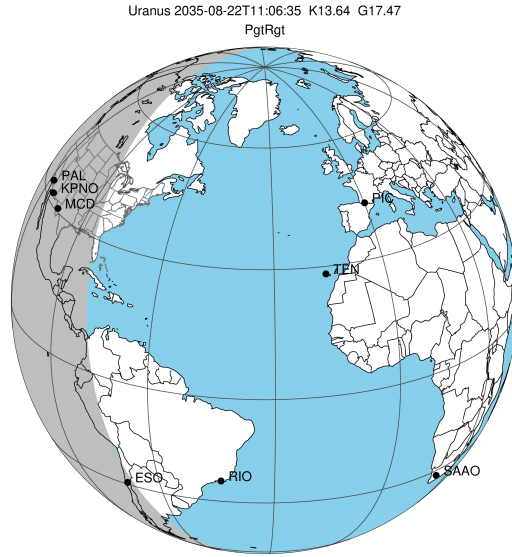


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-08-22T11:06:35.300
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3380074360703605376
 2Mass ID (if available) : 06570236+2307483

ICRS Star Coord at Epoch: 06h 57m 02.39491s +23:07:47.69465s

RUWE (>1.4 is poor) : 0.00
 K magnitude : 13.636
 G magnitude : 17.468
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.542
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 27.27
 Sun-Target sep (deg) : 45.63
 Sun-Moon sep (deg) : 93.98
 B (ring opening deg) : 63.38
 PA of pole (deg) : 77.47

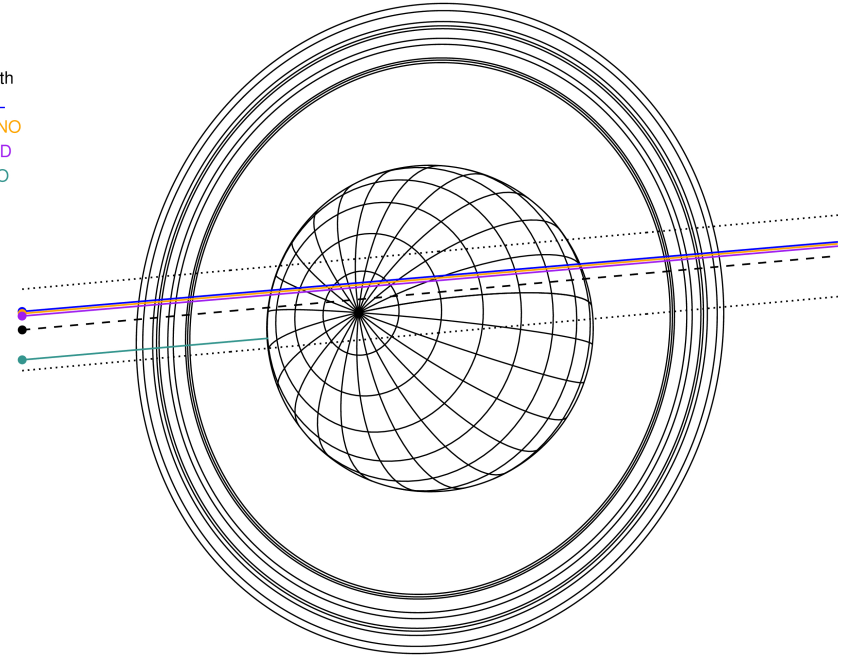
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2035-08-22T11:06:35.3000 ex: 06 57 02.3949 s: +23 07 47.695 C/A 0.397" PA 185.19 deg v_sky +27.27 km/s D 19.54 AU
 Credit: Styled after SORA/Lucky Star

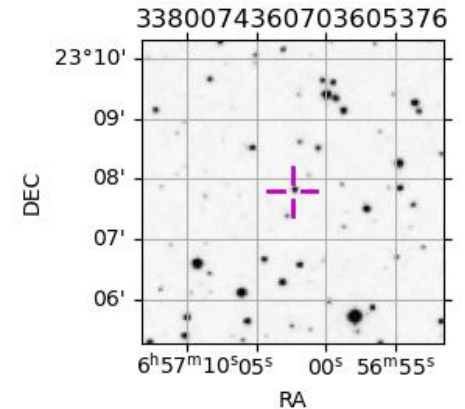
Uranus 2035-08-22T11:06:35 K13.64 G17.47 PgtRgt

Earth
 PAL
 KPNO
 MCD
 ESO

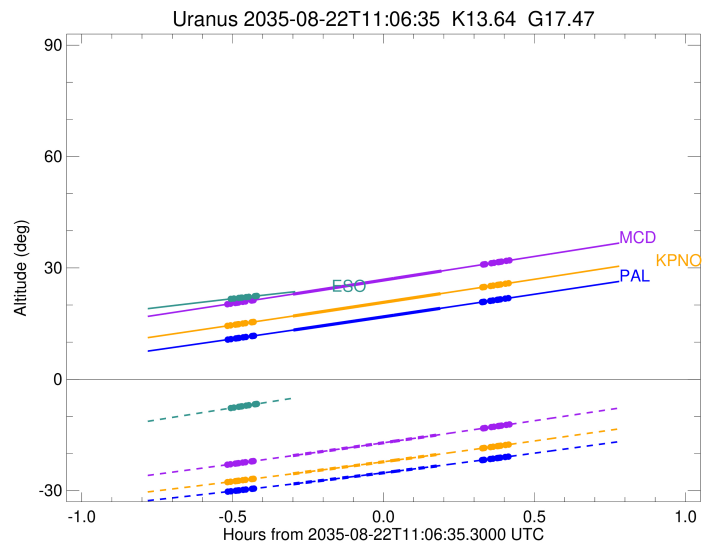
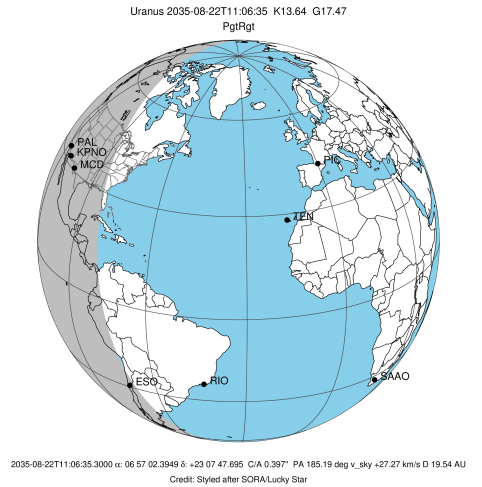


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1					PnnRnn
PAL	Palomar Mt (200")	33.4	243.1	+++++	+ +	+++++	AUG 22 10:35 - AUG 22 11:31	PieRie
PNO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+++++	+ +	+++++	AUG 22 10:35 - AUG 22 11:31	PieRie
MCD	McDonald Obs. 2.7m	30.7	256.0	+++++	+ +	+++++	AUG 22 10:35 - AUG 22 11:31	PieRie
TEN	Teide Obs./Tenerife	28.3	343.5					PnnRnn
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					PnnRnn
ESO	European Southern Obs	-29.3	289.3	+++++			AUG 22 10:36 - AUG 22 10:41	PnnRin
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

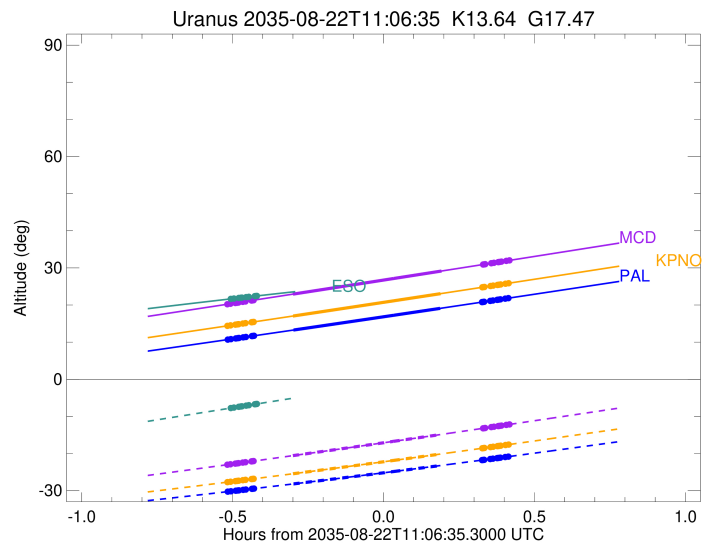
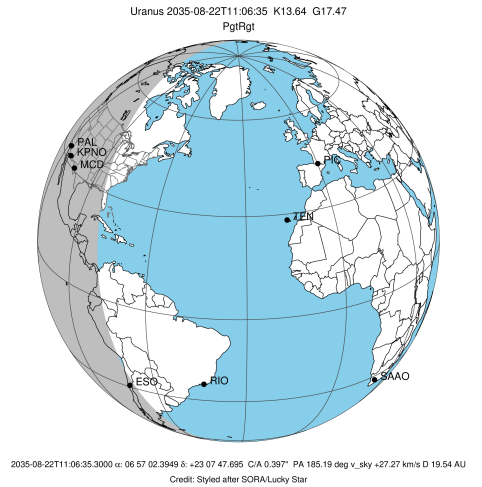


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-08-22T11:03:12.360
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PAL
 Location : Palomar Mt (200")
 Latitude (deg) : 33.35622
 E. Longitude (deg) : 243.13601
 Altitude (km) : 1.706
 Gaia source ID : 3380074360703605376
 2Mass ID (if available) : 06570236+2307483
 ICRS Star Coord at Epoch: 06h 57m 02.39491s +23:07:47.69465s
 RUWE (>1.4 is poor) : 0.00
 K magnitude : 13.636
 G magnitude : 17.468
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.542
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 27.27
 Sun-Target sep (deg) : 45.63
 Sun-Moon sep (deg) : 94.31
 B (ring opening deg) : 63.38
 PA of pole (deg) : 77.47
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.570
 C/A sky separation (km) : 8075.5
 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



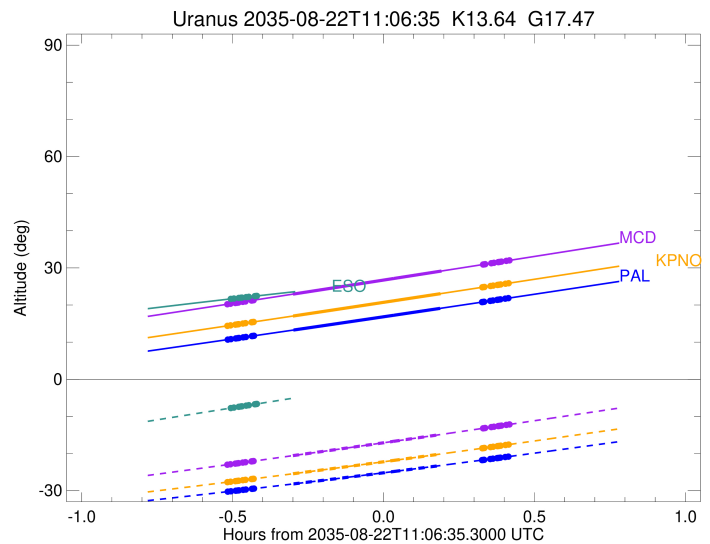
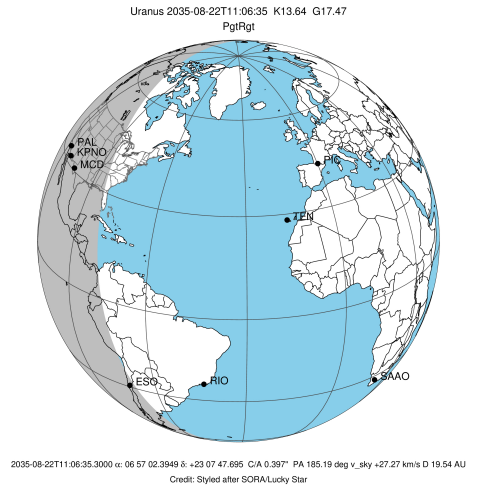
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-08-22T10:35:52.167		10.73	-30.24	50744.35	-29.83		
lambda	I	2035-08-22T10:36:16.228		10.81	-30.17	50026.71	-29.82		
delta	I	2035-08-22T10:37:14.152		11.00	-30.02	48300.35	-29.79		
gamma	I	2035-08-22T10:37:36.834		11.07	-29.96	47624.87	-29.77		
eta	I	2035-08-22T10:37:51.909		11.12	-29.92	47176.12	-29.76		
beta	I	2035-08-22T10:38:42.348		11.29	-29.79	45677.48	-29.73		
alpha	I	2035-08-22T10:39:15.767		11.40	-29.70	44687.10	-29.71		
4	I	2035-08-22T10:40:28.445		11.64	-29.51	42526.77	-29.65		
5	I	2035-08-22T10:40:36.364		11.66	-29.49	42310.89	-29.66		
6	I	2035-08-22T10:40:53.589		11.72	-29.44	41794.83	-29.64		
Uranus	I	2035-08-22T10:48:40.153		13.26	-28.19	25092.01		26.61	27.69
Uranus	E	2035-08-22T11:17:51.632		19.10	-23.25	25250.74		-21.24	-22.15
6	E	2035-08-22T11:26:11.060		20.79	-21.78	41877.48	29.54		
5	E	2035-08-22T11:26:20.807		20.82	-21.75	42174.56	29.57		
4	E	2035-08-22T11:26:36.136		20.87	-21.70	42609.22	29.55		
alpha	E	2035-08-22T11:27:48.312		21.12	-21.49	44752.42	29.61		
beta	E	2035-08-22T11:28:18.471		21.22	-21.40	45641.75	29.63		
eta	E	2035-08-22T11:29:10.277		21.39	-21.24	47176.12	29.66		
gamma	E	2035-08-22T11:29:25.440		21.44	-21.20	47625.86	29.66		
delta	E	2035-08-22T11:29:48.172		21.52	-21.13	48300.35	29.68		
lambda	E	2035-08-22T11:30:46.316		21.72	-20.95	50026.71	29.71		
epsilon	E	2035-08-22T11:31:36.744		21.89	-20.80	51525.26	29.71		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-08-22T11:03:12.650
 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 : 3380074360703605376
 2Mass ID (if available) : 06570236+2307483
 ICRS Star Coord at Epoch: 06h 57m 02.39491s +23:07:47.69465s
 RUWE (>1.4 is poor) : 0.00
 K magnitude : 13.636
 G magnitude : 17.468
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.542
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 27.27
 Sun-Target sep (deg) : 45.63
 Sun-Moon sep (deg) : 94.37
 B (ring opening deg) : 63.38
 PA of pole (deg) : 77.47
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.547
 C/A sky separation (km) : 7759.4
 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



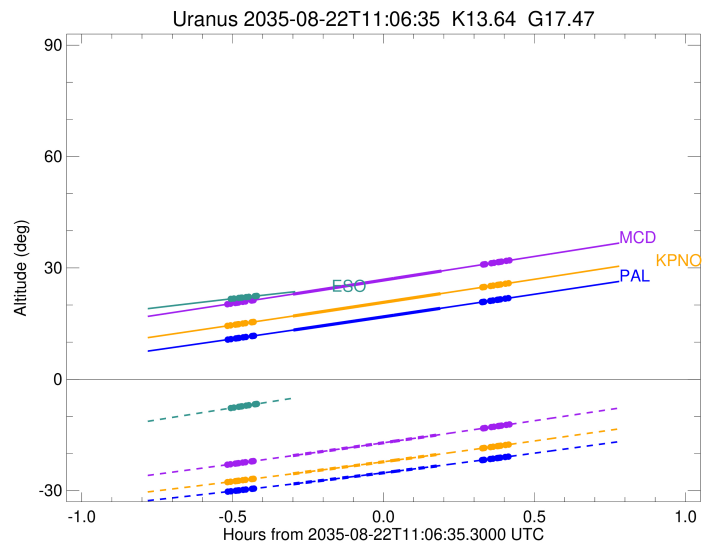
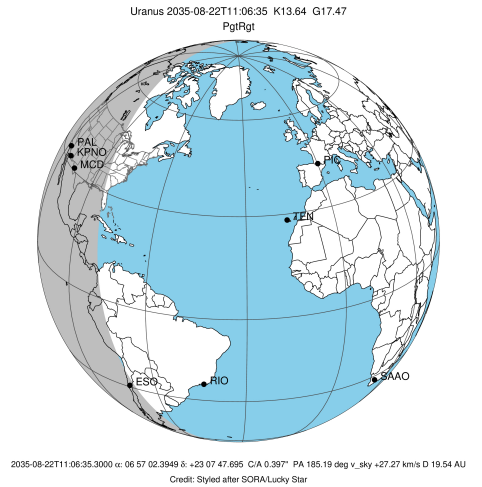
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-08-22T10:35:47.901		14.44	-27.67	50744.52	-29.82		
lambda	I	2035-08-22T10:36:11.974		14.52	-27.60	50026.71	-29.81		
delta	I	2035-08-22T10:37:09.913		14.71	-27.44	48300.35	-29.78		
gamma	I	2035-08-22T10:37:32.597		14.79	-27.37	47624.90	-29.77		
eta	I	2035-08-22T10:37:47.675		14.84	-27.33	47176.12	-29.76		
beta	I	2035-08-22T10:38:38.117		15.01	-27.18	45677.56	-29.73		
alpha	I	2035-08-22T10:39:11.544		15.12	-27.09	44687.01	-29.71		
4	I	2035-08-22T10:40:24.207		15.37	-26.88	42526.83	-29.65		
5	I	2035-08-22T10:40:32.136		15.40	-26.86	42310.68	-29.66		
6	I	2035-08-22T10:40:49.349		15.45	-26.81	41794.81	-29.64		
Uranus	I	2035-08-22T10:48:35.421		17.03	-25.45	25091.80		26.62	27.69
Uranus	E	2035-08-22T11:17:56.712		23.06	-20.14	25245.04		-21.45	-22.36
6	E	2035-08-22T11:26:14.578		24.78	-18.58	41877.59	29.55		
5	E	2035-08-22T11:26:24.307		24.82	-18.55	42174.16	29.57		
4	E	2035-08-22T11:26:39.656		24.87	-18.50	42609.41	29.56		
alpha	E	2035-08-22T11:27:51.826		25.12	-18.28	44752.42	29.61		
beta	E	2035-08-22T11:28:21.987		25.22	-18.18	45641.78	29.62		
eta	E	2035-08-22T11:29:13.799		25.40	-18.02	47176.12	29.65		
gamma	E	2035-08-22T11:29:28.965		25.46	-17.97	47625.89	29.66		
delta	E	2035-08-22T11:29:51.701		25.54	-17.90	48300.35	29.67		
lambda	E	2035-08-22T11:30:49.860		25.74	-17.71	50026.71	29.70		
epsilon	E	2035-08-22T11:31:40.336		25.91	-17.55	51526.20	29.70		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-08-22T11:03:17.520
 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 : 3380074360703605376
 2Mass ID (if available) : 06570236+2307483
 ICRS Star Coord at Epoch: 06h 57m 02.39491s +23:07:47.69465s
 RUWE (>1.4 is poor) : 0.00
 K magnitude : 13.636
 G magnitude : 17.468
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.542
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 27.27
 Sun-Target sep (deg) : 45.63
 Sun-Moon sep (deg) : 94.47
 B (ring opening deg) : 63.38
 PA of pole (deg) : 77.47
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.520
 C/A sky separation (km) : 7375.8
 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	2035-08-22T10:35:46.816		20.26	-22.97	50744.76	-29.80		
lambda	I	2035-08-22T10:36:10.915		20.34	-22.90	50026.71	-29.79		
delta	I	2035-08-22T10:37:08.893		20.55	-22.72	48300.35	-29.76		
gamma	I	2035-08-22T10:37:31.591		20.62	-22.65	47624.95	-29.75		
eta	I	2035-08-22T10:37:46.679		20.68	-22.60	47176.12	-29.74		
beta	I	2035-08-22T10:38:37.143		20.85	-22.44	45677.66	-29.71		
alpha	I	2035-08-22T10:39:10.593		20.97	-22.34	44686.89	-29.70		
4	I	2035-08-22T10:40:23.270		21.22	-22.11	42526.92	-29.64		
5	I	2035-08-22T10:40:31.214		21.25	-22.09	42310.43	-29.66		
6	I	2035-08-22T10:40:48.418		21.31	-22.03	41794.79	-29.64		
Uranus	I	2035-08-22T10:48:34.149		22.93	-20.57	25091.76		26.62	27.69
Uranus	E	2035-08-22T11:18:07.457		29.16	-14.85	25238.29		-21.69	-22.62
6	E	2035-08-22T11:26:23.675		30.91	-13.21	41877.70	29.54		
5	E	2035-08-22T11:26:33.387		30.95	-13.18	42173.69	29.56		
4	E	2035-08-22T11:26:48.765		31.00	-13.13	42609.62	29.55		
alpha	E	2035-08-22T11:28:00.950		31.26	-12.89	44752.41	29.60		
beta	E	2035-08-22T11:28:31.126		31.37	-12.79	45641.83	29.61		
eta	E	2035-08-22T11:29:22.961		31.55	-12.61	47176.12	29.64		
gamma	E	2035-08-22T11:29:38.137		31.60	-12.56	47625.94	29.64		
delta	E	2035-08-22T11:30:00.884		31.68	-12.49	48300.35	29.65		
lambda	E	2035-08-22T11:30:59.080		31.89	-12.29	50026.71	29.68		
epsilon	E	2035-08-22T11:31:49.629		32.07	-12.13	51527.31	29.68		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-08-22T11:04:43.790
 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 : 3380074360703605376
 2Mass ID (if available) : 06570236+2307483
 ICRS Star Coord at Epoch: 06h 57m 02.39491s +23:07:47.69465s
 RUWE (>1.4 is poor) : 0.00
 K magnitude : 13.636
 G magnitude : 17.468
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.542
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 27.27
 Sun-Target sep (deg) : 45.63
 Sun-Moon sep (deg) : 94.43
 B (ring opening deg) : 63.38
 PA of pole (deg) : 77.47
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.049
 C/A sky separation (km) : 689.8
 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	2035-08-22T10:36:27.746		21.69	-7.71	50752.68	-29.89		
lambda	I	2035-08-22T10:36:52.032		21.75	-7.62	50026.71	-29.89		
delta	I	2035-08-22T10:37:49.788		21.90	-7.42	48300.35	-29.89		
gamma	I	2035-08-22T10:38:12.359		21.96	-7.34	47625.70	-29.89		
eta	I	2035-08-22T10:38:27.401		22.00	-7.28	47176.12	-29.89		
beta	I	2035-08-22T10:39:17.542		22.13	-7.10	45679.19	-29.89		
alpha	I	2035-08-22T10:39:50.912		22.21	-6.98	44685.40	-29.89		
4	I	2035-08-22T10:41:02.881		22.40	-6.72	42529.02	-29.88		
5	I	2035-08-22T10:41:11.028		22.42	-6.69	42304.98	-29.89		
6	I	2035-08-22T10:41:27.838		22.46	-6.63	41795.04	-29.89		
Uranus	I	2035-08-22T10:49:11.962		23.63	-4.97x	25126.30		25.51	26.56
Uranus	E	2035-08-22T11:20:16.849		27.98	1.66x	25140.82		-25.04	-26.07
6	E	2035-08-22T11:28:07.221		28.98	3.32x	41879.26	29.82		
5	E	2035-08-22T11:28:16.585		29.00	3.35x	42166.30	29.82		
4	E	2035-08-22T11:28:32.215		29.03	3.41x	42612.93	29.81		
alpha	E	2035-08-22T11:29:43.757		29.18	3.66x	44751.85	29.81		
beta	E	2035-08-22T11:30:13.766		29.24	3.76x	45642.84	29.81		
eta	E	2035-08-22T11:31:05.253		29.35	3.94x	47176.12	29.81		
gamma	E	2035-08-22T11:31:20.367		29.38	4.00x	47626.68	29.81		
delta	E	2035-08-22T11:31:42.966		29.42	4.08x	48300.35	29.81		
lambda	E	2035-08-22T11:32:40.879		29.54	4.28x	50026.71	29.81		
epsilon	E	2035-08-22T11:33:31.756		29.64	4.46x	51543.33	29.81		