

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2037-05-06T11:11:33.630
 Event type : PgRgt
 : Uranus occs: geocentric, not topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3368198673051624192
 2Mass ID (if available) : 07085856+2255204

ICRS Star Coord at Epoch: 07h 08m 58.56359s +22:55:20.13507s

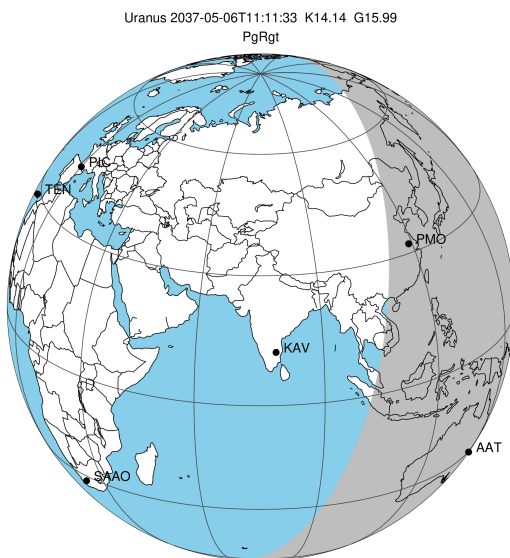
RUWE (>1.4 is poor) : 1.07
 K magnitude : 14.139
 G magnitude : 15.990
 RP magnitude : 15.351
 BP magnitude : 16.465
 DUPflag : 0
 Distance (au) : 19.227
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.30
 Sun-Target sep (deg) : 60.09
 Sun-Moon sep (deg) : 158.24
 B (ring opening deg) : 60.73
 PA of pole (deg) : 80.03

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

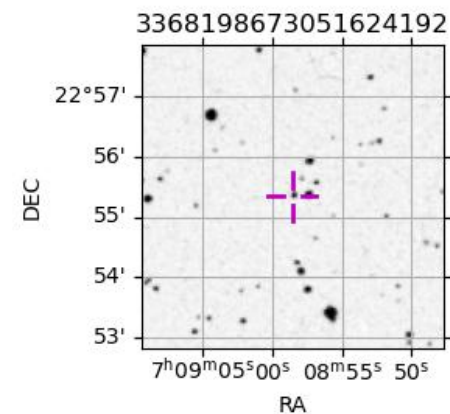
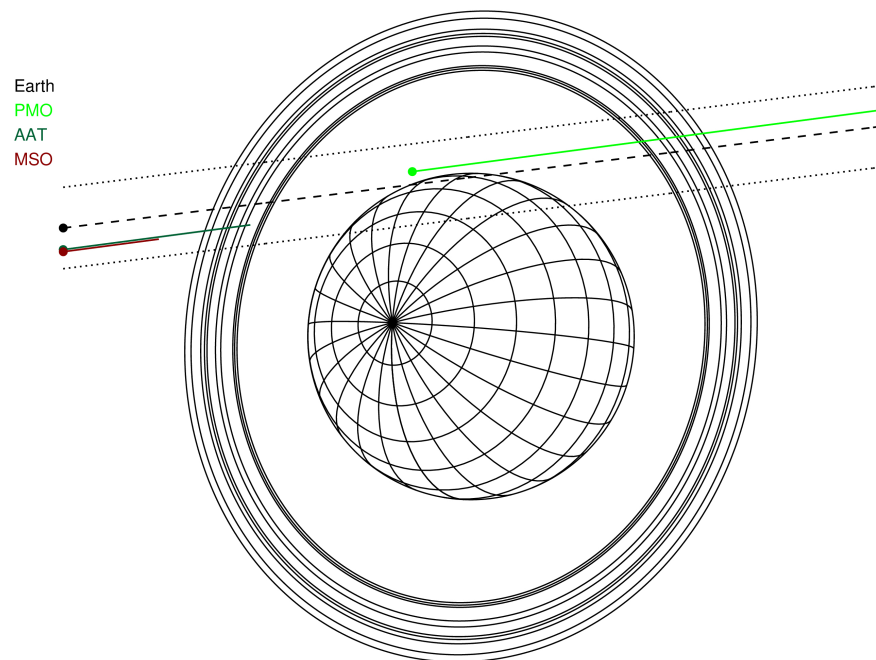
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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					PnnRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8			+++++++	MAY 06 11:37 - MAY 06 11:45	PnnRne
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					PnnRnn
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	+++++++			MAY 06 10:44 - MAY 06 10:50	PnnRin
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn

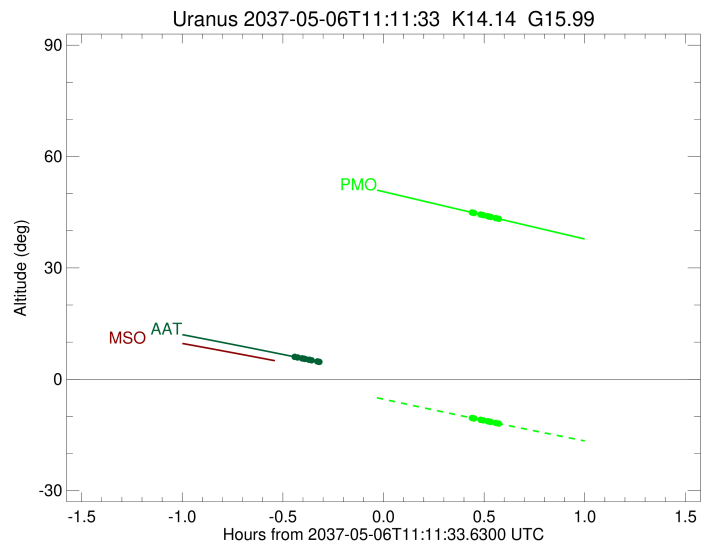
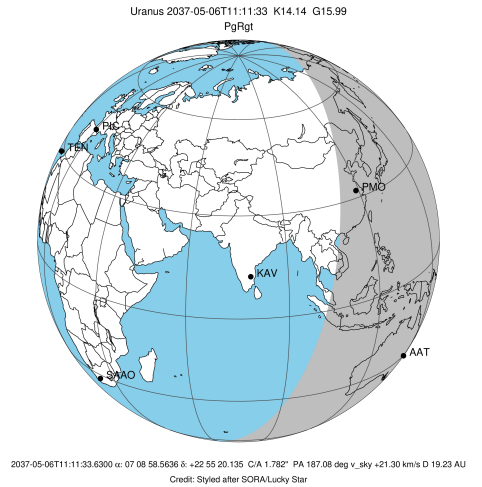


2037-05-06T11:11:33.6300 ex: 07 08 58.5636 s: +22 55 20.135 C/A 1.782° PA 187.08 deg v_sky +21.30 km/s D 19.23 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2037-05-06T11:11:33 K14.14 G15.99 PgRgt



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2037-05-06T11:14:11.380
 Event type : PgRgt
 : Uranus occs: geocentric, not 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 : 3368198673051624192
 2Mass ID (if available) : 07085856+2255204
 ICRS Star Coord at Epoch: 07h 08m 58.56359s +22:55:20.13507s
 RUWE (>1.4 is poor) : 1.07
 K magnitude : 14.139
 G magnitude : 15.990
 RP magnitude : 15.351
 BP magnitude : 16.465
 DUPflag : 0
 Distance (au) : 19.227
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.30
 Sun-Target sep (deg) : 60.09
 Sun-Moon sep (deg) : 158.04
 B (ring opening deg) : 60.73
 PA of pole (deg) : 80.03
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.922
 C/A sky separation (km) : 26797.1
 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



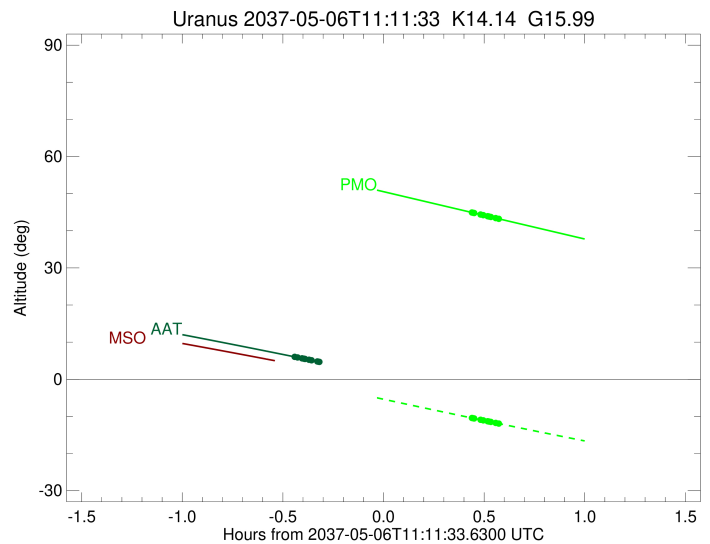
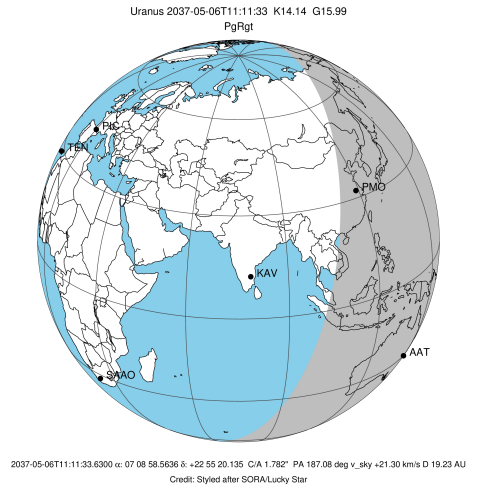
b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2037-05-06T10:45:04.112		56.16	-0.16x	51488.84	-20.29		
lambda	I	2037-05-06T10:46:16.765		55.90	-0.40x	50026.71	-20.01		
delta	I	2037-05-06T10:47:43.695		55.59	-0.69x	48300.35	-19.70		
gamma	I	2037-05-06T10:48:18.224		55.47	-0.80x	47622.20	-19.57		
eta	I	2037-05-06T10:48:41.064		55.39	-0.88x	47176.12	-19.49		
beta	I	2037-05-06T10:49:59.777		55.11	-1.14x	45652.87	-19.16		
alpha	I	2037-05-06T10:50:50.195		54.94	-1.30x	44689.41	-18.92		
4	I	2037-05-06T10:52:41.238		54.54	-1.67x	42615.06	-18.37		
5	I	2037-05-06T10:53:03.986		54.46	-1.75x	42186.76	-18.27		
6	I	2037-05-06T10:53:26.419		54.38	-1.82x	41808.62	-18.13		

No planet occultations

6	E	2037-05-06T11:37:52.272		44.94	-10.42	41810.80	18.19		
5	E	2037-05-06T11:38:19.979		44.84	-10.51	42306.70	18.33		
4	E	2037-05-06T11:38:33.193		44.79	-10.55	42551.47	18.44		
alpha	E	2037-05-06T11:40:28.673		44.38	-10.91	44709.46	19.00		
beta	E	2037-05-06T11:41:19.565		44.20	-11.07	45681.08	19.24		
eta	E	2037-05-06T11:42:36.596		43.93	-11.31	47176.12	19.56		
gamma	E	2037-05-06T11:42:59.461		43.85	-11.38	47624.51	19.65		
delta	E	2037-05-06T11:43:33.731		43.73	-11.49	48300.35	19.79		
lambda	E	2037-05-06T11:45:00.293		43.42	-11.76	50026.71	20.10		
epsilon	E	2037-05-06T11:45:58.079		43.21	-11.94	51193.47	20.38		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2037-05-06T11:15:52.560
 Event type : PgRgt
 : Uranus occs: geocentric, not 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 : 3368198673051624192
 2Mass ID (if available) : 07085856+2255204
 ICRS Star Coord at Epoch: 07h 08m 58.56359s +22:55:20.13507s
 RUWE (>1.4 is poor) : 1.07
 K magnitude : 14.139
 G magnitude : 15.990
 RP magnitude : 15.351
 BP magnitude : 16.465
 DUPflag : 0
 Distance (au) : 19.227
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.30
 Sun-Target sep (deg) : 60.09
 Sun-Moon sep (deg) : 157.50
 B (ring opening deg) : 60.73
 PA of pole (deg) : 80.03
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.567
 C/A sky separation (km) : 21845.9
 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	2037-05-06T10:44:50.989		6.08	-43.47	51461.79	-21.71		
lambda	I	2037-05-06T10:45:57.455		5.88	-43.71	50026.71	-21.52		
delta	I	2037-05-06T10:47:18.026		5.63	-43.99	48300.35	-21.33		
gamma	I	2037-05-06T10:47:49.855		5.54	-44.11	47622.66	-21.25		
eta	I	2037-05-06T10:48:10.896		5.47	-44.18	47176.12	-21.20		
beta	I	2037-05-06T10:49:23.108		5.25	-44.44	45650.54	-21.00		
alpha	I	2037-05-06T10:50:08.780		5.11	-44.60	44692.02	-20.85		
4	I	2037-05-06T10:51:49.034		4.80x	-44.95	42616.28	-20.52		
5	I	2037-05-06T10:52:09.836		4.74x	-45.03	42177.89	-20.45		
6	I	2037-05-06T10:52:29.311		4.68x	-45.10	41813.61	-20.37		
Uranus	I	2037-05-06T11:05:49.731		2.18x	-47.92	25311.91		21.25	22.16
Uranus	E	2037-05-06T11:26:15.222		-1.72x	-52.21	25533.47		-6.65	-6.96
6	E	2037-05-06T11:41:36.787		-4.71x	-55.39	41815.99	20.47		
5	E	2037-05-06T11:42:01.670		-4.79x	-55.47	42311.17	20.55		
4	E	2037-05-06T11:42:12.903		-4.83x	-55.51	42545.83	20.62		
alpha	E	2037-05-06T11:43:57.387		-5.17x	-55.87	44713.90	20.96		
beta	E	2037-05-06T11:44:43.436		-5.32x	-56.02	45681.23	21.11		
eta	E	2037-05-06T11:45:53.882		-5.55x	-56.26	47176.12	21.31		
gamma	E	2037-05-06T11:46:14.922		-5.62x	-56.34	47625.13	21.37		
delta	E	2037-05-06T11:46:46.459		-5.72x	-56.44	48300.35	21.45		
lambda	E	2037-05-06T11:48:06.567		-5.99x	-56.71	50026.71	21.65		
epsilon	E	2037-05-06T11:48:58.255		-6.16x	-56.89	51148.59	21.84		