

ObservationReport

ObservationID

173

on 2023-02-08 19:33

Object

C/2022-E3

Common Name C/2022 E3
Alternate Name Comet ZTF
Visual Magnitude 5
Distance ► Object
Apparent Size
Object R.A.
Object DEC
WikiLink [https://en.wikipedia.org/wiki/C/2022_E3_\(ZTF\)](https://en.wikipedia.org/wiki/C/2022_E3_(ZTF))



20230208-212756_C-2022 E3_ZWOASI294_0003-01_1280.jpg

Link ► Picture [C/2022-E3_20230208](#)
Description Comet
Constellation Auriga

Picture Data

Work Status	Published	Quality	****
Format	Video	Picture Center R.A.	04h 54m 20.535s
Tot./Act. Frames/Pane	9 98	Picture Center DEC	+33° 54' 44.278"
H / V Panes	1024 800	H/V FoV [°]	1,8268 1,2434
Exp. [s] / Frame	60	Above horizon [°]	69,5°
Total Time / Pane [min]	80.281.600,00 98,00	View Direction	214,7°

Camera Data

ZWO

ASI294MC-Pro

ZWOASI294

Camera Angle [°]	272,6	Pixel Pitch [µm]	4,63
Gain or ISO	120	Camera Temp. °C	-4

Observation Data

Observation Start	2023-02-08T19:33:49 UTC+/- +1h	Observation End	2023-02-08T21:27:56
Observation Site	DE GÖ MBR	Site Elevation /Bortle	182 5
Province	NDS	Site Coordinates	51° 34' N, 9° 56' E

Sky & Moon

Sky Quality	2,01	Outside Temp. °C	-2
Seeing Index 1	3	Seeing Index 2	1
Moon Phase	3rd quarter	Moon Age [d]	18
Moon Percent %	91	Distance ► Target	UNKNOWN
MoonRise	20:16:00	MoonSet	09:11:00

Optical Config.

Config04c

L:1_E:100_C:1_O:-_T:89.7_F:-

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	-	Optical Scale ["/px]	1,595

Other Hardware & Software

GuideScope	ZWO 30/120 mini	Mount	iOptron iEQ45 Pro
GuiderHW	ASiAirPro	SessionControl	ASiAirPro
GuiderSW	ASiAirPro	PostProcessingSW	PixInsight + Photoshop + Lightroom

More ...

Work Folder [2023\20230208-193349_C-2022-E3_GÖ-MBR](#)
Remarks Comet C/2022 E3 Video - comet moving in front of the stars in constellation Auriga

1. Session Planning

Used SkySafari Pro for the actual comet coordinates together with ASI AIR Pro for

GoTo and telescope guiding.

2. Location and sky

Unfortunately the sky conditions were only mediocre with high speed winds in the upper atmosphere and a rather bright sky resulting in much background noise. But this was the second night after many weeks of bad weather and rain. Had to quickly install and calibrate everything between sunset and before the nearly full moon rose above the horizon at 20:16h, I was still a little late before I could start the nearly 2 hours of frame capturing that only started at 19:33h local time (UCT+1).

3. Session Results

The relatively bright sky (humidity, city lights) lead to a lot of background noise in the picture, absolutely no ideal conditions. Due to a tracking error (around frame #79 and 80) only 98 out of 100 original frames could be used. Further details about the image post-processing are available here and subsequent pages: [Creating a Comet Video Clip \(starlust.de\)](#)

4. Plate Solving and Camera Rotation Results

ASIAIR rotation measurement: not done

Astrometry.net rotation measurement: 272,6° E of N

Plate Solve result (ASIAIR): not done

5. Post Processing

The **post-processing** (see: [Creating a Comet Video Clip \(https://astroguide.starlust.de/html/CreatingaCometVideoClip.html\)](#)) was done with PixInsight using following steps:

- Use [PixInsight - Blink Process \(https://astroguide.starlust.de/html/11BlinkManualFrameSelection.html\)](#) to select the good frames: frames #79 and 80 had to be discarded due to guide errors
- Use [Bulk Image Rotation \(https://astroguide.starlust.de/html/BulkImageRotation.html\)](#) to rotate wrong orientated frames (e.g. due to an meridian flip during the exposure phase)
- Use [Debayer Function \(https://astroguide.starlust.de/html/DebayerFunction.html\)](#) the pictures (if using an OSC or color CMOS camera)
- Use [PixInsight - Blink Process \(https://astroguide.starlust.de/html/11BlinkManualFrameSelection.html\)](#) to enhance the picture quality and to generate a video file using the external **ffmpeg** function and finally improving the video quality and reducing the file volume using an external tool like [Movavi \(https://www.movavi.com/movavi-video-converter\)](#). No color or hue changes have been applied; the final image is showing natural colors.

6. Lessons Learned

Should have turned off the [dithering \(https://astroguide.starlust.de/html/Dithering.html\)](#) which was unnecessary for this task and only wasted time. A [Meridian Flip \(https://astroguide.starlust.de/html/TelescopeSettings.html\)](#) occurred after frame #26 and could unfortunately not be avoided.

7. Main logfile entries

```
Log enabled at 2023/02/08 19:31:00
2023/02/08 19:31:00 [Autorun|Begin] C2022E3 Start
2023/02/08 19:31:00 Target RA:4h55m52s DEC:+33°56'51"
2023/02/08 19:31:00 Shooting 100 light frames, exposure 60.0s Bin1
2023/02/08 19:31:00 Start Tracking
2023/02/08 19:31:00 [AutoFocus|Begin] Run AF before Autorun start, exposure 2.0s
Bin1, temperature -1.4°C
2023/02/08 19:31:00 Find Focus Star
2023/02/08 19:31:05 Find Focus Star: detect and calculate star size 3.1 , EAF
position 14419
2023/02/08 19:31:05 Find Focus Star: finding appropriate stars star size 3.1
```

2023/02/08 19:31:17 Find Focus Star: detect and calculate star size 3.7 , EAF position 14469
2023/02/08 19:31:17 Calculate V-Curve
2023/02/08 19:32:48 Auto focus succeeded, the focused position is 14420
2023/02/08 19:32:49 [AutoFocus|End] Auto focus succeeded
2023/02/08 19:32:49 Exposure 60.0s image 1#
2023/02/08 19:33:49 Exposure 60.0s image 2#
2023/02/08 19:34:50 Target RA:4h55m52s DEC:+33°56'50"
2023/02/08 19:34:50 Exposure 60.0s image 3#
...
2023/02/08 19:52:07 Exposure 60.0s image 20#

2023/02/08 19:58:13 Exposure 60.0s image 26#
2023/02/08 19:59:14 Stop Tracking
2023/02/08 19:59:14 [Meridian Flip|Begin] Wait 4min24s to Meridian Flip
2023/02/08 20:04:58 Mount slews to target position: RA:4h55m52s DEC:+33°56'50"
2023/02/08 20:05:02 Exposure 10.0s
2023/02/08 20:05:13 Plate Solve
2023/02/08 20:05:18 Solve succeeded: RA:4h55m53s DEC:+33°56'55" Angle = 86.983, Star number = 177
2023/02/08 20:05:18 The Mount has flipped
2023/02/08 20:05:18 [AutoCenter|End] The target is centered
2023/02/08 20:05:18 [Guide] Calibration data Flipped
2023/02/08 20:05:18 [Meridian Flip|End] Meridian Flip succeeded
2023/02/08 20:05:18 Start Tracking
2023/02/08 20:05:18 Wait for Mount Settle
2023/02/08 20:05:23 Start Tracking
2023/02/08 20:05:23 [AutoFocus|Begin] Run AF after Auto Meridian flipped, exposure 2.0s Bin1, temperature -3.0°C
2023/02/08 20:05:23 Find Focus Star
2023/02/08 20:07:17 Auto focus succeeded, the focused position is 14416
2023/02/08 20:07:17 [AutoFocus|End] Auto focus succeeded
2023/02/08 20:07:17 Exposure 60.0s image 27#
...
2023/02/08 21:02:08 Exposure 60.0s image 81#
2023/02/08 21:02:34 Stop Autorun Manually
2023/02/08 21:02:34 [Autorun|End] Pause Autorun
2023/02/08 21:03:50 [Guide] Dither
2023/02/08 21:03:50 [Guide] Dither Settle
2023/02/08 21:04:36 [Guide] Settle Done
2023/02/08 21:04:36 Exposure 60.0s image 81#
2023/02/08 21:05:37 Exposure 60.0s image 82#
2023/02/08 21:06:38 Target RA:4h55m44s DEC:+33°54'28"
2023/02/08 21:06:38 Exposure 60.0s image 83#
2023/02/08 21:07:39 Exposure 60.0s image 84#
2023/02/08 21:08:40 Exposure 60.0s image 85#
2023/02/08 21:09:41 [Guide] Dither
2023/02/08 21:09:41 [Guide] Dither Settle
2023/02/08 21:10:39 [Guide] Settle Done
2023/02/08 21:10:40 Exposure 60.0s image 86#
...
2023/02/08 21:14:44 Exposure 60.0s image 90#
2023/02/08 21:15:45 [Guide] Dither
2023/02/08 21:15:45 [Guide] Dither Settle
2023/02/08 21:16:43 [Guide] Settle Done
2023/02/08 21:16:43 Exposure 60.0s image 91#
...
2023/02/08 21:20:47 Exposure 60.0s image 95#
2023/02/08 21:21:48 [Guide] Dither
2023/02/08 21:21:48 [Guide] Dither Settle
2023/02/08 21:21:56 Stop Autorun Manually
2023/02/08 21:21:56 [Autorun|End] Pause Autorun
2023/02/08 21:22:11 [Guide] Dither

2023/02/08 21:22:11 [Guide] Dither Settle
2023/02/08 21:22:51 [Guide] Settle Timeout
2023/02/08 21:22:51 Exposure 60.0s image 96#
...
2023/02/08 21:26:56 Exposure 60.0s image 100#
2023/02/08 21:27:56 [Aautorun|End] Finish Aautorun
Log disabled at 2023/02/08 21:27:56