

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-01-26T23:53:55.020
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3425480651878424704
 2Mass ID (if available) : 06100088+2341441

ICRS Star Coord at Epoch: 06h 10m 00.87987s +23:41:44.05547s

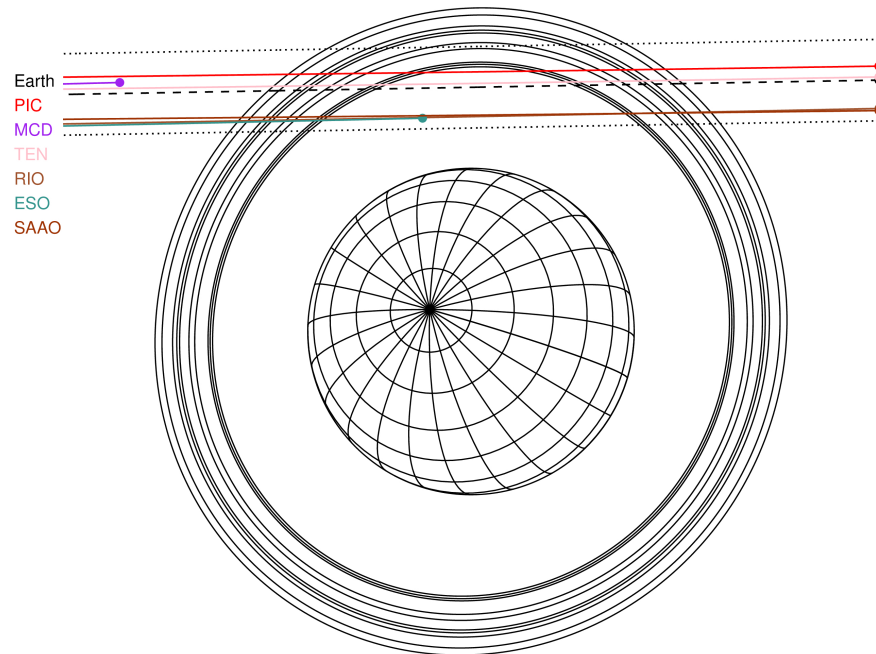
RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.407
 G magnitude : 16.192
 RP magnitude : 15.578
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 18.127
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -18.21
 Sun-Target sep (deg) : 145.66
 Sun-Moon sep (deg) : 60.42
 B (ring opening deg) : 73.35
 PA of pole (deg) : 61.98

#	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



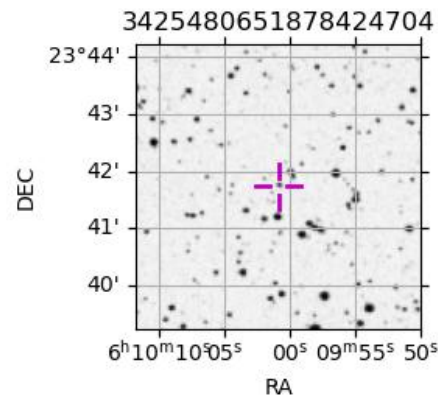
2034-01-26T23:53:55.0200 ra: 06 10 00.8799 s: +23 41 44.055 C/A 2.915° PA 181.01 deg v_sky -18.21 km/s D 18.13 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2034-01-26T23:53:55 K14.41 G16.19 XRgt



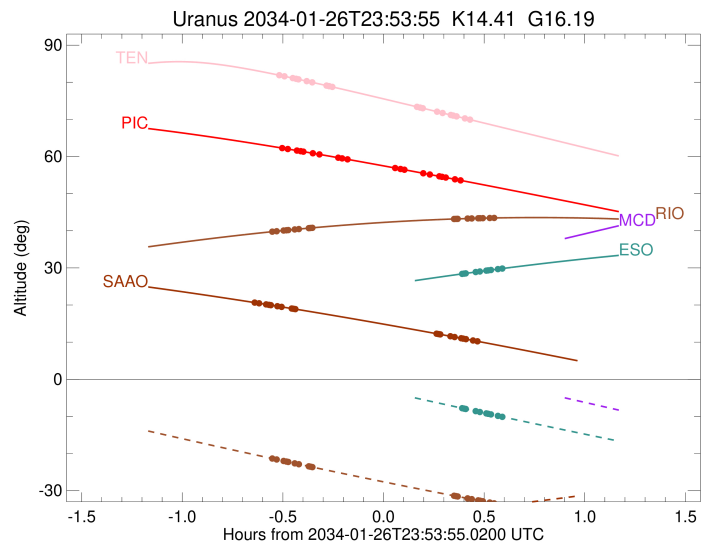
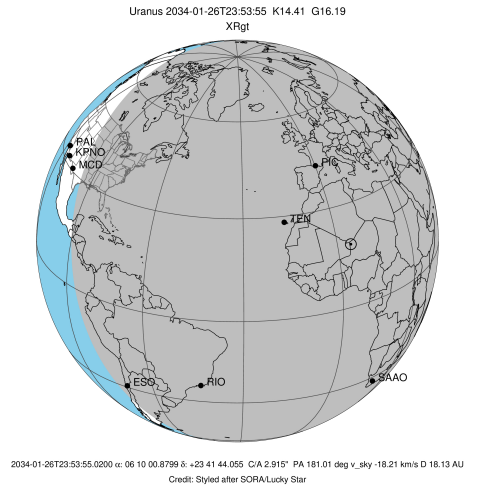
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++		+++++	JAN 26 23:24 - JAN 27 00:16	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	+++++		+++++	JAN 26 23:23 - JAN 27 00:19	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	+++++		+++++	JAN 26 23:20 - JAN 27 00:26	PnnRie
ESO	European Southern Obs	-29.3	289.3				JAN 27 00:17 - JAN 27 00:28	PnnRne
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8	+++++		+++++	JAN 26 23:15 - JAN 27 00:21	PnnRie
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2034-01-26T23:51:34.730
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      : 3425480651878424704
2Mass ID (if available) : 06100088+2341441
ICRS Star Coord at Epoch: 06h 10m 00.87987s +23:41:44.05547s
RUWE (>1.4 is poor) : 1.00
K magnitude         : 14.407
G magnitude         : 16.192
RP magnitude        : 15.578
BP magnitude        : 16.627
DUPflag            : 0
Distance (au)       : 18.127
f0 (km)            : 0.000
g0 (km)            : 0.000
skyplane vel. (km/s) : -18.21
Sun-Target sep (deg) : 145.66
Sun-Moon sep (deg)  : 61.34
B (ring opening deg) : 73.35
PA of pole (deg)    : 61.98
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.092
C/A sky separation (km) : 40643.3
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itrfr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
```

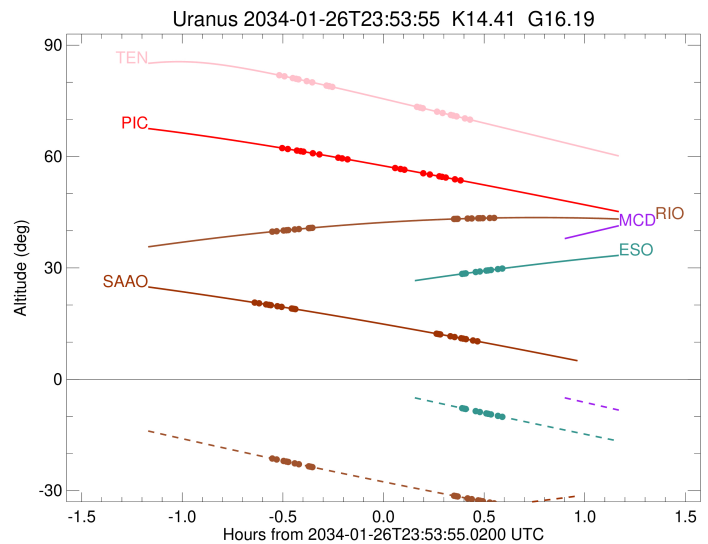
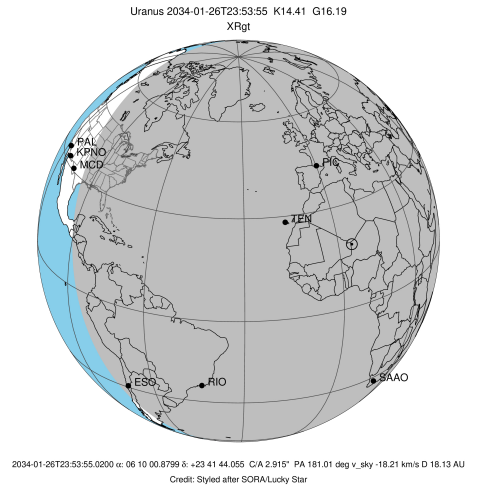


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-01-26T23:24:05.896		62.22	-63.72	50898.83	-11.23		
lambda	I	2034-01-26T23:25:24.183		62.02	-63.82	50026.71	-10.95		
delta	I	2034-01-26T23:28:08.146		61.61	-64.03	48300.35	-10.09		
gamma	I	2034-01-26T23:29:15.999		61.43	-64.12	47628.32	-9.71		
eta	I	2034-01-26T23:30:03.222		61.31	-64.18	47176.12	-9.44		
beta	I	2034-01-26T23:32:51.797		60.88	-64.37	45671.72	-8.40		
alpha	I	2034-01-26T23:34:54.080		60.56	-64.51	44695.24	-7.58		
4	I	2034-01-26T23:40:36.056		59.66	-64.85	42534.22	-4.99		
5	I	2034-01-26T23:41:21.312		59.54	-64.90	42312.17	-4.64		
6	I	2034-01-26T23:43:22.632		59.21	-65.00	41808.95	-3.65		

No planet occultations

6	E	2034-01-26T23:57:16.649		56.93	-65.55	41822.87	3.65		
5	E	2034-01-26T23:59:09.782		56.61	-65.59	42292.81	4.63		
4	E	2034-01-26T23:59:56.203		56.48	-65.61	42526.10	4.99		
alpha	E	2034-01-27T00:05:44.354		55.50	-65.71	44720.42	7.57		
beta	E	2034-01-27T00:07:44.623		55.16	-65.73	45681.11	8.38		
eta	E	2034-01-27T00:10:32.388		54.68	-65.74	47176.12	9.42		
gamma	E	2034-01-27T00:11:19.166		54.54	-65.74	47622.99	9.69		
delta	E	2034-01-27T00:12:27.727		54.34	-65.74	48300.35	10.07		
lambda	E	2034-01-27T00:15:12.108		53.87	-65.73	50026.71	10.92		
epsilon	E	2034-01-27T00:16:18.960		53.68	-65.73	50767.55	11.20		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-01-26T23:52:30.180
 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 : 3425480651878424704
 2Mass ID (if available) : 06100088+2341441
 ICRS Star Coord at Epoch: 06h 10m 00.87987s +23:41:44.05547s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.407
 G magnitude : 16.192
 RP magnitude : 15.578
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 18.127
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -18.21
 Sun-Target sep (deg) : 145.66
 Sun-Moon sep (deg) : 61.37
 B (ring opening deg) : 73.35
 PA of pole (deg) : 61.98
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.954
 C/A sky separation (km) : 38838.3
 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_itrfr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



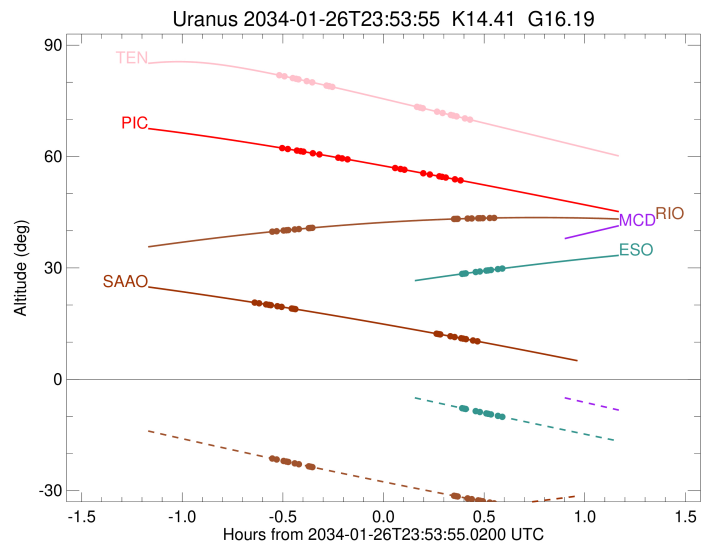
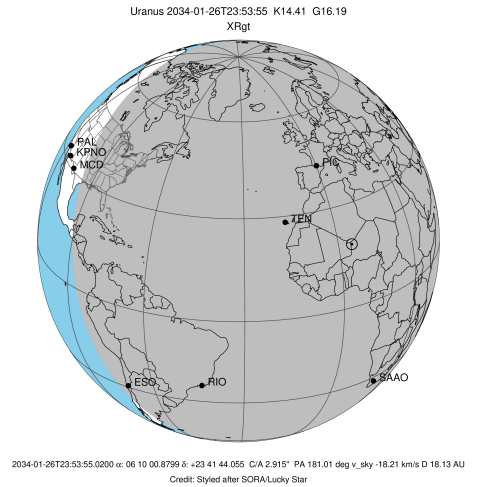
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-01-26T23:23:10.987		81.84	-61.90	50917.35	-12.18		
lambda	I	2034-01-26T23:24:24.498		81.61	-62.16	50026.71	-11.95		
delta	I	2034-01-26T23:26:53.341		81.13	-62.69	48300.35	-11.23		
gamma	I	2034-01-26T23:27:53.975		80.93	-62.91	47628.65	-10.92		
eta	I	2034-01-26T23:28:35.846		80.79	-63.06	47176.12	-10.69		
beta	I	2034-01-26T23:31:02.290		80.31	-63.57	45670.28	-9.86		
alpha	I	2034-01-26T23:32:44.672		79.97	-63.94	44693.09	-9.23		
4	I	2034-01-26T23:37:02.708		79.09	-64.85	42537.94	-7.43		
5	I	2034-01-26T23:37:33.000		78.99	-64.95	42314.46	-7.21		
6	I	2034-01-26T23:38:46.517		78.73	-65.21	41804.27	-6.67		

No planet occultations

6	E	2034-01-27T00:03:51.438		73.40	-70.36	41829.54	6.66		
5	E	2034-01-27T00:04:56.782		73.16	-70.58	42284.44	7.21		
4	E	2034-01-27T00:05:28.300		73.05	-70.68	42525.98	7.42		
alpha	E	2034-01-27T00:09:52.284		72.09	-71.54	44723.60	9.22		
beta	E	2034-01-27T00:11:32.585		71.73	-71.87	45681.23	9.85		
eta	E	2034-01-27T00:13:58.116		71.20	-72.34	47176.12	10.68		
gamma	E	2034-01-27T00:14:39.510		71.05	-72.47	47622.69	10.90		
delta	E	2034-01-27T00:15:40.796		70.82	-72.66	48300.35	11.21		
lambda	E	2034-01-27T00:18:09.915		70.28	-73.13	50026.71	11.93		
epsilon	E	2034-01-27T00:19:12.047		70.05	-73.33	50776.42	12.16		

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2034-01-26T23:54:54.610
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       : 3425480651878424704
2Mass ID (if available) : 06100088+2341441
ICRS Star Coord at Epoch: 06h 10m 00.87987s +23:41:44.05547s
RUWE (>1.4 is poor) : 1.00
K magnitude          : 14.407
G magnitude          : 16.192
RP magnitude         : 15.578
BP magnitude         : 16.627
DUPflag              : 0
Distance (au)        : 18.127
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -18.21
Sun-Target sep (deg) : 145.66
Sun-Moon sep (deg)   : 60.90
B (ring opening deg) : 73.35
PA of pole (deg)     : 61.98
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.559
C/A sky separation (km) : 33638.4
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itrfr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
```



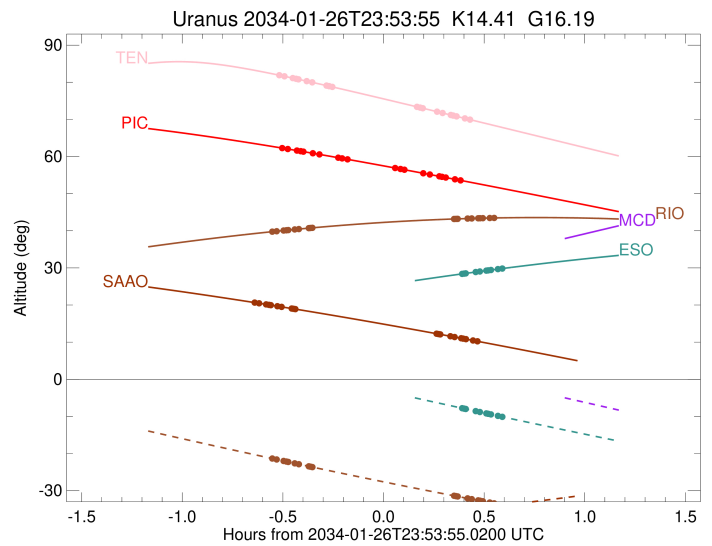
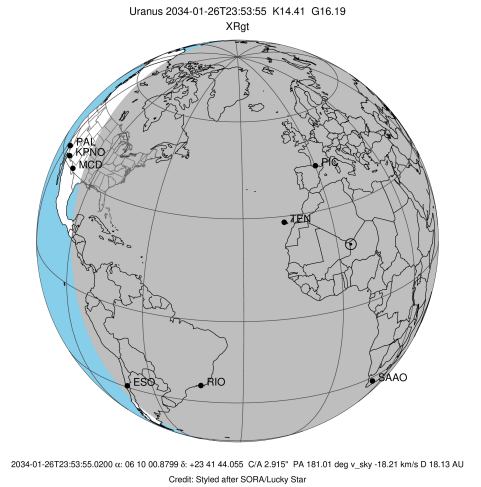
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-01-26T23:20:58.938		39.78	-21.39	50967.91	-14.26		
lambda	I	2034-01-26T23:22:05.028		39.88	-21.61	50026.71	-14.13		
delta	I	2034-01-26T23:24:09.131		40.07	-22.01	48300.35	-13.68		
gamma	I	2034-01-26T23:24:58.508		40.14	-22.17	47629.42	-13.49		
eta	I	2034-01-26T23:25:32.276		40.19	-22.28	47176.12	-13.36		
beta	I	2034-01-26T23:27:27.401		40.36	-22.65	45666.74	-12.87		
alpha	I	2034-01-26T23:28:44.393		40.47	-22.90	44689.09	-12.51		
4	I	2034-01-26T23:31:42.148		40.71	-23.47	42546.36	-11.57		
5	I	2034-01-26T23:32:02.414		40.74	-23.53	42314.77	-11.48		
6	I	2034-01-26T23:32:47.928		40.80	-23.68	41798.41	-11.22		

No planet occultations

6	E	2034-01-27T00:14:57.242		43.18	-31.39	41841.04	11.23		
5	E	2034-01-27T00:15:34.508		43.20	-31.49	42266.68	11.48		
4	E	2034-01-27T00:15:56.192		43.21	-31.56	42527.92	11.58		
alpha	E	2034-01-27T00:18:59.400		43.29	-32.08	44730.50	12.51		
beta	E	2034-01-27T00:20:14.127		43.32	-32.30	45680.93	12.88		
eta	E	2034-01-27T00:22:08.068		43.37	-32.62	47176.12	13.36		
gamma	E	2034-01-27T00:22:41.274		43.38	-32.71	47622.06	13.50		
delta	E	2034-01-27T00:23:31.171		43.40	-32.85	48300.35	13.69		
lambda	E	2034-01-27T00:25:35.208		43.44	-33.20	50026.71	14.14		
epsilon	E	2034-01-27T00:26:29.909		43.45	-33.35	50805.14	14.27		

```

target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2034-01-26T23:57:07.790
Event type          : XRgt
: No Uranus occs
: Ring occs: geocentric, topocentric
Observer code       : ESO
Location            : European Southern Obs. (3.6m)
Latitude (deg)      : -29.26097
E. Longitude (deg)  : 289.26831
Altitude (km)       : 2.400
Gaia source ID      : 3425480651878424704
2Mass ID (if available) : 06100088+2341441
ICRS Star Coord at Epoch: 06h 10m 00.87987s +23:41:44.05547s
RUWE (>1.4 is poor) : 1.00
K magnitude         : 14.407
G magnitude         : 16.192
RP magnitude        : 15.578
BP magnitude        : 16.627
DUPflag            : 0
Distance (au)       : 18.127
f0 (km)            : 0.000
g0 (km)            : 0.000
skyplane vel. (km/s) : -18.21
Sun-Target sep (deg) : 145.66
Sun-Moon sep (deg)  : 60.51
B (ring opening deg) : 73.35
PA of pole (deg)    : 61.98
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 2.553
C/A sky separation (km) : 33565.2
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itrfr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
```

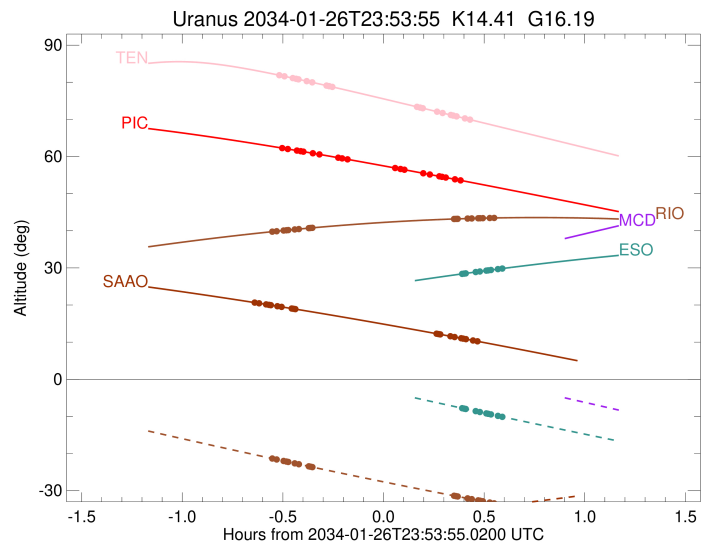
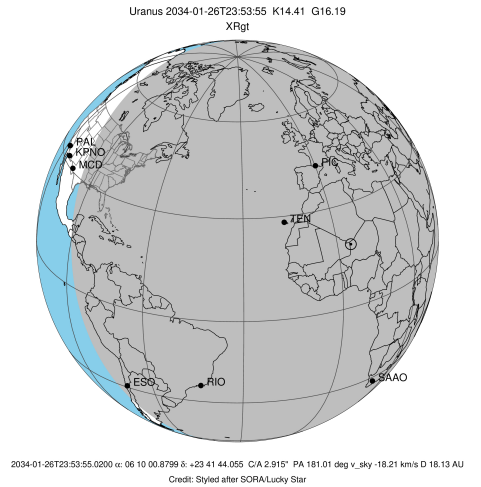


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-01-26T23:22:55.924		20.71	3.17x	50967.31	-14.18		
lambda	I	2034-01-26T23:24:02.318		20.88	2.94x	50026.71	-14.06		
delta	I	2034-01-26T23:26:07.043		21.20	2.52x	48300.35	-13.62		
gamma	I	2034-01-26T23:26:56.655		21.33	2.35x	47629.41	-13.43		
eta	I	2034-01-26T23:27:30.579		21.41	2.23x	47176.12	-13.29		
beta	I	2034-01-26T23:29:26.207		21.71	1.83x	45666.76	-12.82		
alpha	I	2034-01-26T23:30:43.510		21.91	1.57x	44689.11	-12.46		
4	I	2034-01-26T23:33:41.880		22.36	0.96x	42546.33	-11.54		
5	I	2034-01-26T23:34:02.201		22.41	0.89x	42314.78	-11.45		
6	I	2034-01-26T23:34:47.836		22.52	0.74x	41798.42	-11.19		

No planet occultations

6	E	2034-01-27T00:17:21.573		28.39	-7.79	41841.32	11.22		
5	E	2034-01-27T00:17:58.808		28.46	-7.91	42266.21	11.47		
4	E	2034-01-27T00:18:20.568		28.51	-7.98	42528.01	11.56		
alpha	E	2034-01-27T00:21:24.067		28.88	-8.58	44730.69	12.49		
beta	E	2034-01-27T00:22:38.920		29.04	-8.82	45680.91	12.85		
eta	E	2034-01-27T00:24:33.112		29.26	-9.19	47176.12	13.33		
gamma	E	2034-01-27T00:25:06.394		29.33	-9.30	47622.04	13.47		
delta	E	2034-01-27T00:25:56.412		29.43	-9.46	48300.35	13.66		
lambda	E	2034-01-27T00:28:00.761		29.67	-9.86	50026.71	14.10		
epsilon	E	2034-01-27T00:28:55.691		29.78	-10.04	50806.34	14.23		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-01-26T23:49:44.890
 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 : 3425480651878424704
 2Mass ID (if available) : 06100088+2341441
 ICRS Star Coord at Epoch: 06h 10m 00.87987s +23:41:44.05547s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.407
 G magnitude : 16.192
 RP magnitude : 15.578
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 18.127
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -18.21
 Sun-Target sep (deg) : 145.66
 Sun-Moon sep (deg) : 60.96
 B (ring opening deg) : 73.35
 PA of pole (deg) : 61.98
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.576
 C/A sky separation (km) : 33870.7
 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_itrfr93_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	2034-01-26T23:15:43.773		20.62	-38.91	50968.77	-14.09		
lambda	I	2034-01-26T23:16:50.711		20.46	-38.87	50026.71	-13.96		
delta	I	2034-01-26T23:18:56.387		20.16	-38.81	48300.35	-13.50		
gamma	I	2034-01-26T23:19:46.427		20.04	-38.78	47629.42	-13.31		
eta	I	2034-01-26T23:20:20.662		19.96	-38.76	47176.12	-13.17		
beta	I	2034-01-26T23:22:17.475		19.68	-38.69	45666.72	-12.67		
alpha	I	2034-01-26T23:23:35.684		19.49	-38.64	44689.08	-12.31		
4	I	2034-01-26T23:26:36.597		19.05	-38.52	42546.33	-11.35		
5	I	2034-01-26T23:26:57.255		19.00	-38.51	42314.78	-11.26		
6	I	2034-01-26T23:27:43.689		18.88	-38.47	41798.43	-10.99		

No planet occultations

6	E	2034-01-27T00:09:43.819		12.28	-35.78	41840.32	10.95		
5	E	2034-01-27T00:10:22.171		12.17	-35.72	42267.91	11.22		
4	E	2034-01-27T00:10:44.237		12.11	-35.69	42527.71	11.31		
alpha	E	2034-01-27T00:13:51.496		11.59	-35.42	44730.00	12.26		
beta	E	2034-01-27T00:15:07.822		11.38	-35.31	45680.98	12.62		
eta	E	2034-01-27T00:17:04.025		11.05	-35.13	47176.12	13.11		
gamma	E	2034-01-27T00:17:37.876		10.95	-35.08	47622.11	13.24		
delta	E	2034-01-27T00:18:28.720		10.81	-35.00	48300.35	13.44		
lambda	E	2034-01-27T00:20:35.058		10.45	-34.80	50026.71	13.89		
epsilon	E	2034-01-27T00:21:30.545		10.30	-34.72	50802.24	14.01		