

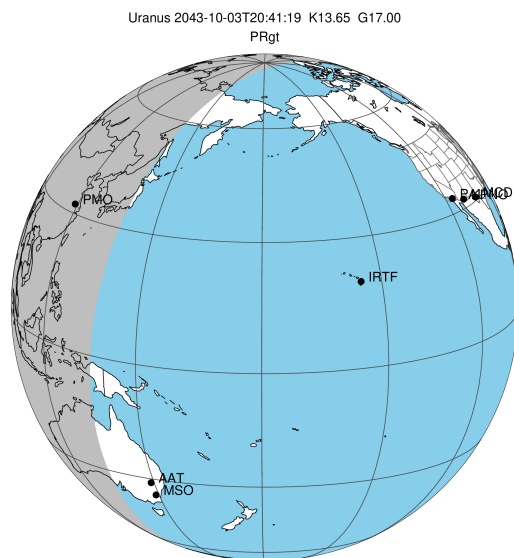
target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2043-10-03T20:41:19.560
 Event type : PRgt
 : Uranus occs: not geocentric or topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 618977221977971072
 2Mass ID (if available) : 09312608+1522319

Uranus 2043-10-03T20:41:19 K13.65 G17.00 PRgt

ICRS Star Coord at Epoch: 09h 31m 26.09684s +15:22:30.96734s

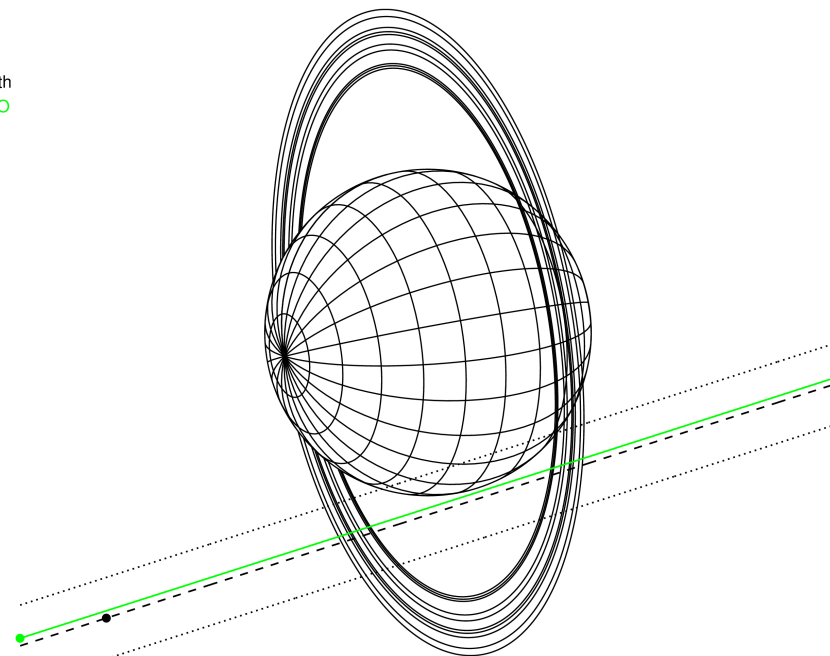
RUWE (>1.4 is poor) : 0.97
 K magnitude : 13.647
 G magnitude : 17.000
 RP magnitude : 15.929
 BP magnitude : 18.180
 DUPflag : 0
 Distance (au) : 19.044
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 25.96
 Sun-Target sep (deg) : 49.70
 Sun-Moon sep (deg) : 58.01
 B (ring opening deg) : 27.04
 PA of pole (deg) : 99.47

#	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



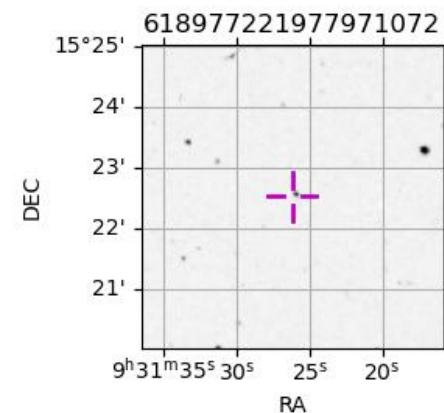
2043-10-03T20:41:19.5600 α: 09 31 26.0968 s: +15 22 30.967 C/A 1.966° PA 17.81 deg v_sky +25.96 km/s D 19.04 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PMO

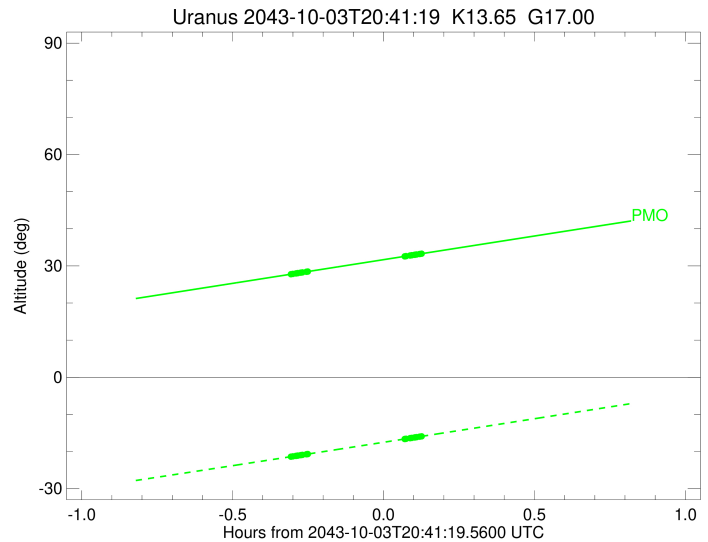
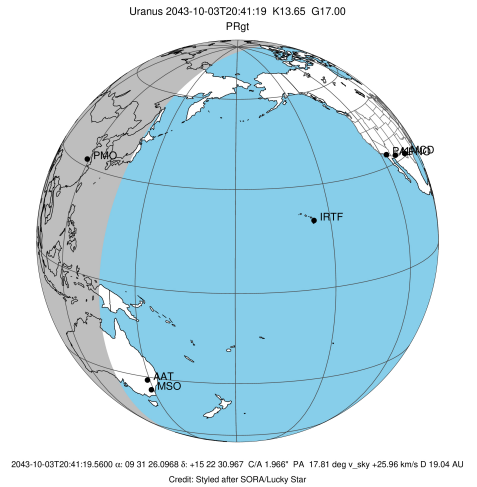


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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	+++++		+++++	OCT 03 20:23 - OCT 03 20:48	PnnRie
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					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 : 2043-10-03T20:37:51.230
 Event type : PRgt
 : Uranus occs: not geocentric or 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 : 618977221977971072
 2Mass ID (if available) : 09312608+1522319
 ICRS Star Coord at Epoch: 09h 31m 26.09684s +15:22:30.96734s
 RUWE (>1.4 is poor) : 0.97
 K magnitude : 13.647
 G magnitude : 17.000
 RP magnitude : 15.929
 BP magnitude : 18.180
 DUPflag : 0
 Distance (au) : 19.044
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 25.96
 Sun-Target sep (deg) : 49.70
 Sun-Moon sep (deg) : 58.82
 B (ring opening deg) : 27.04
 PA of pole (deg) : 99.47
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.897
 C/A sky separation (km) : 26195.9
 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



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	2043-10-03T20:23:02.705		27.79	-21.36	50826.62	-47.90		
lambda	I	2043-10-03T20:23:19.405		27.85	-21.30	50026.71	-47.75		
delta	I	2043-10-03T20:23:55.810		27.98	-21.18	48300.35	-47.07		
gamma	I	2043-10-03T20:24:10.268		28.03	-21.13	47621.85	-46.78		
eta	I	2043-10-03T20:24:19.815		28.06	-21.09	47176.12	-46.59		
beta	I	2043-10-03T20:24:52.837		28.18	-20.98	45654.33	-45.84		
alpha	I	2043-10-03T20:25:14.318		28.25	-20.90	44688.16	-45.38		
4	I	2043-10-03T20:26:01.266		28.42	-20.74	42564.47	-44.01		
5	I	2043-10-03T20:26:09.207		28.45	-20.71	42263.66	-43.90		
6	I	2043-10-03T20:26:18.708		28.48	-20.68	41869.28	-43.70		

No planet occultations

6	E	2043-10-03T20:45:31.539		32.57	-16.63	41858.07	43.65		
5	E	2043-10-03T20:45:37.184		32.59	-16.61	42155.72	43.85		
4	E	2043-10-03T20:45:47.803		32.63	-16.57	42529.14	43.95		
alpha	E	2043-10-03T20:46:36.396		32.80	-16.40	44742.05	45.31		
beta	E	2043-10-03T20:46:56.365		32.87	-16.33	45645.54	45.78		
eta	E	2043-10-03T20:47:29.476		32.99	-16.22	47176.12	46.51		
gamma	E	2043-10-03T20:47:39.111		33.02	-16.18	47625.25	46.71		
delta	E	2043-10-03T20:47:53.519		33.07	-16.13	48300.35	47.00		
lambda	E	2043-10-03T20:48:29.985		33.20	-16.00	50026.71	47.67		
epsilon	E	2043-10-03T20:48:51.888		33.28	-15.93	51075.02	47.82		