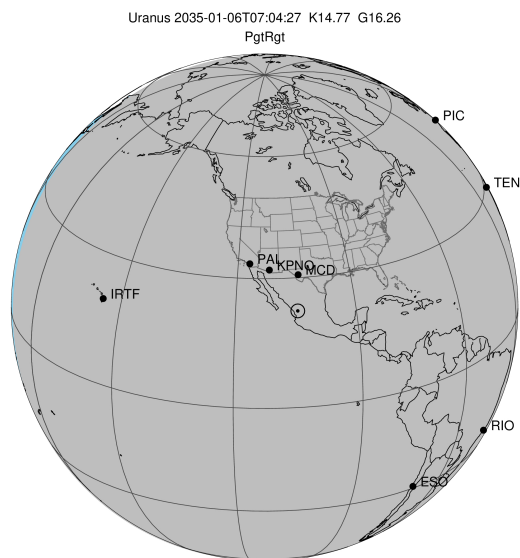


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-06T07:04:27.830
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3382632649385556224
 2Mass ID (if available) : 06334562+2332456

ICRS Star Coord at Epoch: 06h 33m 45.63714s +23:32:45.23584s

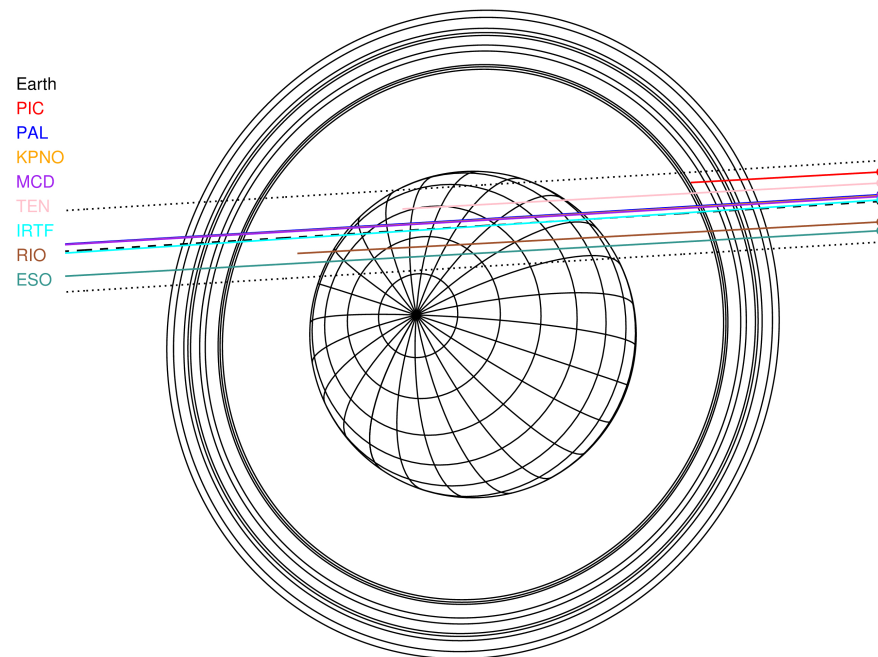
RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.768
 G magnitude : 16.261
 RP magnitude : 15.729
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 17.913
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.13
 Sun-Target sep (deg) : 172.44
 Sun-Moon sep (deg) : 150.43
 B (ring opening deg) : 68.41
 PA of pole (deg) : 71.02

#	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



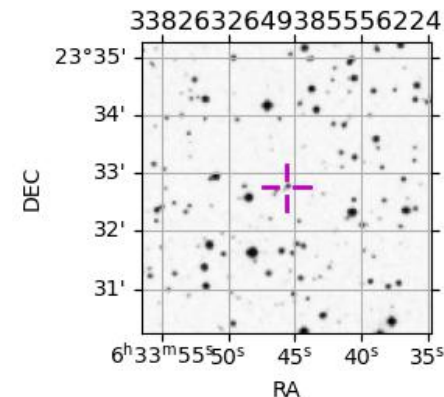
2035-01-06T07:04:27.8300 α: 06 33 45.6371 s: +23 32 45.236 C/A 1.310° PA 183.50 deg v_sky -23.13 km/s D 17.91 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2035-01-06T07:04:27 K14.77 G16.26 PgtRgt

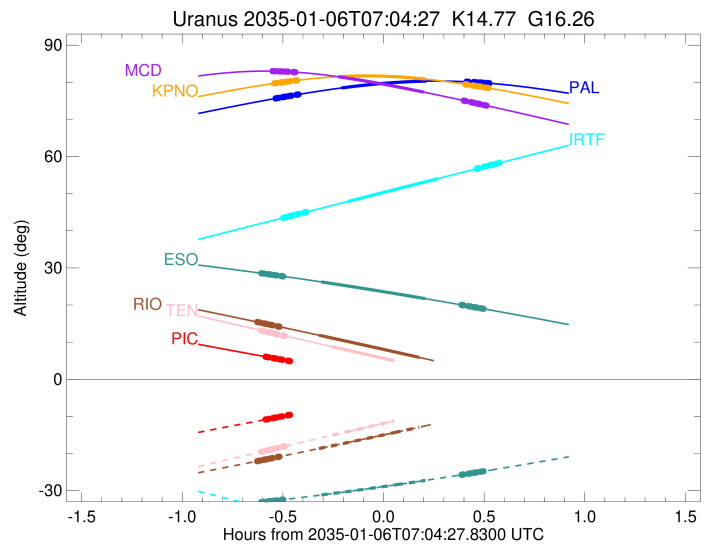
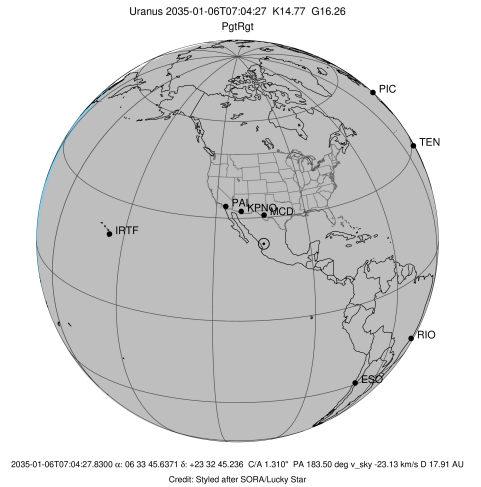


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++			JAN 06 06:29 - JAN 06 06:34	PnnRin
PAL	Palomar Mt (200")	33.4	243.1	+++++	+ +	+++++	JAN 06 06:32 - JAN 06 07:35	PieRie
PNO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+++++	+ +	+++++	JAN 06 06:31 - JAN 06 07:35	PieRie
MCD	McDonald Obs. 2.7m	30.7	256.0	+++++	+ +	+++++	JAN 06 06:31 - JAN 06 07:34	PieRie
TEN	Teide Obs./Tenerife	28.3	343.5	+++++	+		JAN 06 06:27 - JAN 06 06:49	PinRin
IRTF	Mauna Kea/IRTF	19.8	204.5	+++++	+ +	+++++	JAN 06 06:34 - JAN 06 07:38	PieRie
KAV	Kavalur Observatory	12.6	78.8					PnnRnn
RIO	Rio de Janeiro	-22.9	316.8	+++++	+ +		JAN 06 06:26 - JAN 06 07:15	PieRin
ESO	European Southern Obs	-29.3	289.3	+++++	+ +	+++++	JAN 06 06:27 - JAN 06 07:34	PieRie
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

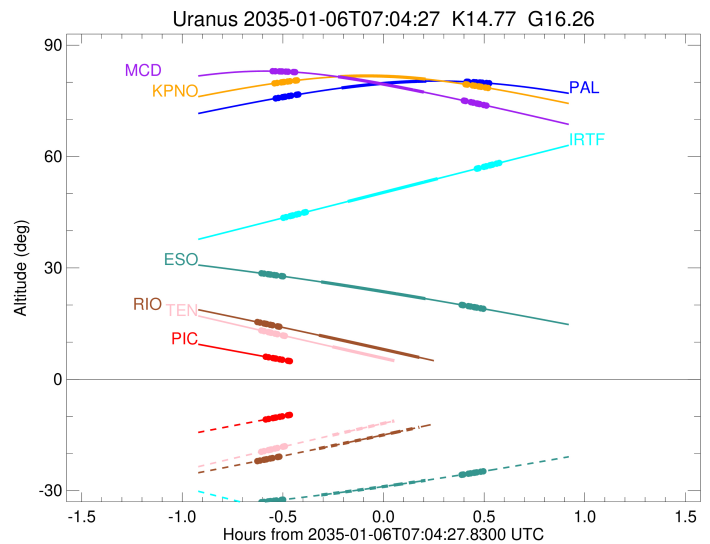
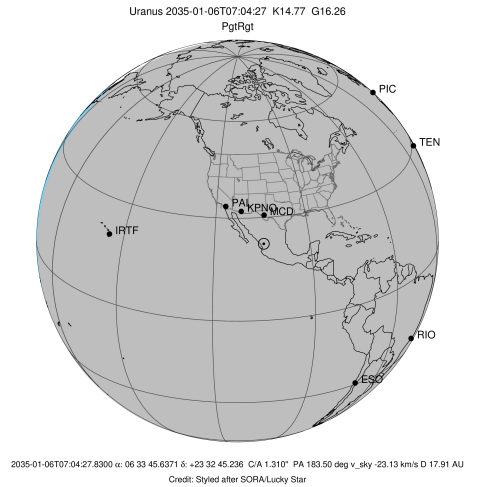


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-06T07:01:29.230
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 3382632649385556224
 2Mass ID (if available) : 06334562+2332456
 ICRS Star Coord at Epoch: 06h 33m 45.63714s +23:32:45.23584s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.768
 G magnitude : 16.261
 RP magnitude : 15.729
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 17.913
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.13
 Sun-Target sep (deg) : 172.44
 Sun-Moon sep (deg) : 151.03
 B (ring opening deg) : 68.41
 PA of pole (deg) : 71.02
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.682
 C/A sky separation (km) : 21855.4
 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



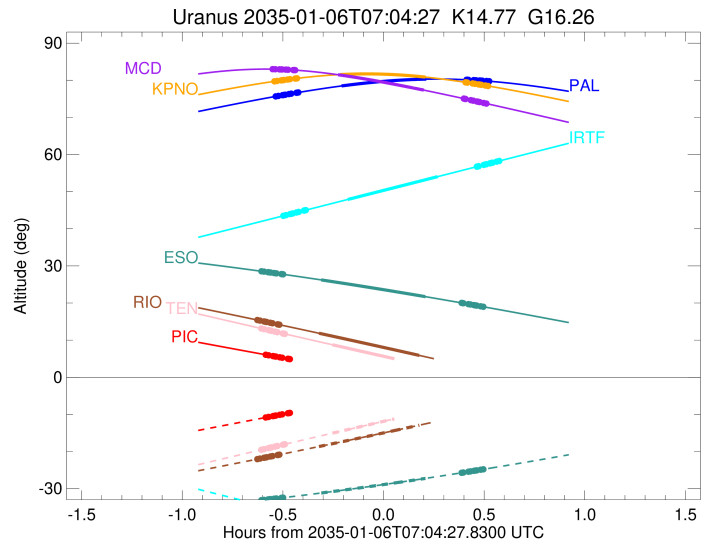
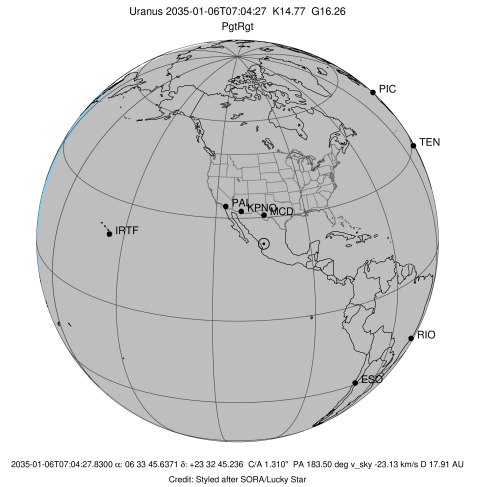
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-06T06:29:03.259		6.11	-10.88	51548.98	-22.18		
lambda	I	2035-01-06T06:30:12.177		5.92	-10.69	50026.71	-22.01		
delta	I	2035-01-06T06:31:30.963		5.71	-10.46	48300.35	-21.81		
gamma	I	2035-01-06T06:32:02.143		5.62	-10.37	47621.56	-21.73		
eta	I	2035-01-06T06:32:22.671		5.57	-10.31	47176.12	-21.67		
beta	I	2035-01-06T06:33:32.667		5.38	-10.11	45667.18	-21.47		
alpha	I	2035-01-06T06:34:18.335		5.25	-9.98	44687.26	-21.31		
4	I	2035-01-06T06:35:57.833		4.98x	-9.70	42584.21	-20.97		
5	I	2035-01-06T06:36:16.692		4.93x	-9.65	42181.53	-20.86		
6	I	2035-01-06T06:36:31.826		4.89x	-9.60	41864.66	-20.83		
Uranus	I	2035-01-06T06:51:54.041		2.41x	-7.01	25546.26		-3.30	-3.46
Uranus	E	2035-01-06T07:10:38.551		-0.51x	-3.91x	25239.59		16.90	17.65
6	E	2035-01-06T07:24:56.396		-2.68x	-1.60x	41854.18	20.76		
5	E	2035-01-06T07:25:13.033		-2.72x	-1.56x	42205.61	20.80		
4	E	2035-01-06T07:25:32.384		-2.77x	-1.51x	42603.74	20.91		
alpha	E	2035-01-06T07:27:12.718		-3.02x	-1.24x	44723.19	21.24		
beta	E	2035-01-06T07:27:57.113		-3.13x	-1.13x	45674.15	21.40		
eta	E	2035-01-06T07:29:06.986		-3.30x	-0.94x	47176.12	21.59		
gamma	E	2035-01-06T07:29:27.836		-3.35x	-0.89x	47626.93	21.65		
delta	E	2035-01-06T07:29:58.882		-3.43x	-0.80x	48300.35	21.73		
lambda	E	2035-01-06T07:31:17.967		-3.62x	-0.60x	50026.71	21.92		
epsilon	E	2035-01-06T07:32:00.028		-3.72x	-0.49x	50950.85	22.09		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-06T07:04:46.150
 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 : 3382632649385556224
 2Mass ID (if available) : 06334562+2332456
 ICRS Star Coord at Epoch: 06h 33m 45.63714s +23:32:45.23584s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.768
 G magnitude : 16.261
 RP magnitude : 15.729
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 17.913
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.13
 Sun-Target sep (deg) : 172.44
 Sun-Moon sep (deg) : 150.83
 B (ring opening deg) : 68.41
 PA of pole (deg) : 71.02
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.383
 C/A sky separation (km) : 17961.8
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



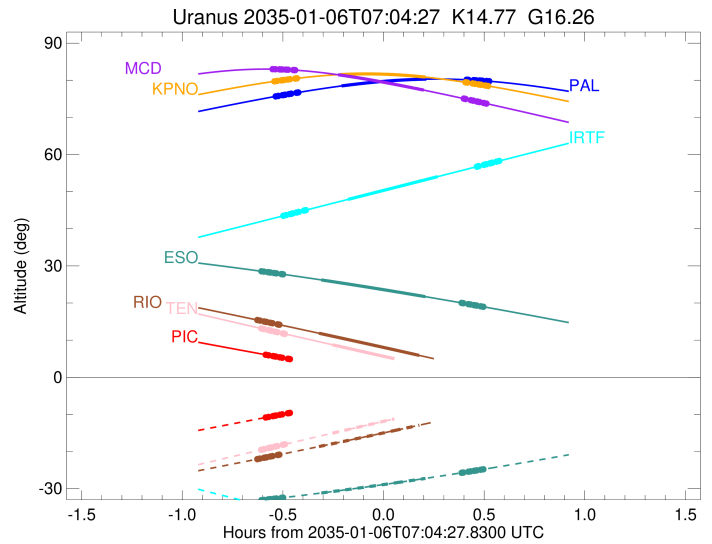
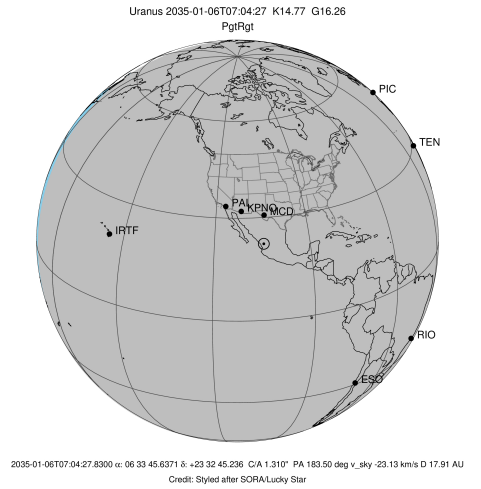
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-06T06:32:02.944		75.62	-69.21	51542.16	-23.45		
lambda	I	2035-01-06T06:33:07.770		75.79	-69.41	50026.71	-23.33		
delta	I	2035-01-06T06:34:21.984		75.99	-69.65	48300.35	-23.20		
gamma	I	2035-01-06T06:34:51.271		76.07	-69.74	47621.79	-23.14		
eta	I	2035-01-06T06:35:10.545		76.12	-69.80	47176.12	-23.10		
beta	I	2035-01-06T06:36:16.158		76.29	-70.00	45665.41	-22.97		
alpha	I	2035-01-06T06:36:58.620		76.40	-70.13	44688.62	-22.87		
4	I	2035-01-06T06:38:31.290		76.64	-70.42	42579.81	-22.65		
5	I	2035-01-06T06:38:48.261		76.68	-70.47	42187.84	-22.57		
6	I	2035-01-06T06:39:02.654		76.72	-70.51	41861.20	-22.56		
Uranus	I	2035-01-06T06:51:57.674		78.48	-72.82	25481.57		-8.17	-8.55
Uranus	E	2035-01-06T07:17:13.369		80.31	-76.71	25129.60		19.77	20.62
6	E	2035-01-06T07:29:14.492		80.14	-78.10	41849.77	22.56		
5	E	2035-01-06T07:29:30.380		80.13	-78.12	42213.95	22.57		
4	E	2035-01-06T07:29:47.614		80.12	-78.15	42600.13	22.65		
alpha	E	2035-01-06T07:31:20.841		80.04	-78.29	44726.59	22.87		
beta	E	2035-01-06T07:32:01.898		80.00	-78.35	45672.56	22.98		
eta	E	2035-01-06T07:33:07.157		79.94	-78.45	47176.12	23.11		
gamma	E	2035-01-06T07:33:26.672		79.92	-78.47	47627.42	23.14		
delta	E	2035-01-06T07:33:55.713		79.89	-78.51	48300.35	23.20		
lambda	E	2035-01-06T07:35:09.918		79.81	-78.61	50026.71	23.33		
epsilon	E	2035-01-06T07:35:48.196		79.76	-78.66	50920.86	23.45		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-06T07:04:24.390
 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 : 3382632649385556224
 2Mass ID (if available) : 06334562+2332456
 ICRS Star Coord at Epoch: 06h 33m 45.63714s +23:32:45.23584s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.768
 G magnitude : 16.261
 RP magnitude : 15.729
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 17.913
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.13
 Sun-Target sep (deg) : 172.44
 Sun-Moon sep (deg) : 150.89
 B (ring opening deg) : 68.41
 PA of pole (deg) : 71.02
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.373
 C/A sky separation (km) : 17836.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ural11.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ural11.bsp
 ural61.bsp
 vgr2.ural61.bsp
 peph.ural60.bsp
 earthstns_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



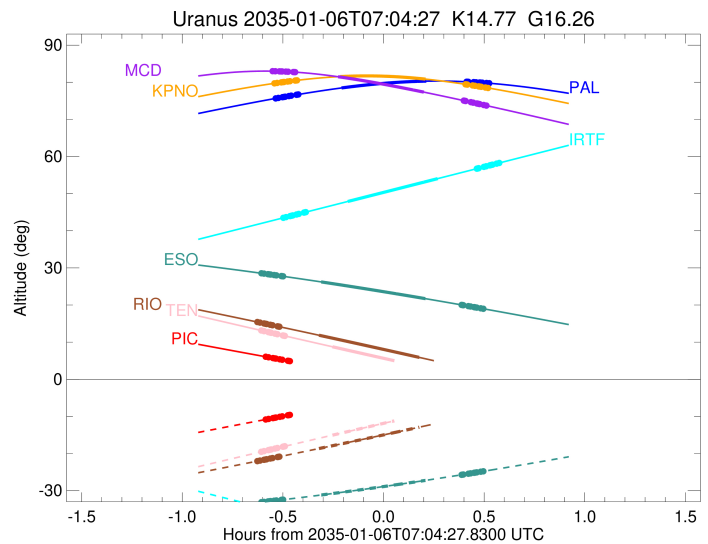
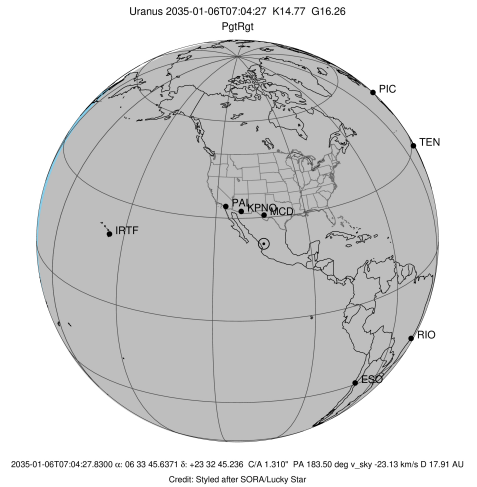
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-06T06:31:40.377		79.68	-73.71	51541.82	-23.48		
lambda	I	2035-01-06T06:32:45.090		79.82	-73.90	50026.71	-23.36		
delta	I	2035-01-06T06:33:59.187		79.98	-74.13	48300.35	-23.23		
gamma	I	2035-01-06T06:34:28.425		80.04	-74.21	47621.80	-23.18		
eta	I	2035-01-06T06:34:47.668		80.08	-74.27	47176.12	-23.14		
beta	I	2035-01-06T06:35:53.170		80.21	-74.47	45665.34	-23.01		
alpha	I	2035-01-06T06:36:35.548		80.29	-74.59	44688.68	-22.91		
4	I	2035-01-06T06:38:08.051		80.47	-74.86	42579.63	-22.70		
5	I	2035-01-06T06:38:24.968		80.50	-74.91	42188.10	-22.62		
6	I	2035-01-06T06:38:39.348		80.52	-74.95	41861.06	-22.60		
Uranus	I	2035-01-06T06:51:31.051		81.54	-77.07	25478.82		-8.32	-8.70
Uranus	E	2035-01-06T07:16:56.723		80.86	-80.12	25127.32		19.82	20.68
6	E	2035-01-06T07:28:55.171		79.46	-80.68	41849.65	22.60		
5	E	2035-01-06T07:29:11.047		79.42	-80.69	42214.17	22.61		
4	E	2035-01-06T07:29:28.235		79.38	-80.69	42600.03	22.69		
alpha	E	2035-01-06T07:31:01.324		79.16	-80.70	44726.67	22.90		
beta	E	2035-01-06T07:31:42.316		79.06	-80.71	45672.52	23.01		
eta	E	2035-01-06T07:32:47.488		78.90	-80.71	47176.12	23.14		
gamma	E	2035-01-06T07:33:06.979		78.86	-80.70	47627.43	23.17		
delta	E	2035-01-06T07:33:35.983		78.78	-80.70	48300.35	23.23		
lambda	E	2035-01-06T07:34:50.100		78.60	-80.69	50026.71	23.35		
epsilon	E	2035-01-06T07:35:28.305		78.50	-80.67	50920.16	23.47		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-06T07:03:52.660
 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 : 3382632649385556224
 2Mass ID (if available) : 06334562+2332456
 ICRS Star Coord at Epoch: 06h 33m 45.63714s +23:32:45.23584s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.768
 G magnitude : 16.261
 RP magnitude : 15.729
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 17.913
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.13
 Sun-Target sep (deg) : 172.44
 Sun-Moon sep (deg) : 150.98
 B (ring opening deg) : 68.41
 PA of pole (deg) : 71.02
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.367
 C/A sky separation (km) : 17765.5
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ural11.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ural11.bsp
 ural61.bsp
 vgr2.ural61.bsp
 peph.ural60.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	2035-01-06T06:31:08.152		83.00	-79.48	51541.58	-23.50		
lambda	I	2035-01-06T06:32:12.796		82.98	-79.64	50026.71	-23.38		
delta	I	2035-01-06T06:33:26.822		82.95	-79.81	48300.35	-23.26		
gamma	I	2035-01-06T06:33:56.032		82.93	-79.88	47621.81	-23.20		
eta	I	2035-01-06T06:34:15.255		82.92	-79.92	47176.12	-23.17		
beta	I	2035-01-06T06:35:20.693		82.88	-80.07	45665.29	-23.04		
alpha	I	2035-01-06T06:36:03.022		82.85	-80.16	44688.72	-22.93		
4	I	2035-01-06T06:37:35.429		82.77	-80.36	42579.51	-22.72		
5	I	2035-01-06T06:37:52.314		82.75	-80.39	42188.28	-22.64		
6	I	2035-01-06T06:38:06.688		82.73	-80.42	41860.96	-22.63		
Uranus	I	2035-01-06T06:50:56.513		81.50	-81.65	25477.05		-8.41	-8.80
Uranus	E	2035-01-06T07:16:28.015		77.36	-81.34	25126.23		19.85	20.71
6	E	2035-01-06T07:28:25.169		75.06	-80.02	41849.61	22.61		
5	E	2035-01-06T07:28:41.039		75.01	-79.98	42214.25	22.63		
4	E	2035-01-06T07:28:58.210		74.95	-79.94	42600.00	22.70		
alpha	E	2035-01-06T07:30:31.246		74.65	-79.73	44726.71	22.92		
beta	E	2035-01-06T07:31:12.215		74.51	-79.63	45672.51	23.02		
eta	E	2035-01-06T07:32:17.357		74.30	-79.48	47176.12	23.15		
gamma	E	2035-01-06T07:32:36.840		74.23	-79.43	47627.44	23.18		
delta	E	2035-01-06T07:33:05.832		74.14	-79.36	48300.35	23.24		
lambda	E	2035-01-06T07:34:19.923		73.89	-79.17	50026.71	23.36		
epsilon	E	2035-01-06T07:34:58.106		73.76	-79.08	50919.92	23.48		

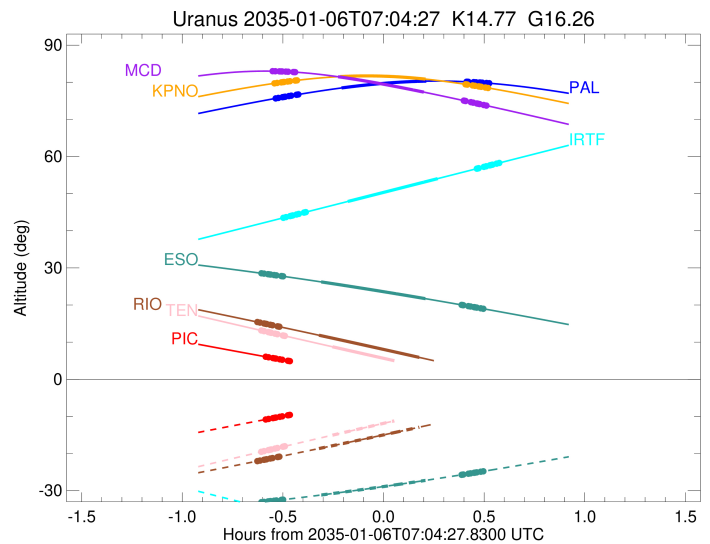
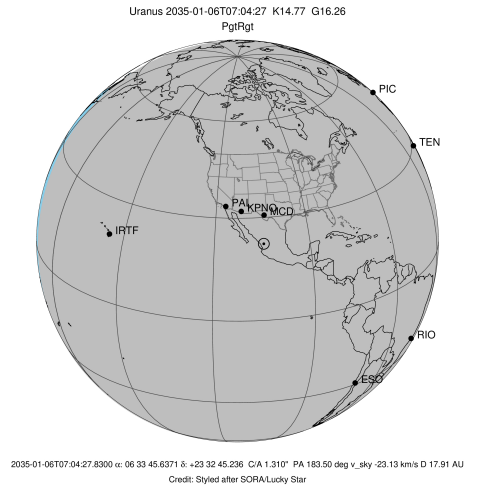
target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-06T07:00:28.530
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : TEN
 Location : Teide Obs./Tenerife
 Latitude (deg) : 28.30050
 E. Longitude (deg) : 343.48909
 Altitude (km) : 2.395
 Gaia source ID : 3382632649385556224
 2Mass ID (if available) : 06334562+2332456
 ICRS Star Coord at Epoch: 06h 33m 45.63714s +23:32:45.23584s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.768
 G magnitude : 16.261
 RP magnitude : 15.729
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 17.913
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.13
 Sun-Target sep (deg) : 172.44
 Sun-Moon sep (deg) : 151.21
 B (ring opening deg) : 68.41
 PA of pole (deg) : 71.02
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.558
 C/A sky separation (km) : 20235.1
 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	2035-01-06T06:27:44.412		13.20	-19.60	51546.09	-22.64		
lambda	I	2035-01-06T06:28:51.777		12.96	-19.36	50026.71	-22.49		
delta	I	2035-01-06T06:30:08.830		12.70	-19.09	48300.35	-22.32		
gamma	I	2035-01-06T06:30:39.285		12.59	-18.98	47621.66	-22.25		
eta	I	2035-01-06T06:30:59.333		12.52	-18.91	47176.12	-22.20		
beta	I	2035-01-06T06:32:07.641		12.28	-18.67	45666.37	-22.03		
alpha	I	2035-01-06T06:32:52.045		12.13	-18.51	44687.86	-21.89		
4	I	2035-01-06T06:34:28.863		11.80	-18.17	42582.20	-21.61		
5	I	2035-01-06T06:34:46.930		11.73	-18.11	42184.37	-21.52		
6	I	2035-01-06T06:35:01.796		11.68	-18.05	41863.10	-21.49		
Uranus	I	2035-01-06T06:49:14.892		8.75	-15.06	25522.00		-5.63	-5.90
Uranus	E	2035-01-06T07:11:18.671		4.27x	-10.46	25187.24		18.31	19.11
6	E	2035-01-06T07:24:33.273		1.62x	-7.73	41852.46	21.40		
5	E	2035-01-06T07:24:49.650		1.57x	-7.67	42208.86	21.43		
4	E	2035-01-06T07:25:08.191		1.51x	-7.61	42602.36	21.52		
alpha	E	2035-01-06T07:26:45.937		1.18x	-7.27	44724.53	21.80		
beta	E	2035-01-06T07:27:29.125		1.04x	-7.13	45673.54	21.93		
eta	E	2035-01-06T07:28:37.377		0.82x	-6.89	47176.12	22.10		
gamma	E	2035-01-06T07:28:57.765		0.75x	-6.82	47627.12	22.14		
delta	E	2035-01-06T07:29:28.119		0.65x	-6.72	48300.35	22.21		
lambda	E	2035-01-06T07:30:45.549		0.39x	-6.46	50026.71	22.38		
epsilon	E	2035-01-06T07:31:26.256		0.26x	-6.32	50939.15	22.52		

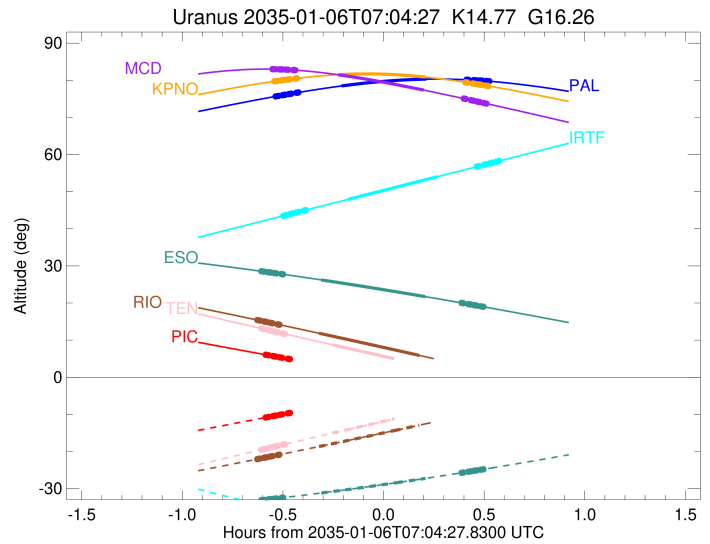
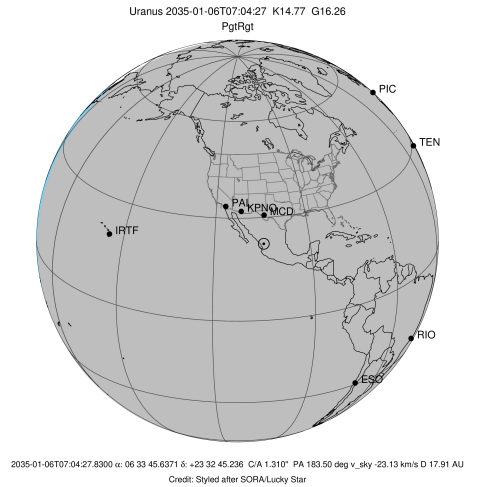
```

target                : Uranus
target radius (km)    : 25559.00
C/A epoch              : 2035-01-06T07:07:24.320
Event type             : PgtRgt
: Uranus occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code         : IRTF
Location               : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 3382632649385556224
2Mass ID (if available) : 06334562+2332456
ICRS Star Coord at Epoch: 06h 33m 45.63714s +23:32:45.23584s
RUWE (>1.4 is poor)  : 0.93
K magnitude           : 14.768
G magnitude           : 16.261
RP magnitude          : 15.729
BP magnitude          : 16.627
DUPflag              : 0
Distance (au)         : 17.913
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s)  : -23.13
Sun-Target sep (deg)  : 172.44
Sun-Moon sep (deg)    : 150.28
B (ring opening deg)  : 68.41
PA of pole (deg)      : 71.02
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 1.296
C/A sky separation (km) : 16841.1
NAIF SPICE kernels    : RAJobs_U111+rgf15.spk
URKALLvl1.spk
ural11.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.ural11.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
    
```



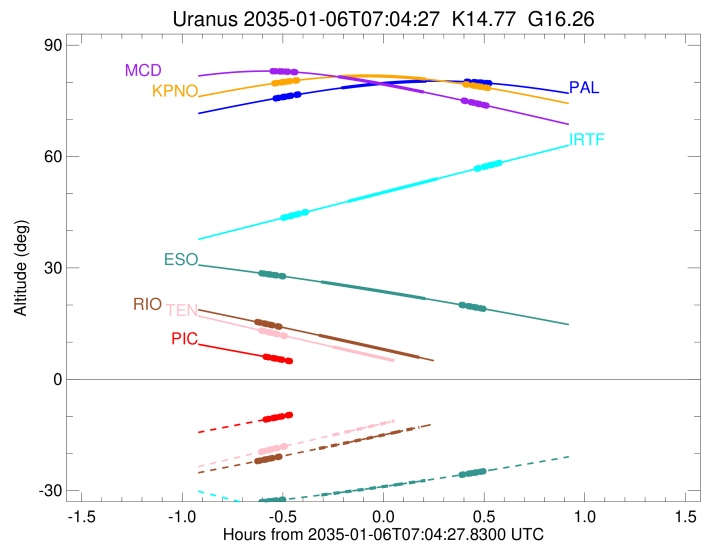
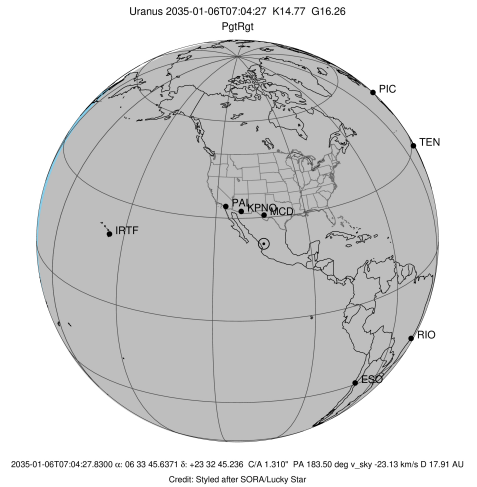
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-06T06:34:20.111		43.43	-35.89	51540.13	-23.54		
lambda	I	2035-01-06T06:35:24.556		43.68	-36.14	50026.71	-23.44		
delta	I	2035-01-06T06:36:38.378		43.96	-36.42	48300.35	-23.33		
gamma	I	2035-01-06T06:37:07.491		44.07	-36.53	47621.85	-23.28		
eta	I	2035-01-06T06:37:26.649		44.14	-36.60	47176.12	-23.25		
beta	I	2035-01-06T06:38:31.841		44.39	-36.85	45664.97	-23.14		
alpha	I	2035-01-06T06:39:13.947		44.55	-37.01	44689.00	-23.05		
4	I	2035-01-06T06:40:45.892		44.90	-37.36	42578.70	-22.86		
5	I	2035-01-06T06:41:02.584		44.97	-37.42	42189.49	-22.79		
6	I	2035-01-06T06:41:16.943		45.02	-37.48	41860.30	-22.78		
Uranus	I	2035-01-06T06:53:50.280		47.90	-40.35	25460.36		-9.24	-9.67
Uranus	E	2035-01-06T07:20:37.664		54.05	-46.50	25107.60		20.30	21.18
6	E	2035-01-06T07:32:18.392		56.73	-49.18	41848.38	22.84		
5	E	2035-01-06T07:32:34.263		56.80	-49.24	42216.58	22.85		
4	E	2035-01-06T07:32:51.097		56.86	-49.31	42598.95	22.92		
alpha	E	2035-01-06T07:34:23.391		57.21	-49.66	44727.63	23.11		
beta	E	2035-01-06T07:35:03.959		57.37	-49.82	45672.04	23.21		
eta	E	2035-01-06T07:36:08.620		57.62	-50.07	47176.12	23.32		
gamma	E	2035-01-06T07:36:27.965		57.69	-50.14	47627.57	23.35		
delta	E	2035-01-06T07:36:56.743		57.80	-50.25	48300.35	23.40		
lambda	E	2035-01-06T07:38:10.331		58.08	-50.53	50026.71	23.52		
epsilon	E	2035-01-06T07:38:47.917		58.23	-50.68	50911.62	23.62		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-06T07:00:18.530
 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 : 3382632649385556224
 2Mass ID (if available) : 06334562+2332456
 ICRS Star Coord at Epoch: 06h 33m 45.63714s +23:32:45.23584s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.768
 G magnitude : 16.261
 RP magnitude : 15.729
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 17.913
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.13
 Sun-Target sep (deg) : 172.44
 Sun-Moon sep (deg) : 151.12
 B (ring opening deg) : 68.41
 PA of pole (deg) : 71.02
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.090
 C/A sky separation (km) : 14156.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ural11.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ural11.bsp
 ural61.bsp
 vgr2.ural61.bsp
 peph.ural60.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	2035-01-06T06:26:35.417		15.47	-22.10	51531.93	-23.89		
lambda	I	2035-01-06T06:27:38.554		15.27	-21.91	50026.71	-23.81		
delta	I	2035-01-06T06:28:51.185		15.04	-21.69	48300.35	-23.73		
gamma	I	2035-01-06T06:29:19.789		14.94	-21.60	47622.07	-23.69		
eta	I	2035-01-06T06:29:38.619		14.88	-21.54	47176.12	-23.67		
beta	I	2035-01-06T06:30:42.664		14.68	-21.35	45663.50	-23.59		
alpha	I	2035-01-06T06:31:23.801		14.55	-21.22	44690.35	-23.52		
4	I	2035-01-06T06:32:53.952		14.26	-20.95	42575.13	-23.40		
5	I	2035-01-06T06:33:09.884		14.21	-20.90	42194.92	-23.34		
6	I	2035-01-06T06:33:24.242		14.16	-20.86	41857.34	-23.34		
Uranus	I	2035-01-06T06:45:13.127		11.86	-18.66	25397.06		-11.89	-12.44
Uranus	E	2035-01-06T07:15:08.280		5.89	-12.91	25075.47		21.07	21.97
6	E	2035-01-06T07:26:17.020		3.61x	-10.70	41845.90	23.24		
5	E	2035-01-06T07:26:32.930		3.56x	-10.65	42221.23	23.25		
4	E	2035-01-06T07:26:49.148		3.50x	-10.59	42596.80	23.30		
alpha	E	2035-01-06T07:28:20.271		3.19x	-10.29	44729.40	23.42		
beta	E	2035-01-06T07:29:00.211		3.05x	-10.16	45671.13	23.49		
eta	E	2035-01-06T07:30:04.199		2.84x	-9.94	47176.12	23.56		
gamma	E	2035-01-06T07:30:23.363		2.77x	-9.88	47627.83	23.58		
delta	E	2035-01-06T07:30:51.861		2.67x	-9.79	48300.35	23.61		
lambda	E	2035-01-06T07:32:04.850		2.42x	-9.54	50026.71	23.69		
epsilon	E	2035-01-06T07:32:41.555		2.29x	-9.42	50896.88	23.77		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-06T07:01:33.320
 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 : 3382632649385556224
 2Mass ID (if available) : 06334562+2332456
 ICRS Star Coord at Epoch: 06h 33m 45.63714s +23:32:45.23584s
 RUWE (>1.4 is poor) : 0.93
 K magnitude : 14.768
 G magnitude : 16.261
 RP magnitude : 15.729
 BP magnitude : 16.627
 DUPflag : 0
 Distance (au) : 17.913
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.13
 Sun-Target sep (deg) : 172.44
 Sun-Moon sep (deg) : 150.99
 B (ring opening deg) : 68.41
 PA of pole (deg) : 71.02
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.974
 C/A sky separation (km) : 12650.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ural11.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ural11.bsp
 ural61.bsp
 vgr2.ural61.bsp
 peph.ural60.bsp
 earthstns_itrff93_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	2035-01-06T06:27:48.869		28.58	-33.13	51527.86	-24.22		
lambda	I	2035-01-06T06:28:50.952		28.46	-33.03	50026.71	-24.15		
delta	I	2035-01-06T06:30:02.517		28.31	-32.91	48300.35	-24.09		
gamma	I	2035-01-06T06:30:30.683		28.25	-32.86	47622.18	-24.06		
eta	I	2035-01-06T06:30:49.226		28.21	-32.83	47176.12	-24.05		
beta	I	2035-01-06T06:31:52.276		28.07	-32.72	45662.84	-23.98		
alpha	I	2035-01-06T06:32:32.670		27.99	-32.65	44691.00	-23.93		
4	I	2035-01-06T06:34:01.333		27.80	-32.49	42573.51	-23.83		
5	I	2035-01-06T06:34:16.808		27.77	-32.46	42197.46	-23.78		
6	I	2035-01-06T06:34:31.055		27.74	-32.44	41855.96	-23.78		
Uranus	I	2035-01-06T06:45:55.297		26.22	-31.17	25364.49		-13.06	-13.66
Uranus	E	2035-01-06T07:16:57.244		21.72	-27.25	25063.00		21.36	22.27
6	E	2035-01-06T07:27:45.146		20.03	-25.73	41844.24	23.71		
5	E	2035-01-06T07:28:00.946		19.99	-25.70	42224.37	23.71		
4	E	2035-01-06T07:28:16.621		19.95	-25.66	42595.31	23.76		
alpha	E	2035-01-06T07:29:46.148		19.71	-25.44	44730.59	23.86		
beta	E	2035-01-06T07:30:25.291		19.60	-25.35	45670.49	23.91		
eta	E	2035-01-06T07:31:28.197		19.44	-25.20	47176.12	23.97		
gamma	E	2035-01-06T07:31:47.043		19.39	-25.15	47628.01	23.99		
delta	E	2035-01-06T07:32:15.058		19.31	-25.08	48300.35	24.01		
lambda	E	2035-01-06T07:33:26.864		19.12	-24.91	50026.71	24.07		
epsilon	E	2035-01-06T07:34:02.571		19.02	-24.82	50886.75	24.14		