°14'54"
2025/10/02 21:19:50 Exposure 2.0s
2025/10/02 21:19:56 Plate Solve
2025/10/02 21:20:00 Solve succeeded: RA:20h35m27s DEC:+60°14'41"
Angle = 172.593, Star number = 84
```

```
2025/10/02 21:20:01 [AutoCenter|End] The target is centered
2025/10/02 21:20:01 CAA starts rotating: current angle = 172.6,
target angle = 350.4
2025/10/02 21:20:25 CAA rotation completed
2025/10/02 21:20:28 Start Tracking
```

4. Plate Solving and Camera Rotation Results

see the details in the session report.

5. Post Processing

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

- 1: Blink
- 2: SubframeSelector
- 3: FBPP
- 4: Dynamic Crop + Plate Solve
- 5: GraXpert
- 6: BlurXTerminator
- 7: NoiseXTerminator
- 8: SPCC: Spectrometric Color Calibration
- 9: StarXTerminator: splitting the image into Stars and Galaxy
- 10: Applied HAT (Histogram Transfer) and CT (Curves Transformation) on both images
- 11: PixMath: Integrated Galaxy + Stars*0.8 into final image

No further image post processing was required.

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

6. Lessons Learned

Telescope collimation is still not perfect, but acceptable.

7. Main logfile entries

see above