

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2027-04-03T13:24:57.730
 Event type : PtRgt
 : Uranus occs: topocentric, not geocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 50658559438703360
 2Mass ID (if available) : 04015569+2032500

ICRS Star Coord at Epoch: 04h 01m 55.71748s +20:32:49.96881s

RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.423
 G magnitude : 16.217
 RP magnitude : 15.618
 BP magnitude : 16.635
 DUPflag : 0
 Distance (au) : 20.044
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 25.74
 Sun-Target sep (deg) : 49.34
 Sun-Moon sep (deg) : 89.85
 B (ring opening deg) : 73.12
 PA of pole (deg) : -74.19

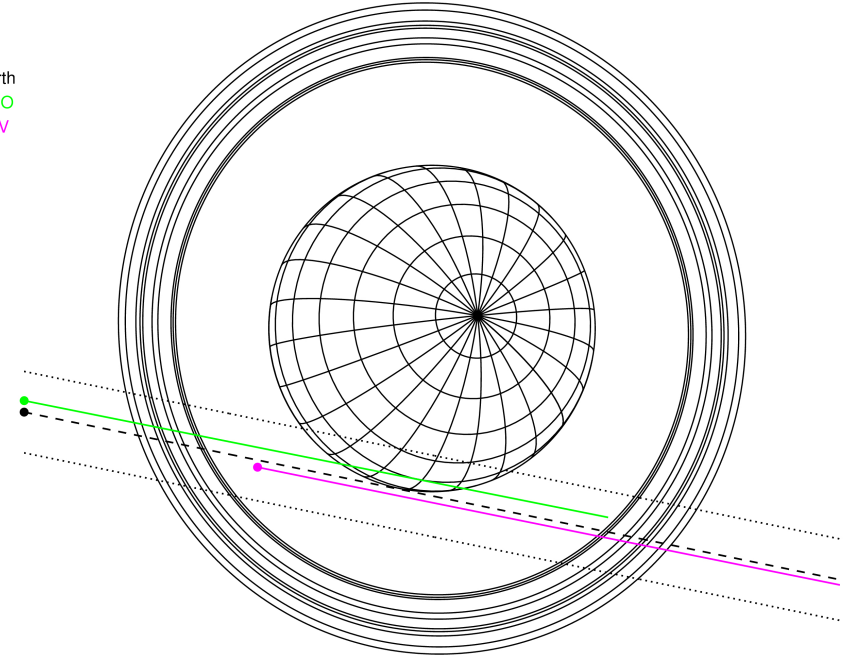
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2027-04-03T13:24:57.7300 ex: 04 01 55.7175 s: +20 32 49.969 C/A 1.764° PA 348.40 deg v_sky +25.74 km/s D 20.04 AU
 Credit: Styled after SORA/Lucky Star

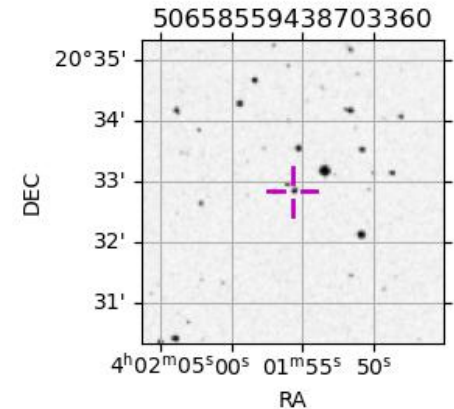
Uranus 2027-04-03T13:24:57 K14.42 G16.22 PtRgt

Earth
 PMO
 KAV

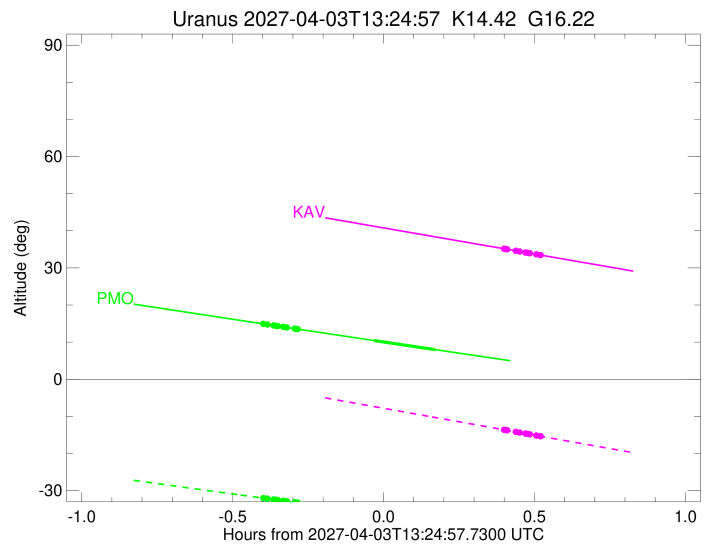
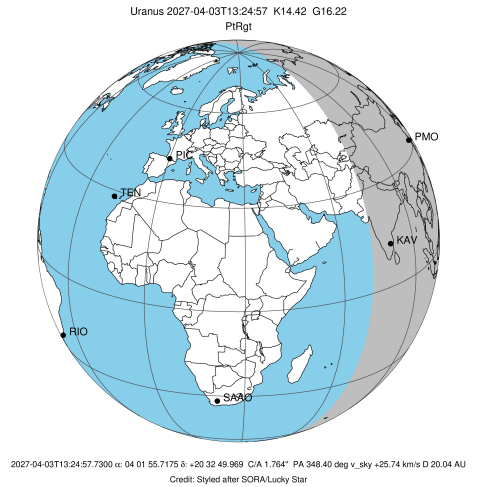


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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	+++++	+ +		APR 03 13:01 - APR 03 13:35	PieRin
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			+++++	APR 03 13:48 - APR 03 13:55	PnnRne
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



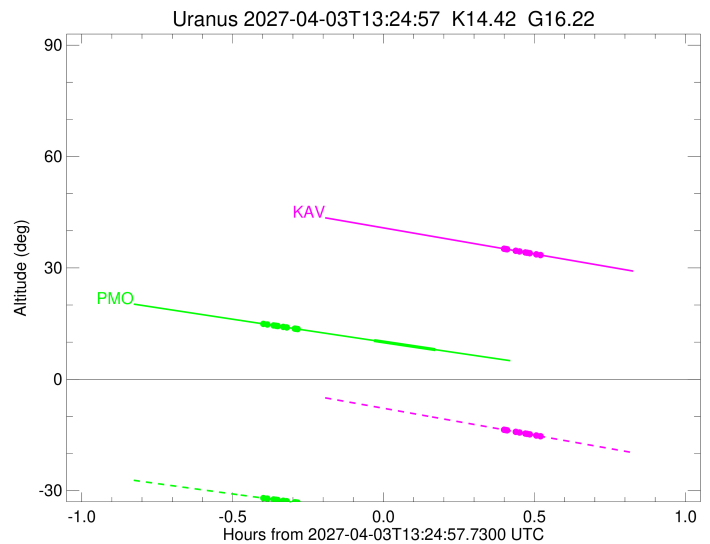
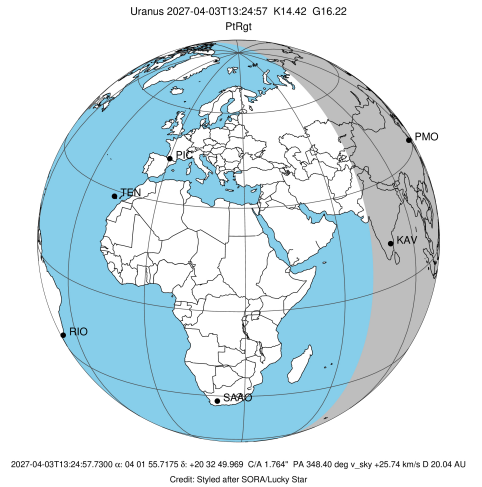
target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2027-04-03T13:28:53.360
 Event type : PtRgt
 : Uranus occs: topocentric, not geocentric
 : Ring occs: geocentric, topocentric
 Observer code : PMO
 Location : Purple Mtn Obs. Nanking
 Latitude (deg) : 32.06667
 E. Longitude (deg) : 118.82089
 Altitude (km) : 0.364
 Gaia source ID : 50658559438703360
 2Mass ID (if available) : 04015569+2032500
 ICRS Star Coord at Epoch: 04h 01m 55.71748s +20:32:49.96881s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.423
 G magnitude : 16.217
 RP magnitude : 15.618
 BP magnitude : 16.635
 DUPflag : 0
 Distance (au) : 20.044
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 25.74
 Sun-Target sep (deg) : 49.34
 Sun-Moon sep (deg) : 90.01
 B (ring opening deg) : 73.12
 PA of pole (deg) : -74.19
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.624
 C/A sky separation (km) : 23610.2
 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	2027-04-03T13:01:01.907		14.93	-32.00	51234.19	-23.44		
lambda	I	2027-04-03T13:01:53.391		14.75	-32.16	50026.71	-23.37		
delta	I	2027-04-03T13:03:07.642		14.50	-32.38	48300.35	-23.12		
gamma	I	2027-04-03T13:03:36.900		14.40	-32.47	47625.32	-23.02		
eta	I	2027-04-03T13:03:56.446		14.33	-32.53	47176.12	-22.94		
beta	I	2027-04-03T13:05:03.063		14.10	-32.73	45655.24	-22.67		
alpha	I	2027-04-03T13:05:43.865		13.97	-32.85	44738.08	-22.49		
4	I	2027-04-03T13:07:20.923		13.63	-33.14	42574.85	-22.05		
5	I	2027-04-03T13:07:33.738		13.59	-33.18	42302.98	-21.99		
6	I	2027-04-03T13:07:52.776		13.53	-33.23	41868.40	-21.86		
Uranus	I	2027-04-03T13:23:04.285		10.43	-35.90	25259.41		-12.45	-13.02
Uranus	E	2027-04-03T13:35:13.437		7.98	-37.95	25555.44		-1.34	-1.40
6	E	2027-04-03T13:50:52.147	x	4.86	-40.47	41799.26	21.93		
5	E	2027-04-03T13:51:12.817	x	4.79	-40.52	42249.85	22.06		
4	E	2027-04-03T13:51:29.390	x	4.74	-40.56	42611.79	22.13		
alpha	E	2027-04-03T13:53:02.008	x	4.43	-40.80	44685.10	22.58		
beta	E	2027-04-03T13:53:44.439	x	4.29	-40.91	45646.71	22.76		
eta	E	2027-04-03T13:54:51.218	x	4.07	-41.08	47176.12	23.04		
gamma	E	2027-04-03T13:55:10.943	x	4.01	-41.14	47631.27	23.11		
delta	E	2027-04-03T13:55:39.826	x	3.91	-41.21	48300.35	23.22		
lambda	E	2027-04-03T13:56:53.765	x	3.67	-41.40	50026.71	23.47		
epsilon	E	2027-04-03T13:57:25.446	x	3.57	-41.48	50772.00	23.54		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2027-04-03T13:28:05.790
 Event type : PtRgt
 : Uranus occs: topocentric, not geocentric
 : 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 : 50658559438703360
 2Mass ID (if available) : 04015569+2032500
 ICRS Star Coord at Epoch: 04h 01m 55.71748s +20:32:49.96881s
 RUWE (>1.4 is poor) : 1.00
 K magnitude : 14.423
 G magnitude : 16.217
 RP magnitude : 15.618
 BP magnitude : 16.635
 DUPflag : 0
 Distance (au) : 20.044
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 25.74
 Sun-Target sep (deg) : 49.34
 Sun-Moon sep (deg) : 90.44
 B (ring opening deg) : 73.12
 PA of pole (deg) : -74.19
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.838
 C/A sky separation (km) : 26721.6
 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_itrf93_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	2027-04-03T13:01:09.239		46.36	-2.04x	51206.94	-22.24		
lambda	I	2027-04-03T13:02:02.293		46.15	-2.25x	50026.71	-22.14		
delta	I	2027-04-03T13:03:20.839		45.85	-2.57x	48300.35	-21.81		
gamma	I	2027-04-03T13:03:51.871		45.73	-2.70x	47625.71	-21.67		
eta	I	2027-04-03T13:04:12.665		45.64	-2.78x	47176.12	-21.57		
beta	I	2027-04-03T13:05:23.766		45.37	-3.07x	45653.72	-21.21		
alpha	I	2027-04-03T13:06:07.500		45.20	-3.25x	44735.73	-20.97		
4	I	2027-04-03T13:07:51.810		44.79	-3.67x	42578.86	-20.36		
5	I	2027-04-03T13:08:05.690		44.73	-3.72x	42306.55	-20.27		
6	I	2027-04-03T13:08:26.630		44.65	-3.81x	41865.61	-20.10		

No planet occultations

6	E	2027-04-03T13:48:53.080		35.17	-13.59	41801.29	20.16		
5	E	2027-04-03T13:49:15.818		35.08	-13.68	42257.30	20.33		
4	E	2027-04-03T13:49:33.459		35.01	-13.76	42613.52	20.42		
alpha	E	2027-04-03T13:51:13.292		34.62	-14.16	44685.74	21.03		
beta	E	2027-04-03T13:51:58.663		34.44	-14.34	45645.57	21.28		
eta	E	2027-04-03T13:53:09.964		34.16	-14.63	47176.12	21.65		
gamma	E	2027-04-03T13:53:30.948		34.08	-14.71	47631.40	21.75		
delta	E	2027-04-03T13:54:01.610		33.96	-14.83	48300.35	21.89		
lambda	E	2027-04-03T13:55:19.873		33.66	-15.15	50026.71	22.22		
epsilon	E	2027-04-03T13:55:52.862		33.53	-15.28	50762.05	22.32		