

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-03T23:34:30.680
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3383339837224484608
 2Mass ID (if available) : 06285921+2336183

ICRS Star Coord at Epoch: 06h 28m 59.21811s +23:36:17.90965s

RUWE (>1.4 is poor) : 6.56
 K magnitude : 14.135
 G magnitude : 16.735
 RP magnitude : 15.777
 BP magnitude : 17.092
 DUPflag : 0
 Distance (au) : 18.095
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -17.13
 Sun-Target sep (deg) : 142.16
 Sun-Moon sep (deg) : 167.21
 B (ring opening deg) : 69.42
 PA of pole (deg) : 69.44

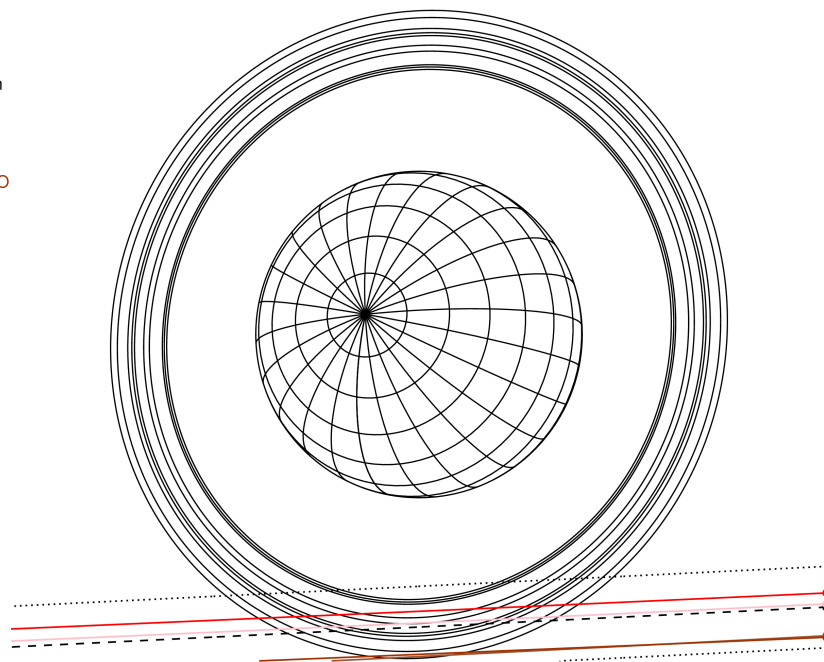
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2035-02-03T23:34:30.6800 α: 06 28 59.2181 δ: +23 36 17.910 C/A 3.480° PA 2.80 deg v_sky -17.13 km/s D 18.09 AU
 Credit: Styled after SORA/Lucky Star

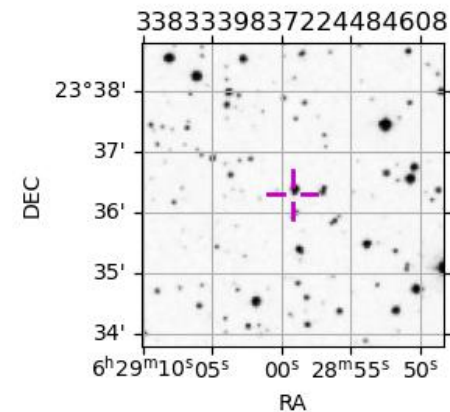
Uranus 2035-02-03T23:34:30 K14.13 G16.74 XRgt

Earth
 PIC
 TEN
 RIO
 SAAO

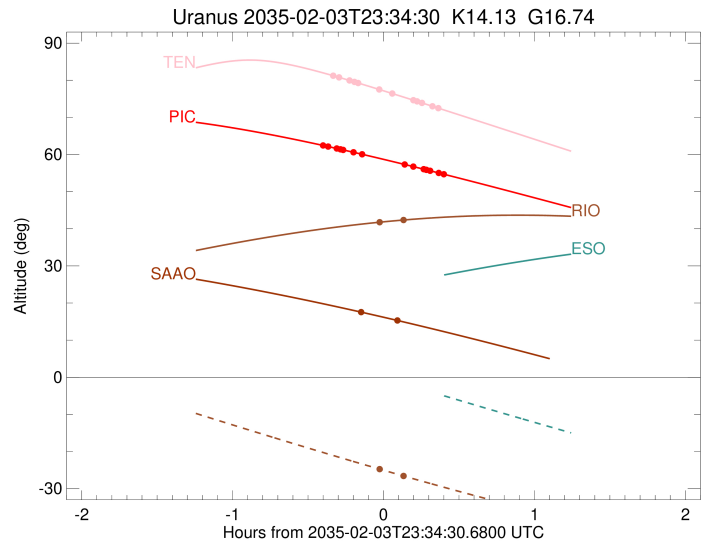
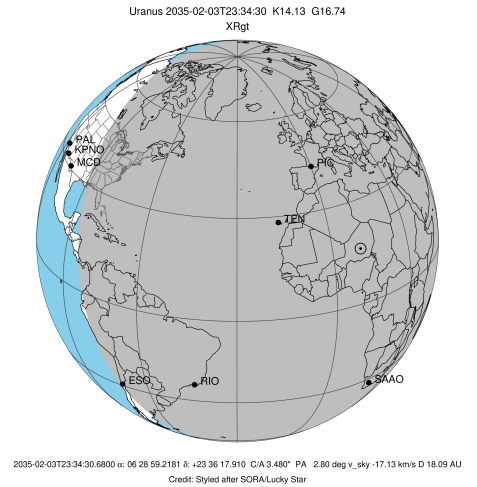


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	++++++		++++++	FEB 03 23:11 - FEB 03 23:57	PnnRie
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4					PnnRnn
MCD	McDonald Obs. 2.7m	30.7	256.0					PnnRnn
TEN	Teide Obs./Tenerife	28.3	343.5	++++++		++++++	FEB 03 23:15 - FEB 03 23:55	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	+		+	FEB 03 23:37 - FEB 03 23:38	PnnRie
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	+		+	FEB 03 23:28 - FEB 03 23:37	PnnRie
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-03T23:32:35.560
 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 : 3383339837224484608
 2Mass ID (if available) : 06285921+2336183
 ICRS Star Coord at Epoch: 06h 28m 59.21811s +23:36:17.90965s
 RUWE (>1.4 is poor) : 6.56
 K magnitude : 14.135
 G magnitude : 16.735
 RP magnitude : 15.777
 BP magnitude : 17.092
 DUPflag : 0
 Distance (au) : 18.095
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -17.13
 Sun-Target sep (deg) : 142.16
 Sun-Moon sep (deg) : 167.80
 B (ring opening deg) : 69.42
 PA of pole (deg) : 69.44
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.300
 C/A sky separation (km) : 43310.9
 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



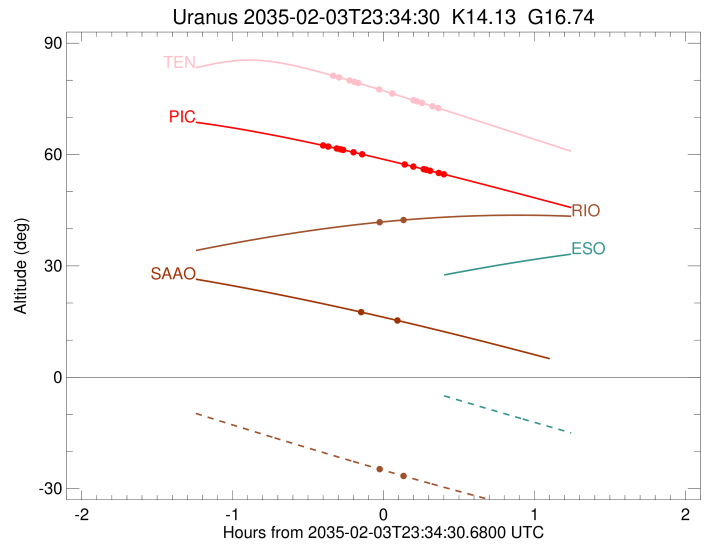
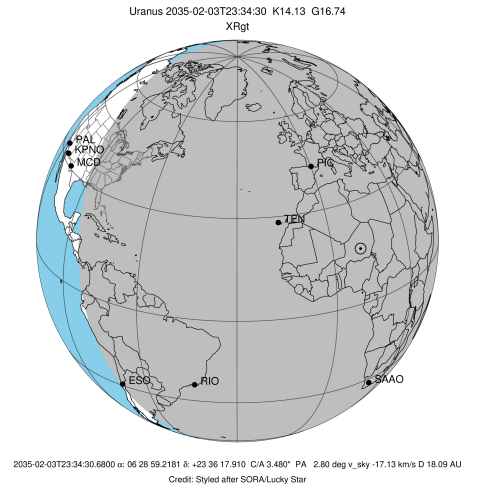
b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-02-03T23:11:00.678		62.37	-60.45	50865.81	-9.32		
lambda	I	2035-02-03T23:12:32.058		62.14	-60.60	50026.71	-8.95		
delta	I	2035-02-03T23:15:57.739		61.63	-60.91	48300.35	-7.82		
gamma	I	2035-02-03T23:17:26.217		61.40	-61.04	47631.53	-7.30		
eta	I	2035-02-03T23:18:30.351		61.24	-61.13	47176.12	-6.90		
beta	I	2035-02-03T23:22:40.697		60.59	-61.48	45649.12	-5.28		
alpha	I	2035-02-03T23:25:55.751		60.08	-61.74	44751.54	-3.89		

No planet occultations

alpha	E	2035-02-03T23:42:59.777		57.31	-62.82	44745.41	3.88		
beta	E	2035-02-03T23:46:19.189		56.76	-62.98	45659.93	5.27		
eta	E	2035-02-03T23:50:27.821		56.06	-63.15	47176.12	6.89		
gamma	E	2035-02-03T23:51:31.912		55.88	-63.19	47630.39	7.28		
delta	E	2035-02-03T23:53:00.715		55.63	-63.24	48300.35	7.80		
lambda	E	2035-02-03T23:56:26.844		55.05	-63.35	50026.71	8.93		
epsilon	E	2035-02-03T23:57:46.887		54.82	-63.39	50757.59	9.30		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-02-03T23:33:27.010
 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 : 3383339837224484608
 2Mass ID (if available) : 06285921+2336183
 ICRS Star Coord at Epoch: 06h 28m 59.21811s +23:36:17.90965s
 RUWE (>1.4 is poor) : 6.56
 K magnitude : 14.135
 G magnitude : 16.735
 RP magnitude : 15.777
 BP magnitude : 17.092
 DUPflag : 0
 Distance (au) : 18.095
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -17.13
 Sun-Target sep (deg) : 142.16
 Sun-Moon sep (deg) : 167.60
 B (ring opening deg) : 69.42
 PA of pole (deg) : 69.44
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 3.439
 C/A sky separation (km) : 45132.3
 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

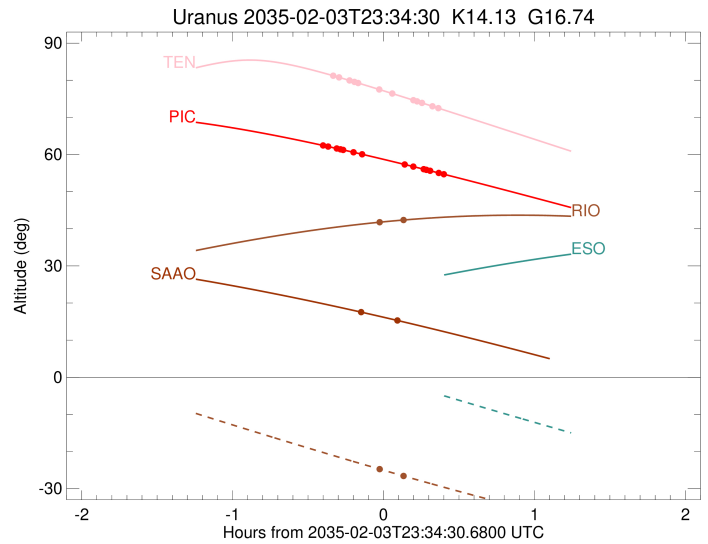
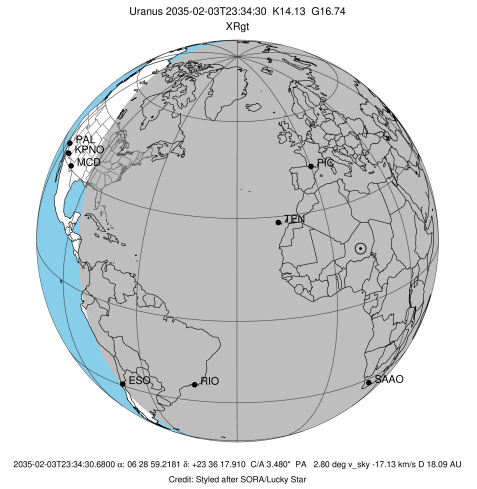
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-02-03T23:15:09.563		81.11	-58.97	50844.88	-8.12		
lambda	I	2035-02-03T23:16:52.776		80.78	-59.34	50026.71	-7.64		
delta	I	2035-02-03T23:21:03.132		79.95	-60.22	48300.35	-6.13		
gamma	I	2035-02-03T23:22:59.358		79.56	-60.63	47631.58	-5.37		
eta	I	2035-02-03T23:24:29.092		79.25	-60.94	47176.12	-4.77		
beta	I	2035-02-03T23:33:09.966		77.45	-62.75	45653.19	-1.02		

No planet occultations

beta	E	2035-02-03T23:37:41.419		76.50	-63.69	45655.26	1.02		
eta	E	2035-02-03T23:46:20.458		74.65	-65.45	47176.12	4.77		
gamma	E	2035-02-03T23:47:50.112		74.33	-65.75	47630.75	5.37		
delta	E	2035-02-03T23:49:46.601		73.91	-66.14	48300.35	6.12		
lambda	E	2035-02-03T23:53:57.248		73.01	-66.97	50026.71	7.63		
epsilon	E	2035-02-03T23:55:29.057		72.68	-67.27	50750.56	8.11		

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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2035-02-03T23:35:31.750
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : RIO
Location            : Rio de Janeiro
Latitude (deg)      : -22.89506
E. Longitude (deg)  : 316.77708
Altitude (km)       : 0.033
Gaia source ID      : 3383339837224484608
2Mass ID (if available) : 06285921+2336183
ICRS Star Coord at Epoch: 06h 28m 59.21811s +23:36:17.90965s
RUWE (>1.4 is poor) : 6.56
K magnitude          : 14.135
G magnitude          : 16.735
RP magnitude         : 15.777
BP magnitude         : 17.092
DUPflag             : 0
Distance (au)       : 18.095
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -17.13
Sun-Target sep (deg) : 142.16
Sun-Moon sep (deg)  : 166.93
B (ring opening deg) : 69.42
PA of pole (deg)    : 69.44
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.839
C/A sky separation (km) : 50376.6
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.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
  
```



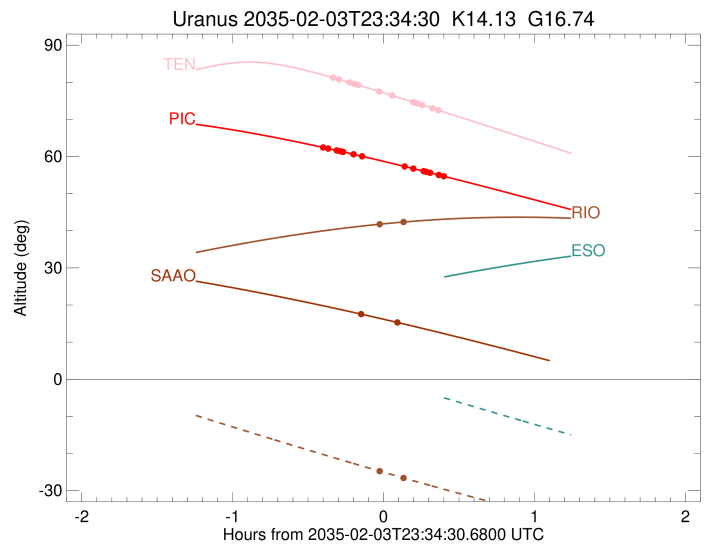
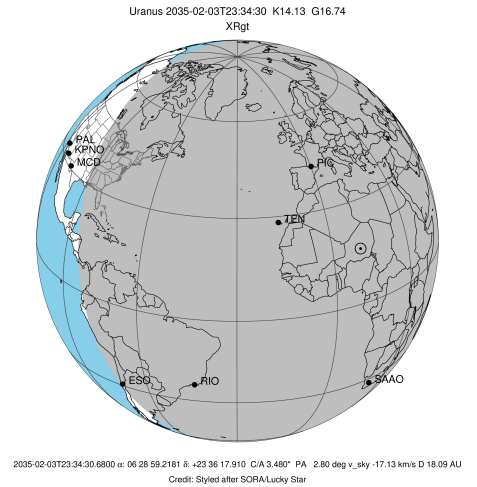
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-02-03T23:38:23.968		42.12	-25.80	51089.20	1.67		

No planet occultations

epsilon	E	2035-02-03T23:37:23.781		42.06	-25.61	51050.74	-1.42		
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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2035-02-03T23:30:39.550
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : SAAO
Location            : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)      : -32.37953
E. Longitude (deg)  : 20.81070
Altitude (km)       : 1.768
Gaia source ID      : 3383339837224484608
2Mass ID (if available) : 06285921+2336183
ICRS Star Coord at Epoch: 06h 28m 59.21811s +23:36:17.90965s
RUWE (>1.4 is poor) : 6.56
K magnitude          : 14.135
G magnitude          : 16.735
RP magnitude         : 15.777
BP magnitude         : 17.092
DUPflag             : 0
Distance (au)       : 18.095
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : -17.13
Sun-Target sep (deg) : 142.16
Sun-Moon sep (deg)  : 167.54
B (ring opening deg) : 69.42
PA of pole (deg)    : 69.44
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.814
C/A sky separation (km) : 50051.1
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural161.bsp
vgr2.ural161.bsp
peph.ural160.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  2035-02-03T23:28:28.245  17.11 -40.61  50772.37 -1.70
    
```

No planet occultations

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epsilon   E  2035-02-03T23:37:00.027  15.78 -40.20  50753.44  1.71
    
```