

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2048-11-25T10:13:17.290
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3816710940855585280
 2Mass ID (if available) : 11055056+0637236

ICRS Star Coord at Epoch: 11h 05m 50.50313s +06:37:23.10854s

RUWE (>1.4 is poor) : 0.98
 K magnitude : 12.532
 G magnitude : 14.265
 RP magnitude : 13.697
 BP magnitude : 14.663
 DUPflag : 0
 Distance (au) : 18.467
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 13.01
 Sun-Target sep (deg) : 78.16
 Sun-Moon sep (deg) : 48.26
 B (ring opening deg) : 2.55
 PA of pole (deg) : 104.99

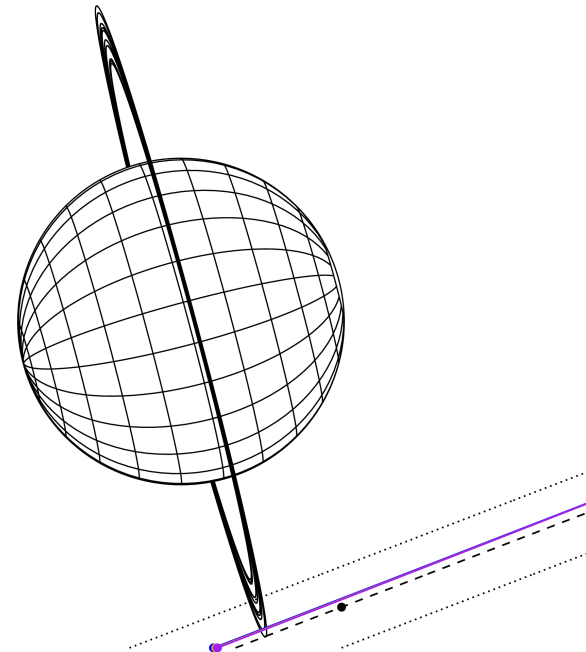
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2048-11-25T10:13:17.2900 ra: 11 05 50.50313 s: +06 37 23.109 C/A 3.799° PA 21.02 deg v_sky +13.01 km/s D 18.47 AU
 Credit: Styled after SORA/Lucky Star

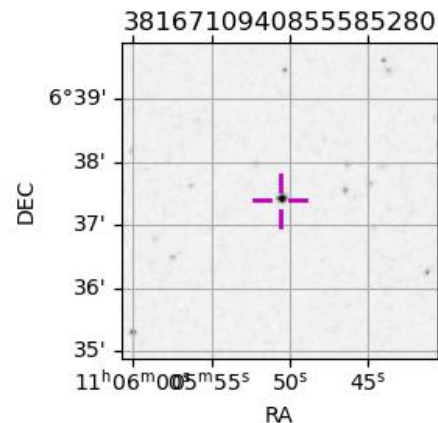
Earth
 PAL
 KPNO
 MCD

Uranus 2048-11-25T10:13:17 K12.53 G14.26 XRgt



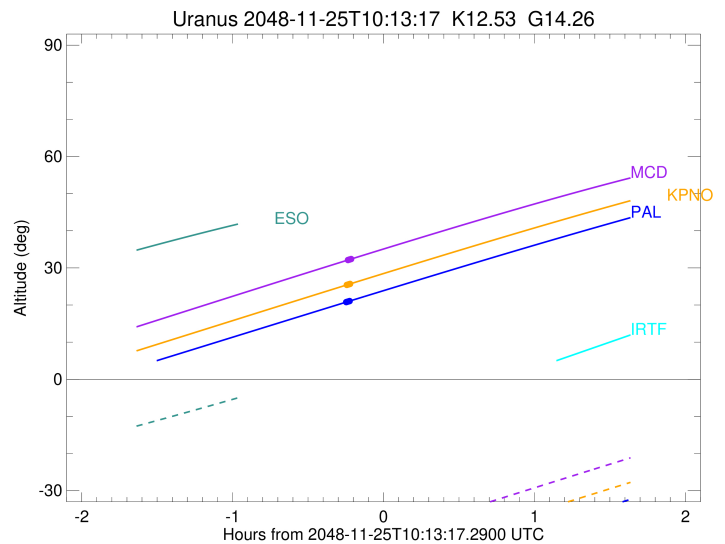
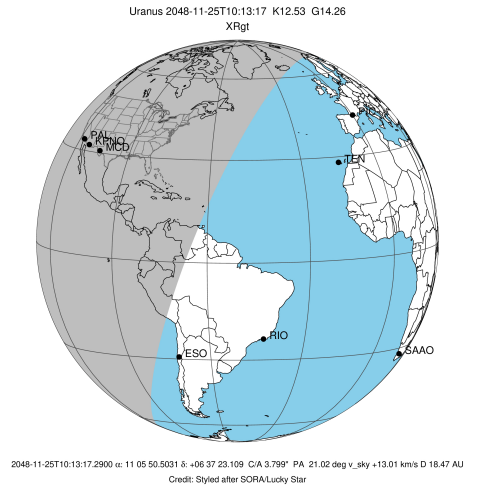
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1					PnnRnn
PAL	Palomar Mt (200")	33.4	243.1	++		++	NOV 25 09:58 - NOV 25 09:59	PnnRie
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	++		++	NOV 25 09:58 - NOV 25 09:59	PnnRie
MCD	McDonald Obs. 2.7m	30.7	256.0	++		++	NOV 25 09:59 - NOV 25 10:00	PnnRie
TEN	Teide Obs./Tenerife	28.3	343.5					PnnRnn
IRTF	Mauna Kea/IRTF	19.8	204.5					PnnRnn
KAV	Kavalur Observatory	12.6	78.8					PnnRnn
RIO	Rio de Janeiro	-22.9	316.8					PnnRnn
ESO	European Southern Obs	-29.3	289.3					PnnRnn
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2048-11-25T10:05:59.660
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 3816710940855585280
2Mass ID (if available) : 11055056+0637236
ICRS Star Coord at Epoch: 11h 05m 50.50313s +06:37:23.10854s
RUWE (>1.4 is poor) : 0.98
K magnitude         : 12.532
G magnitude         : 14.265
RP magnitude        : 13.697
BP magnitude        : 14.663
DUPflag            : 0
Distance (au)       : 18.467
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : 13.01
Sun-Target sep (deg) : 78.16
Sun-Moon sep (deg)  : 48.01
B (ring opening deg) : 2.55
PA of pole (deg)    : 104.99
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.698
C/A sky separation (km) : 49526.3
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
ura111.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.ura111.bsp
ura161.bsp
vgr2.ura161.bsp
peph.ura160.bsp
earthstns_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
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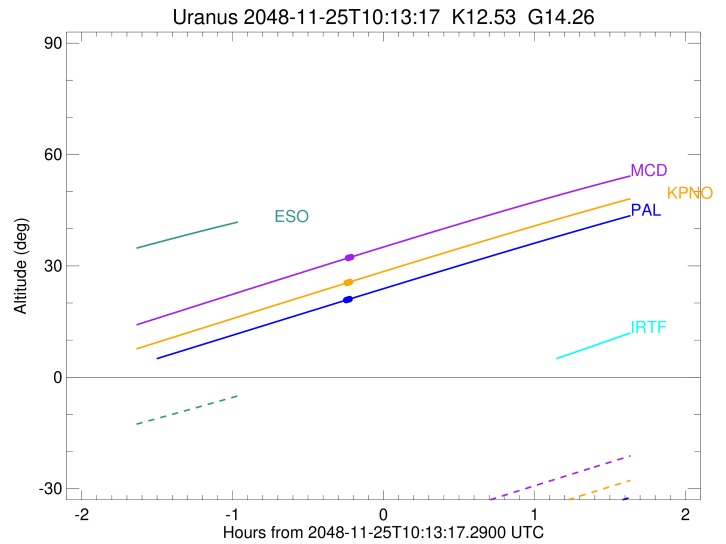
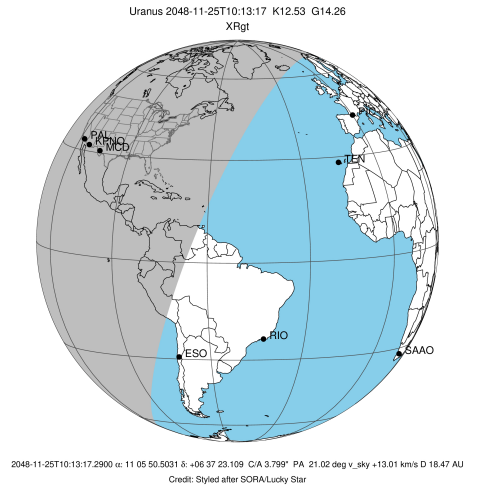
b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b? alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2048-11-25T09:58:34.071	20.81	-55.85	50807.31	-55.24		
lambda	I	2048-11-25T09:58:52.918	20.87	-55.79	50026.71	-25.98		

No planet occultations

lambda	E	2048-11-25T09:59:24.270	20.98	-55.68	50026.71	26.14		
epsilon	E	2048-11-25T09:59:42.096	21.04	-55.62	50750.46	55.39		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2048-11-25T10:06:18.780
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : KPNO
 Location : Kitt Peak Natl Obs
 Latitude (deg) : 31.96333
 E. Longitude (deg) : 248.40000
 Altitude (km) : 2.120
 Gaia source ID : 3816710940855585280
 2Mass ID (if available) : 11055056+0637236
 ICRS Star Coord at Epoch: 11h 05m 50.50313s +06:37:23.10854s
 RUWE (>1.4 is poor) : 0.98
 K magnitude : 12.532
 G magnitude : 14.265
 RP magnitude : 13.697
 BP magnitude : 14.663
 DUPflag : 0
 Distance (au) : 18.467
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 13.01
 Sun-Target sep (deg) : 78.16
 Sun-Moon sep (deg) : 48.07
 B (ring opening deg) : 2.55
 PA of pole (deg) : 104.99
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.707
 C/A sky separation (km) : 49647.6
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ura111.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ura111.bsp
 ura161.bsp
 vgr2.ura161.bsp
 peph.ura160.bsp
 earthstns_itrf93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



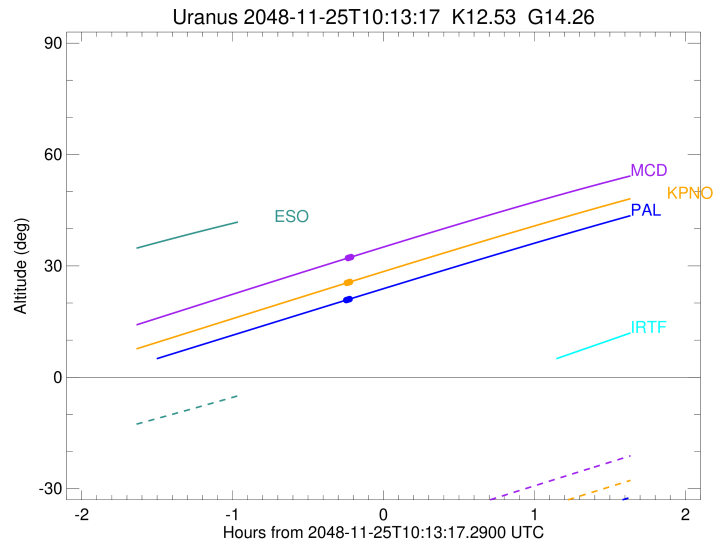
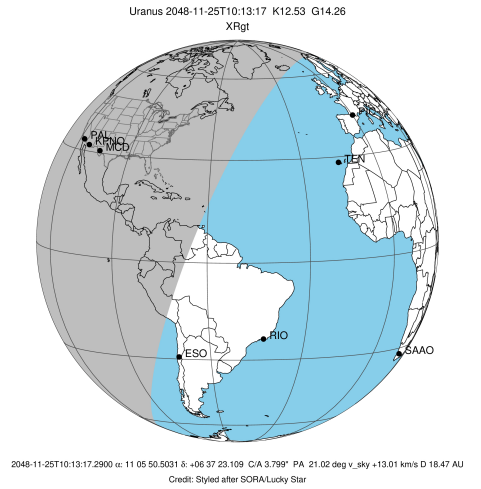
Ring	I/E	UTC	b? alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2048-11-25T09:58:49.164	25.44	-51.63	50804.45	-51.28		
lambda	I	2048-11-25T09:59:11.776	25.52	-51.55	50026.71	-15.87		

No planet occultations

lambda	E	2048-11-25T09:59:31.072	25.59	-51.48	50026.71	16.04		
epsilon	E	2048-11-25T09:59:52.661	25.66	-51.40	50751.58	51.44		

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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2048-11-25T10:06:53.400
Event type           : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code        : MCD
Location             : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)   : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 3816710940855585280
2Mass ID (if available) : 11055056+0637236
ICRS Star Coord at Epoch: 11h 05m 50.50313s +06:37:23.10854s
RUWE (>1.4 is poor) : 0.98
K magnitude           : 12.532
G magnitude           : 14.265
RP magnitude          : 13.697
BP magnitude          : 14.663
DUPflag              : 0
Distance (au)         : 18.467
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 13.01
Sun-Target sep (deg) : 78.16
Sun-Moon sep (deg)   : 48.18
B (ring opening deg) : 2.55
PA of pole (deg)     : 104.99
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.712
C/A sky separation (km) : 49713.2
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLvl1.spk
ura111.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.ura111.bsp
ura161.bsp
vgr2.ura161.bsp
peph.ura160.bsp
earthstns_itrf93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
```



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2048-11-25T09:59:16.983		32.15	-45.12	50802.72	-48.74		
lambda	I	2048-11-25T09:59:46.075		32.25	-45.02	50028.76	-3.79		

No planet occultations

lambda	E	2048-11-25T09:59:49.656		32.26	-45.01	50027.12	3.18		
epsilon	E	2048-11-25T10:00:17.778		32.36	-44.91	50752.32	48.90		