

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-04-20T03:38:43.040
 Event type : PRgt
 : Uranus occs: not geocentric or topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3425480338343468672
 2Mass ID (if available) : 06095562+2341235

ICRS Star Coord at Epoch: 06h 09m 55.60969s +23:41:22.97462s

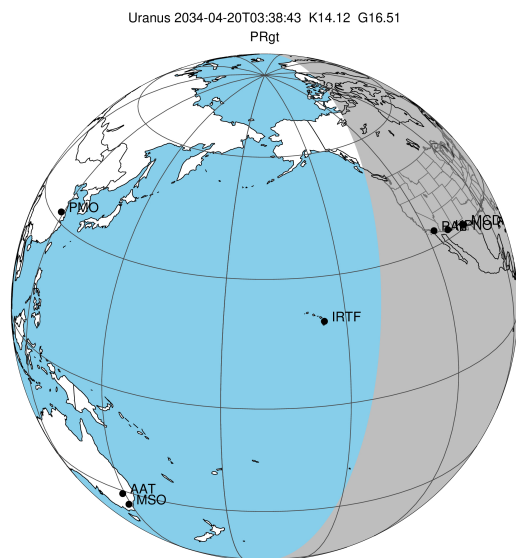
RUWE (>1.4 is poor) : 1.08
 K magnitude : 14.122
 G magnitude : 16.506
 RP magnitude : 15.714
 BP magnitude : 17.148
 DUPflag : 0
 Distance (au) : 19.374
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 20.10
 Sun-Target sep (deg) : 62.60
 Sun-Moon sep (deg) : 43.65
 B (ring opening deg) : 73.37
 PA of pole (deg) : 61.96

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

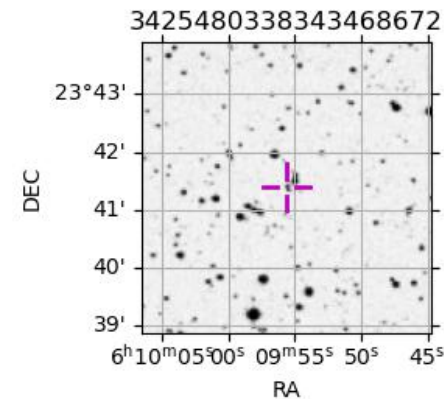
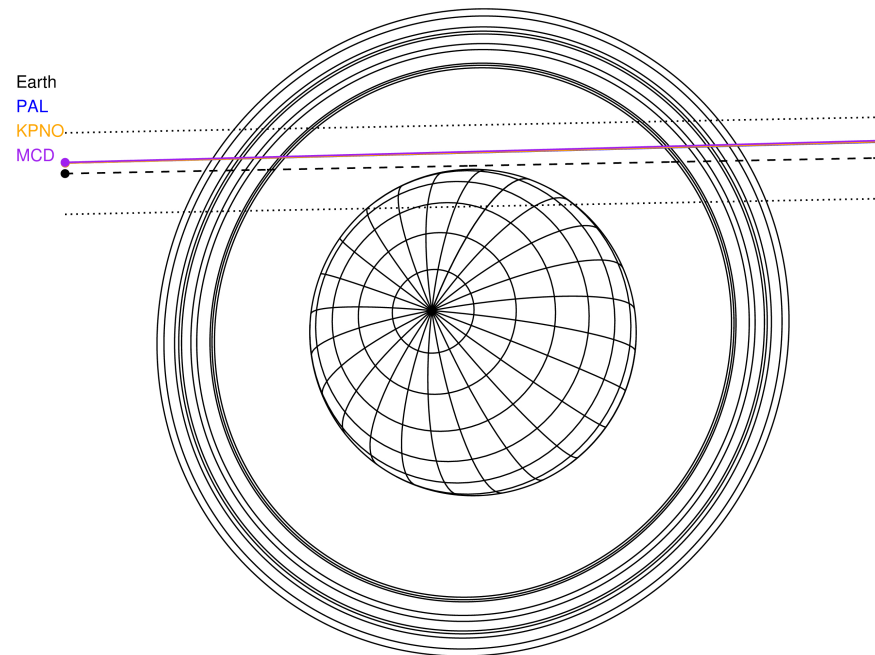
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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	+++++		+++++	APR 20 03:08 - APR 20 04:17	PnnRie
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+++++		+++++	APR 20 03:08 - APR 20 04:17	PnnRie
MCD	McDonald Obs. 2.7m	30.7	256.0	+++++		+++++	APR 20 03:09 - APR 20 04:18	PnnRie
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					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn

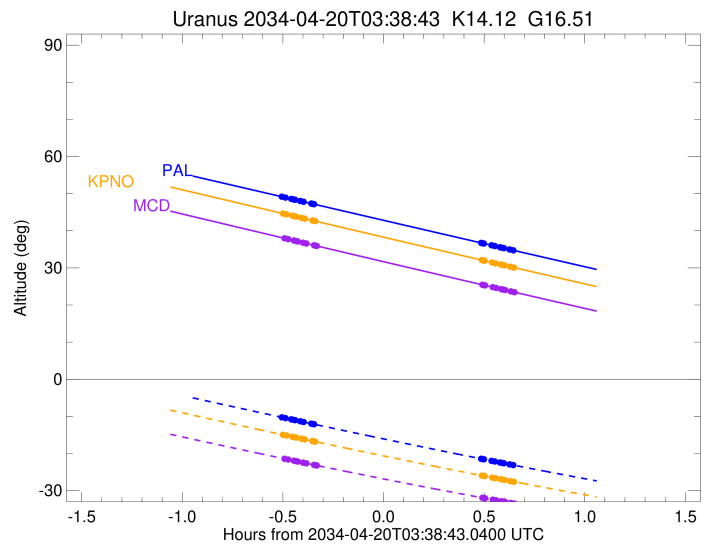
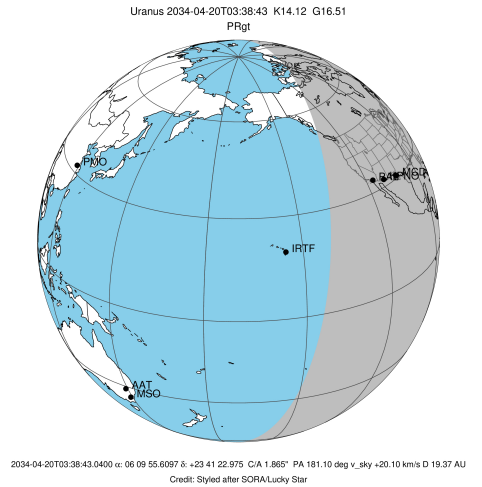


2034-04-20T03:38:43.0400 ex: 06 09 55.6097 s: +23 41 22.975 C/A 1.865° PA 181.10 deg v_sky +20.10 km/s D 19.37 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2034-04-20T03:38:43 K14.12 G16.51 PRgt



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-04-20T03:42:06.190
 Event type : PRgt
 : Uranus occs: not geocentric or 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 : 3425480338343468672
 2Mass ID (if available) : 06095562+2341235
 ICRS Star Coord at Epoch: 06h 09m 55.60969s +23:41:22.97462s
 RUWE (>1.4 is poor) : 1.08
 K magnitude : 14.122
 G magnitude : 16.506
 RP magnitude : 15.714
 BP magnitude : 17.148
 DUPflag : 0
 Distance (au) : 19.375
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 20.10
 Sun-Target sep (deg) : 62.60
 Sun-Moon sep (deg) : 44.63
 B (ring opening deg) : 73.37
 PA of pole (deg) : 61.96
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.003
 C/A sky separation (km) : 28139.1
 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_itr93_040916.bsp
 earth_720101_070426.bpc
 earth_200101_990628_predict.bpc
 pg3f0000r.bsp
 pg490000r.bsp
 naif0012.tls
 earth_flat_IAU.spk

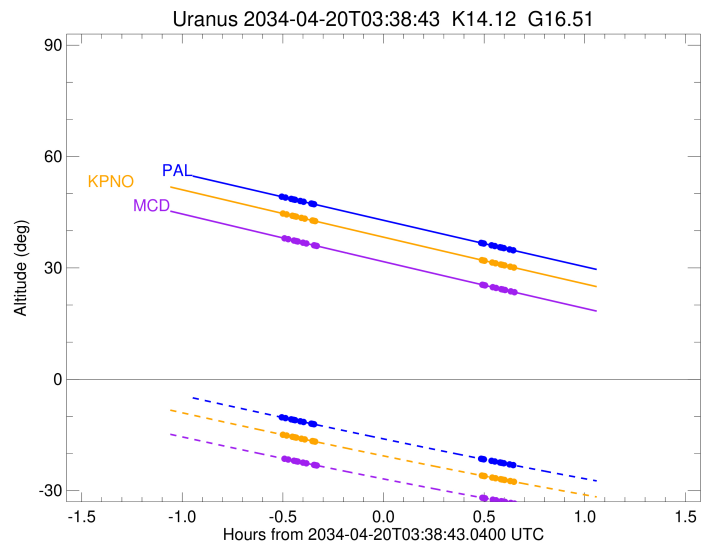
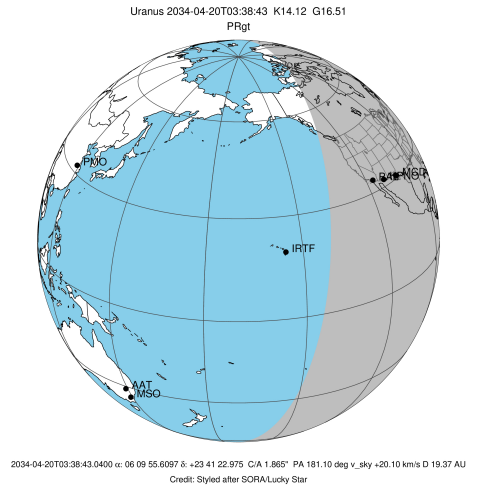


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-04-20T03:08:31.611		49.15	-10.27	51024.77	-17.09		
lambda	I	2034-04-20T03:09:30.581		48.95	-10.47	50026.71	-16.85		
delta	I	2034-04-20T03:11:13.938		48.58	-10.80	48300.35	-16.55		
gamma	I	2034-04-20T03:11:54.491		48.44	-10.93	47631.55	-16.43		
eta	I	2034-04-20T03:12:22.285		48.35	-11.02	47176.12	-16.34		
beta	I	2034-04-20T03:13:56.962		48.01	-11.33	45643.93	-16.02		
alpha	I	2034-04-20T03:14:56.282		47.81	-11.52	44701.84	-15.81		
4	I	2034-04-20T03:17:10.069		47.34	-11.95	42616.20	-15.26		
5	I	2034-04-20T03:17:39.404		47.24	-12.05	42170.20	-15.11		
6	I	2034-04-20T03:18:00.011		47.17	-12.11	41860.03	-15.04		

No planet occultations

6	E	2034-04-20T04:07:51.479		36.73	-21.42	41871.19	15.11		
5	E	2034-04-20T04:08:12.747		36.65	-21.49	42193.81	15.17		
4	E	2034-04-20T04:08:36.446		36.57	-21.56	42560.57	15.32		
alpha	E	2034-04-20T04:10:56.790		36.08	-21.98	44750.71	15.89		
beta	E	2034-04-20T04:11:53.414		35.89	-22.14	45654.91	16.10		
eta	E	2034-04-20T04:13:26.899		35.56	-22.42	47176.12	16.43		
gamma	E	2034-04-20T04:13:54.170		35.47	-22.50	47625.29	16.52		
delta	E	2034-04-20T04:14:34.887		35.33	-22.62	48300.35	16.64		
lambda	E	2034-04-20T04:16:17.677		34.97	-22.93	50026.71	16.94		
epsilon	E	2034-04-20T04:17:47.162		34.66	-23.19	51553.57	17.19		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-04-20T03:42:22.650
 Event type : PRgt
 : Uranus occs: not geocentric or 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 : 3425480338343468672
 2Mass ID (if available) : 06095562+2341235
 ICRS Star Coord at Epoch: 06h 09m 55.60969s +23:41:22.97461s
 RUWE (>1.4 is poor) : 1.08
 K magnitude : 14.122
 G magnitude : 16.506
 RP magnitude : 15.714
 BP magnitude : 17.148
 DUPflag : 0
 Distance (au) : 19.375
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 20.10
 Sun-Target sep (deg) : 62.60
 Sun-Moon sep (deg) : 44.63
 B (ring opening deg) : 73.37
 PA of pole (deg) : 61.96
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.005
 C/A sky separation (km) : 28177.5
 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

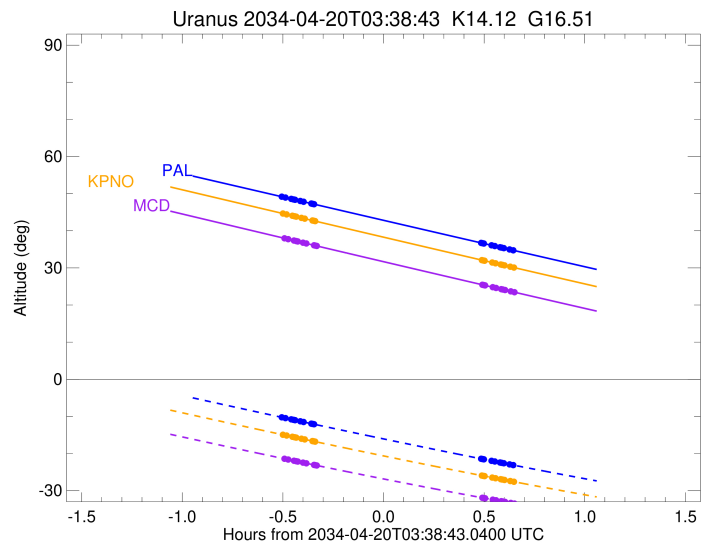
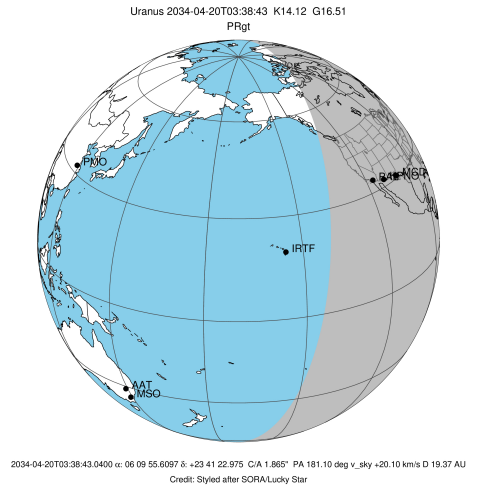


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2034-04-20T03:08:51.943		44.62	-14.97	51024.94	-17.10		
lambda	I	2034-04-20T03:09:50.893		44.41	-15.16	50026.71	-16.86		
delta	I	2034-04-20T03:11:34.202		44.04	-15.50	48300.35	-16.56		
gamma	I	2034-04-20T03:12:14.738		43.90	-15.63	47631.55	-16.44		
eta	I	2034-04-20T03:12:42.521		43.80	-15.72	47176.12	-16.35		
beta	I	2034-04-20T03:14:17.166		43.47	-16.02	45643.93	-16.02		
alpha	I	2034-04-20T03:15:16.469		43.26	-16.21	44701.86	-15.82		
4	I	2034-04-20T03:17:30.233		42.78	-16.64	42616.20	-15.26		
5	I	2034-04-20T03:17:59.569		42.68	-16.73	42170.16	-15.11		
6	I	2034-04-20T03:18:20.171		42.61	-16.80	41860.06	-15.04		

No planet occultations

6	E	2034-04-20T04:08:04.111		32.09	-25.95	41871.23	15.11		
5	E	2034-04-20T04:08:25.362		32.02	-26.01	42193.69	15.18		
4	E	2034-04-20T04:08:49.068		31.94	-26.08	42560.64	15.33		
alpha	E	2034-04-20T04:11:09.343		31.44	-26.49	44750.69	15.90		
beta	E	2034-04-20T04:12:05.934		31.25	-26.65	45654.88	16.11		
eta	E	2034-04-20T04:13:39.360		30.92	-26.92	47176.12	16.44		
gamma	E	2034-04-20T04:14:06.612		30.83	-27.00	47625.30	16.53		
delta	E	2034-04-20T04:14:47.299		30.68	-27.12	48300.35	16.66		
lambda	E	2034-04-20T04:16:30.006		30.32	-27.42	50026.71	16.96		
epsilon	E	2034-04-20T04:17:59.416		30.01	-27.67	51553.62	17.20		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2034-04-20T03:42:41.390
 Event type : PRgt
 : Uranus occs: not geocentric or 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 : 3425480338343468672
 2Mass ID (if available) : 06095562+2341235
 ICRS Star Coord at Epoch: 06h 09m 55.60969s +23:41:22.97461s
 RUWE (>1.4 is poor) : 1.08
 K magnitude : 14.122
 G magnitude : 16.506
 RP magnitude : 15.714
 BP magnitude : 17.148
 DUPflag : 0
 Distance (au) : 19.375
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 20.10
 Sun-Target sep (deg) : 62.60
 Sun-Moon sep (deg) : 44.61
 B (ring opening deg) : 73.37
 PA of pole (deg) : 61.96
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.016
 C/A sky separation (km) : 28322.0
 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	2034-04-20T03:09:19.956		37.94	-21.44	51026.05	-17.09		
lambda	I	2034-04-20T03:10:18.995		37.73	-21.63	50026.71	-16.85		
delta	I	2034-04-20T03:12:02.366		37.37	-21.95	48300.35	-16.55		
gamma	I	2034-04-20T03:12:42.934		37.22	-22.08	47631.55	-16.42		
eta	I	2034-04-20T03:13:10.743		37.12	-22.17	47176.12	-16.33		
beta	I	2034-04-20T03:14:45.493		36.78	-22.46	45643.89	-16.00		
alpha	I	2034-04-20T03:15:44.867		36.57	-22.65	44701.97	-15.79		
4	I	2034-04-20T03:17:58.880		36.10	-23.06	42616.17	-15.23		
5	I	2034-04-20T03:18:28.296		35.99	-23.15	42169.96	-15.07		
6	I	2034-04-20T03:18:48.923		35.92	-23.22	41860.21	-15.01		

No planet occultations

6	E	2034-04-20T04:08:13.031		25.45	-31.93	41871.36	15.08		
5	E	2034-04-20T04:08:34.295		25.38	-31.99	42193.34	15.15		
4	E	2034-04-20T04:08:58.089		25.29	-32.05	42560.87	15.30		
alpha	E	2034-04-20T04:11:18.557		24.80	-32.44	44750.64	15.88		
beta	E	2034-04-20T04:12:15.204		24.60	-32.59	45654.79	16.09		
eta	E	2034-04-20T04:13:48.708		24.28	-32.84	47176.12	16.43		
gamma	E	2034-04-20T04:14:15.976		24.18	-32.92	47625.32	16.52		
delta	E	2034-04-20T04:14:56.679		24.04	-33.03	48300.35	16.65		
lambda	E	2034-04-20T04:16:39.411		23.68	-33.30	50026.71	16.96		
epsilon	E	2034-04-20T04:18:08.829		23.37	-33.54	51553.76	17.20		