

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-05-01T22:42:22.130
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3382608735007212416
 2Mass ID (if available) : 06303049+2334368

Uranus 2035-05-01T22:42:22 K14.97 G17.12 PgtRgt

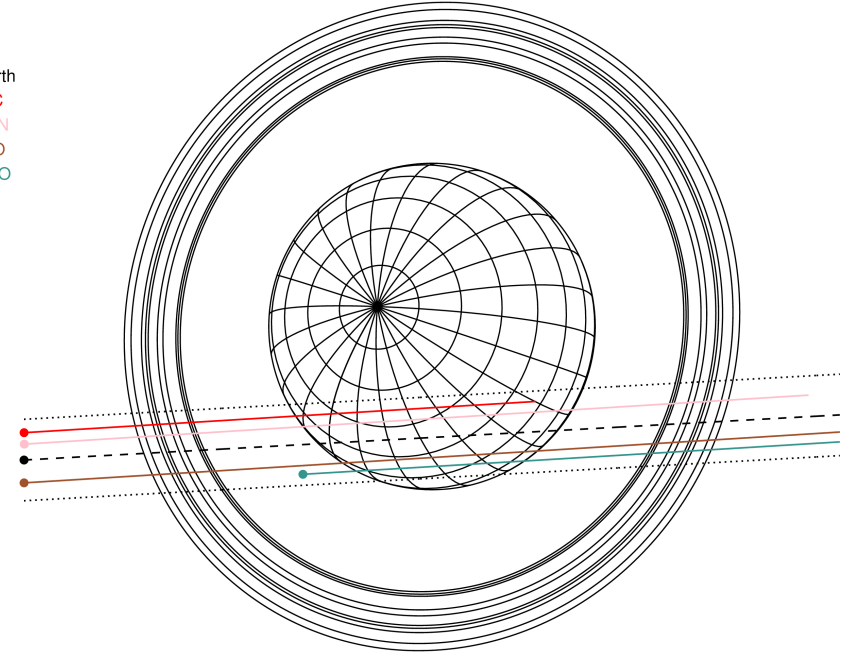
ICRS Star Coord at Epoch: 06h 30m 30.50650s +23:34:36.93336s

RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.967
 G magnitude : 17.120
 RP magnitude : 16.481
 BP magnitude : 17.599
 DUPflag : 0
 Distance (au) : 19.412
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 23.02
 Sun-Target sep (deg) : 56.08
 Sun-Moon sep (deg) : 131.86
 B (ring opening deg) : 69.11
 PA of pole (deg) : 69.98



2035-05-01T22:42:22.1300 α: 06 30 30.5065 δ: +23 34 36.933 C/A 1.225° PA 3.17 deg v_sky +23.02 km/s D 19.41 AU
 Credit: Styled after SORA/Lucky Star

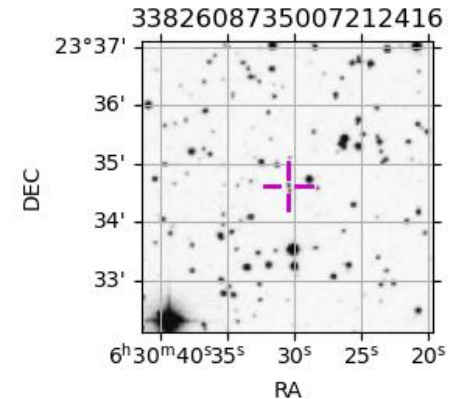
Earth
 PIC
 TEN
 RIO
 ESO



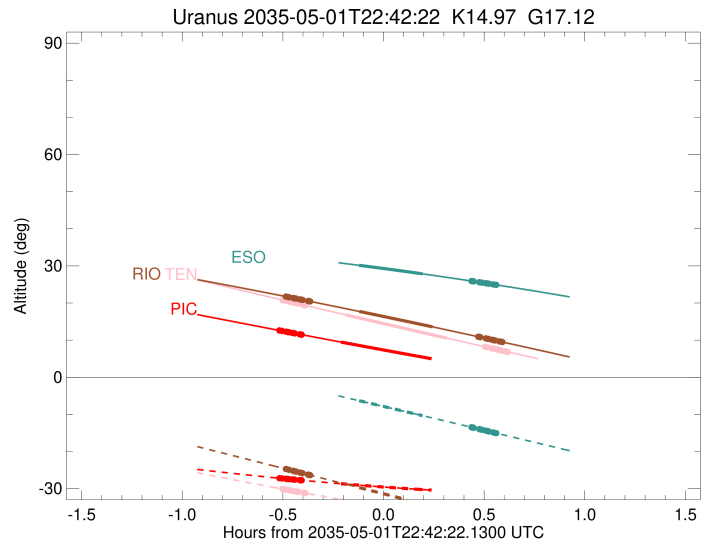
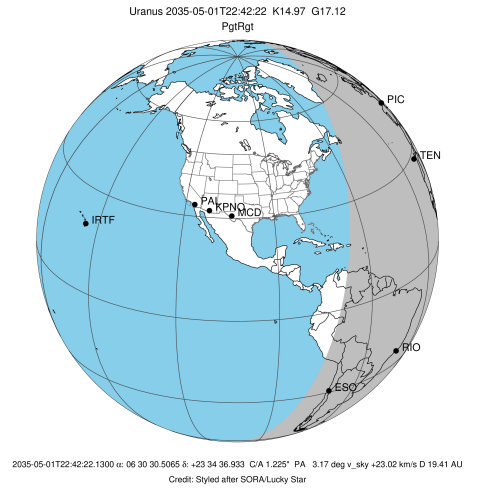
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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	+++++	+		MAY 01 22:11 - MAY 01 22:29	PinRin
PAL	Palomar Mt (200")	33.4	243.1					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
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	+++++	+ +	+++++	MAY 01 22:12 - MAY 01 23:19	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	+++++	+ +	+++++	MAY 01 22:13 - MAY 01 23:17	PieRie
ESO	European Southern Obs	-29.3	289.3		+ +	+++++	MAY 01 22:35 - MAY 01 23:15	PieRne
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

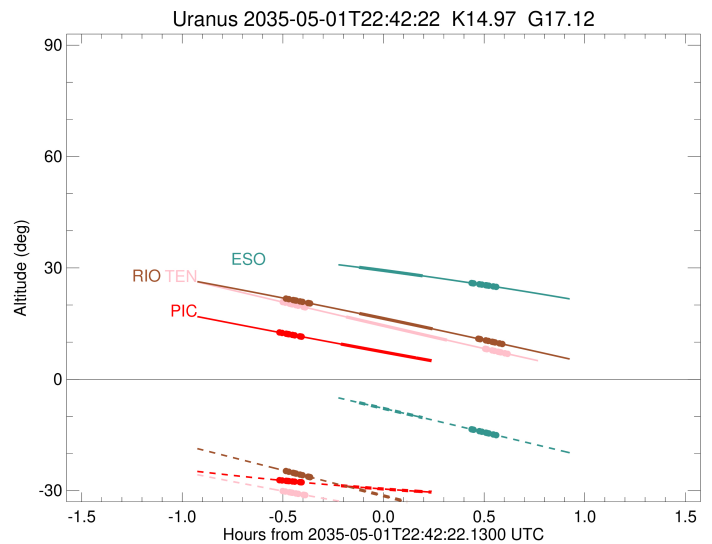
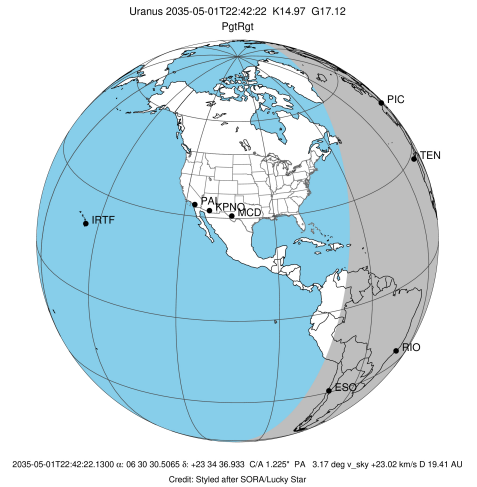


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-05-01T22:45:31.590
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 3382608735007212416
 2Mass ID (if available) : 06303049+2334368
 ICRS Star Coord at Epoch: 06h 30m 30.50650s +23:34:36.93336s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.967
 G magnitude : 17.120
 RP magnitude : 16.481
 BP magnitude : 17.599
 DUPflag : 0
 Distance (au) : 19.412
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 23.02
 Sun-Target sep (deg) : 56.08
 Sun-Moon sep (deg) : 131.54
 B (ring opening deg) : 69.11
 PA of pole (deg) : 69.98
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.902
 C/A sky separation (km) : 12704.2
 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



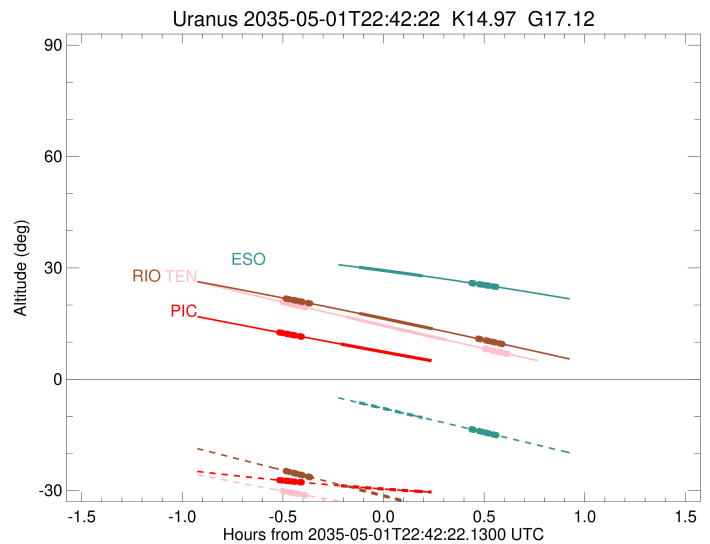
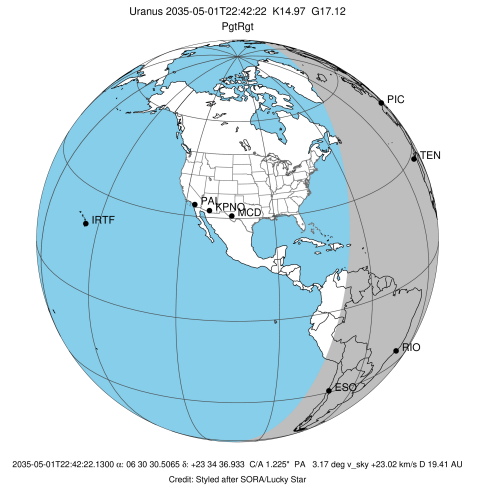
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-05-01T22:11:04.014		12.66	-27.16	51555.06	-23.64		
lambda	I	2035-05-01T22:12:08.721		12.47	-27.26	50026.71	-23.60		
delta	I	2035-05-01T22:13:21.977		12.26	-27.36	48300.35	-23.54		
gamma	I	2035-05-01T22:13:50.739		12.18	-27.40	47623.73	-23.51		
eta	I	2035-05-01T22:14:09.784		12.13	-27.43	47176.12	-23.49		
beta	I	2035-05-01T22:15:14.951		11.94	-27.52	45645.91	-23.43		
alpha	I	2035-05-01T22:15:54.137		11.83	-27.58	44728.89	-23.39		
4	I	2035-05-01T22:17:28.064		11.56	-27.71	42530.81	-23.27		
5	I	2035-05-01T22:17:37.589		11.53	-27.73	42313.90	-23.27		
6	I	2035-05-01T22:17:59.509		11.47	-27.76	41797.99	-23.23		
Uranus	I	2035-05-01T22:29:40.451		9.48	-28.68	25375.21		12.23	12.79
Uranus	E	2035-05-01T23:01:05.608		4.28x	-30.62	25055.59		-20.73	-21.63
6	E	2035-05-01T23:12:10.416		2.51x	-31.12	41859.47	23.33		
5	E	2035-05-01T23:12:23.782		2.47x	-31.12	42179.25	23.37		
4	E	2035-05-01T23:12:42.066		2.42x	-31.14	42592.43	23.37		
alpha	E	2035-05-01T23:14:11.263		2.19x	-31.19	44692.04	23.49		
beta	E	2035-05-01T23:14:53.447		2.07x	-31.22	45681.04	23.54		
eta	E	2035-05-01T23:15:56.818		1.91x	-31.26	47176.12	23.60		
gamma	E	2035-05-01T23:16:15.870		1.86x	-31.27	47626.00	23.62		
delta	E	2035-05-01T23:16:44.401		1.78x	-31.29	48300.35	23.65		
lambda	E	2035-05-01T23:17:57.302		1.59x	-31.33	50026.71	23.71		
epsilon	E	2035-05-01T23:18:29.378		1.51x	-31.35	50787.73	23.76		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-05-01T22:46:23.280
 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 : 3382608735007212416
 2Mass ID (if available) : 06303049+2334368
 ICRS Star Coord at Epoch: 06h 30m 30.50650s +23:34:36.93336s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.967
 G magnitude : 17.120
 RP magnitude : 16.481
 BP magnitude : 17.599
 DUPflag : 0
 Distance (au) : 19.412
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 23.02
 Sun-Target sep (deg) : 56.08
 Sun-Moon sep (deg) : 131.52
 B (ring opening deg) : 69.11
 PA of pole (deg) : 69.98
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.023
 C/A sky separation (km) : 14401.7
 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



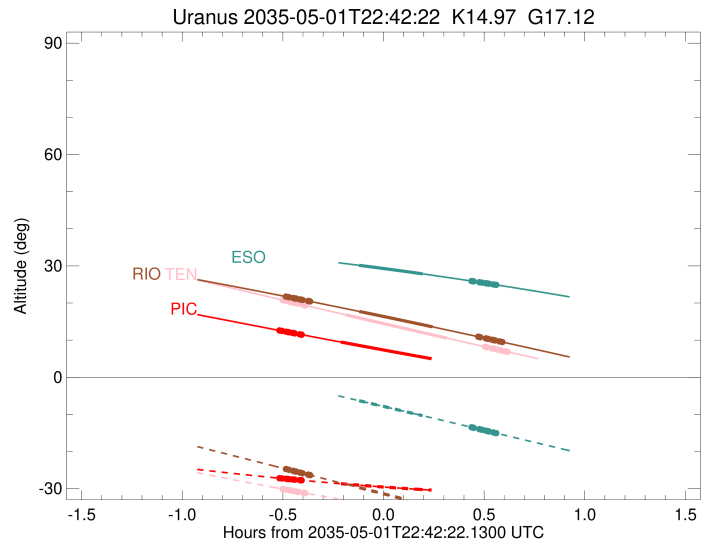
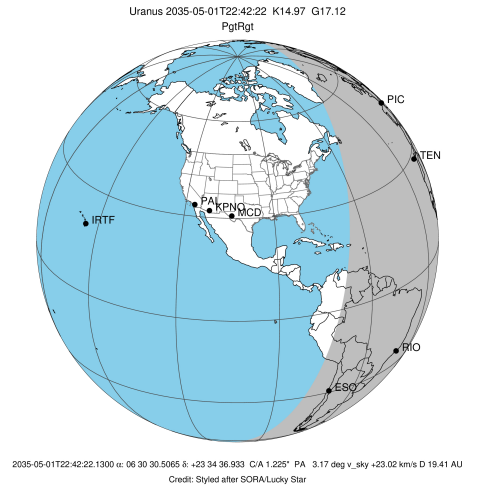
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-05-01T22:12:01.945		20.86	-30.06	51554.29	-23.30		
lambda	I	2035-05-01T22:13:07.576		20.62	-30.24	50026.71	-23.24		
delta	I	2035-05-01T22:14:21.966		20.36	-30.44	48300.35	-23.17		
gamma	I	2035-05-01T22:14:51.199		20.26	-30.52	47623.55	-23.13		
eta	I	2035-05-01T22:15:10.548		20.19	-30.58	47176.12	-23.11		
beta	I	2035-05-01T22:16:16.794		19.96	-30.76	45646.46	-23.03		
alpha	I	2035-05-01T22:16:56.747		19.81	-30.87	44727.53	-22.97		
4	I	2035-05-01T22:18:32.422		19.48	-31.13	42529.95	-22.83		
5	I	2035-05-01T22:18:42.039		19.44	-31.16	42314.48	-22.82		
6	I	2035-05-01T22:19:04.463		19.36	-31.22	41797.30	-22.78		
Uranus	I	2035-05-01T22:31:12.619		16.81	-33.15	25413.41		10.86	11.36
Uranus	E	2035-05-01T23:01:14.423		10.56	-37.55	25067.91		-20.46	-21.34
6	E	2035-05-01T23:12:40.743		8.21	-39.05	41857.93	22.89		
5	E	2035-05-01T23:12:54.543		8.16	-39.08	42181.68	22.94		
4	E	2035-05-01T23:13:13.009		8.10	-39.12	42590.77	22.94		
alpha	E	2035-05-01T23:14:43.835		7.79	-39.31	44691.24	23.09		
beta	E	2035-05-01T23:15:26.771		7.64	-39.40	45681.13	23.16		
eta	E	2035-05-01T23:16:31.154		7.42	-39.53	47176.12	23.24		
gamma	E	2035-05-01T23:16:50.492		7.36	-39.57	47625.81	23.26		
delta	E	2035-05-01T23:17:19.464		7.26	-39.63	48300.35	23.30		
lambda	E	2035-05-01T23:18:33.425		7.01	-39.78	50026.71	23.38		
epsilon	E	2035-05-01T23:19:06.218		6.90	-39.85	50794.04	23.44		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-05-01T22:46:17.720
 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 : 3382608735007212416
 2Mass ID (if available) : 06303049+2334368
 ICRS Star Coord at Epoch: 06h 30m 30.50650s +23:34:36.93336s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.967
 G magnitude : 17.120
 RP magnitude : 16.481
 BP magnitude : 17.599
 DUPflag : 0
 Distance (au) : 19.412
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 23.02
 Sun-Target sep (deg) : 56.08
 Sun-Moon sep (deg) : 131.54
 B (ring opening deg) : 69.11
 PA of pole (deg) : 69.98
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.455
 C/A sky separation (km) : 20485.4
 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_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	2035-05-01T22:12:59.757		21.79	-24.65	51547.35	-22.05		
lambda	I	2035-05-01T22:14:08.860		21.58	-24.91	50026.71	-21.94		
delta	I	2035-05-01T22:15:27.836		21.34	-25.22	48300.35	-21.78		
gamma	I	2035-05-01T22:15:58.994		21.25	-25.33	47622.95	-21.70		
eta	I	2035-05-01T22:16:19.602		21.19	-25.41	47176.12	-21.66		
beta	I	2035-05-01T22:17:30.367		20.98	-25.68	45648.60	-21.49		
alpha	I	2035-05-01T22:18:13.576		20.85	-25.85	44722.56	-21.36		
4	I	2035-05-01T22:19:56.833		20.54	-26.24	42527.52	-21.05		
5	I	2035-05-01T22:20:07.008		20.50	-26.28	42315.24	-21.02		
6	I	2035-05-01T22:20:31.557		20.43	-26.37	41795.48	-20.94		
Uranus	I	2035-05-01T22:35:09.438		17.73	-29.73	25532.17		4.62	4.84
Uranus	E	2035-05-01T22:56:59.160		13.58	-34.75	25179.63		-17.83	-18.62
6	E	2035-05-01T23:10:37.254		10.92	-37.89	41851.66	21.02		
5	E	2035-05-01T23:10:53.078		10.87	-37.95	42191.93	21.11		
4	E	2035-05-01T23:11:12.378		10.80	-38.03	42584.05	21.14		
alpha	E	2035-05-01T23:12:50.713		10.48	-38.41	44688.54	21.46		
beta	E	2035-05-01T23:13:36.997		10.33	-38.58	45681.21	21.59		
eta	E	2035-05-01T23:14:45.902		10.10	-38.85	47176.12	21.76		
gamma	E	2035-05-01T23:15:06.507		10.03	-38.93	47625.08	21.81		
delta	E	2035-05-01T23:15:37.412		9.93	-39.05	48300.35	21.89		
lambda	E	2035-05-01T23:16:55.983		9.67	-39.35	50026.71	22.06		
epsilon	E	2035-05-01T23:17:31.982		9.55	-39.49	50821.98	22.17		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2035-05-01T22:44:46.710
 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 : 3382608735007212416
 2Mass ID (if available) : 06303049+2334368
 ICRS Star Coord at Epoch: 06h 30m 30.50650s +23:34:36.93336s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.967
 G magnitude : 17.120
 RP magnitude : 16.481
 BP magnitude : 17.599
 DUPflag : 0
 Distance (au) : 19.412
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 23.02
 Sun-Target sep (deg) : 56.08
 Sun-Moon sep (deg) : 131.87
 B (ring opening deg) : 69.11
 PA of pole (deg) : 69.98
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.555
 C/A sky separation (km) : 21899.3
 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	2035-05-01T22:11:42.533		32.62	-1.38x	51544.94	-21.64		
lambda	I	2035-05-01T22:12:52.866		32.51	-1.63x	50026.71	-21.51		
delta	I	2035-05-01T22:14:13.476		32.38	-1.91x	48300.35	-21.32		
gamma	I	2035-05-01T22:14:45.317		32.33	-2.02x	47622.82	-21.24		
eta	I	2035-05-01T22:15:06.377		32.29	-2.09x	47176.12	-21.18		
beta	I	2035-05-01T22:16:18.763		32.17	-2.35x	45649.13	-20.98		
alpha	I	2035-05-01T22:17:03.109		32.10	-2.50x	44721.42	-20.83		
4	I	2035-05-01T22:18:49.086		31.92	-2.87x	42527.11	-20.48		
5	I	2035-05-01T22:18:59.512		31.90	-2.91x	42315.12	-20.44		
6	I	2035-05-01T22:19:24.791		31.86	-3.00x	41795.22	-20.34		
Uranus	I	2035-05-01T22:35:06.228		30.16	-6.31	25549.90		2.69	2.82
Uranus	E	2035-05-01T22:53:58.820		27.86	-10.33	25227.78		-16.60	-17.34
6	E	2035-05-01T23:08:37.134		25.92	-13.47	41849.98	20.40		
5	E	2035-05-01T23:08:53.672		25.88	-13.53	42194.76	20.50		
4	E	2035-05-01T23:09:13.331		25.84	-13.60	42582.27	20.53		
alpha	E	2035-05-01T23:10:54.503		25.60	-13.97	44687.95	20.90		
beta	E	2035-05-01T23:11:42.034		25.49	-14.14	45681.16	21.05		
eta	E	2035-05-01T23:12:52.665		25.33	-14.39	47176.12	21.25		
gamma	E	2035-05-01T23:13:13.757		25.28	-14.47	47624.90	21.30		
delta	E	2035-05-01T23:13:45.399		25.21	-14.58	48300.35	21.39		
lambda	E	2035-05-01T23:15:05.744		25.02	-14.87	50026.71	21.58		
epsilon	E	2035-05-01T23:15:42.891		24.93	-15.00	50830.00	21.72		