

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-03-25T17:18:29.460
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3426149150658292608
 2Mass ID (if available) : 06071290+2342030

Uranus 2034-03-25T17:18:29 K13.61 G18.28 PgtRgt

ICRS Star Coord at Epoch: 06h 07m 12.95233s +23:42:03.17644s

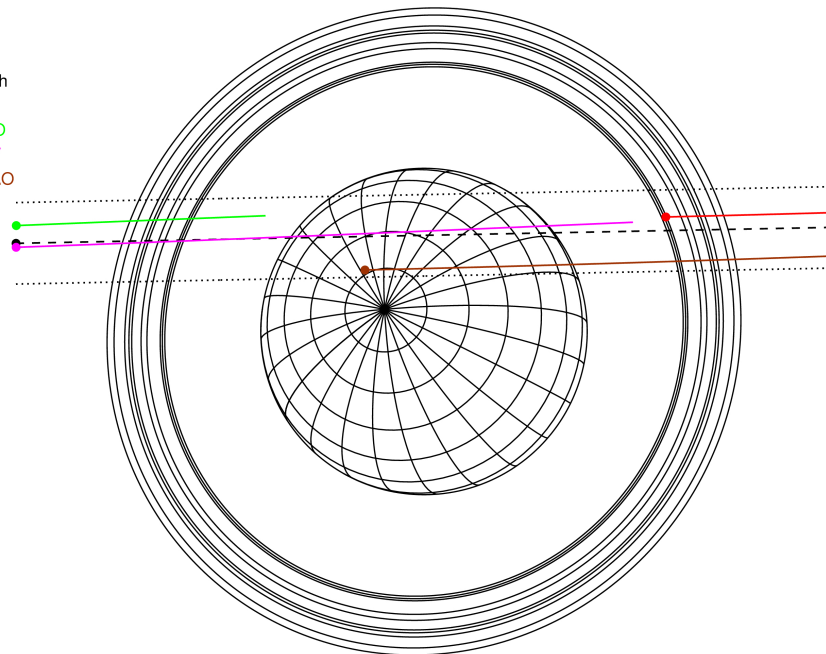
RUWE (>1.4 is poor) : 1.05
 K magnitude : 13.611
 G magnitude : 18.276
 RP magnitude : 17.404
 BP magnitude : 18.827
 DUPflag : 0
 Distance (au) : 18.964
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 7.95
 Sun-Target sep (deg) : 87.00
 Sun-Moon sep (deg) : 15.17
 B (ring opening deg) : 73.91
 PA of pole (deg) : 60.63

Uranus 2034-03-25T17:18:29 K13.61 G18.28
 PgtRgt



2034-03-25T17:18:29.4600 ra: 06 07 12.95233 s: +23 42 03.176 C/A 1.102° PA 181.12 deg v_sky + 7.95 km/s D 18.96 AU
 Credit: Styled after SORA/Lucky Star

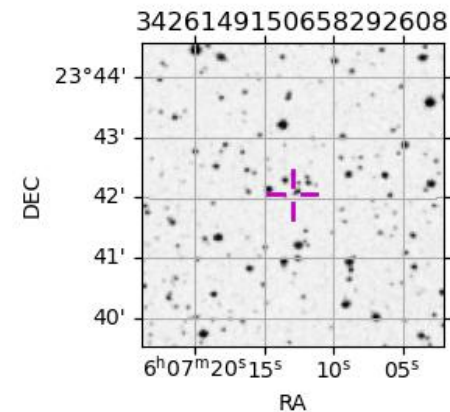
Earth
 PIC
 PMO
 KAV
 SAAO



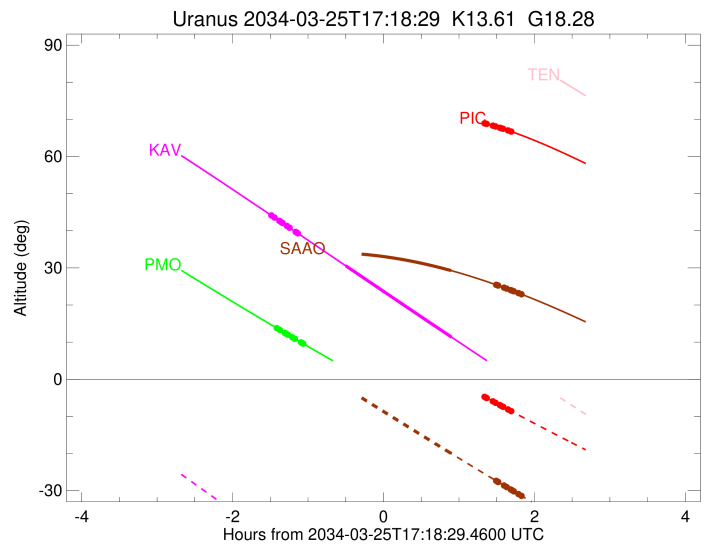
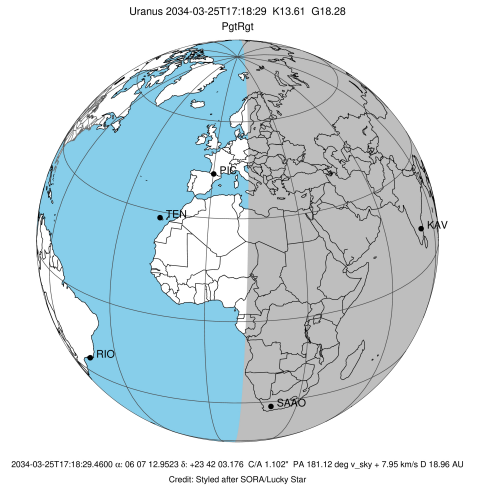
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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			+++++++	MAR 25 18:40 - MAR 25 19:00	PnnRne
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8	+++++++			MAR 25 15:54 - MAR 25 16:14	PnnRin
KPNO	Kitt Peak Natl Obs	32.0	248.4					PnnRnn
MCD	McDonald Obs. 2.7m	30.7	256.0					PnnRnn
TEN	Teide Obs./Tenerife	28.3	343.5					PnnRnn
IRTF	Mauna Kea/IRTF	19.8	204.5					PnnRnn
KAV	Kavalur Observatory	12.6	78.8	+++++++	+ +		MAR 25 15:50 - MAR 25 18:12	PieRin
RIO	Rio de Janeiro	-22.9	316.8					PnnRnn
ESO	European Southern Obs	-29.3	289.3					PnnRnn
AAT	Siding Spring (AAT)	-31.3	149.1					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8		+	+++++++	MAR 25 18:12 - MAR 25 19:09	PneRne
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn

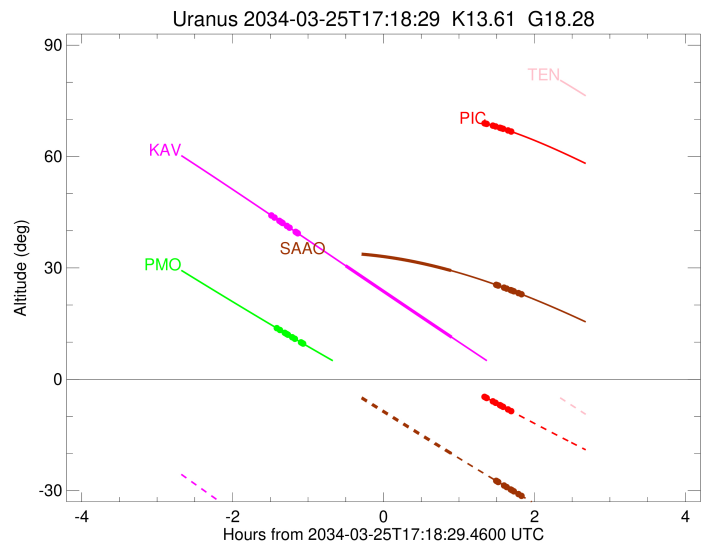
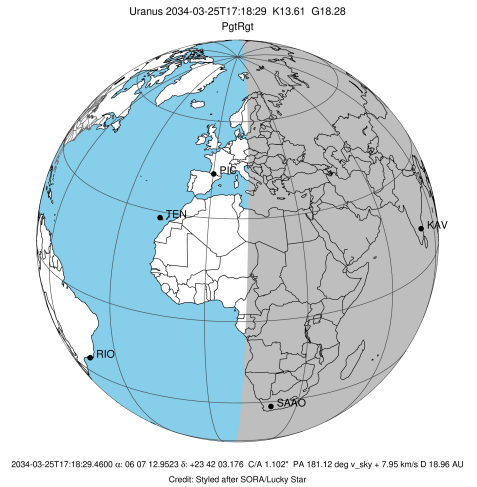


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-03-25T17:16:48.140
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 3426149150658292608
 2Mass ID (if available) : 06071290+2342030
 ICRS Star Coord at Epoch: 06h 07m 12.95233s +23:42:03.17644s
 RUWE (>1.4 is poor) : 1.05
 K magnitude : 13.611
 G magnitude : 18.276
 RP magnitude : 17.404
 BP magnitude : 18.827
 DUPflag : 0
 Distance (au) : 18.964
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 7.95
 Sun-Target sep (deg) : 87.00
 Sun-Moon sep (deg) : 15.42
 B (ring opening deg) : 73.91
 PA of pole (deg) : 60.63
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.246
 C/A sky separation (km) : 17144.0
 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



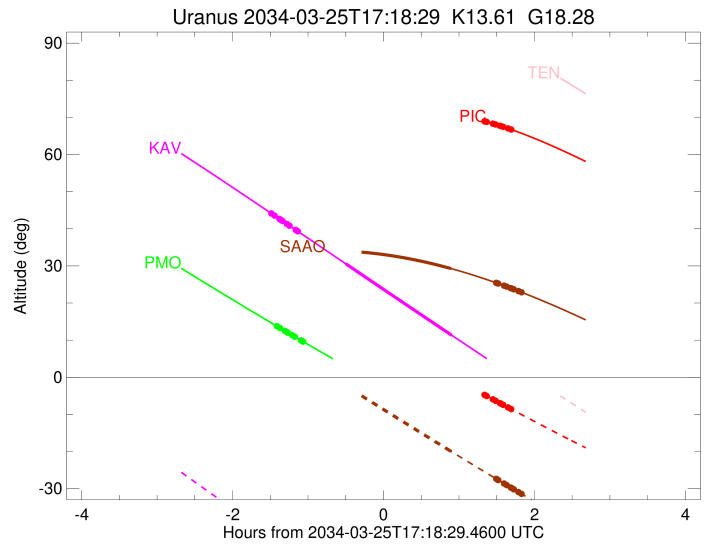
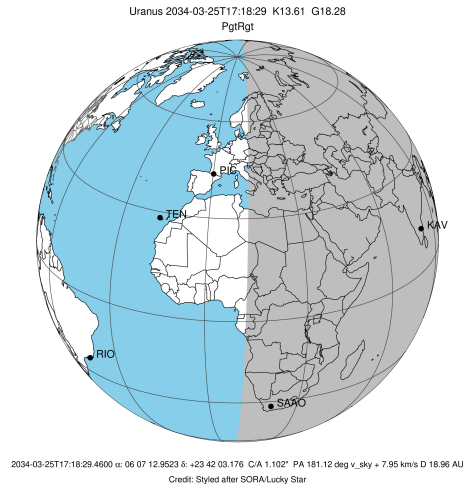
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-03-25T15:36:51.753		55.59	27.81x	50778.88	-7.41		
lambda	I	2034-03-25T15:38:33.525		55.88	27.53x	50026.71	-7.38		
delta	I	2034-03-25T15:42:27.962		56.54	26.88x	48300.35	-7.34		
gamma	I	2034-03-25T15:43:59.548		56.80	26.63x	47628.45	-7.33		
eta	I	2034-03-25T15:45:01.321		56.97	26.46x	47176.12	-7.32		
beta	I	2034-03-25T15:48:28.622		57.54	25.88x	45664.16	-7.28		
alpha	I	2034-03-25T15:50:43.264		57.92	25.50x	44685.29	-7.25		
4	I	2034-03-25T15:55:33.875		58.71	24.67x	42581.86	-7.18		
5	I	2034-03-25T15:56:17.917		58.83	24.55x	42277.46	-7.17		
6	I	2034-03-25T15:57:24.565		59.01	24.36x	41802.07	-7.16		
Uranus	I	2034-03-25T16:36:51.974		64.91	17.47x	25044.70		15.67	16.38
Uranus	E	2034-03-25T17:58:05.704		70.94	2.71x	25509.72		-4.73	-4.95
6	E	2034-03-25T18:38:51.619		68.94	-4.75x	41878.33	7.17		
5	E	2034-03-25T18:39:30.368		68.89	-4.87x	42155.91	7.18		
4	E	2034-03-25T18:40:31.672		68.79	-5.05	42596.86	7.20		
alpha	E	2034-03-25T18:45:26.859		68.33	-5.95	44736.91	7.27		
beta	E	2034-03-25T18:47:31.753		68.12	-6.33	45645.01	7.30		
eta	E	2034-03-25T18:51:00.991		67.75	-6.96	47176.12	7.34		
gamma	E	2034-03-25T18:52:02.520		67.64	-7.14	47627.96	7.35		
delta	E	2034-03-25T18:53:33.908		67.48	-7.42	48300.35	7.37		
lambda	E	2034-03-25T18:57:27.643		67.04	-8.12	50026.71	7.41		
epsilon	E	2034-03-25T19:00:51.575		66.64	-8.73	51540.22	7.43		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-03-25T17:28:07.510
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PMO
 Location : Purple Mtn Obs. Nanking
 Latitude (deg) : 32.06667
 E. Longitude (deg) : 118.82089
 Altitude (km) : 0.364
 Gaia source ID : 3426149150658292608
 2Mass ID (if available) : 06071290+2342030
 ICRS Star Coord at Epoch: 06h 07m 12.95233s +23:42:03.17644s
 RUWE (>1.4 is poor) : 1.05
 K magnitude : 13.611
 G magnitude : 18.276
 RP magnitude : 17.404
 BP magnitude : 18.827
 DUPflag : 0
 Distance (au) : 18.964
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 7.95
 Sun-Target sep (deg) : 87.00
 Sun-Moon sep (deg) : 16.07
 B (ring opening deg) : 73.91
 PA of pole (deg) : 60.63
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.386
 C/A sky separation (km) : 19064.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ura111.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ura111.bsp
 ura161.bsp
 vgr2.ura161.bsp
 peph.ura160.bsp
 earthstns_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



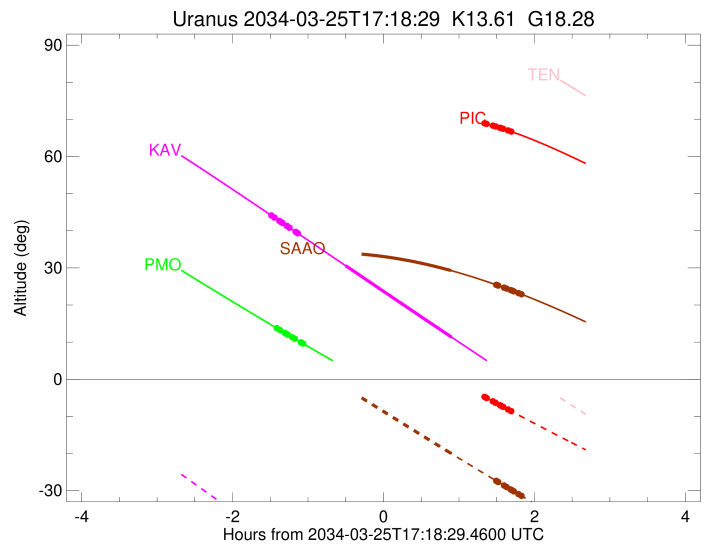
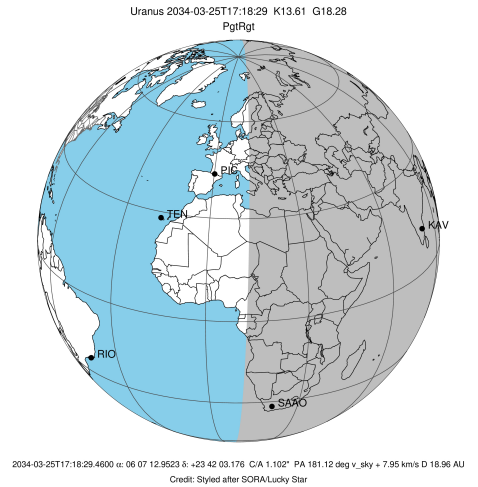
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-03-25T15:54:30.668		13.60	-55.88	50781.75	-7.54		
lambda	I	2034-03-25T15:56:11.042		13.26	-55.92	50026.71	-7.51		
delta	I	2034-03-25T16:00:01.399		12.50	-56.00	48300.35	-7.47		
gamma	I	2034-03-25T16:01:31.392		12.20	-56.02	47628.55	-7.46		
eta	I	2034-03-25T16:02:32.120		12.00	-56.04	47176.12	-7.44		
beta	I	2034-03-25T16:05:55.986		11.32	-56.07	45663.70	-7.40		
alpha	I	2034-03-25T16:08:08.355		10.88	-56.08	44685.13	-7.37		
4	I	2034-03-25T16:12:54.220		9.94	-56.08	42583.08	-7.29		
5	I	2034-03-25T16:13:38.078		9.79	-56.08	42275.52	-7.27		
6	I	2034-03-25T16:14:43.384		9.58	-56.07	41802.78	-7.26		
Uranus	I	2034-03-25T16:54:28.252	1.88x	-54.51	25068.47			15.29	15.97
Uranus	E	2034-03-25T18:02:58.995	-10.52x	-46.85	25541.31			-2.83	-2.96
6	E	2034-03-25T18:43:09.910	-17.07x	-40.41	41877.53	7.52			
5	E	2034-03-25T18:43:46.866	-17.17x	-40.30	42155.22	7.53			
4	E	2034-03-25T18:44:45.630	-17.32x	-40.13	42599.23	7.56			
alpha	E	2034-03-25T18:49:25.924	-18.04x	-39.32	44735.12	7.65			
beta	E	2034-03-25T18:51:24.610	-18.34x	-38.97	45644.32	7.69			
eta	E	2034-03-25T18:54:42.983	-18.83x	-38.38	47176.12	7.75			
gamma	E	2034-03-25T18:55:41.261	-18.98x	-38.21	47628.24	7.77			
delta	E	2034-03-25T18:57:07.673	-19.19x	-37.95	48300.35	7.79			
lambda	E	2034-03-25T19:00:48.504	-19.73x	-37.29	50026.71	7.84			
epsilon	E	2034-03-25T19:04:00.062	-20.20x	-36.71	51533.75	7.88			

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-03-25T17:30:09.430
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : KAV
 Location : Kavalur Observatory
 Latitude (deg) : 12.57556
 E. Longitude (deg) : 78.83167
 Altitude (km) : 0.722
 Gaia source ID : 3426149150658292608
 2Mass ID (if available) : 06071290+2342030
 ICRS Star Coord at Epoch: 06h 07m 12.95233s +23:42:03.17644s
 RUWE (>1.4 is poor) : 1.05
 K magnitude : 13.611
 G magnitude : 18.276
 RP magnitude : 17.404
 BP magnitude : 18.827
 DUPflag : 0
 Distance (au) : 18.964
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 7.95
 Sun-Target sep (deg) : 87.00
 Sun-Moon sep (deg) : 16.11
 B (ring opening deg) : 73.91
 PA of pole (deg) : 60.63
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.142
 C/A sky separation (km) : 15700.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLvl.spk
 ura111.bsp
 IAU_URANUS_for_RINGFIT.tpc
 vgr2.ura111.bsp
 ura161.bsp
 vgr2.ura161.bsp
 peph.ura160.bsp
 earthstns_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	2034-03-25T15:50:12.465		43.93	-42.95	50770.24	-7.45		
lambda	I	2034-03-25T15:51:52.356		43.55	-43.34	50026.71	-7.44		
delta	I	2034-03-25T15:55:44.797		42.67	-44.25	48300.35	-7.41		
gamma	I	2034-03-25T15:57:15.512		42.32	-44.61	47628.16	-7.41		
eta	I	2034-03-25T15:58:16.589		42.09	-44.85	47176.12	-7.40		
beta	I	2034-03-25T16:01:41.257		41.31	-45.65	45665.34	-7.37		
alpha	I	2034-03-25T16:03:54.211		40.80	-46.17	44685.75	-7.35		
4	I	2034-03-25T16:08:40.679		39.70	-47.28	42579.09	-7.31		
5	I	2034-03-25T16:09:22.893		39.54	-47.45	42281.65	-7.30		
6	I	2034-03-25T16:10:29.102		39.29	-47.70	41800.64	-7.29		
Uranus	I	2034-03-25T16:48:22.885		30.59	-56.38	25026.51		15.96	16.68
Uranus	E	2034-03-25T18:12:41.876		11.33	-72.69	25492.79		-5.49	-5.75
6	E	2034-03-25T18:50:34.445		2.78x	-75.44	41878.51	7.62		
5	E	2034-03-25T18:51:10.925		2.64x	-75.44	42156.14	7.63		
4	E	2034-03-25T18:52:08.542		2.43x	-75.44	42596.26	7.65		
alpha	E	2034-03-25T18:56:46.665		1.39x	-75.36	44737.31	7.71		
beta	E	2034-03-25T18:58:44.317		0.95x	-75.30	45645.17	7.74		
eta	E	2034-03-25T19:02:01.514		0.22x	-75.16	47176.12	7.78		
gamma	E	2034-03-25T19:02:59.513		0.00x	-75.11	47627.90	7.80		
delta	E	2034-03-25T19:04:25.684		-0.32x	-75.03	48300.35	7.81		
lambda	E	2034-03-25T19:08:06.094		-1.13x	-74.80	50026.71	7.85		
epsilon	E	2034-03-25T19:11:18.562		-1.85x	-74.55	51541.25	7.88		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-03-25T17:20:58.730
 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 : 3426149150658292608
 2Mass ID (if available) : 06071290+2342030
 ICRS Star Coord at Epoch: 06h 07m 12.95233s +23:42:03.17644s
 RUWE (>1.4 is poor) : 1.05
 K magnitude : 13.611
 G magnitude : 18.276
 RP magnitude : 17.404
 BP magnitude : 18.827
 DUPflag : 0
 Distance (au) : 18.964
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 7.95
 Sun-Target sep (deg) : 87.00
 Sun-Moon sep (deg) : 15.21
 B (ring opening deg) : 73.91
 PA of pole (deg) : 60.63
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.716
 C/A sky separation (km) : 9853.0
 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	2034-03-25T15:35:04.216		32.40	13.12x	50757.65	-7.62		
lambda	I	2034-03-25T15:36:40.268		32.49	12.78x	50026.71	-7.61		
delta	I	2034-03-25T15:40:27.375		32.69	12.00x	48300.35	-7.60		
gamma	I	2034-03-25T15:41:55.973		32.77	11.69x	47627.61	-7.59		
eta	I	2034-03-25T15:42:55.467		32.82	11.48x	47176.12	-7.59		
beta	I	2034-03-25T15:46:14.521		32.98	10.79x	45667.59	-7.57		
alpha	I	2034-03-25T15:48:24.012		33.08	10.34x	44687.02	-7.57		
4	I	2034-03-25T15:53:02.820		33.28	9.36x	42573.37	-7.55		
5	I	2034-03-25T15:53:41.639		33.31	9.23x	42289.63	-7.54		
6	I	2034-03-25T15:54:47.053		33.35	9.00x	41798.15	-7.54		
Uranus	I	2034-03-25T16:30:13.649		34.10	1.54x	25027.39		15.95	16.66
Uranus	E	2034-03-25T18:12:17.429		29.27	-19.98	25366.36		-9.42	-9.86
6	E	2034-03-25T18:48:09.713		25.43	-27.37	41879.61	7.66		
5	E	2034-03-25T18:48:46.360		25.36	-27.49	42159.47	7.66		
4	E	2034-03-25T18:49:42.750		25.25	-27.68	42589.94	7.67		
alpha	E	2034-03-25T18:54:22.031		24.68	-28.63	44741.36	7.70		
beta	E	2034-03-25T18:56:19.791		24.43	-29.02	45647.15	7.71		
eta	E	2034-03-25T18:59:37.933		24.02	-29.69	47176.12	7.73		
gamma	E	2034-03-25T19:00:36.301		23.89	-29.89	47627.16	7.73		
delta	E	2034-03-25T19:02:03.349		23.71	-30.18	48300.35	7.74		
lambda	E	2034-03-25T19:05:46.231		23.22	-30.92	50026.71	7.75		
epsilon	E	2034-03-25T19:09:02.731		22.79	-31.58	51551.79	7.77		