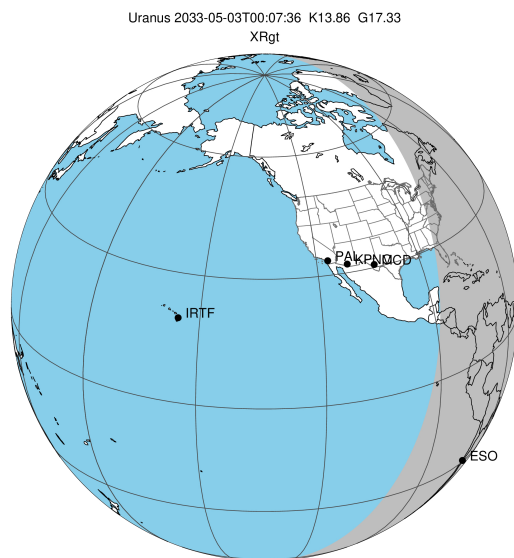


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2033-05-03T00:07:36.460
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3427823500701876096
 2Mass ID (if available) : 05534172+2338472

ICRS Star Coord at Epoch: 05h 53m 41.73172s +23:38:46.93721s

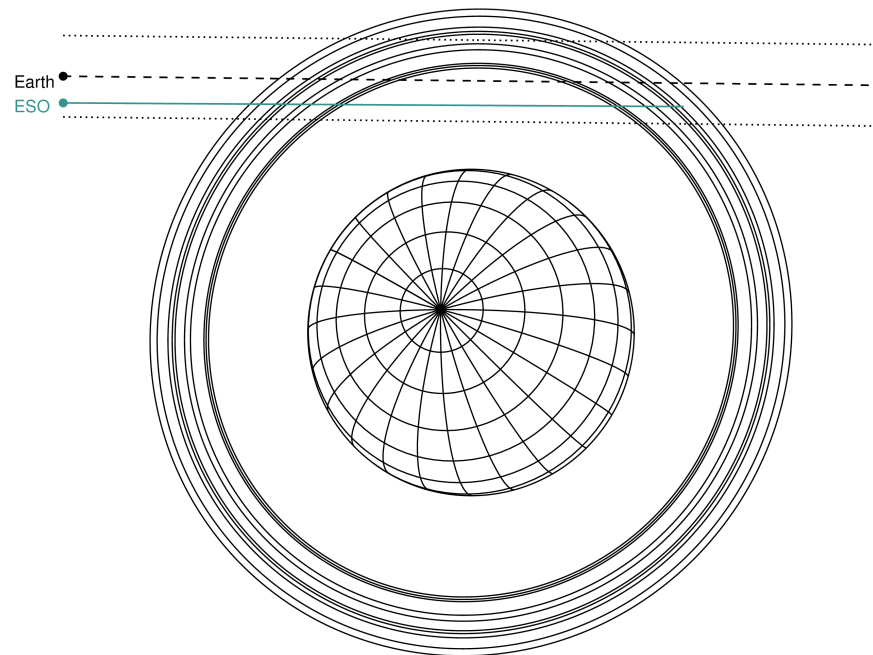
RUWE (>1.4 is poor) : 1.99
 K magnitude : 13.856
 G magnitude : 17.331
 RP magnitude : 16.235
 BP magnitude : 18.293
 DUPflag : 0
 Distance (au) : 19.680
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 27.02
 Sun-Target sep (deg) : 46.12
 Sun-Moon sep (deg) : 7.42
 B (ring opening deg) : 76.54
 PA of pole (deg) : 53.02

#	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



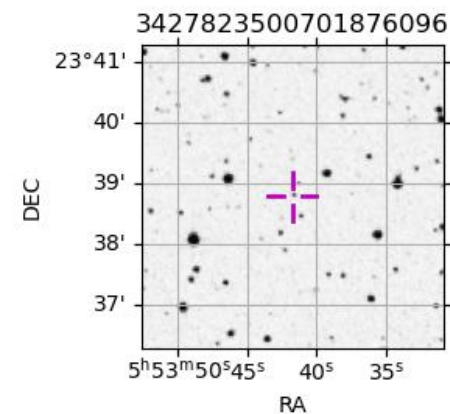
2033-05-03T00:07:36.4600 ex: 05 53 41.7317 s: +23 38 46.937 C/A 2.768° PA 179.36 deg v_sky +27.02 km/s D 19.68 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2033-05-03T00:07:36 K13.86 G17.33 XRgt

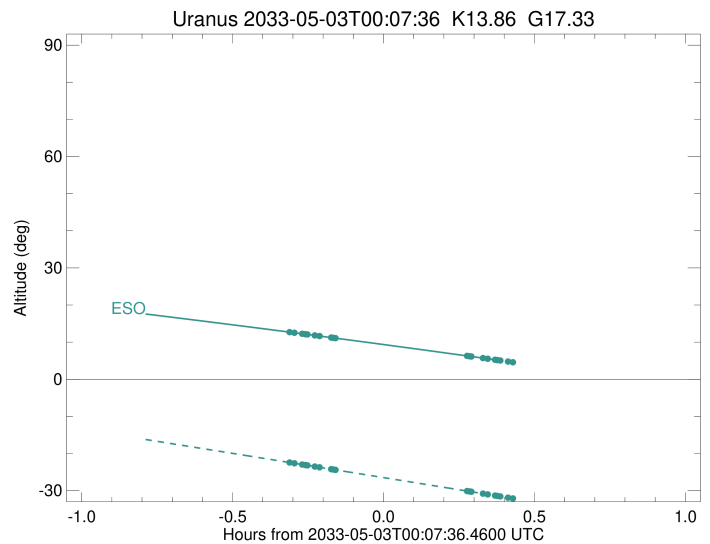
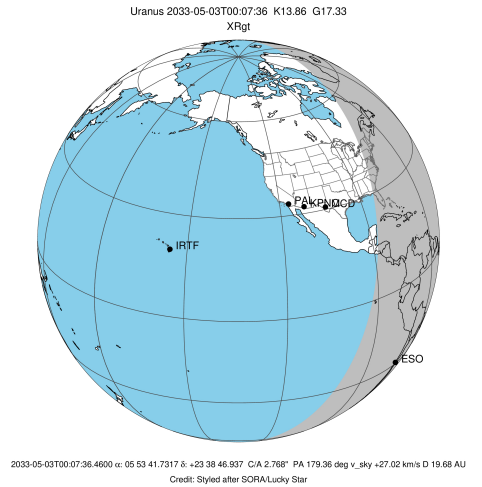


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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					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					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	+++++		+++++	MAY 02 23:49 - MAY 03 00:30	PnnRie
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 : 2033-05-03T00:10:33.870
 Event type : XRgt
 : No Uranus occs
 : 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 : 3427823500701876096
 2Mass ID (if available) : 05534172+2338472
 ICRS Star Coord at Epoch: 05h 53m 41.73172s +23:38:46.93721s
 RUWE (>1.4 is poor) : 1.99
 K magnitude : 13.856
 G magnitude : 17.331
 RP magnitude : 16.235
 BP magnitude : 18.293
 DUPflag : 0
 Distance (au) : 19.680
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 27.02
 Sun-Target sep (deg) : 46.12
 Sun-Moon sep (deg) : 6.51
 B (ring opening deg) : 76.54
 PA of pole (deg) : 53.02
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.492
 C/A sky separation (km) : 35569.5
 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	2033-05-02T23:49:13.674		12.65	-22.49	50821.13	-19.21		
lambda	I	2033-05-02T23:49:55.165		12.52	-22.64	50026.71	-18.99		
delta	I	2033-05-02T23:51:27.872		12.25	-22.97	48300.35	-18.24		
gamma	I	2033-05-02T23:52:05.256		12.14	-23.11	47624.49	-17.91		
eta	I	2033-05-02T23:52:30.443		12.07	-23.20	47176.12	-17.69		
beta	I	2033-05-02T23:53:59.328		11.80	-23.52	45641.54	-16.83		
alpha	I	2033-05-02T23:54:56.919		11.63	-23.73	44687.84	-16.24		
4	I	2033-05-02T23:57:17.370		11.22	-24.24	42526.41	-14.60		
5	I	2033-05-02T23:57:34.141		11.17	-24.30	42273.89	-14.42		
6	I	2033-05-02T23:58:03.376		11.08	-24.41	41854.25	-13.98		

No planet occultations

6	E	2033-05-03T00:24:10.213		6.30	-30.10	41811.04	14.01		
5	E	2033-05-03T00:24:45.669		6.19	-30.23	42315.16	14.45		
4	E	2033-05-03T00:25:02.299		6.14	-30.29	42558.04	14.63		
alpha	E	2033-05-03T00:27:22.073		5.71	-30.80	44723.38	16.28		
beta	E	2033-05-03T00:28:18.073		5.53	-31.00	45652.19	16.87		
eta	E	2033-05-03T00:29:46.095		5.25	-31.32	47176.12	17.73		
gamma	E	2033-05-03T00:30:11.027		5.18	-31.42	47621.07	17.96		
delta	E	2033-05-03T00:30:48.502		5.06	-31.55	48300.35	18.29		
lambda	E	2033-05-03T00:32:20.948		4.77x	-31.89	50026.71	19.05		
epsilon	E	2033-05-03T00:33:06.796		4.62x	-32.06	50907.91	19.27		