

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2038-09-14T05:23:43.190
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 673924280488626176
 2Mass ID (if available) : 07571148+2112287

Uranus 2038-09-14T05:23:43 K14.76 G18.39 PgtRgt

ICRS Star Coord at Epoch: 07h 57m 11.50928s +21:12:29.19509s

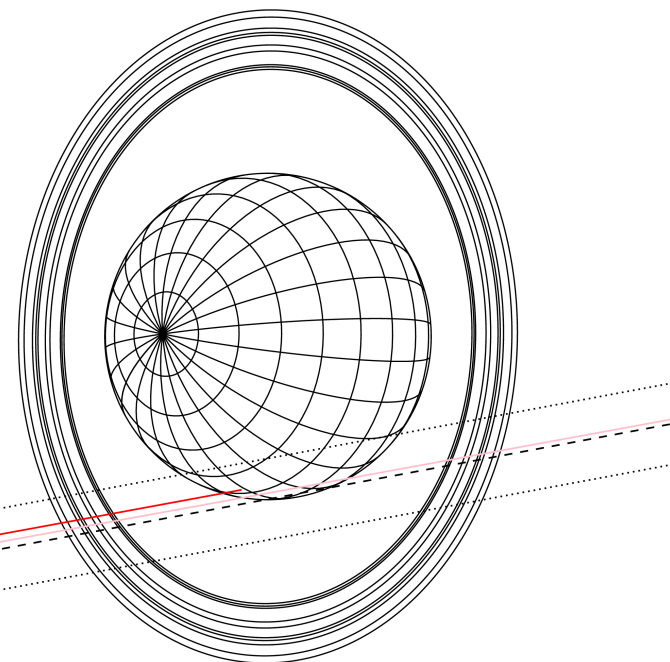
RUWE (>1.4 is poor) : 1.18
 K magnitude : 14.764
 G magnitude : 18.392
 RP magnitude : 17.032
 BP magnitude : 19.250
 DUPflag : 0
 Distance (au) : 19.240
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 24.10
 Sun-Target sep (deg) : 53.84
 Sun-Moon sep (deg) : 118.08
 B (ring opening deg) : 49.77
 PA of pole (deg) : 88.63

Uranus 2038-09-14T05:23:43 K14.76 G18.39
 PgtRgt



2038-09-14T05:23:43.1900 cr: 07 57 11.5093 s: +21 12 29.195 C/A 1.7911 PA 10.57 deg v_sky +24.10 km/s D 19.24 AU
 Credit: Styled after SORA/Lucky Star

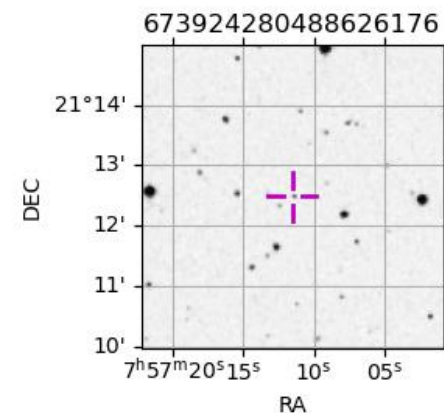
Earth
 PIC
 TEN



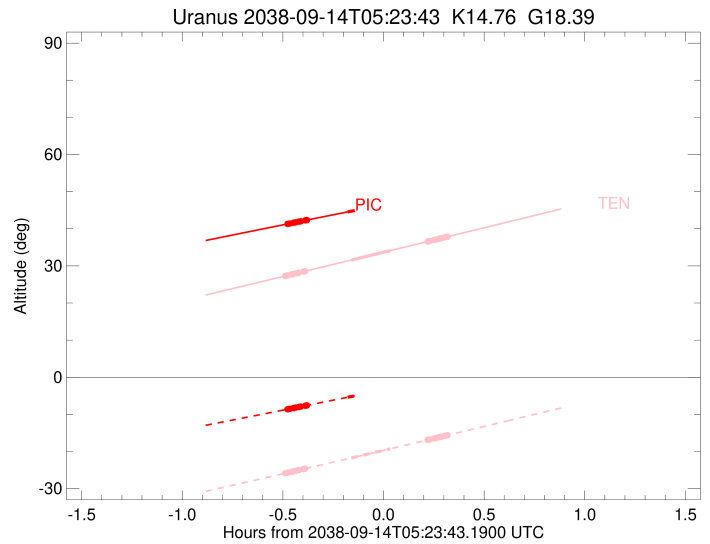
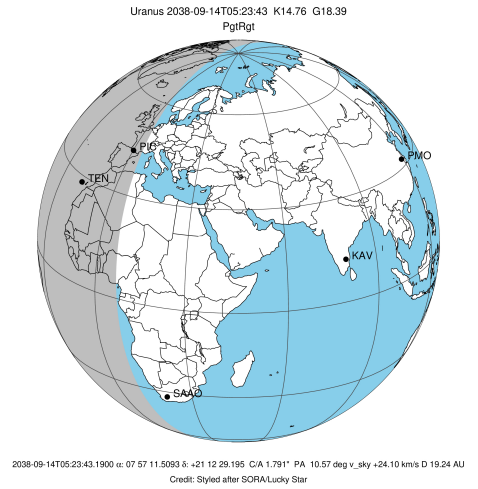
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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	+++++++	+		SEP 14 04:55 - SEP 14 05:13	PinRin
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 04:54 - SEP 14 05:42	PieRie
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

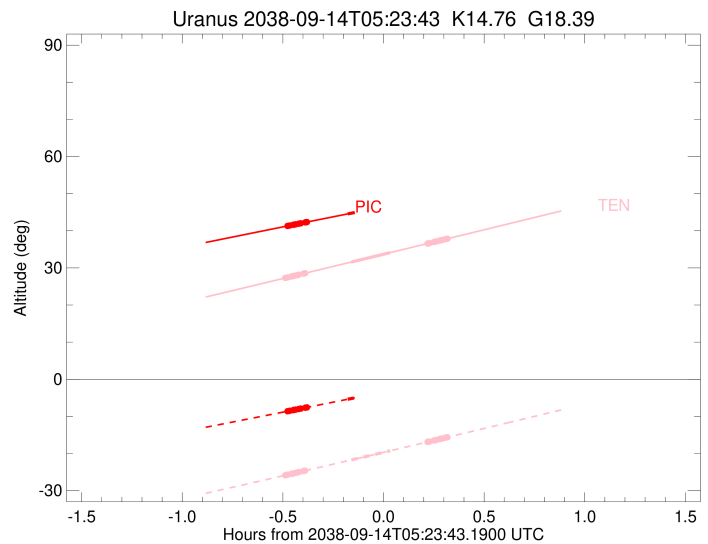
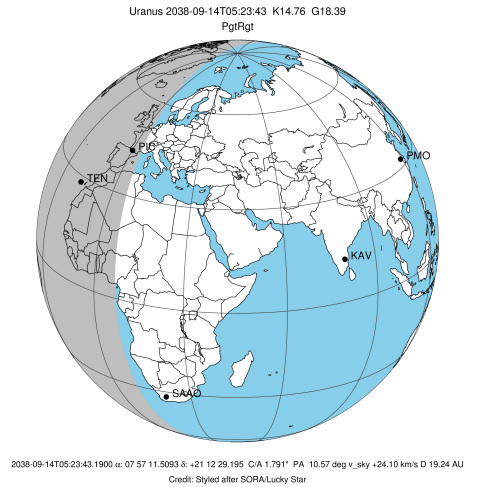


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2038-09-14T05:21:01.700
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 673924280488626176
 2Mass ID (if available) : 07571148+2112287
 ICRS Star Coord at Epoch: 07h 57m 11.50928s +21:12:29.19509s
 RUWE (>1.4 is poor) : 1.18
 K magnitude : 14.764
 G magnitude : 18.392
 RP magnitude : 17.032
 BP magnitude : 19.250
 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) : 118.91
 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 (") : 1.638
 C/A sky separation (km) : 22862.1
 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	2038-09-14T04:55:17.645		41.34	-8.58	50863.35	-27.55		
lambda	I	2038-09-14T04:55:47.997		41.43	-8.49	50026.71	-27.50		
delta	I	2038-09-14T04:56:51.077		41.62	-8.30	48300.35	-27.23		
gamma	I	2038-09-14T04:57:16.022		41.70	-8.22	47622.57	-27.11		
eta	I	2038-09-14T04:57:32.513		41.75	-8.17	47176.12	-27.03		
beta	I	2038-09-14T04:58:28.977		41.92	-8.00	45655.25	-26.75		
alpha	I	2038-09-14T04:59:04.192		42.02	-7.90	44721.20	-26.56		
4	I	2038-09-14T05:00:26.934		42.27	-7.65	42531.30	-26.03		
5	I	2038-09-14T05:00:35.754		42.30	-7.63	42290.87	-25.98		
6	I	2038-09-14T05:00:53.065		42.35	-7.57	41878.97	-25.85		
Uranus	I	2038-09-14T05:13:04.666		44.55	-5.38	25536.92		9.39	9.82
Uranus	E	2038-09-14T05:28:48.753		47.35	-2.52x	25429.64		-23.32	-24.30
6	E	2038-09-14T05:38:26.733		49.05	-0.76x	41813.48	25.80		
5	E	2038-09-14T05:38:43.390		49.09	-0.71x	42265.00	25.92		
4	E	2038-09-14T05:38:56.467		49.13	-0.67x	42607.18	25.97		
alpha	E	2038-09-14T05:40:18.369		49.37	-0.42x	44747.14	26.49		
beta	E	2038-09-14T05:40:53.260		49.47	-0.32x	45680.78	26.68		
eta	E	2038-09-14T05:41:48.961		49.63	-0.15x	47176.12	26.96		
gamma	E	2038-09-14T05:42:05.584		49.68	-0.10x	47625.00	27.04		
delta	E	2038-09-14T05:42:30.505		49.75	-0.02x	48300.35	27.16		
lambda	E	2038-09-14T05:43:33.756		49.94	0.17x	50026.71	27.43		
epsilon	E	2038-09-14T05:44:12.060		50.05	0.29x	51080.19	27.47		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2038-09-14T05:20:00.290
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : 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 : 673924280488626176
 2Mass ID (if available) : 07571148+2112287
 ICRS Star Coord at Epoch: 07h 57m 11.50928s +21:12:29.19509s
 RUWE (>1.4 is poor) : 1.18
 K magnitude : 14.764
 G magnitude : 18.392
 RP magnitude : 17.032
 BP magnitude : 19.250
 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) : 118.88
 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 (") : 1.729
 C/A sky separation (km) : 24131.2
 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_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	2038-09-14T04:54:37.862		27.33	-25.81	50855.80	-27.20		
lambda	I	2038-09-14T04:55:08.328		27.44	-25.71	50026.71	-27.14		
delta	I	2038-09-14T04:56:12.287		27.67	-25.49	48300.35	-26.83		
gamma	I	2038-09-14T04:56:37.613		27.76	-25.40	47622.46	-26.70		
eta	I	2038-09-14T04:56:54.357		27.83	-25.34	47176.12	-26.61		
beta	I	2038-09-14T04:57:51.745		28.03	-25.14	45655.85	-26.28		
alpha	I	2038-09-14T04:58:27.588		28.16	-25.02	44722.28	-26.07		
4	I	2038-09-14T04:59:52.029		28.47	-24.72	42532.06	-25.47		
5	I	2038-09-14T05:00:01.009		28.50	-24.69	42292.85	-25.40		
6	I	2038-09-14T05:00:18.805		28.57	-24.63	41878.66	-25.26		
Uranus	I	2038-09-14T05:14:08.514		31.58	-21.73	25553.10		4.83	5.06
Uranus	E	2038-09-14T05:25:41.594		34.11	-19.28	25470.75		-19.06	-19.90
6	E	2038-09-14T05:36:51.590		36.56	-16.89	41814.85	25.19		
5	E	2038-09-14T05:37:08.627		36.62	-16.83	42267.81	25.33		
4	E	2038-09-14T05:37:21.876		36.67	-16.78	42606.11	25.39		
alpha	E	2038-09-14T05:38:45.605		36.98	-16.48	44747.76	25.98		
beta	E	2038-09-14T05:39:21.133		37.11	-16.35	45680.91	26.20		
eta	E	2038-09-14T05:40:17.815		37.32	-16.15	47176.12	26.52		
gamma	E	2038-09-14T05:40:34.707		37.38	-16.09	47624.83	26.61		
delta	E	2038-09-14T05:41:00.034		37.47	-16.00	48300.35	26.74		
lambda	E	2038-09-14T05:42:04.228		37.71	-15.77	50026.71	27.04		
epsilon	E	2038-09-14T05:42:42.622		37.85	-15.63	51068.25	27.10		