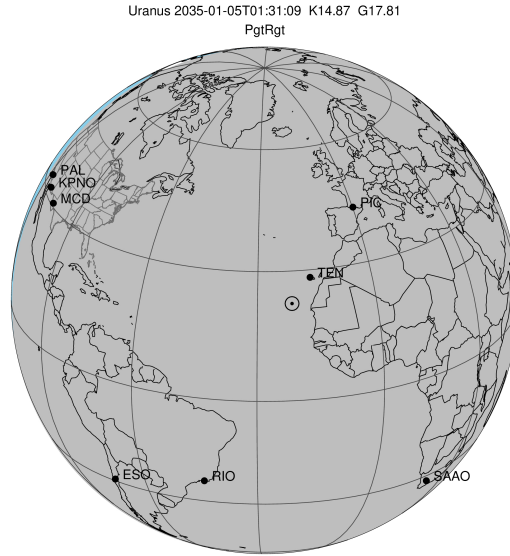


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-05T01:31:09.960
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3382632713805725184
 2Mass ID (if available) : 06335940+2332324

ICRS Star Coord at Epoch: 06h 33m 59.40498s +23:32:32.32521s

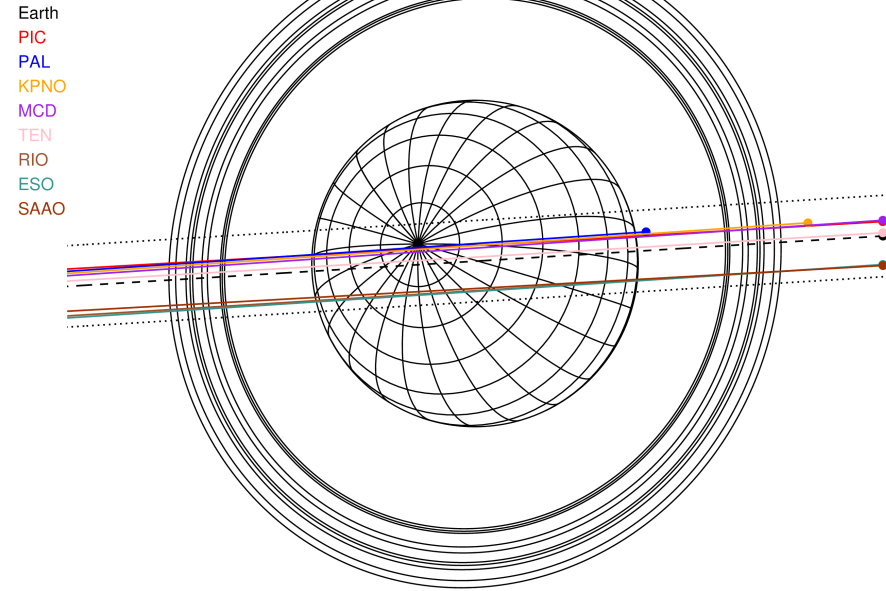
RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.867
 G magnitude : 17.810
 RP magnitude : 16.884
 BP magnitude : 18.704
 DUPflag : 0
 Distance (au) : 17.910
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.21
 Sun-Target sep (deg) : 173.74
 Sun-Moon sep (deg) : 136.01
 B (ring opening deg) : 68.36
 PA of pole (deg) : 71.09

#	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



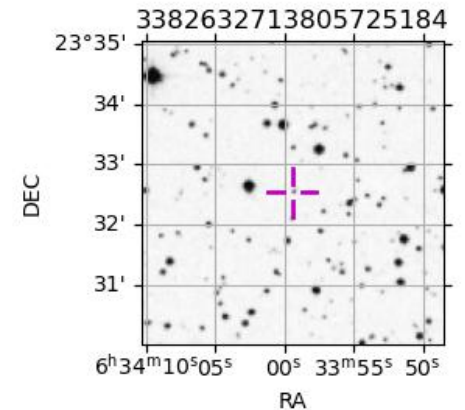
2035-01-05T01:31:09.9600 ra: 06 33 59.40500 cr: +23 32 32.325 C/A 0.035° PA 183.48 deg v_sky -23.21 km/s D 17.91 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2035-01-05T01:31:09 K14.87 G17.81 PgtRgt

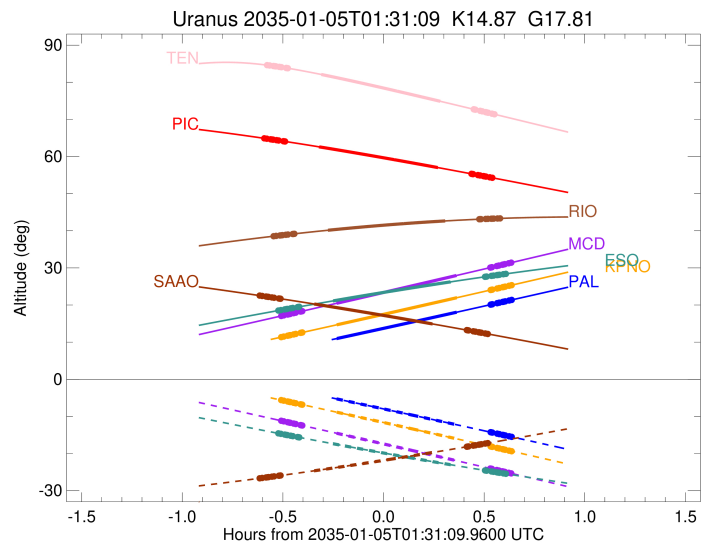
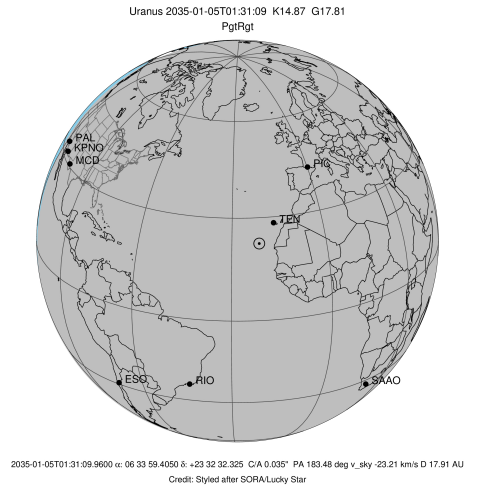


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++	+ +	+++++	JAN 05 00:55 - JAN 05 02:03	PieRie
PAL	Palomar Mt (200")	33.4	243.1		+ +	+++++	JAN 05 01:17 - JAN 05 02:09	PieRne
PNO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+++++	+ +	+++++	JAN 05 01:00 - JAN 05 02:09	PieRie
MCD	McDonald Obs. 2.7m	30.7	256.0	+++++	+ +	+++++	JAN 05 01:00 - JAN 05 02:09	PieRie
TEN	Teide Obs./Tenerife	28.3	343.5	+++++	+ +	+++++	JAN 05 00:56 - JAN 05 02:04	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 05 00:58 - JAN 05 02:05	PieRie
ESO	European Southern Obs	-29.3	289.3	+++++	+ +	+++++	JAN 05 00:59 - JAN 05 02:07	PieRie
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8	+++++	+ +	+++++	JAN 05 00:54 - JAN 05 02:02	PieRie
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn

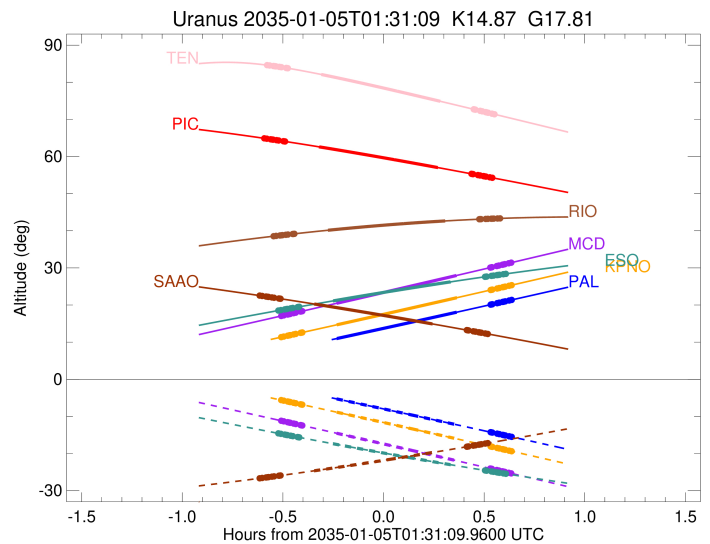
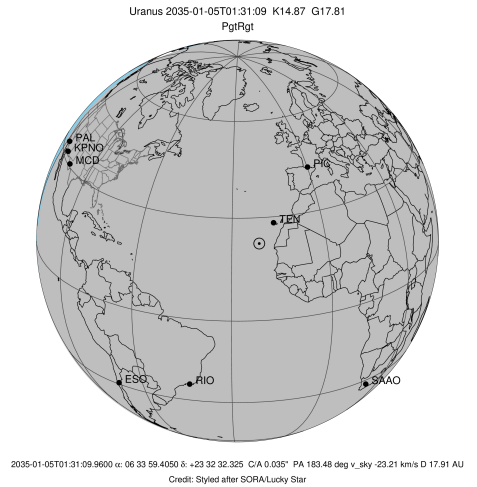


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-05T01:29:41.500
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 3382632713805725184
 2Mass ID (if available) : 06335940+2332324
 ICRS Star Coord at Epoch: 06h 33m 59.40498s +23:32:32.32521s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.867
 G magnitude : 17.810
 RP magnitude : 16.884
 BP magnitude : 18.704
 DUPflag : 0
 Distance (au) : 17.910
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.21
 Sun-Target sep (deg) : 173.74
 Sun-Moon sep (deg) : 136.78
 B (ring opening deg) : 68.36
 PA of pole (deg) : 71.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.217
 C/A sky separation (km) : 2813.4
 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



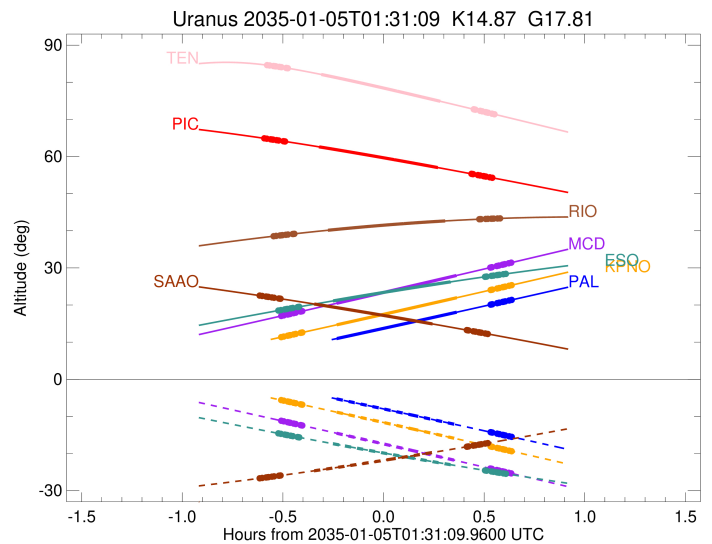
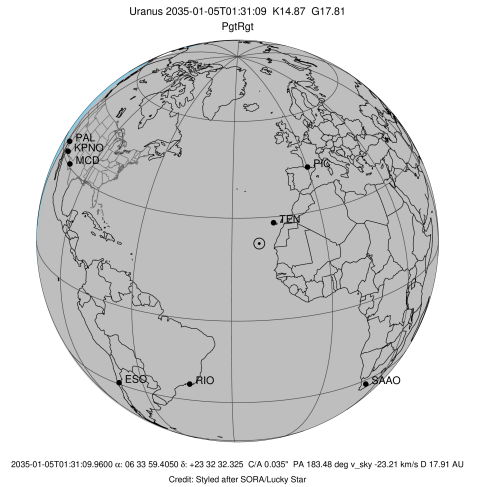
Ring	I/E	UTC	b? alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-05T00:55:23.663	64.93	-67.29	51498.55	-25.02		
lambda	I	2035-01-05T00:56:22.501	64.80	-67.19	50026.71	-25.01		
delta	I	2035-01-05T00:57:31.525	64.65	-67.08	48300.35	-25.01		
gamma	I	2035-01-05T00:57:58.617	64.59	-67.03	47622.82	-25.01		
eta	I	2035-01-05T00:58:16.480	64.55	-67.00	47176.12	-25.01		
beta	I	2035-01-05T00:59:17.167	64.41	-66.90	45659.31	-25.00		
alpha	I	2035-01-05T00:59:55.548	64.32	-66.83	44694.93	-25.00		
4	I	2035-01-05T01:01:20.674	64.13	-66.68	42565.36	-24.99		
5	I	2035-01-05T01:01:34.692	64.09	-66.66	42210.82	-24.98		
6	I	2035-01-05T01:01:49.017	64.06	-66.63	41848.78	-24.98		
Uranus	I	2035-01-05T01:11:57.754	62.61	-65.49	25167.12		-18.88	-19.70
Uranus	E	2035-01-05T01:47:22.549	57.03	-60.68	25089.85		20.78	21.67
6	E	2035-01-05T01:57:23.100	55.34	-59.15	41831.38	24.94		
5	E	2035-01-05T01:57:39.626	55.29	-59.11	42248.29	24.94		
4	E	2035-01-05T01:57:52.962	55.26	-59.07	42583.08	24.94		
alpha	E	2035-01-05T01:59:19.260	55.01	-58.85	44738.74	24.95		
beta	E	2035-01-05T01:59:56.199	54.91	-58.75	45665.47	24.95		
eta	E	2035-01-05T02:00:56.752	54.73	-58.59	47176.12	24.96		
gamma	E	2035-01-05T02:01:14.907	54.68	-58.54	47629.20	24.96		
delta	E	2035-01-05T02:01:41.799	54.60	-58.47	48300.35	24.96		
lambda	E	2035-01-05T02:02:50.966	54.41	-58.29	50026.71	24.96		
epsilon	E	2035-01-05T02:03:22.894	54.31	-58.20	50823.67	24.97		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-05T01:35:08.760
 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 : 3382632713805725184
 2Mass ID (if available) : 06335940+2332324
 ICRS Star Coord at Epoch: 06h 33m 59.40498s +23:32:32.32521s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.867
 G magnitude : 17.810
 RP magnitude : 16.884
 BP magnitude : 18.704
 DUPflag : 0
 Distance (au) : 17.910
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.21
 Sun-Target sep (deg) : 173.74
 Sun-Moon sep (deg) : 135.64
 B (ring opening deg) : 68.36
 PA of pole (deg) : 71.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.240
 C/A sky separation (km) : 3112.1
 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_itrf93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



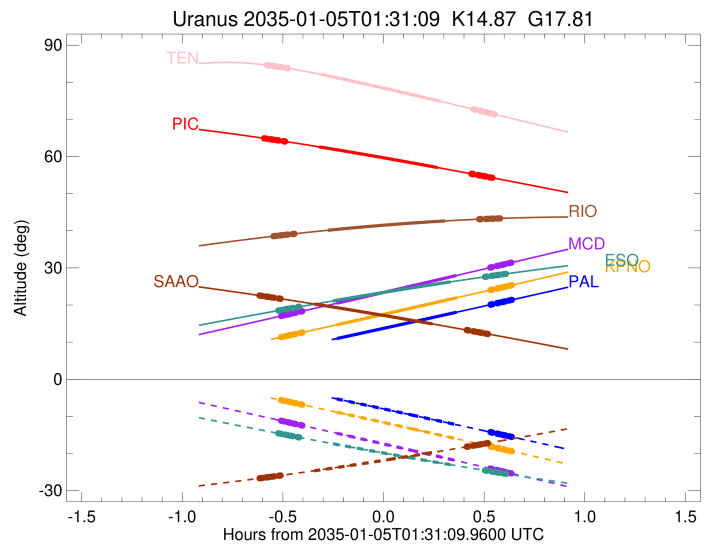
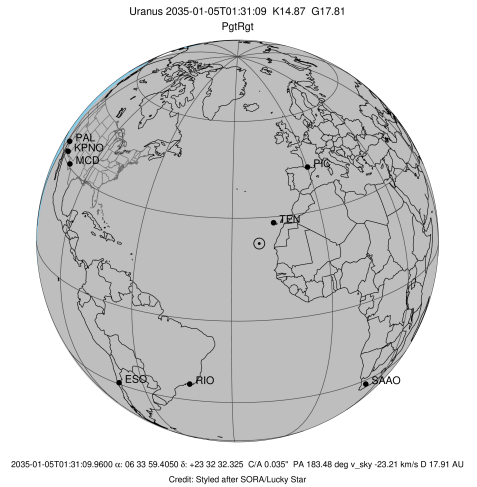
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-05T01:00:22.143		7.69	-2.09x	51501.68	-24.63		
lambda	I	2035-01-05T01:01:22.046		7.88	-2.28x	50026.71	-24.62		
delta	I	2035-01-05T01:02:32.164		8.11	-2.50x	48300.35	-24.62		
gamma	I	2035-01-05T01:02:59.686		8.19	-2.59x	47622.76	-24.62		
eta	I	2035-01-05T01:03:17.828		8.25	-2.64x	47176.12	-24.62		
beta	I	2035-01-05T01:04:19.456		8.45	-2.84x	45659.63	-24.62		
alpha	I	2035-01-05T01:04:58.469		8.58	-2.96x	44694.54	-24.61		
4	I	2035-01-05T01:06:24.880		8.86	-3.23x	42566.10	-24.61		
5	I	2035-01-05T01:06:39.187		8.90	-3.28x	42209.56	-24.60		
6	I	2035-01-05T01:06:53.660		8.95	-3.32x	41849.45	-24.60		
Uranus	I	2035-01-05T01:17:12.775		10.96	-5.29	25176.44		-18.64	-19.45
Uranus	E	2035-01-05T01:52:59.594		18.07	-12.26	25089.41		20.79	21.69
6	E	2035-01-05T02:03:06.406		20.10	-14.26	41831.28	24.70		
5	E	2035-01-05T02:03:23.104		20.16	-14.32	42248.48	24.70		
4	E	2035-01-05T02:03:36.554		20.21	-14.36	42582.97	24.71		
alpha	E	2035-01-05T02:05:03.679		20.50	-14.65	44738.82	24.72		
beta	E	2035-01-05T02:05:40.957		20.63	-14.77	45665.41	24.72		
eta	E	2035-01-05T02:06:42.071		20.83	-14.98	47176.12	24.73		
gamma	E	2035-01-05T02:07:00.392		20.89	-15.04	47629.21	24.73		
delta	E	2035-01-05T02:07:27.528		20.98	-15.13	48300.35	24.73		
lambda	E	2035-01-05T02:08:37.316		21.22	-15.36	50026.71	24.74		
epsilon	E	2035-01-05T02:09:09.491		21.33	-15.47	50822.77	24.75		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-05T01:35:09.480
 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 : 3382632713805725184
 2Mass ID (if available) : 06335940+2332324
 ICRS Star Coord at Epoch: 06h 33m 59.40498s +23:32:32.32521s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.867
 G magnitude : 17.810
 RP magnitude : 16.884
 BP magnitude : 18.704
 DUPflag : 0
 Distance (au) : 17.910
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.21
 Sun-Target sep (deg) : 173.74
 Sun-Moon sep (deg) : 135.67
 B (ring opening deg) : 68.36
 PA of pole (deg) : 71.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.215
 C/A sky separation (km) : 2791.9
 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



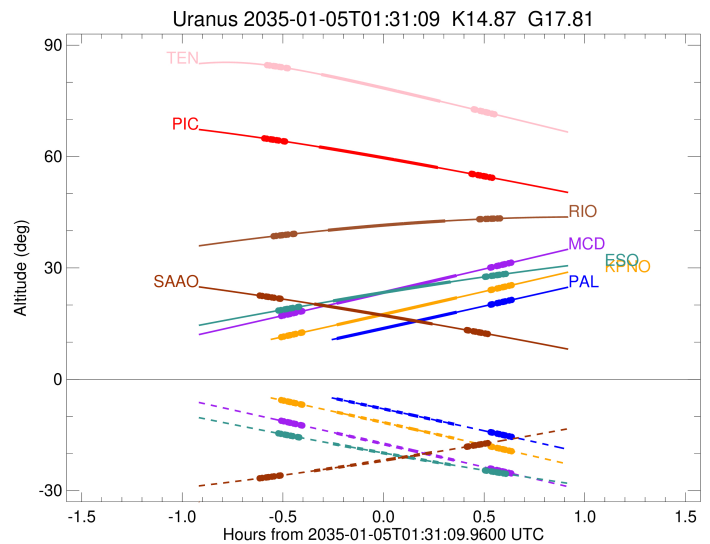
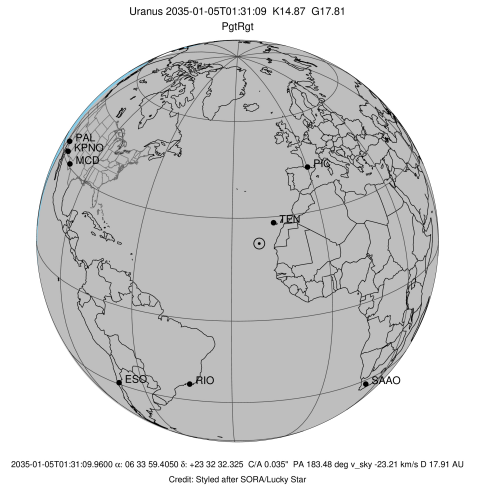
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-05T01:00:26.102		11.30	-5.57	51500.39	-24.68		
lambda	I	2035-01-05T01:01:25.838		11.50	-5.76	50026.71	-24.67		
delta	I	2035-01-05T01:02:35.819		11.73	-5.99	48300.35	-24.67		
gamma	I	2035-01-05T01:03:03.286		11.82	-6.08	47622.79	-24.67		
eta	I	2035-01-05T01:03:21.394		11.88	-6.14	47176.12	-24.67		
beta	I	2035-01-05T01:04:22.904		12.09	-6.34	45659.49	-24.67		
alpha	I	2035-01-05T01:05:01.824		12.22	-6.47	44694.71	-24.66		
4	I	2035-01-05T01:06:28.077		12.51	-6.75	42565.75	-24.66		
5	I	2035-01-05T01:06:42.321		12.55	-6.79	42210.15	-24.65		
6	I	2035-01-05T01:06:56.798		12.60	-6.84	41849.14	-24.65		
Uranus	I	2035-01-05T01:17:13.795		14.67	-8.87	25170.96		-18.78	-19.60
Uranus	E	2035-01-05T01:53:00.417		21.96	-16.05	25092.76		20.71	21.60
6	E	2035-01-05T02:03:06.103		24.05	-18.10	41830.96	24.75		
5	E	2035-01-05T02:03:22.805		24.11	-18.16	42249.08	24.75		
4	E	2035-01-05T02:03:36.184		24.15	-18.21	42582.64	24.76		
alpha	E	2035-01-05T02:05:03.151		24.45	-18.50	44739.02	24.77		
beta	E	2035-01-05T02:05:40.340		24.58	-18.63	45665.27	24.78		
eta	E	2035-01-05T02:06:41.337		24.79	-18.84	47176.12	24.78		
gamma	E	2035-01-05T02:06:59.623		24.86	-18.90	47629.24	24.78		
delta	E	2035-01-05T02:07:26.703		24.95	-18.99	48300.35	24.78		
lambda	E	2035-01-05T02:08:36.354		25.19	-19.23	50026.71	24.79		
epsilon	E	2035-01-05T02:09:08.406		25.30	-19.34	50821.27	24.80		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-05T01:35:05.220
 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 : 3382632713805725184
 2Mass ID (if available) : 06335940+2332324
 ICRS Star Coord at Epoch: 06h 33m 59.40498s +23:32:32.32521s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.867
 G magnitude : 17.810
 RP magnitude : 16.884
 BP magnitude : 18.704
 DUPflag : 0
 Distance (au) : 17.910
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.21
 Sun-Target sep (deg) : 173.74
 Sun-Moon sep (deg) : 135.73
 B (ring opening deg) : 68.36
 PA of pole (deg) : 71.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.185
 C/A sky separation (km) : 2397.9
 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



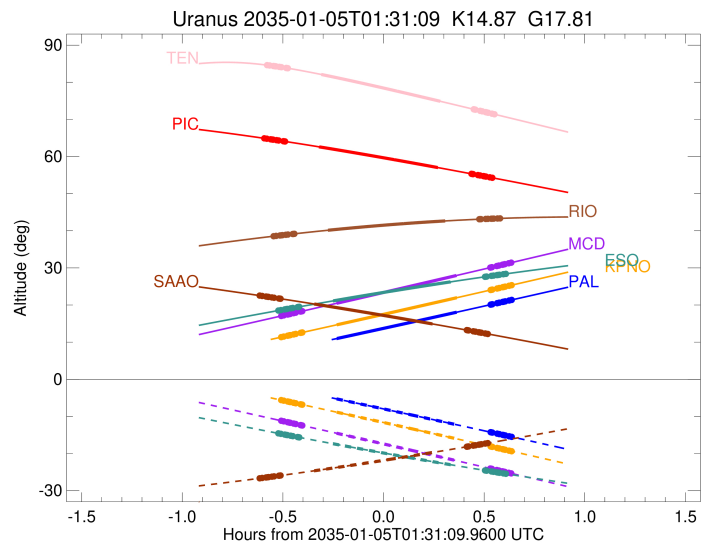
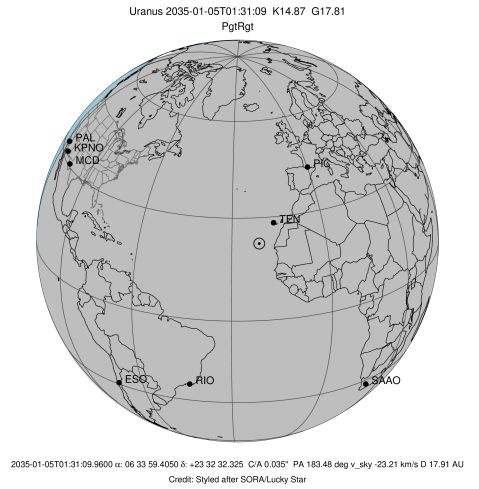
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-05T01:00:26.651		17.00	-11.13	51498.76	-24.74		
lambda	I	2035-01-05T01:01:26.161		17.21	-11.33	50026.71	-24.74		
delta	I	2035-01-05T01:02:35.953		17.45	-11.57	48300.35	-24.74		
gamma	I	2035-01-05T01:03:03.344		17.54	-11.66	47622.82	-24.74		
eta	I	2035-01-05T01:03:21.403		17.60	-11.72	47176.12	-24.74		
beta	I	2035-01-05T01:04:22.750		17.81	-11.93	45659.31	-24.73		
alpha	I	2035-01-05T01:05:01.545		17.95	-12.06	44694.94	-24.73		
4	I	2035-01-05T01:06:27.578		18.24	-12.35	42565.33	-24.73		
5	I	2035-01-05T01:06:41.740		18.29	-12.40	42210.89	-24.72		
6	I	2035-01-05T01:06:56.220		18.34	-12.45	41848.74	-24.72		
Uranus	I	2035-01-05T01:17:10.487		20.46	-14.54	25164.28		-18.95	-19.78
Uranus	E	2035-01-05T01:52:55.707		27.95	-21.93	25097.01		20.61	21.50
6	E	2035-01-05T02:02:59.933		30.08	-24.04	41830.58	24.82		
5	E	2035-01-05T02:03:16.634		30.14	-24.10	42249.80	24.82		
4	E	2035-01-05T02:03:29.924		30.19	-24.15	42582.24	24.83		
alpha	E	2035-01-05T02:04:56.680		30.50	-24.45	44739.25	24.83		
beta	E	2035-01-05T02:05:33.753		30.63	-24.58	45665.10	24.84		
eta	E	2035-01-05T02:06:34.594		30.84	-24.79	47176.12	24.85		
gamma	E	2035-01-05T02:06:52.832		30.91	-24.86	47629.28	24.85		
delta	E	2035-01-05T02:07:19.840		31.00	-24.95	48300.35	24.85		
lambda	E	2035-01-05T02:08:29.308		31.25	-25.19	50026.71	24.85		
epsilon	E	2035-01-05T02:09:01.205		31.36	-25.31	50819.49	24.86		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-05T01:30:22.950
 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 : 3382632713805725184
 2Mass ID (if available) : 06335940+2332324
 ICRS Star Coord at Epoch: 06h 33m 59.40498s +23:32:32.32521s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.867
 G magnitude : 17.810
 RP magnitude : 16.884
 BP magnitude : 18.704
 DUPflag : 0
 Distance (au) : 17.910
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.21
 Sun-Target sep (deg) : 173.74
 Sun-Moon sep (deg) : 136.73
 B (ring opening deg) : 68.36
 PA of pole (deg) : 71.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.076
 C/A sky separation (km) : 988.6
 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_itrf93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



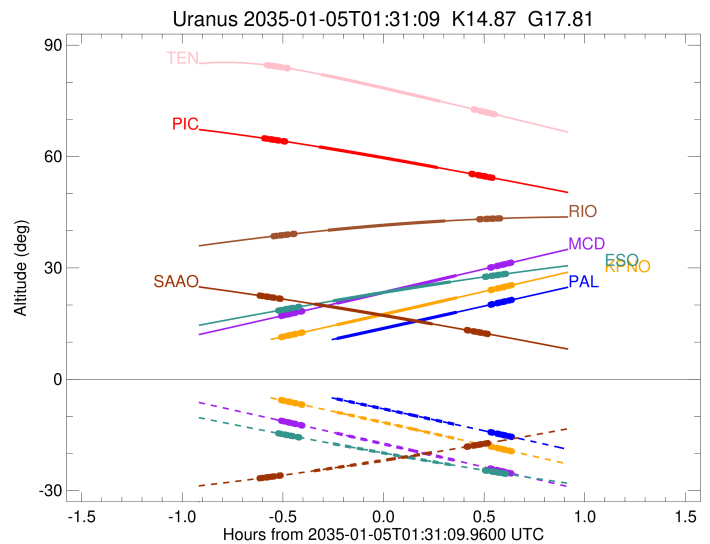
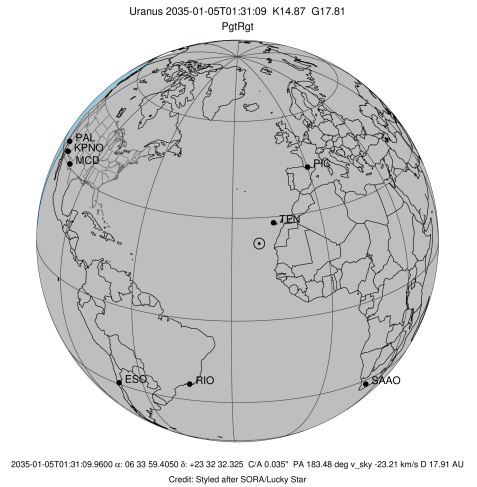
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-05T00:56:14.735		84.64	-83.58	51491.11	-25.15		
lambda	I	2035-01-05T00:57:12.977		84.53	-83.69	50026.71	-25.14		
delta	I	2035-01-05T00:58:21.641		84.39	-83.81	48300.35	-25.14		
gamma	I	2035-01-05T00:58:48.584		84.33	-83.86	47622.97	-25.14		
eta	I	2035-01-05T00:59:06.358		84.29	-83.89	47176.12	-25.14		
beta	I	2035-01-05T01:00:06.744		84.15	-83.98	45658.53	-25.14		
alpha	I	2035-01-05T01:00:44.840		84.07	-84.04	44695.93	-25.14		
4	I	2035-01-05T01:02:09.588		83.86	-84.16	42563.47	-25.13		
5	I	2035-01-05T01:02:23.345		83.83	-84.17	42214.10	-25.13		
6	I	2035-01-05T01:02:37.779		83.79	-84.19	41847.01	-25.13		
Uranus	I	2035-01-05T01:12:39.013		82.10	-84.50	25138.69		-19.59	-20.44
Uranus	E	2035-01-05T01:48:06.075		74.88	-80.00	25111.19		20.27	21.14
6	E	2035-01-05T01:58:04.260		72.73	-78.05	41829.50	25.10		
5	E	2035-01-05T01:58:20.899		72.67	-78.00	42251.80	25.11		
4	E	2035-01-05T01:58:33.900		72.62	-77.96	42581.14	25.11		
alpha	E	2035-01-05T01:59:59.769		72.31	-77.67	44739.87	25.11		
beta	E	2035-01-05T02:00:36.396		72.18	-77.54	45664.66	25.11		
eta	E	2035-01-05T02:01:36.601		71.96	-77.34	47176.12	25.11		
gamma	E	2035-01-05T02:01:54.649		71.90	-77.28	47629.37	25.11		
delta	E	2035-01-05T02:02:21.366		71.80	-77.19	48300.35	25.11		
lambda	E	2035-01-05T02:03:30.108		71.55	-76.96	50026.71	25.11		
epsilon	E	2035-01-05T02:04:01.494		71.44	-76.85	50814.96	25.12		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-05T01:32:01.440
 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 : 3382632713805725184
 2Mass ID (if available) : 06335940+2332324
 ICRS Star Coord at Epoch: 06h 33m 59.40498s +23:32:32.32521s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.867
 G magnitude : 17.810
 RP magnitude : 16.884
 BP magnitude : 18.704
 DUPflag : 0
 Distance (au) : 17.910
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.21
 Sun-Target sep (deg) : 173.74
 Sun-Moon sep (deg) : 136.23
 B (ring opening deg) : 68.36
 PA of pole (deg) : 71.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.328
 C/A sky separation (km) : 4260.2
 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_itrf93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



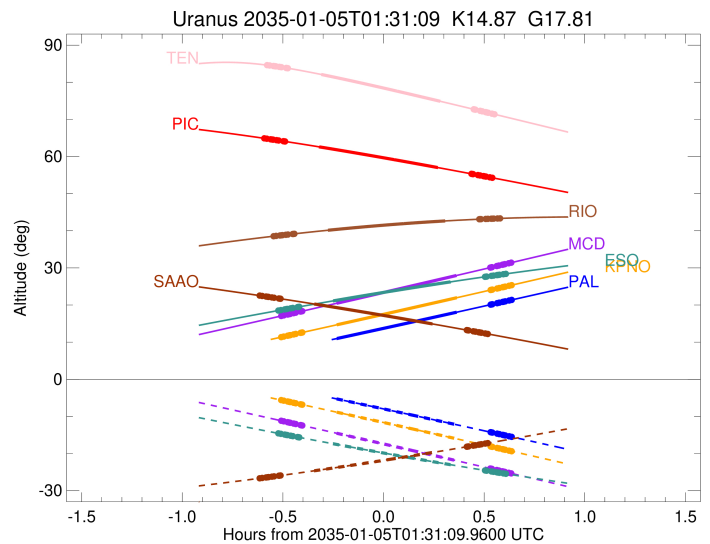
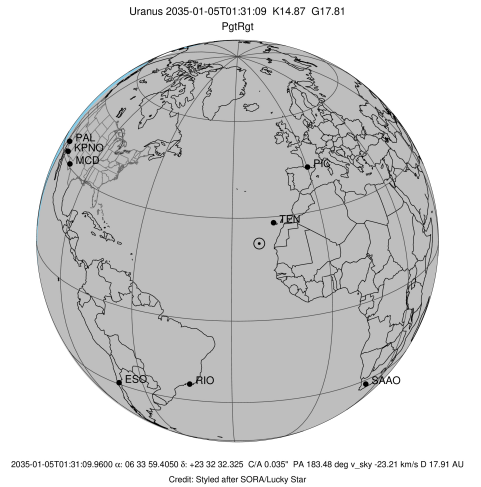
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-01-05T00:58:11.655		38.52	-36.06	51467.34	-25.03		
lambda	I	2035-01-05T00:59:09.185		38.62	-36.18	50026.71	-25.04		
delta	I	2035-01-05T01:00:18.142		38.74	-36.33	48300.35	-25.03		
gamma	I	2035-01-05T01:00:45.185		38.79	-36.39	47623.44	-25.03		
eta	I	2035-01-05T01:01:03.057		38.82	-36.43	47176.12	-25.03		
beta	I	2035-01-05T01:02:03.808		38.92	-36.56	45656.29	-25.02		
alpha	I	2035-01-05T01:02:41.872		38.99	-36.64	44699.00	-25.01		
4	I	2035-01-05T01:04:07.364		39.13	-36.82	42558.10	-25.00		
5	I	2035-01-05T01:04:20.676		39.16	-36.85	42223.74	-25.00		
6	I	2035-01-05T01:04:35.761		39.18	-36.88	41841.82	-24.99		
Uranus	I	2035-01-05T01:14:35.121		40.14	-38.10	25077.26		-21.08	-21.98
Uranus	E	2035-01-05T01:49:32.473		42.65	-41.65	25193.93		18.18	18.98
6	E	2035-01-05T01:59:43.311		43.11	-42.45	41824.15	25.01		
5	E	2035-01-05T02:00:00.644		43.13	-42.47	42261.73	25.03		
4	E	2035-01-05T02:00:12.986		43.13	-42.48	42575.43	25.02		
alpha	E	2035-01-05T02:01:39.497		43.19	-42.58	44742.91	25.04		
beta	E	2035-01-05T02:02:16.015		43.21	-42.63	45662.28	25.05		
eta	E	2035-01-05T02:03:16.469		43.25	-42.70	47176.12	25.06		
gamma	E	2035-01-05T02:03:34.577		43.26	-42.72	47629.84	25.06		
delta	E	2035-01-05T02:04:01.333		43.27	-42.75	48300.35	25.06		
lambda	E	2035-01-05T02:05:10.208		43.31	-42.82	50026.71	25.07		
epsilon	E	2035-01-05T02:05:40.748		43.33	-42.86	50792.36	25.06		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-05T01:33:36.450
 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 : 3382632713805725184
 2Mass ID (if available) : 06335940+2332324
 ICRS Star Coord at Epoch: 06h 33m 59.40498s +23:32:32.32521s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.867
 G magnitude : 17.810
 RP magnitude : 16.884
 BP magnitude : 18.704
 DUPflag : 0
 Distance (au) : 17.910
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.21
 Sun-Target sep (deg) : 173.74
 Sun-Moon sep (deg) : 135.84
 B (ring opening deg) : 68.36
 PA of pole (deg) : 71.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.337
 C/A sky separation (km) : 4374.2
 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_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	2035-01-05T00:59:36.760		18.48	-14.53	51467.47	-24.89		
lambda	I	2035-01-05T01:00:34.634		18.64	-14.70	50026.71	-24.89		
delta	I	2035-01-05T01:01:43.995		18.82	-14.90	48300.35	-24.89		
gamma	I	2035-01-05T01:02:11.196		18.90	-14.98	47623.44	-24.88		
eta	I	2035-01-05T01:02:29.173		18.95	-15.04	47176.12	-24.88		
beta	I	2035-01-05T01:03:30.279		19.11	-15.21	45656.30	-24.87		
alpha	I	2035-01-05T01:04:08.565		19.21	-15.32	44698.99	-24.87		
4	I	2035-01-05T01:05:34.555		19.44	-15.57	42558.10	-24.85		
5	I	2035-01-05T01:05:47.944		19.48	-15.61	42223.74	-24.86		
6	I	2035-01-05T01:06:03.117		19.52	-15.65	41841.82	-24.84		
Uranus	I	2035-01-05T01:16:05.939		21.11	-17.37	25076.92		-21.09	-21.99
Uranus	E	2035-01-05T01:51:11.291		26.24	-23.02	25197.40		18.09	18.89
6	E	2035-01-05T02:01:25.229		27.60	-24.55	41823.92	24.91		
5	E	2035-01-05T02:01:42.660		27.64	-24.59	42262.16	24.92		
4	E	2035-01-05T02:01:55.023		27.66	-24.62	42575.17	24.92		
alpha	E	2035-01-05T02:03:21.902		27.85	-24.84	44743.04	24.94		
beta	E	2035-01-05T02:03:58.558		27.93	-24.93	45662.17	24.95		
eta	E	2035-01-05T02:04:59.256		28.06	-25.07	47176.12	24.96		
gamma	E	2035-01-05T02:05:17.436		28.10	-25.12	47629.87	24.96		
delta	E	2035-01-05T02:05:44.296		28.15	-25.18	48300.35	24.96		
lambda	E	2035-01-05T02:06:53.439		28.30	-25.35	50026.71	24.97		
epsilon	E	2035-01-05T02:07:24.057		28.36	-25.42	50791.36	24.97		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-01-05T01:28:05.000
 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 : 3382632713805725184
 2Mass ID (if available) : 06335940+2332324
 ICRS Star Coord at Epoch: 06h 33m 59.40498s +23:32:32.32521s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.867
 G magnitude : 17.810
 RP magnitude : 16.884
 BP magnitude : 18.704
 DUPflag : 0
 Distance (au) : 17.910
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -23.21
 Sun-Target sep (deg) : 173.74
 Sun-Moon sep (deg) : 136.57
 B (ring opening deg) : 68.36
 PA of pole (deg) : 71.09
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.302
 C/A sky separation (km) : 3916.9
 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_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	2035-01-05T00:54:02.516		22.57	-26.70	51467.48	-24.95		
lambda	I	2035-01-05T00:55:00.251		22.44	-26.59	50026.71	-24.95		
delta	I	2035-01-05T00:56:09.448		22.28	-26.45	48300.35	-24.94		
gamma	I	2035-01-05T00:56:36.587		22.22	-26.39	47623.44	-24.94		
eta	I	2035-01-05T00:56:54.523		22.18	-26.36	47176.12	-24.94		
beta	I	2035-01-05T00:57:55.490		22.04	-26.23	45656.32	-24.93		
alpha	I	2035-01-05T00:58:33.693		21.96	-26.16	44698.95	-24.92		
4	I	2035-01-05T00:59:59.490		21.76	-25.98	42558.19	-24.91		
5	I	2035-01-05T01:00:12.859		21.73	-25.95	42223.57	-24.91		
6	I	2035-01-05T01:00:27.989		21.69	-25.92	41841.91	-24.90		
Uranus	I	2035-01-05T01:10:29.661		20.28	-24.65	25078.84		-21.04	-21.94
Uranus	E	2035-01-05T01:45:45.994		14.91	-19.73	25185.02		18.41	19.22
6	E	2035-01-05T01:56:00.118		13.25	-18.17	41824.72	24.82		
5	E	2035-01-05T01:56:17.517		13.20	-18.13	42260.67	24.83		
4	E	2035-01-05T01:56:30.032		13.16	-18.10	42576.05	24.83		
alpha	E	2035-01-05T01:57:57.190		12.92	-17.87	44742.59	24.84		
beta	E	2035-01-05T01:58:34.026		12.82	-17.78	45662.55	24.85		
eta	E	2035-01-05T01:59:34.962		12.65	-17.62	47176.12	24.85		
gamma	E	2035-01-05T01:59:53.218		12.60	-17.57	47629.79	24.85		
delta	E	2035-01-05T02:00:20.198		12.53	-17.50	48300.35	24.85		
lambda	E	2035-01-05T02:01:29.651		12.34	-17.32	50026.71	24.86		
epsilon	E	2035-01-05T02:02:00.548		12.25	-17.24	50794.81	24.85		