

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-12-11T14:20:53.830
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3382408482155800192
 2Mass ID (if available) : 06382972+2328227

Uranus 2034-12-11T14:20:53 K14.34 G16.25 PgtRgt

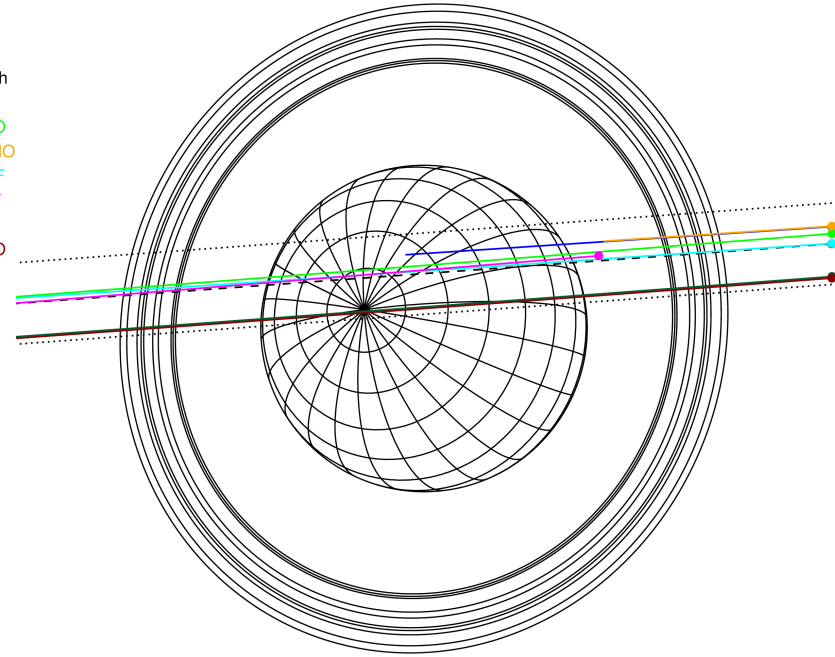
ICRS Star Coord at Epoch: 06h 38m 29.73199s +23:28:22.58494s

RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.344
 G magnitude : 16.253
 RP magnitude : 15.599
 BP magnitude : 16.754
 DUPflag : 0
 Distance (au) : 17.962
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.64
 Sun-Target sep (deg) : 160.30
 Sun-Moon sep (deg) : 167.40
 B (ring opening deg) : 67.41
 PA of pole (deg) : 72.50



2034-12-11T14:20:53.8300 ra: 06 38 29.73200 l: +23 28 22.585 C/A 0.667 PA 184.19 deg v_sky -21.64 km/s D 17.96 AU
 Credit: Styled after SORA/Lucky Star

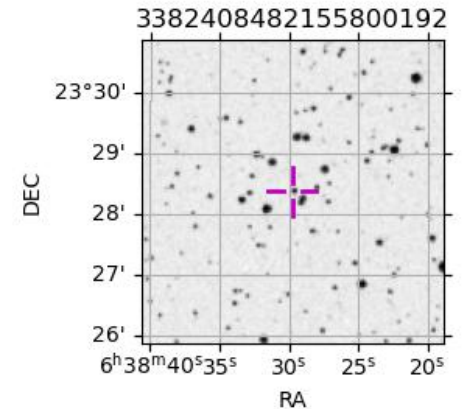
Earth
 PAL
 PMO
 KPNO
 IRTF
 KAV
 AAT
 MSO



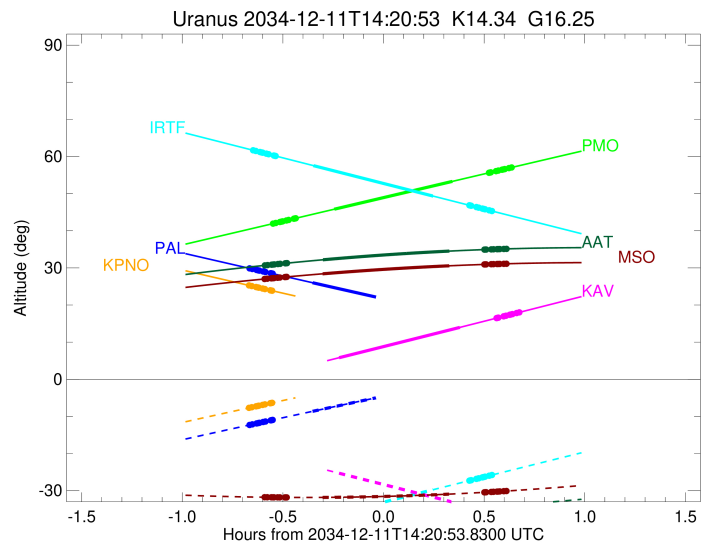
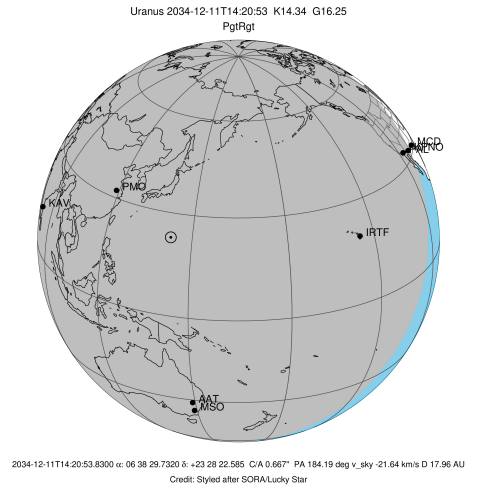
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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					PnnRnn
PAL	Palomar Mt (200")	33.4	243.1	+++++	+		DEC 11 13:40 - DEC 11 13:59	PinRin
PMO	Purple Mtn Obs. Nanki	32.1	118.8	+++++	+ +	+++++	DEC 11 13:47 - DEC 11 14:58	PieRie
KPNO	Kitt Peak Natl Obs	32.0	248.4	+++++			DEC 11 13:40 - DEC 11 13:47	PnnRin
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	+++++	+ +	+++++	DEC 11 13:41 - DEC 11 14:52	PieRie
KAV	Kavalur Observatory	12.6	78.8		+ +	+++++	DEC 11 14:07 - DEC 11 15:01	PieRne
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	+++++	+ +	+++++	DEC 11 13:45 - DEC 11 14:57	PieRie
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0	+++++	+ +	+++++	DEC 11 13:45 - DEC 11 14:57	PieRie

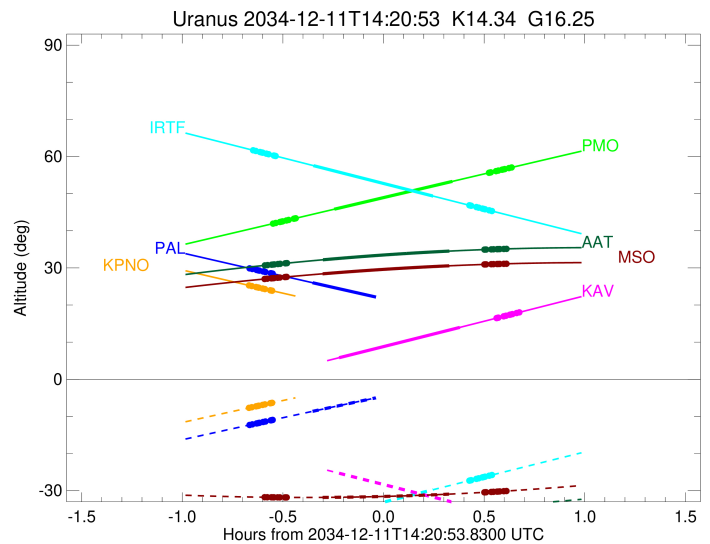
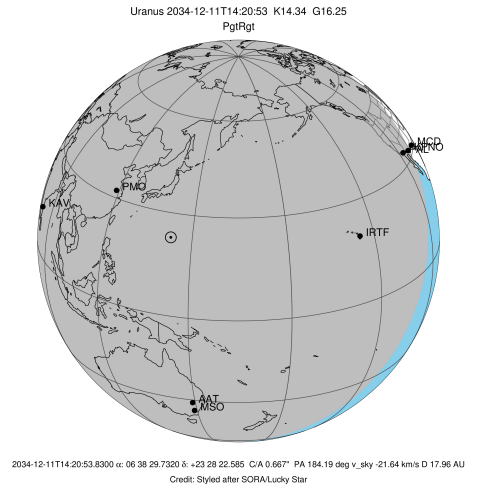


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-12-11T14:16:59.590
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PAL
 Location : Palomar Mt (200")
 Latitude (deg) : 33.35622
 E. Longitude (deg) : 243.13601
 Altitude (km) : 1.706
 Gaia source ID : 3382408482155800192
 2Mass ID (if available) : 06382972+2328227
 ICRS Star Coord at Epoch: 06h 38m 29.73199s +23:28:22.58494s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.344
 G magnitude : 16.253
 RP magnitude : 15.599
 BP magnitude : 16.754
 DUPflag : 0
 Distance (au) : 17.962
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.64
 Sun-Target sep (deg) : 160.30
 Sun-Moon sep (deg) : 168.28
 B (ring opening deg) : 67.41
 PA of pole (deg) : 72.50
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.899
 C/A sky separation (km) : 11710.8
 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



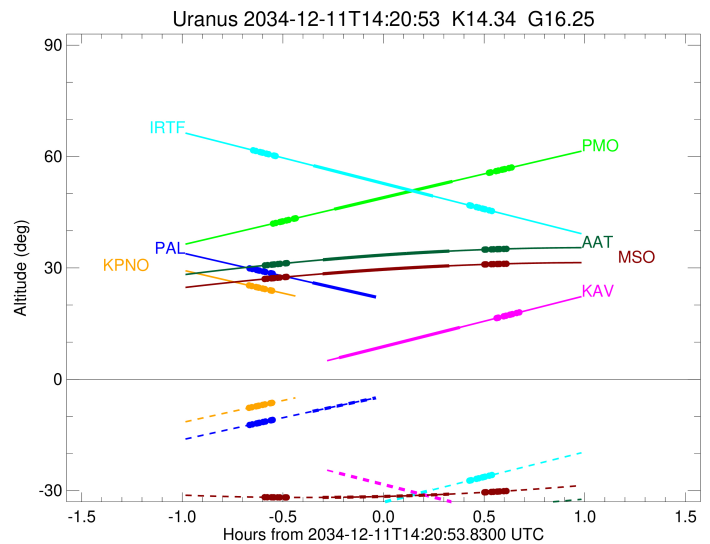
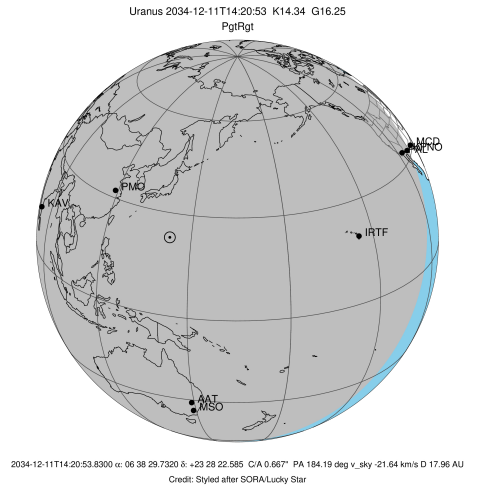
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-12-11T13:40:41.301		29.93	-12.36	51544.70	-22.71		
lambda	I	2034-12-11T13:41:48.180		29.70	-12.14	50026.71	-22.68		
delta	I	2034-12-11T13:43:04.395		29.44	-11.89	48300.35	-22.63		
gamma	I	2034-12-11T13:43:34.436		29.34	-11.80	47620.97	-22.60		
eta	I	2034-12-11T13:43:54.123		29.27	-11.73	47176.12	-22.59		
beta	I	2034-12-11T13:45:00.516		29.04	-11.51	45677.78	-22.54		
alpha	I	2034-12-11T13:45:44.391		28.89	-11.37	44686.50	-22.50		
4	I	2034-12-11T13:47:16.524		28.57	-11.07	42613.39	-22.41		
5	I	2034-12-11T13:47:37.425		28.50	-11.00	42155.16	-22.39		
6	I	2034-12-11T13:47:49.557		28.46	-10.96	41879.52	-22.38		
Uranus	I	2034-12-11T13:59:45.326		26.01	-8.64	25339.05		-14.66	-15.32
Uranus	E	2034-12-11T14:34:00.955		19.03	-2.10x	25066.72		22.44	23.39
6	E	2034-12-11T14:45:14.167		16.78	-0.01x	41799.40	22.28		
5	E	2034-12-11T14:45:36.753		16.70	0.06x	42306.22	22.30		
4	E	2034-12-11T14:45:48.278		16.67	0.10x	42544.54	22.31		
alpha	E	2034-12-11T14:47:26.778		16.34	0.40x	44751.74	22.40		
beta	E	2034-12-11T14:48:06.886		16.20	0.52x	45652.40	22.44		
eta	E	2034-12-11T14:49:14.681		15.98	0.73x	47176.12	22.48		
gamma	E	2034-12-11T14:49:34.910		15.91	0.79x	47631.10	22.50		
delta	E	2034-12-11T14:50:04.645		15.81	0.88x	48300.35	22.52		
lambda	E	2034-12-11T14:51:21.233		15.56	1.12x	50026.71	22.56		
epsilon	E	2034-12-11T14:51:53.498		15.45	1.22x	50755.05	22.59		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-12-11T14:23:57.360
 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 : 3382408482155800192
 2Mass ID (if available) : 06382972+2328227
 ICRS Star Coord at Epoch: 06h 38m 29.73199s +23:28:22.58494s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.344
 G magnitude : 16.253
 RP magnitude : 15.599
 BP magnitude : 16.754
 DUPflag : 0
 Distance (au) : 17.962
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.64
 Sun-Target sep (deg) : 160.30
 Sun-Moon sep (deg) : 167.13
 B (ring opening deg) : 67.41
 PA of pole (deg) : 72.50
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.756
 C/A sky separation (km) : 9842.9
 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_itrff93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



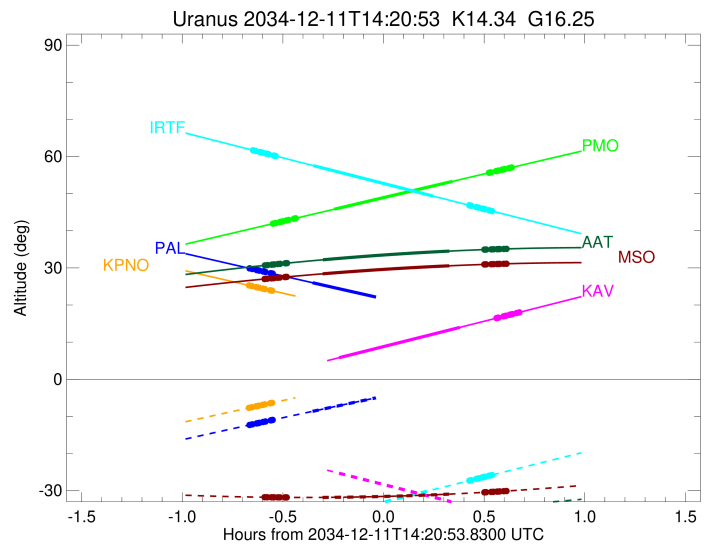
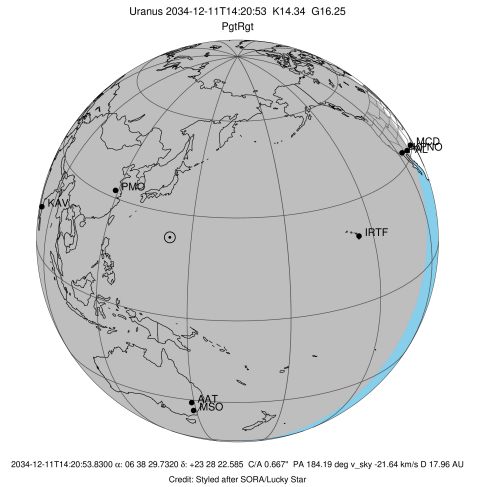
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-12-11T13:47:40.525		41.87	-59.90	51547.01	-23.00		
lambda	I	2034-12-11T13:48:46.648		42.10	-60.13	50026.71	-22.98		
delta	I	2034-12-11T13:50:01.829		42.37	-60.39	48300.35	-22.95		
gamma	I	2034-12-11T13:50:31.447		42.47	-60.50	47620.96	-22.93		
eta	I	2034-12-11T13:50:50.849		42.54	-60.56	47176.12	-22.92		
beta	I	2034-12-11T13:51:56.263		42.77	-60.79	45677.41	-22.89		
alpha	I	2034-12-11T13:52:39.452		42.93	-60.94	44686.15	-22.86		
4	I	2034-12-11T13:54:10.060		43.25	-61.26	42612.78	-22.80		
5	I	2034-12-11T13:54:30.608		43.32	-61.33	42154.95	-22.79		
6	I	2034-12-11T13:54:42.508		43.36	-61.37	41879.65	-22.78		
Uranus	I	2034-12-11T14:06:13.807		45.81	-63.77	25304.48		-15.81	-16.52
Uranus	E	2034-12-11T14:41:27.728		53.31	-70.89	25060.58		22.59	23.54
6	E	2034-12-11T14:52:18.359		55.61	-72.98	41798.37	22.86		
5	E	2034-12-11T14:52:40.498		55.69	-73.05	42308.19	22.87		
4	E	2034-12-11T14:52:51.540		55.73	-73.08	42542.54	22.88		
alpha	E	2034-12-11T14:54:27.734		56.07	-73.38	44752.06	22.95		
beta	E	2034-12-11T14:55:06.824		56.21	-73.50	45651.46	22.98		
eta	E	2034-12-11T14:56:13.084		56.44	-73.71	47176.12	23.01		
gamma	E	2034-12-11T14:56:32.854		56.51	-73.77	47631.20	23.02		
delta	E	2034-12-11T14:57:01.908		56.62	-73.86	48300.35	23.04		
lambda	E	2034-12-11T14:58:16.781		56.88	-74.09	50026.71	23.08		
epsilon	E	2034-12-11T14:58:48.155		56.99	-74.18	50750.92	23.10		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-12-11T14:16:52.110
 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 : 3382408482155800192
 2Mass ID (if available) : 06382972+2328227
 ICRS Star Coord at Epoch: 06h 38m 29.73199s +23:28:22.58494s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.344
 G magnitude : 16.253
 RP magnitude : 15.599
 BP magnitude : 16.754
 DUPflag : 0
 Distance (au) : 17.962
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.64
 Sun-Target sep (deg) : 160.30
 Sun-Moon sep (deg) : 168.29
 B (ring opening deg) : 67.41
 PA of pole (deg) : 72.50
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.905
 C/A sky separation (km) : 11790.9
 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_itrff93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



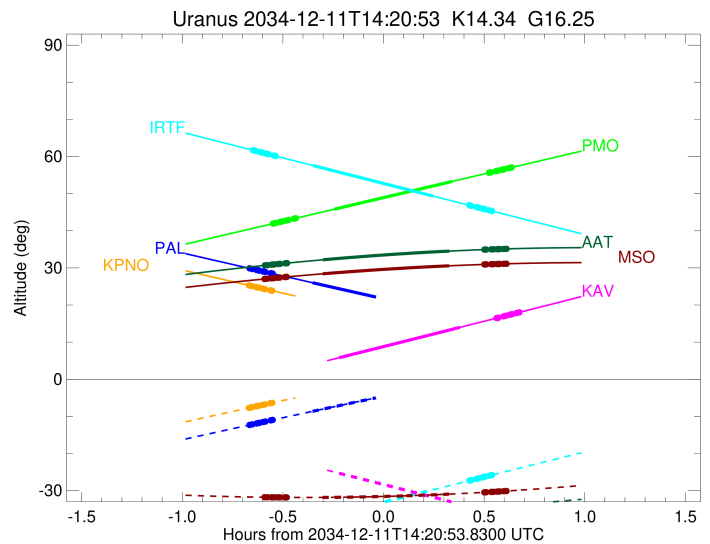
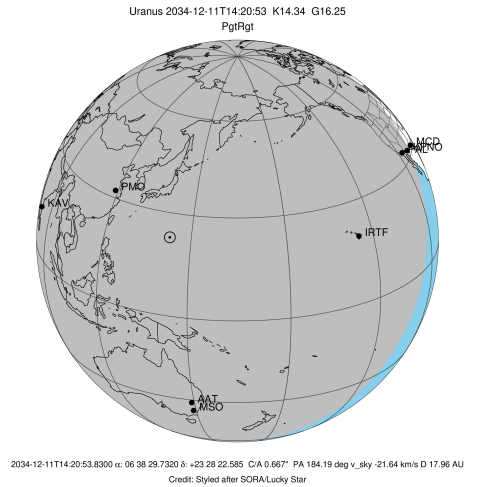
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-12-11T13:40:31.100		25.34	-7.76	51544.56	-22.67		
lambda	I	2034-12-11T13:41:38.099		25.11	-7.54	50026.71	-22.63		
delta	I	2034-12-11T13:42:54.459		24.85	-7.29	48300.35	-22.58		
gamma	I	2034-12-11T13:43:24.559		24.74	-7.19	47620.97	-22.56		
eta	I	2034-12-11T13:43:44.284		24.67	-7.12	47176.12	-22.54		
beta	I	2034-12-11T13:44:50.808		24.44	-6.91	45677.80	-22.49		
alpha	I	2034-12-11T13:45:34.770		24.29	-6.76	44686.52	-22.45		
4	I	2034-12-11T13:47:07.093		23.97	-6.46	42613.42	-22.36		
5	I	2034-12-11T13:47:28.036		23.90	-6.39	42155.18	-22.35		
6	I	2034-12-11T13:47:40.194		23.86	-6.35	41879.51	-22.33		
Uranus	I	2034-12-11T13:59:38.050		21.39	-4.03x	25340.73		-14.60	-15.26
Uranus	E	2034-12-11T14:33:53.187		14.41	2.45x	25067.14		22.43	23.38
6	E	2034-12-11T14:45:08.232		12.15	4.53x	41799.44	22.23		
5	E	2034-12-11T14:45:30.864		12.07	4.59x	42306.15	22.25		
4	E	2034-12-11T14:45:42.422		12.04	4.63x	42544.61	22.26		
alpha	E	2034-12-11T14:47:21.135		11.71	4.93x	44751.73	22.35		
beta	E	2034-12-11T14:48:01.333		11.57	5.05x	45652.43	22.39		
eta	E	2034-12-11T14:49:09.271		11.35	5.26x	47176.12	22.44		
gamma	E	2034-12-11T14:49:29.544		11.28	5.32x	47631.09	22.45		
delta	E	2034-12-11T14:49:59.342		11.18	5.41x	48300.35	22.47		
lambda	E	2034-12-11T14:51:16.090		10.93	5.64x	50026.71	22.52		
epsilon	E	2034-12-11T14:51:48.429		10.82	5.74x	50755.21	22.55		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-12-11T14:17:56.640
 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 : 3382408482155800192
 2Mass ID (if available) : 06382972+2328227
 ICRS Star Coord at Epoch: 06h 38m 29.73199s +23:28:22.58494s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.344
 G magnitude : 16.253
 RP magnitude : 15.599
 BP magnitude : 16.754
 DUPflag : 0
 Distance (au) : 17.962
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.64
 Sun-Target sep (deg) : 160.30
 Sun-Moon sep (deg) : 168.06
 B (ring opening deg) : 67.41
 PA of pole (deg) : 72.50
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.690
 C/A sky separation (km) : 8988.6
 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



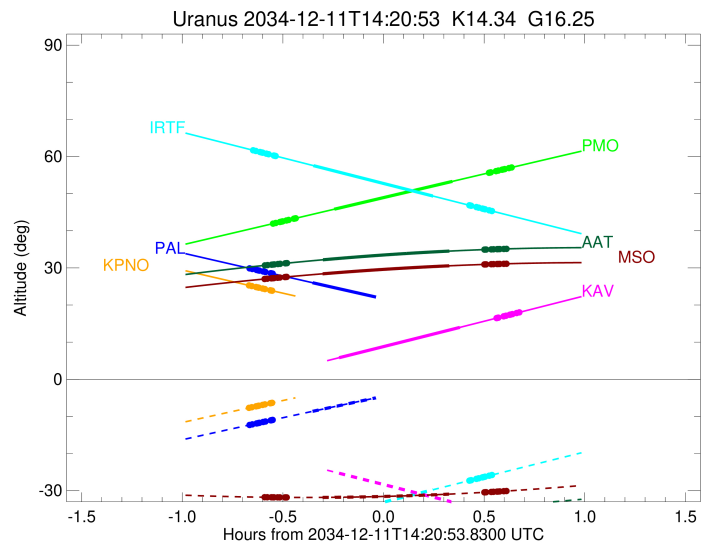
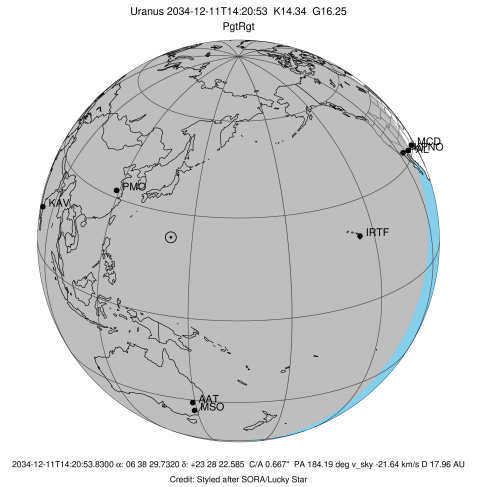
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-12-11T13:41:44.953		61.75	-42.02	51549.07	-23.22		
lambda	I	2034-12-11T13:42:50.527		61.50	-41.77	50026.71	-23.20		
delta	I	2034-12-11T13:44:04.976		61.21	-41.49	48300.35	-23.17		
gamma	I	2034-12-11T13:44:34.302		61.10	-41.38	47620.96	-23.16		
eta	I	2034-12-11T13:44:53.512		61.03	-41.31	47176.12	-23.15		
beta	I	2034-12-11T13:45:58.287		60.78	-41.06	45677.07	-23.12		
alpha	I	2034-12-11T13:46:41.038		60.61	-40.90	44685.87	-23.10		
4	I	2034-12-11T13:48:10.720		60.27	-40.56	42612.21	-23.04		
5	I	2034-12-11T13:48:31.059		60.19	-40.48	42154.85	-23.04		
6	I	2034-12-11T13:48:42.825		60.15	-40.43	41879.72	-23.03		
Uranus	I	2034-12-11T14:00:01.699		57.55	-37.85	25281.48		-16.54	-17.28
Uranus	E	2034-12-11T14:35:41.793		49.35	-29.75	25060.38		22.59	23.55
6	E	2034-12-11T14:46:27.303		46.88	-27.32	41798.17	22.96		
5	E	2034-12-11T14:46:49.374		46.79	-27.24	42308.57	22.97		
4	E	2034-12-11T14:47:00.332		46.75	-27.19	42542.14	22.97		
alpha	E	2034-12-11T14:48:36.191		46.38	-26.83	44752.11	23.02		
beta	E	2034-12-11T14:49:15.143		46.24	-26.69	45651.28	23.05		
eta	E	2034-12-11T14:50:21.220		45.98	-26.44	47176.12	23.08		
gamma	E	2034-12-11T14:50:40.939		45.91	-26.37	47631.22	23.08		
delta	E	2034-12-11T14:51:09.920		45.80	-26.26	48300.35	23.09		
lambda	E	2034-12-11T14:52:24.625		45.51	-25.98	50026.71	23.12		
epsilon	E	2034-12-11T14:52:55.913		45.39	-25.86	50750.32	23.14		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-12-11T14:25:46.450
 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 : 3382408482155800192
 2Mass ID (if available) : 06382972+2328227
 ICRS Star Coord at Epoch: 06h 38m 29.73199s +23:28:22.58494s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.344
 G magnitude : 16.253
 RP magnitude : 15.599
 BP magnitude : 16.754
 DUPflag : 0
 Distance (au) : 17.962
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.64
 Sun-Target sep (deg) : 160.30
 Sun-Moon sep (deg) : 166.68
 B (ring opening deg) : 67.41
 PA of pole (deg) : 72.50
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.700
 C/A sky separation (km) : 9124.5
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk



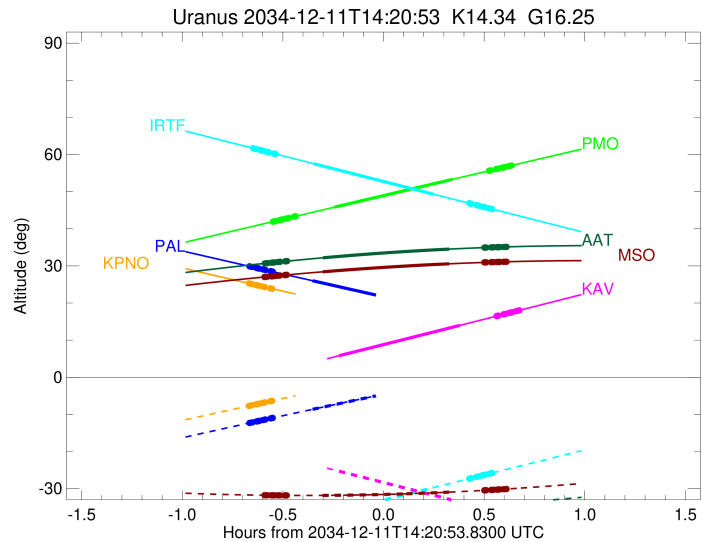
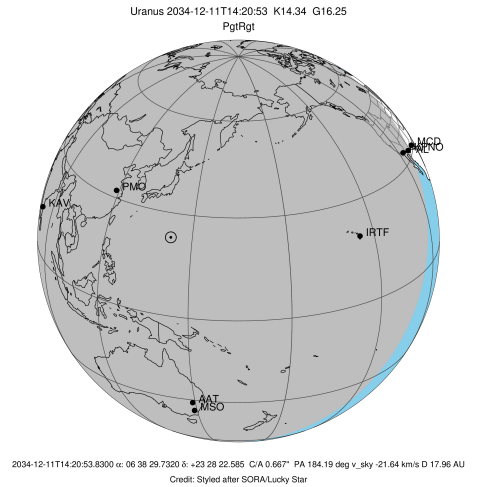
Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-12-11T13:49:00.266		1.61x	-21.03	51547.88	-22.79		
lambda	I	2034-12-11T13:50:07.037		1.86x	-21.29	50026.71	-22.77		
delta	I	2034-12-11T13:51:22.894		2.14x	-21.58	48300.35	-22.74		
gamma	I	2034-12-11T13:51:52.772		2.25x	-21.69	47620.96	-22.73		
eta	I	2034-12-11T13:52:12.343		2.33x	-21.77	47176.12	-22.73		
beta	I	2034-12-11T13:53:18.322		2.57x	-22.02	45677.26	-22.70		
alpha	I	2034-12-11T13:54:01.870		2.74x	-22.18	44686.03	-22.68		
4	I	2034-12-11T13:55:33.208		3.08x	-22.53	42612.53	-22.63		
5	I	2034-12-11T13:55:53.918		3.16x	-22.61	42154.89	-22.62		
6	I	2034-12-11T13:56:05.905		3.20x	-22.66	41879.69	-22.61		
Uranus	I	2034-12-11T14:07:38.501		5.80	-25.31	25291.29		-16.24	-16.96
Uranus	E	2034-12-11T14:43:41.098		13.98	-33.59	25060.46		22.59	23.55
6	E	2034-12-11T14:54:33.742		16.46	-36.09	41798.00	22.74		
5	E	2034-12-11T14:54:56.046		16.55	-36.18	42308.88	22.75		
4	E	2034-12-11T14:55:07.076		16.59	-36.22	42541.80	22.76		
alpha	E	2034-12-11T14:56:43.857		16.96	-36.59	44752.15	22.81		
beta	E	2034-12-11T14:57:23.156		17.11	-36.74	45651.11	22.84		
eta	E	2034-12-11T14:58:29.839		17.36	-37.00	47176.12	22.87		
gamma	E	2034-12-11T14:58:49.734		17.44	-37.07	47631.24	22.88		
delta	E	2034-12-11T14:59:18.969		17.55	-37.19	48300.35	22.89		
lambda	E	2034-12-11T15:00:34.322		17.84	-37.48	50026.71	22.93		
epsilon	E	2034-12-11T15:01:05.842		17.96	-37.60	50749.57	22.95		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-12-11T14:21:42.050
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : AAT
 Location : Siding Spring (AAT)
 Latitude (deg) : -31.27703
 E. Longitude (deg) : 149.06608
 Altitude (km) : 1.164
 Gaia source ID : 3382408482155800192
 2Mass ID (if available) : 06382972+2328227
 ICRS Star Coord at Epoch: 06h 38m 29.73199s +23:28:22.58494s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.344
 G magnitude : 16.253
 RP magnitude : 15.599
 BP magnitude : 16.754
 DUPflag : 0
 Distance (au) : 17.962
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.64
 Sun-Target sep (deg) : 160.30
 Sun-Moon sep (deg) : 167.06
 B (ring opening deg) : 67.41
 PA of pole (deg) : 72.50
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.258
 C/A sky separation (km) : 3364.0
 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_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	2034-12-11T13:45:15.397		30.65	-35.80	51554.30	-23.53		
lambda	I	2034-12-11T13:46:20.318		30.75	-35.81	50026.71	-23.53		
delta	I	2034-12-11T13:47:33.697		30.87	-35.82	48300.35	-23.53		
gamma	I	2034-12-11T13:48:02.576		30.91	-35.83	47620.98	-23.52		
eta	I	2034-12-11T13:48:21.488		30.94	-35.83	47176.12	-23.52		
beta	I	2034-12-11T13:49:25.262		31.04	-35.84	45675.49	-23.52		
alpha	I	2034-12-11T13:50:07.252		31.10	-35.85	44685.00	-23.51		
4	I	2034-12-11T13:51:35.322		31.24	-35.86	42609.39	-23.51		
5	I	2034-12-11T13:51:55.222		31.27	-35.86	42155.26	-23.51		
6	I	2034-12-11T13:52:06.772		31.28	-35.86	41879.55	-23.51		
Uranus	I	2034-12-11T14:02:49.007		32.18	-35.85	25177.97		-19.55	-20.40
Uranus	E	2034-12-11T14:40:30.489		34.53	-34.87	25088.74		21.89	22.82
6	E	2034-12-11T14:50:56.484		34.93	-34.35	41796.18	23.54		
5	E	2034-12-11T14:51:18.240		34.94	-34.33	42312.37	23.55		
4	E	2034-12-11T14:51:28.498		34.95	-34.32	42537.54	23.54		
alpha	E	2034-12-11T14:53:02.336		34.99	-34.23	44752.43	23.55		
beta	E	2034-12-11T14:53:40.295		35.01	-34.19	45649.07	23.56		
eta	E	2034-12-11T14:54:45.074		35.05	-34.13	47176.12	23.56		
gamma	E	2034-12-11T14:55:04.397		35.06	-34.11	47631.42	23.56		
delta	E	2034-12-11T14:55:32.784		35.07	-34.08	48300.35	23.57		
lambda	E	2034-12-11T14:56:46.032		35.10	-34.01	50026.71	23.57		
epsilon	E	2034-12-11T14:57:16.478		35.12	-33.98	50744.38	23.57		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-12-11T14:21:38.460
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : MSO
 Location : Mt. Stromlo Observatory
 Latitude (deg) : -35.32000
 E. Longitude (deg) : 149.00833
 Altitude (km) : 0.770
 Gaia source ID : 3382408482155800192
 2Mass ID (if available) : 06382972+2328227
 ICRS Star Coord at Epoch: 06h 38m 29.73199s +23:28:22.58494s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.344
 G magnitude : 16.253
 RP magnitude : 15.599
 BP magnitude : 16.754
 DUPflag : 0
 Distance (au) : 17.962
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -21.64
 Sun-Target sep (deg) : 160.30
 Sun-Moon sep (deg) : 167.04
 B (ring opening deg) : 67.41
 PA of pole (deg) : 72.50
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.240
 C/A sky separation (km) : 3120.9
 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	2034-12-11T13:45:10.001		26.99	-31.77	51554.44	-23.52		
lambda	I	2034-12-11T13:46:14.957		27.08	-31.78	50026.71	-23.52		
delta	I	2034-12-11T13:47:28.367		27.19	-31.79	48300.35	-23.52		
gamma	I	2034-12-11T13:47:57.258		27.23	-31.80	47620.99	-23.51		
eta	I	2034-12-11T13:48:16.178		27.26	-31.80	47176.12	-23.51		
beta	I	2034-12-11T13:49:19.979		27.35	-31.81	45675.42	-23.51		
alpha	I	2034-12-11T13:50:01.984		27.41	-31.81	44684.97	-23.51		
4	I	2034-12-11T13:51:30.089		27.53	-31.82	42609.24	-23.50		
5	I	2034-12-11T13:51:49.991		27.56	-31.83	42155.31	-23.50		
6	I	2034-12-11T13:52:01.548		27.57	-31.83	41879.53	-23.50		
Uranus	I	2034-12-11T14:02:43.271		28.41	-31.82	25173.90		-19.66	-20.52
Uranus	E	2034-12-11T14:40:29.357		30.56	-30.94	25091.01		21.83	22.76
6	E	2034-12-11T14:50:55.711		30.93	-30.46	41796.12	23.54		
5	E	2034-12-11T14:51:17.482		30.95	-30.44	42312.49	23.54		
4	E	2034-12-11T14:51:27.728		30.95	-30.43	42537.37	23.53		
alpha	E	2034-12-11T14:53:01.610		31.00	-30.35	44752.43	23.54		
beta	E	2034-12-11T14:53:39.581		31.01	-30.32	45648.98	23.55		
eta	E	2034-12-11T14:54:44.392		31.04	-30.26	47176.12	23.55		
gamma	E	2034-12-11T14:55:03.724		31.05	-30.24	47631.43	23.55		
delta	E	2034-12-11T14:55:32.123		31.07	-30.22	48300.35	23.55		
lambda	E	2034-12-11T14:56:45.408		31.10	-30.15	50026.71	23.56		
epsilon	E	2034-12-11T14:57:15.864		31.11	-30.12	50744.26	23.56		