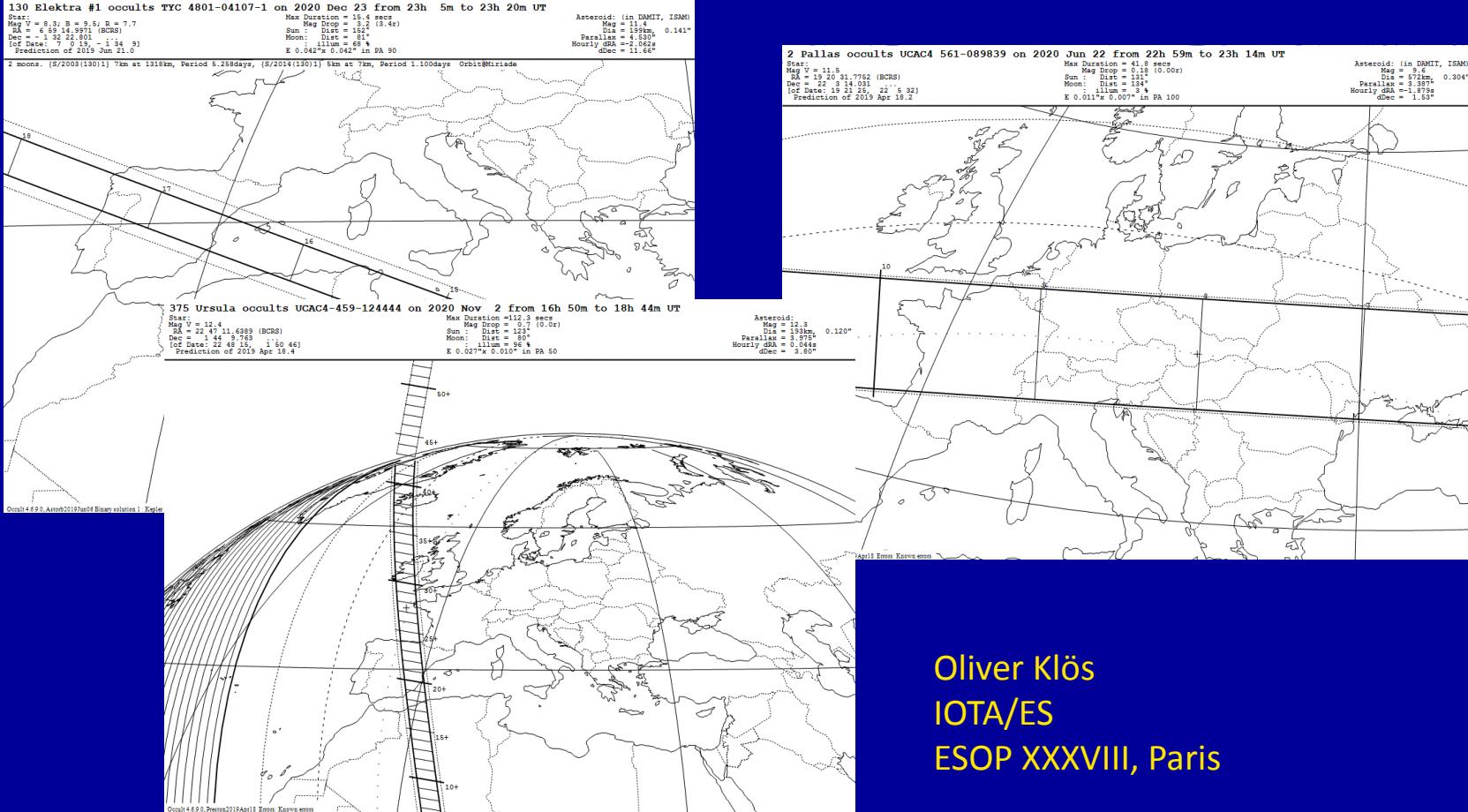


Occultations by Asteroids - Highlights for Europe in 2020



Occultations by Asteroids - Highlights for Europe in 2020

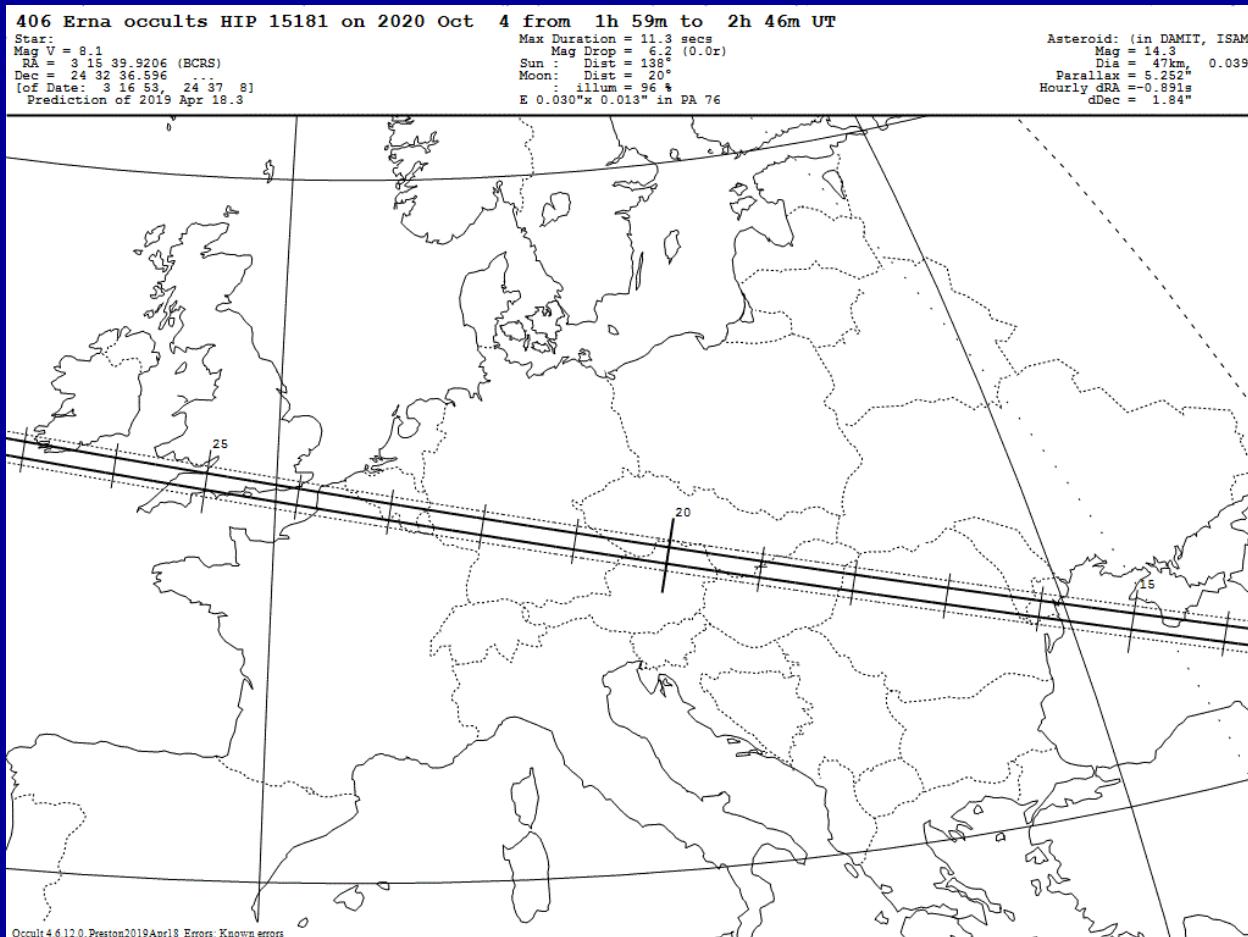
- I. The Brightest Star
- II. The Longest Duration
- III. The Widest Path
- IV. Asteroids with Satellites

- I.- III. Predictions by Steve Preston, IOTA, (Apr 2019)
- IV. Predictions with data from MIRIADE (IMCCE) (Jun/Aug 2019)

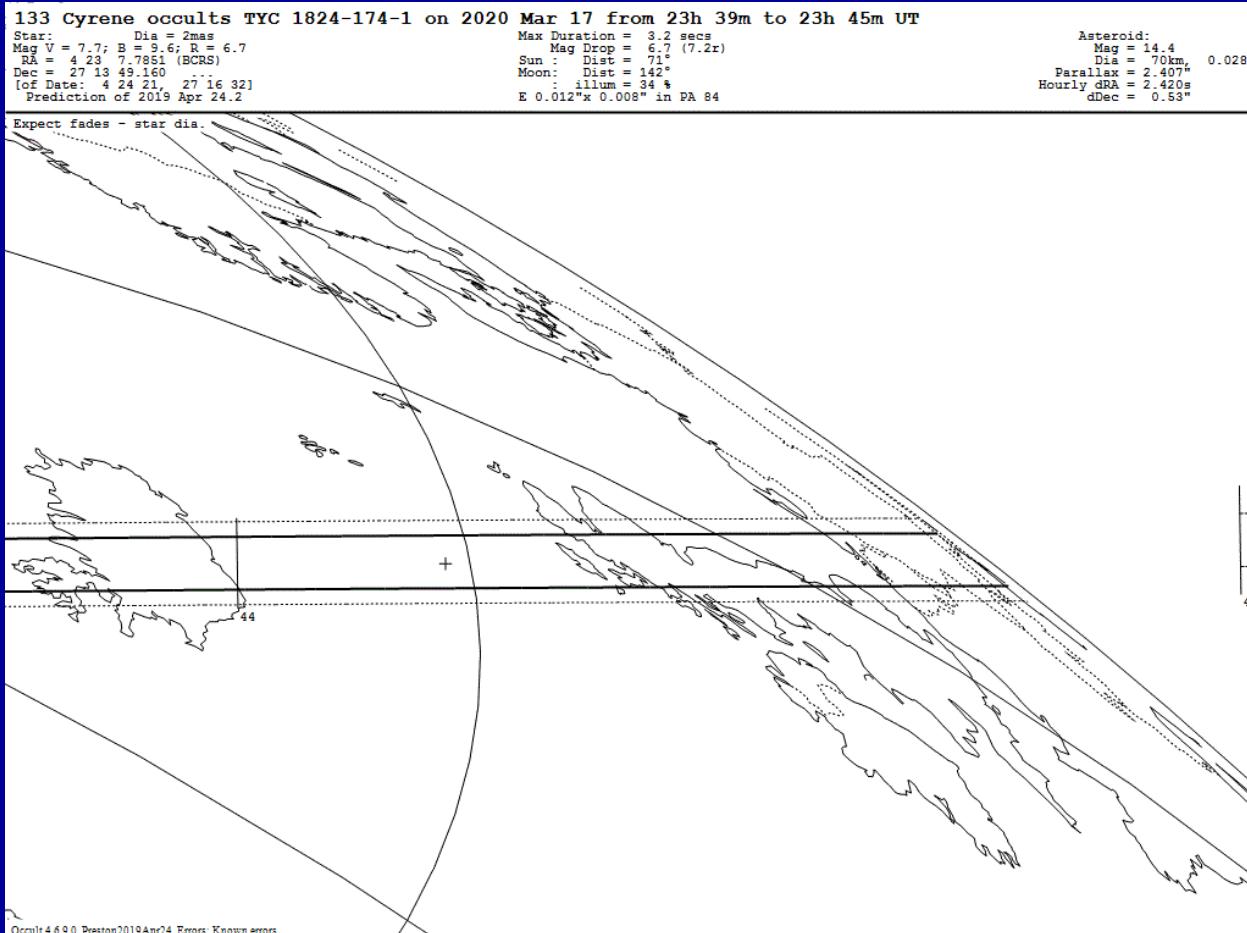
Occultations by Asteroids - Highlights for Europe in 2020

I.
The Brightest Star
Top 6

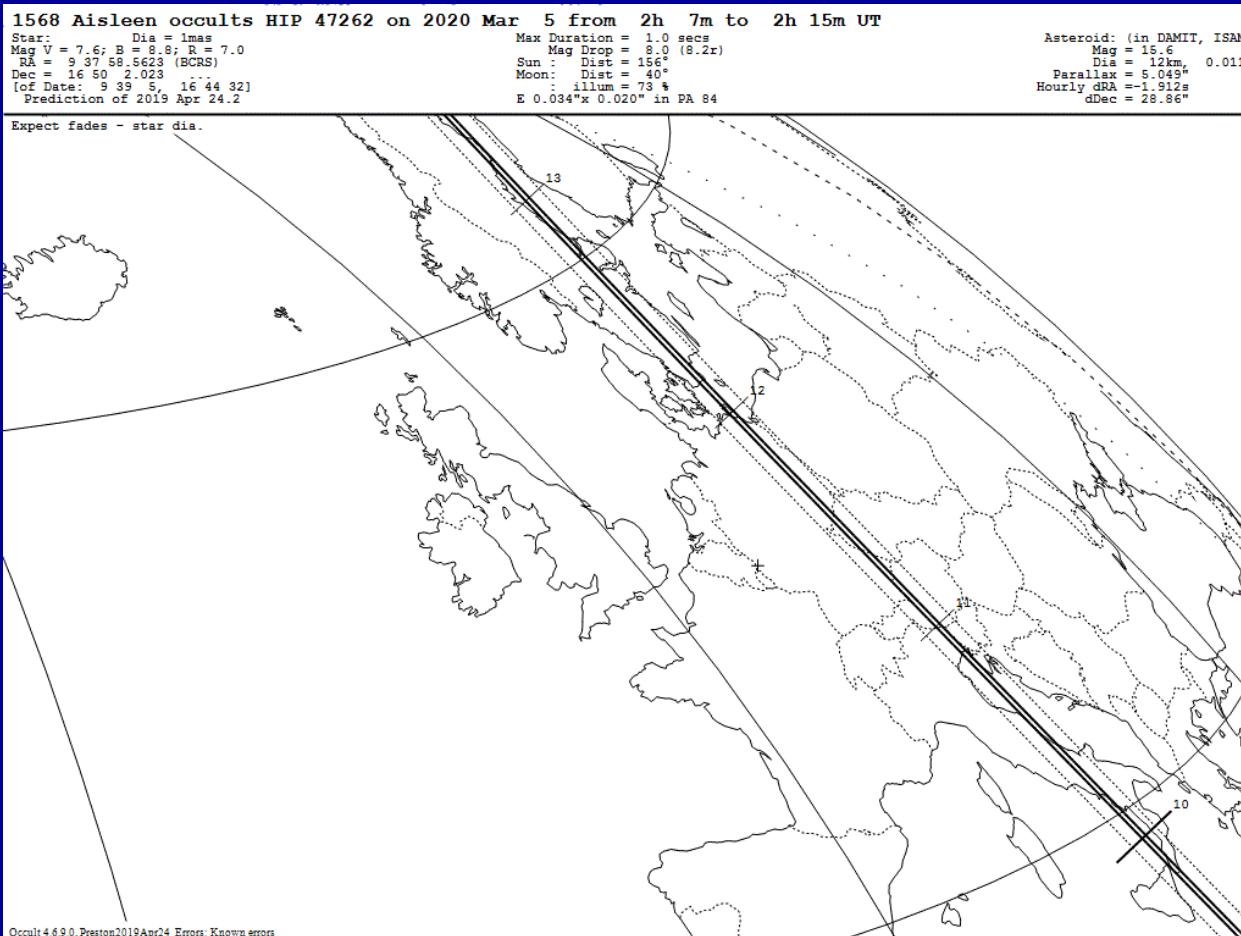
2020 Oct 04 (406) Erna HIP 15181 (8.1 mag) Dur: 11.3 s Drop: 6.2 mag



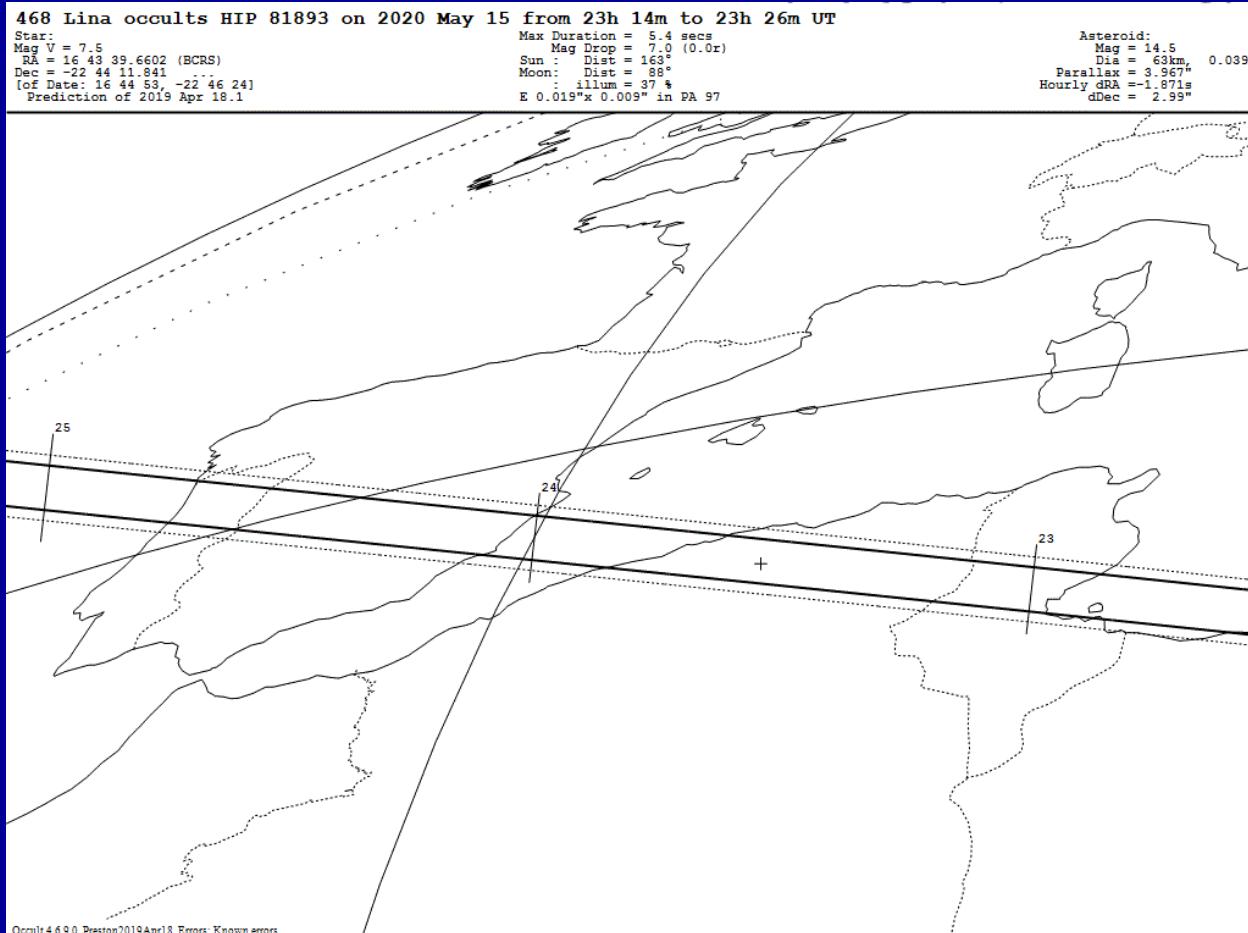
2020 Mar 17 (133) Cyrene TYC 1824-174-1 (7.7 mag) Dur: 3.2 s Drop: 6.7 mag



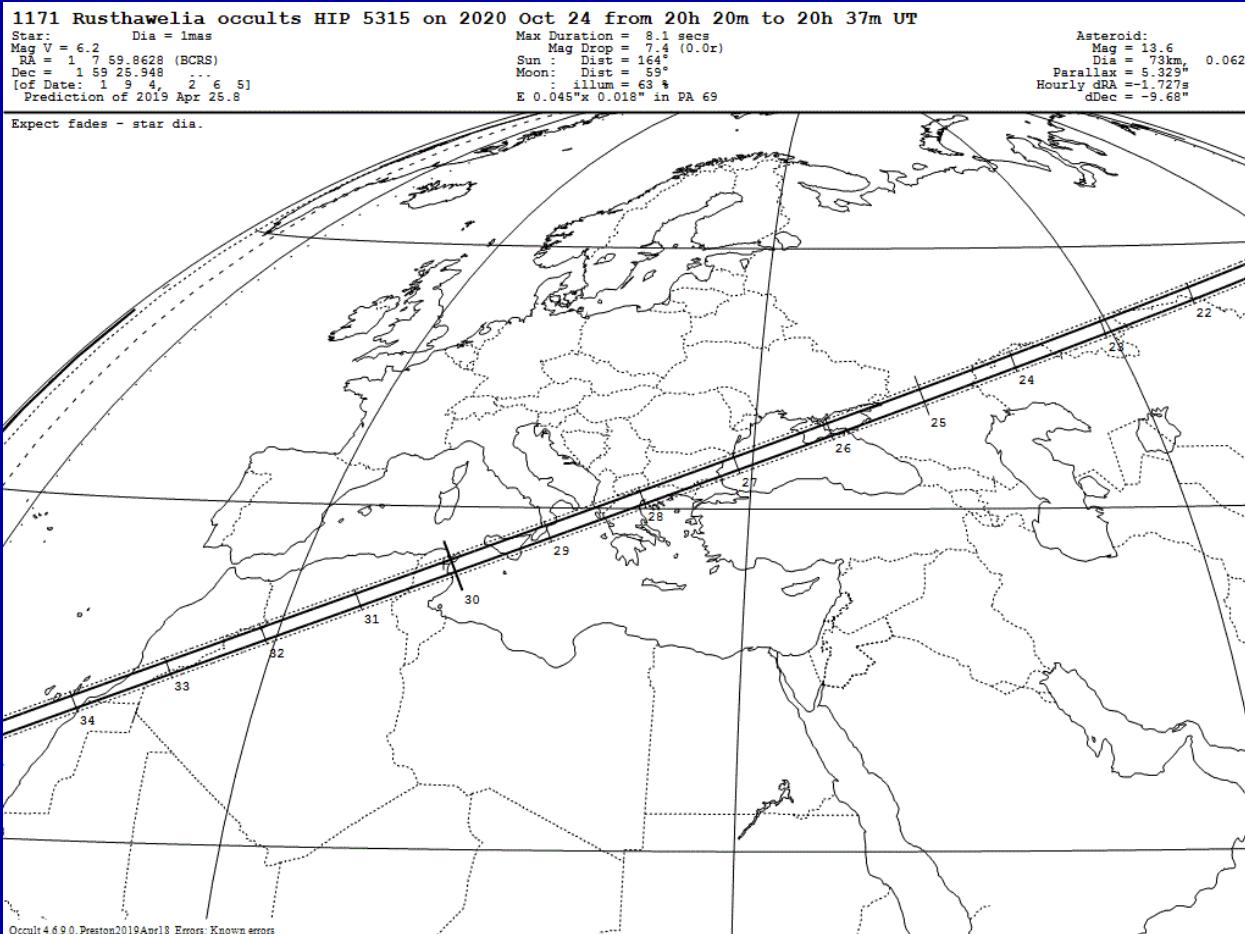
2020 Mar 05 (1568) Aisleen HIP 47262 (7.6 mag) Dur: 1.0 s Drop: 8.0 mag



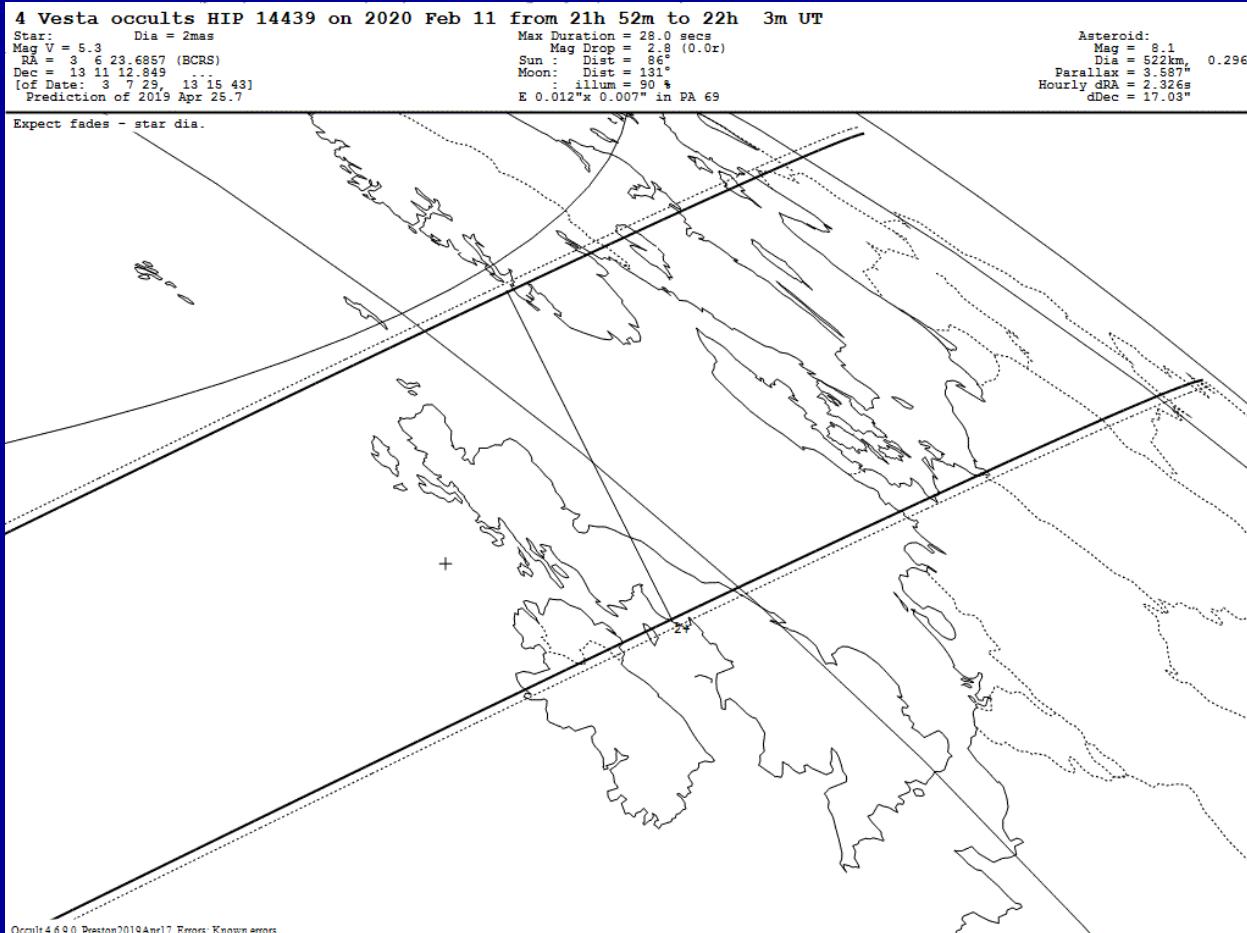
2020 May 15 (468) Lina HIP 81893 (7.6 mag) Dur: 5.4 s Drop: 7.0 mag



2020 Oct 24 (1171) Rusthawelia HIP 5315 (6.2 mag) Dur: 8.1 s Drop: 7.4 mag



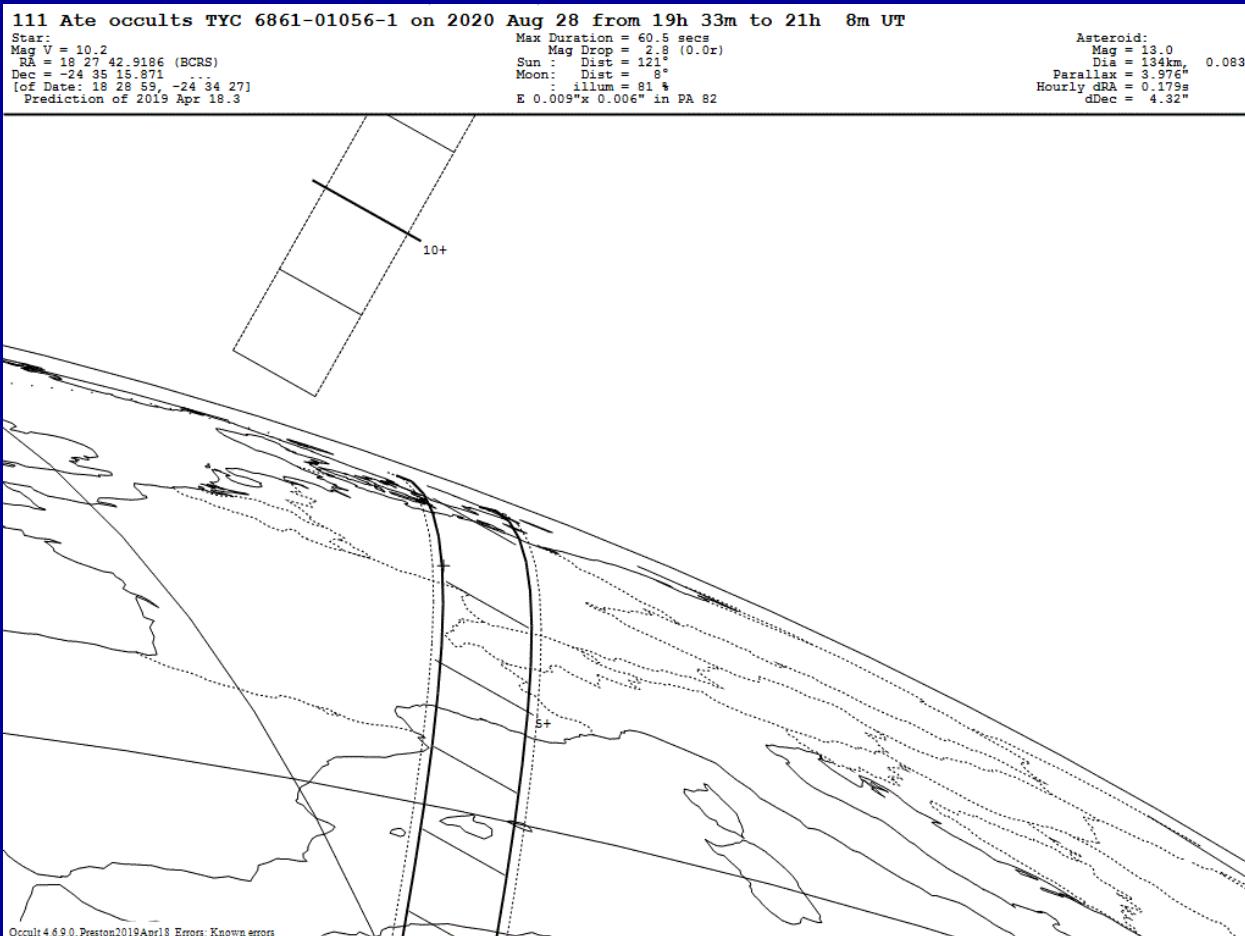
2020 Feb 11 (4) Vesta HIP 14439 (5.3 mag) Dur: 28 s Drop: 2.8 mag



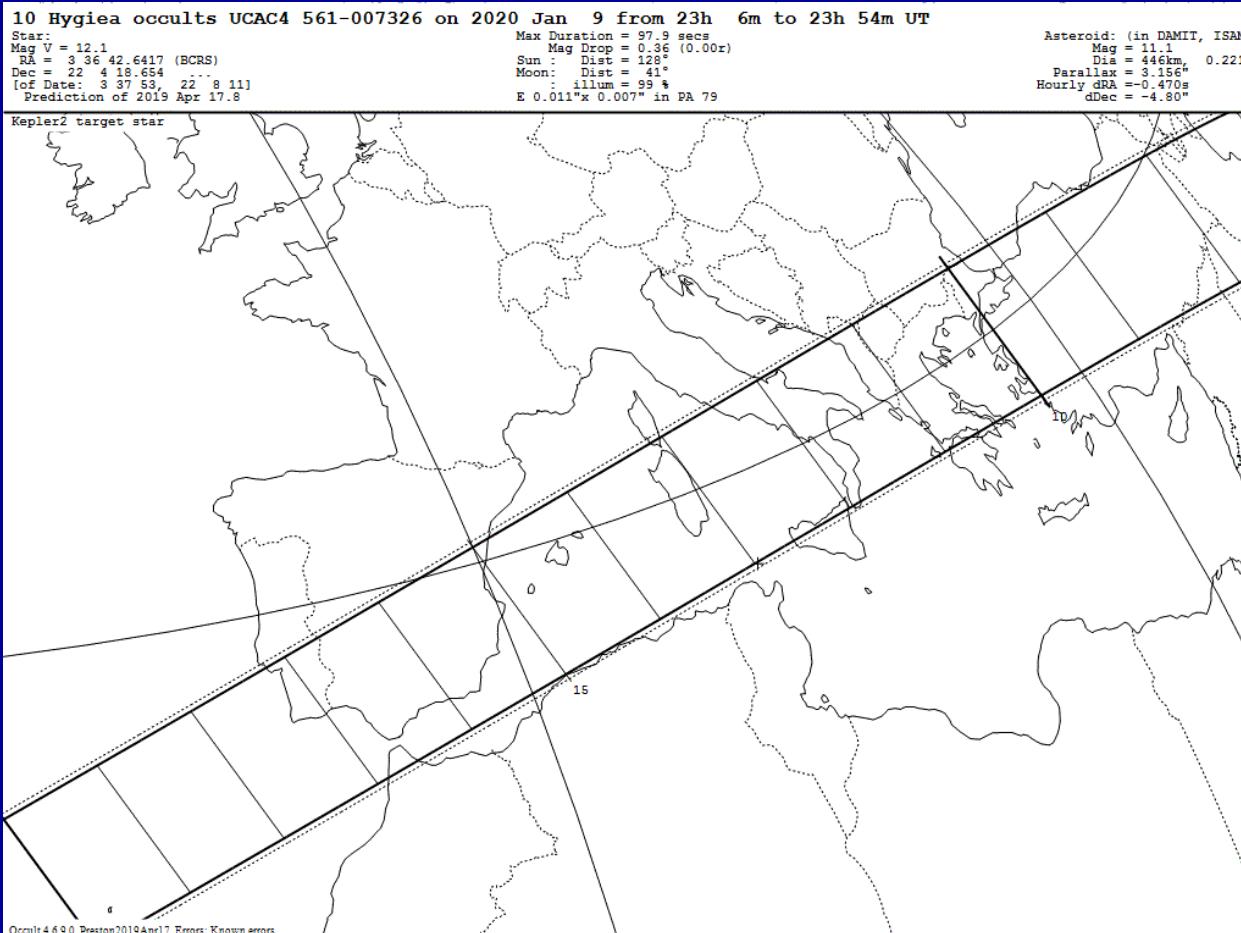
Occultations by Asteroids - Highlights for Europe in 2020

II. The Longest Duration Top 3

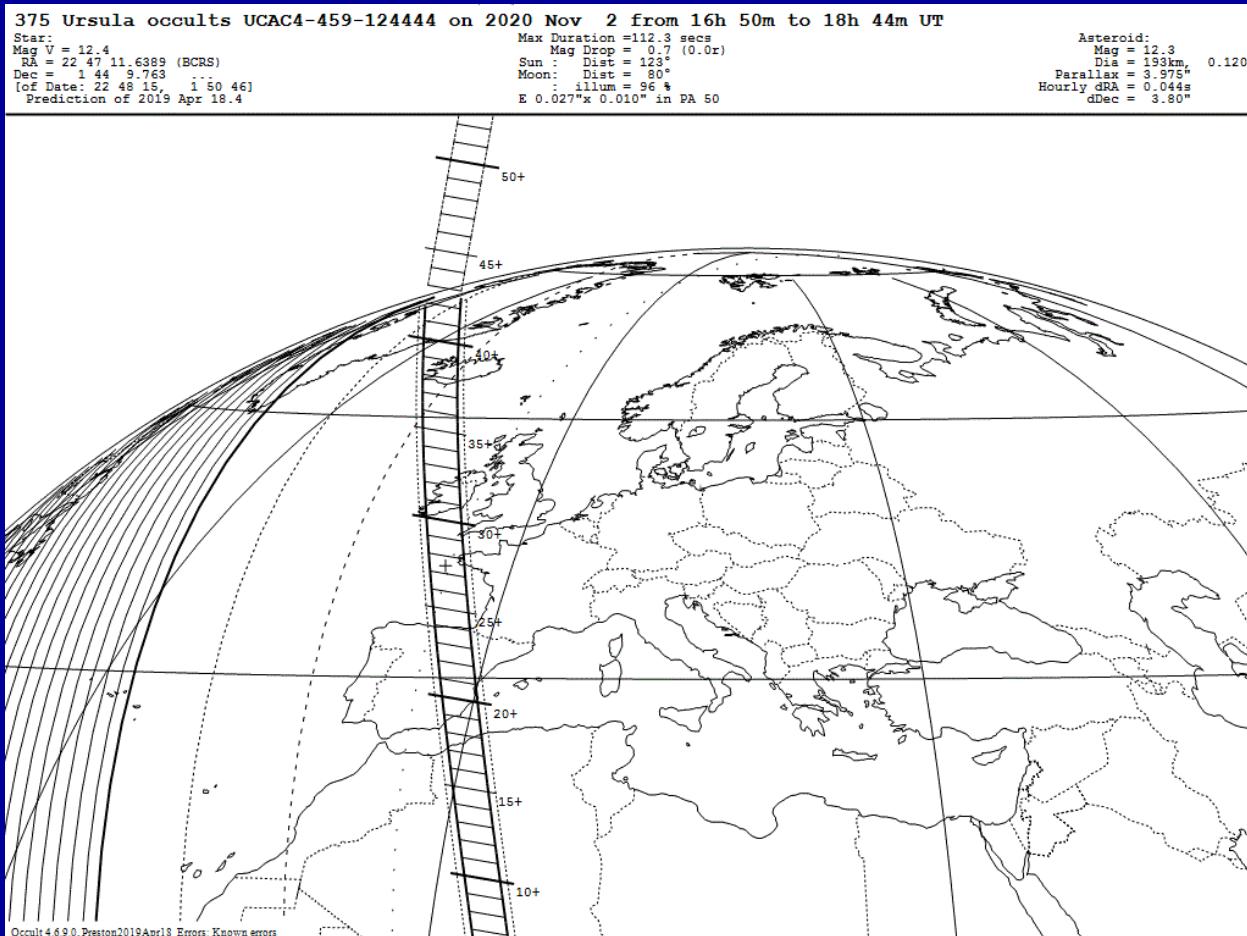
2020 Aug 28 (111) Ate TYC 6861-01056-1 (10.2 mag) Dur: 60.5 s Drop: 2.8 mag



2020 Jan 09 (10) Hygiea UCAC4 561-007326 (12.1 mag) Dur: 97.9 s Drop: 0.36 mag



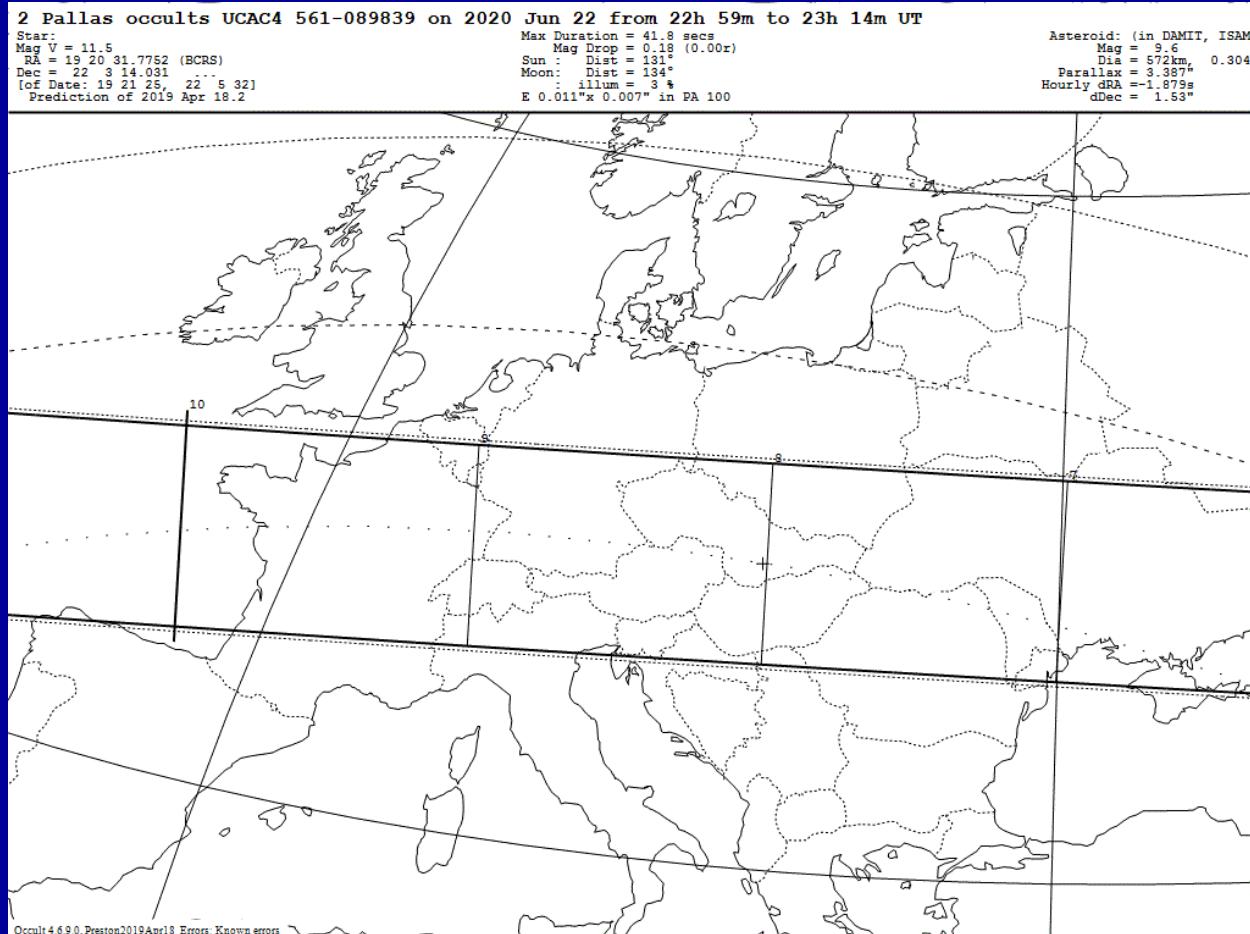
2020 Nov 02 (375) Ursula UCAC4 459-124444 (12.4 mag) Dur: 112.3 s Drop: 0.7 mag



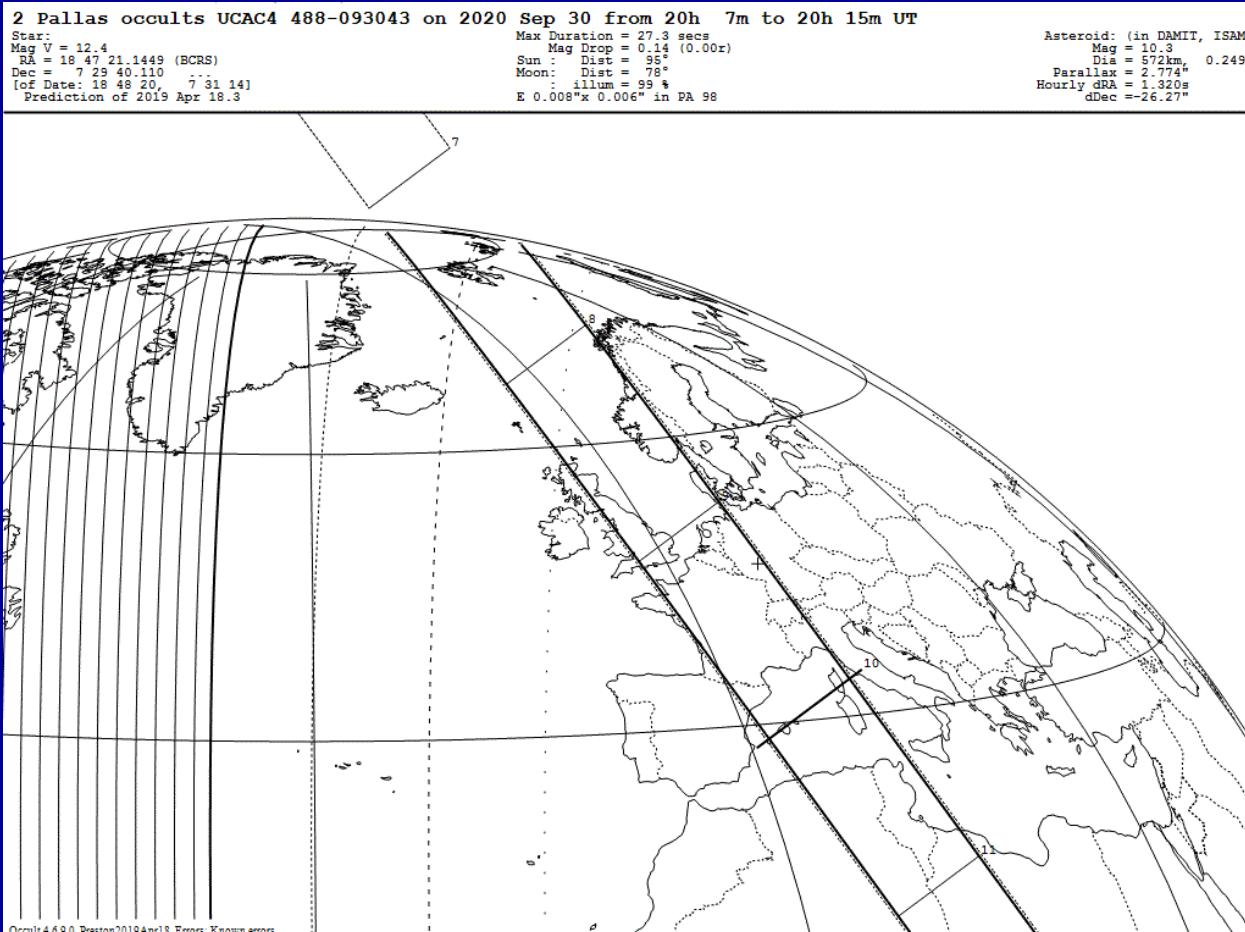
Occultations by Asteroids - Highlights for Europe in 2020

III. The Widest Path

2020 Jun 22 (2) Pallas UCAC4 561-089839 (11.5 mag) Dur: 41.8 s Drop: 0.18 mag



2020 Sep 30 (2) Pallas UCAC4 488-093043 (12.4 mag) Dur: 27.3 s Drop: 0.14 mag



Occultations by Asteroids - Highlights for Europe in 2020

IV. Asteroids with Satellites

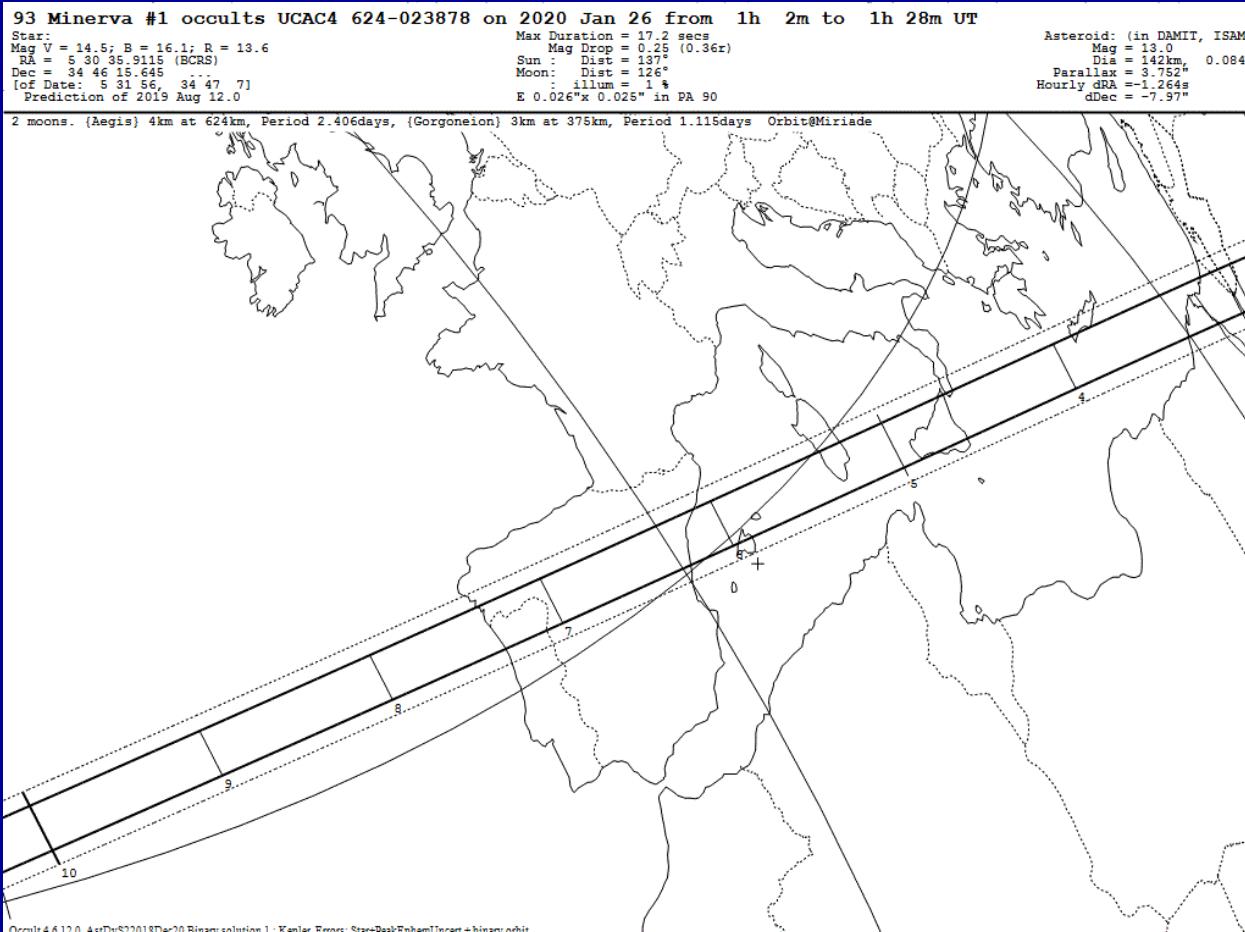
Gaia14 DR2 / MIRIADE (IMCCE)
Duration of Occultation by Satellite:

≥ 1.0 s

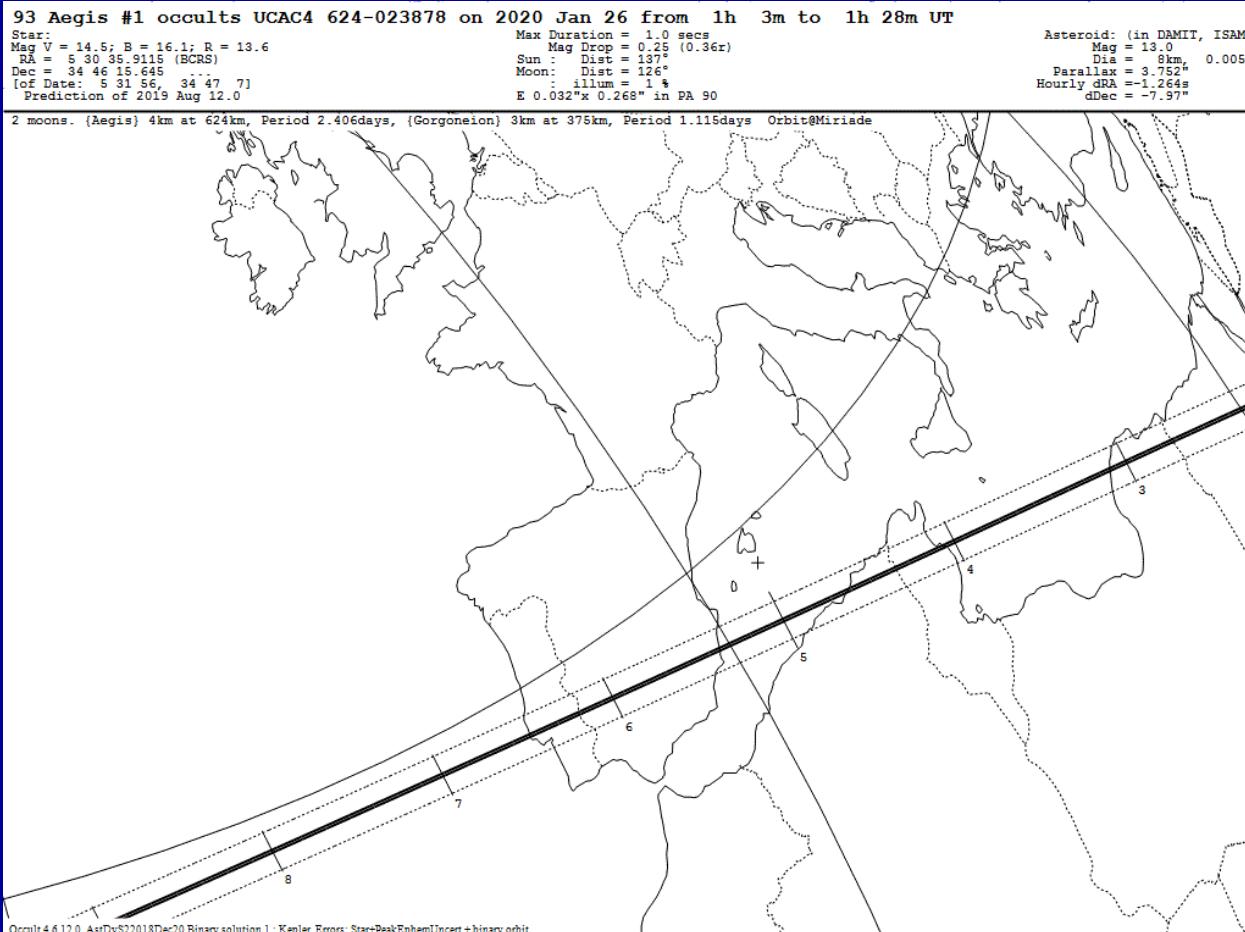
0.6 - 0.9 s

≤ 0.5 s

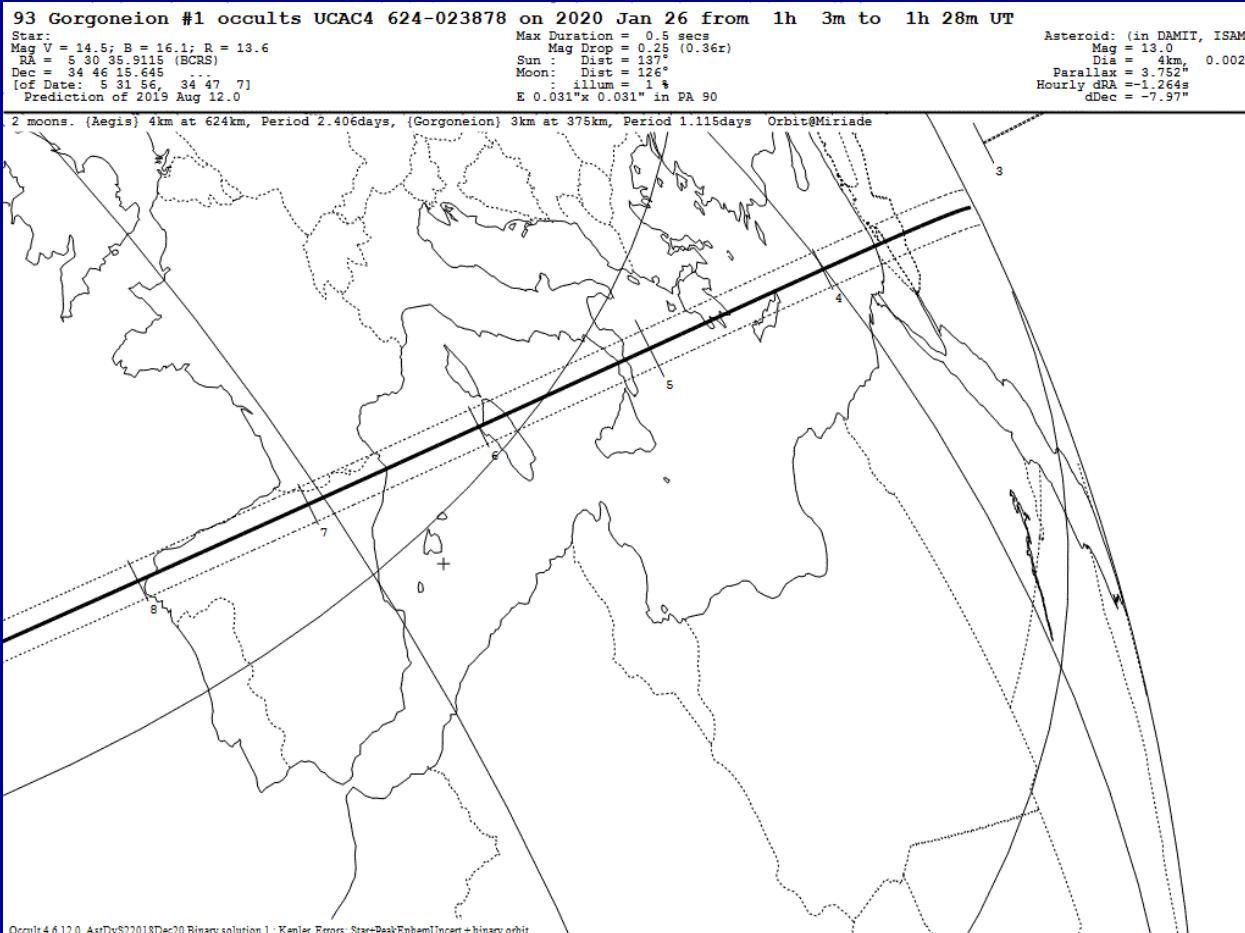
2020 Jan 26 (93) Minerva UCAC4 624-023878 (14.5 mag) Dur: 17.2 s Drop: 0.25 mag



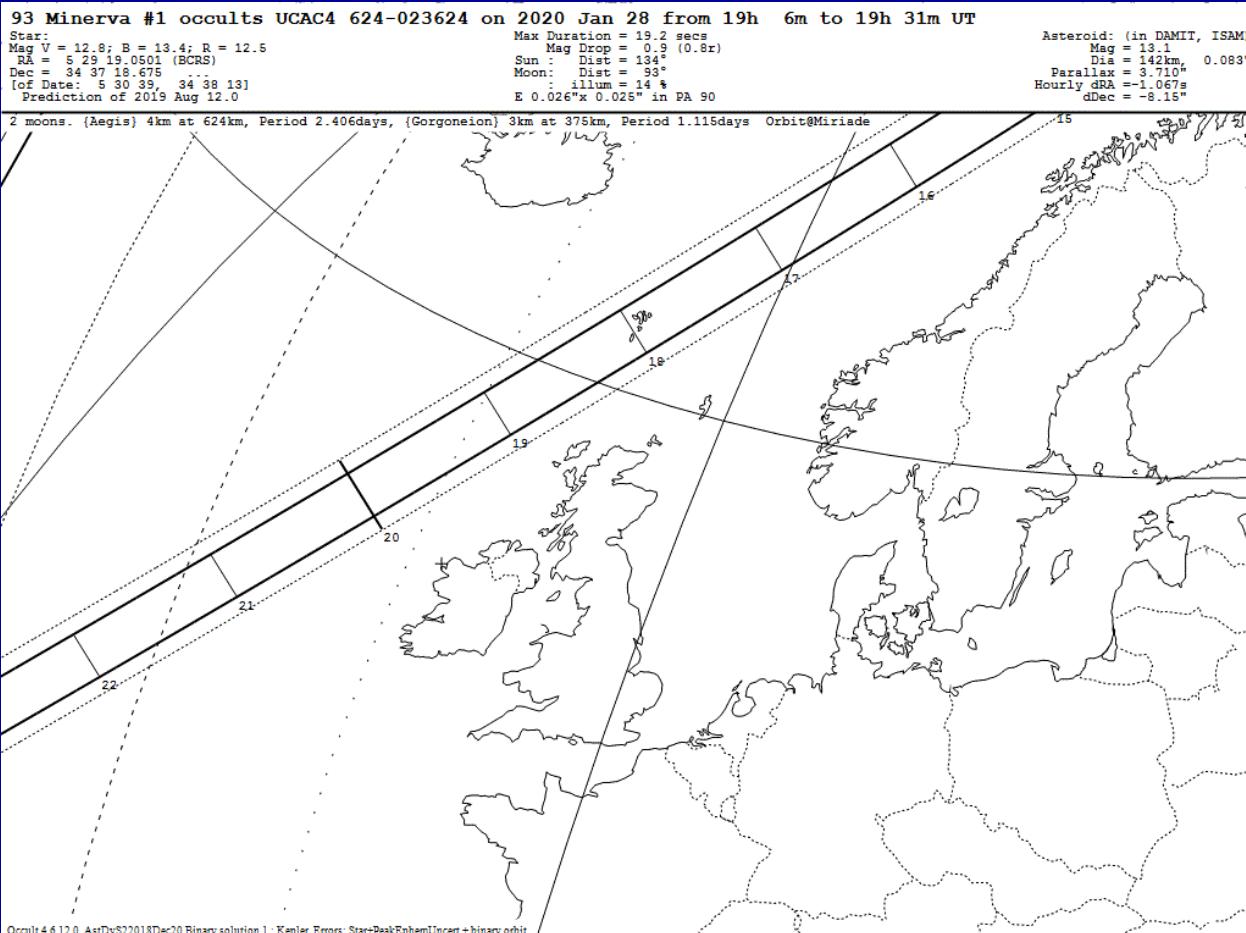
2020 Jan 26 (93) Aegis UCAC4 624-023878 (14.5 mag) Dur: 1.0 s Drop: 0.25 mag



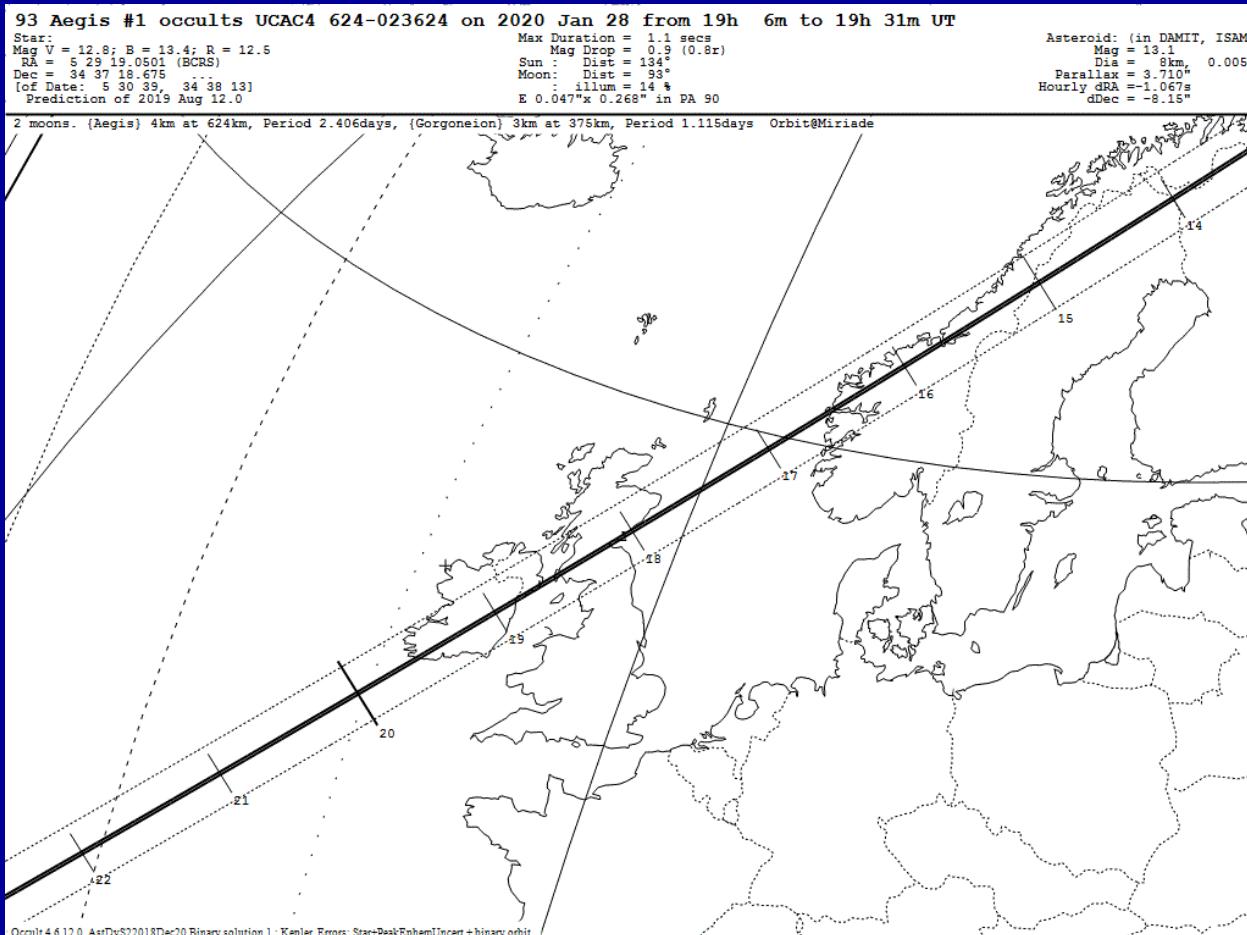
2020 Jan 26 (93) Gorgoneion UCAC4 624-023878 (14.5 mag) Dur: 0.5 s Drop: 0.25 mag



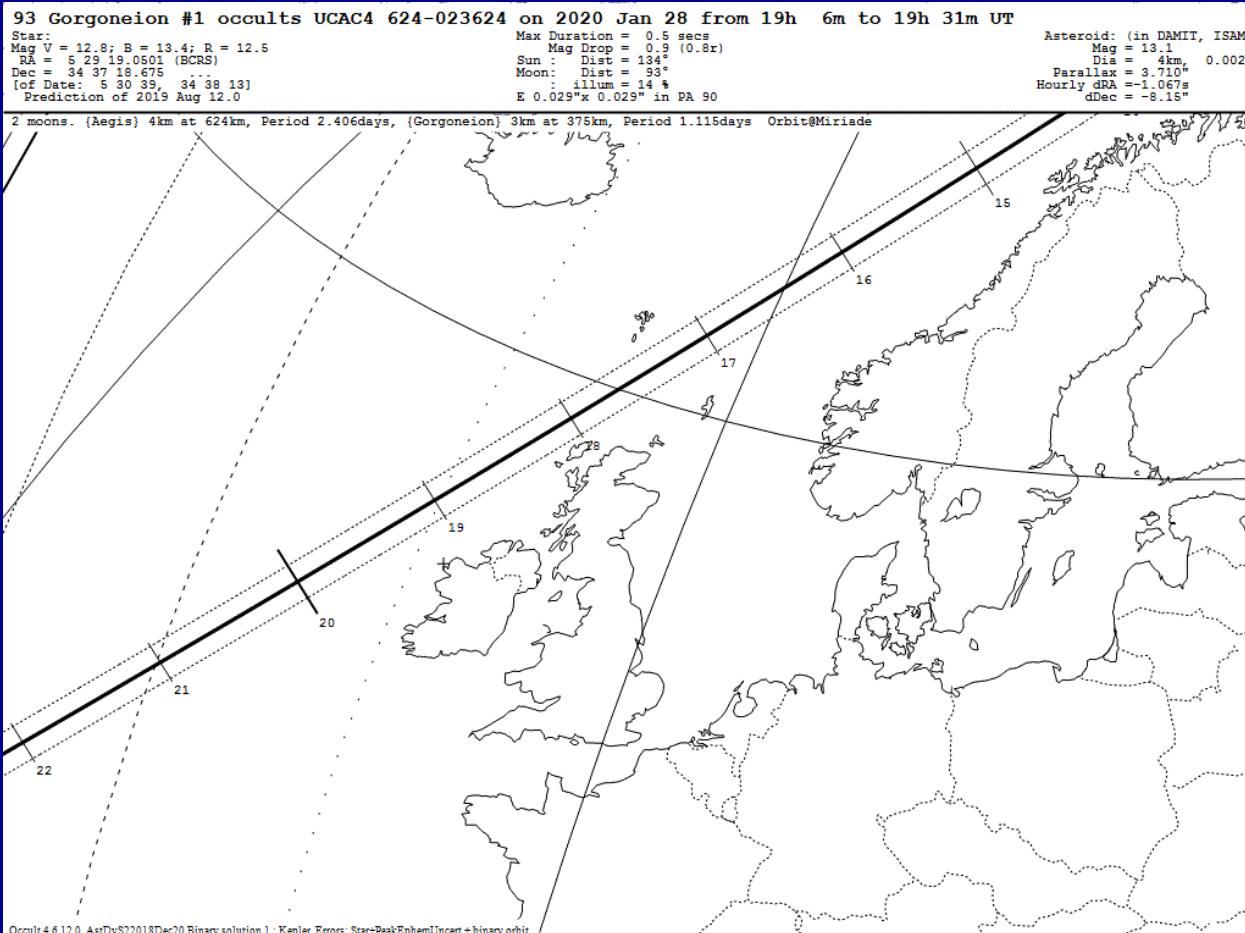
2020 Jan 28 (93) Minerva UCAC4 624-023624 (12.8 mag) Dur: 19.2 s Drop: 0.9 mag



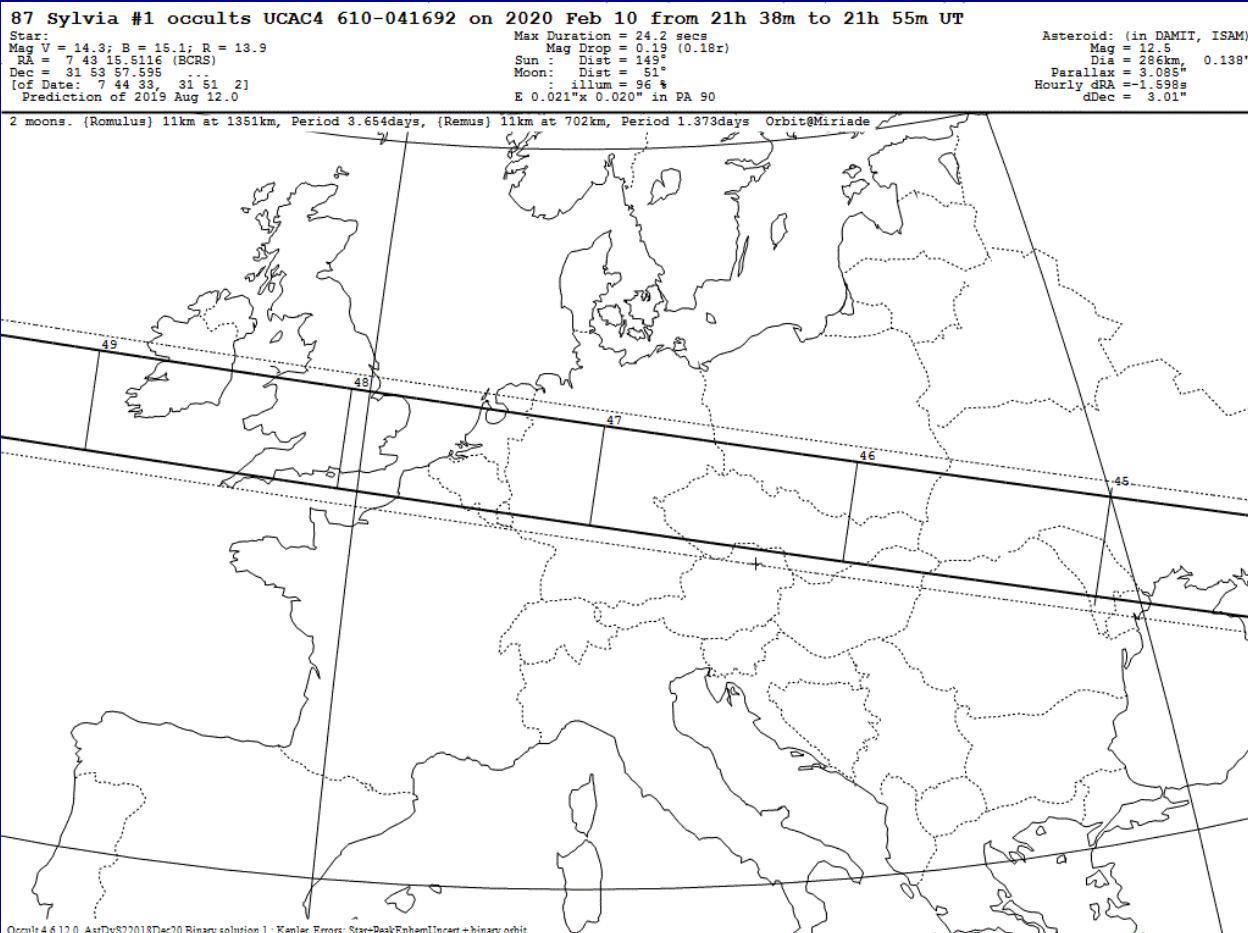
2020 Jan 28 (93) Aegis UCAC4 624-023624 (12.8 mag) Dur: 1.1 s Drop: 0.9 mag



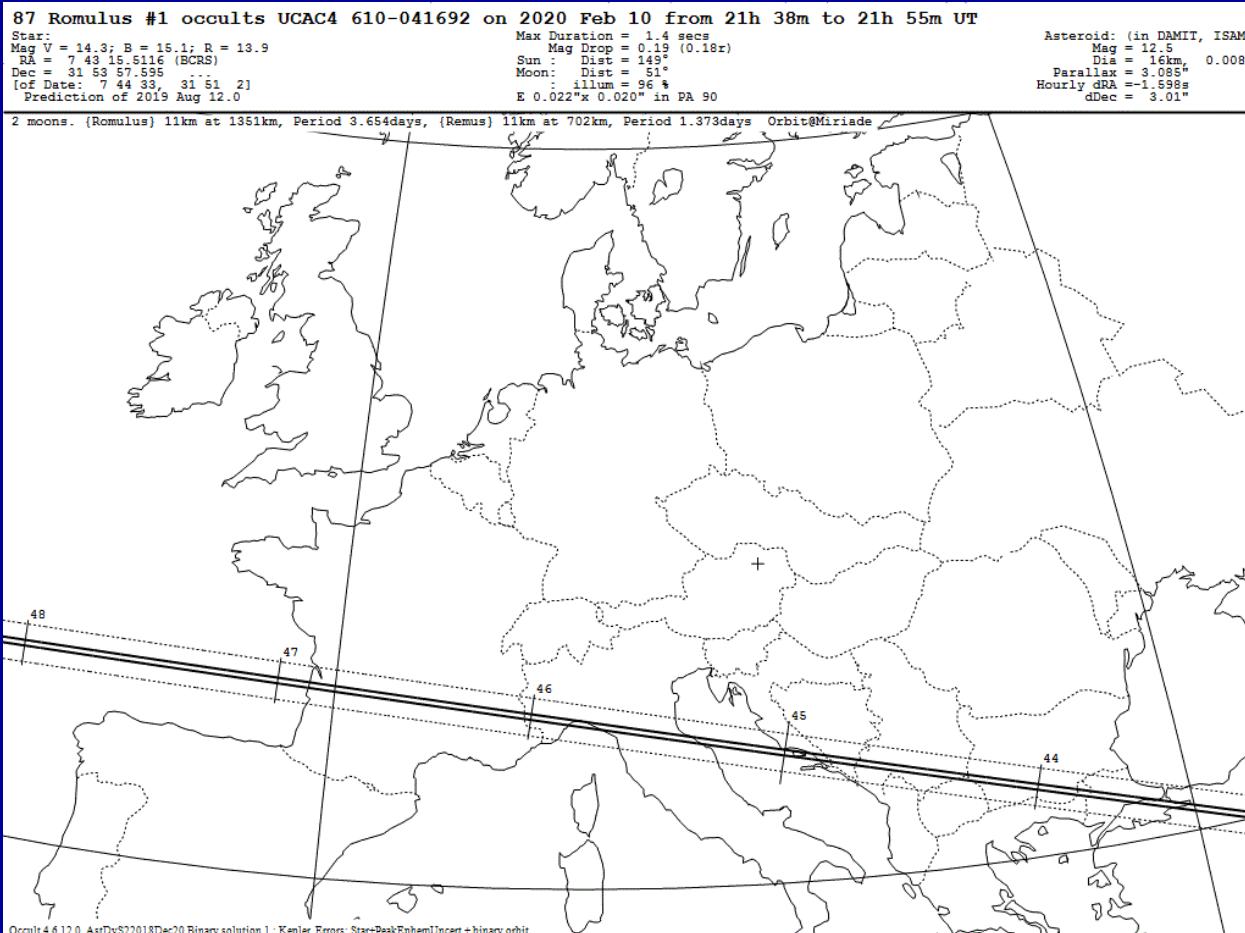
2020 Jan 28 (93) Gorgoneion UCAC4 624-023624 (12.8 mag) Dur: 0.5 s Drop: 0.9 mag



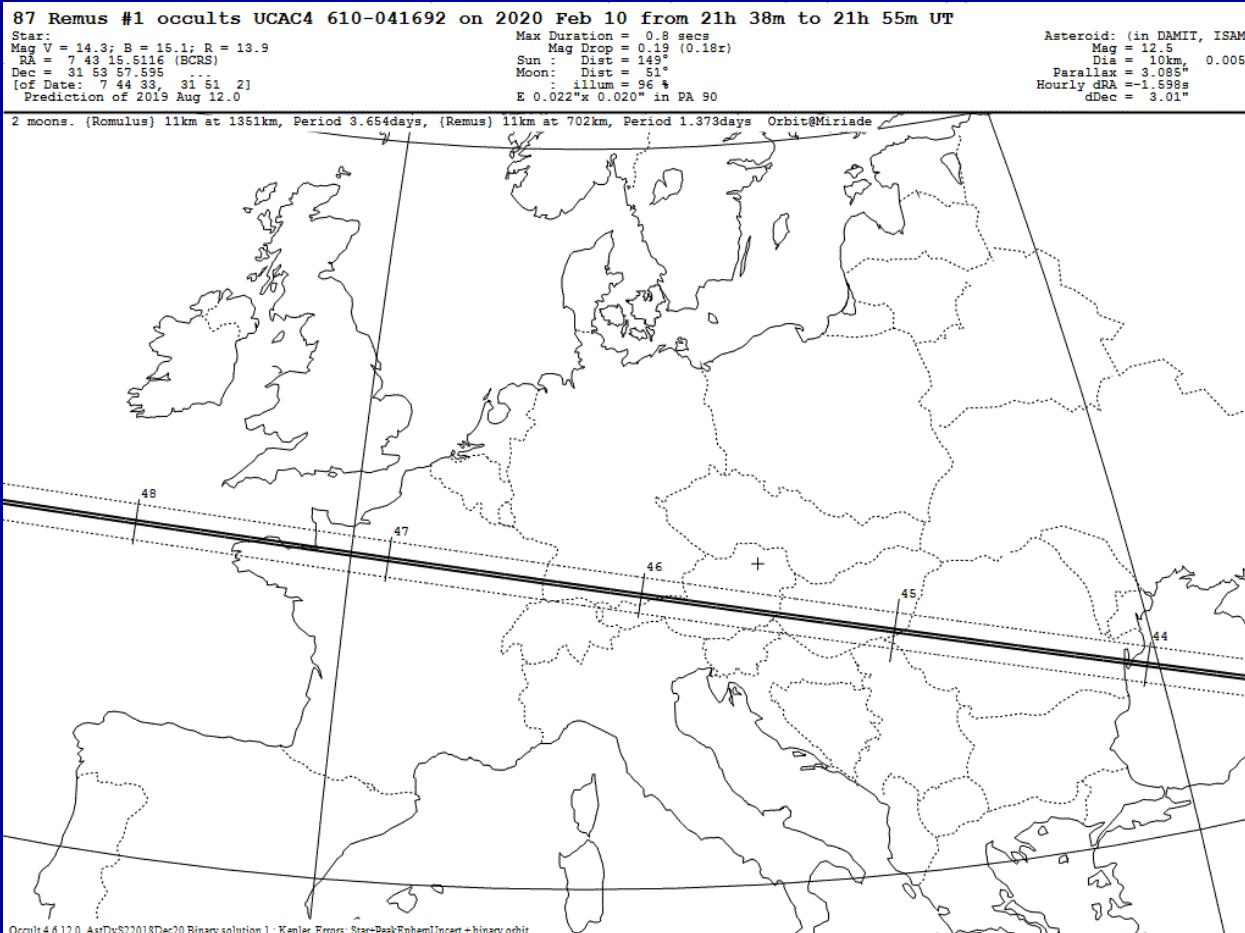
2020 Feb 10 (87) Sylvia UCAC4 610-041692 (14.3 mag) Dur: 24.2 s Drop: 0.19 mag



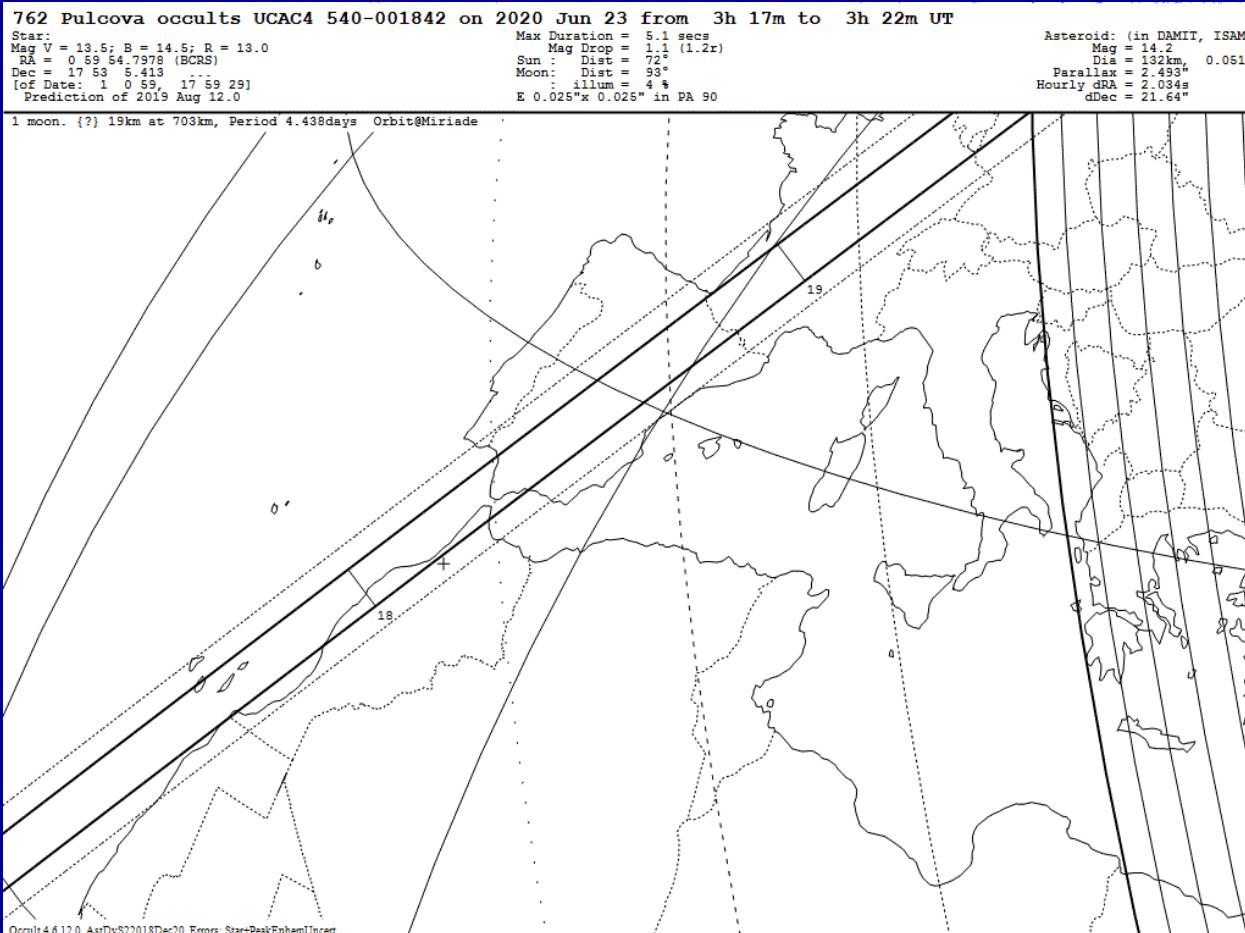
2020 Feb 10 (87) Romulus UCAC4 610-041692 (14.3 mag) Dur: 1.4 s Drop: 0.19 mag



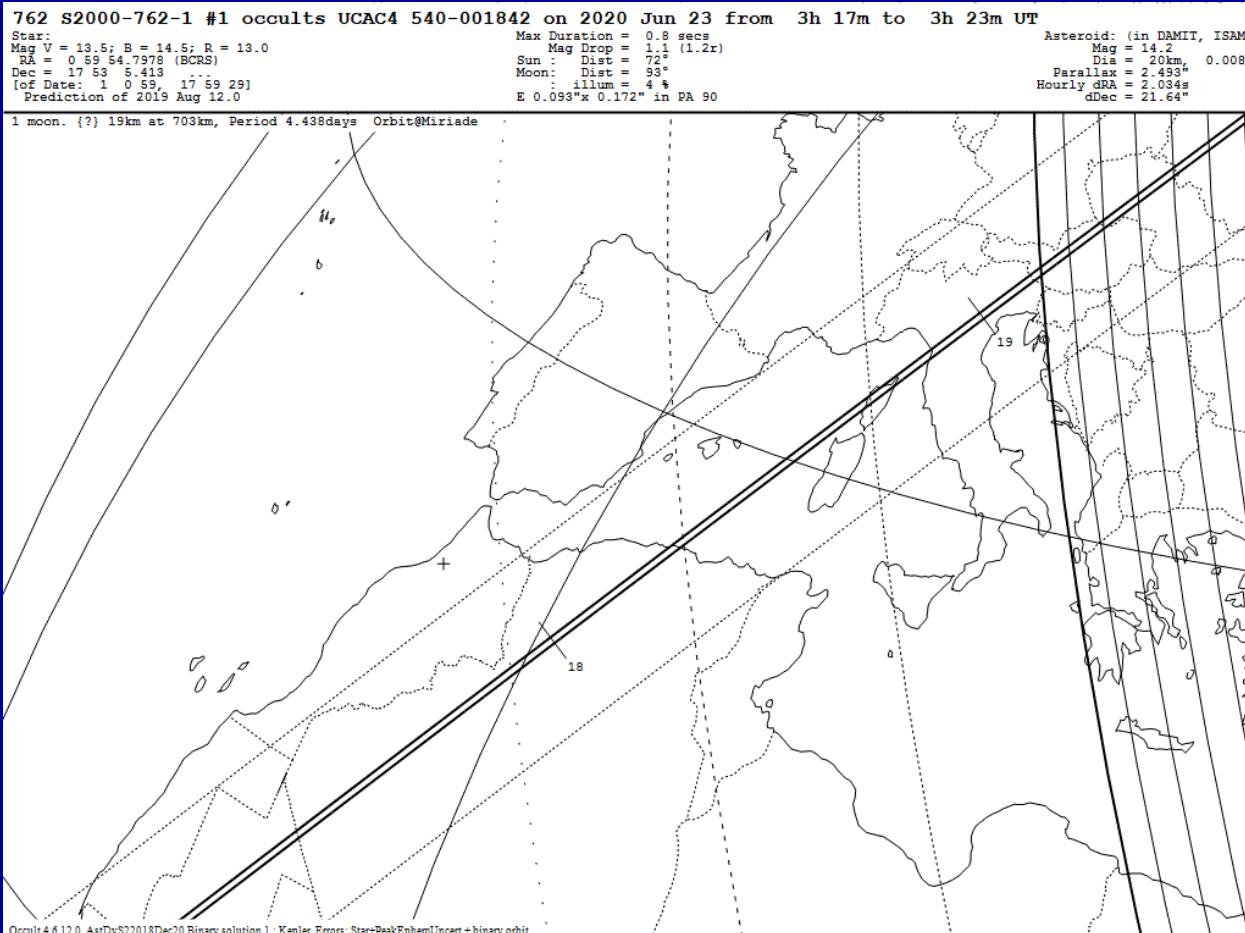
2020 Feb 10 (87) Remus UCAC4 610-041692 (14.3 mag) Dur: 0.8 s Drop: 0.19 mag



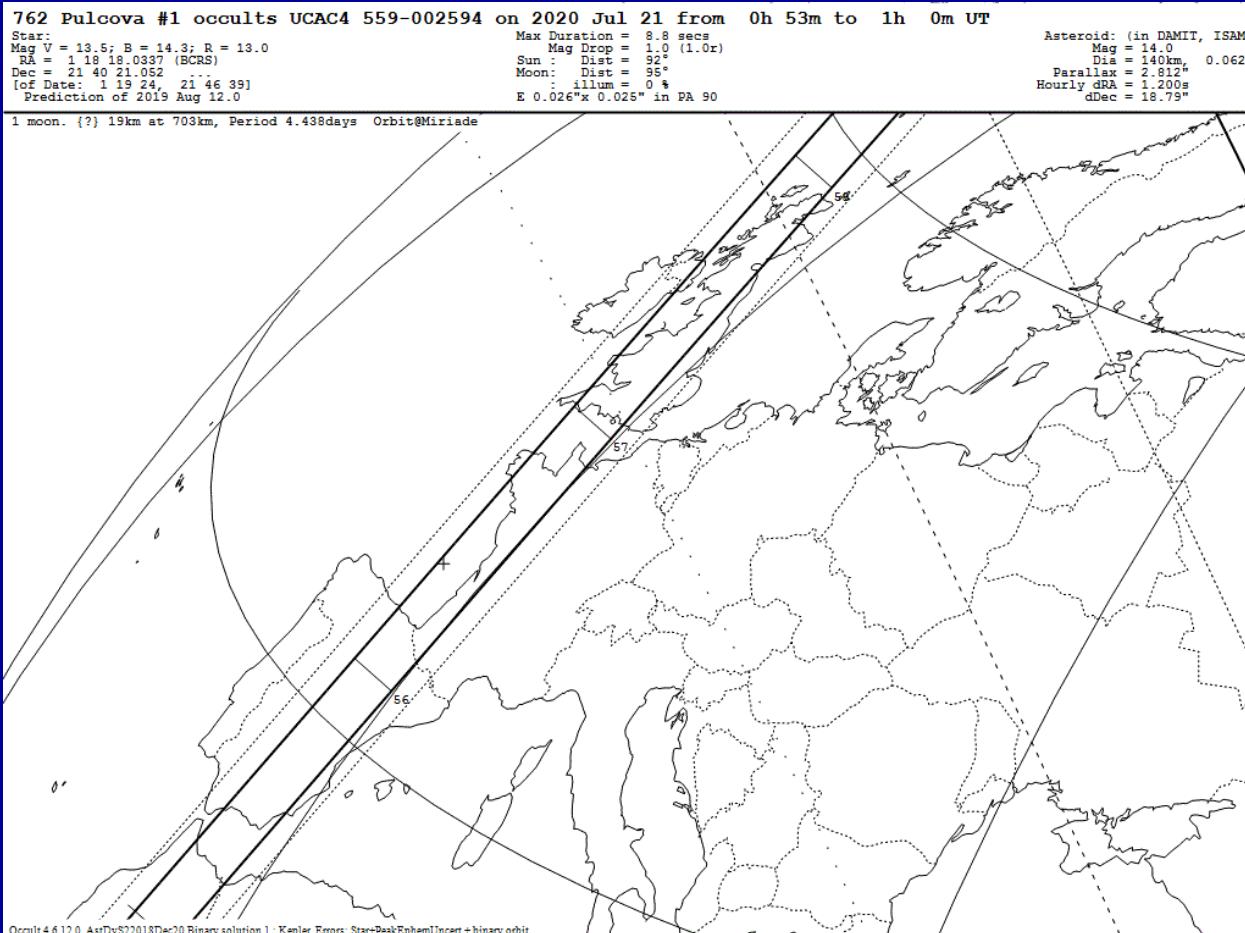
2020 Jun 23 (762) Pulcova UCAC4 540-001842 (13.5 mag) Dur: 5.1 s Drop: 1.1 mag



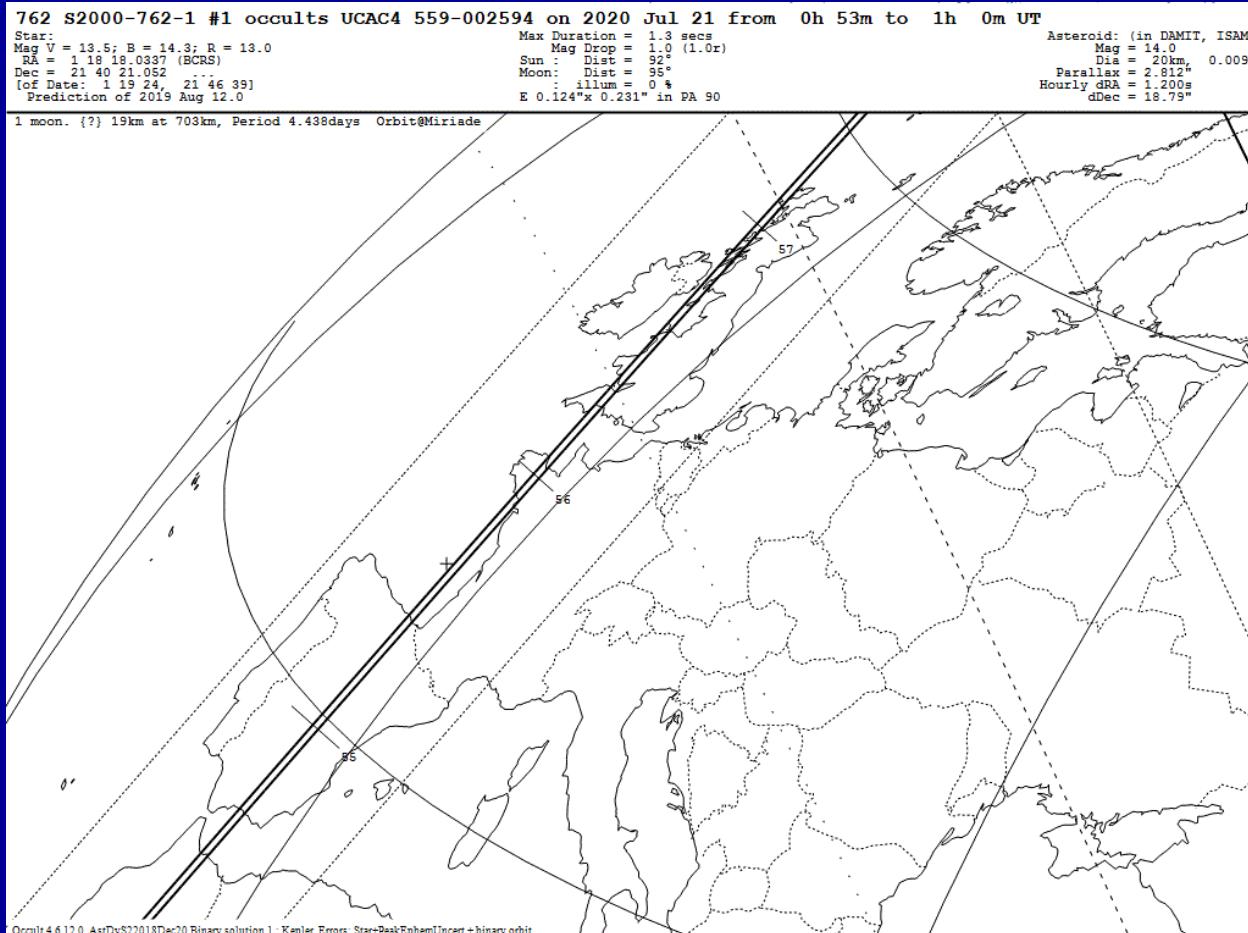
2020 Jun 23 (762) S2000-762-1 UCAC4 540-001842 (13.5 mag) Dur: 0.8 s Drop: 1.1 mag



2020 Jul 21 (762) Pulcova UCAC4 559-002594 (13.5 mag) Dur: 8.8 s Drop: 1.0 mag



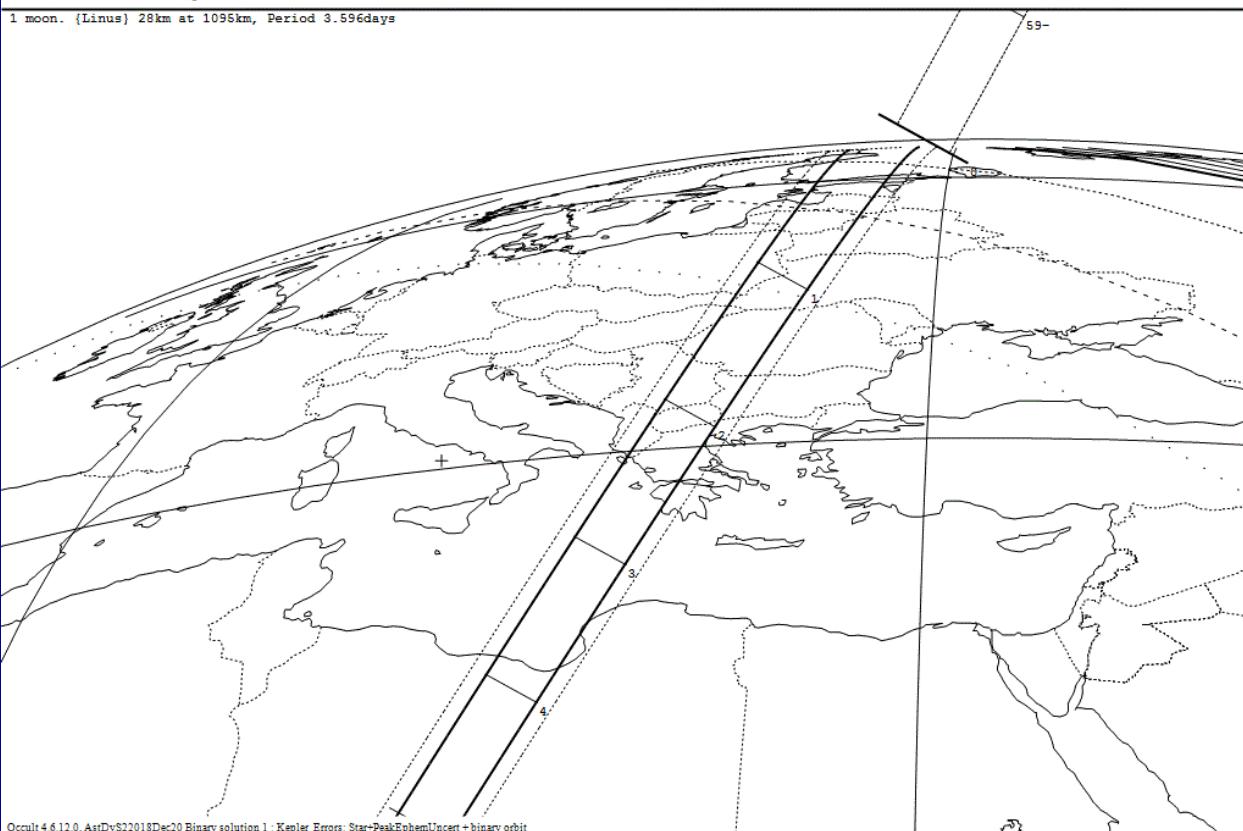
2020 Jul 21 (762) S2000-762-1 UCAC4 559-002594 (13.5 mag) Dur: 1.3 s Drop: 1.0 mag



2020 Aug 09 (22) Kalliope UCAC4 348-000181 (13.3 mag) Dur: 23.0 s Drop: 0.13 mag

Star:	Max Duration = 23.0 secs	Asteroid: (in DAMIT, ISAM)
Mag V = 13.3; B = 14.5; R = 12.6	Mag Drop = 0.13 (0.15r)	Mag = 11.0
RA = 00 09 21.1875 (BCRS)	Sun : Dist = 139°	Dia = 169km, 0.116"
Dec = -20 24 55.947	Moon : Dist = 28°	Parallax = 0.389"
[of Date: 0 10 24, -20° 17' 58"]	illum = 74 %	Hourly dRA = 0.0244s
Prediction of 2019 Aug 12.0	E 0.031" x 0.031" in PA 90	dDec = -15.96"

1 moon. (Linus) 28km at 1095km, Period 3.596days



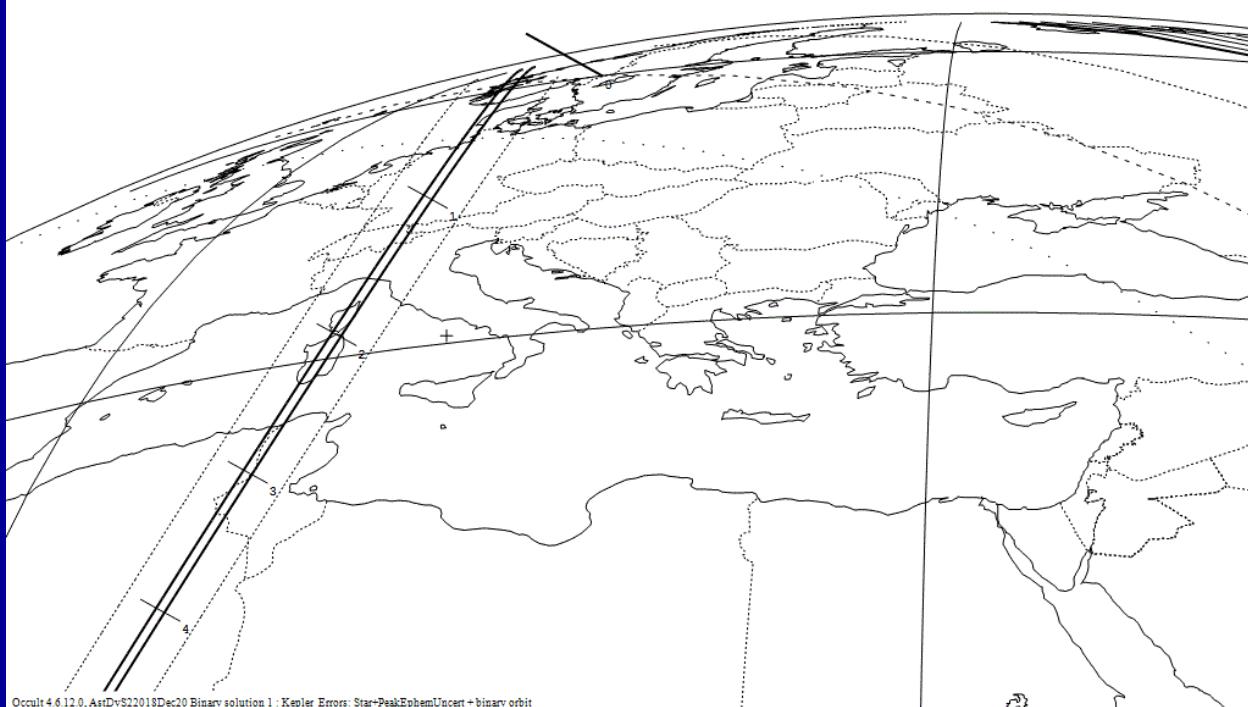
Oscult 4.6.12.0, AstDyS2018 Dec20 Binary solution 1 : Kepler Errors: Star+PeakEphemUncert + binary orbit

2020 Aug 09 (22) Linus UCAC4 348-000181 (13.3 mag) Dur: 3.8 s Drop: 0.13 mag

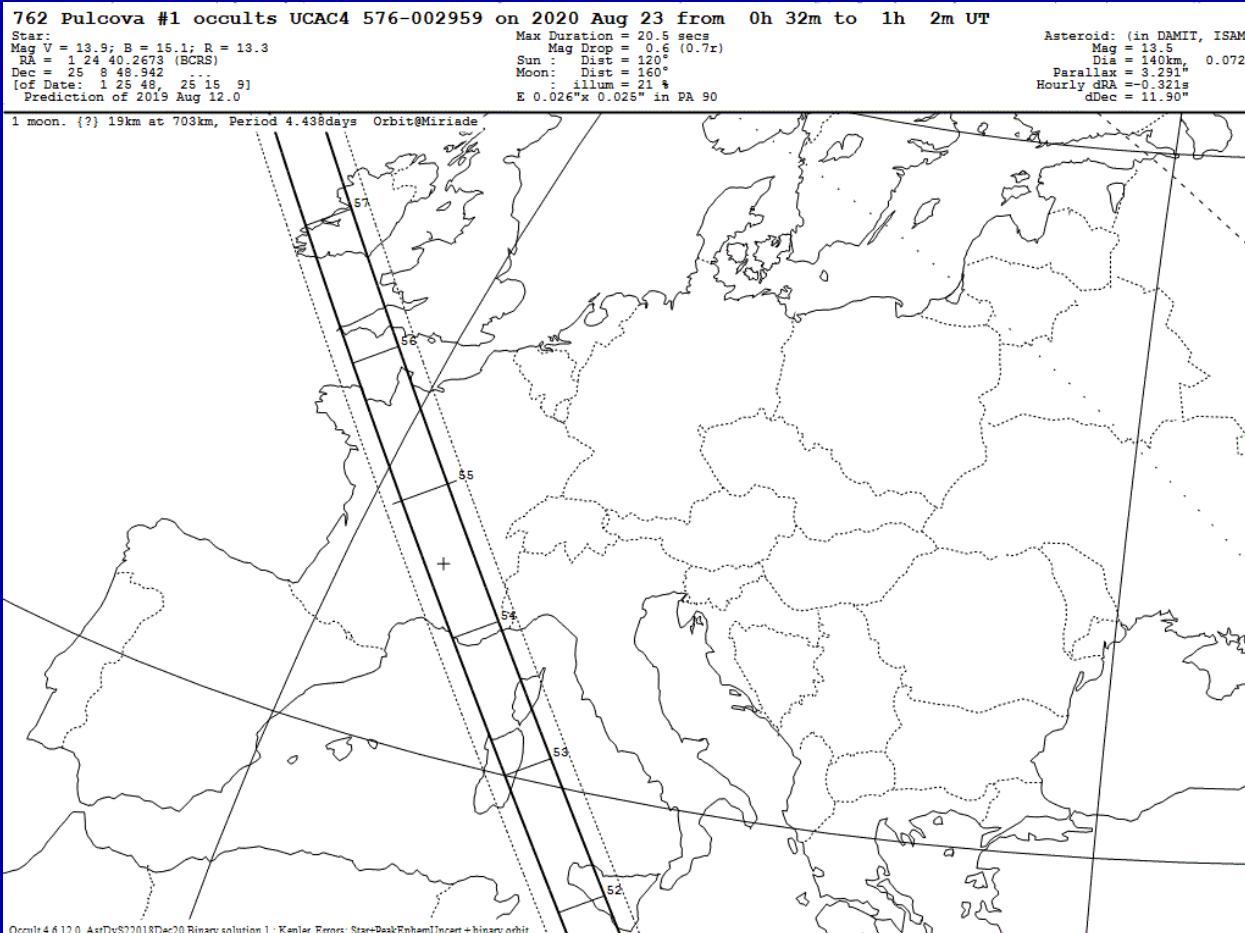
22 Linus #1 occults UCAC4 348-000181 on 2020 Aug 9 from 1h 1m to 1h 24m UT	Asteroid: (in DAMIT, ISAM)
Star:	Mag = 11.0
Mag V = 13.3; B = 14.5; R = 12.6	Dia = 28km, 0.019"
RA = 00 09 21.1875 (BCRS)	Paral. = 4.389"
Dec = -20 24 55.947	Hourly dRA = -0.0244"
[of Date: 0 10 24, -20°17'58"]	dDec = -15.96"
Prediction of 2019 Aug 12.0	

1 moon. (Linus) 28km at 1095km, Period 3.596days

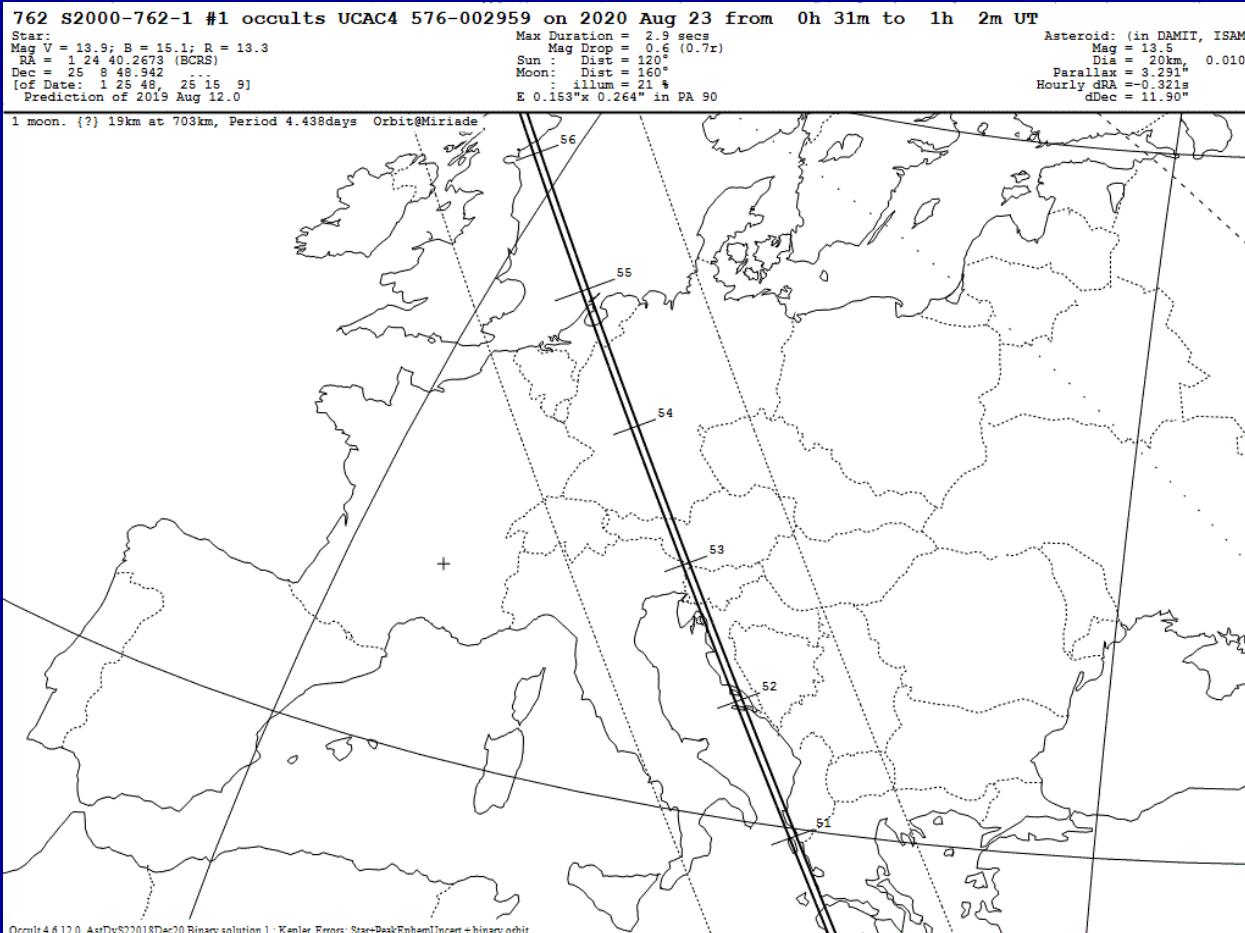
59-



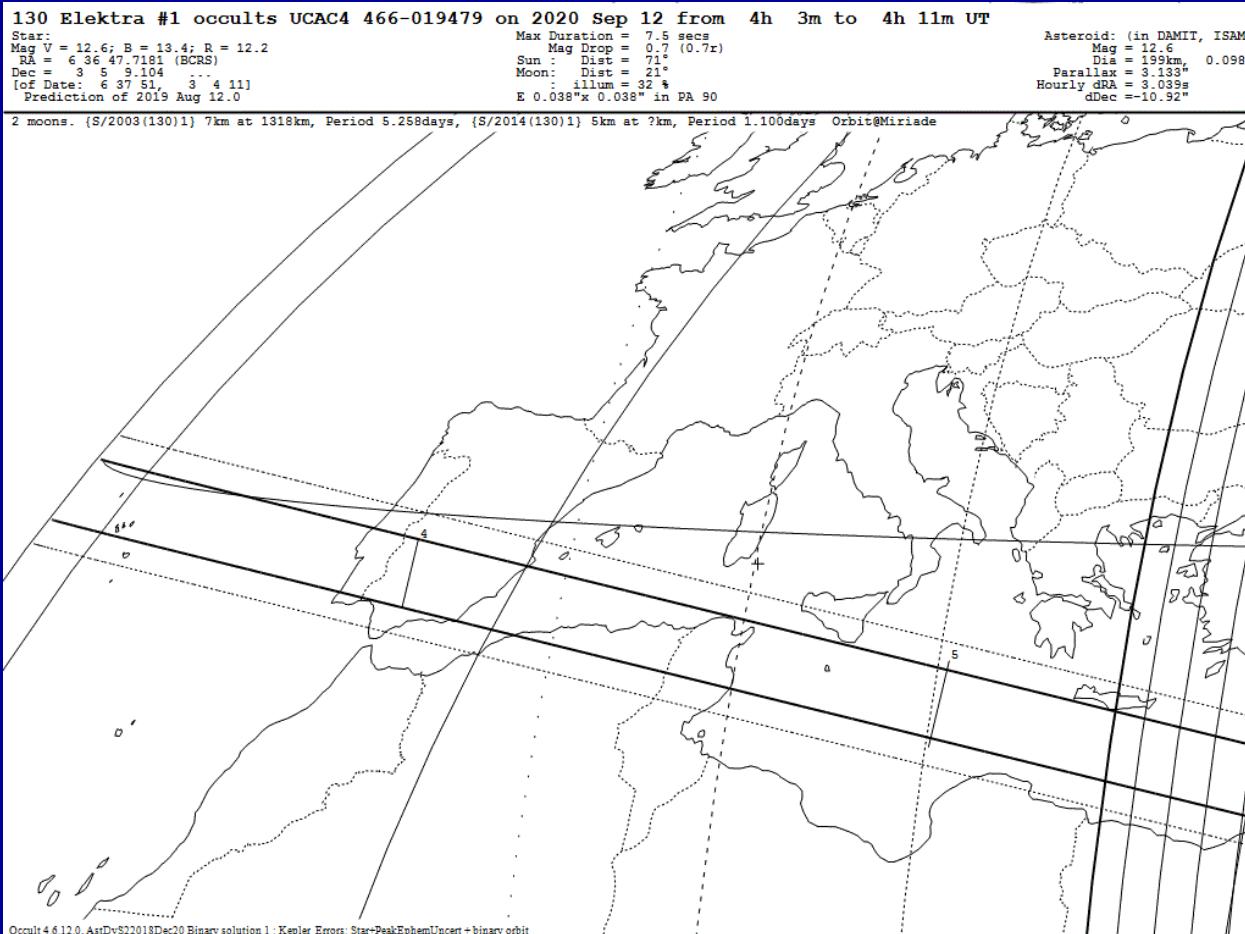
2020 Aug 23 (762) Pulcova UCAC4 576-002959 (13.9 mag) Dur: 20.5 s Drop: 0.6 mag



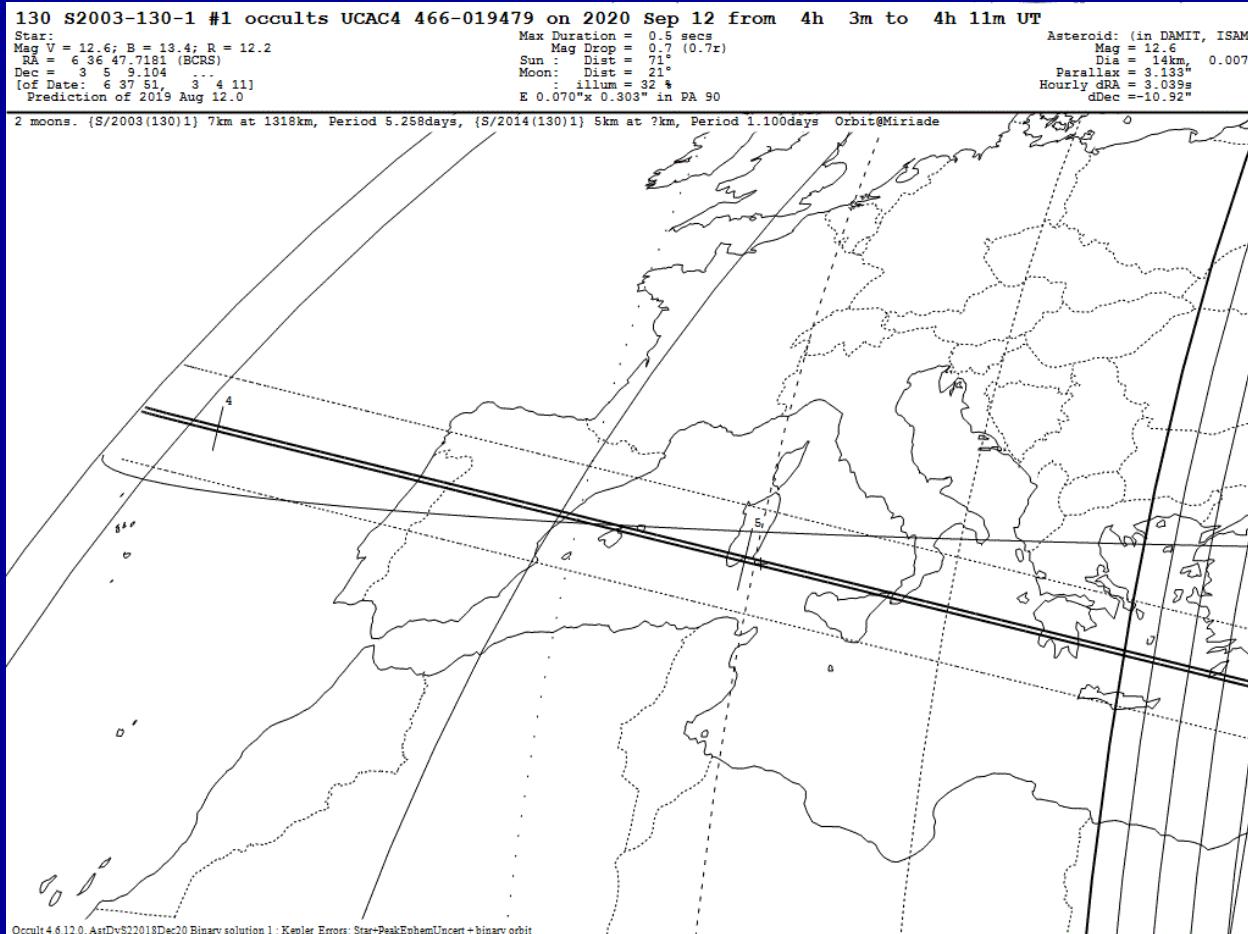
2020 Aug 23 (762) S2000-762-1 UCAC4 576-002959 (13.9 mag) Dur: 2.9 s Drop: 0.6 mag



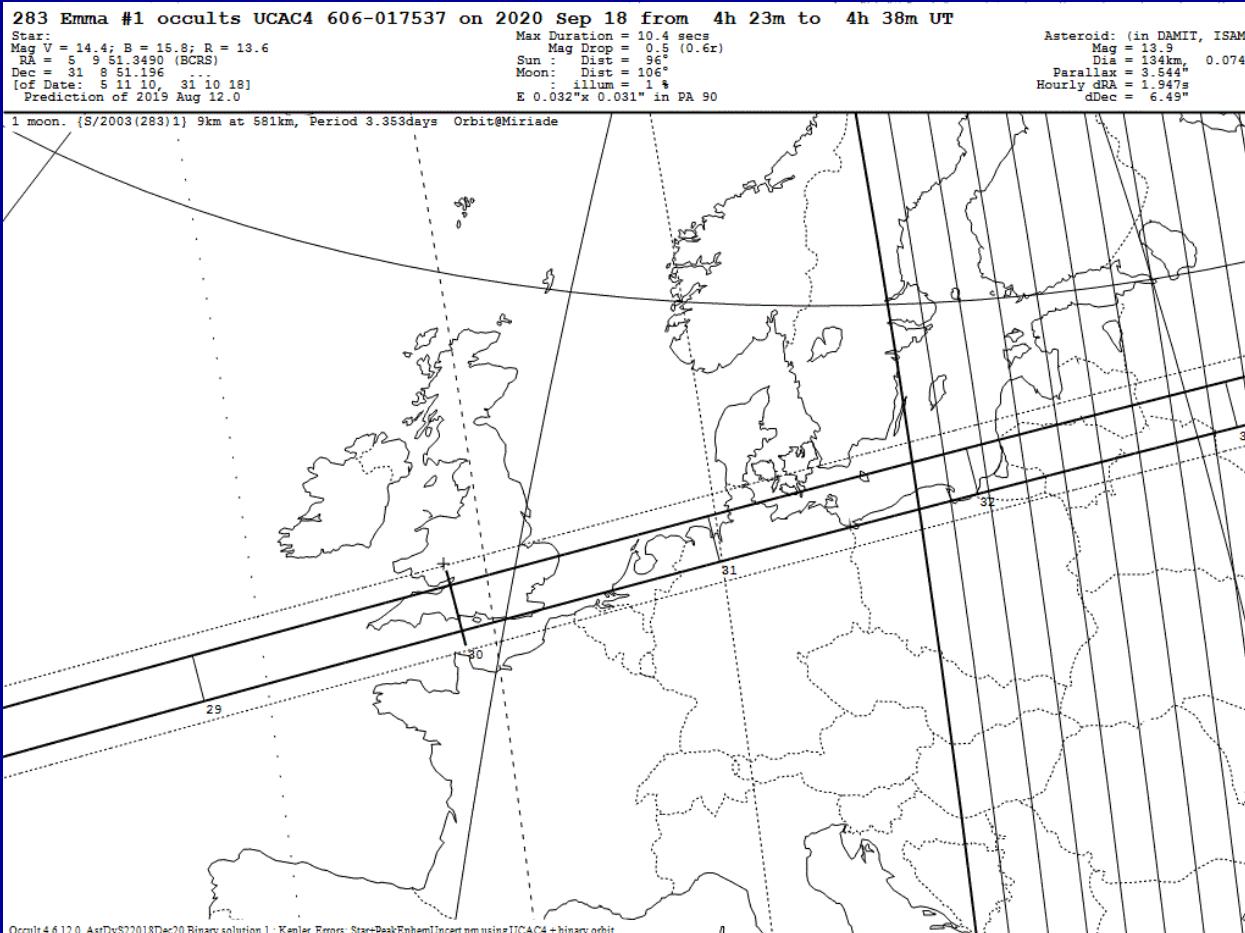
2020 Sep 12 (130) Elektra UCAC4 466-019479 (12.6 mag) Dur: 7.5 s Drop: 0.7 mag



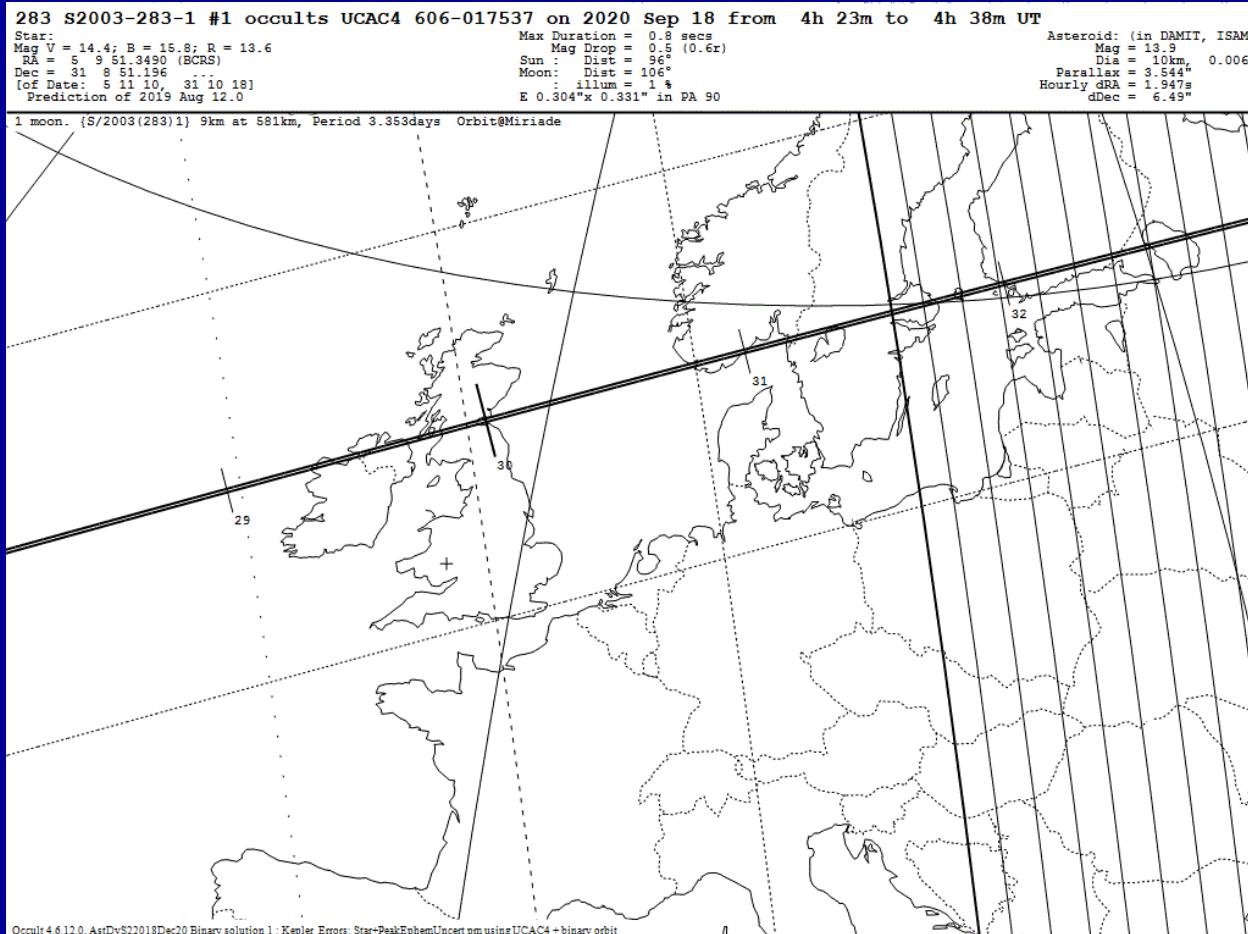
2020 Sep 12 (130) S2003-130-1 UCAC4 466-019479 (12.6 mag) Dur: 0.5 s Drop: 0.7 mag



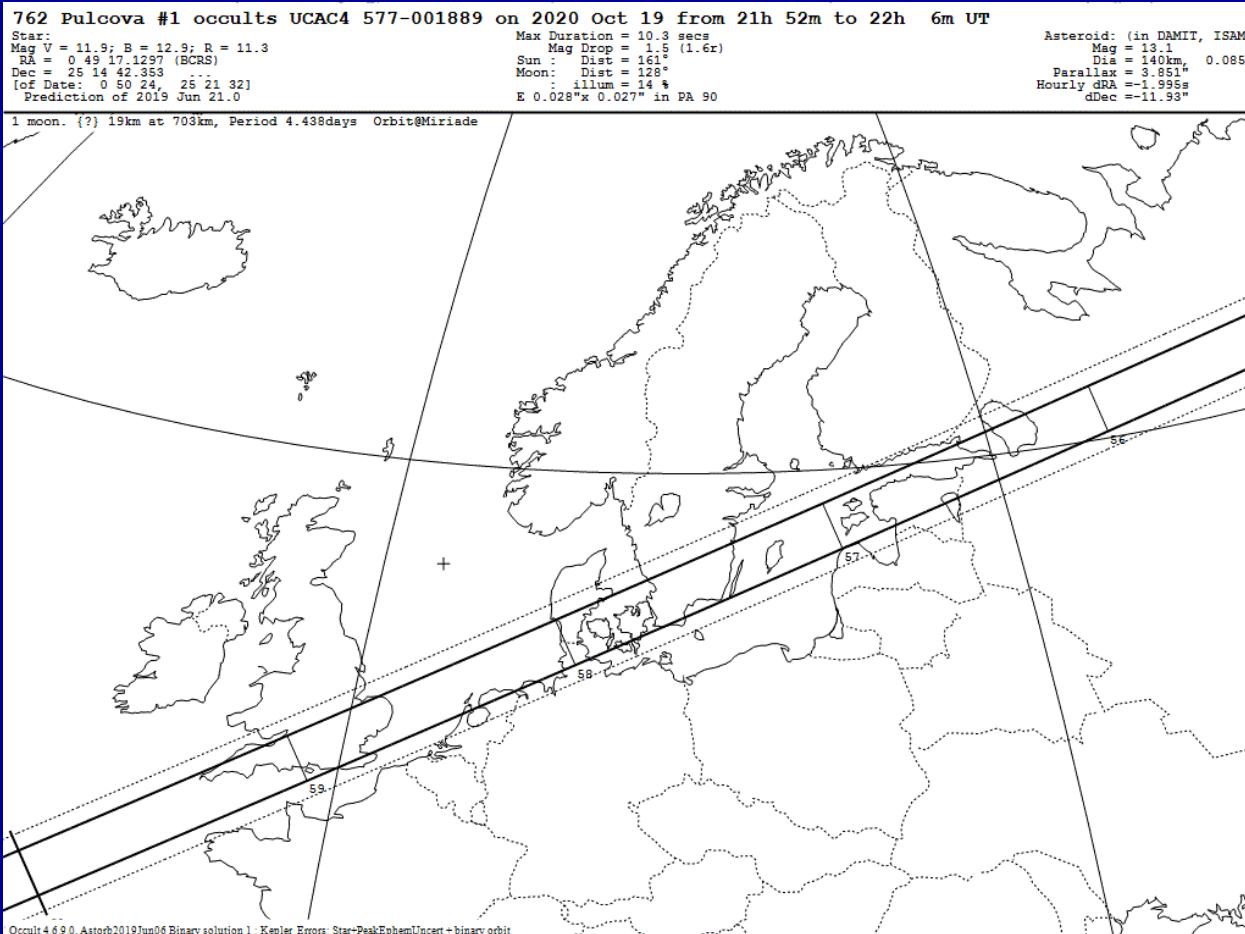
2020 Sep 18 (283) Emma UCAC4 606-017537 (14.4 mag) Dur: 10.4 s Drop: 0.5 mag



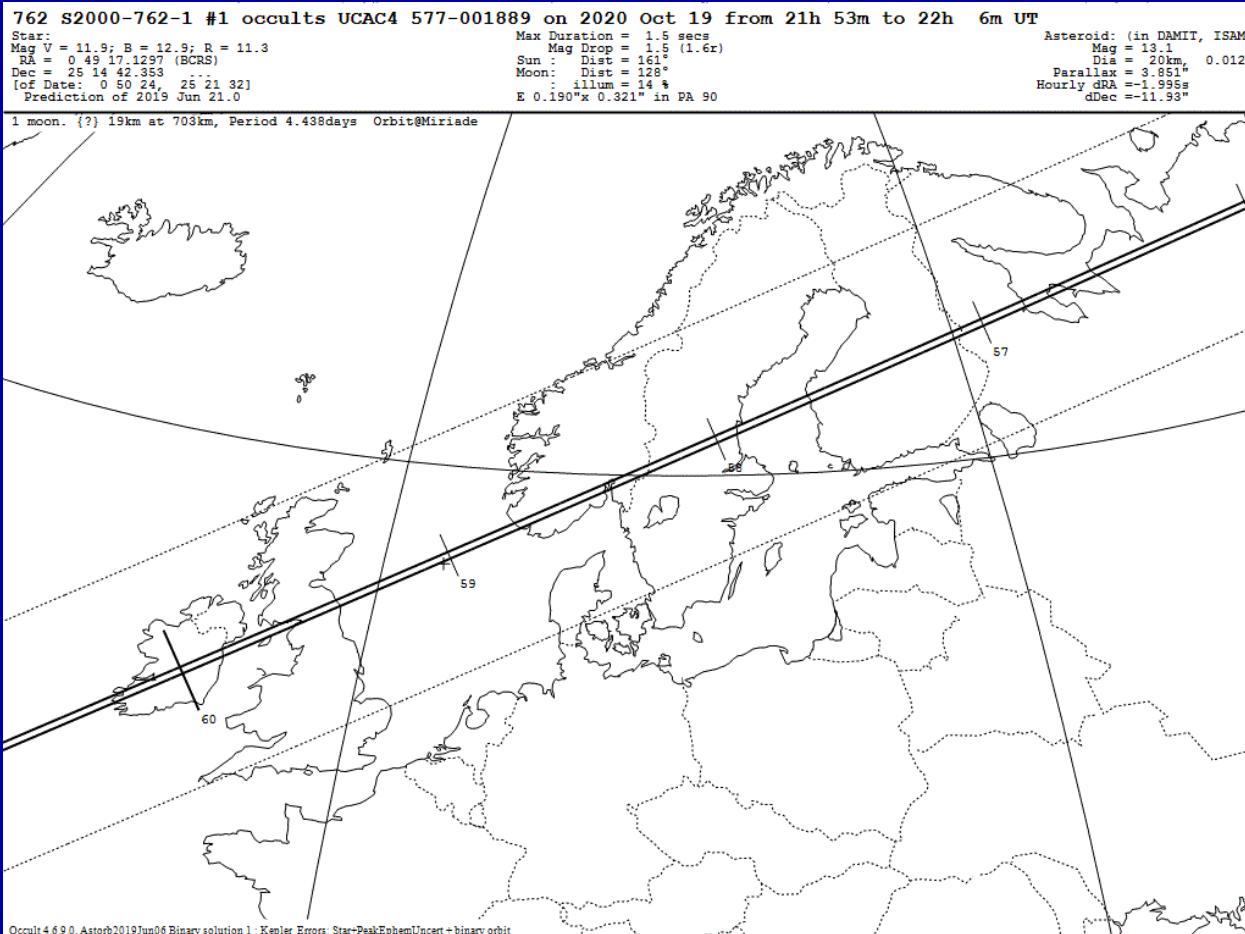
2020 Sep 18 (283) Emma UCAC4 606-017537 (14.4 mag) Dur: 0.8 s Drop: 0.5 mag



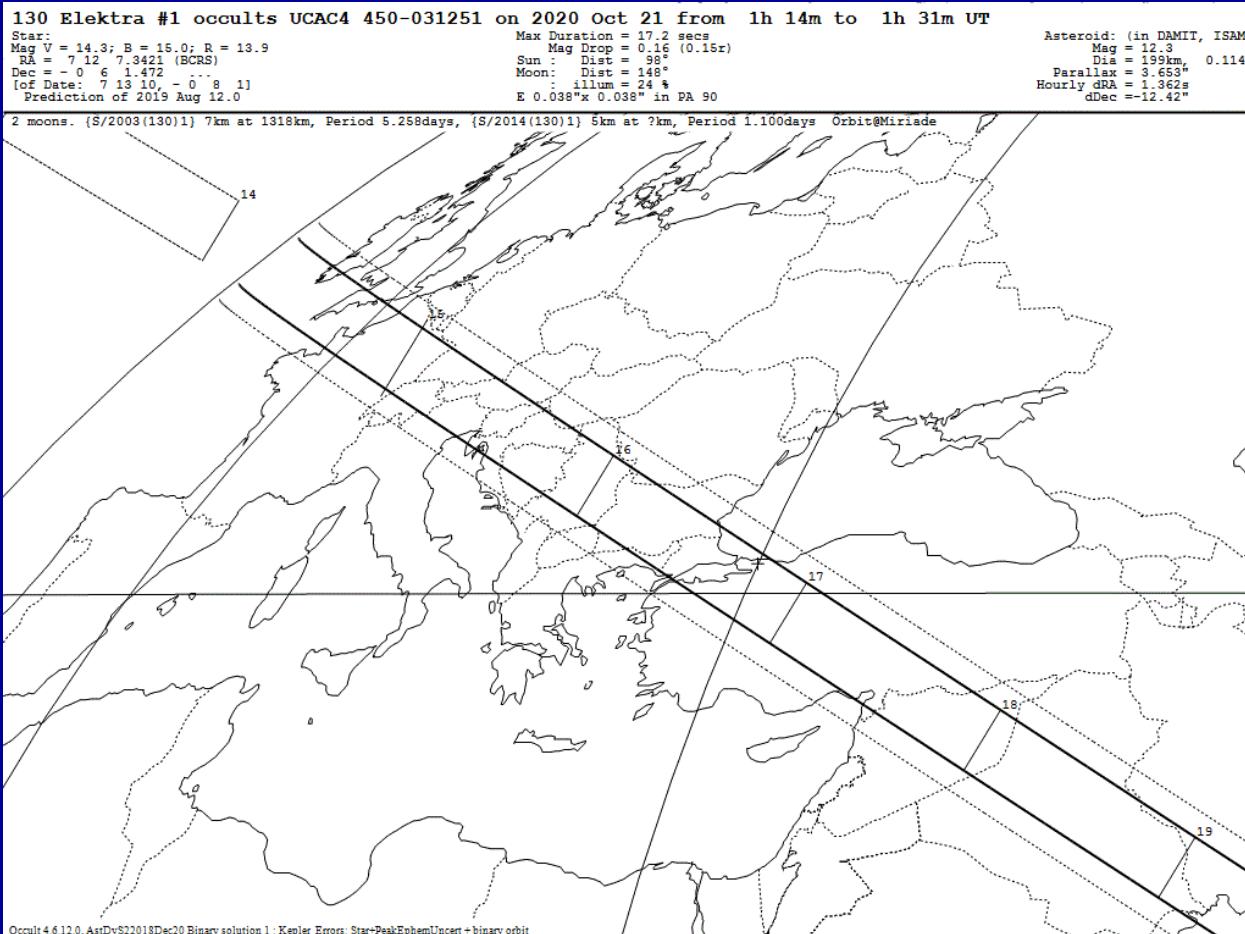
2020 Oct 19 (762) Pulcova UCAC4 577-001889 (11.9 mag) Dur: 10.3 s Drop: 1.5 mag



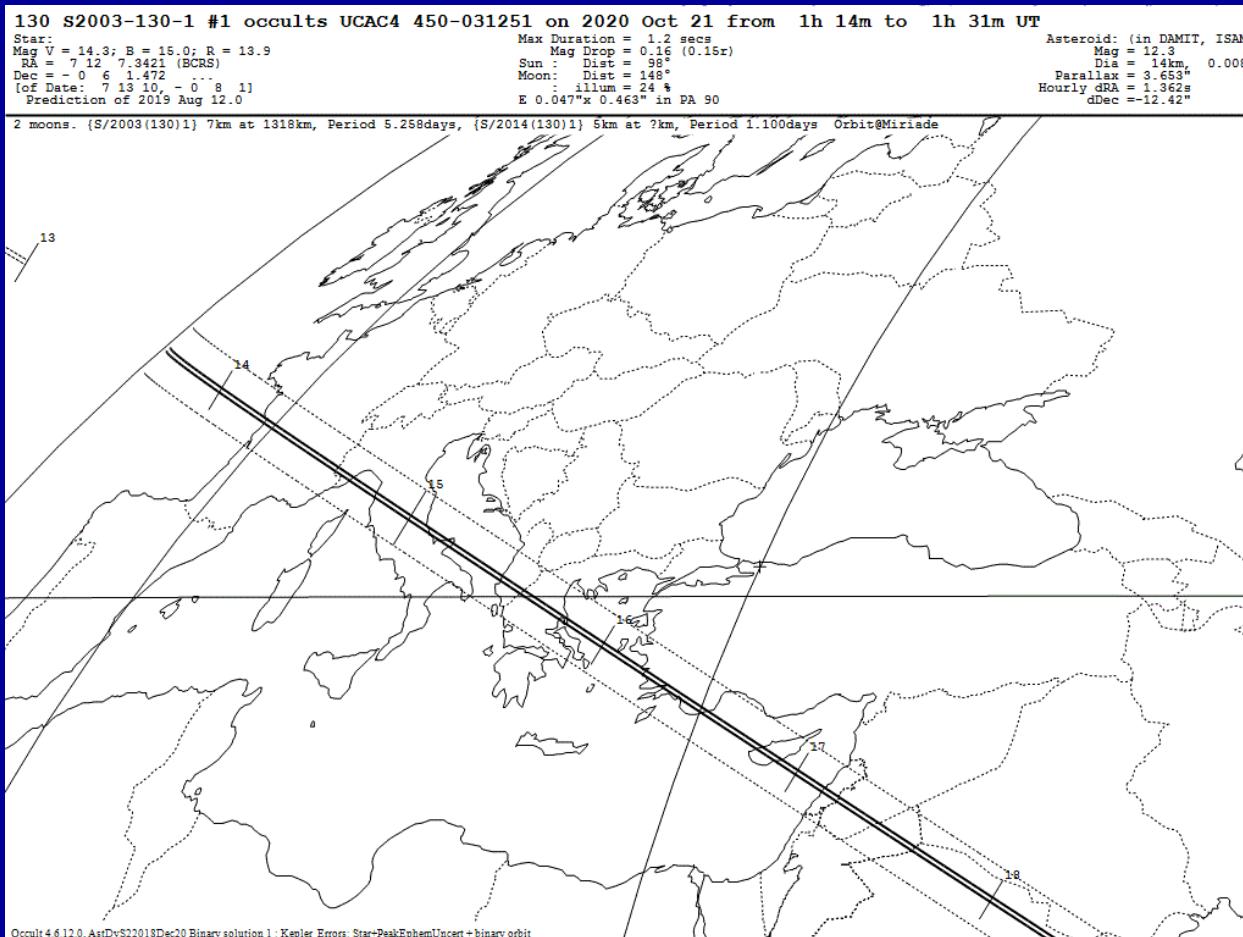
2020 Oct 19 (762) S2000-762-1 UCAC4 577-001889 (11.9 mag) Dur: 1.5 s Drop: 1.5 mag



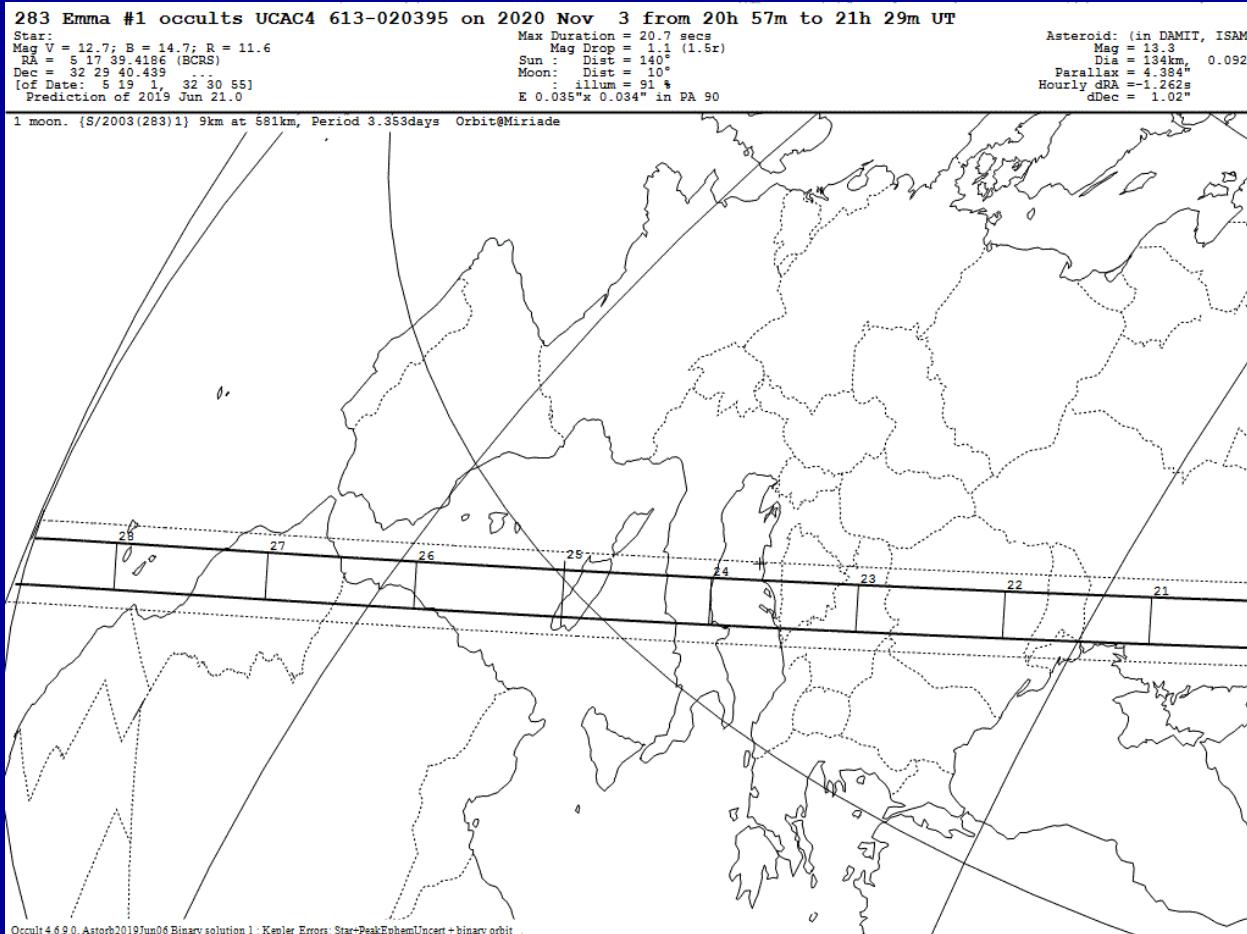
2020 Oct 21 (130) Elektra UCAC4 450-031251 (14.3 mag) Dur: 17.2 s Drop: 0.16 mag



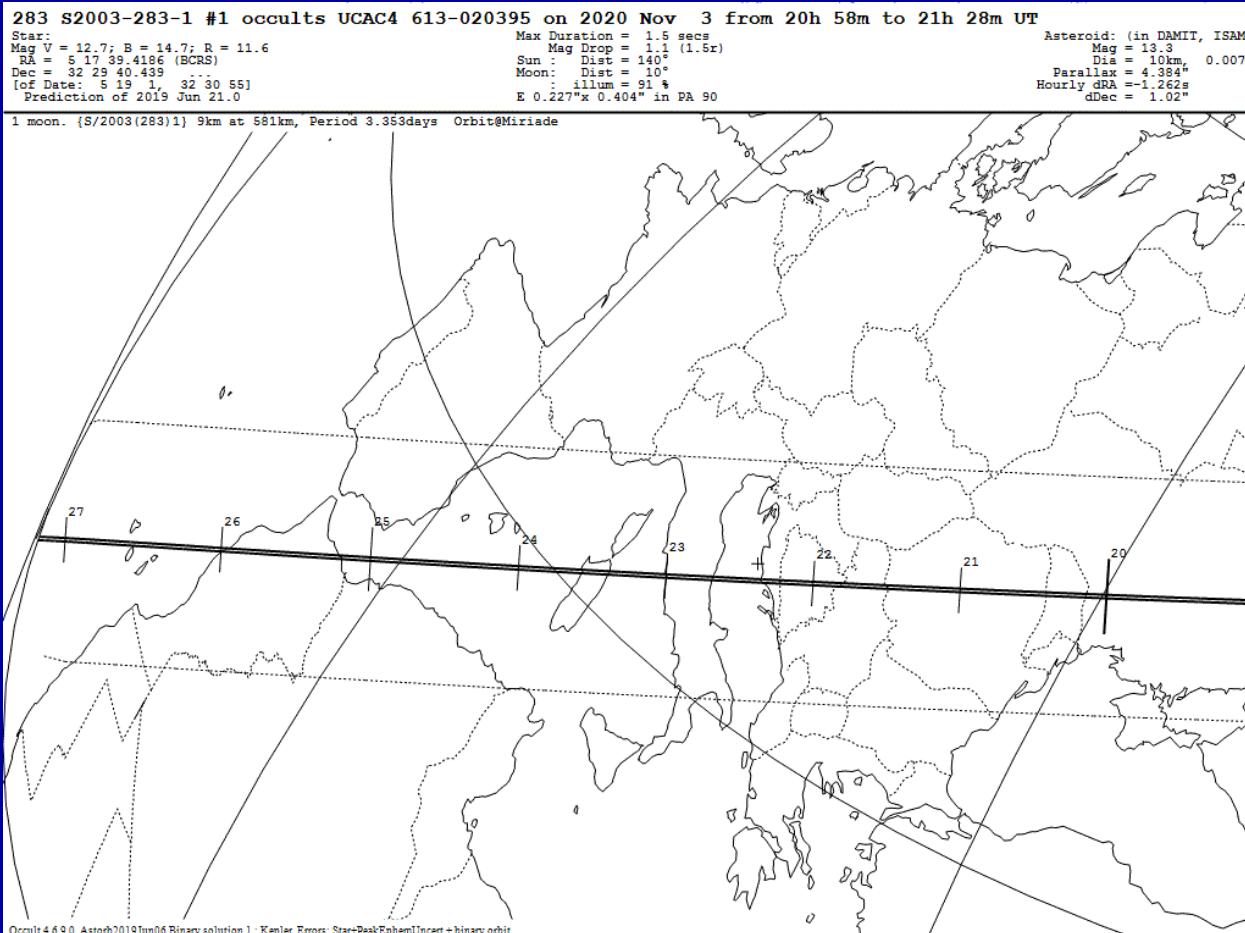
2020 Oct 21 (130) S2000-130-1 UCAC4 450-031251 (14.3 mag) Dur: 1.2 s Drop: 0.16 mag



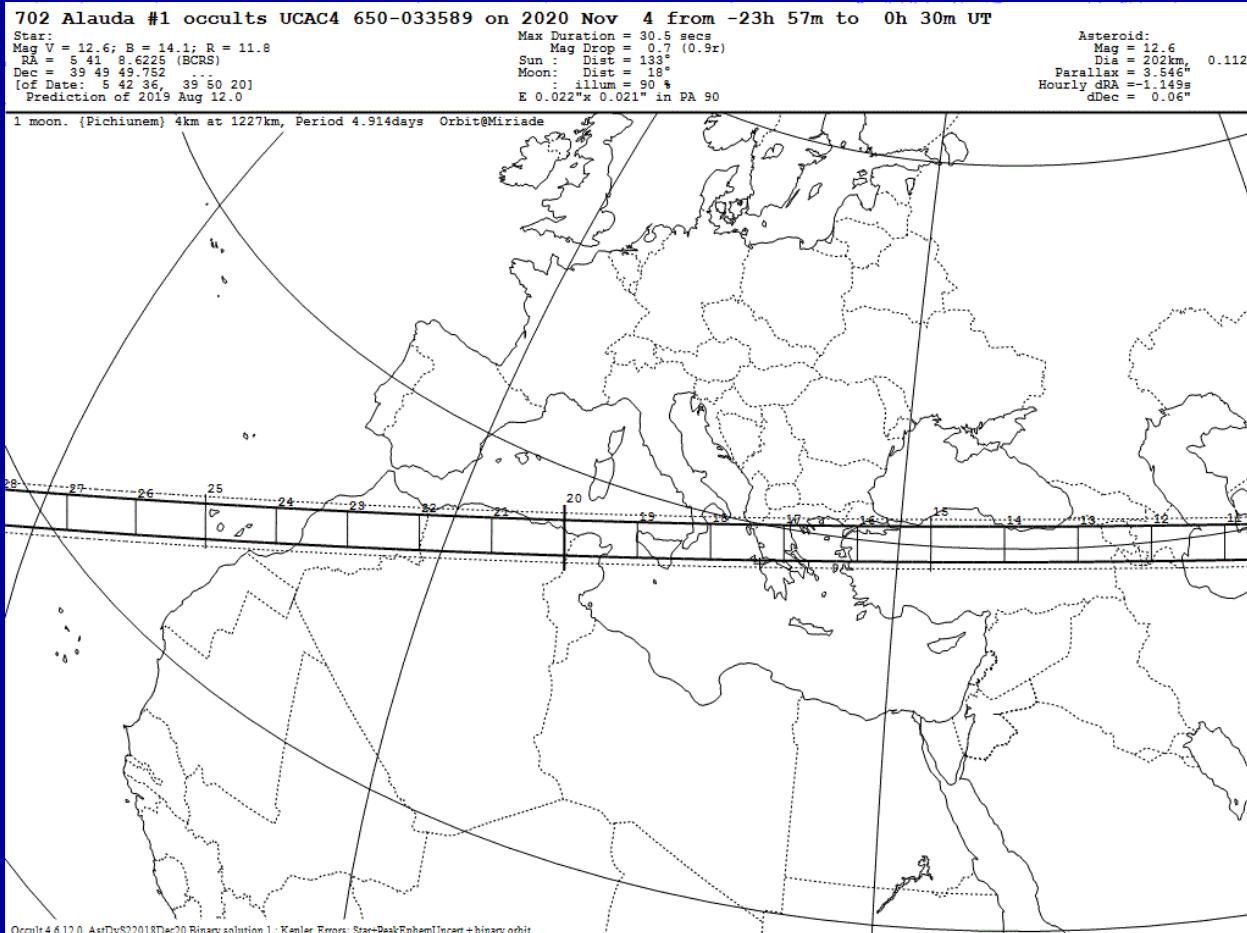
2020 Nov 03 (283) Emma UCAC4 613-020395 (12.7 mag) Dur: 20.7 s Drop: 1.1 mag



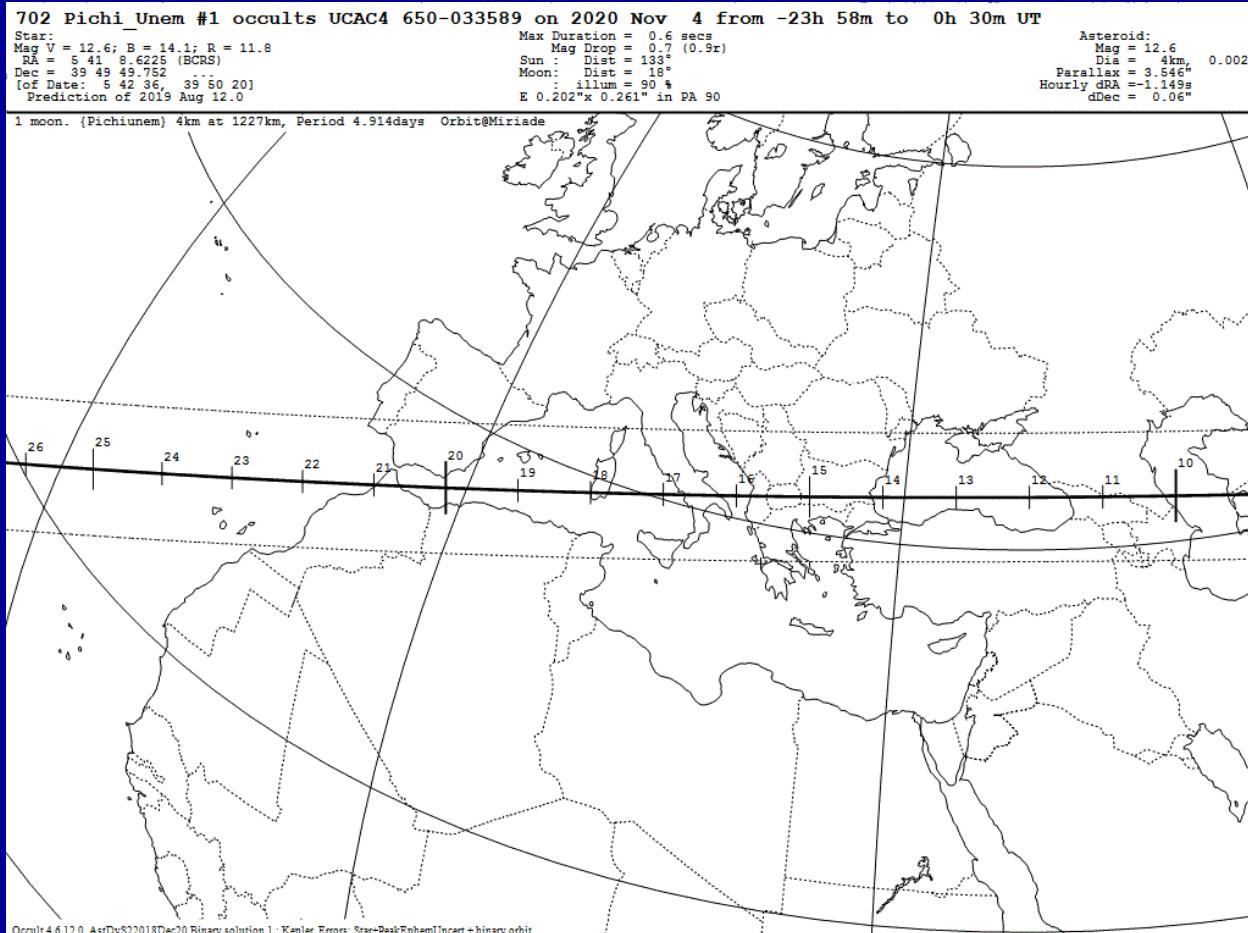
2020 Nov 03 (283) S2000-283-1 UCAC4 613-020395 (12.7 mag) Dur: 1.5 s Drop: 1.1 mag



2020 Nov 04 (702) Alauda UCAC4 650-033589 (12.6 mag) Dur: 30.5 s Drop: 0.7 mag

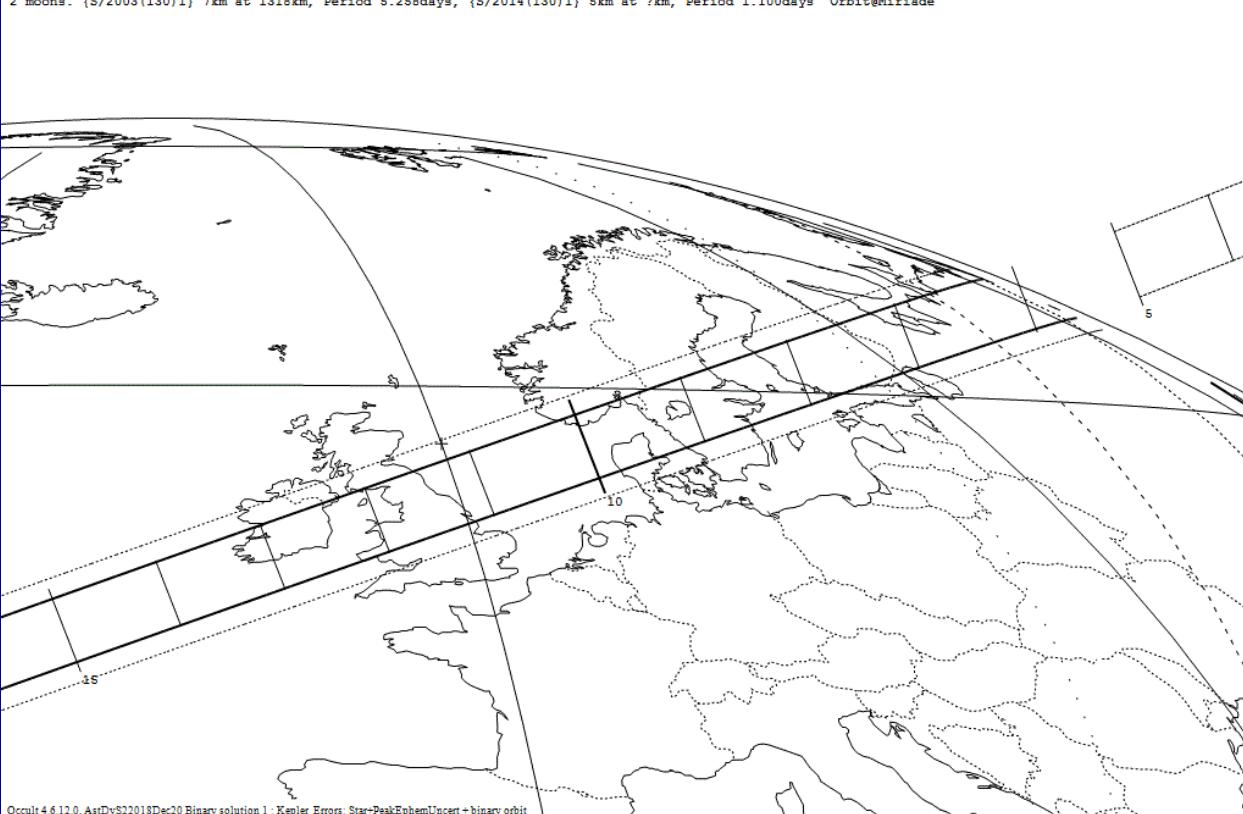


2020 Nov 04 (702) Pichi_Unem UCAC4 650-033589 (12.6 mag) Dur: 0.6 s Drop: 0.7 mag



2020 Nov 24 (130) Elektra UCAC4 440-032094 (14.2 mag) Dur: 41.8 s Drop: 0.13 mag

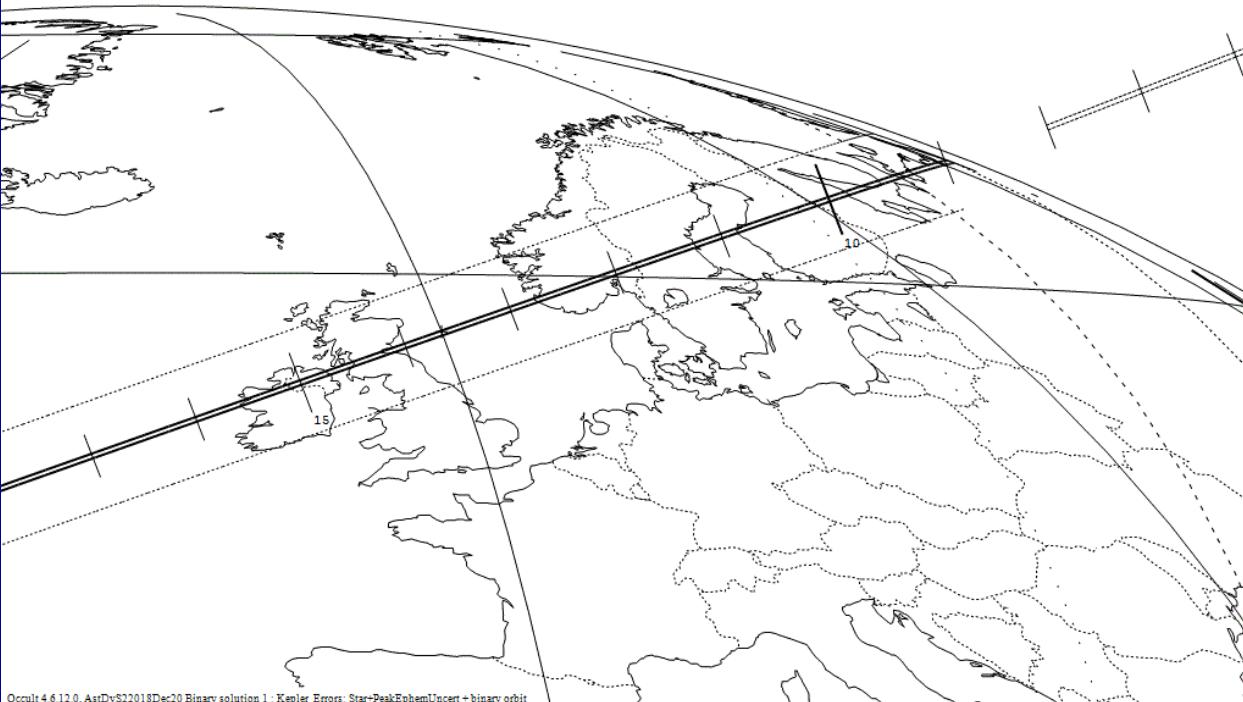
130 Elektra #1 occults UCAC4 440-032094 on 2020 Nov 24 from 4h 5m to 4h 38m UT	Asteroid: (in DAMIT, ISAM)
Star:	Mag = 11.9
Mag V = 14.2; B = 15.4; R = 13.5	Dia = 199km 0.132"
RA = 7.16 55.2105 (BCRS)	Paral. = 4.26"
Dec = -2 11.59.296	Hourly dRA = -0.705s
[of Date] 7 18 2 - 2 14 10	dDec = -4.11"
Prediction of 2019 Aug 12.0	
Max Duration = 41.8 secs	
Mag Drop = 0.13 (0.16r)	
Sun : Dist = 112°	
Moon : Dist = 112°	
illum = 69 %	
E 0.038°x 0.038° in PA 90	
2 moons. {S/2003(130)1} 7km at 1318km, Period 5.258days, {S/2014(130)1} 5km at ?km, Period 1.100days Orbit@Miriade	



2020 Nov 24 (130) S2003-130-1 UCAC4 440-032094 (14.2 mag) Dur: 2.9 s Drop: 0.13 mag

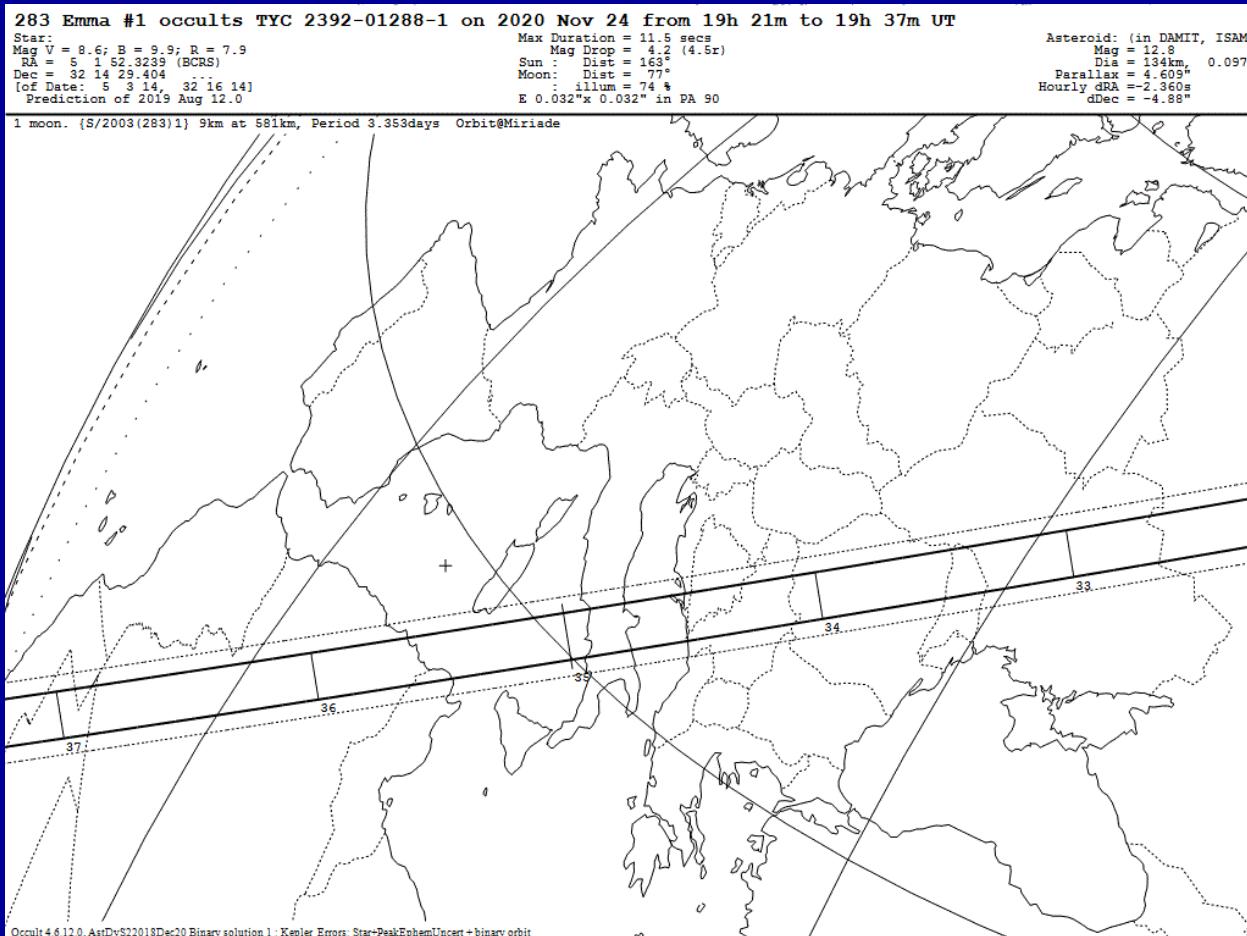
130 S2003-130-1 #1 occults UCAC4 440-032094 on 2020 Nov 24 from 4h 7m to 4h 36m UT	Asteroid: (in DAMIT, ISAM)
Star:	Mag = 11.9
Mag V = 14.2; B = 15.4; R = 13.5	Dia = 14km, 0.009"
RA = 7.16 58.2105 (BCRS)	Paral. = 4.26"
Dec = +2 11.59.296	Hourly dRA = -0.705s
[of Date] 7 18 2 - 2'14.10]	dDec = -4.11"
Prediction of 2019 Aug 12.0	
Max Duration = 2.9 secs	
Mag Drop = 0.13 (0.16r)	
Sun : Dist = 112°.	
Moon : Dist = 61°.	
: Illum = 69 %	
E 0.097°x 0.484" in PA 90	

2 moons. {S/2003(130)1} 7km at 1318km, Period 5.258days, {S/2014(130)1} 5km at ?km, Period 1.100days Orbit@Miriade

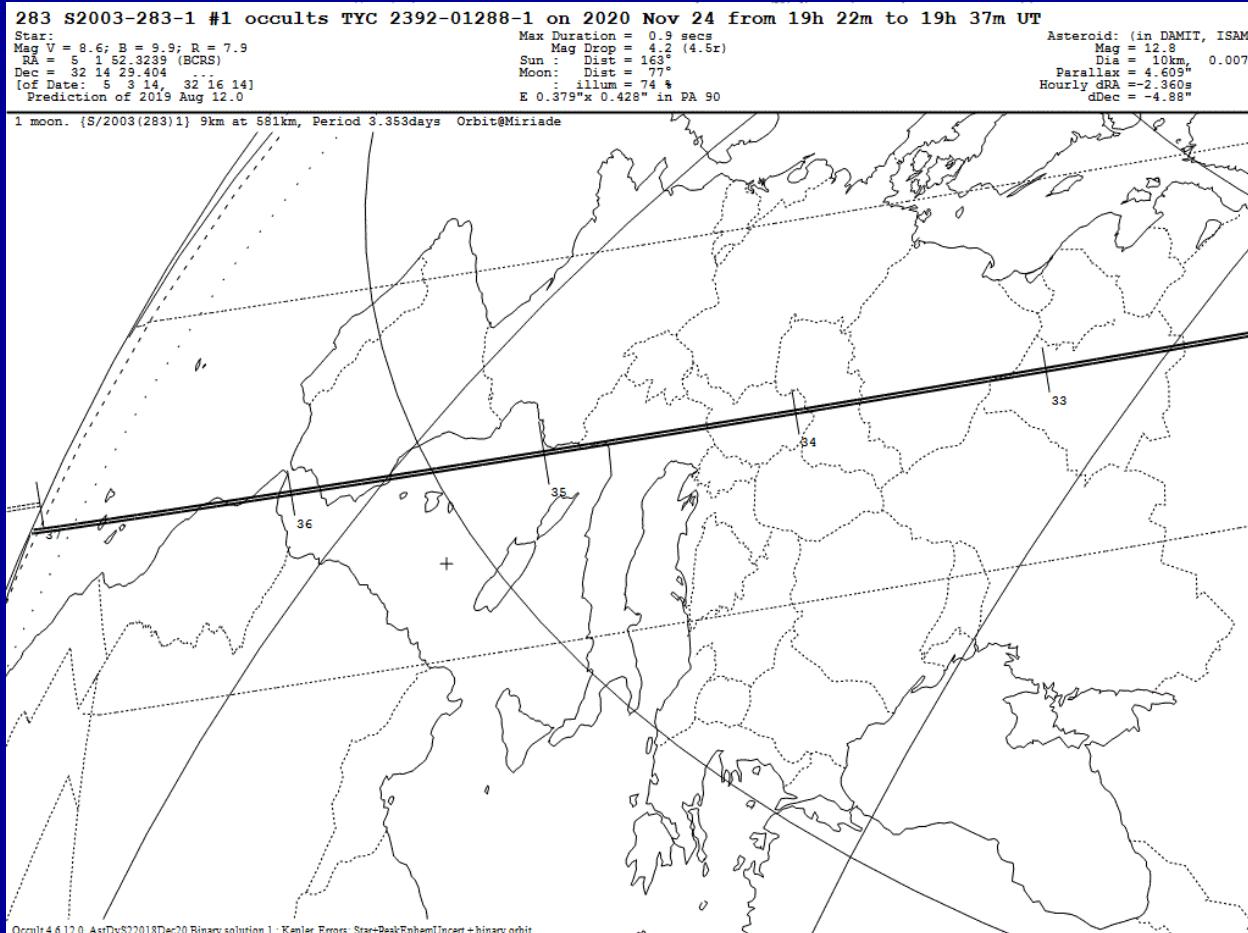


Occult 4.6.12.0, AstDyS2018 Dec20 Binary solution 1. Kepler Errors: Star+PeakEphemUncert + binary orbit

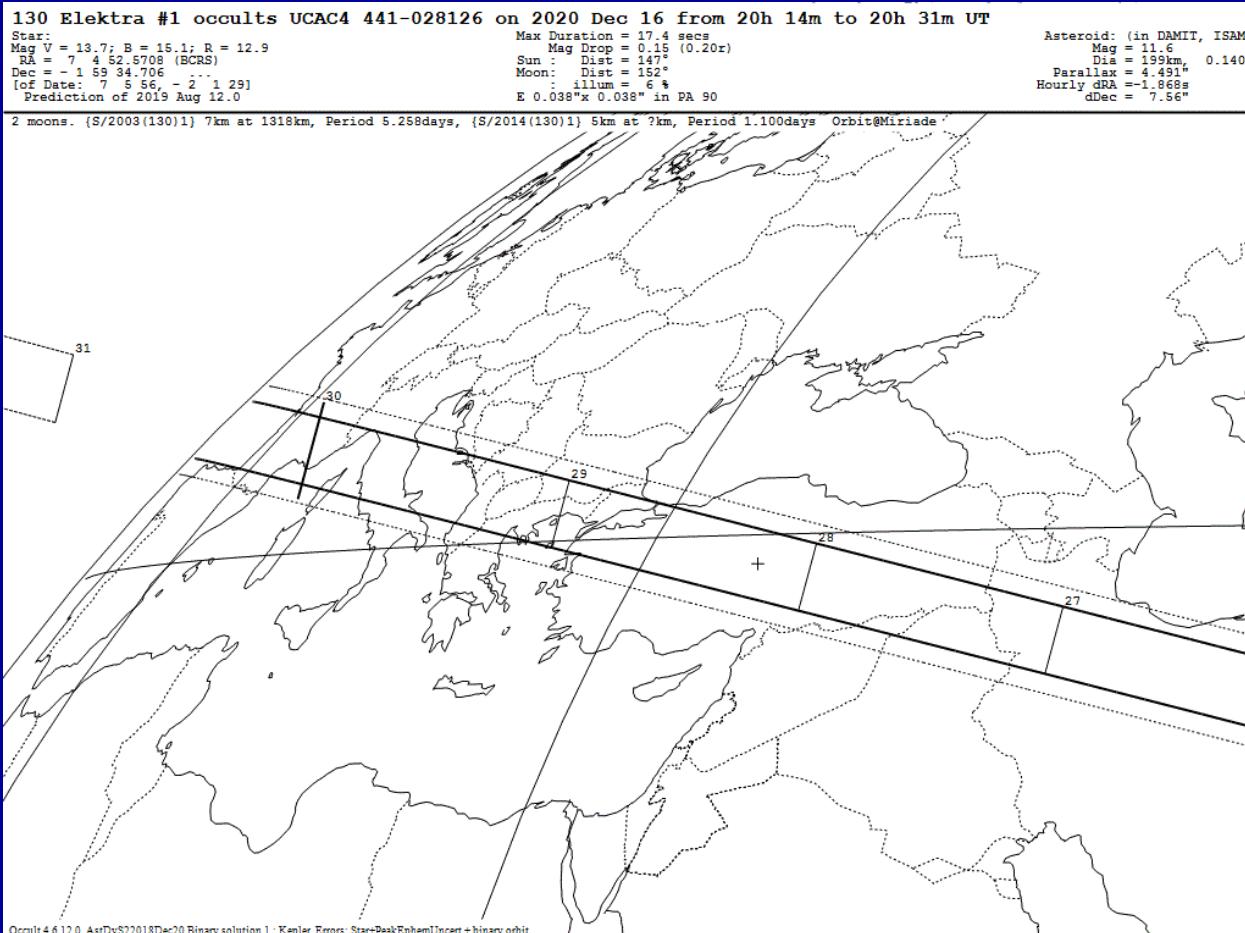
2020 Nov 24 (283) Emma TYC 2392-01288-1 (8.6 mag) Dur: 11.5 s Drop: 4.2 mag



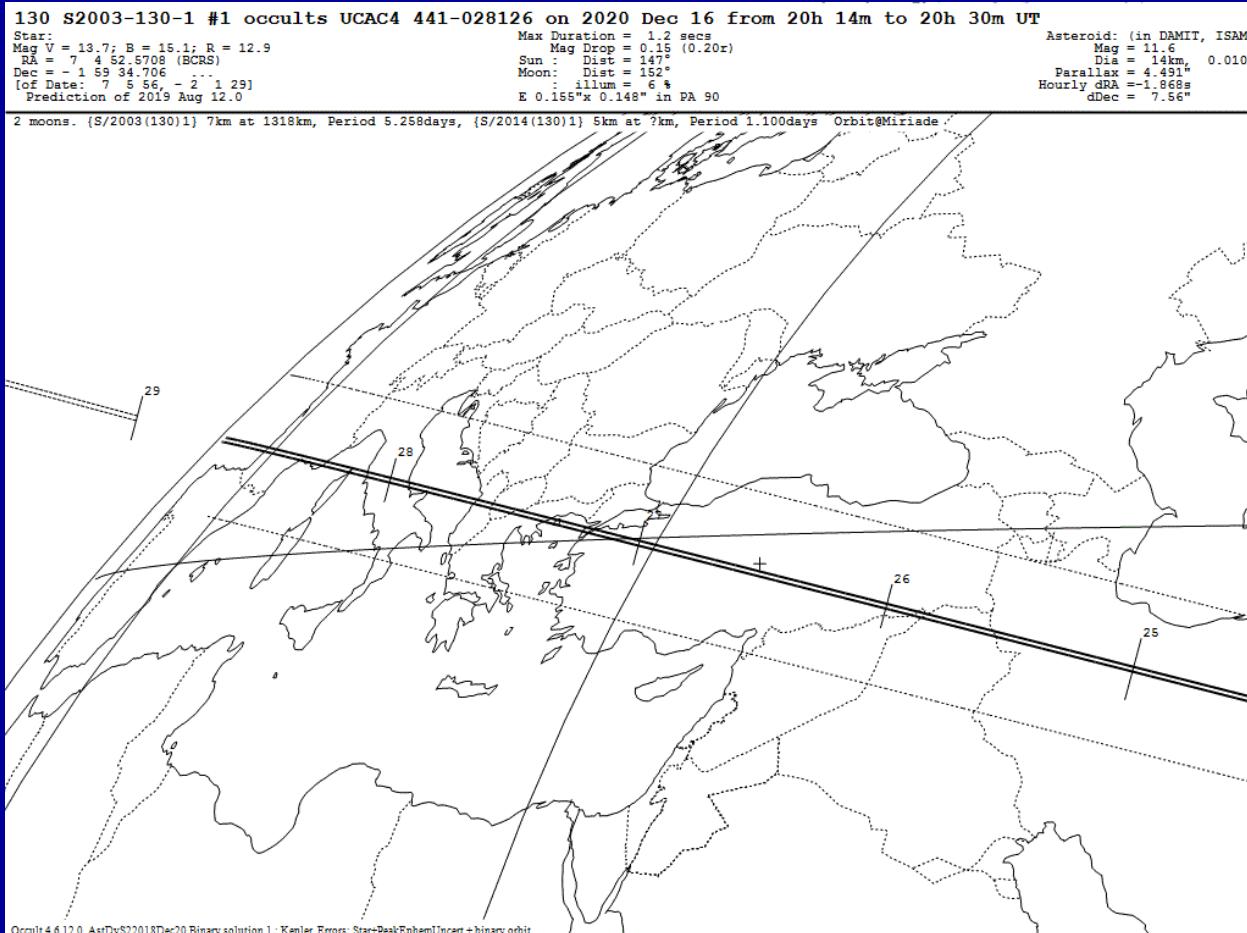
2020 Nov 24 (283) S2003-283-1 TYC 2392-01288-1 (8.6 mag) Dur: 0.9 s Drop: 4.2 mag



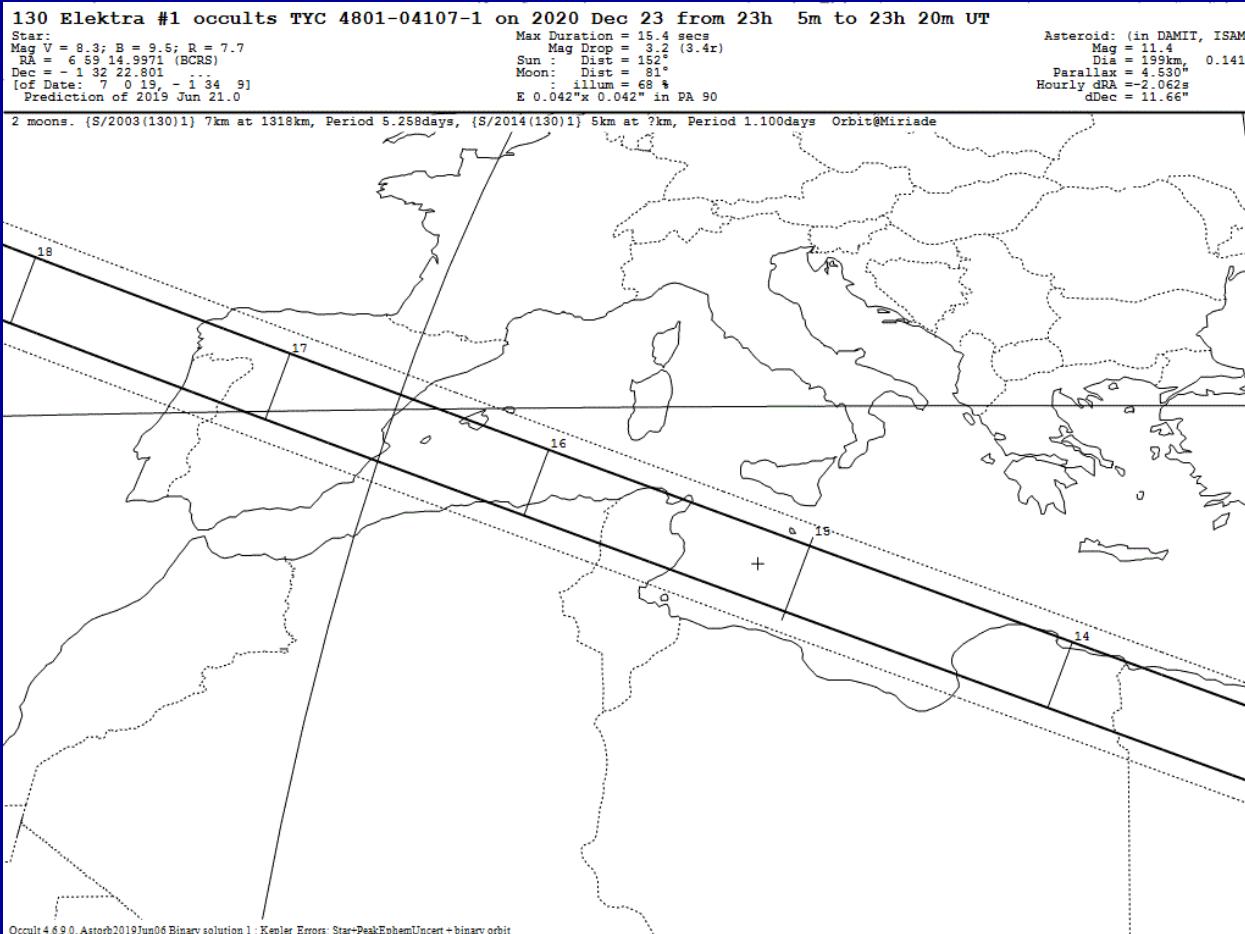
2020 Dec 16 (130) Elektra UCAC4 441-028126 (13.7 mag) Dur: 17.4 s Drop: 0.15 mag



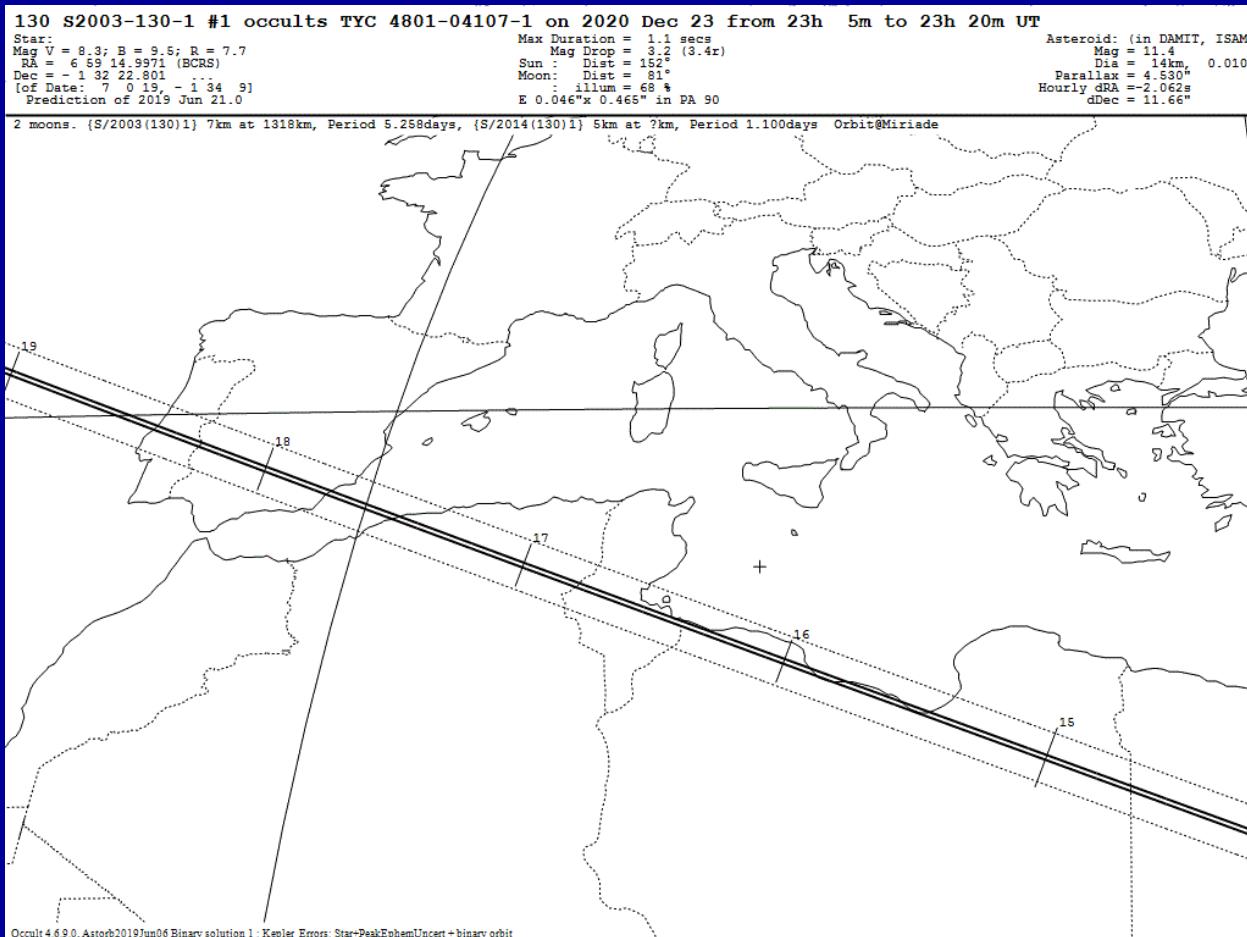
2020 Dec 16 (130) S2003-130-1 UCAC4 441-028126 (13.7 mag) Dur: 1.2 s Drop: 0.15 mag



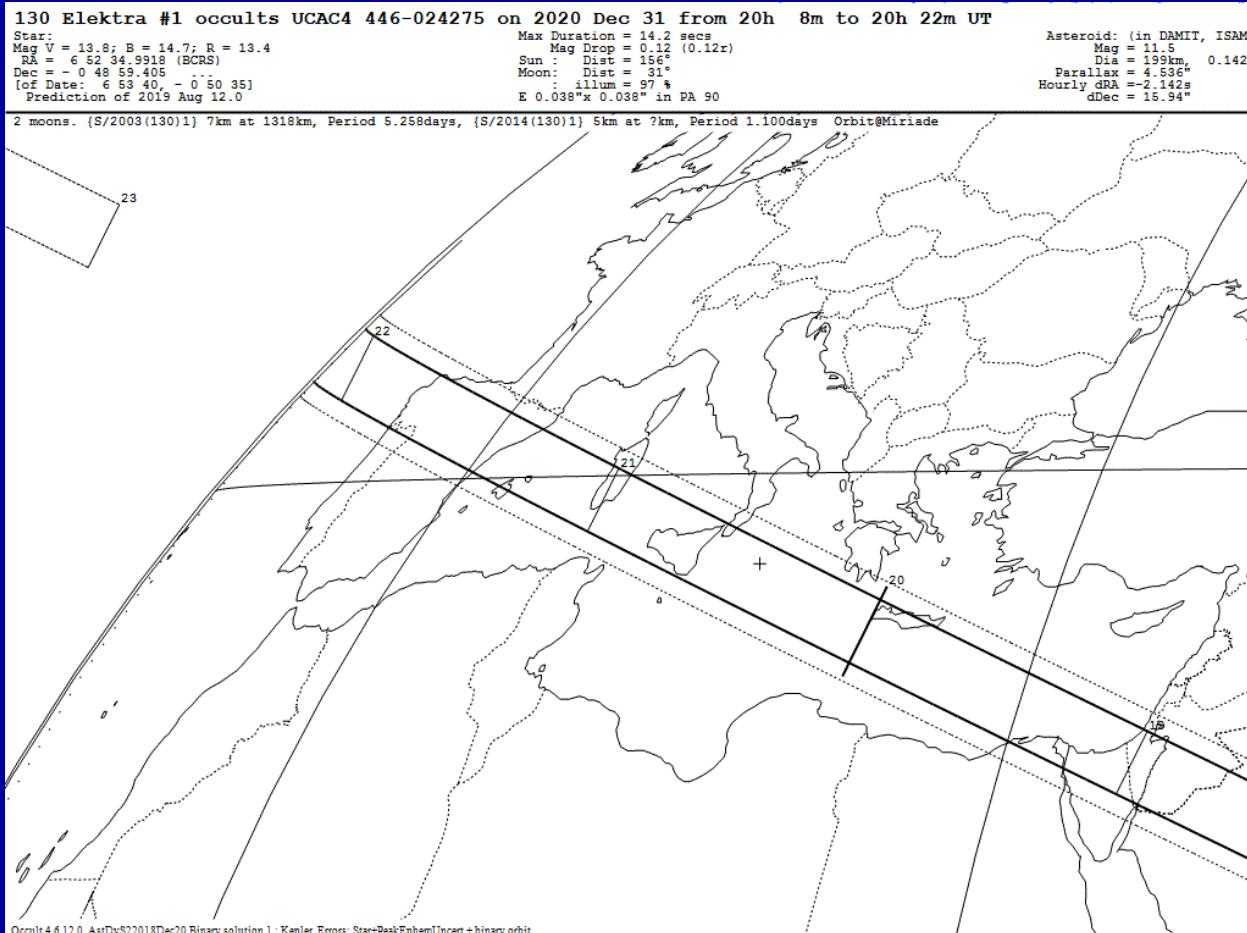
2020 Dec 23 (130) Elektra TYC 4801-04107-1 (8.3 mag) Dur: 15.4 s Drop: 3.2 mag



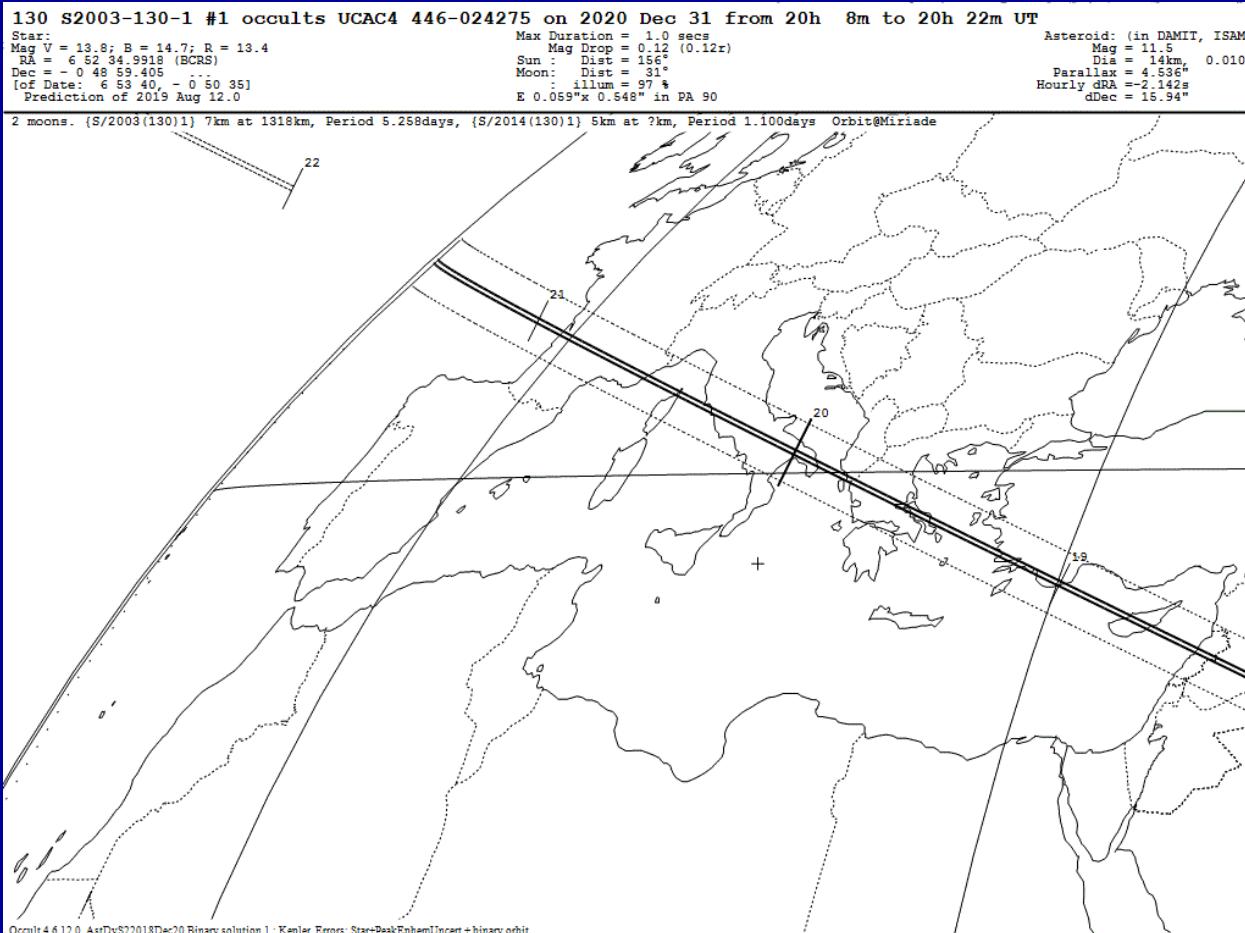
2020 Dec 23 (130) S2003-130-1 TYC 4801-04107-1 (8.3 mag) Dur: 1.1 s Drop: 3.2 mag



2020 Dec 31 (130) Elektra UCAC4 446-024275 (13.8 mag) Dur: 14.2 s Drop: 0.12 mag



2020 Dec 31 (130) S2003-130-1 UCAC4 446-024275 (13.8 mag) Dur: 1.0 s Drop: 0.12 mag



Occultations by Asteroids - Highlights for Europe in 2020

Thanks to:
Dave Herald
Steve Preston
IMCCE

IOTA/ES - Call for Observations
Highlights of Asteroid Occultations in Europe

<http://call4obs.iota-es.de>