

# Comment des paramètres peuvent influencer les mesures cométaires

(rayon d'ouverture, FWHM, SNR, Binning, fond de ciel)

Patrick Ditz

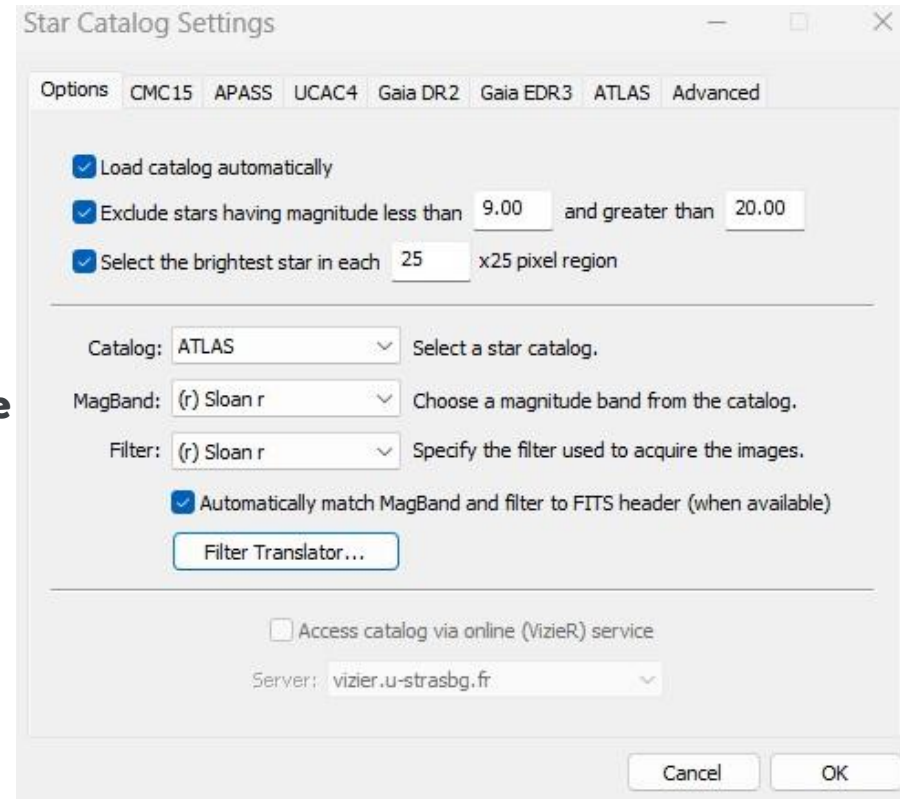
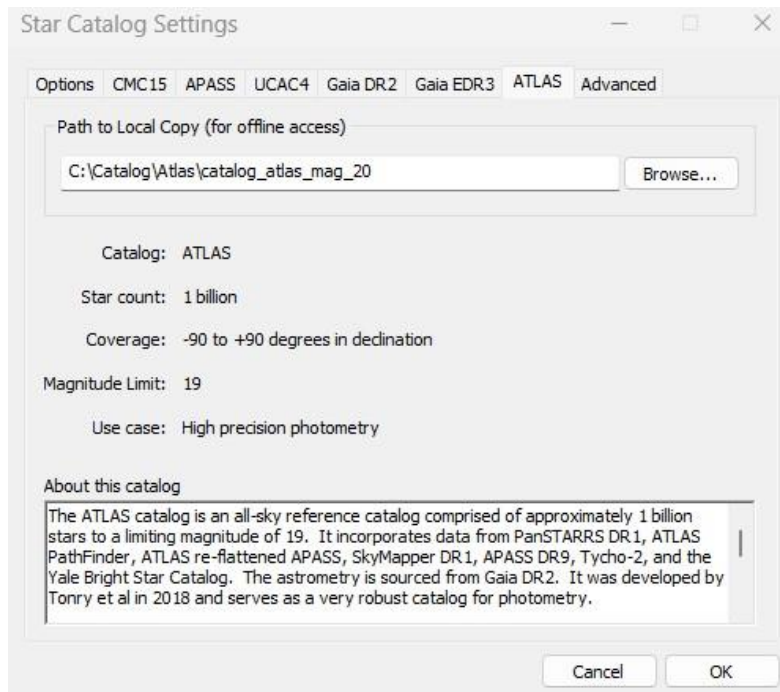
[cometes@groups.io](mailto:cometes@groups.io)

Zoom Comètes

3 juin 2026

## Settings dans Tycho Tracker: Star Catalog

- **Choix des filtres (attention: d'une observation à l'autre, d'autres filtres peuvent être utilisés)**
- **Choix du catalogue: Par exemple ATLAS**  
Ref: Tonry, J.L. and All (2018). « The ATLAS All-Sky Stellar Reference Catalog ». *Astrophys. J.* 867, A105.
  - **Astrométrie utilise Gaia DR2 très haute précision (0.002 ")**
  - **Photométrie: les erreurs systématiques ne dépassent pas 0.005 magnitude rms**



# paramètres influençant les mesures cométaires : Express Mode Tycho Tracker

Tycho v13.5.2

File Action Network Settings Tools Calculators Satellites Plugins Appearance Window Help

Image View Images F3

Calibrate Images  
Debayer Images  
Resize Images  
Plate Solve Images  
Align Images  
Drizzle Images

Evaluate Images  
Inject Test Targets  
Shuffle Images  
Merge Images

Express Mode F4  
Batch Mode F5

Evaluate Thresholds  
Synthetic Tracker F6  
Fast Tracker F8

Express Mode

Regular Functions

Settings...  Calibrate  
Settings...  Debayer  
Settings...  Resize  
Settings...  Plate solve  
Settings...  Align  
Settings...  Drizzle

Evaluation Functions

Settings...  Evaluate Images  
Settings...  Inject test targets  
Settings...  Shuffle timestamps

Processing

Clean up intermediate directories

Save Changes Start

Image Manager

List Selection Goto View Animate Ephemeris

Num	Filename	ExpTime(sec)	DeltaTime (min)	TotalElapsed (min)	Date-Obs	Solved	Width	Height	bpp	Filter	EPH_DATE
1	C:\Users\Astro\Documents\Observa...	60.000000	0.000000	1.000000	2026-05-19 10:01:43.200	Yes	2093	1403	16	---	-
2	C:\Users\Astro\Documents\Observa...	60.000000	1.059920	2.059920	2026-05-19 10:02:46.795	Yes	2093	1403	16	---	-
3	C:\Users\Astro\Documents\Observa...	60.000000	1.050000	3.109920	2026-05-19 10:03:49.795	Yes	2093	1403	16	---	-
4	C:\Users\Astro\Documents\Observa...	60.000000	1.050080	4.160000	2026-05-19 10:04:52.800	Yes	2093	1403	16	---	-
5	C:\Users\Astro\Documents\Observa...	60.000000	1.049960	5.209960	2026-05-19 10:05:55.798	Yes	2093	1403	16	---	-

Plate Solved: Yes    Total Size: 28.00 MB    Total Exp: 5.000 min    Total Time: 5.210 min    Image Count: 5

Image Evaluation Report

Image	N_Total	N_Inner	N_Outer	Match_Total	Match_Inner	Match_Outer	FWHM_Total	FWHM_Inner	FWHM_Outer	Mag_Total	Mag_Inner	Mag_Outer	Shift_Total	Shift_Inner	Shift_Outer
1	255	137	118	100	100	100	2.42	2.47	2.42	17.3	17.2	17.3	0.00	0.00	0.00
2	247	133	114	96	97	96	2.70	2.70	2.66	17.3	17.3	17.3	0.03	0.03	0.04
3	223	115	108	87	83	91	2.61	2.61	2.56	17.1	17.0	17.2	0.05	0.05	0.07
4	218	113	105	85	82	88	2.70	2.70	2.70	17.2	17.1	17.3	0.04	0.03	0.05
5	208	106	102	81	77	86	2.89	2.89	2.84	17.1	17.1	17.2	0.04	0.03	0.04
Stacked	241	127	114	94	92	96	2.66	2.66	2.66	17.3	17.3	17.4	0.04	0.04	0.05
Summary	223	115	108	87	83	91	2.70	2.70	2.66	17.2	17.1	17.3	0.04	0.03	0.05

	Total	Inner	Outer	Description
Plate Solution Residuals:	0.07	0.07	0.08	[ OK ] The plate solution is usable
Matching Star Percentage:	87	83	91	[ OK ] The percentage of matching stars is within tolerance.
Image shift:	0.04	0.03	0.05	[ OK ] The median image shift is within tolerance.
Image FWHM:	2.70	2.70	2.66	The full-width half maximum (FWHM) of the images, in arcseconds.
Image SNR:	7.40	8.01	6.87	Median target signal-to-noise ratio (SNR).
Limiting magnitude:	17.21	17.14	17.28	The magnitude of sources at SNR=10.0 (relies on star catalog settings)
Stack limiting magnitude:	17.33	17.30	17.37	The limiting magnitude achieved when stacking the images.

Image Evaluation Graph

Region Property Plot Symbol Plot Size Plot Transparency Scale

Image Number	% Matching Stars
1	100.00
2	96.00
3	87.00
4	85.00
5	81.00

# aramètres influençant les mesures cométaires : Image Viewer Tycho Tracker

The screenshot displays the Tycho v13.5.2 software interface. The main window is 'Image Viewer', showing a color-coded astronomical image with a tracked object. The 'Verify Track' window is open, displaying track information for '2005 NC56'. The 'Known Objects' window shows a list of objects with columns for Item, Speed, PA, Mag, Dist(AU), Number, Name, X, Y, and RA. The 'Track - Navigator' window shows a table with columns for Num, calcSpeed, calcPA, ObjSpeed, ObjPA, ObjMag, ObjNum, ObjName, ObjDist, X, Y, Quality, and Confidence. The 'Observations -- All Targets' window shows a table with columns for Obs, Tgt, PermID, ProvID, TrkID, MPCDate, RA, DEC, Mag, and X.

**Known Objects Table:**

Item	Speed	PA	Mag	Dist(AU)	Number	Name	X	Y	RA
2	0.436014	211.16	19.6	1.794	(120366)	2005 NC56	1919	1257	19 17 30.90
1	0.159782	241.56	20.4	1.601	(92886)	2000 QS229	1841	447	19 17 26.57
5	0.279156	241.52	20.6	1.274	(275629)	2000 DF101	1134	158	19 16 45.55
3	0.199293	229.45	20.6	1.731	(146592)	2001 TQ143	74	1183	19 15 43.32
4	0.211362	261.35	20.7	2.179	(192769)	1999 TF321	1318	839	19 16 56.02
6	0.319387	218.23	20.8	2.524	(488371)	2016 WJ35	1894	76	19 17 29.76
9	0.119824	185.08	20.9	1.040	(603897)	2015 HY81	408	551	19 16 03.06
12	0.246998	209.00	21.6	1.580	(792385)	2021 FN49	1596	689	19 17 12.28
7	0.195213	249.47	21.8	1.866	(549022)	2011 BD70	997	521	19 16 37.43
8	0.249826	235.86	21.8	2.004	(557144)	2014 TC29	679	822	19 16 18.74
10	0.321032	223.66	22.0	2.281	(766253)	2014 JO26	368	662	19 16 00.72
11	0.208755	249.67	22.5	2.025	(784350)	2015 BX127	883	1229	19 16 30.47
14	0.225274	237.44	22.7	2.018	(831814)	2009 WY177	1457	363	19 17 04.28
15	0.218758	261.67	22.9	2.995		2016 PB267	84	1262	19 15 43.87
13	0.257400	239.61	23.2	3.151	(829145)	2005 YY278	1480	283	19 17 05.63
17	0.197220	253.57	23.3	3.808		2023 BJ20	1046	582	19 16 40.23
18	0.172324	251.27	23.5	1.585		2023 TT88	1392	1275	19 17 00.15
16	0.162343	241.70	23.6	1.821		2019 QJ 178	1078	870	19 17 21.56

**Track - Navigator Table:**

Num	calcSpeed	calcPA	ObjSpeed	ObjPA	ObjMag	ObjNum	ObjName	ObjDist	X	Y	Quality	Confidence
1	0.44	211.2	0.44	211.2	19.6	(120366)	2005 NC56	0.000	1920	1255	0.00	---

**Observations -- All Targets Table:**

Obs	Tgt	PermID	ProvID	TrkID	MPCDate	RA	DEC	Mag	X
1	1	120366	2005 NC56	ABC0560	2026 05 26.32495	19 17 31.11	-25 22 32.7	19.26	1920
2	1	120366	2005 NC56	ABC0560	2026 05 26.32788	19 17 30.91	-25 22 36.4	19.70	1919

**Action/ Image Viewer**  
**Image Viewer / File/ Load Known Objects**  
**Known Objects / Add to Track Navigator**  
**Track Navigator / Verify Track**  
**Verify Track /Add Observations**  
**Observations --All Targets / View with Published Observations**  
**Text Forms- Observations / Comput Orbit**

# Paramètres influençant les mesures cométaires : Comp Stars Tycho Tracker

**Image Viewer / Photometry/Modify Aperture Settings**

**Image Viewer / Photometry/Find Comp Stars**

**Comp Star Finder /Add to Active Comp Stars**

**Active Comparison Stars/Graph/ Generate Data**

**Active Comparison Stars/ Graph/Computed Mag vs. Time**

**Comp Star Finder**

Num	RA	DE	Mag	(B-V)	(V-R)	V
662	289.354536	-25.151390	15.420	0.728	0.438	
431	289.182275	-25.222514	15.433	0.854	0.521	
470	289.219629	-25.127974	15.439	0.696	0.425	
48	288.942322	-25.259921	15.449	0.780	0.470	
725	289.397566	-25.156866	15.451	0.837	0.502	
651	289.338404	-25.365682	15.456	0.820	0.491	
747	289.412088	-25.131442	15.460	0.816	0.501	
495	289.229765	-25.223266	15.505	0.802	0.483	
731	289.394039	-25.381257	15.509	0.841	0.503	
449	289.199834	-25.308122	15.532	0.715	0.435	
341	289.127416	-25.279820	15.533	0.696	0.423	
283	289.091051	-25.382785	15.539	0.692	0.420	
652	289.338336	-25.386998	15.547	0.801	0.480	

Min magnitude: 9.0 Max magnitude: 20.0  
Min ADU: 0 Max ADU: 65535  
Min (B-V): 0.50 Max (B-V): 0.90  
Min (V-R): 0.00 Max (V-R): 0.00  
Min visibility: 100.0 Max visibility: 100.0  
Min SNR: 10.00 Max SNR: 300.00

Radius: 15.0 arcmin from markers

Apply Filter Refresh

**Image Viewer**

ProvID: 2805 NCS6  
Speed: 1.07"/min  
PA: 215.9 deg

Date: 2026 05 26 32788  
RA: 19 17 30.91  
Dec: -25 22 36.4  
Mag: 19.7 V  
Exp: 3.667m (11x20s)

Dynamic Stacking  
Median  
Iter: 5 Kappa: 2.00  
Zero motion Tracked  
Zoom Factor (4x)  
Contrast (-30)  
Intensity (104)

Crosshair Information  
Pixel=(733, 1292)  
RA= 19 16 21.73  
DE=-25 22 57.5  
ADU=[1325]

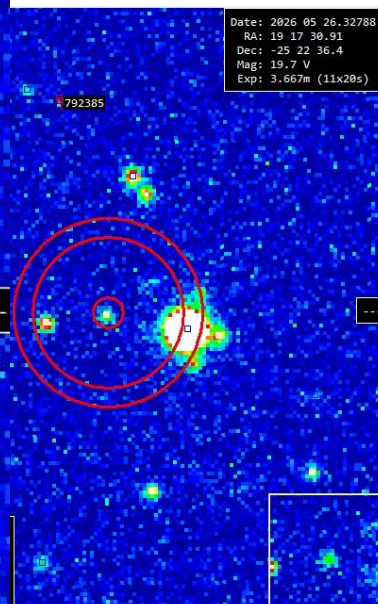
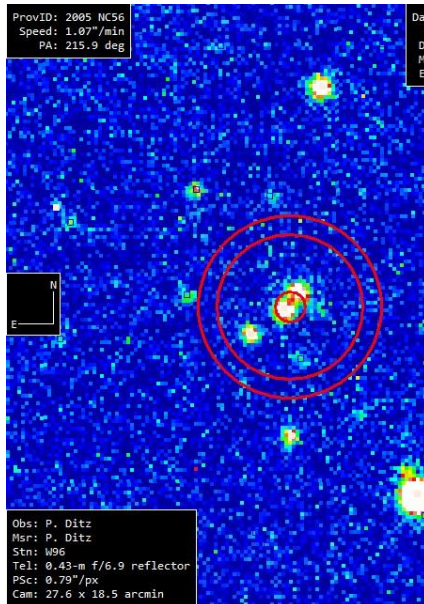
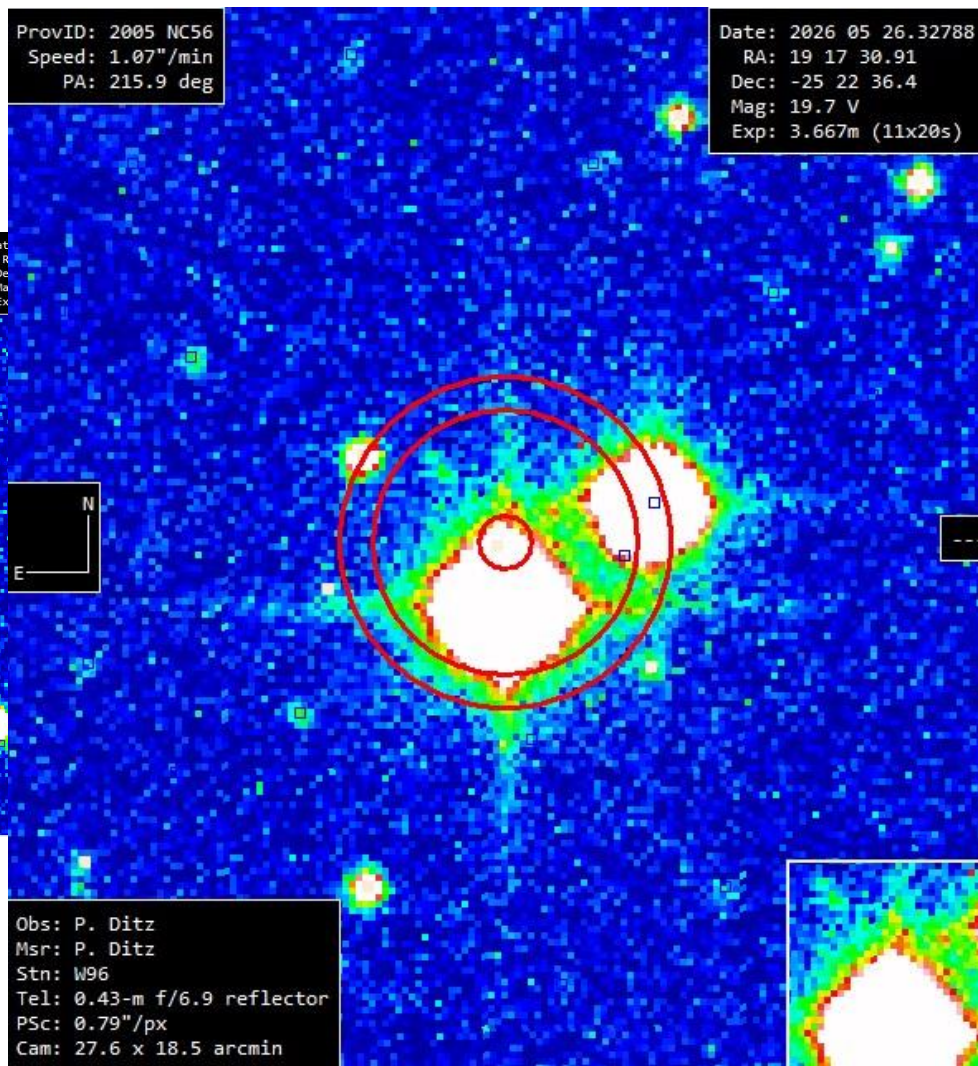
Obs: P. Ditz  
Msr: P. Ditz  
Str: W96  
Tel: 0.43-m f/6.9 reflector  
PSc: 0.79"/px  
Cam: 27.6 x 18.5 arcmin

**Active Comparison Stars**

Num	RA	DE	Mag	(B-V)	(V-R)
1	289.303656	-25.387145	15.040	0.658	0.405
2	289.340005	-25.139090	15.072	0.772	0.463
3	289.201437	-25.285740	15.163	0.658	0.400
4	289.199834	-25.308122	15.533	0.715	0.435
5	289.091051	-25.382785	15.539	0.692	0.420

Computed Mag vs Time

# Paramètres influençant les mesures cométaires : Comp Stars Tycho Tracker



# Paramètres influençant les mesures cométaires : Aperture Target Tycho Tracker

Aperture -- Target

Aperture Type:  Target  Comp Stars  Force comp stars to use same aperture as target

Aperture Shape:  Circle  Ellipse  Rectangle  Large Aperture Mode

Radius 1: 7.000000

Radius 2: 7.000000

Rotation (degrees): 0.000000

Dead zone: 30

Sky annulus: 5.300000

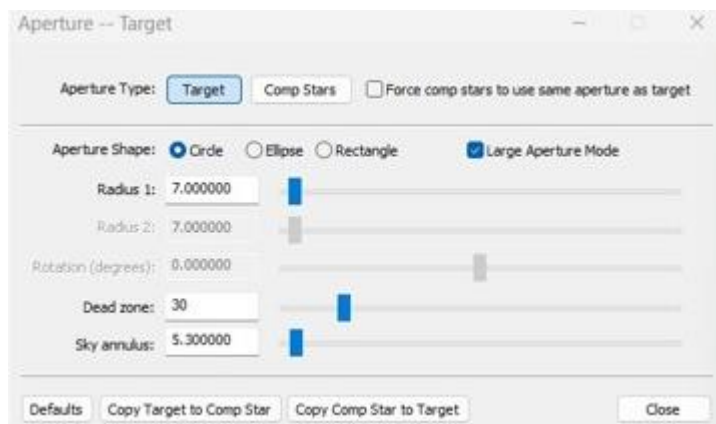
Defaults Copy Target to Comp Star Copy Comp Star to Target

Observations -- All Targets

File Select Observations Settings Report

Obs	Tgt	PermID	R pixels "	TrkID	MPCDate	RA	DEC	Mag	X
1	1	29P	5 pix, 4"6	ABC0426	2026 04 23.86847	11 00 59.55	-01 17 38.7	15.56	723.
2	1	29P		ABC0426	2026 04 23.88390	11 00 59.37	-01 17 37.3	15.57	726.
3	1	29P		ABC0426	2026 04 23.89819	11 00 59.19	-01 17 35.8	15.58	729.
4	2	29P	5.5 pix, 5"1	ABC0427	2026 04 23.86847	11 00 59.55	-01 17 38.7	15.39	723.
5	2	29P		ABC0427	2026 04 23.88390	11 00 59.37	-01 17 37.3	15.40	726.
6	2	29P		ABC0427	2026 04 23.89819	11 00 59.19	-01 17 35.8	15.41	729.
7	3	29P	6 pix, 5"6	ABC0428	2026 04 23.86847	11 00 59.55	-01 17 38.7	15.26	723.
8	3	29P		ABC0428	2026 04 23.88390	11 00 59.37	-01 17 37.3	15.27	726.
9	3	29P		ABC0428	2026 04 23.89819	11 00 59.19	-01 17 35.8	15.28	729.
10	4	29P	6.5 pix, 6"0	ABC0429	2026 04 23.86847	11 00 59.55	-01 17 38.7	15.14	723.
11	4	29P		ABC0429	2026 04 23.88390	11 00 59.37	-01 17 37.3	15.15	726.
12	4	29P		ABC0429	2026 04 23.89819	11 00 59.19	-01 17 35.8	15.16	729.
13	5	29P	7 pix, 6"5	ABC0430	2026 04 23.86847	11 00 59.55	-01 17 38.7	15.03	723.
14	5	29P		ABC0430	2026 04 23.88390	11 00 59.37	-01 17 37.3	15.04	726.
15	5	29P		ABC0430	2026 04 23.89819	11 00 59.19	-01 17 35.8	15.05	729.
16	6	29P	7.5 pix, 7"0	ABC0431	2026 04 23.86847	11 00 59.55	-01 17 38.7	14.93	723.
17	6	29P		ABC0431	2026 04 23.88390	11 00 59.37	-01 17 37.3	14.94	726.
18	6	29P		ABC0431	2026 04 23.89819	11 00 59.19	-01 17 35.8	14.95	729.
19	7	29P	8 pix, 7"4	ABC0432	2026 04 23.86847	11 00 59.55	-01 17 38.7	14.84	723.
20	7	29P		ABC0432	2026 04 23.88390	11 00 59.37	-01 17 37.3	14.85	726.
21	7	29P		ABC0432	2026 04 23.89819	11 00 59.19	-01 17 35.8	14.85	729.

# Paramètres influençant les mesures cométaires : Aperture Target Tycho Tracker



<u>Num</u>	<u>Date</u> [TU]	<u>Julian day</u> -2400000	<u>Comet/Object Name</u>	<u>r</u> (/Sun) [AU]	<u>d</u> (/Earth) [AU]	<u>Pict</u>	<u>Spec</u>	<u>Coma</u> <u>Total</u> <u>mag</u> (m1)	<u>Nuclear</u> <u>mag</u> (m2)	<u>Coma</u> <u>diameter</u> [']	<u>Coma</u> <u>conden</u> <u>sation</u>	<u>Tail</u> <u>length</u> [°]	<u>Tail</u> <u>position</u> <u>angle</u> [°]	<u>Afrho</u> [cm]	<u>Instr</u> <u>diameter</u> [mm]	<u>Instr</u>	<u>m1</u> <u>aperture</u> <u>radius</u> [']	<u>m2</u> <u>aperture</u> <u>radius</u> [']	<u>Obs</u> <u>MPC</u> <u>code</u>	<u>Who</u>
31410	2026 04 29.8	61161.33006	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.644	<a href="#">Pict</a>	-	-	15.9	-	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31407	2026 04 27.8	61159.3268	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.620	<a href="#">Pict</a>	-	-	16.2	-	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31404	2026 04 26.8	61158.32573	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.608	<a href="#">Pict</a>	-	-	16.3	-	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31400	2026 04 25.8	61157.32449	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.596	<a href="#">Pict</a>	-	-	16.1	-	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31396	2026 04 24.8	61156.327	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.584	<a href="#">Pict</a>	-	-	15.9	-	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31395	2026 04 23.8	61155.36847	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.573	<a href="#">Pict</a>	-	-	15	-	-	-	-	-	540	L	-	6.5	K97	pditz
31390	2026 04 23.8	61155.34198	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.573	<a href="#">Pict</a>	-	-	15.7	-	-	-	-	-	300	L	-	6.97	C10	jfsoulier
31377	2026 04 22.8	61154.36701	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.562	<a href="#">Pict</a>	-	-	13.7	-	-	-	-	-	540	L	-	6.5	K97	pditz
31379	2026 04 22.8	61154.35763	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.562	<a href="#">Pict</a>	-	-	14.9	-	-	-	-	-	203	T	-	-	247	jvilhem
31372	2026 04 22.8	61154.35325	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.562	<a href="#">Pict</a>	-	-	15	-	-	-	-	-	250	L	-	6.4	Y87	jgbosch
31371	2026 04 22.8	61154.33765	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.562	<a href="#">Pict</a>	-	-	15.4	-	-	-	-	-	300	L	-	6.97	C10	jfsoulier
31370	2026 04 21.8	61153.31935	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.551	<a href="#">Pict</a>	-	-	15.1	7.24	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31366	2026 04 21.2	61152.70455	<a href="#">29P/Schwassmann-Wachmann</a>	6.314	5.551	<a href="#">Pict</a>	-	-	14.2	-	-	-	-	-	430	C	-	5.5	W96	pditz
31365	2026 04 20.8	61152.36096	<a href="#">29P/Schwassmann-Wachmann</a>	6.313	5.540	<a href="#">Pict</a>	-	-	13.8	-	-	-	-	-	540	L	-	6.5	K97	pditz
31364	2026 04 20.8	61152.33687	<a href="#">29P/Schwassmann-Wachmann</a>	6.313	5.540	<a href="#">Pict</a>	-	-	14.5	-	-	-	-	-	400	L	-	5.95	A77	fkugel
31363	2026 04 20.8	61152.31786	<a href="#">29P/Schwassmann-Wachmann</a>	6.313	5.540	<a href="#">Pict</a>	-	-	14.9	-	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31360	2026 04 20.0	61151.51683	<a href="#">29P/Schwassmann-Wachmann</a>	6.313	5.540	<a href="#">Pict</a>	-	-	14.5	-	-	-	-	-	250	L	-	6.4	Y87	jgbosch
31356	2026 04 19.8	61151.33394	<a href="#">29P/Schwassmann-Wachmann</a>	6.313	5.530	<a href="#">Pict</a>	-	-	14.6	-	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31355	2026 04 18.8	61150.3501	<a href="#">29P/Schwassmann-Wachmann</a>	6.313	5.520	<a href="#">Pict</a>	-	10.8	13.4	8	-	-	-	-	540	L	0.775	6.5	K97	pditz
31354	2026 04 18.8	61150.31478	<a href="#">29P/Schwassmann-Wachmann</a>	6.313	5.520	<a href="#">Pict</a>	-	-	14.1	7.30	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31346	2026 04 17.8	61149.31358	<a href="#">29P/Schwassmann-Wachmann</a>	6.313	5.509	<a href="#">Pict</a>	-	-	13.6	-	-	-	-	-	250	L	-	6.75	L27	jfsoulier
31336	2026 04 16.8	61148.36613	<a href="#">29P/Schwassmann-Wachmann</a>	6.313	5.500	<a href="#">Pict</a>	-	-	13.5	-	-	-	-	-	250	L	-	6.4	Y87	jgbosch



# Paramètres influençant les mesures cométaires : Aperture Target Tycho Tracker

Tycho v13.5.1

File Action Network Settings Tools Calculators Satellites Plugins Appearance Window Help

Image Manager Status Stack Image Viewer Known Object Database Known Objects Progress... Track - Navigator Track - Combine Track - Positions Aperture -- Target Blink Stacks Observations -- All Targets Verify Track

### Aperture -- Target

Aperture Type:  Target  Comp Stars  Force comp stars to use same aperture as target

Aperture Shape:  Circle  Ellipse  Rectangle  Large Aperture Mode

Radius 1: 7.000000

Radius 2: 7.000000

Rotation (degrees): 0.000000

Dead zone: 40

Sky annulus: 5.300000

Defaults Copy Target to Comp Star Copy Comp Star to Target Close

### Verify Track

Examine the track in the Image Viewer.  
If it appears valid, click the "Add Observations" button.

Track Information

Track: 1

Label: Schwassmann-Wachma

Speed: 0.14 arcsec/min

PA: 298.2 degrees

Animation

Follow target

250 ms

3 stacks

Num obs to generate: 3 observations  Advanced mode

Photometry of substacks: Highest Accuracy

<<- Prev Next --> Add Observations Pause Refresh

### Image Viewer

File Display View Edit Create Location Settings Photometry Reset

PermID: 29P

ProvID: ABC0418

TrkSub: ABC0418

Speed: 0.134"/min

PA: 296.8 deg

Date: 2026 04 23.88390

RA: 11 00 59.37

Dec: -01 17 37.3

Mag: 13.6 V

Exp: 18.000m (18x60s)

Dynamic Stacking

Median

Iter: 5 Kappa: 2.00

Zero motion  Tracked

Zoom Factor (2x)

Contrast (134)

Intensity (0)

Crosshair Information

Pixel=(726, 564)

RA= 11 00 59.40

DE=-01 17 36.4

ADU=[7579]

Obs: P. Ditz

Msr: P. Ditz

Stn: K97

Tel: 0.54-m f/3.75 reflector

PSc: 0.93"/px

Cam: 21.2 x 17.0 arcmin

Crosshairs: 13x13 [(293, 735) (11 01 26.19, -01 20 14.0) adu=[4271]

View PSF... Create observation...

### Observations -- All Targets

File Select Observations Settings Report

Obs	Tgt	PermID	ProvID	TrkID	MPCDate	RA	DEC	Mag	X
1	1	29P	ABC0418	ABC0418	2026 04 23.86847	11 00 59.55	-01 17 38.7	13.61	723.
2	1	29P	ABC0418	ABC0418	2026 04 23.88390	11 00 59.37	-01 17 37.3	13.65	726.
3	1	29P	ABC0418	ABC0418	2026 04 23.89819	11 00 59.19	-01 17 35.8	13.65	729.

### Track - Navigator

File Find Object Actions Metadata

Num	calcSpeed	calcPA	ObjSpeed	ObjPA	ObjMag	ObjNum	ObjName	ObjDist	X	Y	Quality	Confidence
1	0.14	298.2	0.14	298.0	---	29P	Schwassmann-Wac...	0.000	722	567	0.00	High

# Paramètres influençant les mesures cométaires : Aperture Target Tycho Tracker

Tycho v13.5.1

File Action Network Settings Tools Calculators Satellites Plugins Appearance Window Help

Image Manager Status Stack Image Viewer Known Object Database Known Objects Progress... Track - Navigator Track - Combine Track - Positions Aperture -- Target Blink Stacks Verify Track Observations -- All Targets

### Aperture -- Target

Aperture Type:  Target  Comp Stars  Force comp stars to use same aperture as target

Aperture Shape:  Circle  Ellipse  Rectangle  Large Aperture Mode

Radius 1: 7.000000

Radius 2: 7.000000

Rotation (degrees): 0.000000

Dead zone: 30

Sky annulus: 5.300000

Defaults Copy Target to Comp Star Copy Comp Star to Target Close

### Verify Track

Examine the track in the Image Viewer.  
If it appears valid, click the "Add Observations" button.

Track Information

Track: 1  
Label: Schwassmann-Wachne  
Speed: 0.14 arcsec/min  
PA: 298.2 degrees

Animation

Follow target  
250 ms  
3 stacks

Num obs to generate: 3 observations  Advanced mode  
Photometry of substacks: Highest Accuracy

<-- Prev Next --> Add Observations Pause Refresh

### Image Viewer

File Display View Edit Create Location Settings Photometry Reset

PermID: 29P Date: 2026 04 23.88390  
ProvID: ABC0417 RA: 11 00 59.37  
TrkSub: ABC0417 Dec: -01 17 37.3  
Speed: 0.134"/min Mag: 15.0 V  
PA: 296.8 deg Exp: 18.000m (18x60s)

Dynamic Stacking  
Median  
Iter: 5 Kappa: 2.00  
 Zero motion  Tracked

Zoom Factor (2x)

Contrast (134)

Intensity (0)

Crosshair Information  
Pixel=(726, 564)  
RA= 11 00 59.40  
DE=-01 17 36.4  
ADU=[7579]

Obs: P. Ditz  
Msr: P. Ditz  
Stn: K97  
Tel: 0.54-m f/3.75 reflector  
PSc: 0.93"/px  
Cam: 21.2 x 17.0 arcmin

Crosshairs: 13x13 [(260, 732) (11 01 28.23, -01 20 11.2) adu=[4275] View PSF... Create observation...

### Observations -- All Targets

File Select Observations Settings Report

Obs	Tgt	PermID	ProvID	TrkID	MPCDate	RA	DEC	Mag	X
1	1	29P	ABC0417	ABC0417	2026 04 23.86847	11 00 59.55	-01 17 38.7	15.04	723
2	1	29P	ABC0417	ABC0417	2026 04 23.88390	11 00 59.37	-01 17 37.3	15.04	726
3	1	29P	ABC0417	ABC0417	2026 04 23.89819	11 00 59.19	-01 17 35.8	15.05	729

### Track - Navigator

File Find Object Actions Metadata

Num	calcSpeed	calcPA	ObjSpeed	ObjPA	ObjMag	ObjNum	ObjName	ObjDist	X	Y	Quality	Confidence
1	0.14	298.2	0.14	298.0	---	29P	Schwassmann-Wac...	0.000	722	567	0.00	High

# Paramètres influençant les mesures cométaires : Aperture Target Tycho Tracker

Tycho v13.5.2

File Action Network Settings Tools Calculators Satellites Plugins Appearance Window Help

Image Manager Status Stack Image Viewer Known Objects Progress... Track - Navigator Track - Combine Track - Positions Aperture -- Target Blink Stacks Observations -- All Targets Verify Track

### Aperture -- Target

Aperture Type:  Target  Comp Stars  Force comp stars to use same aperture as target

Aperture Shape:  Circle  Ellipse  Rectangle  Large Aperture Mode

Radius 1: 7.000000

Radius 2: 7.000000

Rotation (degrees): 0.000000

Dead zone: 40.000000

Sky annulus: 5.300000

Defaults Copy Target to Comp Star Copy Comp Star to Target Close

### Verify Track

Examine the track in the Image Viewer.  
If it appears valid, click the "Add Observations" button.

Track Information

Track: 1  
Label: Schwassmann-Wachme  
Speed: 0.14 arcsec/min  
PA: 298.0 degrees

Animation

Follow target  
250 ms  
3 stacks

Num obs to generate: 3 observations  Advanced mode  
Photometry of substacks: Highest Accuracy

<-- Prev Next --> Add Observations Pause Refresh

### Image Viewer

File Display View Edit Create Location Settings Photometry Reset

PermID: 29P  
ProvID: ABC0422  
TrkSub: ABC0422  
Speed: 0.143"/min  
PA: 298.2 deg

Date: 2026 04 23.86847  
RA: 11 00 59.55  
Dec: -01 17 38.7  
Mag: 15.0 V  
Exp: 19.000m (19x60s)

Dynamic Stacking  
Median  
Iter: 5 Kappa: 2.00  
 Zero motion  Tracked

Zoom Factor (2x)

Contrast (134)

Intensity (0)

Crosshair Information  
Pixel=(723, 566)  
RA= 11 00 59.59  
DE=-01 17 38.3  
ADU=[7661]

Obs: P. Ditz  
Msr: P. Ditz  
Stn: K97  
Tel: 0.54-m f/3.75 reflector  
PSc: 0.93"/px  
Cam: 21.2 x 17.0 arcmin

Crosshairs: 13x13 (338, 813) (11 01 23.41, -01 21 26.4) adu=[4264]

View PSF... Create observation...

### Observations -- All Targets

File Select Observations Settings Report

Obs	Tgt	PermID	ProvID	TrkID	MPCDate	RA	DEC	Mag	X
1	1	29P	ABC0422	ABC0422	2026 04 23.86847	11 00 59.55	-01 17 38.7	15.02	723
2	1	29P	ABC0422	ABC0422	2026 04 23.88390	11 00 59.37	-01 17 37.3	15.03	726
3	1	29P	ABC0422	ABC0422	2026 04 23.89819	11 00 59.19	-01 17 35.8	15.04	729

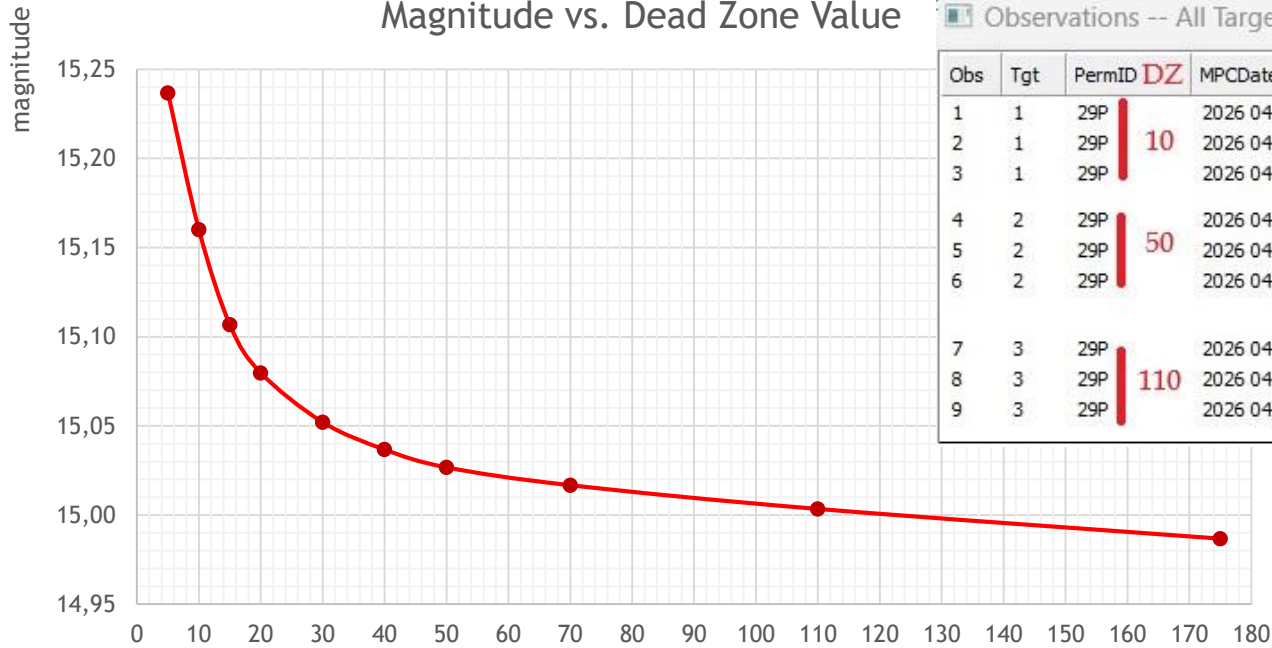
### Track - Navigator

File Find Object Actions Metadata

Num	calcSpeed	calcPA	ObjSpeed	ObjPA	ObjMag	ObjNum	ObjName	ObjDist	X	Y	Quality	Confidence
1	0.14	298.0	0.14	298.0	---	29P	Schwassmann-Wac...	0.000	722	567	0.00	---

# Paramètres influençant les mesures cométaires : Aperture Target Tycho Tracker

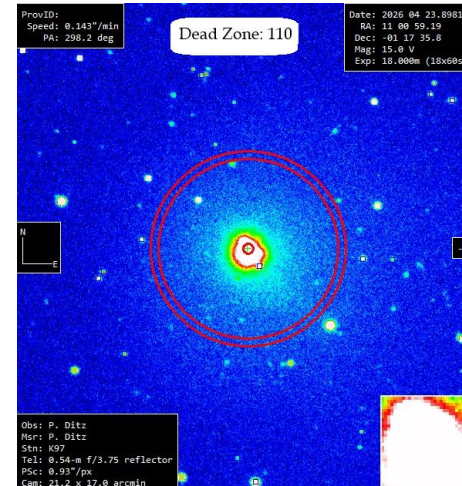
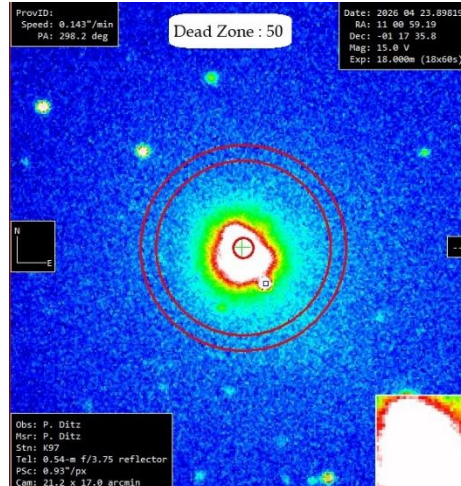
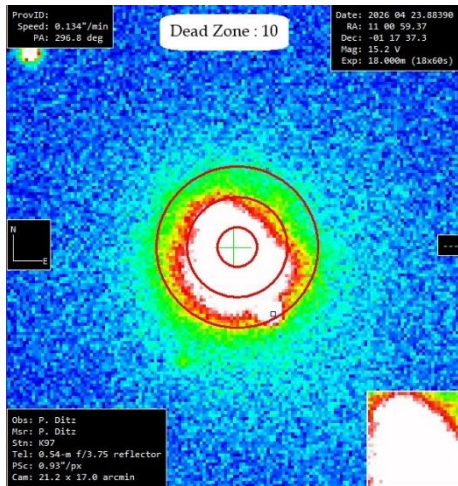
Magnitude vs. Dead Zone Value



Observations -- All Targets

Obs	Tgt	PermID	DZ	MPCDate	RA	DEC	Mag
1	1	29P		2026 04 23.86847	11 00 59.55	-01 17 38.7	15.15
2	1	29P	10	2026 04 23.88390	11 00 59.37	-01 17 37.3	15.14
3	1	29P		2026 04 23.89819	11 00 59.19	-01 17 35.8	15.15
4	2	29P	50	2026 04 23.86847	11 00 59.55	-01 17 38.7	15.02
5	2	29P		2026 04 23.88390	11 00 59.37	-01 17 37.3	15.02
6	2	29P		2026 04 23.89819	11 00 59.19	-01 17 35.8	15.01
7	3	29P		2026 04 23.86847	11 00 59.55	-01 17 38.7	15.00
8	3	29P	110	2026 04 23.88390	11 00 59.37	-01 17 37.3	15.00
9	3	29P		2026 04 23.89819	11 00 59.19	-01 17 35.8	14.99

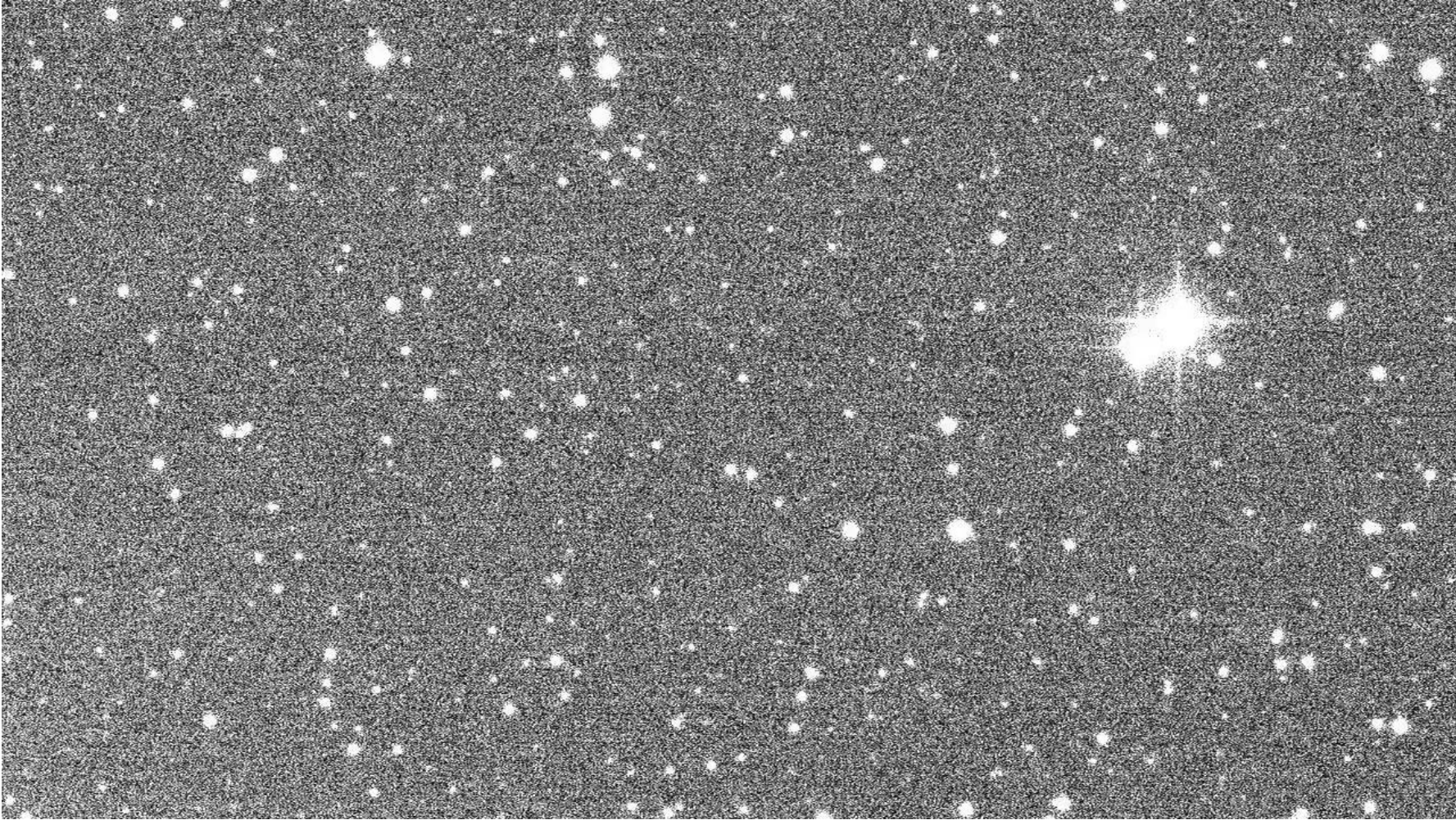
Dead Zone Value (pixels)



**Dans la mesure où l'on a affaire à des objets mobiles, le temps de pose est forcément limité:**

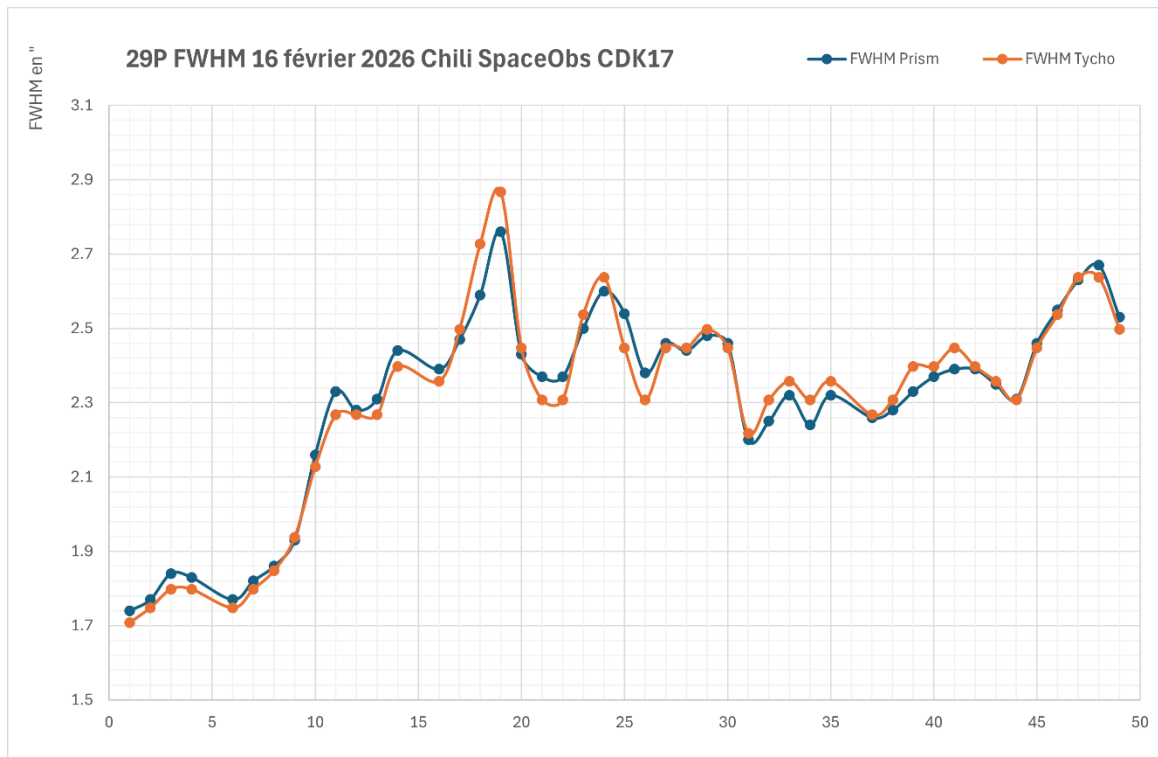
- **L'astrométrie ne doit pas être dégradée par une image cométaire présentant une trainée,**
- **Cela va dépendre de:**
  - **la vitesse de déplacement de la comète,**
  - **du seeing,**
  - **De la taille des pixels**
- **Pour ma part, je limite le temps d'exposition à un déplacement cométaire inférieur ou égal à 1'' d'arc**

## Bruit et seeing



**Des processus aléatoires (stochastiques) sont en jeu:**

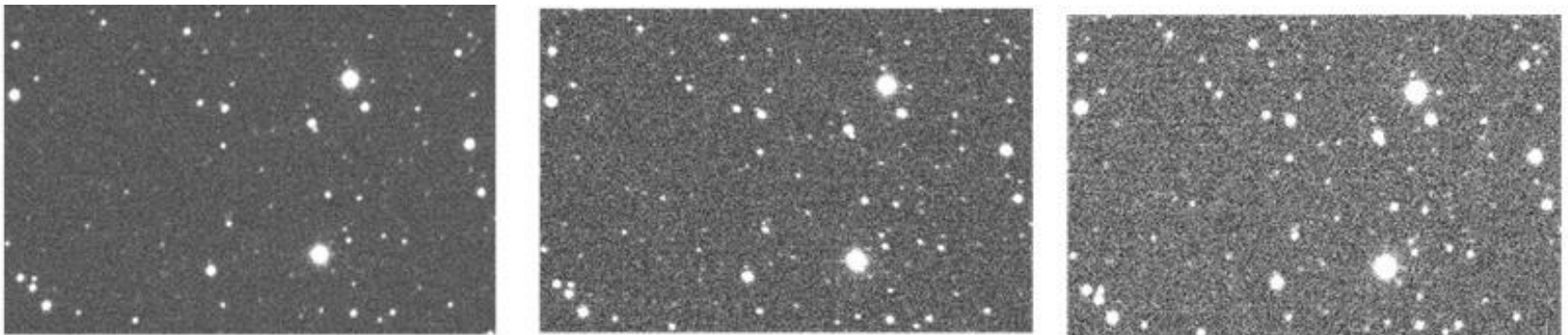
- **Le bruit présent dans chaque image (due au bruit de photons, bruit de lecture, bruit thermique, etc...)**
- **Le seeing qui va faire déplacer aléatoirement les objets célestes et/ou les faire s'étaler ou s'empâter**



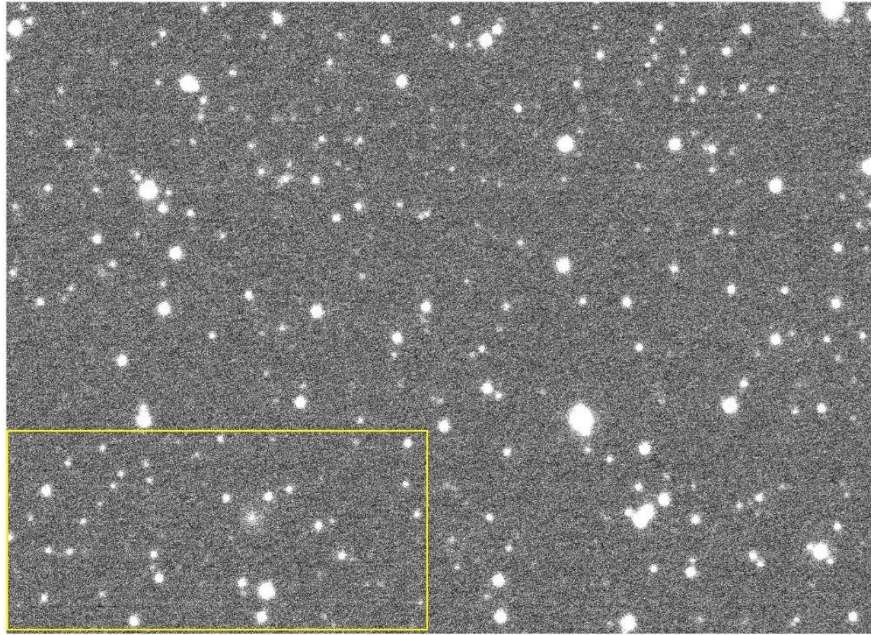
## Conséquence sur les étoiles de faible luminosité (grande magnitude):

- **Le bruit et le seeing vont faire « danser » ces étoiles .**
- **L'astrométrie sur des objets célestes de faible luminosité va être entaché d'erreurs**
- **Remèdes:**
  - **Augmenter le temps de pose (mais pas forcément possible)**
  - **Avoir recourt au «stacking » que Tycho Tracker sait très bien faire qui va augmenter le SNR (signal sur bruit)**

## Influence de la résolution des images ou choix du binning

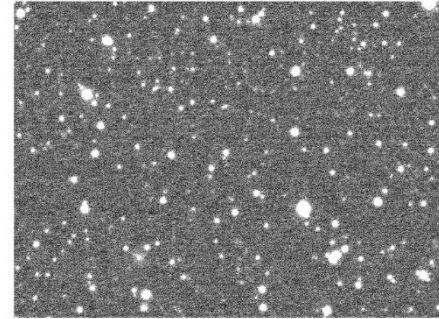


## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ



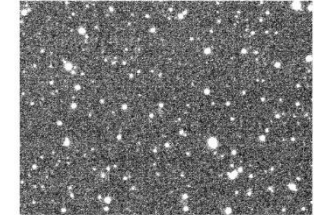
Bin1

26/05/2026 8:33 TU  
H: 76° Seeing: 1"98 Elong: 7%



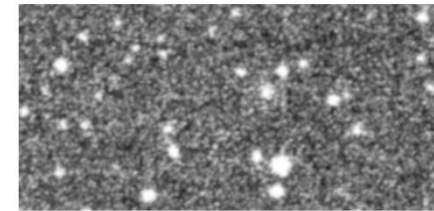
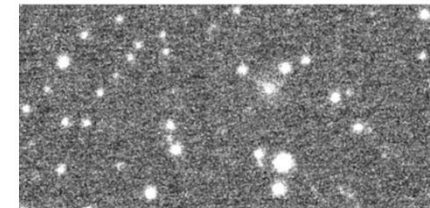
Bin2

26/05/2026 8:11 TU  
H: 81° Seeing: 1"94 Elong: 23%

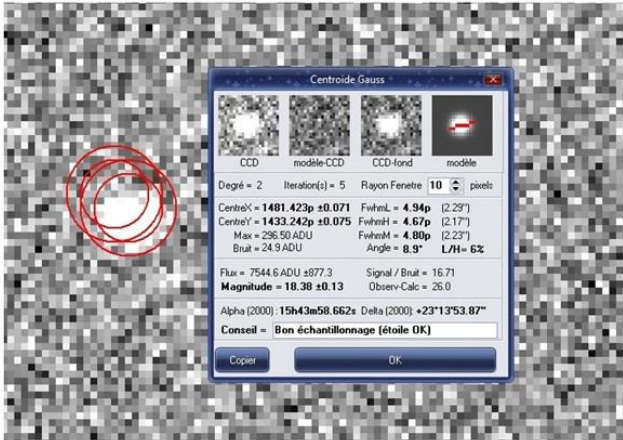


Bin3

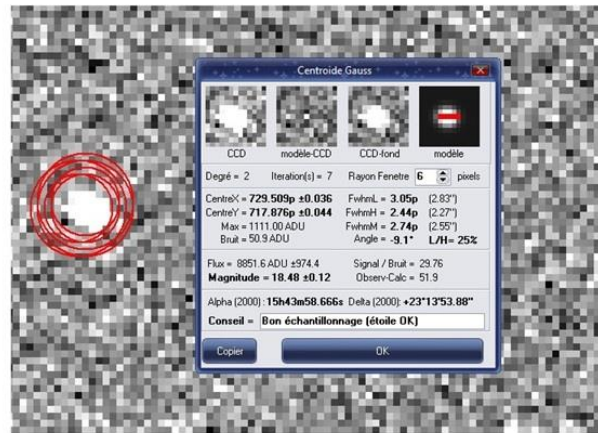
26/05/2026 7:49 TU  
H: 85° Seeing: 2"62 Elong: 11%



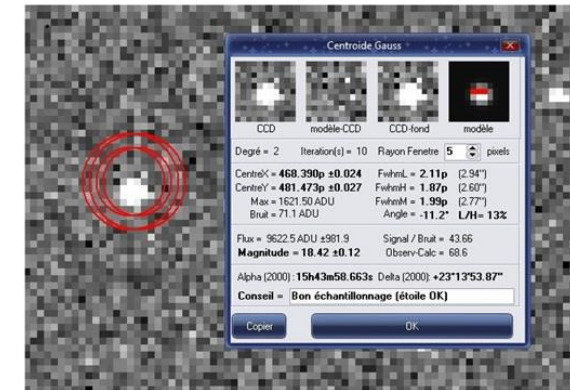
## Freconrupt K97 T540 F/3.75 focale: 2 m Atik 460EX



Bin1



Bin2



Bin3

### Prism :

- **Analyse:**

- **Astrométrie/Etalonnage automatique**
- **Photométrie/Etalonnage automatique**

- **Sur Image:**

- **choisir une étoile en positionnant le curseur sur elle**
- **Click droit: choisir Centroïde évolué**

## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ

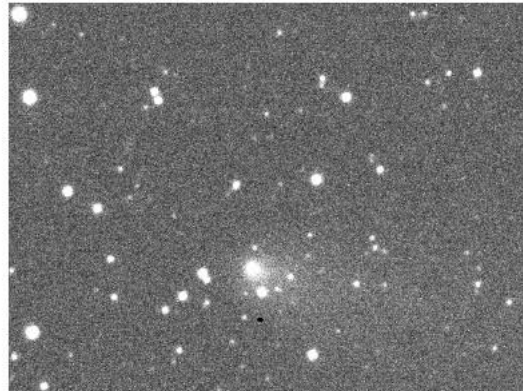


235P  
19/05/2026 08:16 TU

QHY268M Bin1  
0"27/pix. 60s

Masse air: 1.25 H: 53°

Seeing: 2"3  
Elongation: 11%

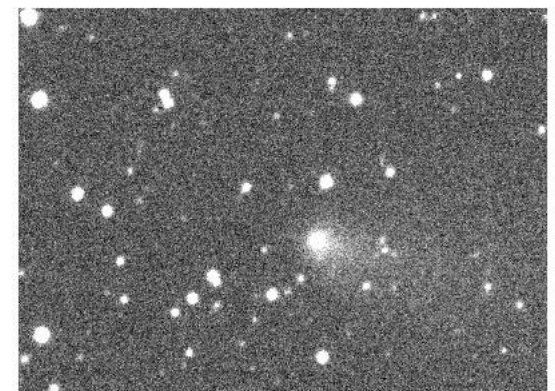


235P  
19/05/2026 07:40 TU

QHY268M Bin2  
0"53/pix. 60s

Masse air: 1.14 H: 61°

Seeing: 2"16  
Elongation: 7%



235P  
19/05/2026 08:53 TU

QHY268M Bin3  
0"80/pix. 60s

Masse air: 1.41 H: 45°

Seeing: 3"12  
Elongation 12%

## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ

### Comète 235P en Bin3

The screenshot displays the Tycho v13.5.2 software interface, which is used for astronomical observations and data processing. The interface is divided into several panels:

- Aperture -- Target:** This panel allows for configuring the aperture settings. It includes options for Aperture Type (Target, Comp Stars), Aperture Shape (Circle, Ellipse, Rectangle), and various parameters like Radius 1, Radius 2, Rotation (degrees), Dead zone, and Sky annulus. The "Large Aperture Mode" is checked.
- Observations -- All Targets:** This panel shows a table of observations. The table has columns for Obs, Tgt, PermID, ProvID, TrkID, MPCDate, RA, DEC, Mag, and X. The data is as follows:

Obs	Tgt	PermID	ProvID	TrkID	MPCDate	RA	DEC	Mag	X
1	1	235P	ABC0545	2026 05 19.36708	17 07 20.45	-09 59 33.8	15.59	1060	
2	1	235P	ABC0545	2026 05 19.37255	17 07 20.22	-09 59 31.8	15.60	1056	
3	1	235P	ABC0545	2026 05 19.37766	17 07 20.01	-09 59 30.1	15.61	1052	
- Image Viewer:** This panel displays a processed image of the comet 235P. The image is a false-color representation showing the comet's nucleus and tail. A red circle highlights the nucleus, and a white crosshair is centered on it. The image is overlaid with a grid of crosshairs. The image viewer also displays metadata such as Date, RA, Dec, Mag, and Exp.
- ADES (PSV-formatted) Report:** This panel shows a text-based report of the observation. The report includes details about the observation, the telescope, the detector, and the software used. The report is as follows:

```
# version=2022
# observatory
! mpcCode W96
# submitter
! name P. Ditz
# observers
! name P. Ditz
# measurers
! name P. Ditz
# telescope
! design reflector
! aperture 0.43
! fRatio 6.9
! detector CMO
# software
! astrometry Tycho 13.5.2
! photometry Tycho 13.5.2
permID | provID | trkSub | imode | stn | obsTime | lra | ldec | lrmsRA | lrmsDec | lrmsFit | lastCat | lmag | lrmsMag | lband | photCat | lphotAp | llogSNR | lexp | lnotes | lremarks
235P | | ABC0545 | CMO | W96 | 2026-05-19T08:48:35Z | 1256.83523 | -9.99271 | 10.24 | 10.31 | 10.40 | | ATLAS2 | 115.6 | 10.04 | | VJ1 | ATLAS2 | 6.3 | 1.86 | 480 | K |
235P | | ABC0545 | CMO | W96 | 2026-05-19T08:56:28Z | 1256.83425 | -9.99217 | 10.23 | 10.30 | 10.38 | | ATLAS2 | 115.6 | 10.04 | | VJ1 | ATLAS2 | 6.3 | 1.87 | 420 | K |
235P | | ABC0545 | CMO | W96 | 2026-05-19T09:03:49Z | 1256.83338 | -9.99170 | 10.25 | 10.31 | 10.40 | | ATLAS2 | 115.6 | 10.02 | | VJ1 | ATLAS2 | 6.3 | 1.87 | 420 | K |
```

# Paramètres influençant les mesures cométaires : Binning Tycho Tracker

## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ

### Comète 235P en Bin2

The screenshot displays the Tycho v13.5.2 software interface. The main window is titled "Observations -- All Targets" and contains a table with the following data:

Obs	Tgt	PermID	ProvID	TrkID	MPCDate	RA	DEC	Mag	X
1	1	235P		ABC0539	2026 05 19.31524	17 07 22.72	-09 59 52.5	15.44	158
2	1	235P		ABC0539	2026 05 19.32258	17 07 22.40	-09 59 49.9	15.42	157
3	1	235P		ABC0539	2026 05 19.32842	17 07 22.14	-09 59 47.8	15.48	156

The "Aperture -- Target" window shows the following settings:

- Aperture Type:  Target  Comp Stars  Force comp stars to use same aperture as target
- Aperture Shape:  Circle  Ellipse  Rectangle  Large Aperture Mode
- Radius 1: 12.000000
- Radius 2: 12.000000
- Rotation (degrees): 0.000000
- Dead zone: 1.300000
- Sky annulus: 10.000000

The "Image Viewer" window displays a processed image of the comet with a red circle around the nucleus. The image metadata is as follows:

- ProvID: Speed: 0.512"/min PA: 299.5 deg
- Date: 2026 05 19.32258
- RA: 17 07 22.40
- Dec: -09 59 49.9
- Mag: 15.4 V
- Exp: 8.000m (8x60s)

The "ADES (PSV-formatted) Report" window shows the following text:

```
# version=2022
# observatory
! mpcCode W96
# submitter
! name P. Ditz
# observers
! name P. Ditz
# measurers
! name P. Ditz
# telescope
! design reflector
! aperture 0.43
! fRatio 6.9
! detector CMO
# software
! astrometry Tycho 13.5.2
! photometry Tycho 13.5.2
permID | provID | trkSub | model | scn | obsTime | lra | ldec | lraRA | lraDec | lraFit | lastCat | lmag | lraMag | band | photCat | photAp | logSNR | exp | notes | remarks
235P | ABC0539 | CMO | W96 | 12026-05-19T07:33:56Z | 1256.84468 | -9.99793 | 10.17 | 10.20 | 10.26 | ATLAS2 | 15.4 | 10.03 | Vj | ATLAS2 | 6.6 | 12.06 | 1540 | K1
235P | ABC0539 | CMO | W96 | 12026-05-19T07:44:31Z | 1256.84335 | -9.99719 | 10.18 | 10.21 | 10.28 | ATLAS2 | 15.4 | 10.02 | Vj | ATLAS2 | 6.6 | 11.99 | 1480 | K1
235P | ABC0539 | CMO | W96 | 12026-05-19T07:52:55Z | 1256.84225 | -9.99661 | 10.20 | 10.22 | 10.30 | ATLAS2 | 15.5 | 10.01 | Vj | ATLAS2 | 6.6 | 11.93 | 1480 | K1
```

The bottom right corner of the image viewer shows the following text:

- Obs: P. Ditz
- Msr: P. Ditz
- Stn: W96
- TEL: 0.43-m f/6.9 reflector
- PSF: 0.53"/px
- Cam: 27.6 x 18.5 arcmin

## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ

### Comète 235P en Bin1

Tycho v13.5.2

File Action Network Settings Tools Calculators Satellites Plugins Appearance Window Help

Image Manager Status Stack Image Viewer Known Objects Progress Track - Navigator Track - Combine Track - Positions Aperture - Target Blink Stacks Observations - All Targets Verify Track ADES (PSV-formatted) Report

#### Aperture -- Target

Aperture Type:  Target  Comp Stars  Force comp stars to use same aperture as target

Aperture Shape:  Circle  Ellipse  Rectangle  Large Aperture Mode

Radius 1: 23.000000

Radius 2: 23.000000

Rotation (degrees): 0.000000

Dead zone: 3.000000

Sky annulus: 10.000000

Defaults Copy Target to Comp Star Copy Comp Star to Target Close

#### Observations -- All Targets

File Select Observations Settings Report

Obs	Tgt	PermID	ProvID	TrkID	MPCDate	RA	DEC	Mag	X
1	1	235P	ABC0543	ABC0543	2026 05 19.34169	17 07 21.58	-09 59 43.0	14.91	3160.8
2	1	235P	ABC0543	ABC0543	2026 05 19.34753	17 07 21.32	-09 59 40.8	14.86	3146.5
3	1	235P	ABC0543	ABC0543	2026 05 19.35336	17 07 21.07	-09 59 38.6	14.82	3132.7

#### Image Viewer

File Display View Edit Create Location Settings Photometry Reset

ProvID: ABC0543  
Speed: 0.519"/min  
PA: 300.2 deg

Date: 2026 05 19.35336  
RA: 17 07 21.07  
Dec: -09 59 38.6  
Mag: 14.8 V  
Exp: 8.000m (8x60s)

Obs: P. Ditz  
Obsr: P. Ditz  
Stn: W96  
Tel: 0.43-m f/6.9 reflector  
PSc: 0.26"/px  
Cam: 27.6 x 18.5 arcmin

Crosshairs: 13x13 (3203, 2074) (17 07 22.32, -10 00 00.2) adu=[107]

#### ADES (PSV-formatted) Report

```
# version=2022
# observatory
! mpcCode W96
# submitter
! name P. Ditz
# observers
! name P. Ditz
# measurers
! name P. Ditz
# telescope
! design reflector
! aperture 0.43
! fRatio 6.9
! detector CMO
# software
! astrometry Tycho 13.5.2
! photometry Tycho 13.5.2
```

permID	provID	trkSub	mode	stn	obsTime	ra	dec	rmsRA	rmsDec	rmsFlt	astCat	mag	rmsMag	band	photCat	photAp	logSNR	exp	notes	remarks
235P	ABC0543	CMO	W96		2026-05-19T08:12:01Z	1256.83990	-9.99527	0.21	0.24	0.32	ATLAS2	14.9	10.01	Vj	ATLAS2	6.2	12.28	480	KI	
235P	ABC0543	CMO	W96		2026-05-19T08:20:26Z	1256.83884	-9.99466	0.22	0.25	0.33	ATLAS2	14.9	10.01	Vj	ATLAS2	6.2	12.28	480	KI	
235P	ABC0543	CMO	W96		2026-05-19T08:28:50Z	1256.83777	-9.99405	0.22	0.25	0.33	ATLAS2	14.8	10.01	Vj	ATLAS2	6.2	12.29	480	KI	

Copy to Clipboard Save to file... Send to MPC... Dismiss

# Paramètres influençant les mesures cométaires : Binning Tycho Tracker

**SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ**

**Astéroïde 2005 NC56 en Bin3**

The screenshot displays the Tycho v13.5.2 software interface. The main window is titled "Tycho v13.5.2" and contains several panels:

- Aperture -- Target:** A configuration panel for the target. It includes options for Aperture Type (Target, Comp Stars), Aperture Shape (Circle, Ellipse, Rectangle, Large Aperture Mode), Radius 1 and 2 (both set to 4.000000), Rotation (0.000000 degrees), Dead zone (118.700000), and Sky annulus (10.000000).
- Observations -- All Targets:** A table showing observation data. The table has columns for Obs, Tgt, PermID, ProvID, TrkID, MPCDate, RA, DEC, Mag, and X. The first row shows: 1, 1, 120366, 2005 NC56, ABC0559, 2026 05 26.32788, 19 17 30.91, -25 22 36.4, 19.81, 1914.
- Image Viewer:** A window displaying a binned image of the asteroid. It includes a menu (File, Display, View, Edit, Create, Location, Settings, Photometry, Reset) and a data box with the following information:
  - ProvID: 2005 NC56
  - Speed: 0.436"/min
  - PA: 211.2 deg
  - Date: 2026 05 26.32788
  - RA: 19 17 30.91
  - Dec: -25 22 36.4
  - Mag: 19.8 g
  - Exp: 3.667m (11x20s)
- ADES (PSV-formatted) Report:** A window showing a text report with the following content:

```
# version=2022
# observatory
! mpcCode W96
# submitter
! name P. Ditz
# observers
! name P. Ditz
# measurers
! name P. Ditz
# telescope
! design reflector
! aperture 0.43
! fRatio 6.9
! detector CMO
# software
! astrometry Tycho 13.5.2
! photometry Tycho 13.5.2
permID | provID | trkSub | modelstn | obsTime | lra | ldec | lrmsRA | lrmsDec | lrmsFit | astCat | lmag | lrmsMag | band | photCat | photAp | logSNR | exp | notes | remark
120366 | 2005 NC56 | ABC0559 | CMO|W96 | 12026-05-26T07:52:08Z | 1289.37879 | -25.37677 | 10.48 | 10.52 | 10.71 | ATLAS2 | 19.8 | 10.32 | Sg | ATLAS2 | 3.6 | 10.82 | 220 | K |
```

## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ

### Astéroïde 2005 NC56 en Bin2

Tycho v13.5.2

File Action Network Settings Tools Calculators Satellites Plugins Appearance Window Help

Image Manager | Status | Progress... | Image Evaluation Report | Image Evaluation Graph | Stack | Image Viewer | Known Objects | Track - Navigator | Track - Combine | Track - Positions | Aperture -- Target | Blink Stacks | Observations -- All Targets | Verify Track | ADES (PSV-formatted) Report

Aperture -- Target

Aperture Type:  Target  Comp Stars  Force comp stars to use same aperture as target

Aperture Shape:  Circle  Ellipse  Rectangle  Large Aperture Mode

Radius 1: 4.000000

Radius 2: 4.000000

Rotation (degrees): 0.000000

Dead zone: 70.000000

Sky annulus: 10.000000

Observations -- All Targets

Obs	Tgt	PermID	ProvID	TrkID	MPCDate	RA	DEC	Mag	X
1	1	120366	2005 NC56	ABC0552	2026 05 26.34020	19 17 30.57	-25 22 43.6	19.97	287

Image Viewer

ProvID: 2005 NC56  
Speed: 0.436"/min  
PA: 211.2 deg

Date: 2026 05 26.34020  
RA: 19 17 30.57  
Dec: -25 22 43.6  
Mag: 20.0 g  
Exp: 3.667m (11x20s)

Obs: P. Ditz  
Msr: P. Ditz  
Stn: W96  
Tel: 0.43-m f/6.9 reflector  
PSc: 0.53"/px  
Cam: 27.6 x 18.5 arcmin

Crosshairs: 13x13 (2866, 1931) (19 17 30.03, -25 22 58.5) adu=[107]

ADES (PSV-formatted) Report

```
# version=2022
# observatory
! mpcCode W96
# submitter
! name P. Ditz
# observers
! name P. Ditz
# measurers
! name P. Ditz
# telescope
! design_reflector
! aperture 0.43
! fRatio 6.9
! detector CMO
# software
! astrometry Tycho 13.5.2
! photometry Tycho 13.5.2
permID | provID | trkSub | mode|stn | obsTime | ra | dec | rmsRA|rmsDec|rmsFit|astCat | mag | rmsMag|band|photCat | photAp|logSNR|exp | notes|remarks
120366|2005 NC56 | ABC0552 | CMO|W96 | 2026-05-26T08:09:53Z | 1289.37737 | -25.37877 | 10.76 | 0.79 | 1.10 | ATLAS2|20.0 | 0.28 | Sg| ATLAS2| 2.4 | 0.58 | 220 | K|
```

# Paramètres influençant les mesures cométaires : Binning Tycho Tracker

**SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ**

**Astéroïde 2005 NC56 en Bin1**

The screenshot displays the Tycho v13.5.2 software interface, which is used for comet observations. The main window is titled "Tycho v13.5.2" and contains several panels:

- Aperture -- Target:** This panel allows users to configure the aperture type (Target, Comp Stars, or Force comp stars to use same aperture as target). It also includes settings for Aperture Shape (Circle, Ellipse, Rectangle, Large Aperture Mode), Radius 1 and 2, Rotation (degrees), Dead zone, and Sky annulus.
- Observations -- All Targets:** This panel displays a table of observations. The table has columns for Obs, Tgt, PermID, ProvID, TrkID, MPCDate, RA, DEC, Mag, and X. The data row shows: 1, 1, 120366, 2005 NC56, ABC0556, 2026 05 26.35707, 19 17 30.16, -25 22 52.2, 20.37, 575.
- Image Viewer:** This panel shows a color-coded image of the field of view. The image is a mosaic of frames, with the target comet (2005 NC56) circled in red. The image viewer includes a menu (File, Display, View, Edit, Create, Location, Settings, Photometry, Reset) and a status box with the following information: ProvID: 2005 NC56, Speed: 0.435"/min, PA: 211.2 deg, Date: 2026 05 26.35707, RA: 19 17 30.16, Dec: -25 22 52.2, Mag: 20.4 g, Exp: 7.333m (22x20s).
- ADES (PSV-formatted) Report:** This panel displays a text report of the observation parameters. The report includes the following information: # version=2022, # observatory, # mpcCode W96, # submitter, # observers, # measurers, # telescope, # design reflector, # aperture 0.43, # fRatio 6.9, # detector CMO, # software, # astrometry Tycho 13.5.2, # photometry Tycho 13.5.2, permID | provID | trkSub | mode | stn | obsTime | lra | ldec | rmsRA | rmsDec | rmsFit | astCat | imag | rmsMag | band | photCat | photAp | logSNR | exp | notes | remarks, 120366 | 2005 NC56 | ABC0556 | CMO | W96 | 2026-05-26T08:34:10Z | 289.37569 | -25.38117 | 10.67 | 10.67 | 10.95 | ATLAS2 | 20.4 | 10.22 | Sg | ATLAS2 | 2.8 | 10.74 | 440 | K |

## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ

### Synthèse

#### Comète 235P

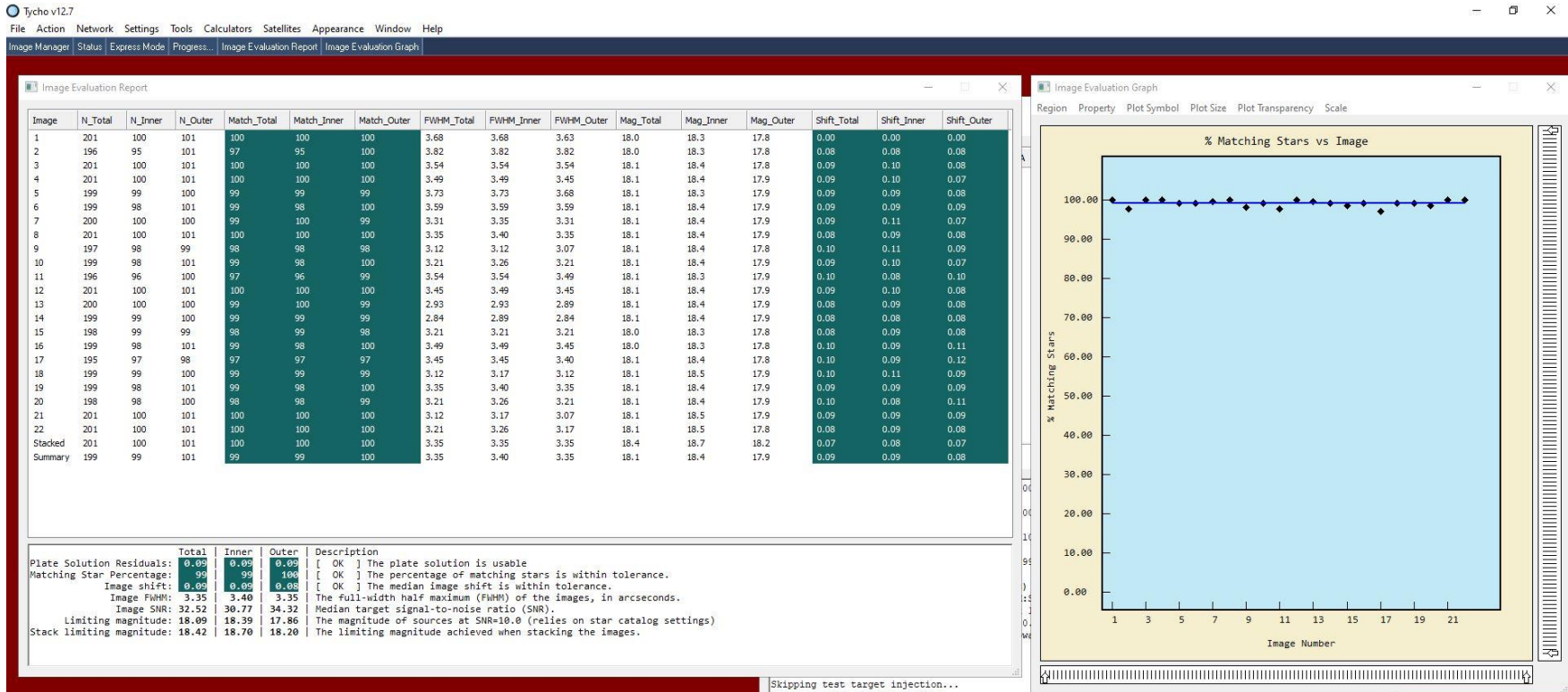
	Rms Fit	log SNR	H (°)	Seeing (")	Magnitude
Bin3	0.4	1.87	45	3.12	15.6
Bin2	0.28	1.99	61	2.16	15.44
Bin1	0.33	2.28	53	2.3	14.86

#### Astéroïde 2005 NC56

	Rms Fit	log SNR	H (°)	Seeing (")	Magnitude
Bin3	0.71	0.82	85	2.62	19.81
Bin2	1.1	0.58	81	1.94	19.97
Bin1	0.95	0.74	76	1.98	20.37

## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ

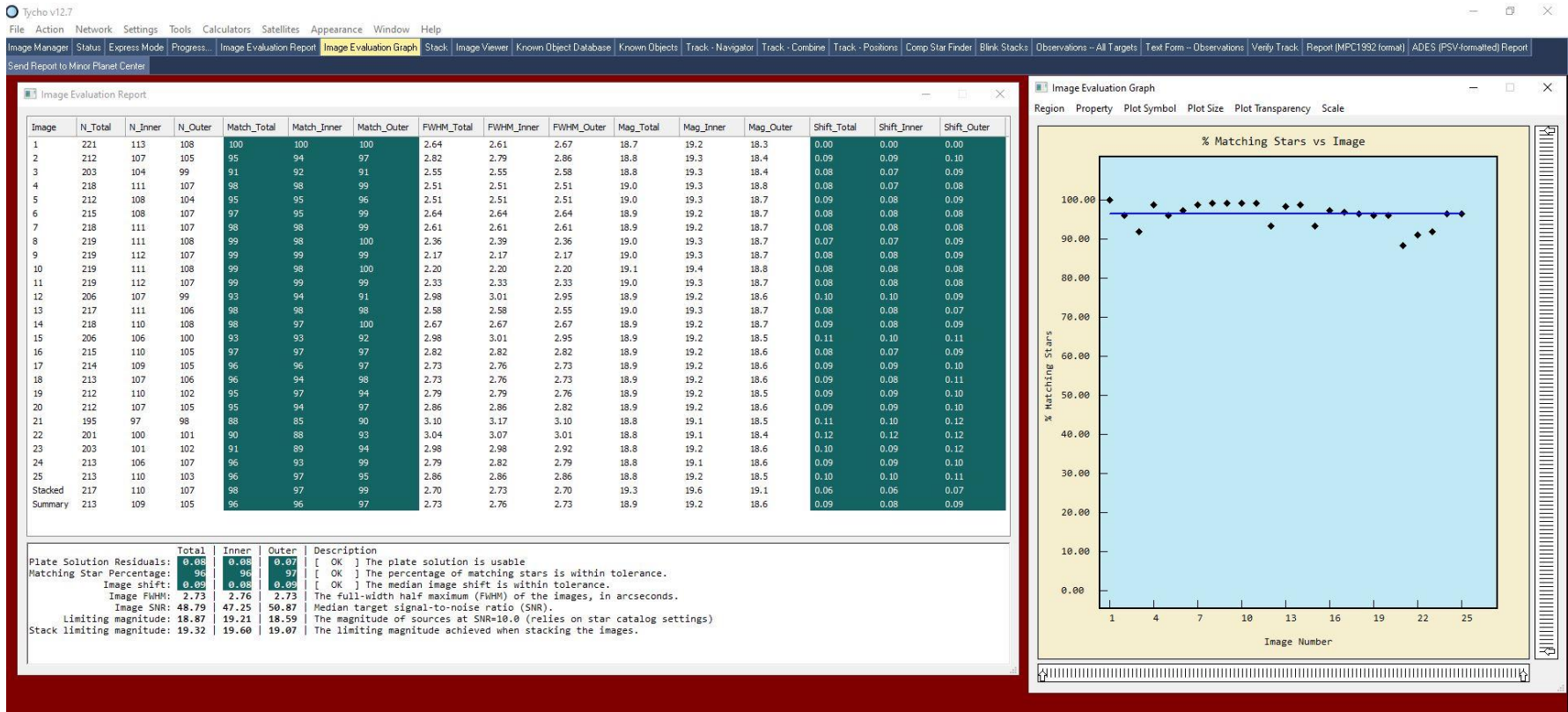
### Image evaluation Bin3



# Paramètres influençant les mesures cométaires : Binning Tycho Tracker

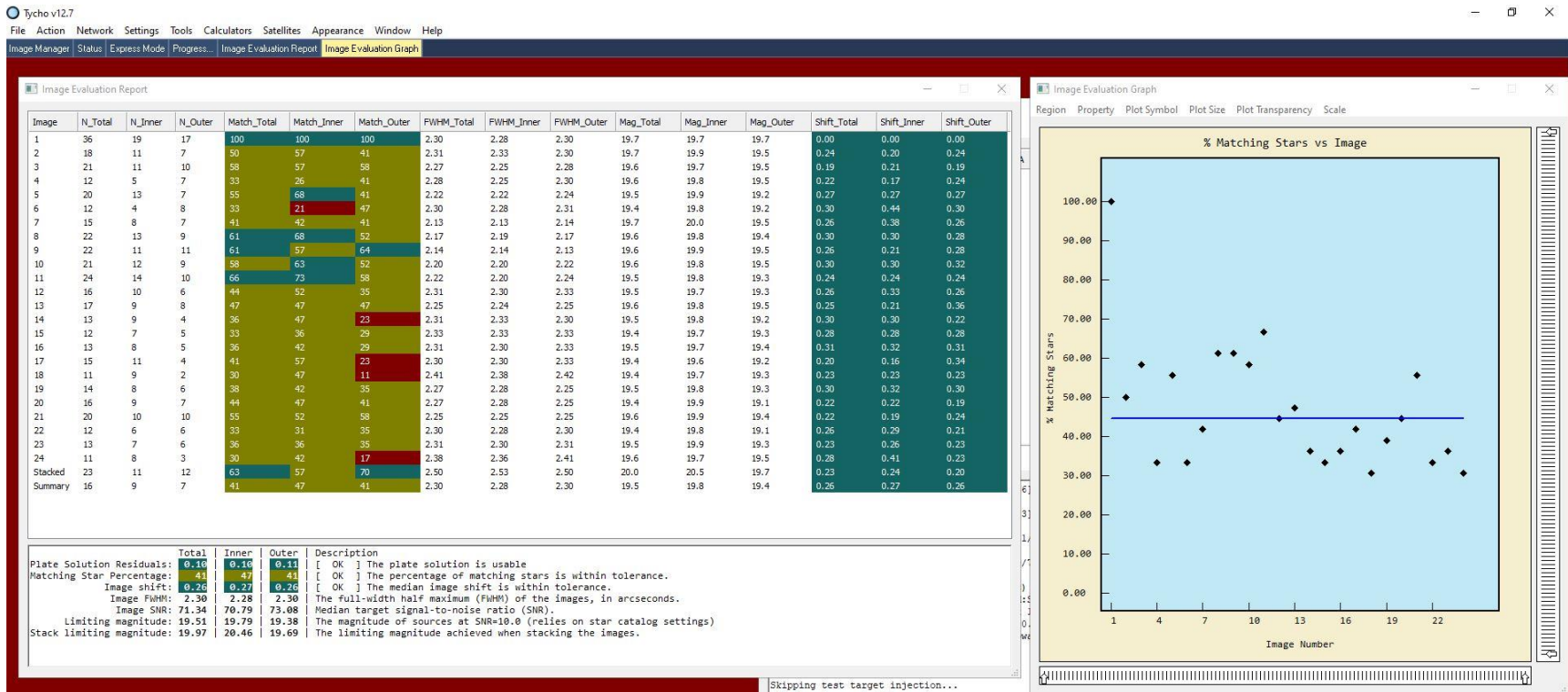
## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ

### Image evaluation Bin2



## SpaceObs Chili W96 PlaneWave CDK17 F/6.9 focale: 3 m environ

### Image evaluation Bin1



### Dans Prism:

- **Addition- recalage / Addition objets mobiles ne fonctionne pas**
- **Addition- recalage / Recalage +Addition sur série d'images peut fonctionner mais uniquement avec Manuel par pointage du curseur**

FIN

