

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-24T01:05:33.610
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3382610178116212096
 2Mass ID (if available) : 06303777+2335109

ICRS Star Coord at Epoch: 06h 30m 37.78712s +23:35:10.96652s

RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.003
 G magnitude : 14.580
 RP magnitude : 14.056
 BP magnitude : 14.928
 DUPflag : 0
 Distance (au) : 17.998
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -20.27
 Sun-Target sep (deg) : 153.65
 Sun-Moon sep (deg) : 29.26
 B (ring opening deg) : 69.08
 PA of pole (deg) : 69.99

a(km) ring

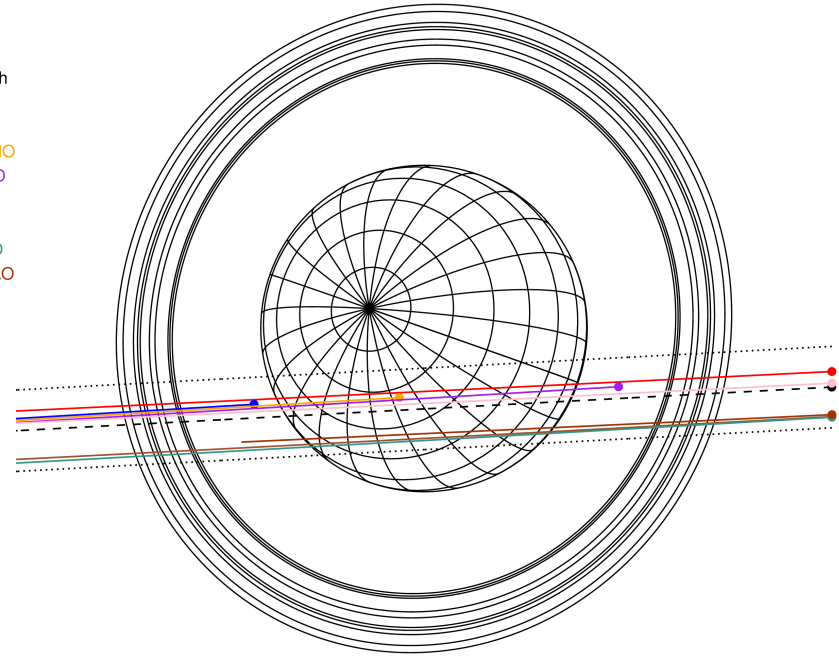
- 1 41837.2 6
- 2 42235.0 5
- 3 42571.2 4
- 4 44718.5 alpha
- 5 45661.1 beta
- 6 47176.1 eta
- 7 47626.3 gamma
- 8 48300.3 delta
- 9 50026.7 lambda
- 10 51149.4 epsilon



2035-01-24T01:05:33.6100 α: 06 30 37.7871 s: +23 35 10.967 C/A 0.956° PA 3.06 deg v_sky -20.27 km/s D 18.00 AU
 Credit: Styled after SORA/Lucky Star

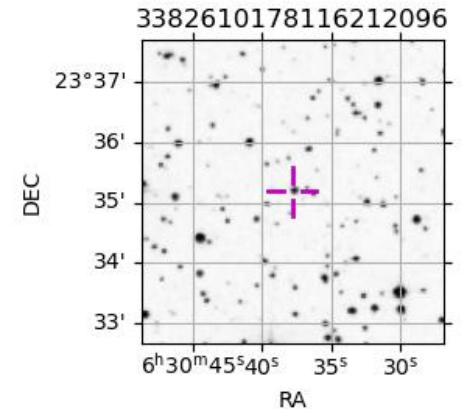
Uranus 2035-01-24T01:05:33 K13.00 G14.58 PgtRgt

Earth
 PIC
 PAL
 KPNO
 MCD
 TEN
 RIO
 ESO
 SAAO

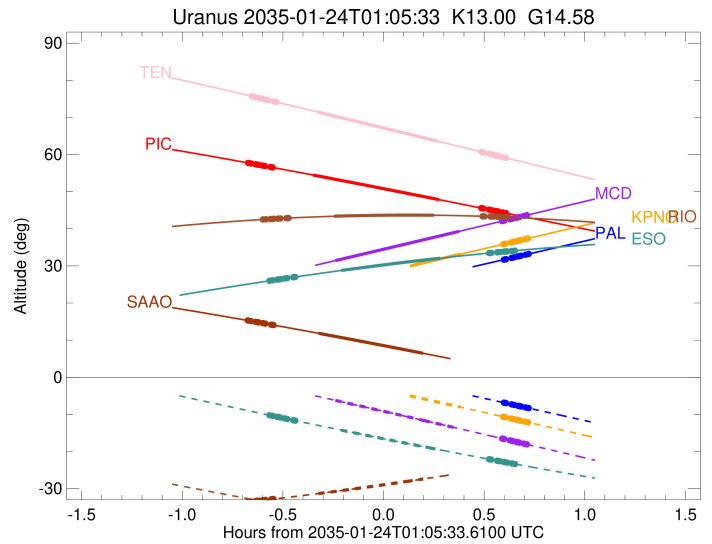
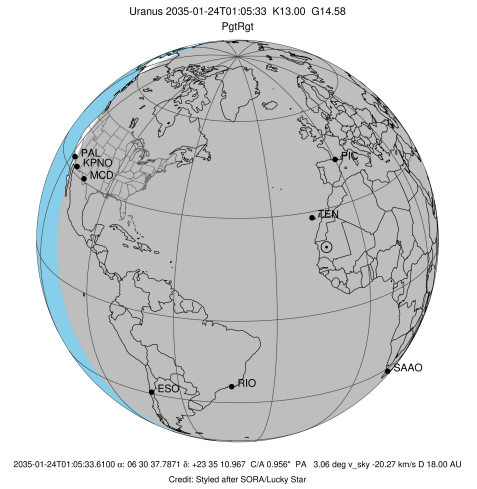


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++	+ +	+++++	JAN 24 00:25 - JAN 24 01:41	PieRie
PAL	Palomar Mt (200")	33.4	243.1			+++++	JAN 24 01:41 - JAN 24 01:48	PnnRne
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4		+	+++++	JAN 24 01:28 - JAN 24 01:48	PneRne
MCD	McDonald Obs. 2.7m	30.7	256.0		+ +	+++++	JAN 24 00:51 - JAN 24 01:48	PieRne
TEN	Teide Obs./Tenerife	28.3	343.5	+++++	+ +	+++++	JAN 24 00:26 - JAN 24 01:41	PieRie
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 24 00:29 - JAN 24 01:42	PieRie
ESO	European Southern Obs	-29.3	289.3	+++++	+ +	+++++	JAN 24 00:31 - JAN 24 01:44	PieRie
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8	+++++	+ +		JAN 24 00:25 - JAN 24 01:17	PieRin
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn

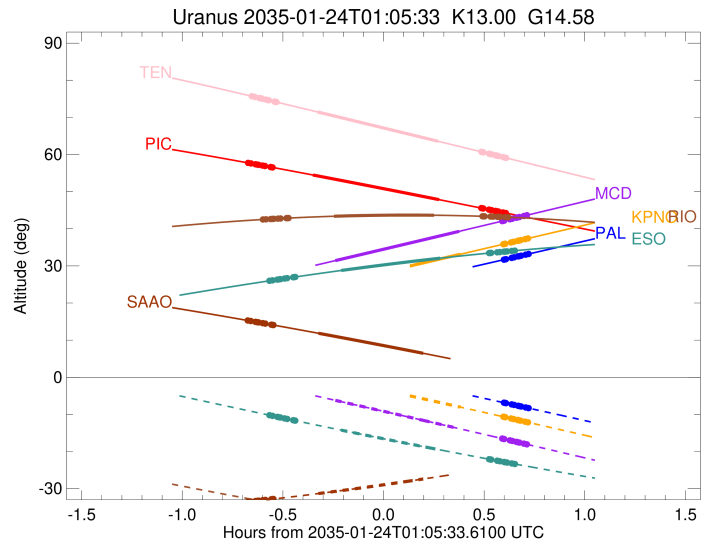
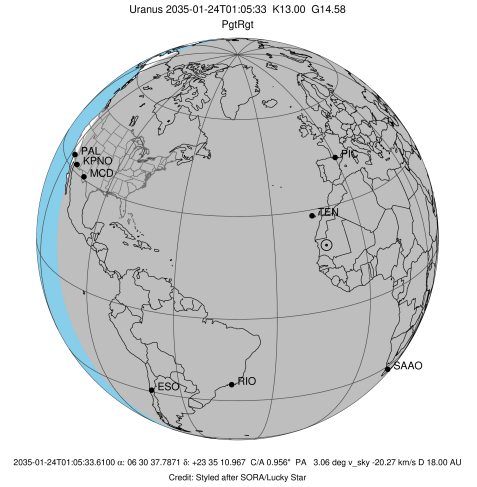


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-24T01:03:12.220
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 3382610178116212096
 2Mass ID (if available) : 06303777+2335109
 ICRS Star Coord at Epoch: 06h 30m 37.78712s +23:35:10.96652s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.003
 G magnitude : 14.580
 RP magnitude : 14.056
 BP magnitude : 14.928
 DUPflag : 0
 Distance (au) : 17.998
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -20.27
 Sun-Target sep (deg) : 153.65
 Sun-Moon sep (deg) : 29.29
 B (ring opening deg) : 69.08
 PA of pole (deg) : 69.99
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.755
 C/A sky separation (km) : 9854.4
 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_itrf93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



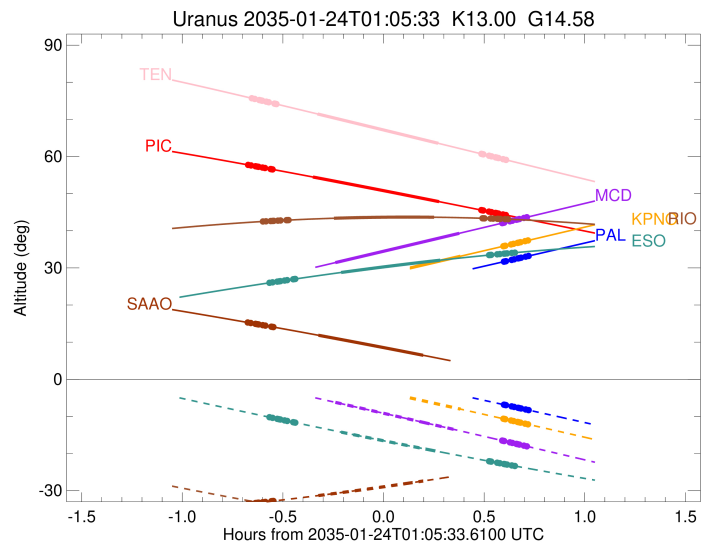
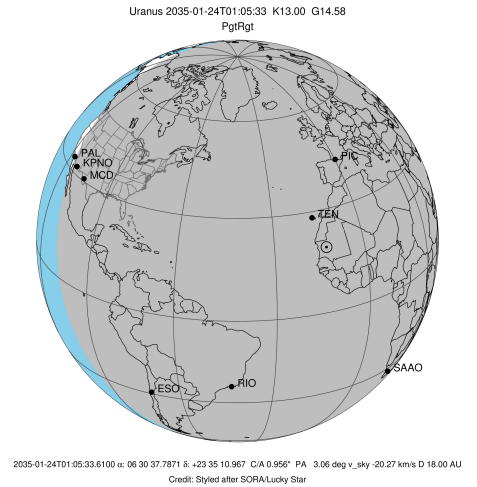
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-24T00:25:05.990		57.76	-66.37	51279.53	-21.35		
lambda	I	2035-01-24T00:26:04.609		57.60	-66.34	50026.71	-21.36		
delta	I	2035-01-24T00:27:25.490		57.38	-66.30	48300.35	-21.33		
gamma	I	2035-01-24T00:27:57.070		57.29	-66.28	47627.05	-21.31		
eta	I	2035-01-24T00:28:18.233		57.23	-66.27	47176.12	-21.30		
beta	I	2035-01-24T00:29:30.276		57.03	-66.23	45643.72	-21.27		
alpha	I	2035-01-24T00:30:13.196		56.91	-66.21	44726.78	-21.25		
4	I	2035-01-24T00:31:56.925		56.62	-66.14	42527.62	-21.18		
5	I	2035-01-24T00:32:07.190		56.59	-66.14	42297.24	-21.17		
6	I	2035-01-24T00:32:30.477		56.53	-66.12	41802.63	-21.15		
Uranus	I	2035-01-24T00:44:30.781		54.49	-65.52	25048.52		-20.92	-21.82
Uranus	E	2035-01-24T01:22:08.490		47.85	-62.18	25306.00		14.45	15.10
6	E	2035-01-24T01:34:44.105		45.57	-60.68	41856.59	21.08		
5	E	2035-01-24T01:35:00.547		45.52	-60.64	42202.53	21.10		
4	E	2035-01-24T01:35:18.930		45.46	-60.60	42604.58	21.11		
alpha	E	2035-01-24T01:36:59.402		45.16	-60.39	44725.23	21.17		
beta	E	2035-01-24T01:37:44.007		45.03	-60.29	45672.68	21.19		
eta	E	2035-01-24T01:38:54.964		44.81	-60.14	47176.12	21.22		
gamma	E	2035-01-24T01:39:16.240		44.75	-60.09	47627.69	21.23		
delta	E	2035-01-24T01:39:47.915		44.65	-60.03	48300.35	21.24		
lambda	E	2035-01-24T01:41:09.126		44.40	-59.85	50026.71	21.27		
epsilon	E	2035-01-24T01:41:49.164		44.28	-59.76	50878.72	21.26		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-24T01:09:50.440
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : 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 : 3382610178116212096
 2Mass ID (if available) : 06303777+2335109
 ICRS Star Coord at Epoch: 06h 30m 37.78712s +23:35:10.96652s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.003
 G magnitude : 14.580
 RP magnitude : 14.056
 BP magnitude : 14.928
 DUPflag : 0
 Distance (au) : 17.998
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -20.27
 Sun-Target sep (deg) : 153.65
 Sun-Moon sep (deg) : 30.21
 B (ring opening deg) : 69.08
 PA of pole (deg) : 69.99
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.785
 C/A sky separation (km) : 10251.2
 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



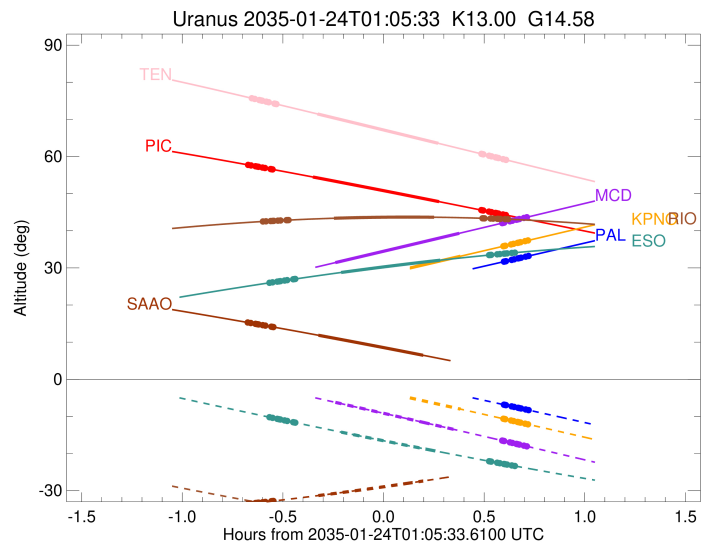
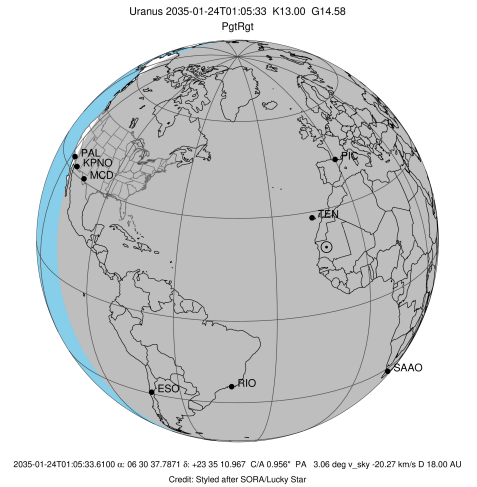
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-24T00:31:26.926		17.39	6.58x	51280.76	-21.06		
lambda	I	2035-01-24T00:32:26.416		17.58	6.40x	50026.71	-21.07		
delta	I	2035-01-24T00:33:48.416		17.86	6.15x	48300.35	-21.04		
gamma	I	2035-01-24T00:34:20.433		17.97	6.05x	47627.03	-21.02		
eta	I	2035-01-24T00:34:41.887		18.04	5.98x	47176.12	-21.01		
beta	I	2035-01-24T00:35:54.923		18.28	5.76x	45643.75	-20.98		
alpha	I	2035-01-24T00:36:38.439		18.43	5.62x	44726.71	-20.96		
4	I	2035-01-24T00:38:23.597		18.78	5.30x	42527.64	-20.89		
5	I	2035-01-24T00:38:34.008		18.82	5.27x	42297.18	-20.89		
6	I	2035-01-24T00:38:57.612		18.90	5.19x	41802.66	-20.86		
Uranus	I	2035-01-24T00:51:08.517		21.36	2.91x	25048.57		-20.92	-21.82
Uranus	E	2035-01-24T01:28:45.465		29.05	-4.34x	25320.78		14.00	14.64
6	E	2035-01-24T01:41:29.192		31.69	-6.85	41855.77	20.96		
5	E	2035-01-24T01:41:45.846		31.74	-6.91	42204.09	20.98		
4	E	2035-01-24T01:42:04.234		31.81	-6.97	42603.92	20.99		
alpha	E	2035-01-24T01:43:45.317		32.16	-7.30	44725.91	21.06		
beta	E	2035-01-24T01:44:30.105		32.31	-7.45	45672.34	21.08		
eta	E	2035-01-24T01:45:41.423		32.56	-7.69	47176.12	21.12		
gamma	E	2035-01-24T01:46:02.803		32.63	-7.76	47627.79	21.13		
delta	E	2035-01-24T01:46:34.618		32.74	-7.86	48300.35	21.15		
lambda	E	2035-01-24T01:47:56.181		33.02	-8.13	50026.71	21.18		
epsilon	E	2035-01-24T01:48:36.108		33.16	-8.27	50872.86	21.18		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-24T01:09:45.880
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : 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 : 3382610178116212096
 2Mass ID (if available) : 06303777+2335109
 ICRS Star Coord at Epoch: 06h 30m 37.78712s +23:35:10.96652s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.003
 G magnitude : 14.580
 RP magnitude : 14.056
 BP magnitude : 14.928
 DUPflag : 0
 Distance (au) : 17.998
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -20.27
 Sun-Target sep (deg) : 153.65
 Sun-Moon sep (deg) : 30.23
 B (ring opening deg) : 69.08
 PA of pole (deg) : 69.99
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.809
 C/A sky separation (km) : 10562.6
 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



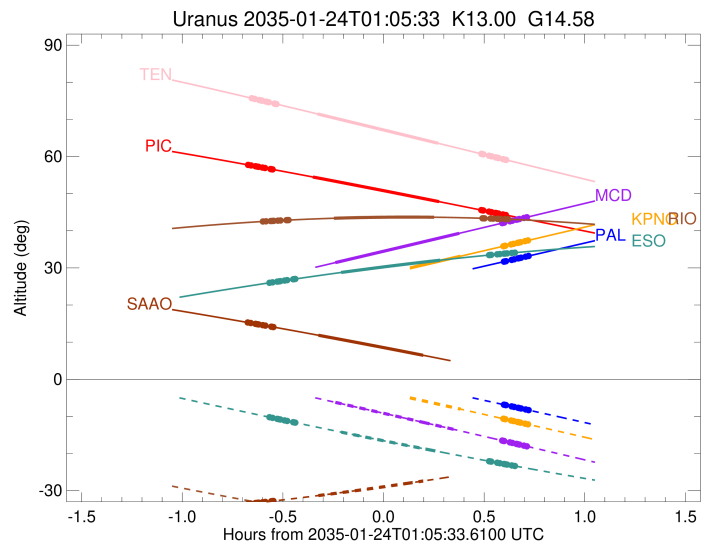
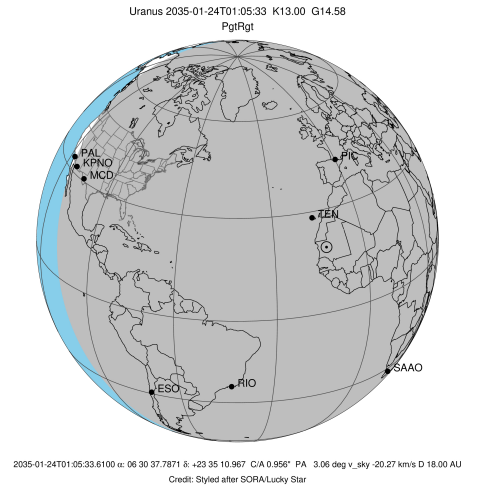
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-24T00:31:30.337		21.27	3.23x	51278.28	-21.07		
lambda	I	2035-01-24T00:32:29.682		21.48	3.04x	50026.71	-21.08		
delta	I	2035-01-24T00:33:51.654		21.76	2.77x	48300.35	-21.04		
gamma	I	2035-01-24T00:34:23.660		21.87	2.67x	47627.07	-21.03		
eta	I	2035-01-24T00:34:45.111		21.94	2.60x	47176.12	-21.02		
beta	I	2035-01-24T00:35:58.138		22.19	2.37x	45643.67	-20.98		
alpha	I	2035-01-24T00:36:41.635		22.34	2.23x	44726.96	-20.96		
4	I	2035-01-24T00:38:26.814		22.70	1.89x	42527.54	-20.89		
5	I	2035-01-24T00:38:37.206		22.74	1.85x	42297.57	-20.88		
6	I	2035-01-24T00:39:00.842		22.82	1.78x	41802.47	-20.86		
Uranus	I	2035-01-24T00:51:12.889		25.35	-0.60x	25048.83		-20.92	-21.82
Uranus	E	2035-01-24T01:28:32.449		33.15	-8.05	25327.47		13.80	14.43
6	E	2035-01-24T01:41:18.300		35.84	-10.64	41855.49	20.95		
5	E	2035-01-24T01:41:35.001		35.90	-10.69	42204.64	20.98		
4	E	2035-01-24T01:41:53.359		35.96	-10.76	42603.69	20.98		
alpha	E	2035-01-24T01:43:34.480		36.32	-11.10	44726.15	21.06		
beta	E	2035-01-24T01:44:19.256		36.48	-11.25	45672.23	21.08		
eta	E	2035-01-24T01:45:30.575		36.73	-11.50	47176.12	21.12		
gamma	E	2035-01-24T01:45:51.953		36.81	-11.57	47627.83	21.14		
delta	E	2035-01-24T01:46:23.762		36.92	-11.68	48300.35	21.15		
lambda	E	2035-01-24T01:47:45.306		37.20	-11.96	50026.71	21.19		
epsilon	E	2035-01-24T01:48:25.136		37.35	-12.09	50871.07	21.18		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-24T01:09:33.570
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : 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 : 3382610178116212096
 2Mass ID (if available) : 06303777+2335109
 ICRS Star Coord at Epoch: 06h 30m 37.78712s +23:35:10.96652s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.003
 G magnitude : 14.580
 RP magnitude : 14.056
 BP magnitude : 14.928
 DUPflag : 0
 Distance (au) : 17.998
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -20.27
 Sun-Target sep (deg) : 153.65
 Sun-Moon sep (deg) : 30.24
 B (ring opening deg) : 69.08
 PA of pole (deg) : 69.99
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.838
 C/A sky separation (km) : 10933.6
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



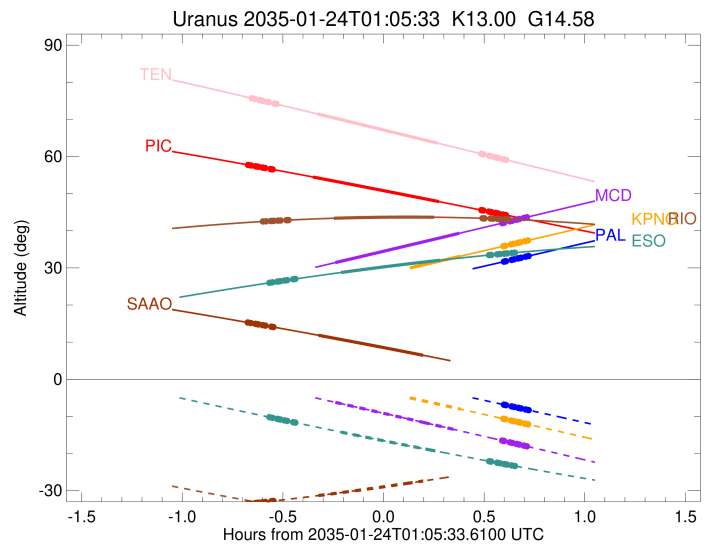
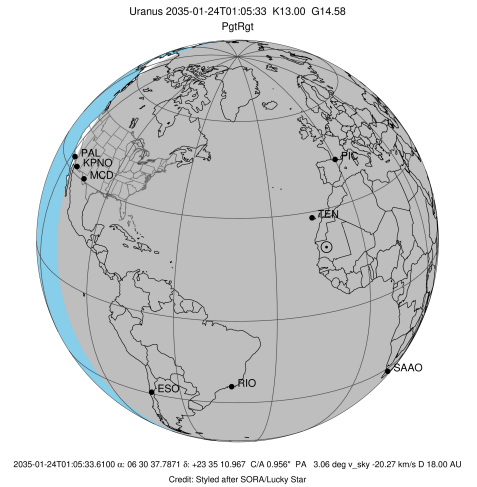
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-24T00:31:28.437		27.25	-2.23x	51275.23	-21.08		
lambda	I	2035-01-24T00:32:27.587		27.46	-2.43x	50026.71	-21.10		
delta	I	2035-01-24T00:33:49.495		27.75	-2.70x	48300.35	-21.06		
gamma	I	2035-01-24T00:34:21.479		27.86	-2.81x	47627.11	-21.04		
eta	I	2035-01-24T00:34:42.918		27.94	-2.88x	47176.12	-21.03		
beta	I	2035-01-24T00:35:55.911		28.19	-3.12x	45643.58	-20.99		
alpha	I	2035-01-24T00:36:39.370		28.35	-3.27x	44727.25	-20.97		
4	I	2035-01-24T00:38:24.540		28.72	-3.62x	42527.43	-20.89		
5	I	2035-01-24T00:38:34.908		28.75	-3.66x	42298.05	-20.88		
6	I	2035-01-24T00:38:58.574		28.84	-3.74x	41802.23	-20.86		
Uranus	I	2035-01-24T00:51:11.855		31.43	-6.22	25049.40		-20.90	-21.80
Uranus	E	2035-01-24T01:28:09.435		39.32	-13.84	25335.36		13.55	14.17
6	E	2035-01-24T01:40:57.740		42.07	-16.52	41855.15	20.94		
5	E	2035-01-24T01:41:14.493		42.13	-16.58	42205.29	20.97		
4	E	2035-01-24T01:41:32.814		42.19	-16.64	42603.42	20.98		
alpha	E	2035-01-24T01:43:13.963		42.56	-17.00	44726.41	21.06		
beta	E	2035-01-24T01:43:58.715		42.72	-17.15	45672.09	21.09		
eta	E	2035-01-24T01:45:10.023		42.97	-17.40	47176.12	21.13		
gamma	E	2035-01-24T01:45:31.396		43.05	-17.48	47627.87	21.14		
delta	E	2035-01-24T01:46:03.191		43.16	-17.59	48300.35	21.16		
lambda	E	2035-01-24T01:47:24.697		43.46	-17.87	50026.71	21.20		
epsilon	E	2035-01-24T01:48:04.408		43.60	-18.01	50869.02	21.19		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-24T01:03:43.510
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : 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 : 3382610178116212096
 2Mass ID (if available) : 06303777+2335109
 ICRS Star Coord at Epoch: 06h 30m 37.78712s +23:35:10.96652s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.003
 G magnitude : 14.580
 RP magnitude : 14.056
 BP magnitude : 14.928
 DUPflag : 0
 Distance (au) : 17.998
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -20.27
 Sun-Target sep (deg) : 153.65
 Sun-Moon sep (deg) : 29.41
 B (ring opening deg) : 69.08
 PA of pole (deg) : 69.99
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.899
 C/A sky separation (km) : 11735.3
 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



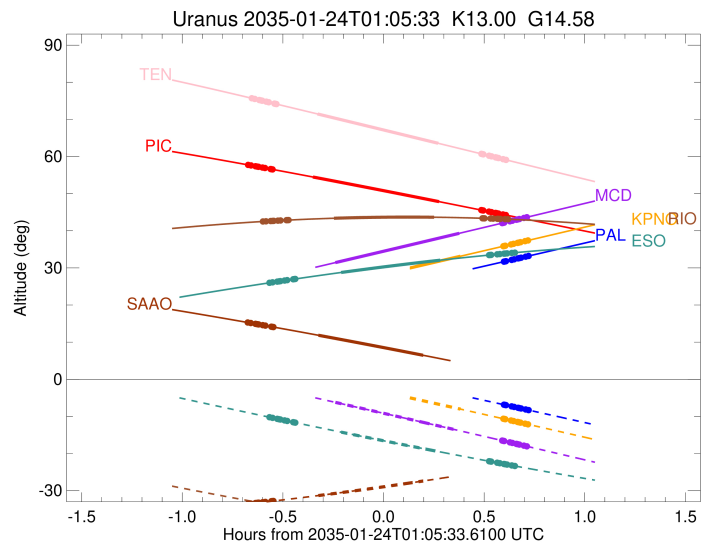
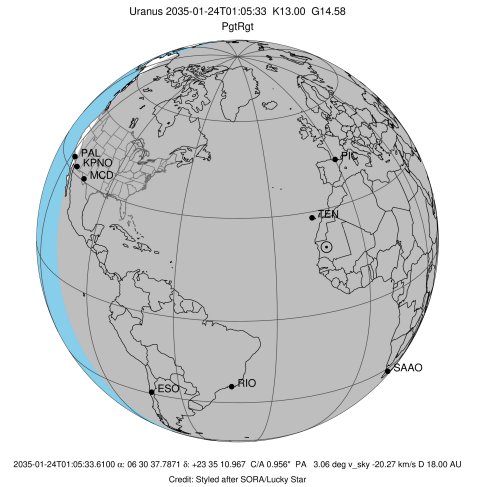
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-24T00:26:13.265		75.72	-75.26	51265.14	-21.28		
lambda	I	2035-01-24T00:27:11.410		75.51	-75.44	50026.71	-21.28		
delta	I	2035-01-24T00:28:32.612		75.22	-75.68	48300.35	-21.24		
gamma	I	2035-01-24T00:29:04.323		75.11	-75.78	47627.26	-21.22		
eta	I	2035-01-24T00:29:25.594		75.03	-75.84	47176.12	-21.20		
beta	I	2035-01-24T00:30:38.023		74.77	-76.05	45643.32	-21.15		
alpha	I	2035-01-24T00:31:21.097		74.62	-76.18	44728.18	-21.12		
4	I	2035-01-24T00:33:05.581		74.24	-76.48	42527.11	-21.03		
5	I	2035-01-24T00:33:15.813		74.21	-76.51	42299.49	-21.02		
6	I	2035-01-24T00:33:39.420		74.12	-76.58	41801.53	-20.99		
Uranus	I	2035-01-24T00:45:51.520		71.48	-78.53	25052.41		-20.84	-21.73
Uranus	E	2035-01-24T01:21:52.537		63.57	-81.10	25347.71		13.16	13.76
6	E	2035-01-24T01:34:45.346		60.72	-80.34	41854.76	20.93		
5	E	2035-01-24T01:35:02.160		60.66	-80.31	42206.02	20.97		
4	E	2035-01-24T01:35:20.440		60.59	-80.29	42603.11	20.97		
alpha	E	2035-01-24T01:37:01.627		60.22	-80.12	44726.70	21.06		
beta	E	2035-01-24T01:37:46.354		60.05	-80.04	45671.96	21.09		
eta	E	2035-01-24T01:38:57.646		59.79	-79.92	47176.12	21.14		
gamma	E	2035-01-24T01:39:19.013		59.71	-79.88	47627.90	21.15		
delta	E	2035-01-24T01:39:50.791		59.60	-79.82	48300.35	21.17		
lambda	E	2035-01-24T01:41:12.250		59.30	-79.66	50026.71	21.22		
epsilon	E	2035-01-24T01:41:51.851		59.15	-79.58	50867.25	21.21		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-24T01:05:30.650
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : 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 : 3382610178116212096
 2Mass ID (if available) : 06303777+2335109
 ICRS Star Coord at Epoch: 06h 30m 37.78712s +23:35:10.96652s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.003
 G magnitude : 14.580
 RP magnitude : 14.056
 BP magnitude : 14.928
 DUPflag : 0
 Distance (au) : 17.998
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -20.27
 Sun-Target sep (deg) : 153.65
 Sun-Moon sep (deg) : 29.51
 B (ring opening deg) : 69.08
 PA of pole (deg) : 69.99
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.317
 C/A sky separation (km) : 17188.9
 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



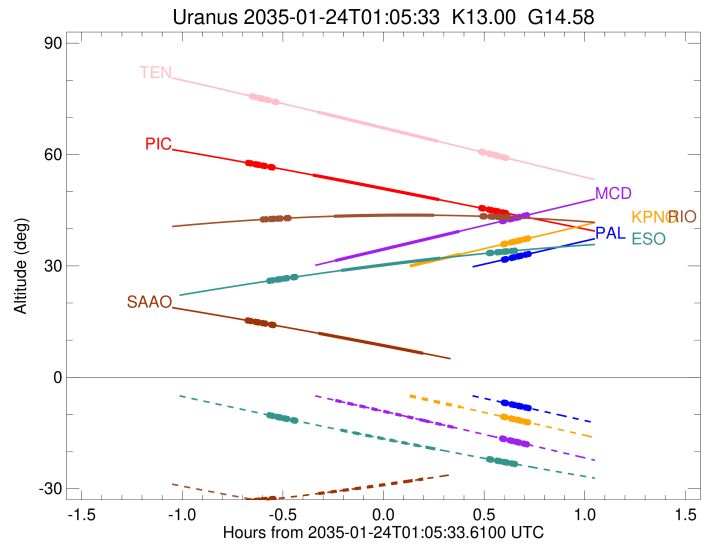
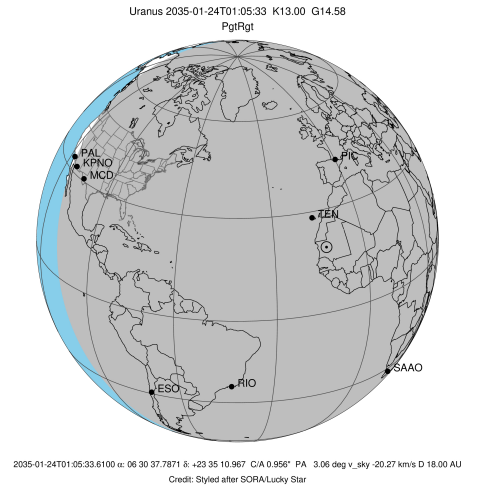
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-24T00:29:33.919		42.50	-33.41	51221.93	-20.58		
lambda	I	2035-01-24T00:30:31.934		42.55	-33.57	50026.71	-20.55		
delta	I	2035-01-24T00:31:56.071		42.63	-33.80	48300.35	-20.47		
gamma	I	2035-01-24T00:32:28.964		42.65	-33.88	47627.87	-20.42		
eta	I	2035-01-24T00:32:51.101		42.67	-33.94	47176.12	-20.39		
beta	I	2035-01-24T00:34:06.561		42.74	-34.15	45642.31	-20.28		
alpha	I	2035-01-24T00:34:51.264		42.77	-34.27	44732.23	-20.22		
4	I	2035-01-24T00:36:40.940		42.86	-34.56	42526.13	-20.02		
5	I	2035-01-24T00:36:51.439		42.86	-34.59	42305.37	-20.00		
6	I	2035-01-24T00:37:16.672		42.88	-34.65	41798.71	-19.94		
Uranus	I	2035-01-24T00:50:46.404		43.38	-36.74	25107.62		-19.59	-20.44
Uranus	E	2035-01-24T01:20:38.784		43.65	-40.88	25468.62		8.53	8.93
6	E	2035-01-24T01:35:04.835		43.37	-42.61	41849.03	19.93		
5	E	2035-01-24T01:35:23.338		43.36	-42.64	42216.91	19.99		
4	E	2035-01-24T01:35:41.784		43.35	-42.68	42598.26	20.01		
alpha	E	2035-01-24T01:37:27.980		43.30	-42.87	44731.01	20.21		
beta	E	2035-01-24T01:38:14.254		43.27	-42.96	45669.66	20.28		
eta	E	2035-01-24T01:39:28.398		43.23	-43.09	47176.12	20.39		
gamma	E	2035-01-24T01:39:50.573		43.22	-43.13	47628.52	20.42		
delta	E	2035-01-24T01:40:23.445		43.20	-43.19	48300.35	20.46		
lambda	E	2035-01-24T01:41:47.612		43.15	-43.34	50026.71	20.56		
epsilon	E	2035-01-24T01:42:26.899		43.13	-43.41	50835.42	20.57		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-24T01:07:30.030
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : 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 : 3382610178116212096
 2Mass ID (if available) : 06303777+2335109
 ICRS Star Coord at Epoch: 06h 30m 37.78712s +23:35:10.96652s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.003
 G magnitude : 14.580
 RP magnitude : 14.056
 BP magnitude : 14.928
 DUPflag : 0
 Distance (au) : 17.998
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -20.27
 Sun-Target sep (deg) : 153.65
 Sun-Moon sep (deg) : 29.76
 B (ring opening deg) : 69.08
 PA of pole (deg) : 69.99
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.342
 C/A sky separation (km) : 17514.8
 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	2035-01-24T00:31:30.960		25.98	-10.21	51220.54	-20.42		
lambda	I	2035-01-24T00:32:29.337		26.11	-10.40	50026.71	-20.42		
delta	I	2035-01-24T00:33:54.108		26.30	-10.67	48300.35	-20.31		
gamma	I	2035-01-24T00:34:27.253		26.38	-10.77	47627.89	-20.27		
eta	I	2035-01-24T00:34:49.561		26.43	-10.84	47176.12	-20.24		
beta	I	2035-01-24T00:36:05.615		26.60	-11.08	45642.28	-20.12		
alpha	I	2035-01-24T00:36:50.668		26.70	-11.23	44732.37	-20.05		
4	I	2035-01-24T00:38:41.258		26.95	-11.58	42526.11	-19.85		
5	I	2035-01-24T00:38:51.839		26.97	-11.61	42305.57	-19.83		
6	I	2035-01-24T00:39:17.301		27.03	-11.69	41798.61	-19.77		
Uranus	I	2035-01-24T00:52:57.407		28.77	-14.25	25112.24		-19.48	-20.33
Uranus	E	2035-01-24T01:22:26.729		32.08	-19.56	25476.71		8.14	8.52
6	E	2035-01-24T01:37:03.349		33.45	-22.08	41848.53	19.81		
5	E	2035-01-24T01:37:22.043		33.48	-22.13	42217.87	19.87		
4	E	2035-01-24T01:37:40.541		33.51	-22.18	42597.82	19.89		
alpha	E	2035-01-24T01:39:27.406		33.66	-22.48	44731.37	20.10		
beta	E	2035-01-24T01:40:13.913		33.73	-22.61	45669.45	20.17		
eta	E	2035-01-24T01:41:28.461		33.83	-22.82	47176.12	20.28		
gamma	E	2035-01-24T01:41:50.753		33.86	-22.88	47628.57	20.31		
delta	E	2035-01-24T01:42:23.789		33.91	-22.98	48300.35	20.36		
lambda	E	2035-01-24T01:43:48.363		34.03	-23.21	50026.71	20.47		
epsilon	E	2035-01-24T01:44:27.703		34.08	-23.32	50832.74	20.47		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-24T01:01:35.030
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : 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 : 3382610178116212096
 2Mass ID (if available) : 06303777+2335109
 ICRS Star Coord at Epoch: 06h 30m 37.78712s +23:35:10.96652s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 13.003
 G magnitude : 14.580
 RP magnitude : 14.056
 BP magnitude : 14.928
 DUPflag : 0
 Distance (au) : 17.998
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -20.27
 Sun-Target sep (deg) : 153.65
 Sun-Moon sep (deg) : 28.58
 B (ring opening deg) : 69.08
 PA of pole (deg) : 69.99
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.260
 C/A sky separation (km) : 16452.4
 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_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	2035-01-24T00:25:02.024		15.30	-33.57	51225.60	-20.51		
lambda	I	2035-01-24T00:26:00.394		15.15	-33.47	50026.71	-20.51		
delta	I	2035-01-24T00:27:24.763		14.92	-33.34	48300.35	-20.41		
gamma	I	2035-01-24T00:27:57.741		14.83	-33.28	47627.81	-20.37		
eta	I	2035-01-24T00:28:19.927		14.77	-33.24	47176.12	-20.35		
beta	I	2035-01-24T00:29:35.542		14.57	-33.12	45642.39	-20.24		
alpha	I	2035-01-24T00:30:20.346		14.45	-33.04	44731.86	-20.18		
4	I	2035-01-24T00:32:10.137		14.16	-32.85	42526.19	-20.00		
5	I	2035-01-24T00:32:20.664		14.13	-32.83	42304.86	-19.98		
6	I	2035-01-24T00:32:45.877		14.06	-32.79	41798.95	-19.93		
Uranus	I	2035-01-24T00:46:09.005		11.85	-31.33	25097.49		-19.82	-20.68
Uranus	E	2035-01-24T01:17:25.006		6.46	-27.40	25450.65		9.36	9.79
6	E	2035-01-24T01:31:44.984	x	3.88x	-25.39	41850.05	19.83		
5	E	2035-01-24T01:32:03.429	x	3.82x	-25.35	42214.97	19.89		
4	E	2035-01-24T01:32:22.101	x	3.77x	-25.30	42599.15	19.91		
alpha	E	2035-01-24T01:34:08.847	x	3.44x	-25.05	44730.26	20.08		
beta	E	2035-01-24T01:34:55.482	x	3.30x	-24.93	45670.08	20.14		
eta	E	2035-01-24T01:36:10.137	x	3.07x	-24.75	47176.12	20.23		
gamma	E	2035-01-24T01:36:32.474	x	3.01x	-24.70	47628.41	20.26		
delta	E	2035-01-24T01:37:05.606	x	2.91x	-24.62	48300.35	20.30		
lambda	E	2035-01-24T01:38:30.460	x	2.65x	-24.41	50026.71	20.39		
epsilon	E	2035-01-24T01:39:10.353	x	2.52x	-24.31	50840.90	20.39		