

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2038-09-14T05:15:10.910
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Gaia source ID : 673924280489527040
 2Mass ID (if available) : 07571148+2112287

ICRS Star Coord at Epoch: 07h 57m 11.43151s +21:12:28.18993s

RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.764
 G magnitude : 18.843
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.240
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 24.10
 Sun-Target sep (deg) : 53.84
 Sun-Moon sep (deg) : 118.15
 B (ring opening deg) : 49.77
 PA of pole (deg) : 88.63

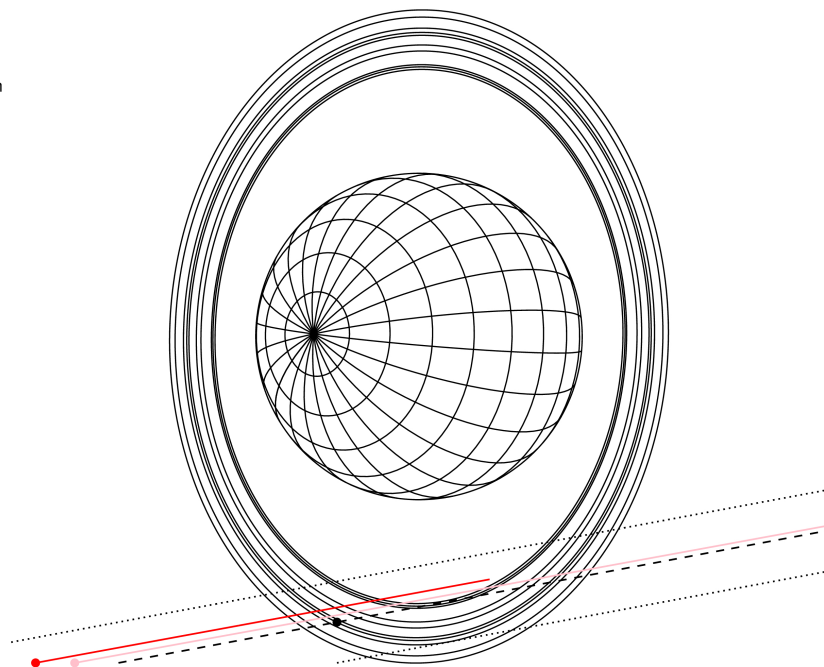
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon



2038-09-14T05:15:10.9100 ra: 07 57 11.4315 s: +21 12 28.190 C/A 2.978° PA 10.57 deg v_sky +24.10 km/s D 19.24 AU
 Credit: Styled after SORA/Lucky Star

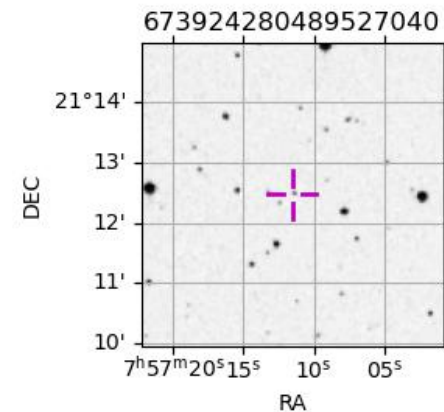
Uranus 2038-09-14T05:15:10 K14.76 G18.84 XRgt

Earth
 PIC
 TEN

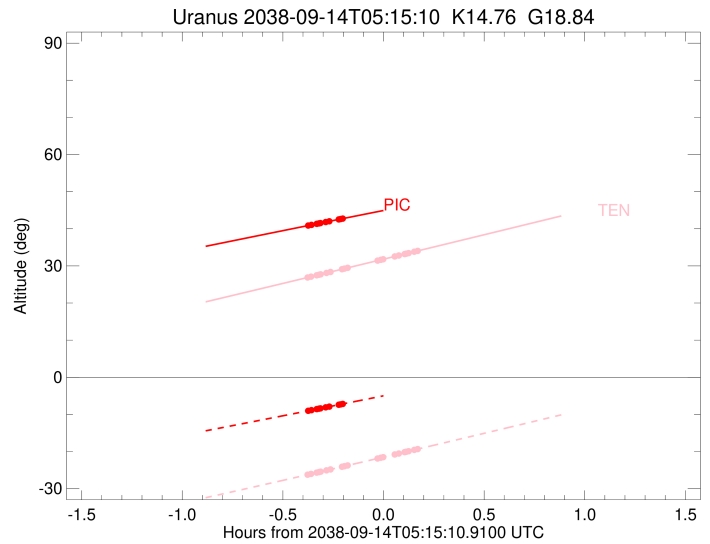
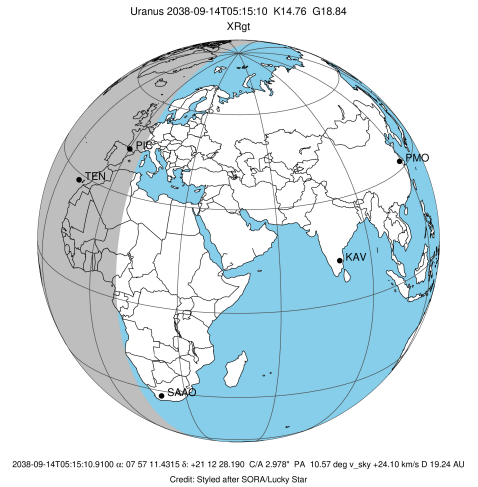


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+++++			SEP 14 04:53 - SEP 14 05:03	PnnRin
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	+++++		+++++	SEP 14 04:52 - SEP 14 05:25	PnnRie
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 : 2038-09-14T05:12:22.610
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 673924280489527040
 2Mass ID (if available) : 07571148+2112287
 ICRS Star Coord at Epoch: 07h 57m 11.43151s +21:12:28.18993s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.764
 G magnitude : 18.843
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.240
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 24.10
 Sun-Target sep (deg) : 53.84
 Sun-Moon sep (deg) : 118.97
 B (ring opening deg) : 49.77
 PA of pole (deg) : 88.63
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.824
 C/A sky separation (km) : 39410.1
 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

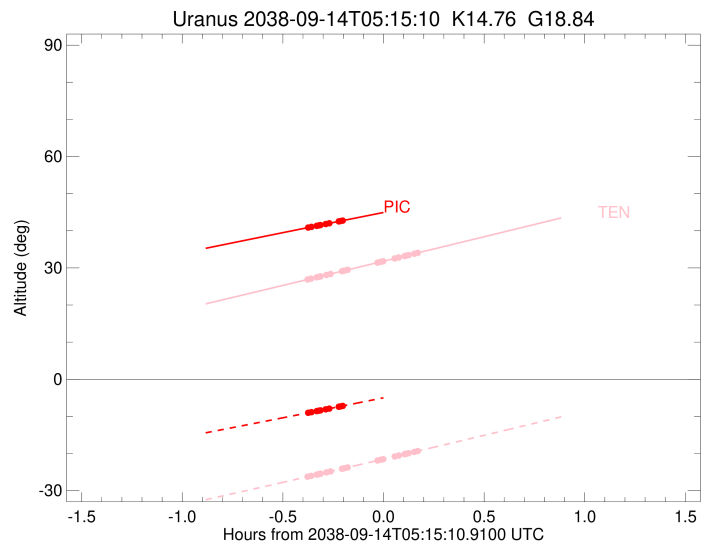
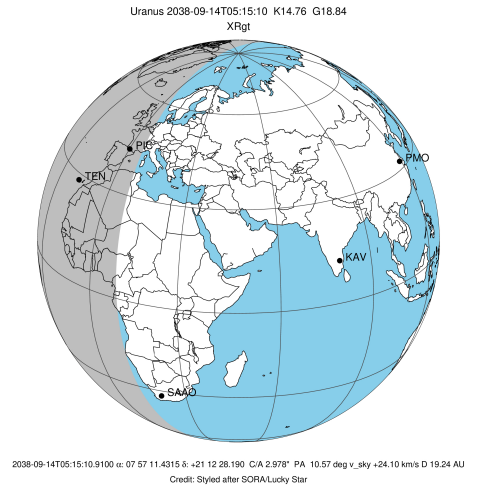


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2038-09-14T04:53:04.103		40.93	-8.97	50769.88	-19.20		
lambda	I	2038-09-14T04:53:43.137		41.05	-8.86	50026.71	-18.80		
delta	I	2038-09-14T04:55:17.955		41.34	-8.58	48300.35	-17.59		
gamma	I	2038-09-14T04:55:57.167		41.46	-8.46	47621.22	-17.04		
eta	I	2038-09-14T04:56:23.569		41.54	-8.38	47176.12	-16.67		
beta	I	2038-09-14T04:57:58.138		41.82	-8.10	45665.72	-15.24		
alpha	I	2038-09-14T04:59:01.382		42.01	-7.91	44738.56	-14.20		
4	I	2038-09-14T05:01:53.910		42.53	-7.39	42551.73	-11.03		
5	I	2038-09-14T05:02:15.685		42.60	-7.33	42314.30	-10.56		
6	I	2038-09-14T05:03:01.263		42.74	-7.19	41864.93	-9.65		

No planet occultations

6	E	2038-09-14T05:17:02.386		45.26	-4.66x	41840.48	9.64		
5	E	2038-09-14T05:17:45.690		45.39	-4.53x	42303.78	10.56		
4	E	2038-09-14T05:18:11.948		45.47	-4.45x	42583.87	11.02		
alpha	E	2038-09-14T05:21:04.296		45.98	-3.93x	44752.43	14.19		
beta	E	2038-09-14T05:22:06.936		46.17	-3.74x	45680.25	15.22		
eta	E	2038-09-14T05:23:40.780		46.44	-3.45x	47176.12	16.64		
gamma	E	2038-09-14T05:24:07.315		46.52	-3.37x	47622.75	17.02		
delta	E	2038-09-14T05:24:46.505		46.64	-3.25x	48300.35	17.56		
lambda	E	2038-09-14T05:26:21.496		46.92	-2.97x	50026.71	18.77		
epsilon	E	2038-09-14T05:27:08.444		47.06	-2.82x	50920.97	19.16		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2038-09-14T05:11:20.650
 Event type : XRgt
 : No Uranus occs
 : Ring occs: geocentric, topocentric
 Observer code : TEN
 Location : Teide Obs./Tenerife
 Latitude (deg) : 28.30050
 E. Longitude (deg) : 343.48909
 Altitude (km) : 2.395
 Gaia source ID : 673924280489527040
 2Mass ID (if available) : 07571148+2112287
 ICRS Star Coord at Epoch: 07h 57m 11.43151s +21:12:28.18993s
 RUWE (>1.4 is poor) : 1.02
 K magnitude : 14.764
 G magnitude : 18.843
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.240
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 24.10
 Sun-Target sep (deg) : 53.84
 Sun-Moon sep (deg) : 118.94
 B (ring opening deg) : 49.77
 PA of pole (deg) : 88.63
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 2.913
 C/A sky separation (km) : 40652.4
 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	2038-09-14T04:52:54.763		26.96	-26.17	50764.60	-18.25		
lambda	I	2038-09-14T04:53:35.633		27.11	-26.03	50026.71	-17.79		
delta	I	2038-09-14T04:55:16.518		27.47	-25.68	48300.35	-16.41		
gamma	I	2038-09-14T04:55:58.708		27.62	-25.53	47621.15	-15.78		
eta	I	2038-09-14T04:56:27.295		27.73	-25.44	47176.12	-15.35		
beta	I	2038-09-14T04:58:11.213		28.10	-25.07	45666.82	-13.66		
alpha	I	2038-09-14T04:59:22.518		28.36	-24.83	44740.25	-12.42		
4	I	2038-09-14T05:02:52.492		29.12	-24.10	42555.58	-8.28		
5	I	2038-09-14T05:03:22.645		29.23	-23.99	42315.13	-7.61		
6	I	2038-09-14T05:04:29.039		29.48	-23.76	41861.06	-6.18		

No planet occultations

6	E	2038-09-14T05:13:25.340		31.43	-21.88	41845.45	6.18		
5	E	2038-09-14T05:14:29.359		31.66	-21.65	42307.63	7.60		
4	E	2038-09-14T05:15:04.005		31.79	-21.53	42579.66	8.28		
alpha	E	2038-09-14T05:18:33.925		32.55	-20.79	44752.38	12.40		
beta	E	2038-09-14T05:19:44.635		32.81	-20.54	45679.85	13.64		
eta	E	2038-09-14T05:21:27.884		33.18	-20.17	47176.12	15.32		
gamma	E	2038-09-14T05:21:56.619		33.29	-20.07	47622.55	15.75		
delta	E	2038-09-14T05:22:38.811		33.44	-19.92	48300.35	16.37		
lambda	E	2038-09-14T05:24:19.933		33.81	-19.56	50026.71	17.75		
epsilon	E	2038-09-14T05:25:08.688		33.99	-19.39	50907.08	18.20		