

Best 2023 Asteroidal Events for North America

Steve Preston

Aug 14, 2022

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
2023	Mar	4	2	49.4	108	0.096	32.6s	9.9	2.8		124	TYC 2451-01245-1		505 Cava
2023	Mar	7	5	37.1	108	0.094	24.2s	9.0	3.7		121	TYC 2452-01121-1		505 Cava
2023	Mar	13	3	46.4	164	0.111	22.6s	9.6	3.1		139	TYC 0813-01352-1		59 Elpis
2023	Mar	21	6	10.0	76	0.045	4.8s	8.7	5.6		172	HIP 58372	v	697 Galilea
2023	Aug	21	10	9.9	125	0.074	14.3s	9.9	3.8		106	TYC 0645-01001-1		127 Johanna
2023	Aug	24	3	33.4	50	0.042	5.8s	9.9	4.3		159	TYC 5768-00076-1		395 Delia
2023	Sep	2	8	52.8	155	0.083	6.3s	9.7	3.3		75	TYC 1302-00855-1		776 Berbericia
2023	Sep	5	8	29.3	142	0.177	14.7s	8.5	1.3		116	TYC 0061-01117-1		18 Melpomene
2023	Sep	13	10	19.1	329	0.173	17.3s	9.1	2.7		83	TYC 2413-01480-1		704 Interamnia
2023	Nov	18	9	31.8	120	0.053	3.6s	9.5	3.4		56	TYC 4937-00390-1		12 Victoria
2023	Nov	24	7	8.0	130	0.094	13.9s	9.1	3.6		155	TYC 1298-00522-1		159 Aemilia
2023	Dec	11	11	29.7	88	0.082	10.1s	8.6	3.9		164	HIP 19499		358 Apollonia
2023	Dec	12	1	20.8	61	0.046	11.6s	0.5	2.9		162	HIP 27989	v	319 Leona
2023	Dec	19	2	7.0	65	0.054	9.5s	7.6	6.3		141	HIP 15099		442 Eichsfeldia

505 Cava occults TYC 2451-01245-1 on 2023 Mar 4 from 2h 18m to 3h 21m UT

Star: (Dia < 0.1 mas)

Mv 9.9

RA = 7 20 28.6097 (astrometric)

Dec = 31 4 54.677

[of Date: 7 21 58, 31 2 23]

Prediction of 2022 Jun 15.0

Reliable not available

Durations: Max = 32.6 secs

1km = 0.30 secs, 1mas = 0.34 secs

Mag Drop = 2.8 [92%]v

Sun : Dist = 124°

Moon: Dist = 18°, illum = 89%

Error 44.0 x 21.7 mas in PA 87°

Asteroid: (in DAMIT, ISAM)

Mag = 12.6

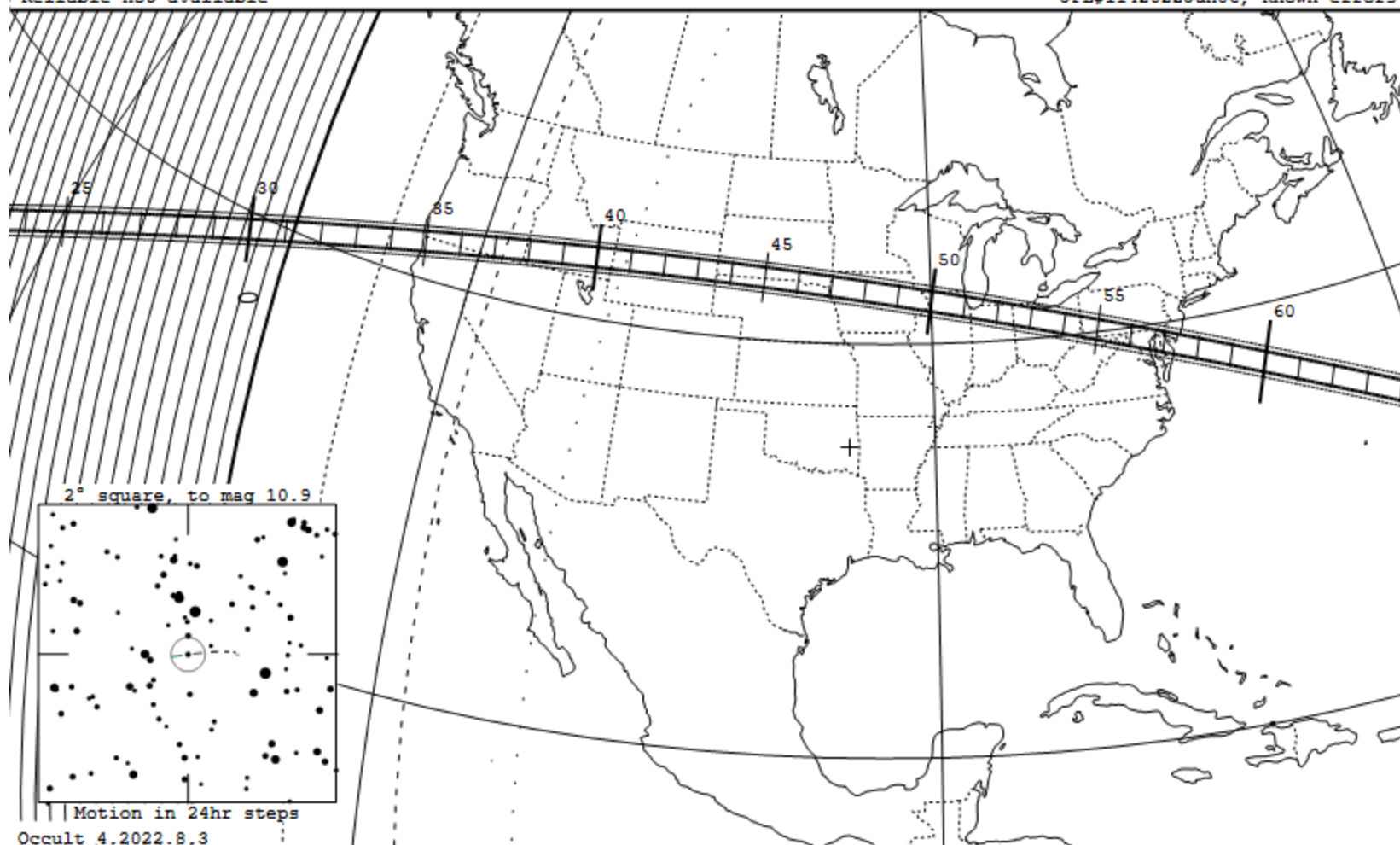
Dia = 108 ±6km, 96 mas

Parallax = 5.652"

Hourly dRA = 0.819s

dDec = -1.37"

JPL#1142022Jun06, Known errors



505 Cava occults TYC 2452-01121-1 on 2023 Mar 7 from 5h 16m to 5h 58m UT

Star: (Dia < 0.1 mas)

Mv 9.0

RA = 7 21 39.2793 (astrometric)

Dec = 31 2 39.613

[of Date: 7 23 8, 31 0 6]

Prediction of 2022 Jun 15.0

Reliable not available

Durations: Max = 24.2 secs

1km = 0.22 secs, 1mas = 0.26 secs

Mag Drop = 3.7 [97%]v

Sun : Dist = 121°

Moon: Dist = 55°, illum =100%

Error 43.0 x 21.0 mas in PA 87°

Asteroid: (in DAMIT, ISAM)

Mag = 12.7

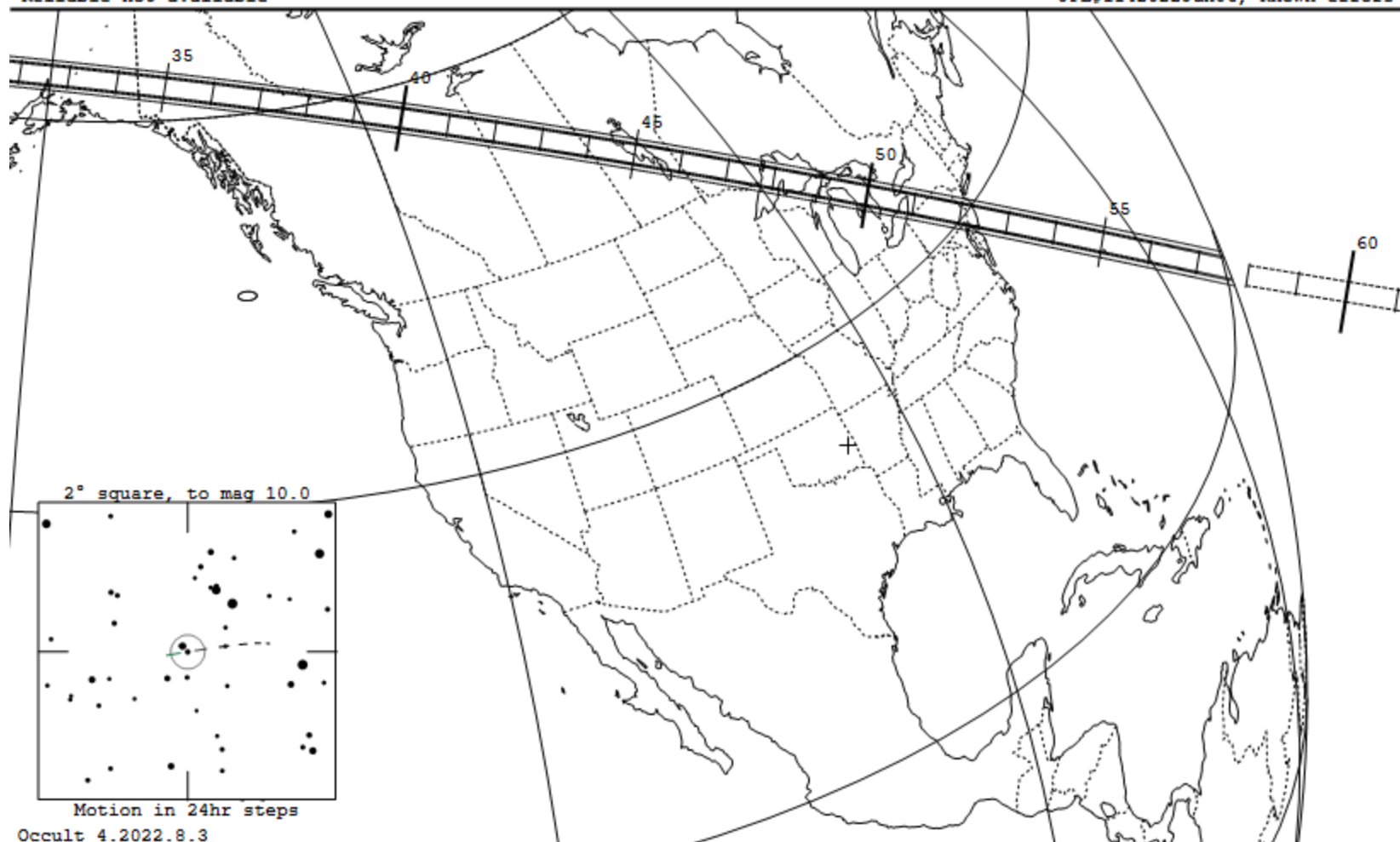
Dia = 108 ±6km, 94 mas

Parallax = 5.518"

Hourly dRA = 1.070s

dDec = -2.26"

JPL#1142022Jun06, Known errors



59 Elpis occults TYC 0813-01352-1 on 2023 Mar 13 from 3h 33m to 4h 0m UT

Star: (Dia < 0.1 mas)

Mv 9.6

RA = 8 49 40.9139 (astrometric)

Dec = 12 17 24.266

[of Date: 8 50 58, 12 12 13]

Prediction of 2022 Jun 15.0

Reliable not available

Durations: Max = 22.6 secs

1km = 0.14 secs, 1mas = 0.20 secs

Mag Drop = 3.1 [94%]v

Sun : Dist = 139°

Moon: Dist = 106°, illum = 71%

Error 17.3 x 5.0 mas in PA 99°

Asteroid:

Mag = 12.6

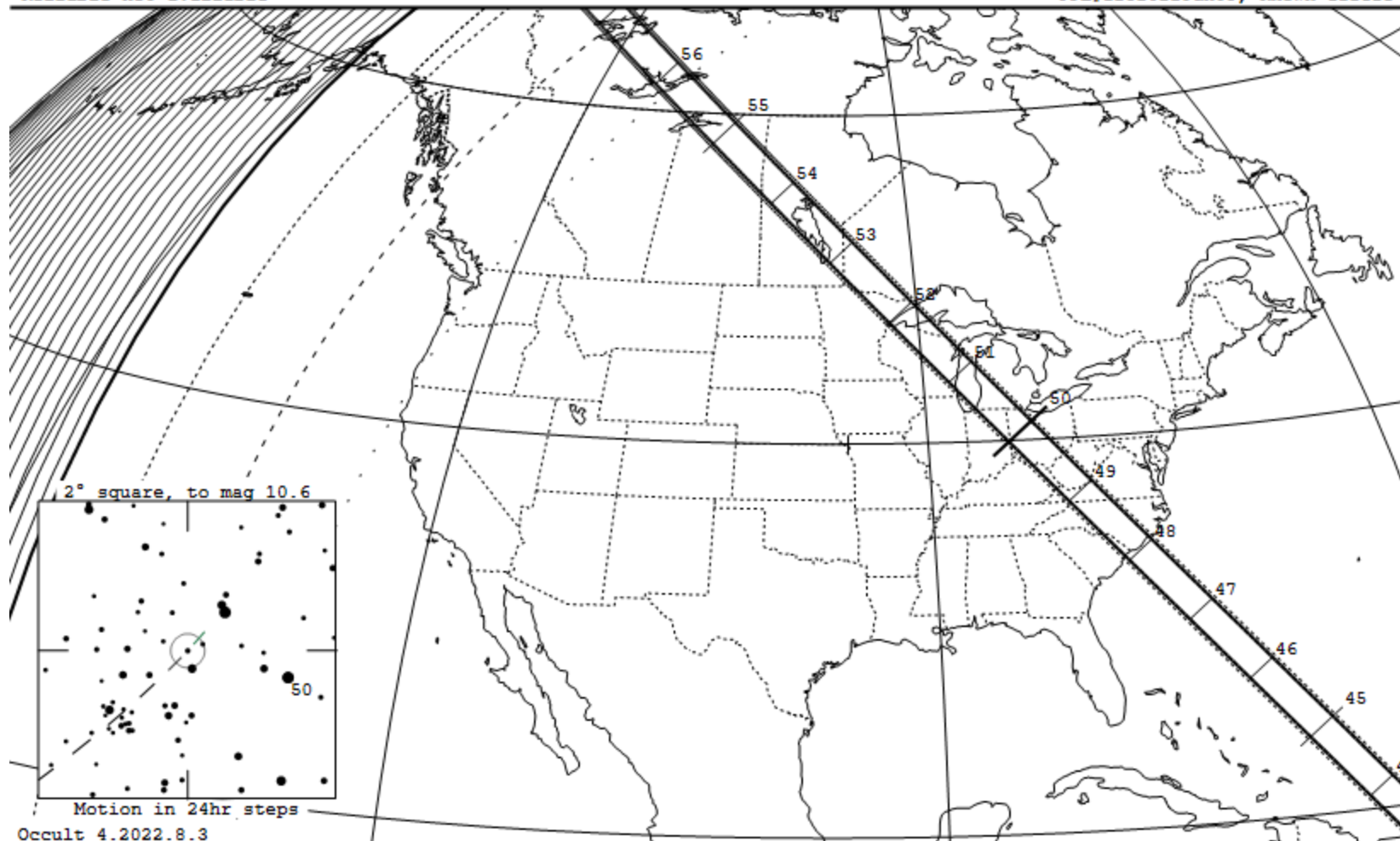
Dia = 164 ±8km, 111 mas

Parallax = 4.323"

Hourly dRA = -0.825s

dDec = 12.92"

JPL#1282022Jun09, Known errors



Occult 4.2022.8.3

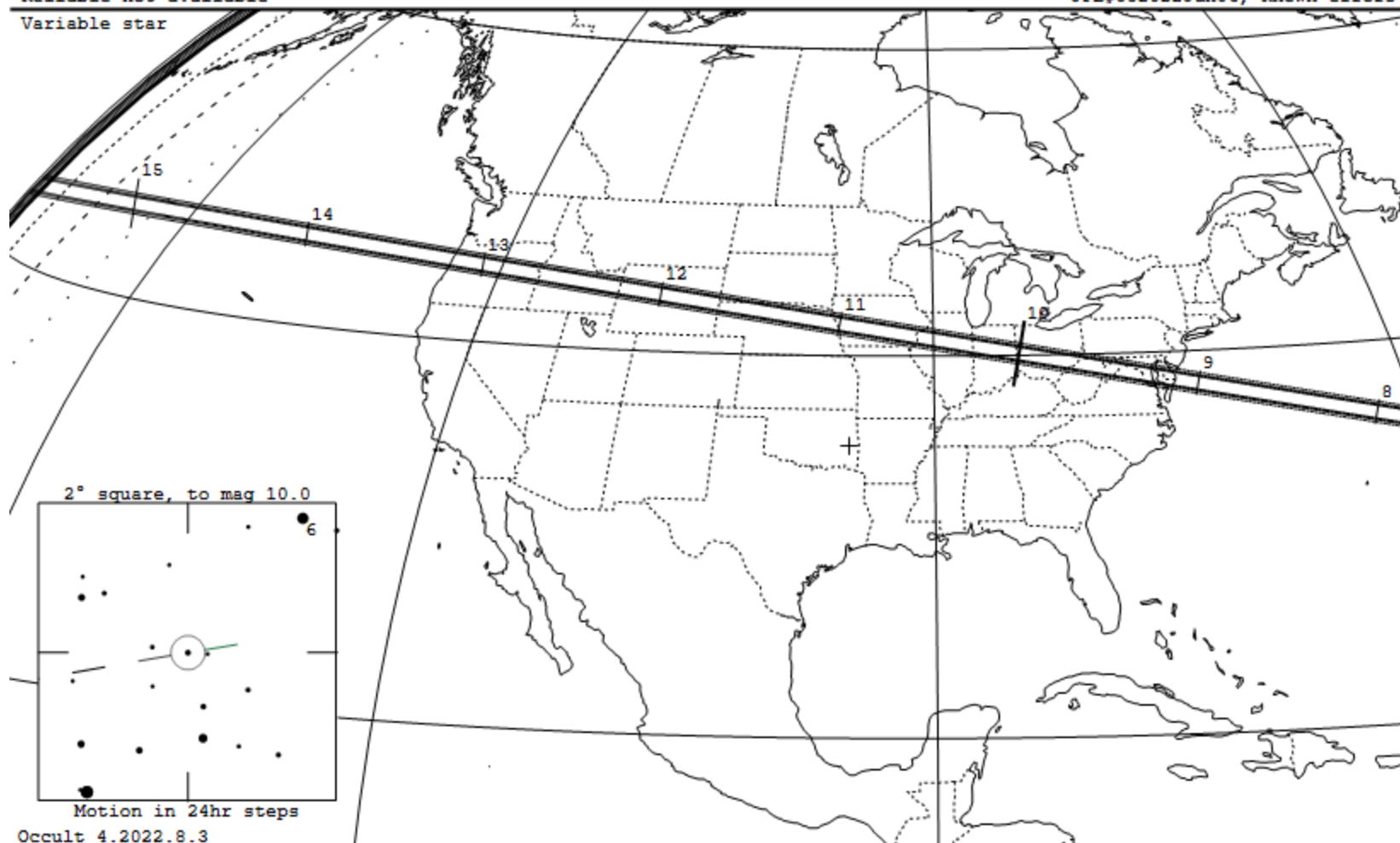
697 Galilea occults HIP 58372 on 2023 Mar 21 from 6h 4m to 6h 16m UT

Star: (Dia < 0.1 mas)
 Mv 8.7
 RA = 11 58 9.4031 (astrometric)
 Dec = 7 32 46.479
 [of Date: 11 59 22, 7 24 57]
 Prediction of 2022 Jun 15.0
 Reliable not available

Durations: Max = 4.8 secs
 1km = 0.063 secs, 1mas = 0.11 secs
 Mag Drop = 5.6 [99%]v
 Sun : Dist = 172°
 Moon: Dist = 176°, illum = 0%
 Error 20.0 x 3.2 mas in PA 129°

Asteroid:
 Mag = 14.3
 Dia = 76 ±4km, 45 mas
 Parallax = 3.774"
 Hourly dRA = -2.230s
 dDec = 5.56"
 JPL#582022Jun06, Known errors

Variable star



127 Johanna occults TYC 0645-01001-1 on 2023 Aug 21 from 10h 0m to 10h 19m UT

Star: (Dia < 0.1 mas)
 Mv 9.9
 RA = 2 41 13.6793 (astrometric)
 Dec = 13 58 17.603
 [of Date: 2 42 31, 14 4 24]
 Prediction of 2022 Jun 15.2
 Reliable not available

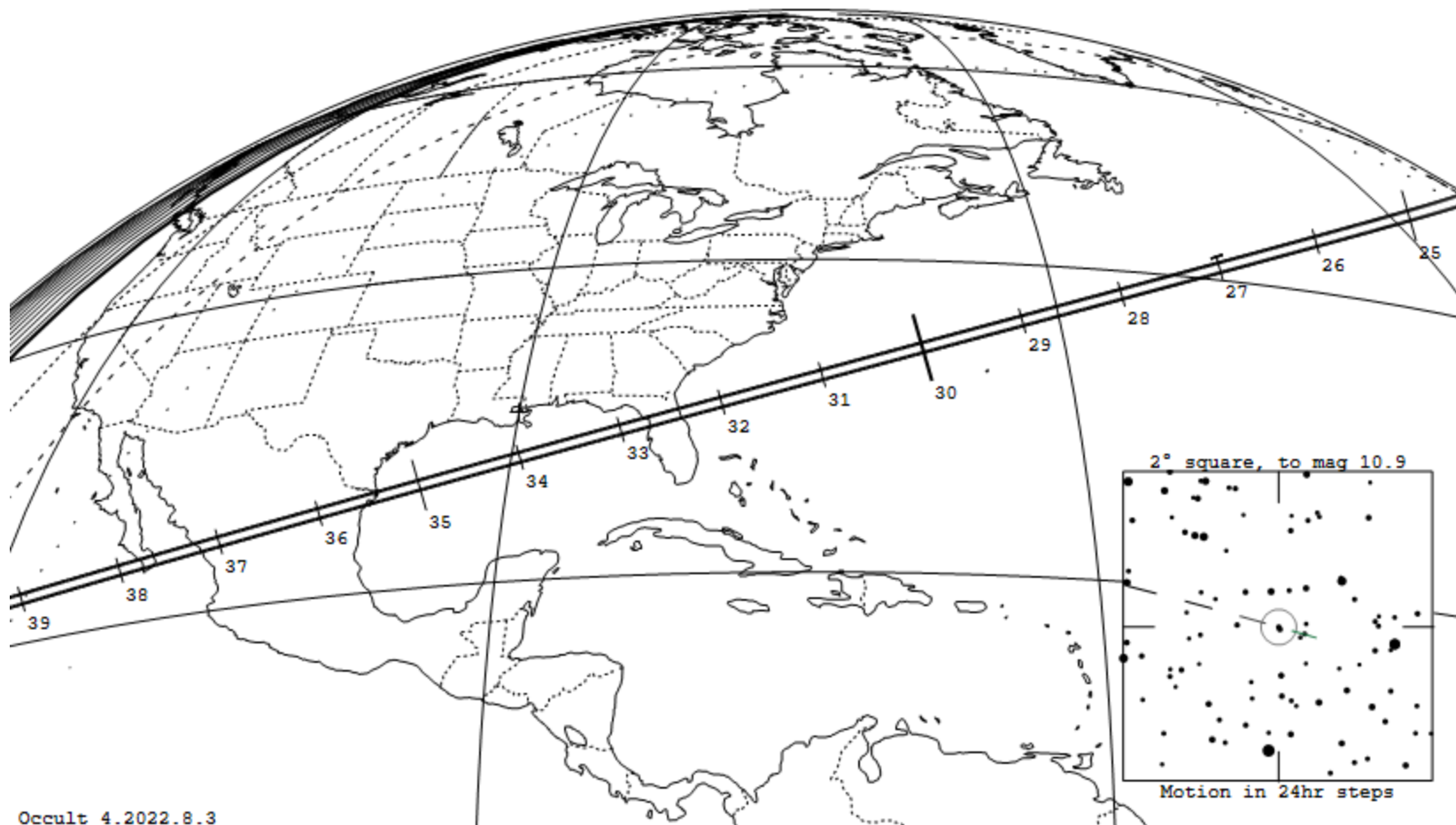
Durations: Max = 14.3 secs
 1km = 0.11 secs, 1mas = 0.19 secs
 Mag Drop = 3.8 [97%]v
 Sun : Dist = 106°
 Moon: Dist = 161°, illum = 21%
 Error 15.7 x 3.3 mas in PA 65°

Asteroid: (in DAMIT, ISAM)
 Mag = 13.7
 Dia = 125 ±8km, 74 mas
 Parallax = 3.764"
 Hourly dRA = 1.111s
 dDec = 9.32"
 JPL#1242022Jun06, Known errors



395 Delia occults TYC 5768-00076-1 on 2023 Aug 24 from 3h 24m to 3h 43m UT

Star: (Dia < 0.1 mas)	Durations: Max = 5.8 secs	Asteroid: (in DAMIT)
Mv 9.9	1km = 0.12 secs, 1mas = 0.14 secs	Mag = 14.2
RA = 20 44 17.1887 (astrometric)	Mag Drop = 4.3 [98%]v	Dia = 50 ±3km, 42 mas
Dec = -13 23 31.893	Sun : Dist = 159°	Parallax = 5.344"
[of Date: 20 45 36, -13 18 22]	Moon: Dist = 73°, illum = 47%	Hourly dRA = -1.697s
Prediction of 2022 Jun 15.2	Error 24.3 x 2.2 mas in PA 72°	dDec = -7.07"
Reliable not available		JPL#672022Jun06, Known errors



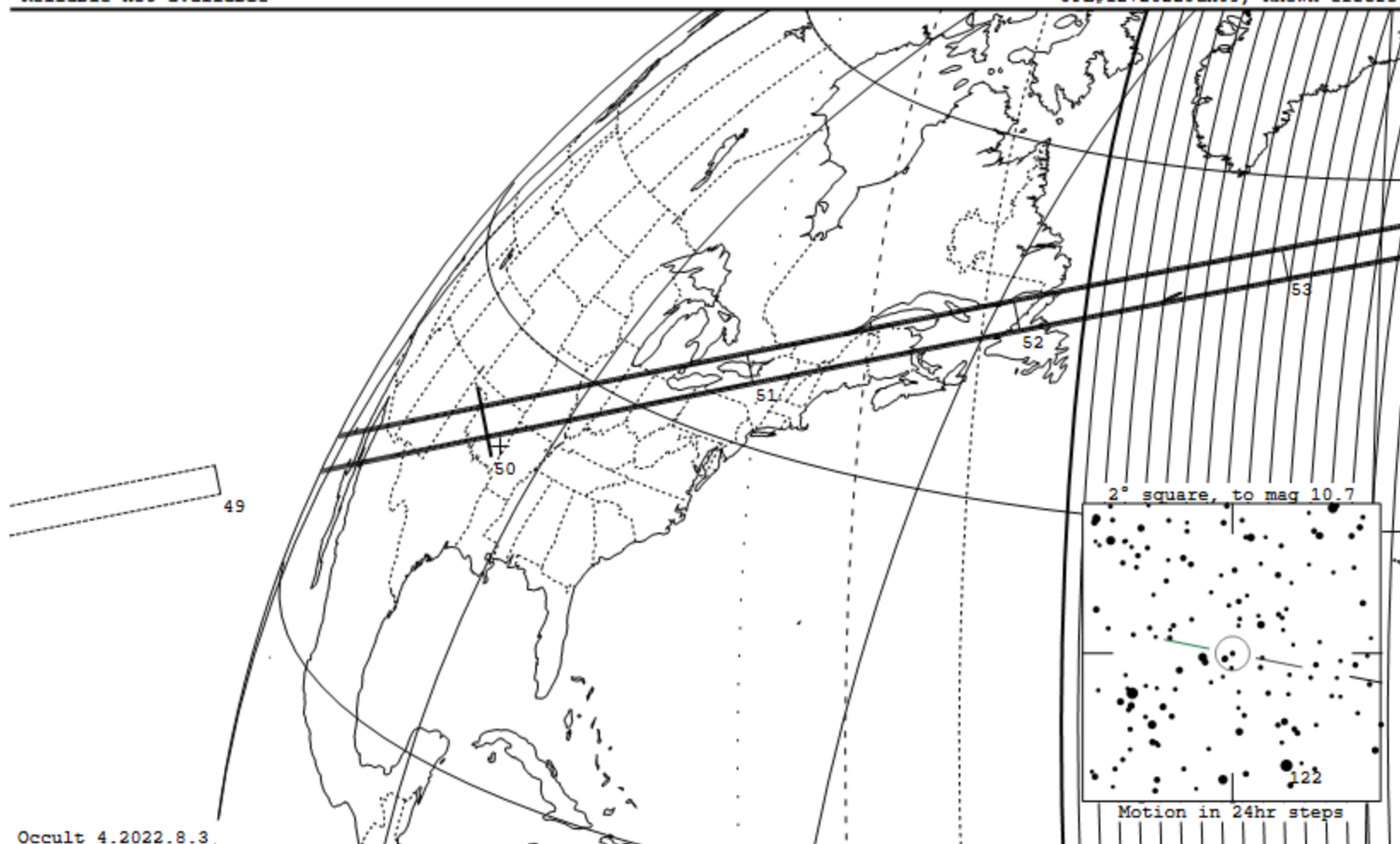
Occult 4.2022.8.3

776 Berbericia occults TYC 1302-00855-1 on 2023 Sep 2 from 8h 49m to 8h 56m UT

Star: (Dia < 0.1 mas)
 Mv 9.7
 RA = 5 38 34.1214 (astrometric)
 Dec = 17 47 18.472
 [of Date: 5 39 56, 17 48 11]
 Prediction of 2022 Jun 15.2
 Reliable not available

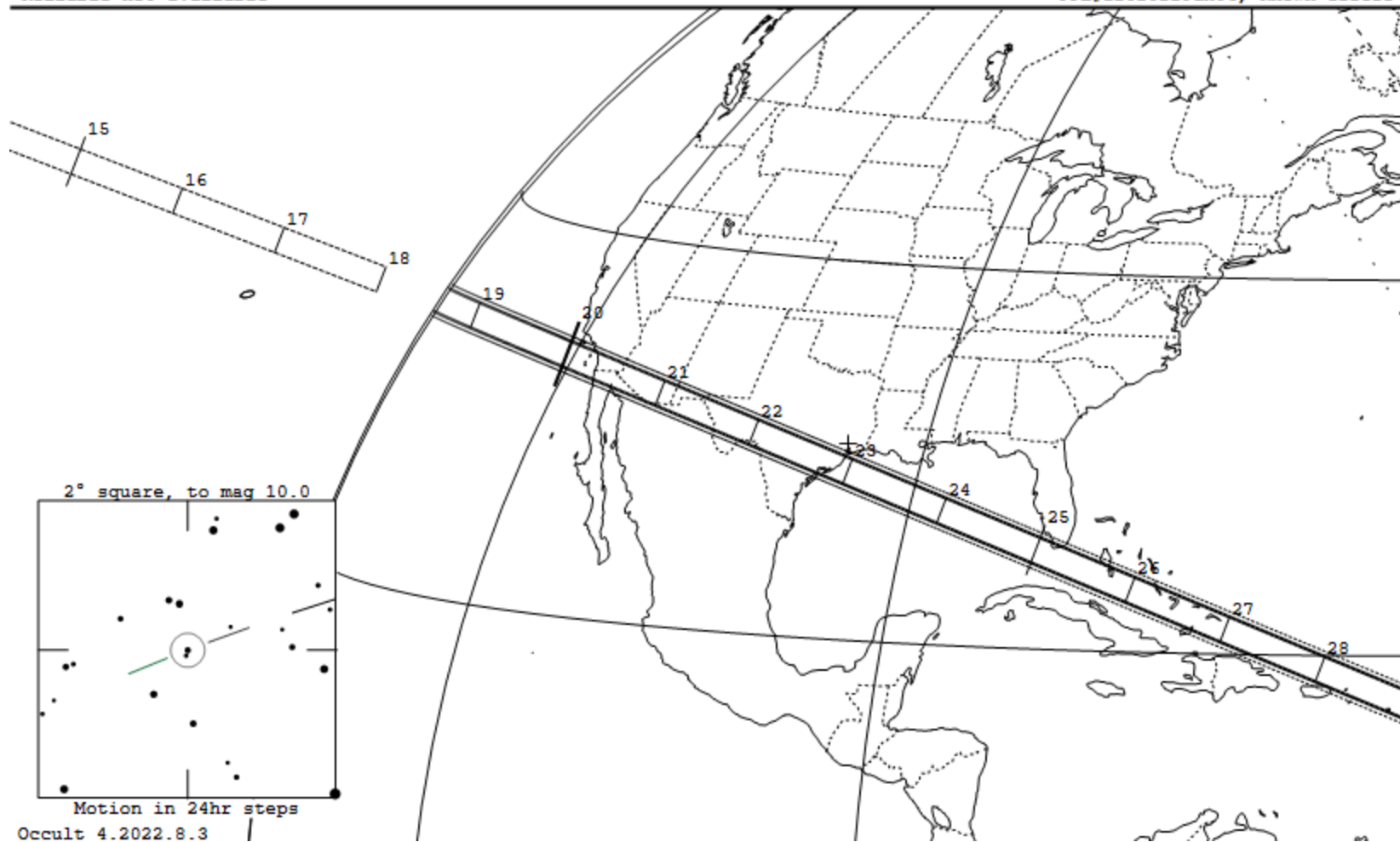
Durations: Max = 6.3 secs
 lkm = 0.041 secs, lmas = 0.076 secs
 Mag Drop = 3.3 [95%]v
 Sun : Dist = 75°
 Moon: Dist = 73°, illum = 92%
 Error 28.7 x 2.6 mas in PA 65°

Asteroid: (in DAMIT, ISAM)
 Mag = 12.9
 Dia = 155 ±8km, 83 mas
 Parallax = 3.405"
 Hourly dRA = 3.243s
 dDec = 9.15"
 JPL#1272022Jun09, Known errors



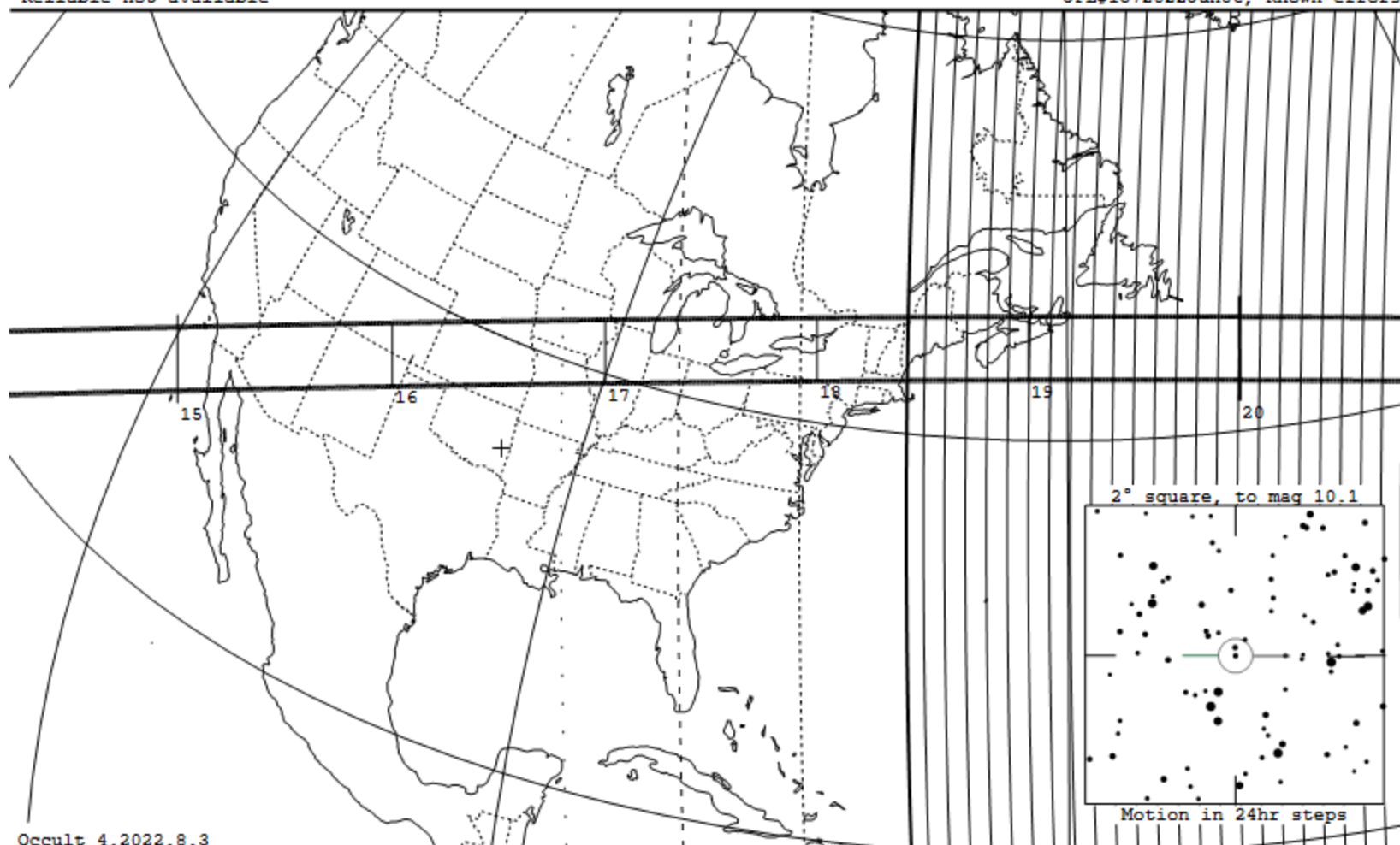
18 Melpomene occults TYC 0061-01117-1 on 2023 Sep 5 from 8h 18m to 8h 40m UT

Star: (Dia < 0.1 mas)	Durations: Max = 14.7 secs	Asteroid: (in DAMIT, ISAM)
Mv 8.5	1km = 0.10 secs, 1mas = 0.083 secs	Mag = 9.3
RA = 3 6 19.8832 (astrometric)	Mag Drop = 1.3 [69%]v	Dia = 142 ±8km, 177 mas
Dec = 5 18 53.261	Sun : Dist = 116°	Parallax = 7.938"
[of Date: 3 7 35, 5 24 29]	Moon: Dist = 16°, illum = 66%	Hourly dRA = 2.715s
Prediction of 2022 Jun 15.2	Error 46.3 x 20.0 mas in PA 75°	dDec = -15.64"
Reliable not available		JPL#1202022Jun06, Known errors



704 Interamnia occults TYC 2413-01480-1 on 2023 Sep 13 from 10h 14m to 10h 25m UT

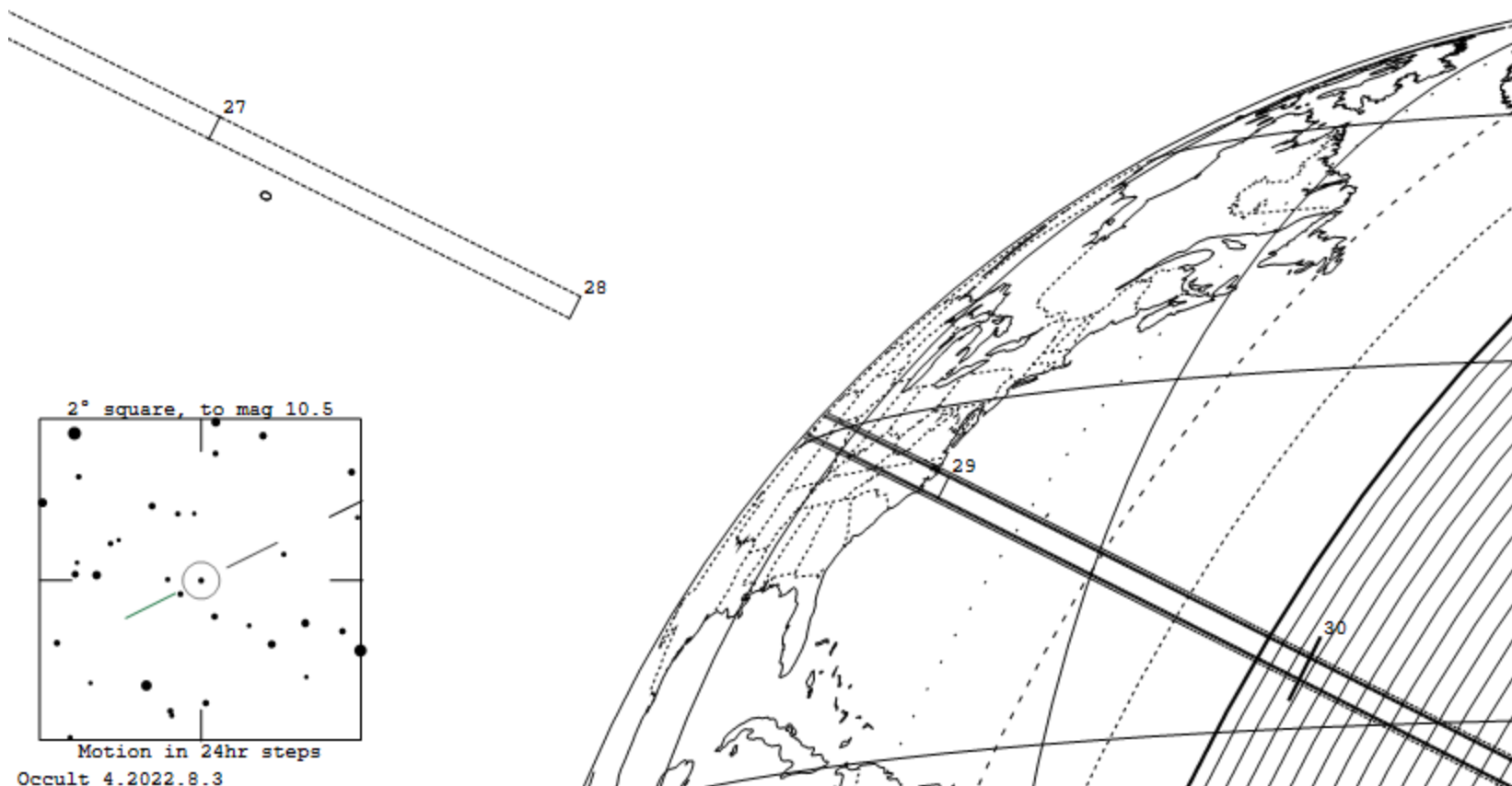
Star: (Dia < 0.1 mas)	Durations: Max = 17.3 secs	Asteroid: (in DAMIT, ISAM)
Mv 9.1	1km = 0.053 secs, 1mas = 0.10 secs	Mag = 11.7
RA = 5 44 19.2900 (astrometric)	Mag Drop = 2.7 [91%]v	Dia = 329 ±17km, 173 mas
Dec = 33 57 48.595	Sun : Dist = 83°	Parallax = 3.345"
[of Date: 5 45 53, 33 58 24]	Moon: Dist = 65°, illum = 3%	Hourly dRA = 2.887s
Prediction of 2022 Jun 15.2	Error 20.7 x 1.1 mas in PA 108°	dDec = 0.06"
Reliable not available		JPL#1572022Jun06, Known errors



Occult 4.2022.8.3

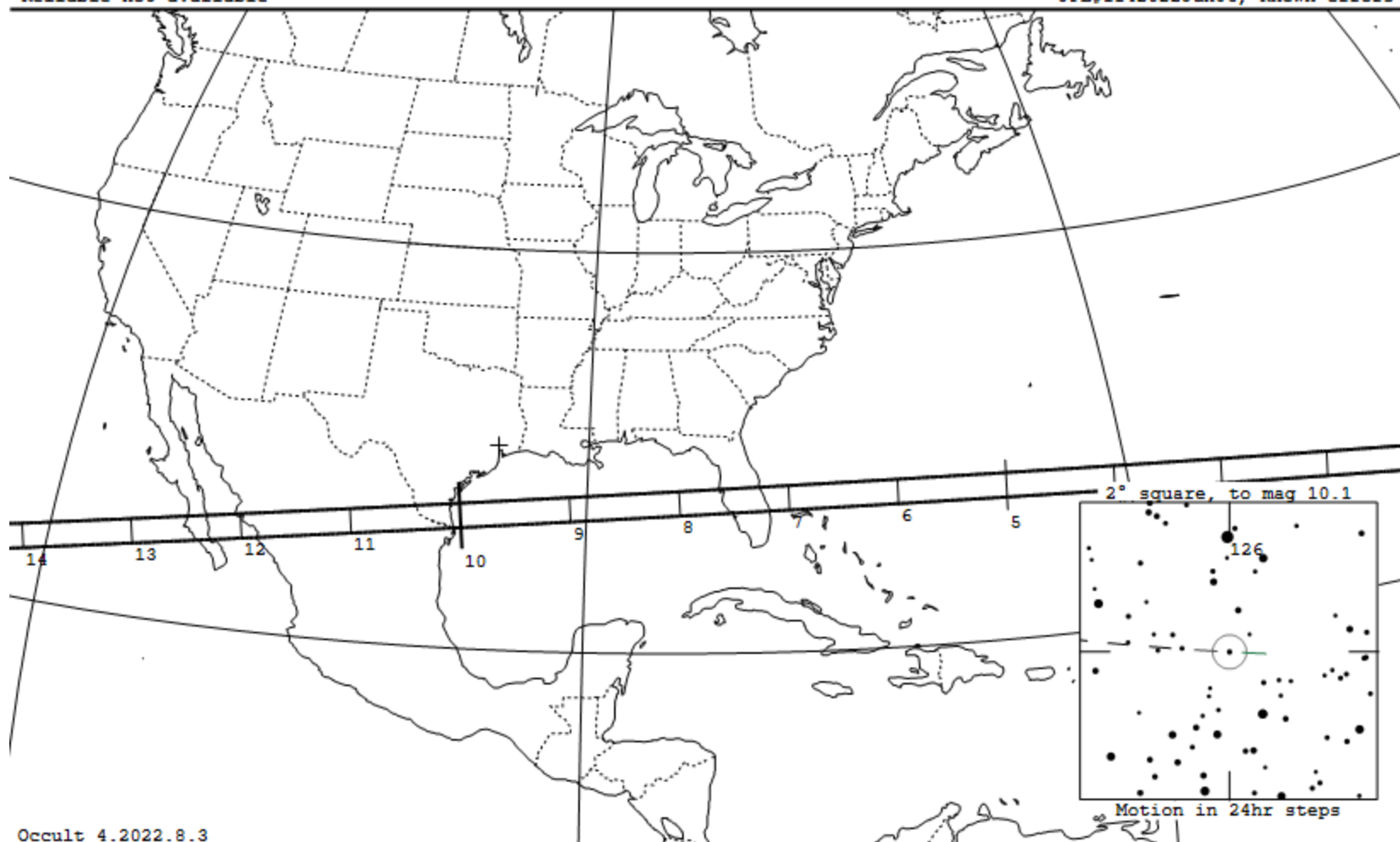
12 Victoria occults TYC 4937-00390-1 on 2023 Nov 18 from 9h 29m to 9h 35m UT

Star: (Dia < 0.1 mas)	Durations: Max = 3.6 secs	Asteroid: (in DAMIT, ISAM)
Mv 9.5	1km = 0.030 secs, 1mas = 0.068 secs	Mag = 12.9
RA = 11 47 53.3175 (astrometric)	Mag Drop = 3.4 [96%]v	Dia = 120 ±7km, 53 mas
Dec = - 6 14 42.333	Sun : Dist = 56°	Parallax = 2.817"
[of Date: 11 49 5, - 6 22 30]	Moon: Dist = 118°, illum = 27%	Hourly dRA = 3.163s
Prediction of 2022 Jun 15.2	Error 11.0 x 8.0 mas in PA 109°	dDec = -23.51"
Reliable not available		JPL#1332022Apr14, Known errors



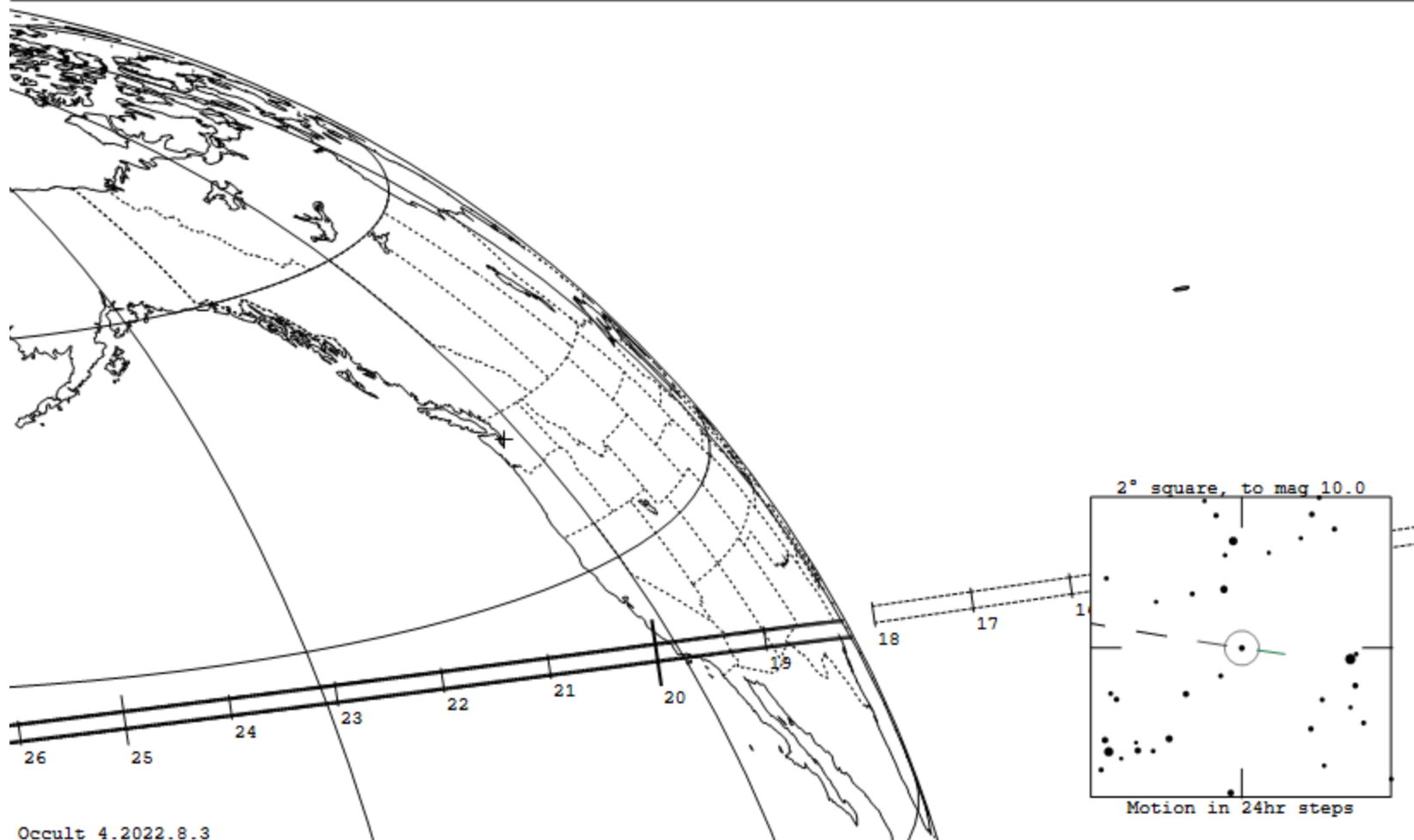
159 Aemilia occults TYC 1298-00522-1 on 2023 Nov 24 from 6h 57m to 7h 19m UT

Star: (Dia < 0.1 mas)	Durations: Max = 13.9 secs	Asteroid: (in DAMIT, ISAM)
Mv 9.1	1km = 0.11 secs, 1mas = 0.15 secs	Mag = 12.6
RA = 5 41 14.1237 (astrometric)	Mag Drop = 3.6 [96%]v	Dia = 130 ±7km, 94 mas
Dec = 15 45 53.529	Sun : Dist = 155°	Parallax = 4.610"
[of Date: 5 42 37, 15 46 41]	Moon: Dist = 64°, illum = 89%	Hourly dRA = -1.682s
Prediction of 2022 Jun 15.2	Error 34.7 x 1.2 mas in PA 84°	dDec = -1.24"
Reliable not available		JPL#1142022Jun06, Known errors



358 Apollonia occults HIP 19499 on 2023 Dec 11 from 11h 18m to 11h 41m UT

Star: (Dia < 0.1 mas)	Durations: Max = 10.1 secs	Asteroid:
Mv 8.6	1km = 0.11 secs, 1mas = 0.12 secs	Mag = 12.5
RA = 4 10 40.9033 (astrometric)	Mag Drop = 3.9 [97%]v	Dia = 88 ±4km, 82 mas
Dec = 15 14 13.158	Sun : Dist = 164°	Parallax = 5.944"
[of Date: 4 12 3, 15 18 1]	Moon: Dist = 170°, illum = 3%	Hourly dRA = -2.012s
Prediction of 2022 Jun 15.2	Error 37.0 x 6.3 mas in PA 81°	dDec = -4.24"
Reliable not available		JPL#722022Jun06, Known errors

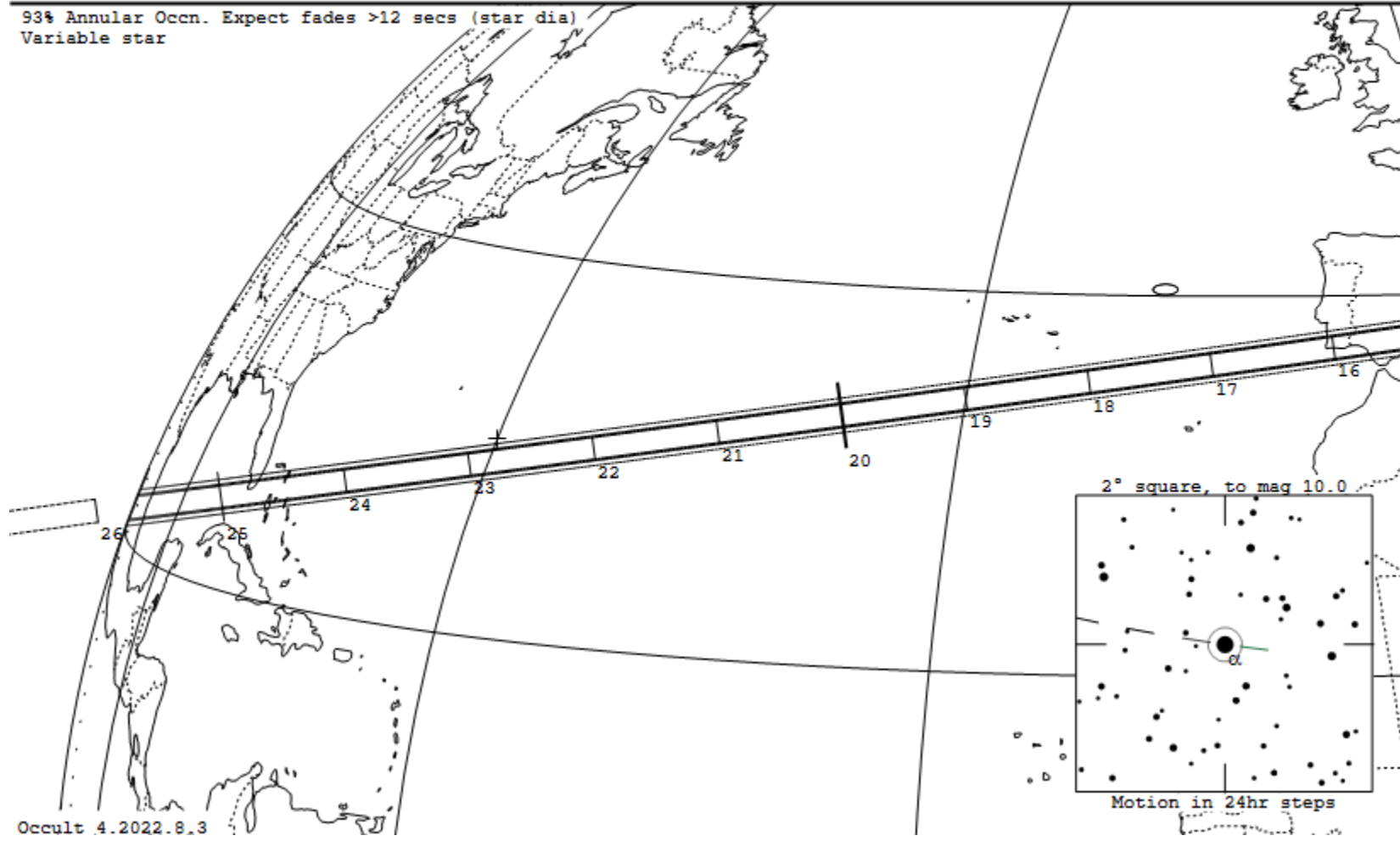


*** NOTE: Path may shift based on revised position for Betelgeuse.

319 Leona occults HIP 27989 on 2023 Dec 12 from 1h 8m to 1h 26m UT

Star: (Dia = 48.1 mas)	Durations: Max = 11.6 secs	Asteroid:
Mv 0.5	1km = 0.19 secs, 1mas = 0.25 secs	Mag = 14.2
RA = 5 55 10.3497 (astrometric)	Mag Drop = 2.9 [93%]v	Dia = 61 ±3km, 46 mas
Dec = 7 24 25.701	Sun : Dist = 162°	Parallax = 4.864"
[of Date: 5 56 29, 7 24 43]	Moon: Dist = 151°, illum = 1%	Hourly dRA = -1.949s
Prediction of 2022 Aug 12.9	Error 50.5 x 21.5 mas in PA 90°	dDec = -3.98"
Reliable not available		JPL#602022Jun06, Known errors

93% Annular Occn. Expect fades >12 secs (star dia)
Variable star



442 Eichsfeldia occults HIP 15099 on 2023 Dec 19 from 1h 53m to 2h 21m UT

Star: (Dia < 0.1 mas)
Mv 7.6
RA = 3 14 47.8732 (astrometric)
Dec = 8 58 41.153
[of Date: 3 16 6, 9 4 4]
Prediction of 2022 Jun 15.2
Reliable not available

Durations: Max = 9.5 secs
1km = 0.15 secs, 1mas = 0.18 secs
Mag Drop = 6.3 [100%]v
Sun : Dist = 141°
Moon: Dist = 61°, illum = 42%
Error 21.3 x 1.4 mas in PA 75°

Asteroid: (in DAMIT)
Mag = 13.9
Dia = 65 ±3km, 54 mas
Parallax = 5.323"
Hourly dRA = -1.369s
dDec = 2.98"
JPL#582022Jun06, Known errors

