

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-17T02:10:44.680
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3383348912491929856
 2Mass ID (if available) : 06272713+2337162

ICRS Star Coord at Epoch: 06h 27m 27.14333s +23:37:16.19827s

RUWE (>1.4 is poor) : 1.10
 K magnitude : 14.449
 G magnitude : 16.328
 RP magnitude : 15.689
 BP magnitude : 16.794
 DUPflag : 0
 Distance (au) : 18.249
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.15
 Sun-Target sep (deg) : 128.54
 Sun-Moon sep (deg) : 19.02
 B (ring opening deg) : 69.75
 PA of pole (deg) : 68.91

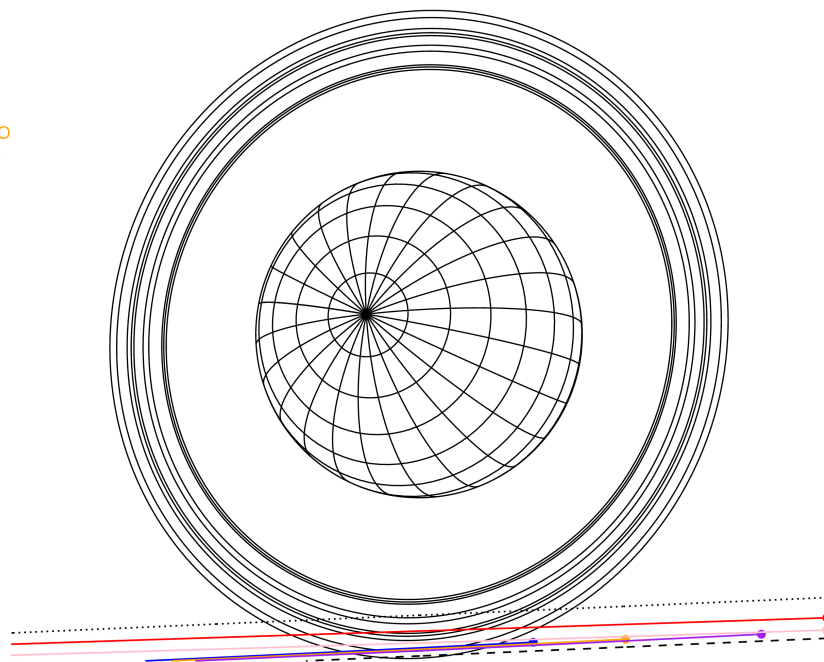
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2035-02-17T02:10:44.6800 a: 06 27 27.1433 s: +23 37 16.198 C/A 3.794" PA 2.48 deg v_sky -12.15 km/s D 18.25 AU
 Credit: Styled after SORA/Lucky Star

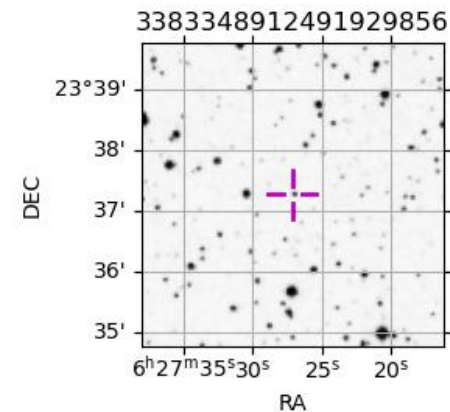
Uranus 2035-02-17T02:10:44 K14.45 G16.33 XRgt

PIC
 PAL
 KPNO
 MCD
 TEN

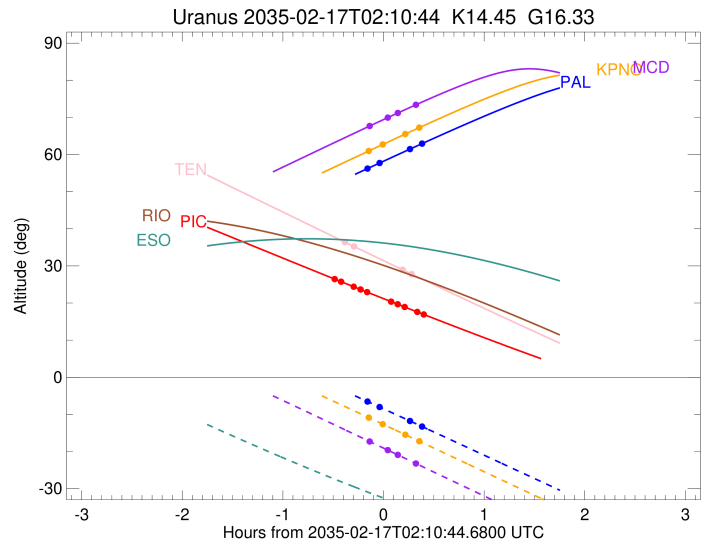
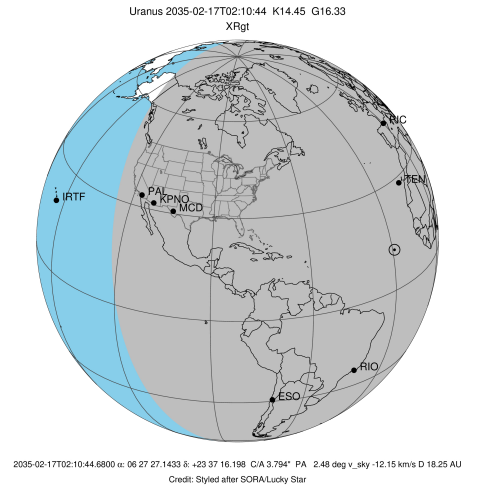


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++		+++++	FEB 17 01:42 - FEB 17 02:33	PnnRie
PAL	Palomar Mt (200")	33.4	243.1	++		++	FEB 17 02:03 - FEB 17 02:31	PnnRie
PNO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	++		++	FEB 17 02:04 - FEB 17 02:29	PnnRie
MCD	McDonald Obs. 2.7m	30.7	256.0	++		++	FEB 17 02:05 - FEB 17 02:27	PnnRie
TEN	Teide Obs./Tenerife	28.3	343.5	++		++	FEB 17 01:49 - FEB 17 02:25	PnnRie
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



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-17T02:05:21.900
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 3383348912491929856
 2Mass ID (if available) : 06272713+2337162
 ICRS Star Coord at Epoch: 06h 27m 27.14333s +23:37:16.19827s
 RUWE (>1.4 is poor) : 1.10
 K magnitude : 14.449
 G magnitude : 16.328
 RP magnitude : 15.689
 BP magnitude : 16.794
 DUPflag : 0
 Distance (au) : 18.249
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.15
 Sun-Target sep (deg) : 128.54
 Sun-Moon sep (deg) : 19.94
 B (ring opening deg) : 69.75
 PA of pole (deg) : 68.91
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.507
 C/A sky separation (km) : 46422.7
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk

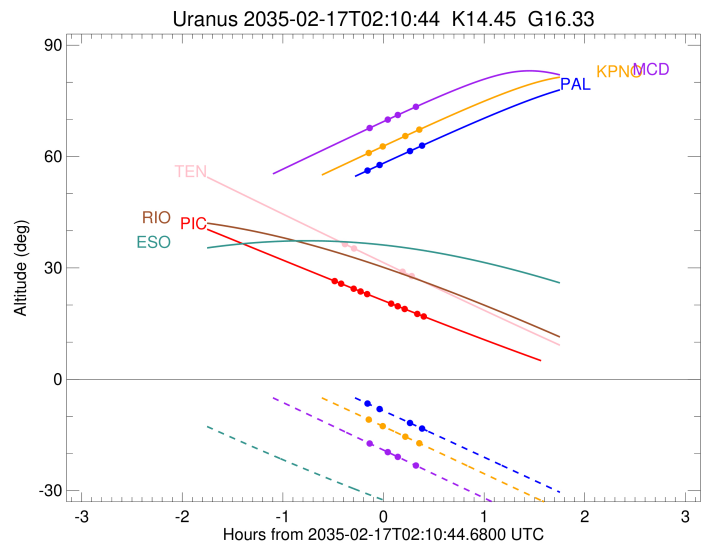
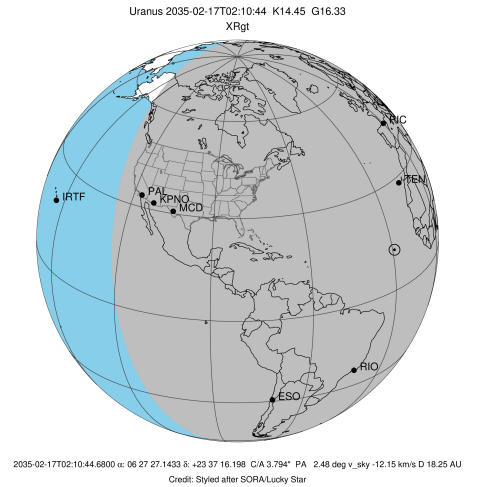


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-02-17T01:42:55.855		26.21	-53.72	50766.52	-4.94		
lambda	I	2035-02-17T01:45:31.801		25.74	-53.42	50026.71	-4.52		
delta	I	2035-02-17T01:53:02.380		24.38	-52.51	48300.35	-3.12		
gamma	I	2035-02-17T01:57:09.033		23.63	-51.99	47630.92	-2.30		
eta	I	2035-02-17T02:01:09.631		22.91	-51.47	47176.12	-1.48		

No planet occultations

eta	E	2035-02-17T02:15:08.385		20.40	-49.57	47176.12	1.47		
gamma	E	2035-02-17T02:19:09.067		19.68	-49.01	47629.72	2.29		
delta	E	2035-02-17T02:23:17.144		18.95	-48.41	48300.35	3.11		
lambda	E	2035-02-17T02:30:50.109		17.61	-47.30	50026.71	4.49		
epsilon	E	2035-02-17T02:33:30.509		17.13	-46.89	50783.34	4.90		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-17T02:14:30.720
 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 : 3383348912491929856
 2Mass ID (if available) : 06272713+2337162
 ICRS Star Coord at Epoch: 06h 27m 27.14333s +23:37:16.19827s
 RUWE (>1.4 is poor) : 1.10
 K magnitude : 14.449
 G magnitude : 16.328
 RP magnitude : 15.689
 BP magnitude : 16.794
 DUPflag : 0
 Distance (au) : 18.249
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.15
 Sun-Target sep (deg) : 128.54
 Sun-Moon sep (deg) : 18.92
 B (ring opening deg) : 69.75
 PA of pole (deg) : 68.91
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.704
 C/A sky separation (km) : 49023.7
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



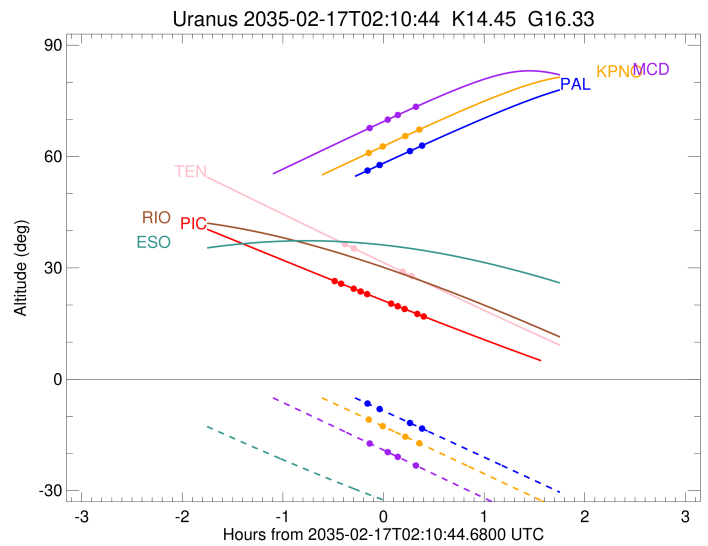
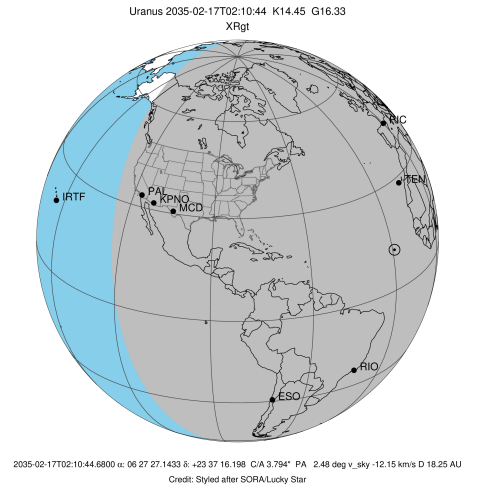
b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-02-17T02:03:26.804		56.68	-7.00	50750.25	-2.85		
lambda	I	2035-02-17T02:08:32.980		57.74	-8.05	50026.71	-1.85		

No planet occultations

lambda	E	2035-02-17T02:26:25.432		61.44	-11.75	50026.71	1.85		
epsilon	E	2035-02-17T02:31:33.609		62.49	-12.82	50757.00	2.85		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-17T02:14:03.110
 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 : 3383348912491929856
 2Mass ID (if available) : 06272713+2337162
 ICRS Star Coord at Epoch: 06h 27m 27.14333s +23:37:16.19827s
 RUWE (>1.4 is poor) : 1.10
 K magnitude : 14.449
 G magnitude : 16.328
 RP magnitude : 15.689
 BP magnitude : 16.794
 DUPflag : 0
 Distance (au) : 18.249
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.15
 Sun-Target sep (deg) : 128.54
 Sun-Moon sep (deg) : 18.97
 B (ring opening deg) : 69.75
 PA of pole (deg) : 68.91
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.721
 C/A sky separation (km) : 49253.4
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



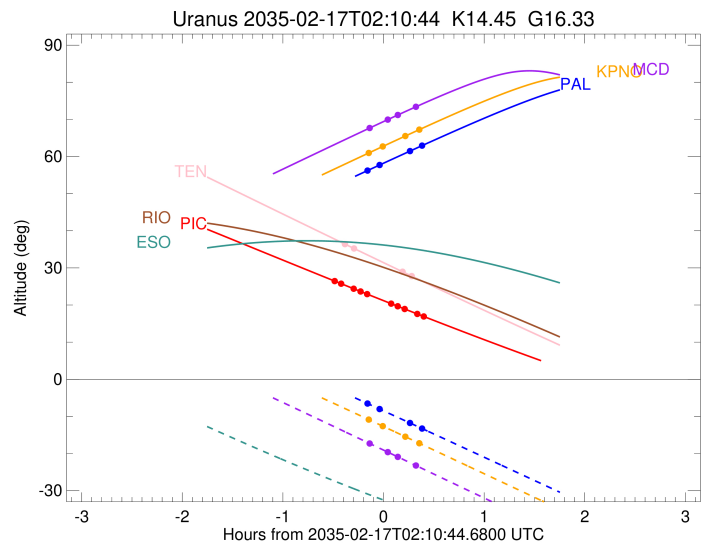
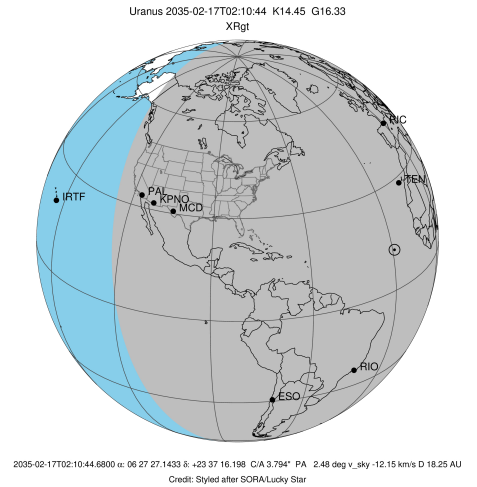
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-02-17T02:04:23.851		61.47	-11.38	50748.78	-2.57		
lambda	I	2035-02-17T02:10:28.183		62.75	-12.66	50026.71	-1.36		

No planet occultations

lambda	E	2035-02-17T02:23:35.586		65.49	-15.43	50026.71	1.37		
epsilon	E	2035-02-17T02:29:42.039		66.75	-16.73	50755.01	2.58		

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2035-02-17T02:13:18.320
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       : 3383348912491929856
2Mass ID (if available) : 06272713+2337162
ICRS Star Coord at Epoch: 06h 27m 27.14333s +23:37:16.19827s
RUWE (>1.4 is poor) : 1.10
K magnitude           : 14.449
G magnitude           : 16.328
RP magnitude          : 15.689
BP magnitude          : 16.794
DUPflag              : 0
Distance (au)         : 18.249
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -12.15
Sun-Target sep (deg) : 128.54
Sun-Moon sep (deg)   : 19.07
B (ring opening deg) : 69.75
PA of pole (deg)     : 68.91
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.739
C/A sky separation (km) : 49481.8
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
  
```



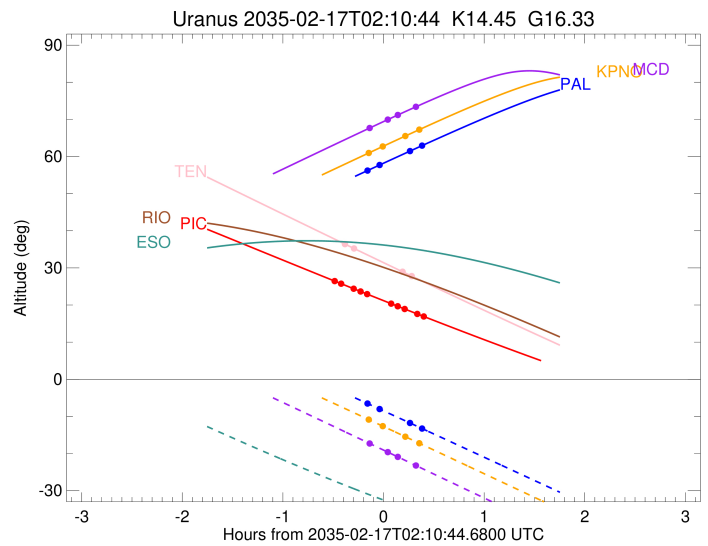
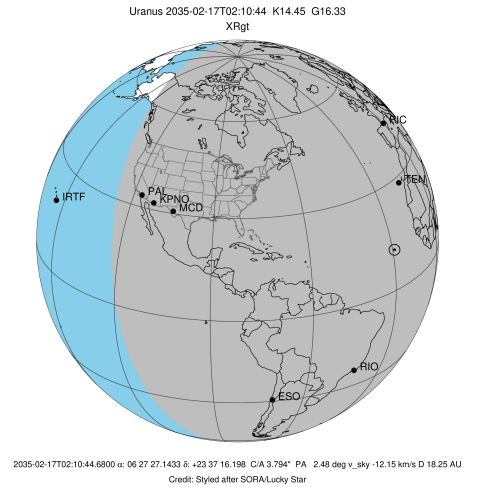
```

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 2035-02-17T02:05:12.881  68.25 -17.89  50747.45 -2.27
lambda    I 2035-02-17T02:13:41.388  70.03 -19.71  50026.72 -0.54

No planet occultations

lambda    E 2035-02-17T02:18:52.849  71.11 -20.83  50026.72  0.54
epsilon   E 2035-02-17T02:27:23.668  72.86 -22.66  50753.12  2.27
  
```

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-17T02:04:45.650
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : TEN
 Location : Teide Obs./Tenerife
 Latitude (deg) : 28.30050
 E. Longitude (deg) : 343.48909
 Altitude (km) : 2.395
 Gaia source ID : 3383348912491929856
 2Mass ID (if available) : 06272713+2337162
 ICRS Star Coord at Epoch: 06h 27m 27.14333s +23:37:16.19827s
 RUWE (>1.4 is poor) : 1.10
 K magnitude : 14.449
 G magnitude : 16.328
 RP magnitude : 15.689
 BP magnitude : 16.794
 DUPflag : 0
 Distance (au) : 18.249
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -12.15
 Sun-Target sep (deg) : 128.54
 Sun-Moon sep (deg) : 19.99
 B (ring opening deg) : 69.75
 PA of pole (deg) : 68.91
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.649
 C/A sky separation (km) : 48294.9
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



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	2035-02-17T01:49:33.058		36.02	-72.53	50753.77	-3.60		
lambda	I	2035-02-17T01:53:14.961		35.21	-72.17	50026.71	-2.92		

No planet occultations

lambda	E	2035-02-17T02:22:01.444		28.98	-68.37	50026.71	2.91		
epsilon	E	2035-02-17T02:25:47.888		28.17	-67.77	50766.26	3.58		