2024 Best North American Asteroidal Events

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Jul 15, 2023

BEST North American Asteroidal Occultations in 2024

Date			U.T.		Diameter		Durn	Star	Mag-Drop		Elon	%	Star	d	Rely	Planet	
y	m	d	h	m	km	"	sec/m	mag	V	R	*	o	Ill	No.		<1.4	No	Name
2024	Jan	19	4	18.7	20	0.021	2.7s	7.4	8.3	8.6	156			TYC 1890-00359-1	s	0.95	1768	Appenzella
2024	Feb	14	10	19.5	231	0.131	15.4s	9.7	2.6	2.6	157			HIP 54502	s	1.05	324	Bamberga
2024	Mar	23	9	51.1	136	0.077	8.3s	9.6	3.6	4.1	93			TYC 6259-00194-1	s	0.85	308	Polyxo
2024	Jun	4	6	10.1	113	0.052	13.1s	9.7	4.2	4.9	135			UCAC4 419-131172	s	1.15	181	Eucharis
2024	Jun	18	4	16.0	63	0.048	6.0s	8.9	3.5	4.0	159			TYC 6300-02115-1	s	1.10	487	Venetia
2024	Aug	13	4	21.2	55	0.045	6.3s	9.6	4.4	5.1	154			TYC 5155-01265-1	s	0.95	838	Seraphina
2024	Aug	22	9	25.2	96	0.041	2.6s	9.9	4.1	3.7	48			TYC 1335-01600-1		1.05	233	Asterope
2024	Sep	12	4	3.2	222	0.232	63.4s	9.4	0.5	0.7	137			TYC 5758-01212-1	s	1.05	7	Iris
2024	Sep	23	9	44.7	147	0.077	6.6s	9.4	2.6	2.8	80			TYC 1342-00182-1	s	0.90	14	Irene
2024	Nov	10	8	7.7	196	0.094	7.8s	9.8	3.0	3.2	75			TYC 840-01198-1	s	1.00	24	Themis

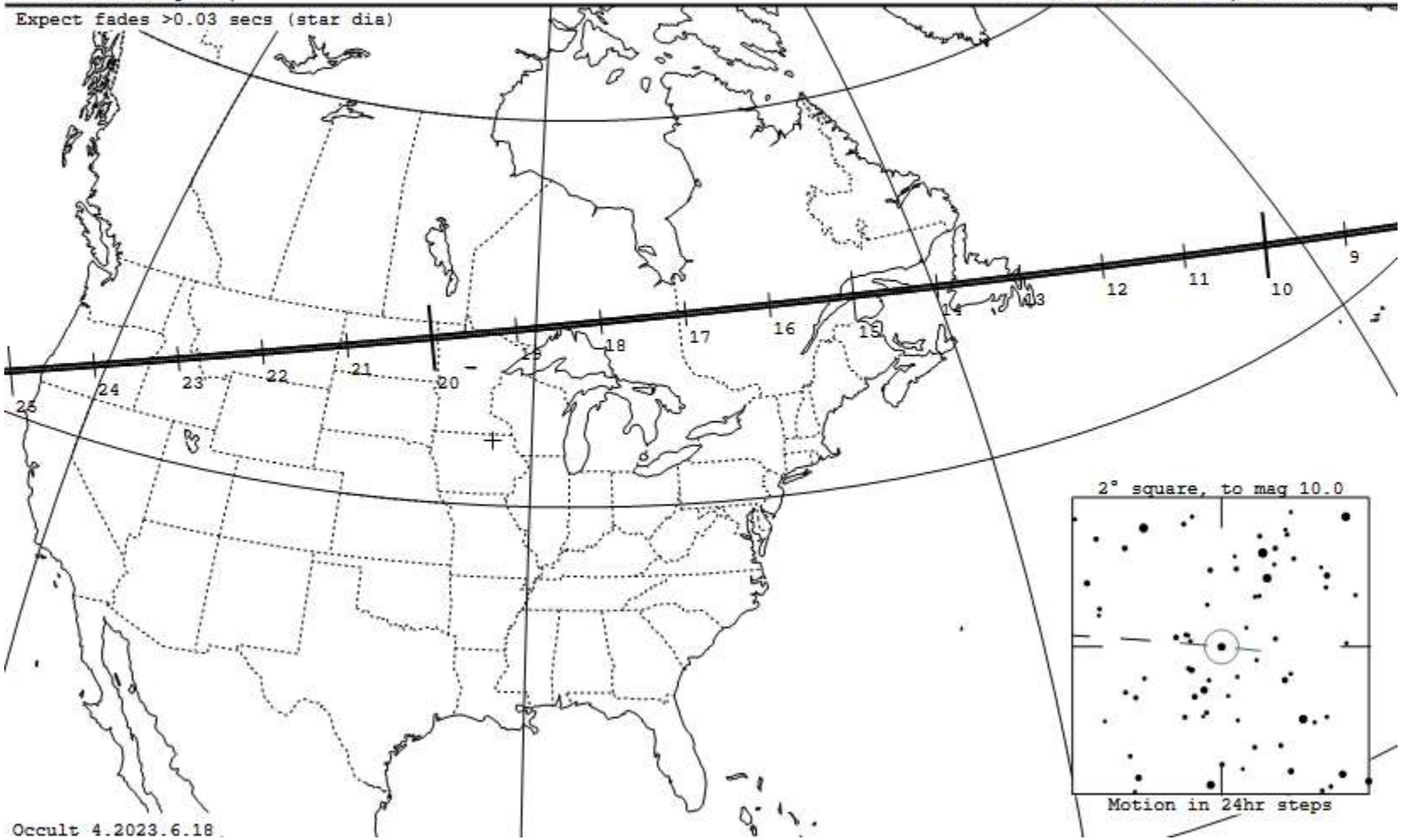
1768 Appenzella occults TYC 1890-00359-1 on 2024 Jan 19 from 4h 5m to 4h 32m UT

Star: (Dia = 0.2 mas)
Mv 7.4; Mb 8.0; Mr 6.7
RA = 6 22 28.0590 (astrometric)
Dec = 28 54 43.091 ...
[of Date: 6 24 1, 28 54 3]
Prediction of 2023 Jun 7.2
Reliable 1.0 (good),

Durations: Max = 2.7 secs
1km = 0.14 secs, 1mas = 0.13 secs
Mag Drop: 8.3 [100%]v, 8.6 [100%]r
Sun : Dist = 156°
Moon: Dist = 54°, illum = 61%
Error 24.0 x 2.0 mas in PA 92°

Asteroid: (in DAMIT)
Mag = 15.7
Dia = 20 ±1km, 21 mas
Parallax = 6.688"
Hourly dRA =-2.078s
dDec = -2.60"
JPL#46INTG:2023Feb11, Known errors

Expect fades >0.03 secs (star dia)



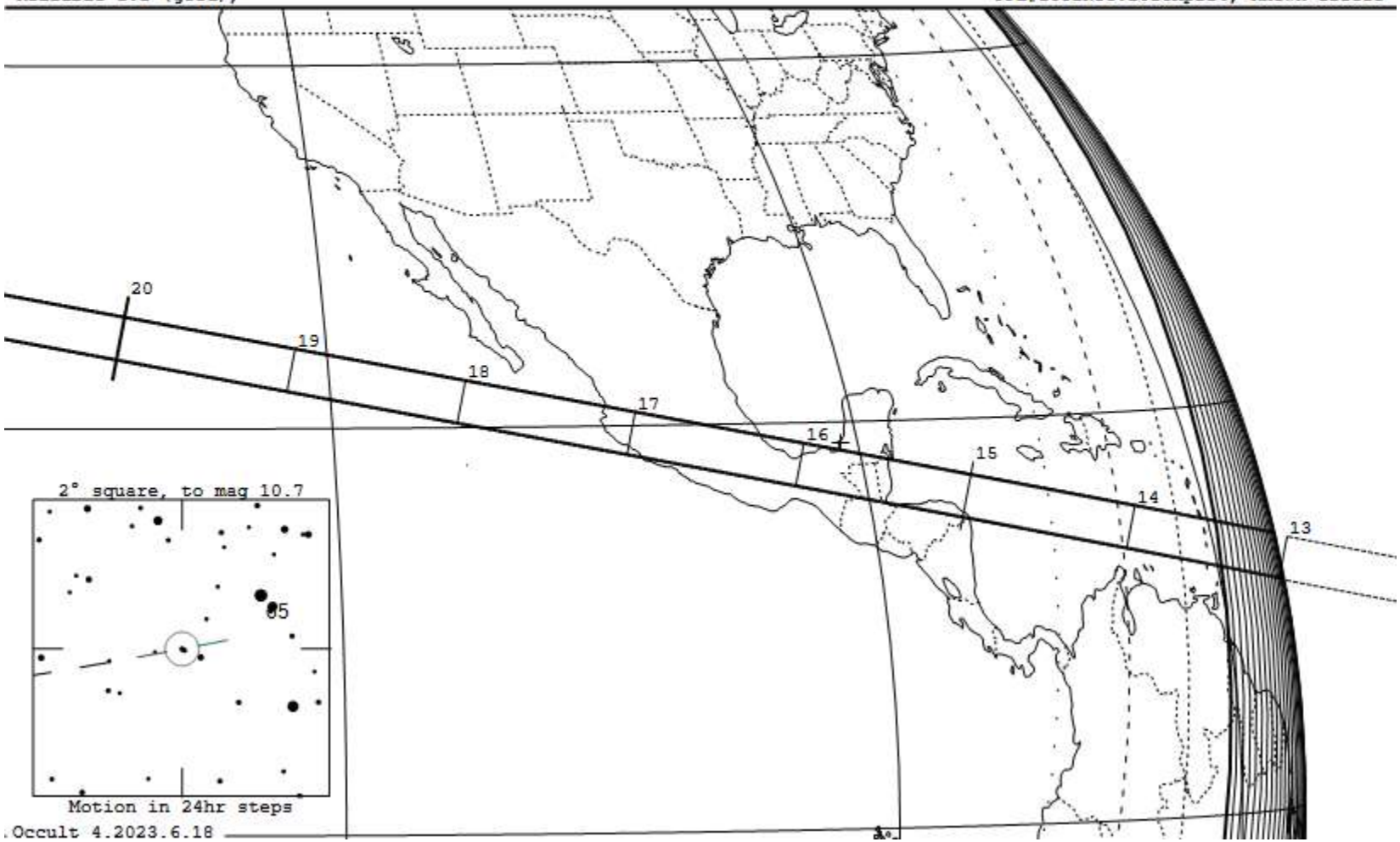
Occult 4.2023.6.18

324 Bamberga occults HIP 54502 on 2024 Feb 14 from 10h 13m to 10h 26m UT

Star: (Dia = 0.1 mas)
Mv 9.7; Mb 10.0; Mr 9.3
RA = 11 9 1.0382 (astrometric)
Dec = 1 35 45.360 ...
[of Date: 11 10 16, 1 27 50]
Prediction of 2023 Jun 7.0
Reliable 1.1 (good),

Durations: Max = 15.4 secs
1km = 0.067 secs, 1mas = 0.12 secs
Mag Drop: 2.6 [91%]v, 2.6 [91%]r
Sun : Dist = 157°
Moon: Dist = 141°, illum = 27%
Error 6.0 x 2.0 mas in PA 112°

Asteroid:
Mag = 12.2
Dia = 231 ±11km, 131 mas
Parallax = 3.632"
Hourly dRA =-2.021s
dDec = 5.78"
JPL#158INTG:2023Apr24, Known errors



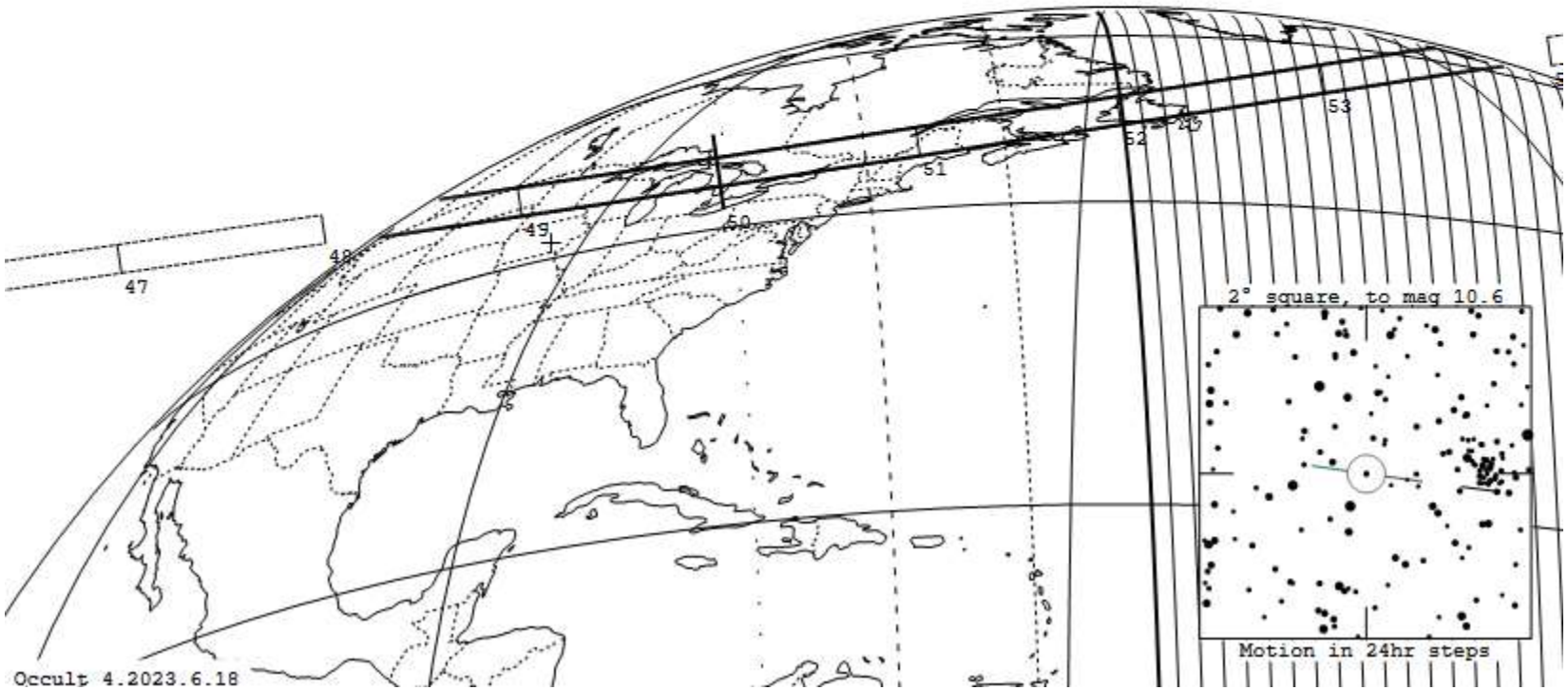
308 Polyxo occults TYC 6259-00194-1 on 2024 Mar 23 from 9h 48m to 9h 54m UT

Star: (Dia = 0.2 mas)
Mv 9.6; Mb 10.6; Mr 8.7
RA = 18 0 0.1047 (astrometric)
Dec = -19 2 16.116 ...
[of Date: 18 1 25, -19 2 26]
Prediction of 2023 Jun 6.7
Reliable 0.9 (good),

Durations: Max = 8.3 secs
1km = 0.061 secs, 1mas = 0.11 secs
Mag Drop: 3.6 [96%]v, 4.1 [98%]r
Sun : Dist = 93°
Moon: Dist = 107°, illum = 97%
Error 9.0 x 1.0 mas in PA 92°

Asteroid:
Mag = 13.2
Dia = 136 ±8km, 77 mas
Parallax = 3.618"
Hourly dRA = 2.344s
dDec = 4.82"
JPL#111INTG:2023Apr24, Known errors

Expect fades >0.02 secs (star dia)



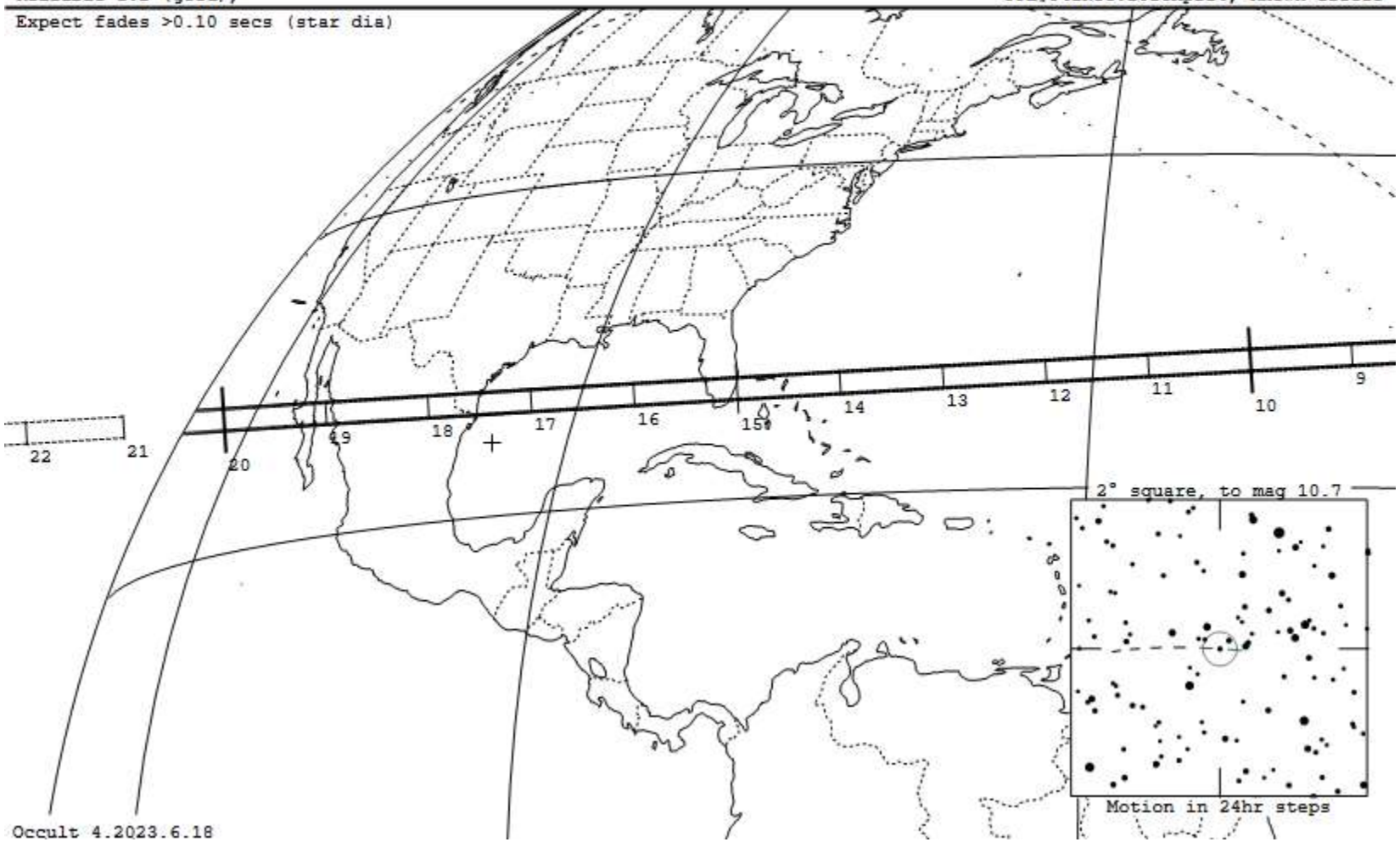
181 Eucharis occults UCAC4 419-131172 on 2024 Jun 4 from 6h 0m to 6h 20m UT

Star: (Dia = 0.4 mas)
Mv 9.7; Mb 11.2; Mr 8.5
RA = 19 41 56.8561 (astrometric)
Dec = - 6 13 38.010 ...
[of Date: 19 43 16, - 6 10 15]
Prediction of 2023 Jun 6.1
Reliable 1.2 (good),

Durations: Max = 13.1 secs
1km = 0.12 secs, 1mas = 0.25 secs
Mag Drop: 4.2 [98%]v, 4.9 [99%]r
Sun : Dist = 135°
Moon: Dist = 106°, illum = 7%
Error 15.0 x 2.0 mas in PA 97°

Asteroid:
Mag = 13.9
Dia = 113 ±5km, 52 mas
Parallax = 2.947"
Hourly dRA =-0.968s
dDec = -0.89"
JPL#94INTG:2023Apr24, Known errors

Expect fades >0.10 secs (star dia)



Occult 4.2023.6.18

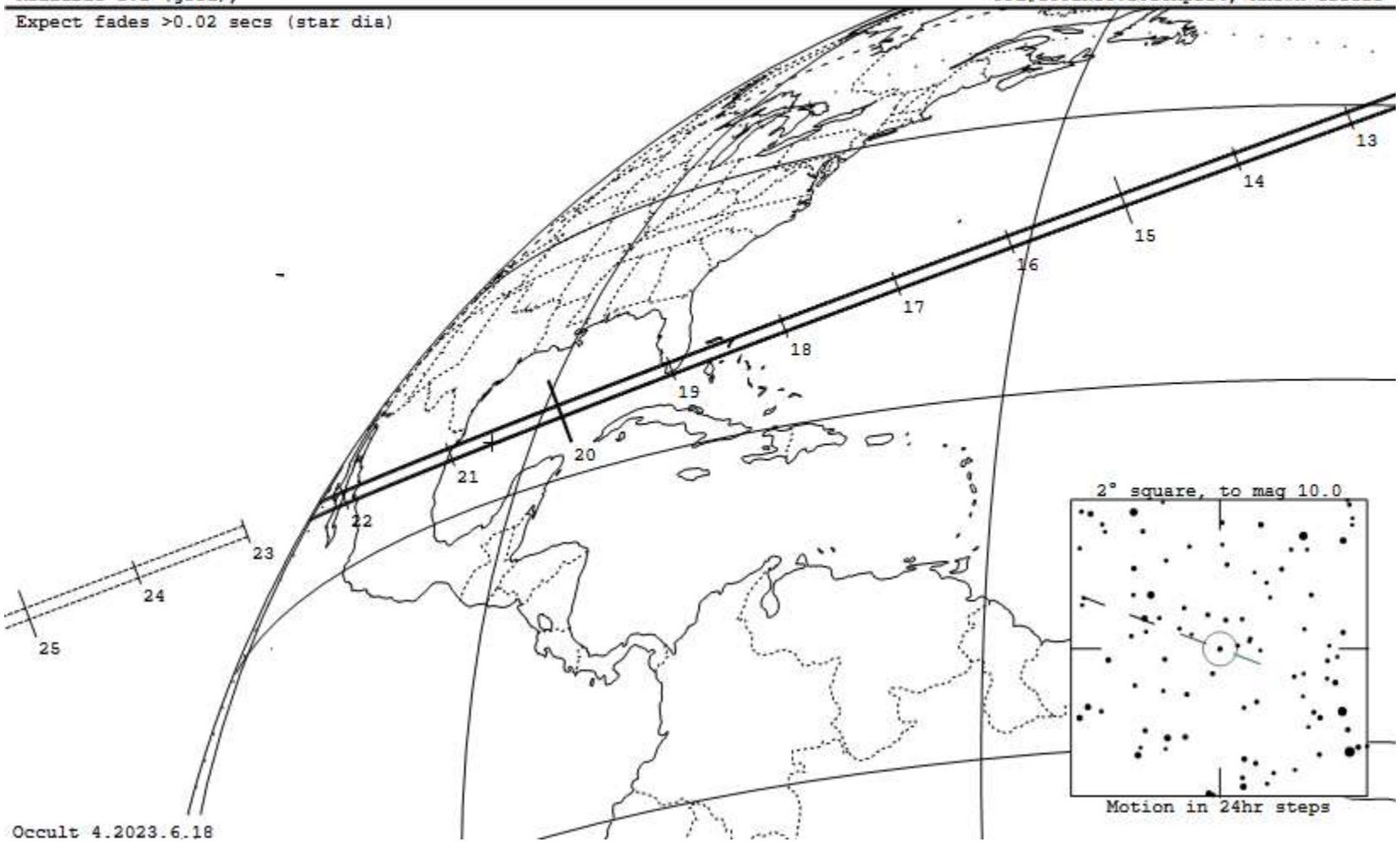
487 Venetia occults TYC 6300-02115-1 on 2024 Jun 18 from 4h 10m to 4h 22m UT

Star: (Dia = 0.2 mas)
Mv 8.9; Mb 10.1; Mr 7.9
RA = 19 12 25.1609 (astrometric)
Dec = -18 15 54.422 ...
[of Date: 19 13 52, -18 13 27]
Prediction of 2023 Jun 6.1
Reliable 1.1 (good),

Durations: Max = 6.0 secs
1km = 0.096 secs, 1mas = 0.12 secs
Mag Drop: 3.5 [96%]v, 4.0 [98%]r
Sun : Dist = 159°
Moon: Dist = 67°, illum = 84%
Error 13.0 x 1.0 mas in PA 93°

Asteroid: (in DAMIT, ISAM)
Mag = 12.3
Dia = 63 ±3km, 48 mas
Parallax = 4.934"
Hourly dRA =-1.903s
dDec =-10.24"
JPL#109INTG:2023Apr24, Known errors

Expect fades >0.02 secs (star dia)



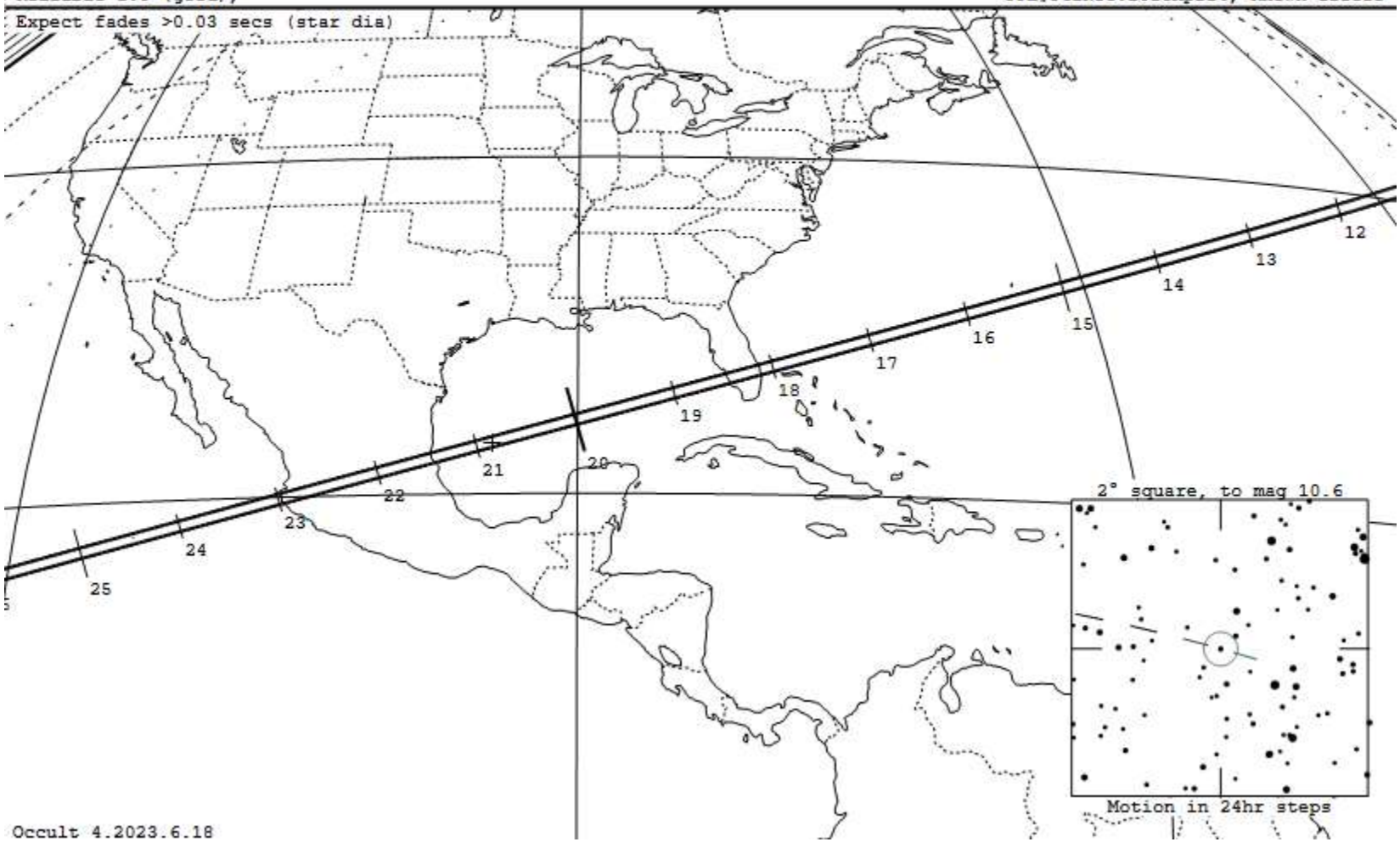
Occult 4.2023.6.18

838 Seraphina occults TYC 5155-01265-1 on 2024 Aug 13 from 4h 10m to 4h 32m UT

Star: (Dia = 0.2 mas)
Mv 9.6; Mb 10.8; Mr 8.5
RA = 19 54 41.3210 (astrometric)
Dec = - 5 17 54.196 ...
[of Date: 19 56 1, - 5 13 59]
Prediction of 2023 Jun 5.9
Reliable 1.0 (good),

Durations: Max = 6.3 secs
1km = 0.12 secs, 1mas = 0.14 secs
Mag Drop: 4.4 [98%]v, 5.1 [99%]r
Sun : Dist = 154°
Moon: Dist = 65°, illum = 55%
Error 22.0 x 3.0 mas in PA 71°

Asteroid: (in DAMIT)
Mag = 14.0
Dia = 55 ±3km, 45 mas
Parallax = 5.245"
Hourly dRA =-1.665s
dDec = -7.06"
JPL#96INTG:2023Apr24, Known errors



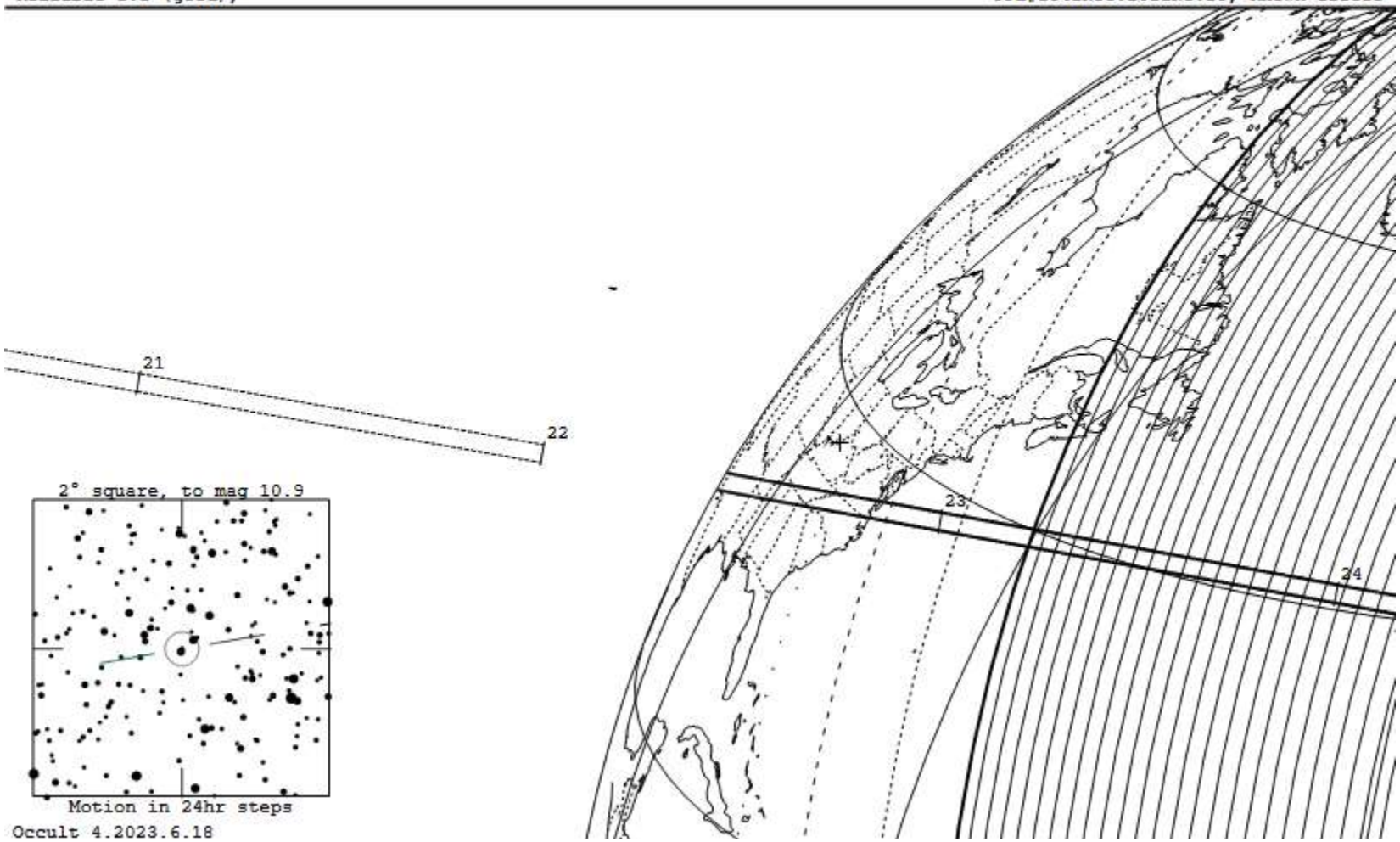
Occult 4.2023.6.18

233 Asterope occults TYC 1335-01600-1 on 2024 Aug 22 from 9h 22m to 9h 28m UT

Star: (Dia < 0.1 mas)
Mv 9.9; Mb 9.9; Mr 9.9
RA = 6 50 28.8945 (astrometric)
Dec = 18 31 29.221 ...
[of Date: 6 51 54, 18 29 51]
Prediction of 2023 Jun 5.9
Reliable 1.1 (good),

Durations: Max = 2.6 secs
1km = 0.027 secs, 1mas = 0.064 secs
Mag Drop: 4.1 [98%]v, 3.7 [97%]r
Sun : Dist = 48°
Moon: Dist = 96°, illum = 90%
Error 6.0 x 1.0 mas in PA 97°

Asteroid: (in DAMIT)
Mag = 14.0
Dia = 96 ±5km, 41 mas
Parallax = 2.710"
Hourly dRA = 3.877s
dDec = -9.68"
JPL#104INTG:2022Nov25, Known errors



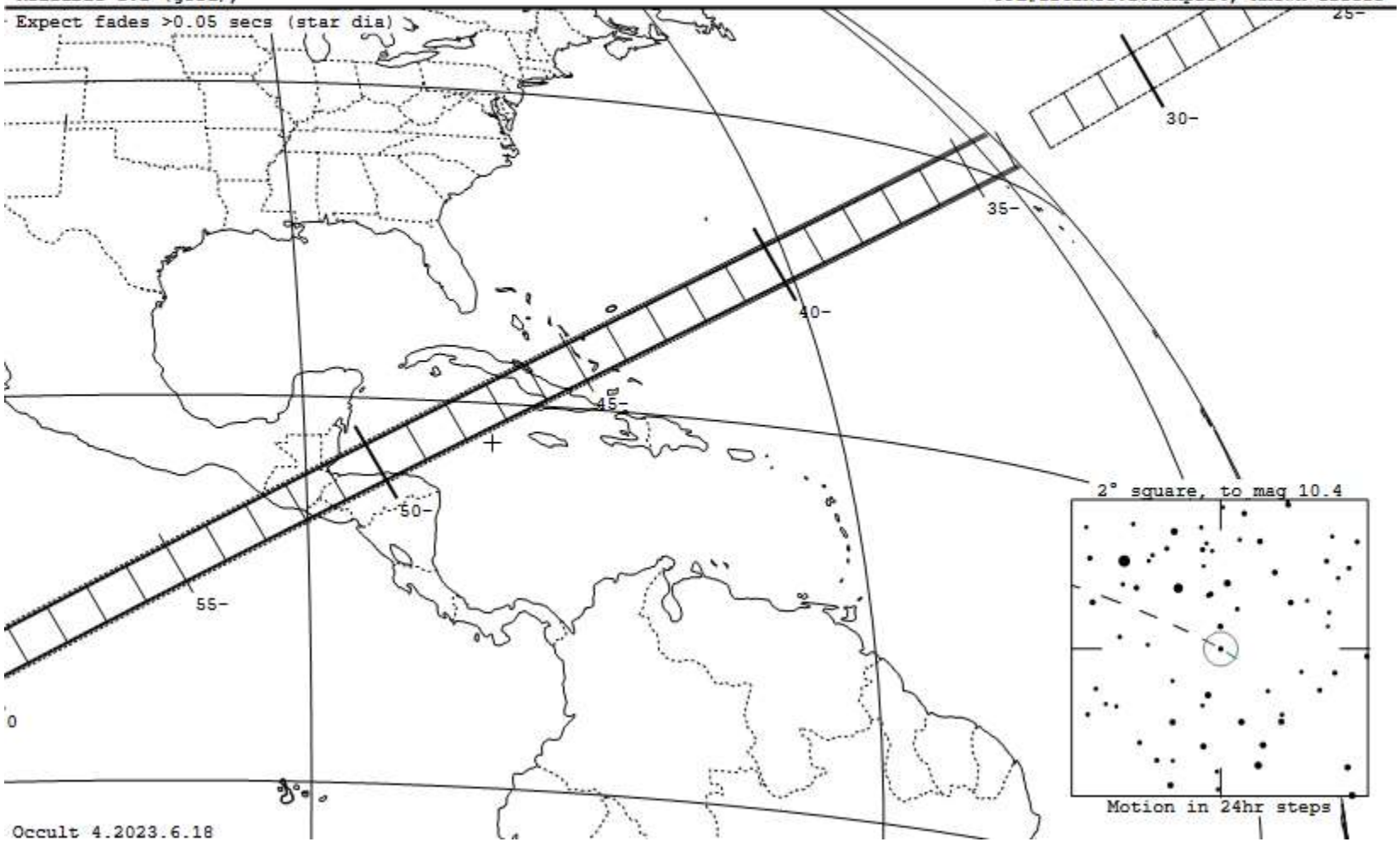
Occult 4.2023.6.18

7 Iris occults TYC 5758-01212-1 on 2024 Sep 12 from 3h 33m to 4h 33m UT

Star: (Dia = 0.2 mas)
Mv 9.4; Mb 10.1; Mr 8.5
RA = 20 29 46.3584 (astrometric)
Dec = -10 26 36.378 ...
[of Date: 20 31 8, -10 21 37]
Prediction of 2023 Jun 5.8
Reliable 1.1 (good),

Durations: Max = 63.4 secs
1km = 0.29 secs, 1mas = 0.27 secs
Mag Drop: 0.5 [39%]v, 0.7 [48%]r
Sun : Dist = 137°
Moon: Dist = 39°, illum = 59%
Error 28.0 x 14.0 mas in PA 69°

Asteroid: (in DAMIT)
Mag = 8.9
Dia = 222 ±15km, 232 mas
Parallax = 6.655"
Hourly dRA =-0.771s
dDec = -6.63"
JPL#126INTG:2023Apr24, Known errors

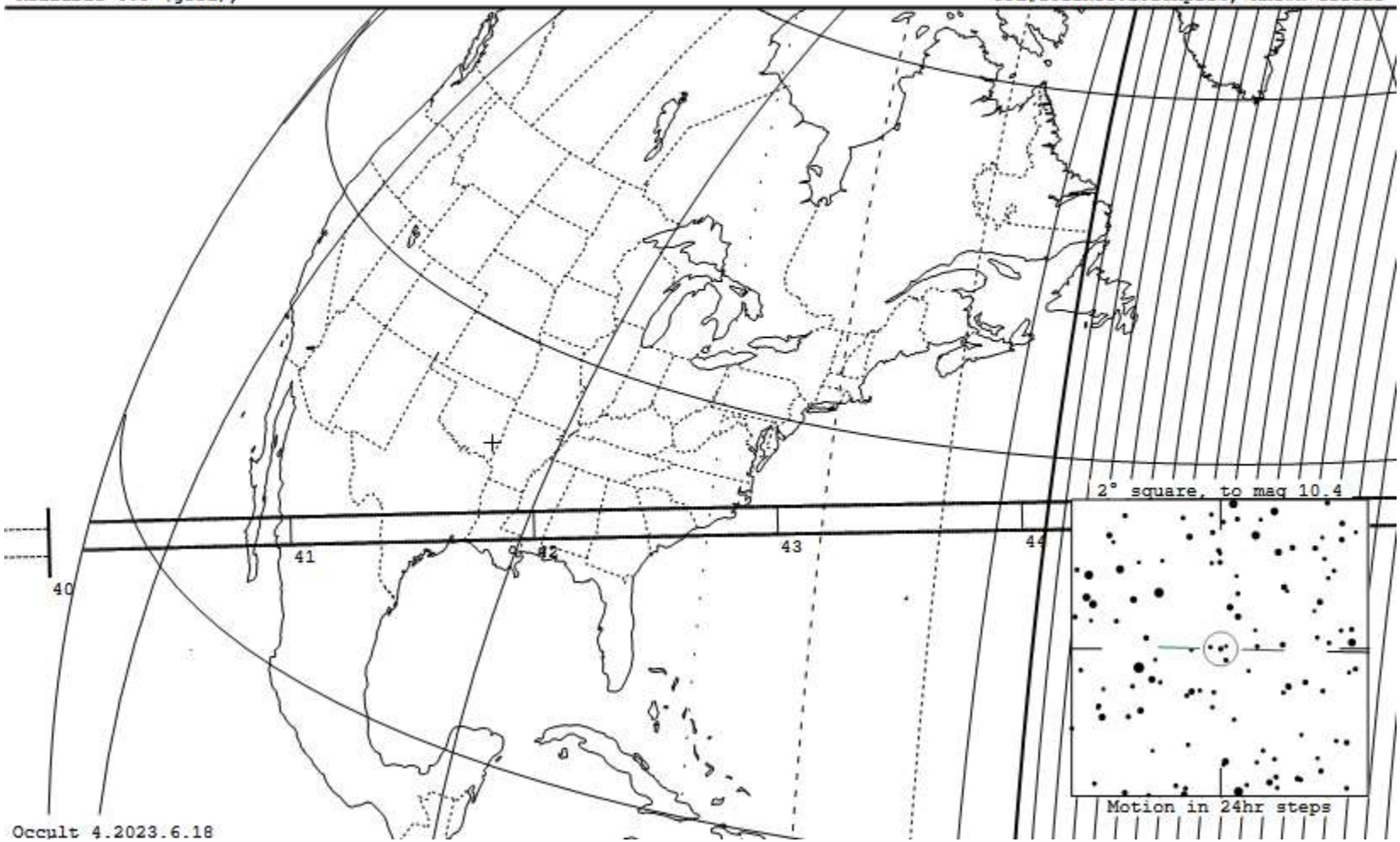


14 Irene occults TYC 1342-00182-1 on 2024 Sep 23 from 9h 40m to 9h 49m UT

Star: (Dia = 0.1 mas)
Mv 9.4; Mb 9.9; Mr 8.7
RA = 6 45 25.6189 (astrometric)
Dec = 21 49 2.064 ...
[of Date: 6 46 54, 21 47 33]
Prediction of 2023 Jun 5.8
Reliable 0.9 (good),

Durations: Max = 6.6 secs
1km = 0.045 secs, 1mas = 0.085 secs
Mag Drop: 2.6 [91%]v, 2.8 [92%]r
Sun : Dist = 80°
Moon: Dist = 28°, illum = 65%
Error 11.0 x 2.0 mas in PA 87°

Asteroid: (in DAMIT, ISAM)
Mag = 11.8
Dia = 147 ±10km, 77 mas
Parallax = 3.358"
Hourly dRA = 3.038s
dDec = 1.03"
JPL#101INTG:2023Apr24, Known errors

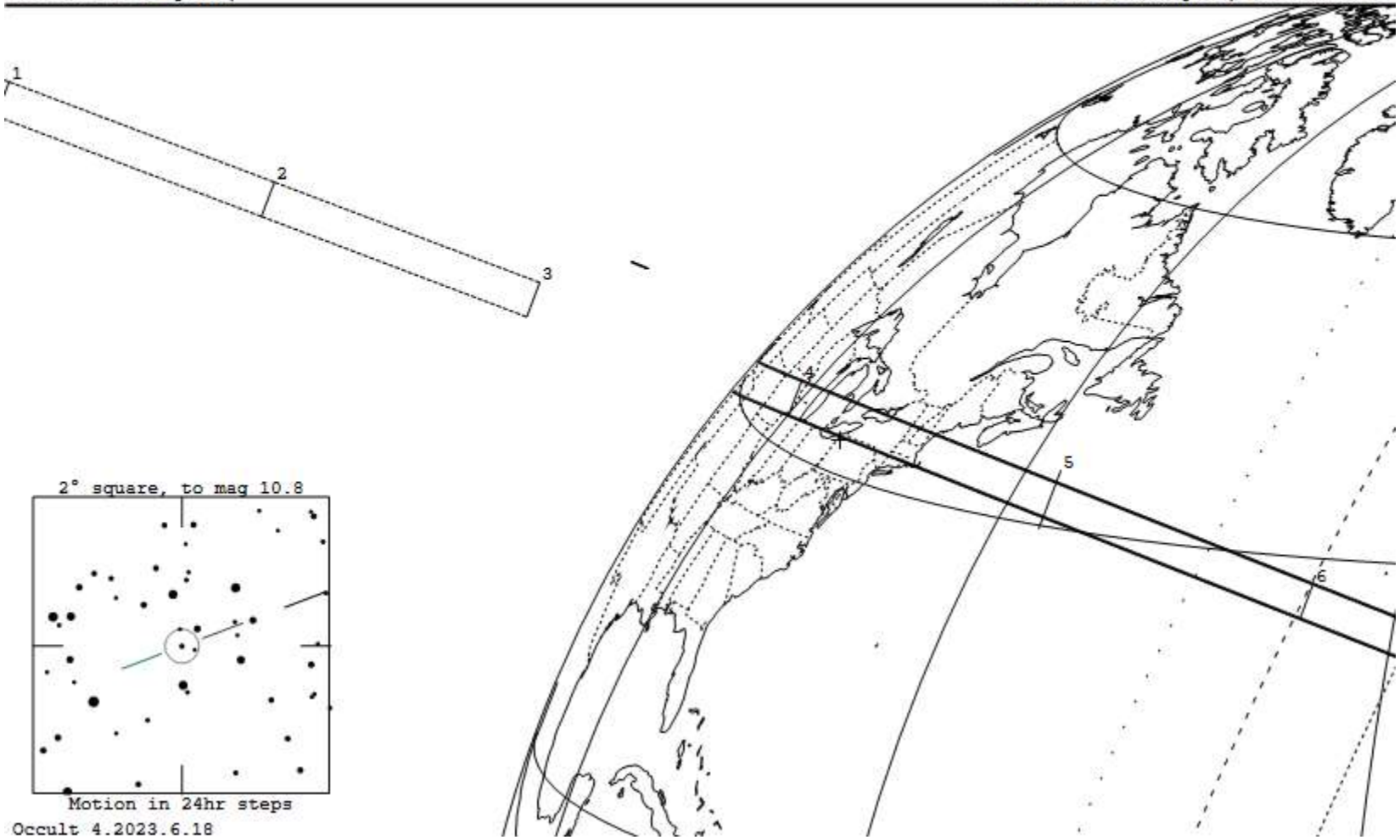


24 Themis occults TYC 840-01198-1 on 2024 Nov 10 from 8h 4m to 8h 12m UT

Star: (Dia = 0.1 mas)
Mv 9.8; Mb 10.4; Mr 9.1
RA = 10 21 54.6960 (astrometric)
Dec = 10 57 41.181 ...
[of Date: 10 23 13, 10 50 14]
Prediction of 2023 Jun 5.7
Reliable 1.0 (good),

Durations: Max = 7.8 secs
1km = 0.040 secs, 1mas = 0.083 secs
Mag Drop: 3.0 [94%]v, 3.2 [95%]r
Sun : Dist = 75°
Moon: Dist = 178°, illum = 62%
Error 22.0 x 1.0 mas in PA 112°

Asteroid: (in DAMIT)
Mag = 12.7
Dia = 196 ±11km, 94 mas
Parallax = 3.056"
Hourly dRA = 2.772s
dDec =-15.43"
JPL#137INTG:2023Apr24, Known errors



Occult 4.2023.6.18