Some Upcoming Occultations

Things to look forward to for the rest of 2024 and into 2025

TTSO18

cloud.occultwatcher.net/campaigns

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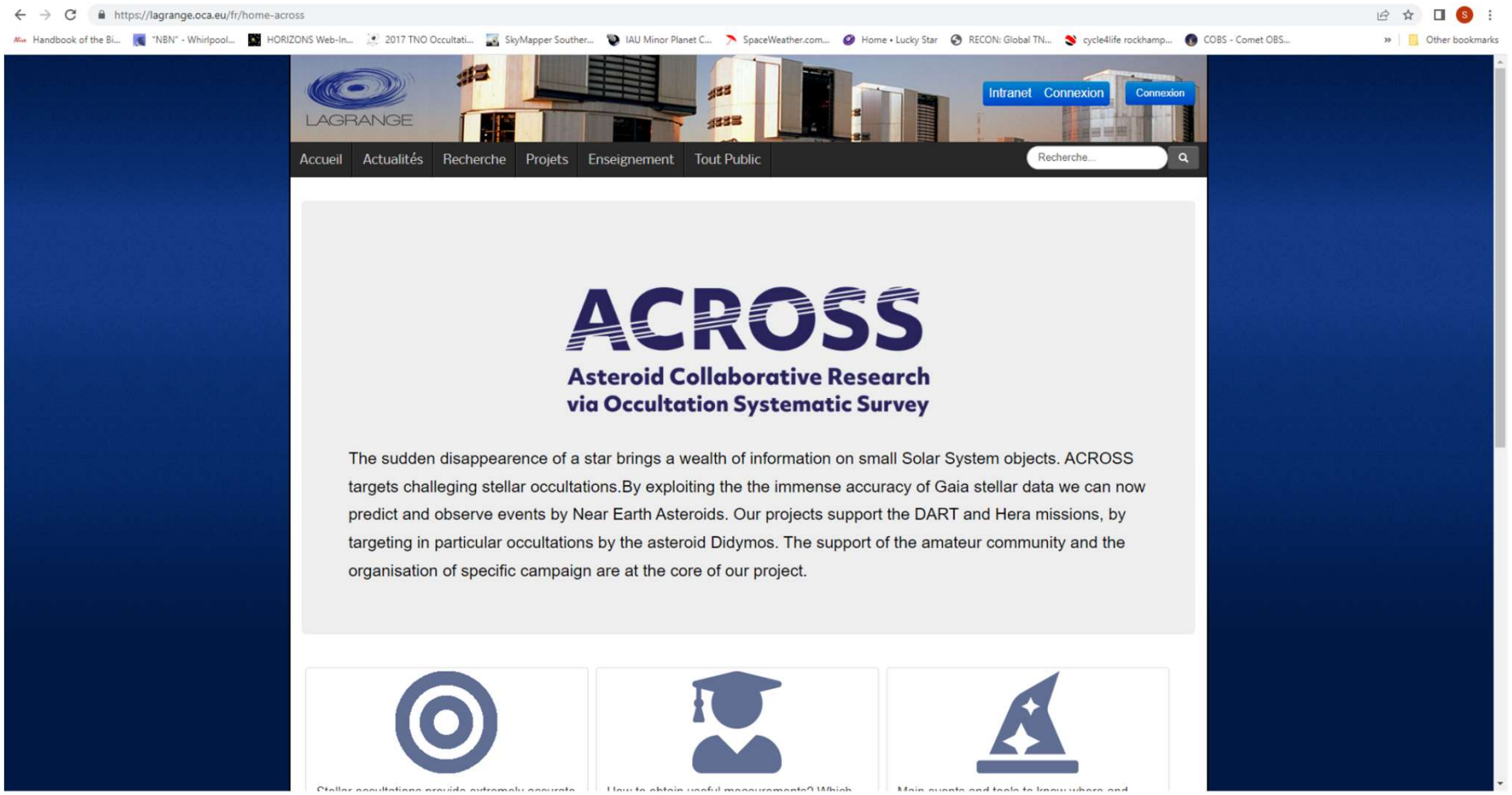
Active Ad-hoc Observation Campaigns:

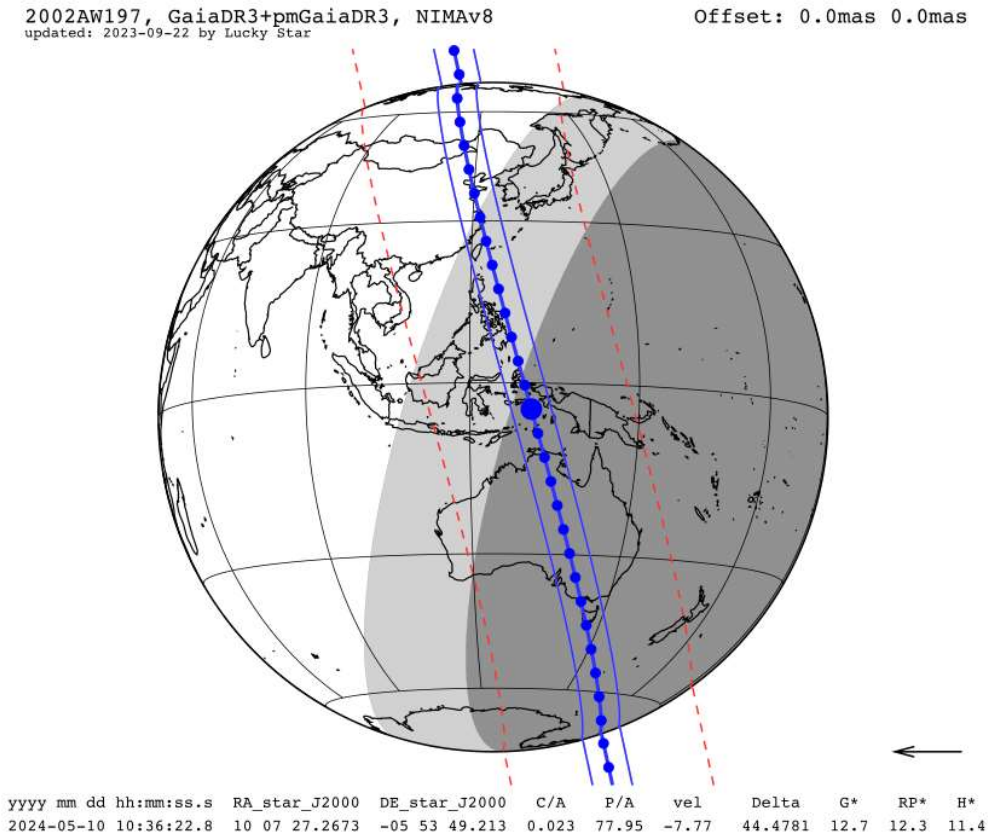
Campaign	Description	Link	Events
SlowRotators	Astronomical Observatory Institute of Poznan, Poland is coordinating a world-wide observing campaign of somewhat neglected asteroids with slow rotation and small lightcurve amplitudes. The aim is to improve biased statistics of spin and pinpointing the correct lightcurve inversion shape model with the help of multi-chord occultation data. The project is led by dr. Anna Marciniak - https://www.iota-es.de/neglected_asteroids.html	External Web Site	OWC Events
ArecIboMoon	A campaign to confirm the suspected moon of Arecibo. The campaign is run by Dave Gault and Peter Nosworthy who first detected the suspected moon on 19 May 2021.	External Web Site	OWC Events
NOC21	LESIA LuckyStar's Neptune Occultation Campaign 2021	External Web Site	OWC Events
ACROSS	ACROSS The ACROSS projects targets challenging events by Near Earth Asteroids. In particular our projects support the DART (NASA) and Hera (ESA) missions, with special efforts to reach the accuracy required to observe occultations by the asteroid Didymos.	External Web Site	OWC Events

LuckyStar and RioGroup Campaigns:

Campaign	Description	Events
TNOExtras	RIO-TNO is a list of Trans Neptunian Object occultation predictions, produced by the RIO de Janeiro Group; Camargo, Julio. I. B.; Vieira-Martins, Roberto; Assafin, Marcelo; Sicardy, Bruno; Braga-Ribas, Felipe; Desmars, Josselin: Observatório Nacional/MCTI, Rio de Janeiro, Brazil; Observatório do Valongo/UFRJ, Rio de Janeiro, Brazil; Observatoire de Paris-Meudon/LESIA, Meudon, France. The predictions are calculated by Felipe Braga Ribas and then converted into OW format by Dave Gault, Australia, www.kuriwaobservatory.com	OWC Events
LuckyStar	Lucky Star is a list of events produced by the 'Lucky Star' project - an ERC Advanced Grant led by Bruno Sicardy at Paris Observatory /	OWC Events



https://lagrange.oca.eu/fr/home-across



Date	Fri. 10 May. 2024 10:36:22
Star position (ICRF)	10 07 27.2673 -05 53 49.213
C/A	0.023 arcsec
P/A	77.95 °
velocity	-7.77 km/s
Geocentric distance Δ	44.4781 au
G mag*	12.7
J mag*	12.3
H mag*	11.4
Magnitude drop	6.4
Uncertainty in time	216.6 sec
Uncertainty in C/A	46.9 mas
Uncertainty in projected distance	1513.8 km
Probability of occultation on centrality	19.4%
Maximum duration	95.6 sec
Moon distance to the object	77.8°
Fraction of illuminated Moon	7.0 %
Solar elongation	105.5°

https://lesia.obspm.fr/lucky-star/occ.php?p=126364

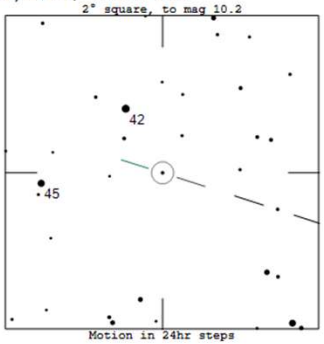
2657 Bashkiria occults UCAC4 384-156375 on 2024 May 18 from 18h 31m to 18h 42m UT

Star: (Dia < 0.1 mas)
Mv 9.2; Mb 9.2; Mr 8.5
RA = 22 15 50.3653 (astrometric)
Dec = -13 14 21.959 ...
[of Date: 22 17 8, -13 7 8]
Prediction of 2024 Mar 27.3
Reliable not set in Gaia (problem)DupSrc, Bad proper motion

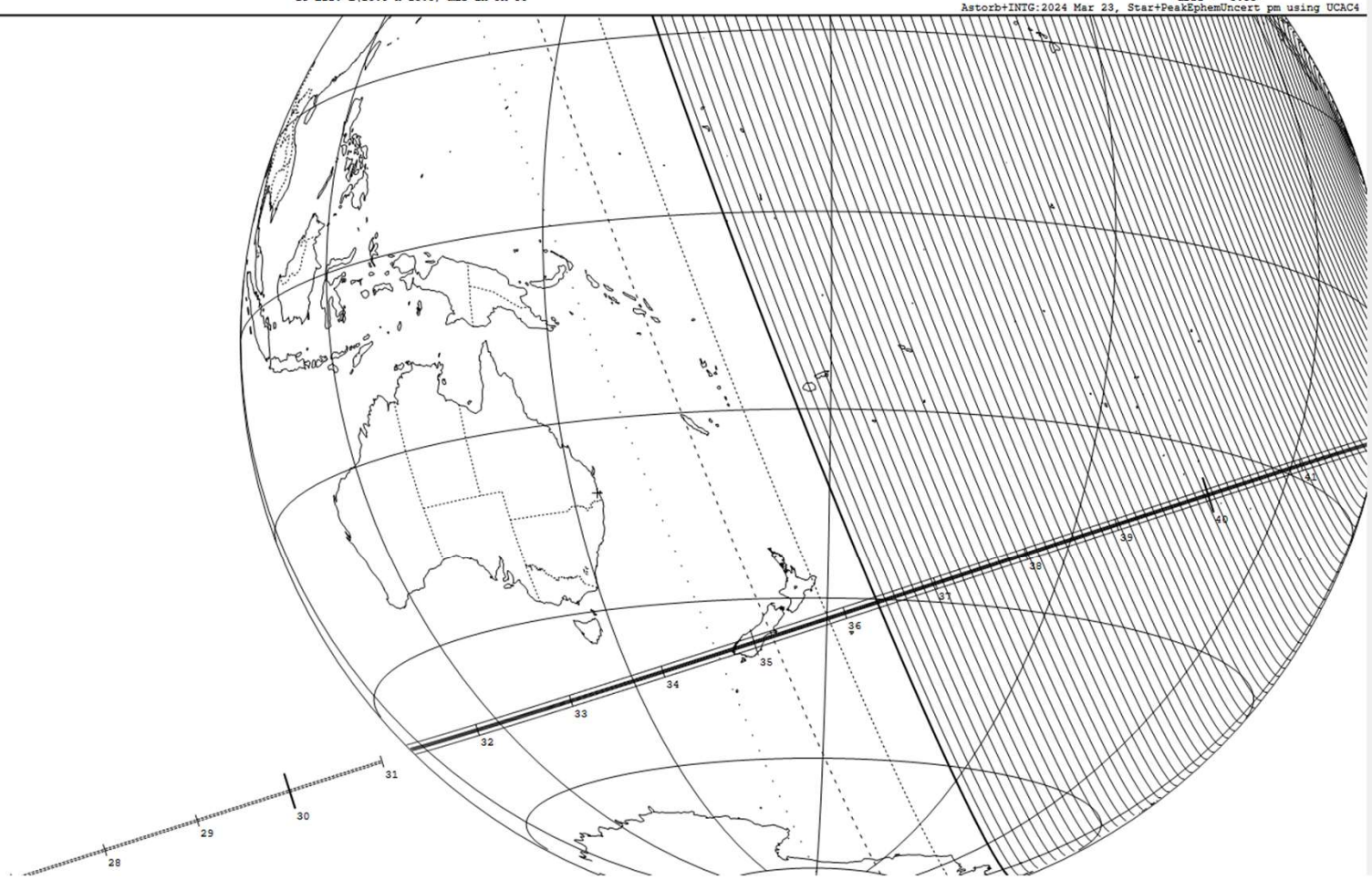
Durations: Max = 1.19 secs
1km = 0.056 secs, 1mas = 0.13 secs
Mag Drop: 9.1 [100%]v, 9.3 [100%]r
Sun : Dist = 87°
Moon: Dist = 147°, illum = 79%
1σ Err: ±(23.0 x 23.0) mas in PA 90°

Asteroid:
Mag = 18.3
Dia = 21 ±2km, 9 mas
Parallax = 2.775"
Hourly dRA = 1.836s
dDec = 8.53"
Astorb+INTG:2024 Mar 23, Star+PeakEphemUncert pm using UCAC4

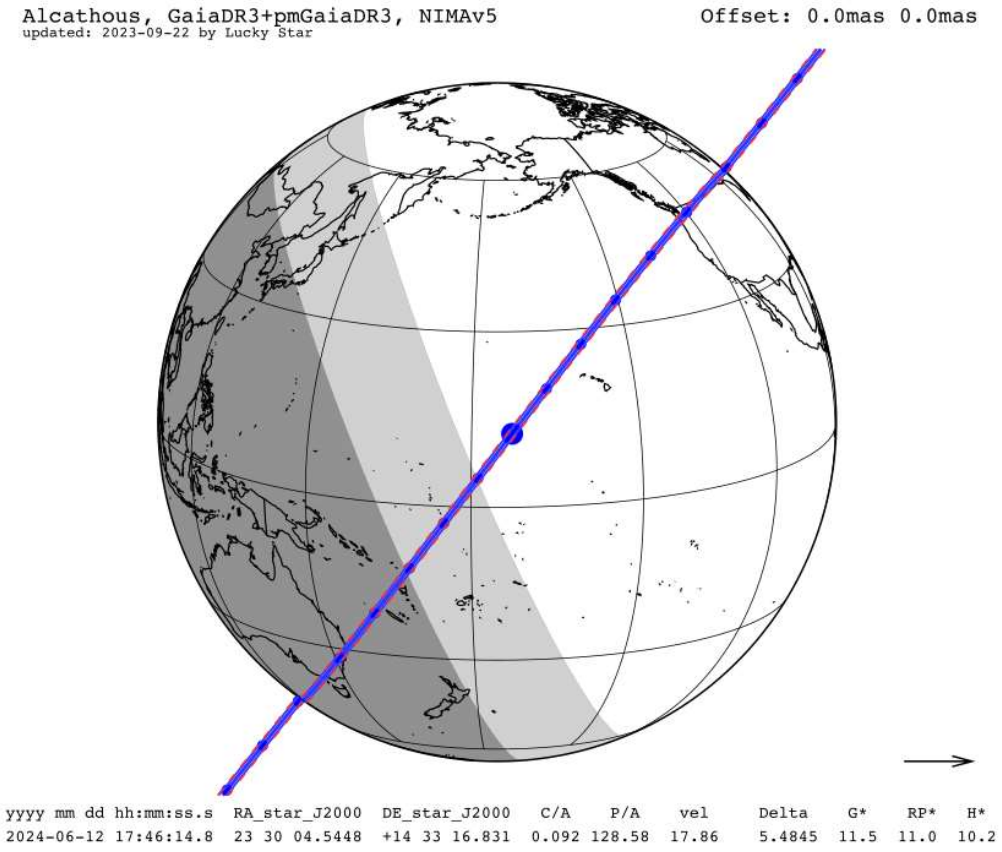
Double, in WDS; Variable star
2° square, to mag 10.2



Motion in 24hr steps



Occult 4.2024.2.23



Date	Wed. 12 Jun. 2024 17:46:14
Star position (ICRF)	23 30 04.5448 +14 33 16.831
C/A	0.092 arcsec
P/A	128.58 °
velocity	17.86 km/s
Geocentric distance Δ	5.4845 au
G mag*	11.5
J mag*	11.0
H mag*	10.2
Magnitude drop	5.0
Uncertainty in time	1.8 sec
Uncertainty in C/A	4.3 mas
Uncertainty in projected distance	17.1 km
Probability of occultation on centrality	99.9%
Maximum duration	6.4 sec
Moon distance to the object	149.9°
Fraction of illuminated Moon	36.2 %
Solar elongation	83.1

https://lesia.obspm.fr/lucky-star/occ.php?p=129039

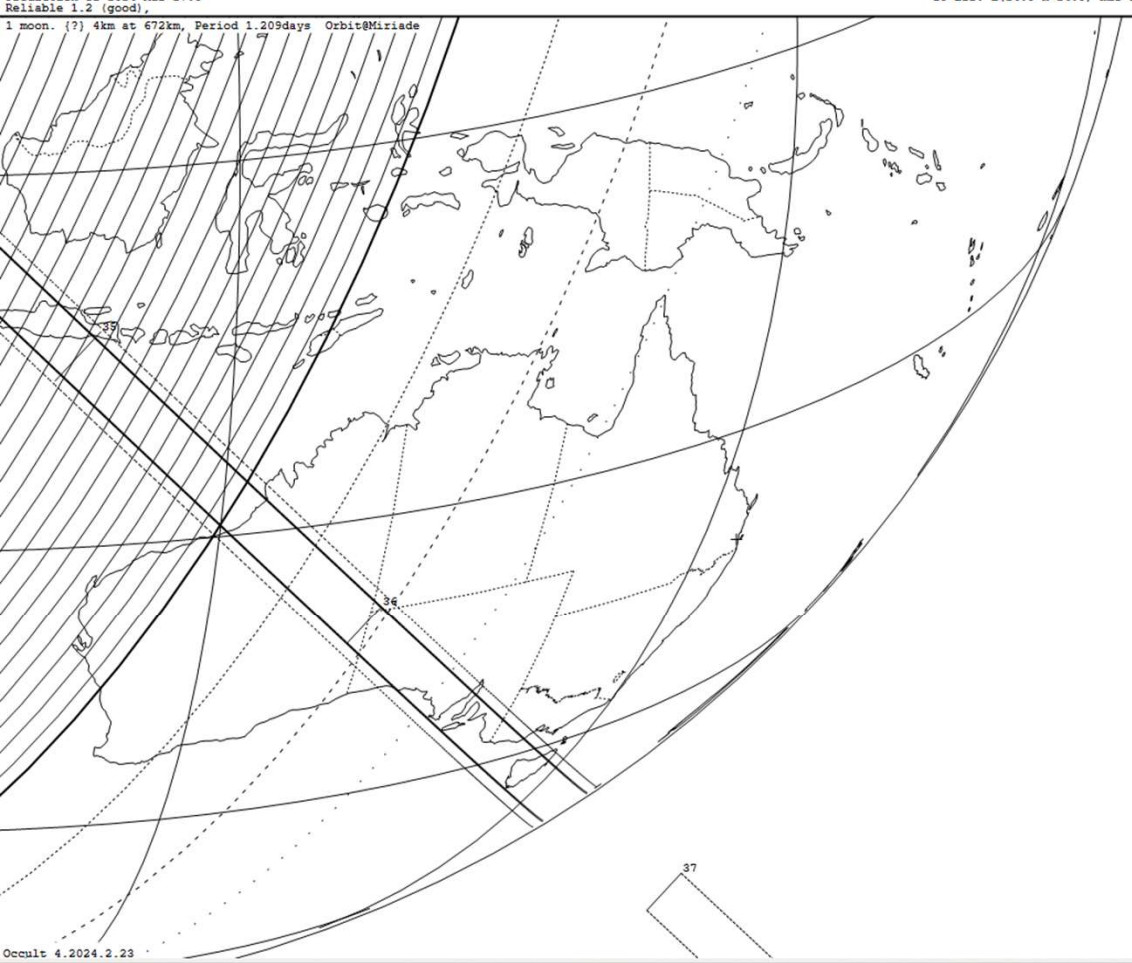
31 Euphrosyne #1 occults TYC 1433-00802-1 on 2024 Jul 1 from 9h 30m to 9h 37m UT

Star: (Dia < 0.1 mas)
Mv 9.4; Mb 9.9; Mr 8.7
RA = 11 8 11.1422 (astrometric)
Dec = 19 55 28.990 ...,
[of Date: 11 9 29, 19 47 41]
Prediction of 2024 Mar 27.3
Reliable 1.2 (good),

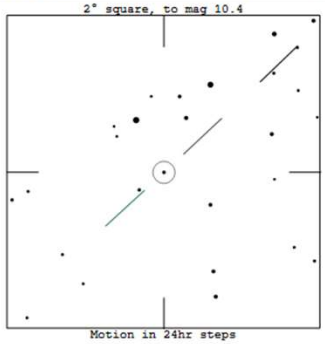
Durations: Max = 7.7 secs
1km = 0.030 secs, 1mas = 0.071 secs
Mag Drop: 3.4 [96%]v, 3.6 [96%]r
Sun : Dist = 61°
Moon: Dist = 117°, illum = 23%
1σ Err: ±(24.0 x 24.0) mas in PA 90°

Asteroid: (in DAMIT)
Mag = 12.7
Dia = 256 ±4km, 108 mas
Parallax = 2.680"
Hourly dRA = 2.624s
dDec =-34.42"
Astorb+INTG:2024 Mar 23 Binary solution 1 : Kepler, Star+PeakEphemUncert + binary orbit

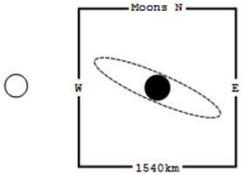
1 moon. {?} 4km at 672km, Period 1.209days Orbit@Miriade



2° square, to mag 10.4



Motion in 24hr steps



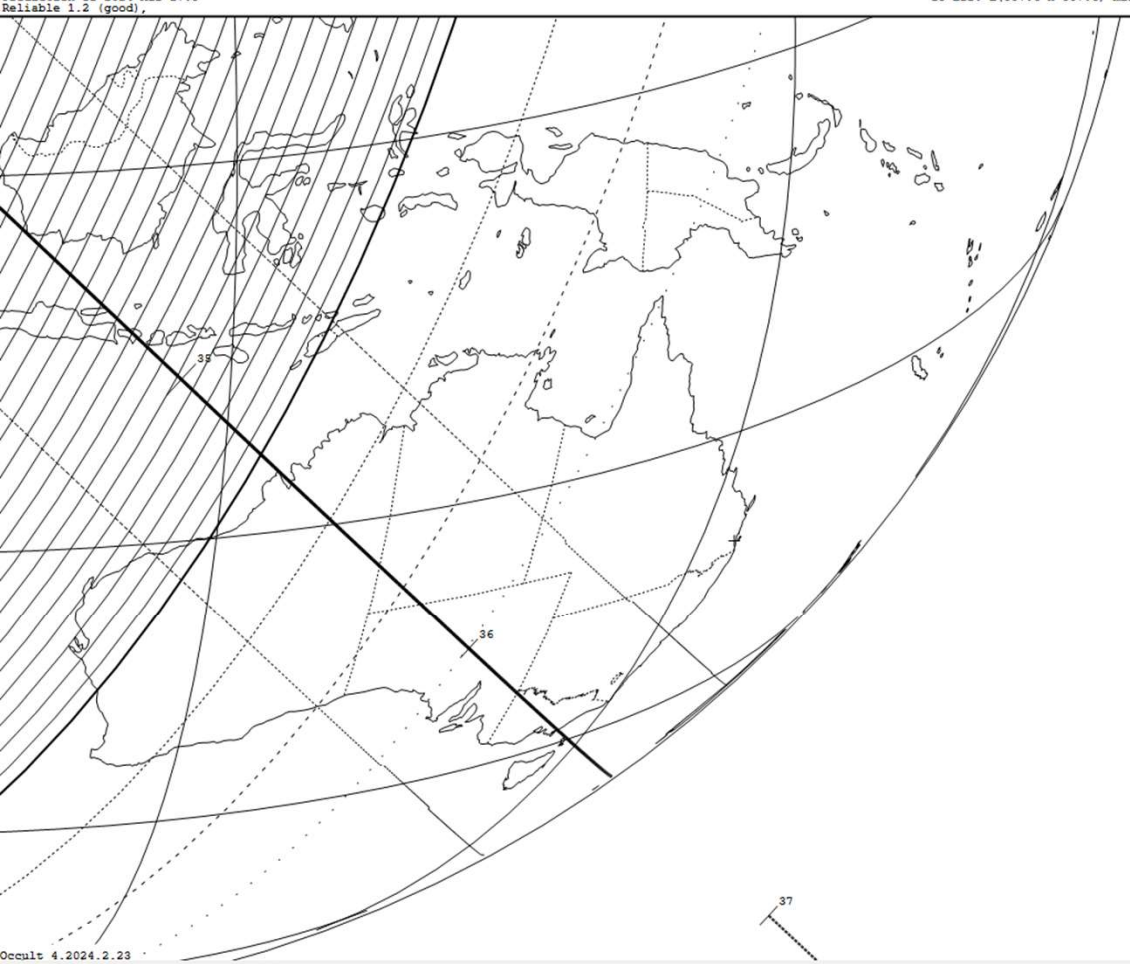
Occult 4.2024.2.23

31 S2019-31-1 #1 occults TYC 1433-00802-1 on 2024 Jul 1 from 9h 30m to 9h 37m UT

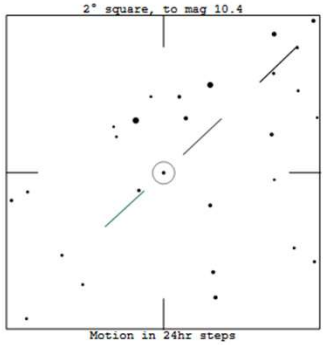
Star: (Dia < 0.1 mas)
Mv 9.4; Mb 9.9; Mr 8.7
RA = 11 8 11.1422 (astrometric)
Dec = 19 55 28.990 ...
[of Date: 11 9 29, 19 47 41]
Prediction of 2024 Mar 27.3
Reliable 1.2 (good),

Durations: Max = 0.19 secs
1km = 0.031 secs, 1mas = 0.071 secs
Mag Drop: 3.4 [96%]v, 3.6 [96%]r
Sun : Dist = 61°
Moon: Dist = 117°, illum = 23%
1σ Err: ±(307.6 x 307.6) mas in PA 72°

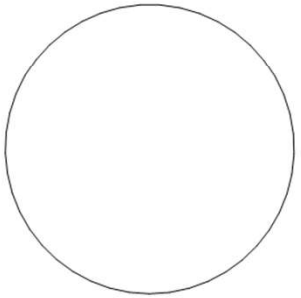
Asteroid: (in DAMIT)
Mag = 12.7
Dia = 6.0 ±2.0km, 3 mas
Parallax = 2.680"
Hourly dRA = 2.624s
dDec =-34.42"
Astorb+INTG:2024 Mar 23 Binary solution 1 : Kepler, Star+PeakEphemUncert + binary orbit



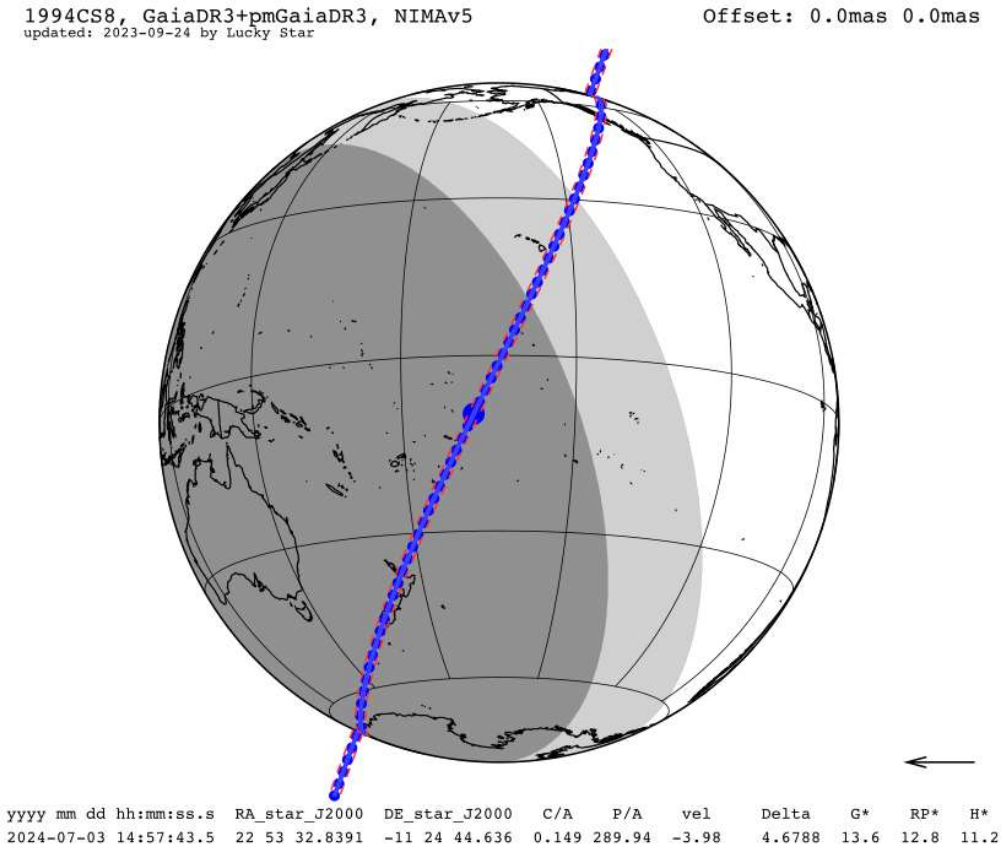
2° square, to mag 10.4



Motion in 24hr steps



Occult 4.2024.2.23



Date	Wed. 3 Jul. 2024 14:57:43
Star position (ICRF)	22 53 32.8391 -11 24 44.636
C/A	0.149 arcsec
P/A	289.94 °
velocity	-3.98 km/s
Geocentric distance Δ	4.6788 au
G mag*	13.6
J mag*	12.8
H mag*	11.2
Magnitude drop	3.0
Uncertainty in time	14.4 sec
Uncertainty in C/A	21.9 mas
Uncertainty in projected distance	74.3 km
Probability of occultation on centrality	22.8%
Maximum duration	10.8 sec
Moon distance to the object	92.8°
Fraction of illuminated Moon	6.4 %
Solar elongation	121.4°

https://lesia.obspm.fr/lucky-star/occ.php?p=126011

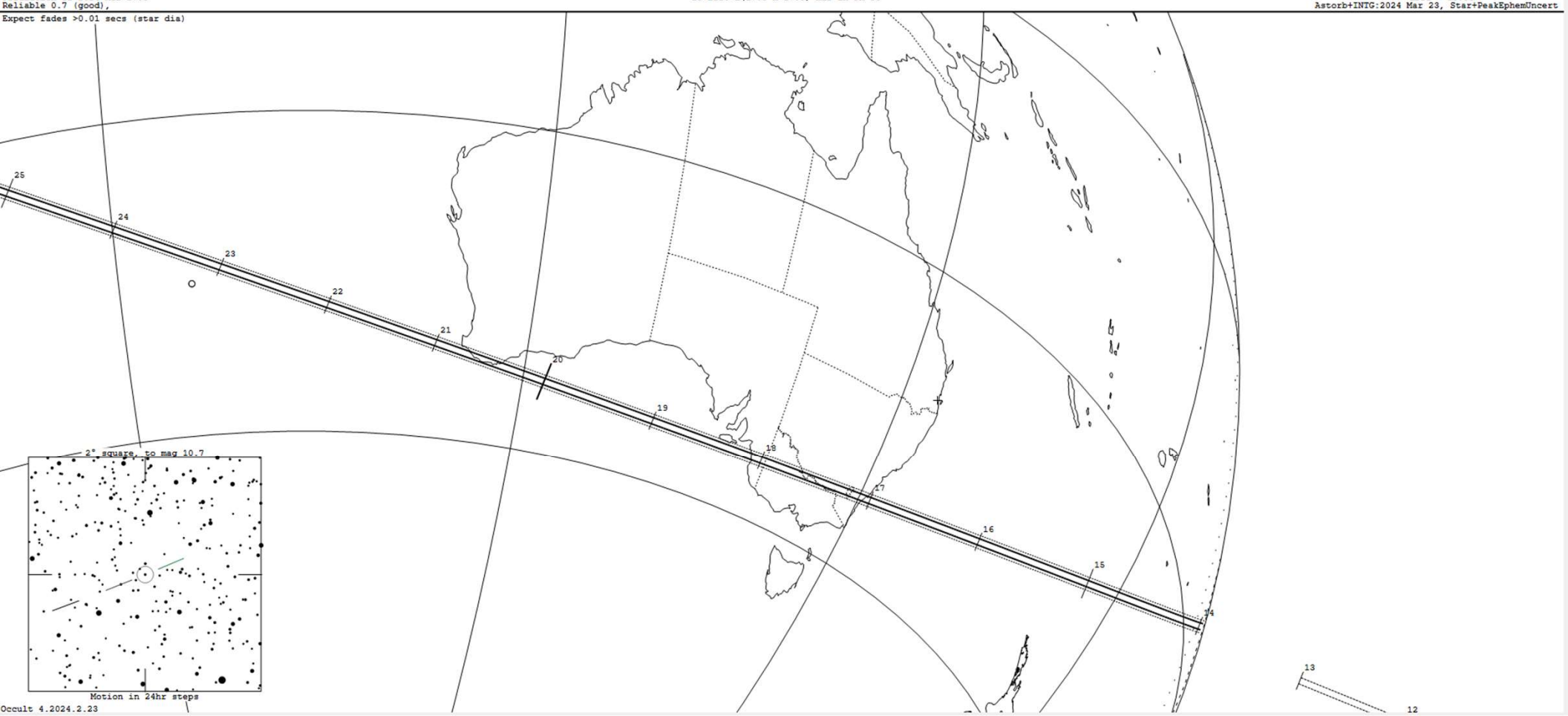
623 Chimaera occults UCAC4 270-126161 on 2024 Jul 4 from 16h 14m to 16h 31m UT

Star: (Dia = 0.1 mas)
Mv 9.7; Mb 10.5; Mr 8.8
RA = 17 53 9.4618 (astrometric)
Dec = -36 9 0.829 ...
[of Date: 17 54 50, -36 9 23]
Prediction of 2024 Mar 27.3
Reliable 0.7 (good),

Durations: Max = 3.5 secs
1km = 0.080 secs, 1mas = 0.10 secs
Mag Drop: 5.0 [99%]v, 5.5 [99%]r
Sun : Dist = 161°
Moon: Dist = 172° illum = 2%
1σ Err: ±(17.0 x 17.0) mas in PA 90°

Asteroid: (in DAMIT)
Mag = 14.7
Dia = 44 ±3km, 35 mas
Parallax = 5.070"
Hourly dRA =-2.764s
dDec = 13.53"
Astorb+INTG:2024 Mar 23, Star+PeakEphemUncert

Expect fades >0.01 secs (star dia)



Occult 4.2024.2.23

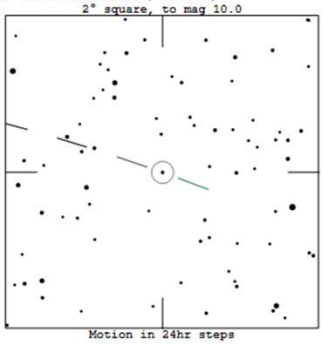
386 Siegena occults TYC 483-00451-1 on 2024 Jul 11 from 11h 11m to 11h 28m UT

Star: (Dia = 0.2 mas)
Mv 9.0; Mb 9.8; Mr 8.2
RA = 19 42 7.8284 (astrometric)
Dec = 3 36 10.727 ...
[of Date: 19 43 23, 3 39 38]
Prediction of 2024 Mar 27.3
Reliable 3.8 (beware),

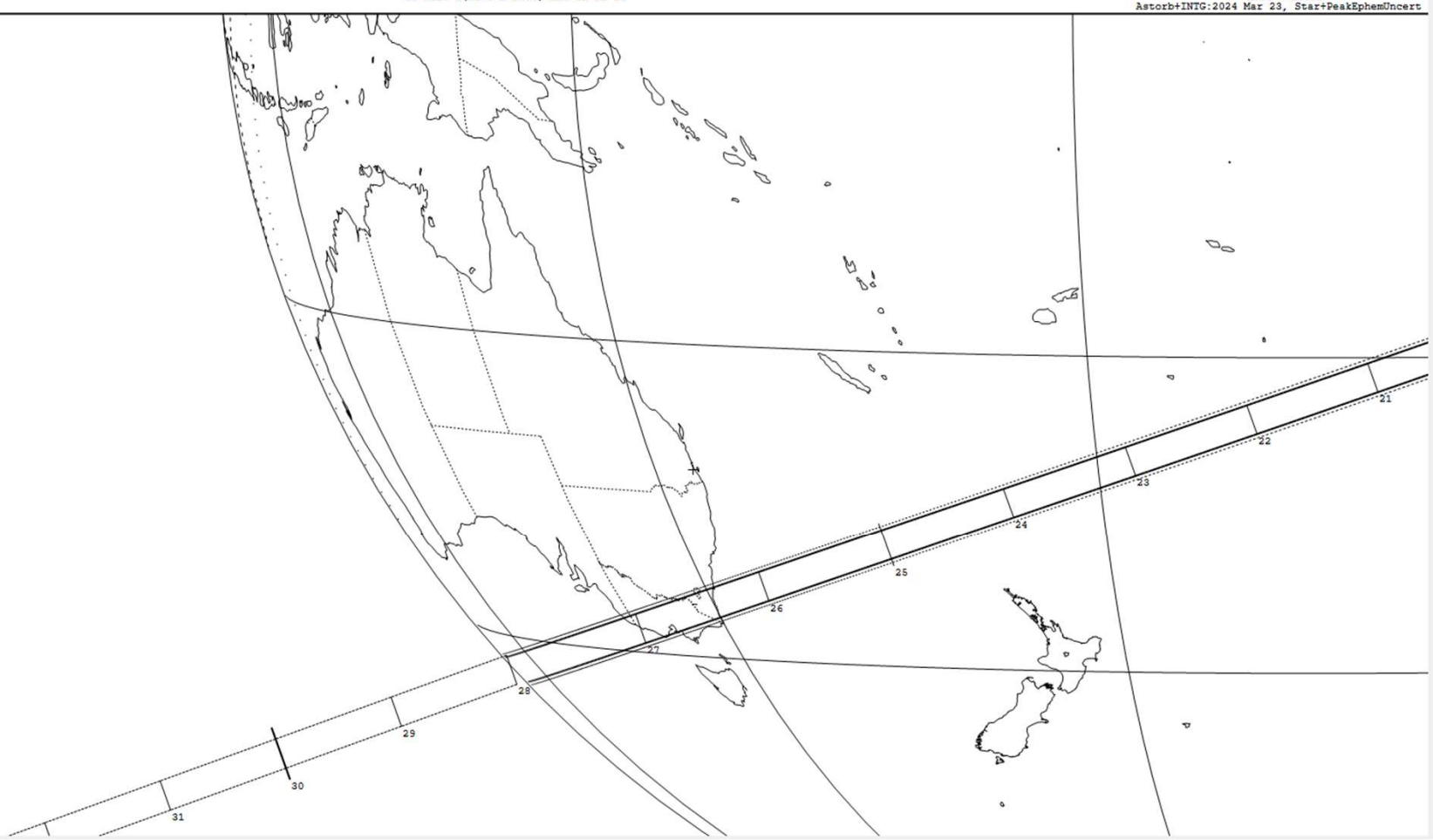
Durations: Max = 15.0 secs
1km = 0.084 secs, 1mas = 0.12 secs
Mag Drop: 3.1 [94%]v, 3.5 [96%]r
Sun : Dist = 154°
Moon: Dist = 121°, illum = 27%
1σ Err: ±(16.0 x 16.0) mas in PA 90°

Asteroid: (in DAMIT)
Mag = 12.1
Dia = 179 ±13km, 129 mas
Parallax = 4.619"
Hourly dRA =-1.951s
dDec =-10.51"
Astorb+INTG:2024 Mar 23, Star+PeakEphemUncert

Expect fades >0.02 secs (star dia)
2° square, to mag 10.0



Motion in 24hr steps



Occult 4.2024.2.23

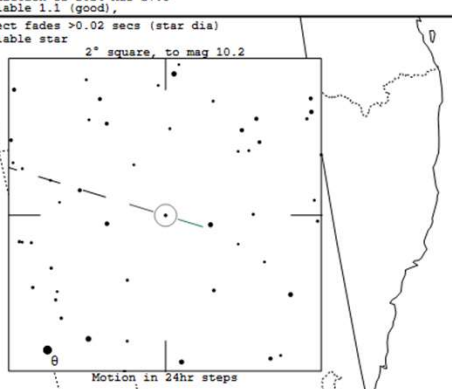
2142 Landau occults TYC 6345-01358-1 on 2024 Jul 13 from 14h 13m to 14h 30m UT

Star: (Dia = 0.2 mas)
Mv 9.2; Mb 9.9; Mr 8.3
RA = 21 2 47.5809 (astrometric)
Dec = -16 22 34.484
[of Date: 21 4 11, -16 16 43]
Prediction of 2024 Mar 27.3
Reliable 1.1 (good),

Durations: Max = 1.78 secs
1km = 0.087 secs, 1mas = 0.15 secs
Mag Drop: 8.0 [100%]v, 8.4 [100%]r
Sun : Dist = 158°
Moon: Dist = 116°, illum = 47%
1σ Err: ±(21.0 x 21.0) mas in PA 90°

Asteroid:
Mag = 17.2
Dia = 20 ±2km, 12 mas
Parallax = 3.748"
Hourly dRA =-1.628s
dDec = -7.22"
Astorb+INTG:2024 Mar 23, Star+PeakEphemUncert

Expect fades >0.02 secs (star dia)
Variable star



Occult 4.2024.2.23

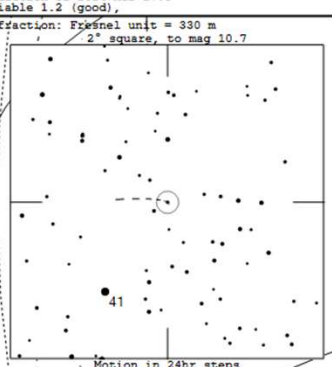
2721 Vsekhsvyatskij occults TYC 6189-00019-1 on 2024 Jul 17 from 13h 18m to 15h 30m UT

Star: (Dia < 0.1 mas)
Mv 9.7; Mb 10.0; Mr 9.2
RA = 15 37 13.5339 (astrometric)
Dec = -18 44 4.628 ...
[of Date: 15 38 39, -18 48 59]
Prediction of 2024 Mar 27.3
Reliable 1.2 (good),

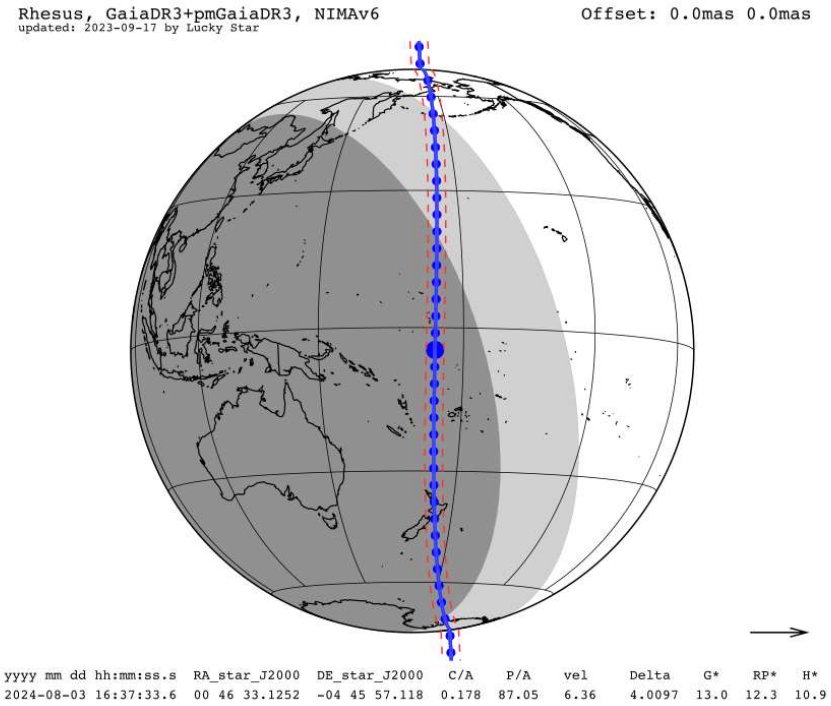
Durations: Max = 15.6 secs
1km = 0.87 secs, 1mas = 1.7 secs
Mag Drop: 8.5 [100%]v, 8.5 [100%]r
Sun : Dist = 121°
Moon: Dist = 11°, illum = 83%
1σ Err: ±(19.0 x 19.0) mas in PA 90°

Asteroid: (in DAMIT)
Mag = 18.1
Dia = 18 ±2km, 9 mas
Parallax = 3.165"
Hourly dRA =-0.122s
dDec = -1.09"
Astorb+INTG:2024 Mar 23, Star+PeakEphemUncert

Diffraction: Fresnel unit = 330 m
2° square, to mag 10.7



Occult 4.2024.2.23



Date	Sat. 3 Aug. 2024 16:37:33
Star position (ICRF)	00 46 33.1252 -04 45 57.118
C/A	0.178 arcsec
P/A	87.05 °
velocity	6.36 km/s
Geocentric distance Δ	4.0097 au
G mag*	13.0
J mag*	12.3
H mag*	10.9
Magnitude drop	3.5
Uncertainty in time	8.1 sec
Uncertainty in C/A	61.3 mas
Uncertainty in projected distance	178.3 km
Probability of occultation on centrality	10.0%
Maximum duration	7.1 sec
Moon distance to the object	114.1°
Fraction of illuminated Moon	0.8 %
Solar elongation	122.2°

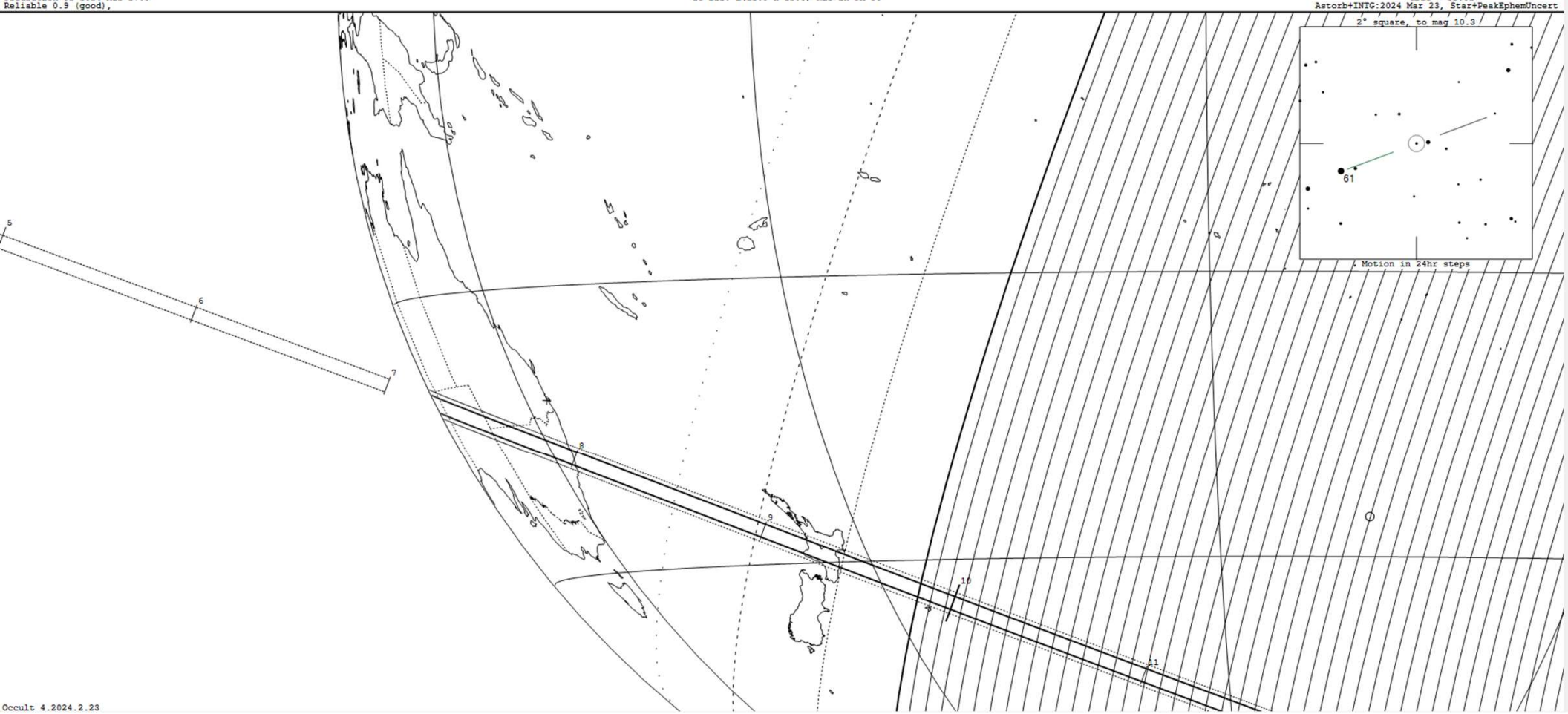
https://lesia.obspm.fr/lucky-star/occ.php?p=131430

313 Chaldaea occults TYC 4914-00733-1 on 2024 Nov 30 from 16h 7m to 16h 13m UT

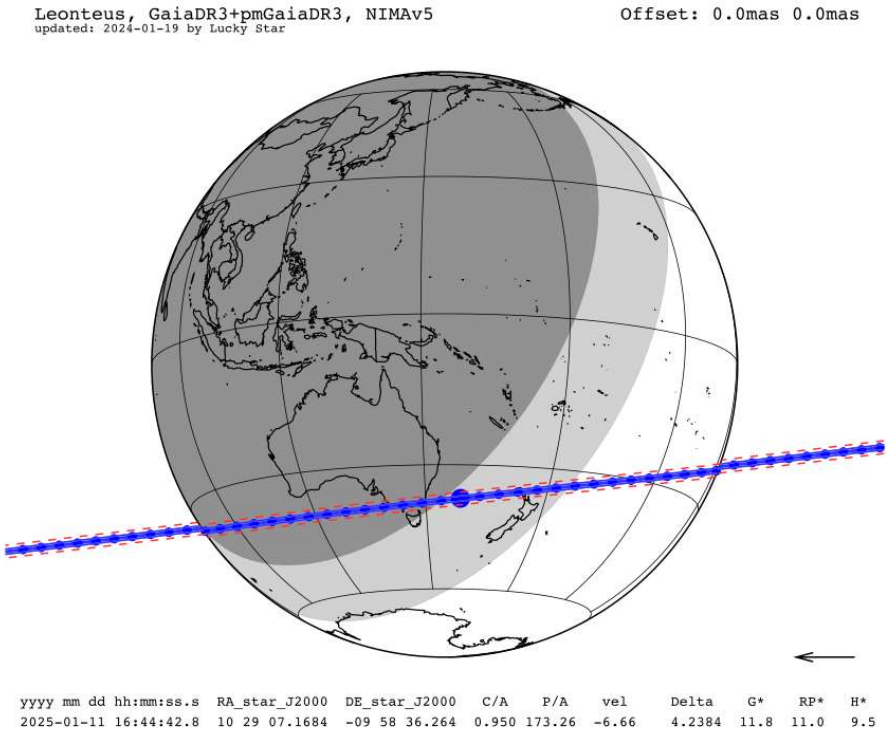
Star: (Dia < 0.1 mas)
Mv 9.3; Mb 9.6; Mr 8.8
RA = 10 59 14.1045 (astrometric)
Dec = - 2 14 51.684 ...
[of Date: 11 0 30, - 2 22 47]
Prediction of 2024 Mar 27.3
Reliable 0.9 (good),

Durations: Max = 4.0 secs
1km = 0.043 secs, 1mas = 0.056 secs
Mag Drop: 4.0 [98%]v, 4.1 [98%]r
Sun : Dist = 82°
Moon: Dist = 75°, illum = 0%
1σ Err: ±(22.0 x 22.0) mas in PA 90°

Asteroid: (in DAMIT)
Mag = 13.3
Dia = 94 ±6km, 71 mas
Parallax = 4.820"
Hourly dRA = 4.001s
dDec =-22.31"
Astorb+INTG:2024 Mar 23, Star+PeakEphemUncert



Occult 4.2024.2.23



Date	Sat. 11 Jan. 2025 16:44:42
Star position (ICRF)	10 29 07.1684 -09 58 36.264
C/A	0.950 arcsec
P/A	173.26 °
velocity	-6.66 km/s
Geocentric distance Δ	4.2384 au
G mag*	11.8
J mag*	11.0
H mag*	9.5
Magnitude drop	3.1
Uncertainty in time	25.5 sec
Uncertainty in C/A	26.5 mas
Uncertainty in projected distance	81.4 km
Probability of occultation on centrality	50.8%
Maximum duration	16.8 sec
Moon distance to the object	82.1°
Fraction of illuminated Moon	93.8 %
Solar elongation	126.3°

https://lesia.obspm.fr/lucky-star/occ.php?p=133011

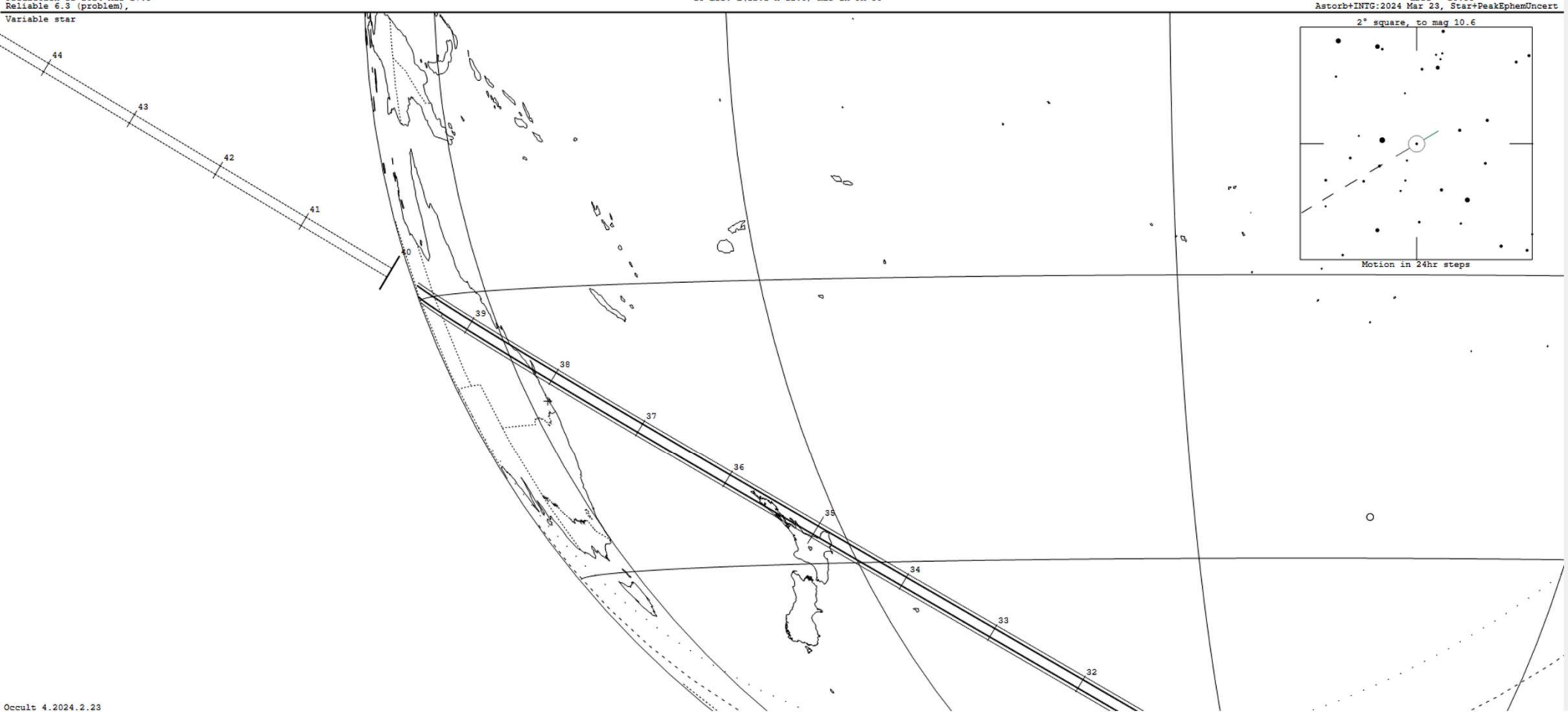
319 Leona occults UCAC4 442-053430 on 2025 Feb 10 from 11h 28m to 11h 40m UT

Star: (Dia < 0.1 mas)
Mv 9.6; Mb 9.8; Mr 9.3
RA = 11 26 42.6790 (astrometric)
Dec = - 1 43 53.637 ...
[of Date: 11 28 1, - 1 52 17]
Prediction of 2024 Mar 27.3
Reliable 6.3 (problem),

Durations: Max = 5.9 secs
1km = 0.088 secs, 1mas = 0.17 secs
Mag Drop: 6.0 [100%]v, 5.9 [100%]r
Sun : Dist = 149°
Moon: Dist = 57°, illum = 95%
1σ Err: ±(12.1 x 12.0) mas in PA 90°

Asteroid:
Mag = 15.6
Dia = 67 ±3km, 35 mas
Parallax = 3.299"
Hourly dRA =-1.217s
dDec = 10.88"
Astorb+INTG:2024 Mar 23, Star+PeakEphemUncert

Variable star



2° square, to mag 10.6

Motion in 24hr steps

Occult 4.2024.2.23

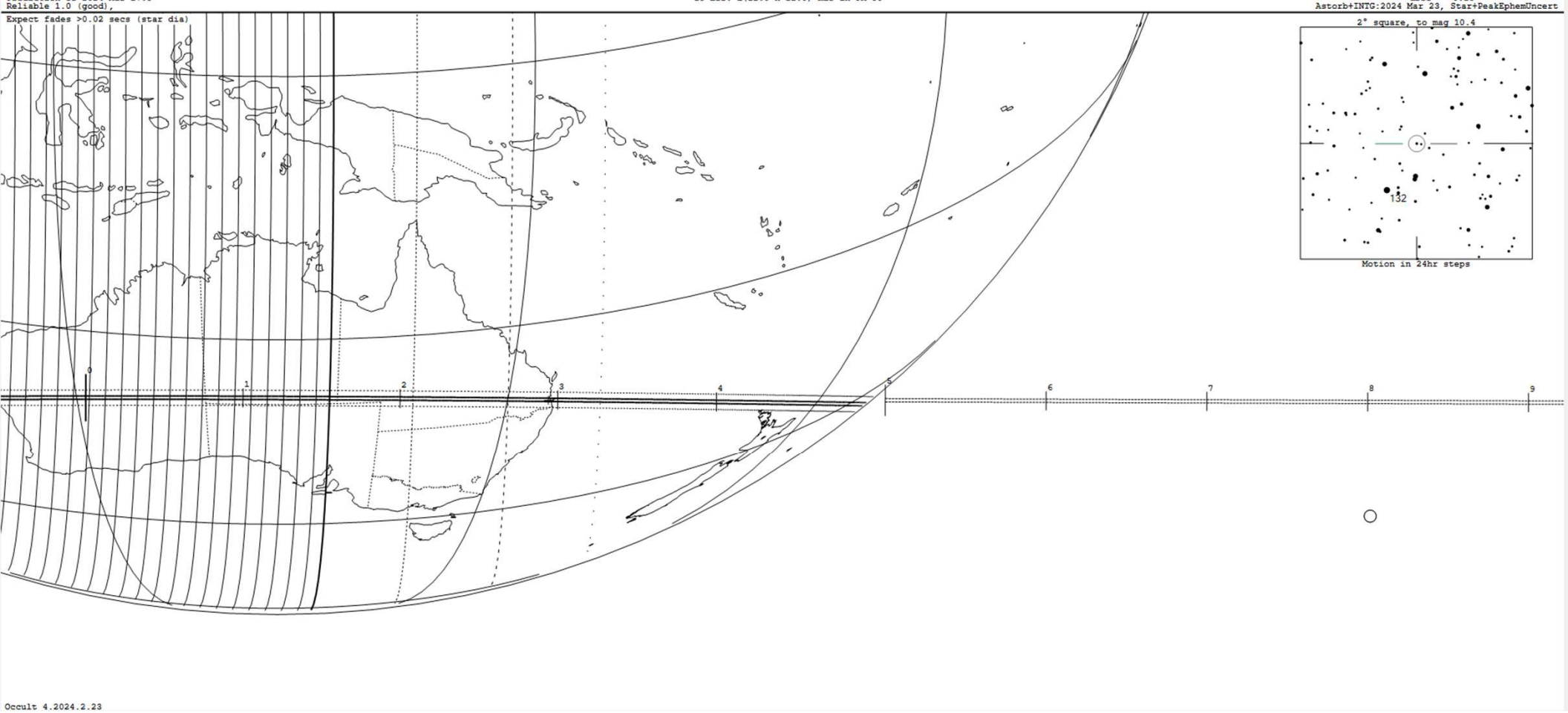
2361 Gogol occults UCAC4 575-019660 on 2025 Mar 20 from 8h 57m to 9h 5m UT

Star: (Dia = 0.2 mas)
Mv 9.4; Mb 10.2; Mr 8.5
RA = 5 47 53.3253 (astrometric)
Dec = 24 58 2.429 ...
[of Date: 5 49 27, 24 58 38]
Prediction of 2024 Mar 27.3
Reliable 1.0 (good),

Durations: Max = 1.23 secs
1km = 0.055 secs, 1mas = 0.10 secs
Mag Drop: 8.1 [100%]v, 8.5 [100%]r
Sun : Dist = 87°
Moon: Dist = 159°, illum = 70%
1σ Err: ±(22.0 x 22.0) mas in PA 90°

Asteroid:
Mag = 17.5
Dia = 22 ±2km, 12 mas
Parallax = 3.408"
Hourly dRA = 2.598s
dDec = -0.13"
Astorb+INTG:2024 Mar 23, Star+PeakEphemUncert

Expect fades >0.02 secs (star dia)



2° square, to mag 10.4

Motion in 24hr steps

Occult 4.2024.2.23

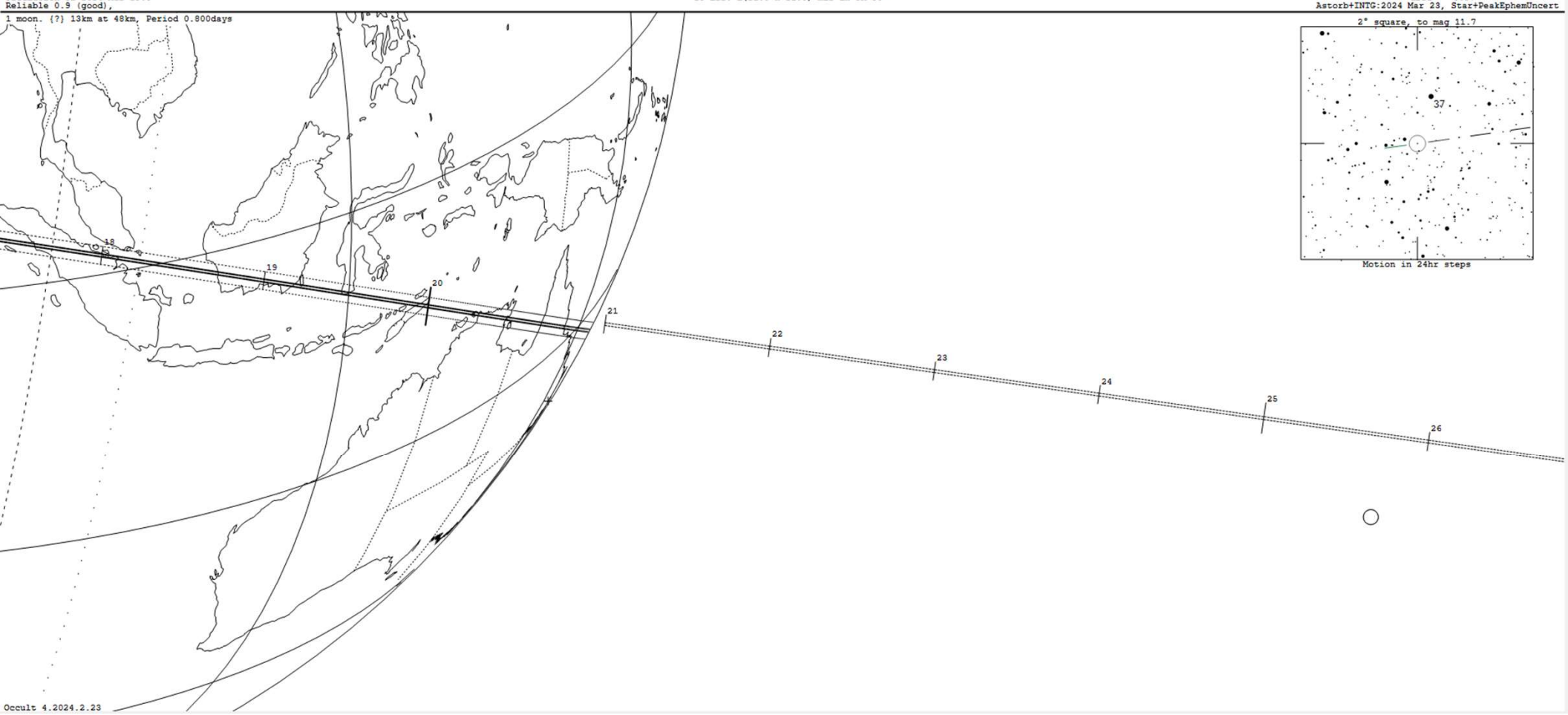
4337 Arecibo occults TYC 1898-01772-1 on 2025 Apr 11 from 12h 10m to 12h 21m UT

Star: (Dia < 0.1 mas)
Mv 10.7; Mb 11.5; Mr 9.8
RA = 6 55 49.7049 (astrometric)
Dec = 24 58 20.624 ...
[of Date: 6 57 23, 24 56 27]
Prediction of 2024 Mar 29.3
Reliable 0.9 (good),

Durations: Max = 1.03 secs
1km = 0.053 secs, 1mas = 0.13 secs
Mag Drop: 8.0 [100%]v, 8.4 [100%]r
Sun : Dist = 81°
Moon: Dist = 83°, illum = 98%
1σ Err: ±(21.0 x 21.0) mas in PA 90°

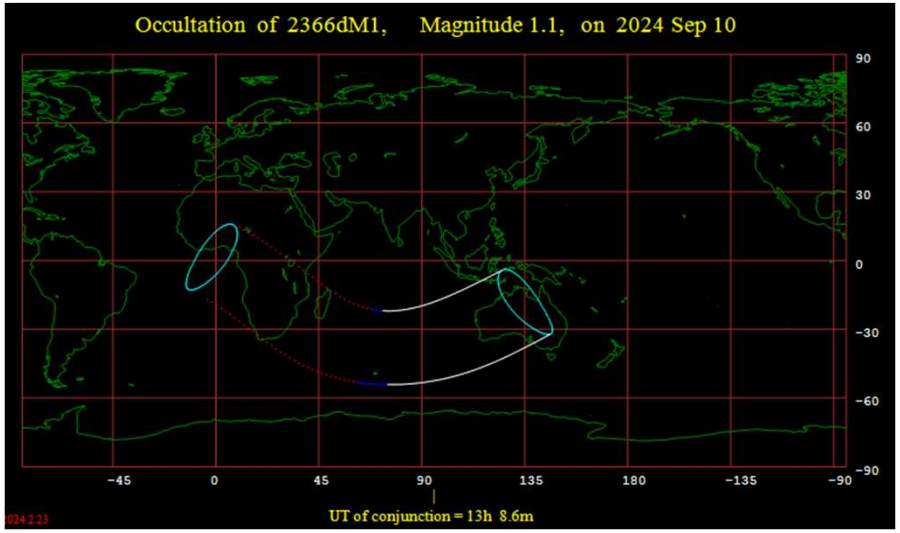
Asteroid: (in DAMIT)
Mag = 18.6
Dia = 19 ±2km, 8 mas
Parallax = 2.625"
Hourly dRA = 2.046s
dDec = -3.97"
Astorb+INTG:2024 Mar 23, Star+PeakEphemUncert

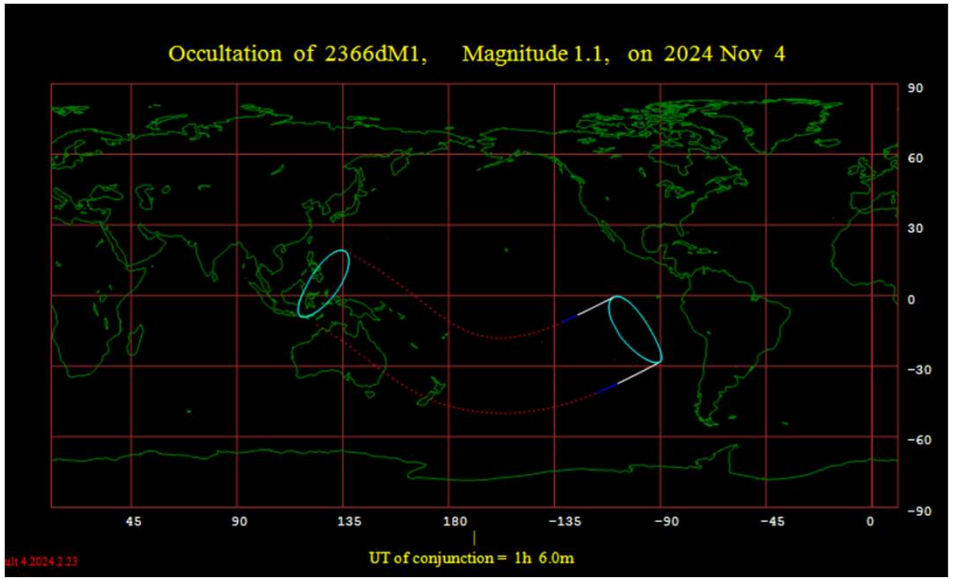
1 moon. {?} 13km at 48km, Period 0.800days



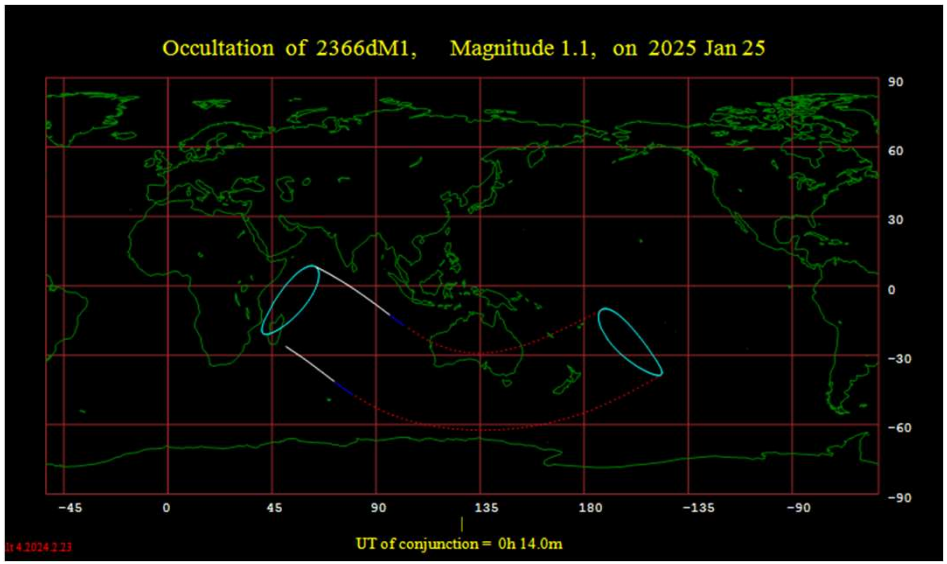
Occult 4.2024.2.23

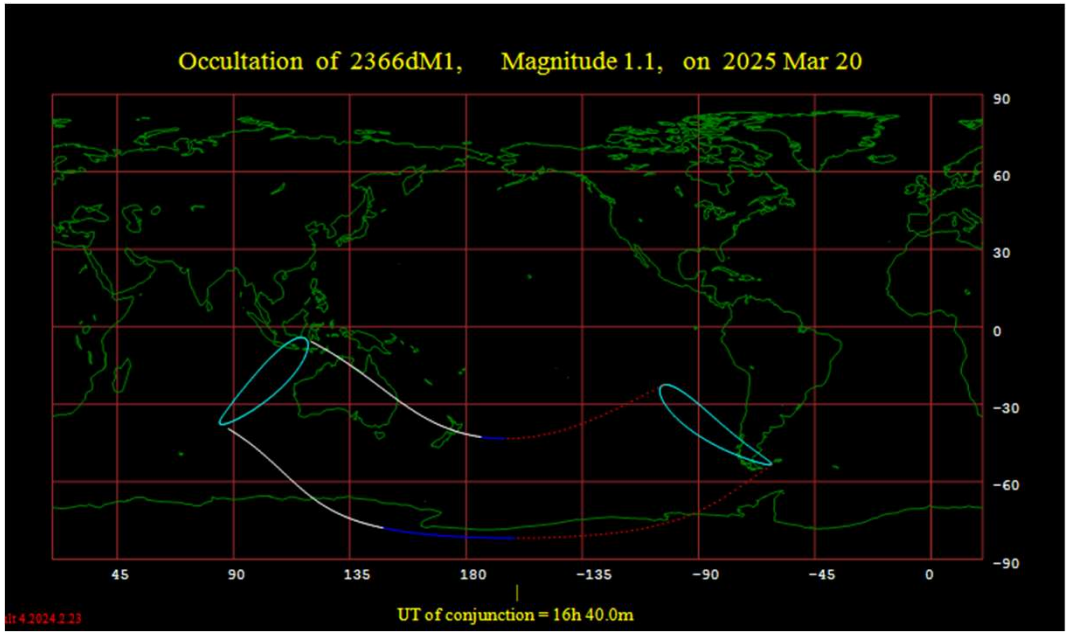
Occultations of Antares





Occultations of Antares





The End

Questions?