

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2040-09-27T05:12:06.650
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 659766114072052608
 2Mass ID (if available) : 08362269+1911293

Uranus 2040-09-27T05:12:06 K10.26 G12.12 PgtRgt

ICRS Star Coord at Epoch: 08h 36m 22.58700s +19:11:28.83824s

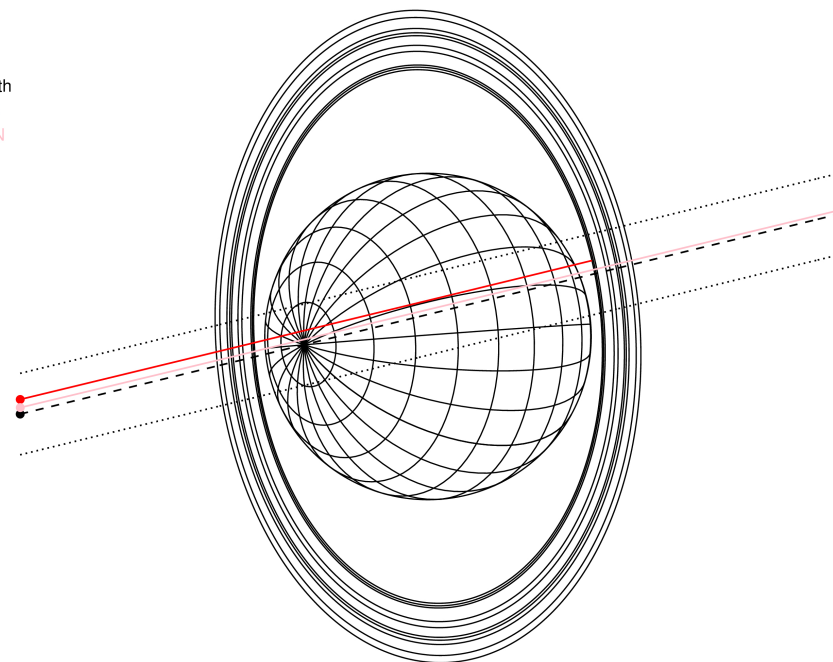
RUWE (>1.4 is poor) : 0.97
 K magnitude : 10.257
 G magnitude : 12.118
 RP magnitude : 11.496
 BP magnitude : 12.584
 DUPflag : 0
 Distance (au) : 19.070
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 22.56
 Sun-Target sep (deg) : 57.60
 Sun-Moon sep (deg) : 43.23
 B (ring opening deg) : 40.54
 PA of pole (deg) : 93.84

Uranus 2040-09-27T05:12:06 K10.26 G12.12
 PgtRgt



2040-09-27T05:12:06.6500 ex: 08 36 22.5870 s: +19 11 28.838 C/A 0.246° PA 193.73 deg v_sky +22.56 km/s D 19.07 AU
 Credit: Styled after SORA/Lucky Star

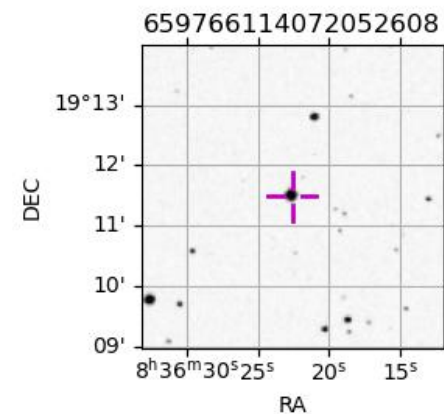
Earth
 PIC
 TEN



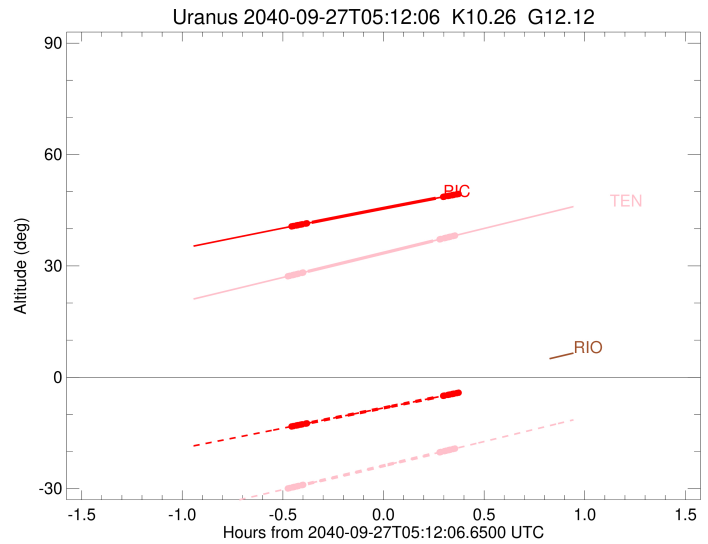
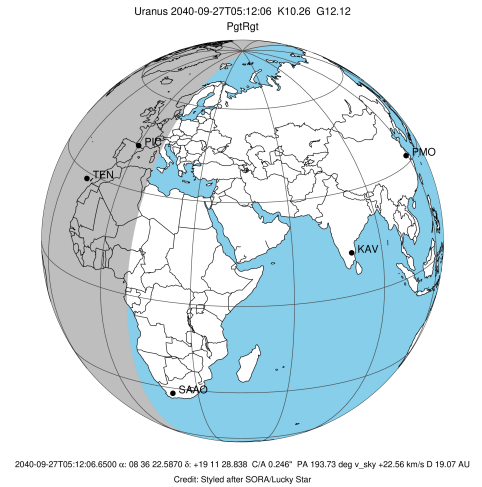
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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 27 04:44 - SEP 27 05:29	PieRie
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 27 04:43 - SEP 27 05:33	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

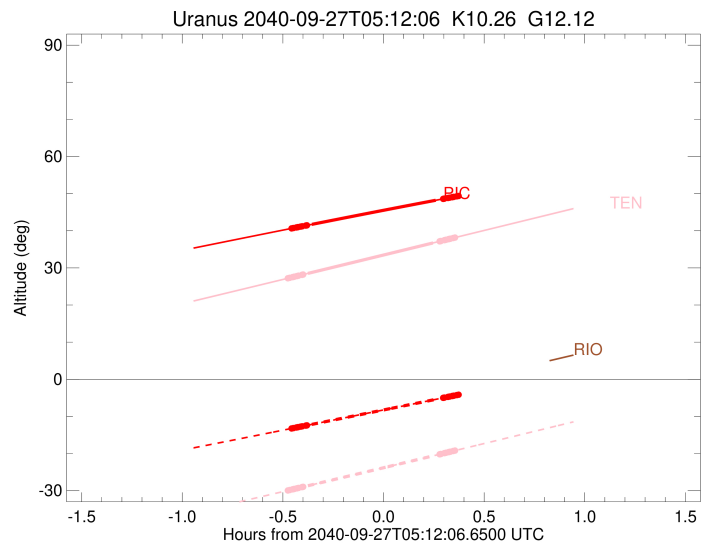
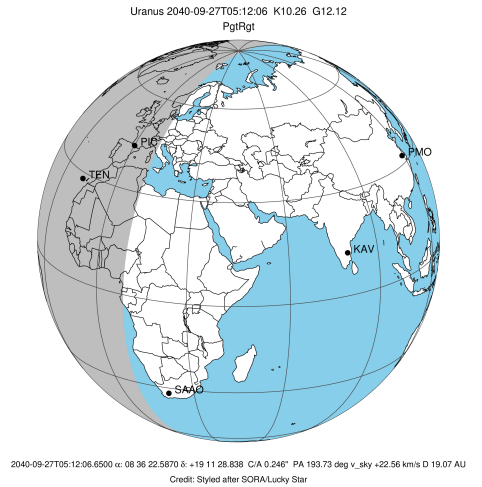


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2040-09-27T05:09:10.820
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PIC
 Location : Pic du Midi
 Latitude (deg) : 42.93656
 E. Longitude (deg) : 0.14231
 Altitude (km) : 2.890
 Gaia source ID : 659766114072052608
 2Mass ID (if available) : 08362269+1911293
 ICRS Star Coord at Epoch: 08h 36m 22.58700s +19:11:28.83824s
 RUWE (>1.4 is poor) : 0.97
 K magnitude : 10.257
 G magnitude : 12.118
 RP magnitude : 11.496
 BP magnitude : 12.584
 DUPflag : 0
 Distance (au) : 19.070
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 22.56
 Sun-Target sep (deg) : 57.60
 Sun-Moon sep (deg) : 43.25
 B (ring opening deg) : 40.54
 PA of pole (deg) : 93.84
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.396
 C/A sky separation (km) : 5479.9
 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_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	2040-09-27T04:44:54.548		40.68	-13.21	50754.15	-33.86		
lambda	I	2040-09-27T04:45:16.035		40.74	-13.15	50026.71	-33.85		
delta	I	2040-09-27T04:46:07.049		40.90	-12.99	48300.35	-33.83		
gamma	I	2040-09-27T04:46:27.065		40.96	-12.93	47623.25	-33.82		
eta	I	2040-09-27T04:46:40.285		41.00	-12.89	47176.12	-33.82		
beta	I	2040-09-27T04:47:25.454		41.13	-12.76	45644.76	-33.80		
alpha	I	2040-09-27T04:47:52.516		41.21	-12.68	44740.10	-33.79		
4	I	2040-09-27T04:48:55.033		41.40	-12.49	42608.44	-33.75		
5	I	2040-09-27T04:49:07.084		41.44	-12.45	42240.73	-33.78		
6	I	2040-09-27T04:49:16.691		41.47	-12.42	41848.28	-33.71		
Uranus	I	2040-09-27T04:50:43.648		41.73	-12.16	25313.65		49.39	50.68
Uranus	E	2040-09-27T05:27:40.728		48.22	-5.42	25348.18		-44.67	-45.98
6	E	2040-09-27T05:29:54.191		48.60	-5.01	41837.27	33.63		
5	E	2040-09-27T05:30:04.027		48.62	-4.98x	42250.02	33.70		
4	E	2040-09-27T05:30:13.919		48.65	-4.95x	42541.93	33.67		
alpha	E	2040-09-27T05:31:17.792		48.83	-4.75x	44703.99	33.71		
beta	E	2040-09-27T05:31:46.909		48.92	-4.66x	45679.84	33.71		
eta	E	2040-09-27T05:32:31.172		49.04	-4.53x	47176.12	33.73		
gamma	E	2040-09-27T05:32:44.574		49.08	-4.49x	47628.19	33.74		
delta	E	2040-09-27T05:33:04.496		49.13	-4.43x	48300.35	33.74		
lambda	E	2040-09-27T05:33:55.648		49.28	-4.27x	50026.71	33.76		
epsilon	E	2040-09-27T05:34:40.920		49.41	-4.13x	51555.25	33.77		

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2040-09-27T05:08:11.370
 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 : 659766114072052608
 2Mass ID (if available) : 08362269+1911293
 ICRS Star Coord at Epoch: 08h 36m 22.58700s +19:11:28.83824s
 RUWE (>1.4 is poor) : 0.97
 K magnitude : 10.257
 G magnitude : 12.118
 RP magnitude : 11.496
 BP magnitude : 12.584
 DUPflag : 0
 Distance (au) : 19.070
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 22.56
 Sun-Target sep (deg) : 57.60
 Sun-Moon sep (deg) : 43.01
 B (ring opening deg) : 40.54
 PA of pole (deg) : 93.84
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.296
 C/A sky separation (km) : 4089.7
 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	2040-09-27T04:43:48.106		27.25	-29.91	50751.87	-34.04		
lambda	I	2040-09-27T04:44:09.414		27.33	-29.83	50026.71	-34.03		
delta	I	2040-09-27T04:45:00.155		27.52	-29.65	48300.35	-34.02		
gamma	I	2040-09-27T04:45:20.058		27.59	-29.58	47623.37	-34.01		
eta	I	2040-09-27T04:45:33.209		27.64	-29.54	47176.12	-34.01		
beta	I	2040-09-27T04:46:18.134		27.80	-29.38	45644.42	-33.99		
alpha	I	2040-09-27T04:46:45.038		27.90	-29.28	44739.30	-33.99		
4	I	2040-09-27T04:47:47.212		28.13	-29.06	42607.61	-33.96		
5	I	2040-09-27T04:47:59.255		28.17	-29.02	42238.17	-33.99		
6	I	2040-09-27T04:48:08.701		28.20	-28.99	41846.95	-33.92		
Uranus	I	2040-09-27T04:49:34.411		28.52	-28.68	25313.13		49.46	50.75
Uranus	E	2040-09-27T05:26:51.158		36.72	-20.64	25338.86		-45.94	-47.25
6	E	2040-09-27T05:28:50.938		37.16	-20.21	41835.77	33.81		
5	E	2040-09-27T05:29:00.715		37.19	-20.17	42247.26	33.88		
4	E	2040-09-27T05:29:10.603		37.23	-20.14	42540.75	33.85		
alpha	E	2040-09-27T05:30:14.119		37.46	-19.91	44702.99	33.87		
beta	E	2040-09-27T05:30:43.137		37.57	-19.80	45679.59	33.87		
eta	E	2040-09-27T05:31:27.203		37.73	-19.64	47176.12	33.88		
gamma	E	2040-09-27T05:31:40.549		37.78	-19.59	47628.35	33.88		
delta	E	2040-09-27T05:32:00.380		37.85	-19.52	48300.35	33.89		
lambda	E	2040-09-27T05:32:51.318		38.04	-19.34	50026.71	33.90		
epsilon	E	2040-09-27T05:33:36.399		38.21	-19.17	51554.92	33.90		