

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2039-10-01T15:53:37.670
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 663673091203548928
 2Mass ID (if available) : 08182765+2011240

Uranus 2039-10-01T15:53:37 K12.85 G14.63 PgtRgt

ICRS Star Coord at Epoch: 08h 18m 27.70420s +20:11:23.60749s

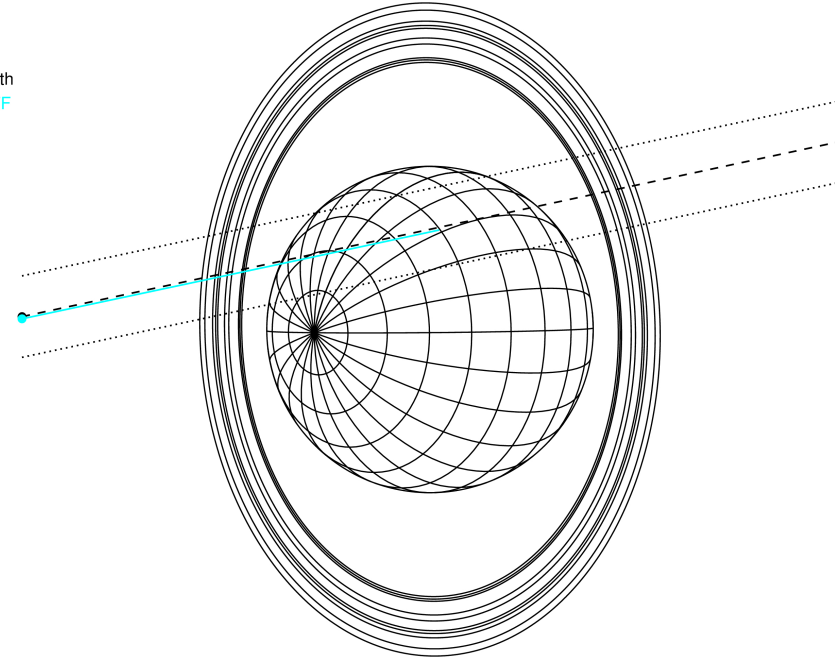
RUWE (>1.4 is poor) : 0.94
 K magnitude : 12.852
 G magnitude : 14.635
 RP magnitude : 14.040
 BP magnitude : 15.054
 DUPflag : 0
 Distance (au) : 18.997
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 18.87
 Sun-Target sep (deg) : 65.57
 Sun-Moon sep (deg) : 122.15
 B (ring opening deg) : 44.80
 PA of pole (deg) : 91.60

#	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



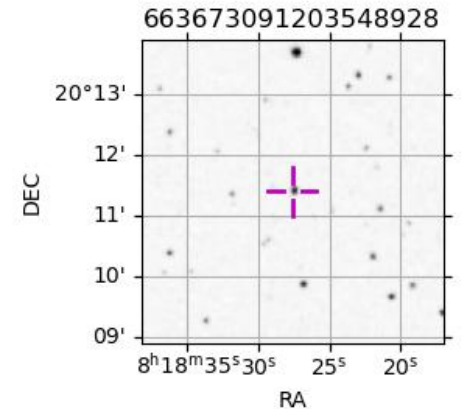
2039-10-01T15:53:37.6700 ex: 08 18 27.7042 s: +20 11 23.607 C/A 1.116° PA 192.08 deg v_sky +18.87 km/s D 19.00 AU
 Credit: Styled after SORA/Lucky Star

Earth
 IRTF



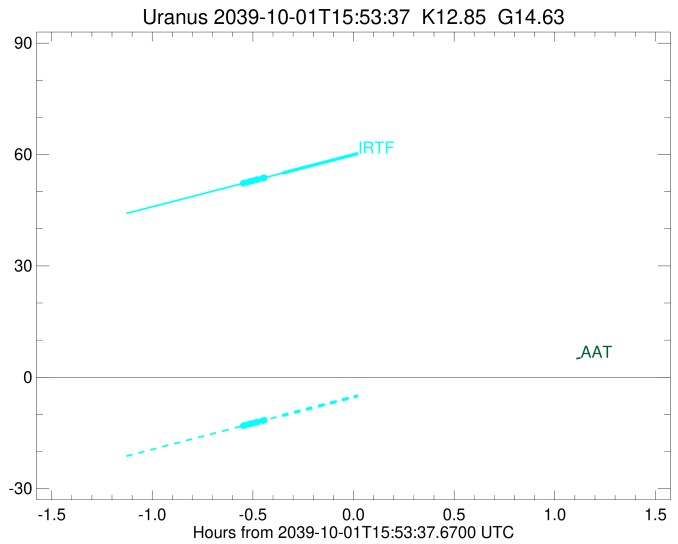
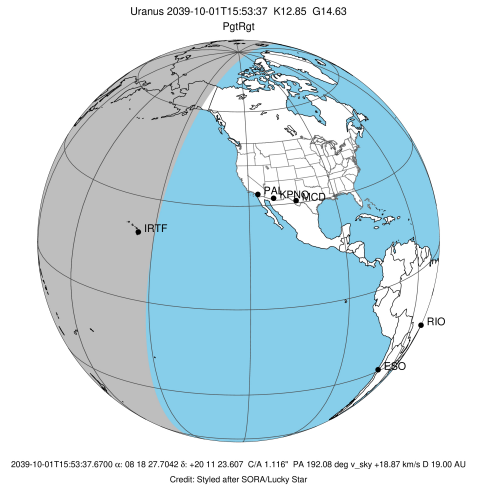
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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	+++++	+		OCT 01 15:20 - OCT 01 15:32	PinRin
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



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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2039-10-01T15:50:46.450
Event type          : PgtRgt
: Uranus occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code       : IRTF
Location            : Mauna Kea/IRTF
Latitude (deg)      : 19.82622
E. Longitude (deg)  : 204.52800
Altitude (km)       : 4.168
Gaia source ID      : 663673091203548928
2Mass ID (if available) : 08182765+2011240
ICRS Star Coord at Epoch: 08h 18m 27.70420s +20:11:23.60749s
RUWE (>1.4 is poor) : 0.94
K magnitude         : 12.852
G magnitude         : 14.635
RP magnitude        : 14.040
BP magnitude        : 15.054
DUPflag            : 0
Distance (au)       : 18.997
f0 (km)            : 0.000
g0 (km)            : 0.000
skyplane vel. (km/s) : 18.87
Sun-Target sep (deg) : 65.57
Sun-Moon sep (deg)  : 123.10
B (ring opening deg) : 44.80
PA of pole (deg)    : 91.60
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 1.084
C/A sky separation (km) : 14933.0
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall1.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall1.bsp
ural61.bsp
vgr2.ural61.bsp
peph.ural60.bsp
earthstns_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
    
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Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2039-10-01T15:20:40.839		52.24	-13.07	51277.34	-24.87		
lambda	I	2039-10-01T15:21:31.065		52.44	-12.87	50026.71	-24.87		
delta	I	2039-10-01T15:22:40.613		52.71	-12.60	48300.35	-24.78		
gamma	I	2039-10-01T15:23:07.999		52.82	-12.49	47622.40	-24.74		
eta	I	2039-10-01T15:23:26.051		52.89	-12.42	47176.12	-24.71		
beta	I	2039-10-01T15:24:28.005		53.13	-12.18	45644.39	-24.61		
alpha	I	2039-10-01T15:25:06.730		53.28	-12.03	44708.08	-24.56		
4	I	2039-10-01T15:26:35.457		53.63	-11.68	42549.11	-24.38		
5	I	2039-10-01T15:26:46.161		53.67	-11.64	42294.89	-24.35		
6	I	2039-10-01T15:27:00.683		53.73	-11.58	41877.16	-24.30		
Uranus	I	2039-10-01T15:32:21.722		54.98	-10.32	25323.34		39.76	41.06
Uranus	E	2039-10-01T16:09:19.033		63.64	-1.63x	25420.60		-29.25	-30.40
6	E	2039-10-01T16:16:58.422		65.44	0.17x	41797.87	24.22		
5	E	2039-10-01T16:17:12.714		65.50	0.23x	42154.82	24.27		
4	E	2039-10-01T16:17:29.029		65.56	0.29x	42561.60	24.30		
alpha	E	2039-10-01T16:18:58.839		65.91	0.64x	44747.03	24.47		
beta	E	2039-10-01T16:19:37.499		66.07	0.79x	45681.16	24.52		
eta	E	2039-10-01T16:20:38.229		66.30	1.03x	47176.12	24.61		
gamma	E	2039-10-01T16:20:56.721		66.38	1.10x	47631.54	24.64		
delta	E	2039-10-01T16:21:23.843		66.48	1.21x	48300.35	24.68		
lambda	E	2039-10-01T16:22:33.669		66.76	1.48x	50026.71	24.77		
epsilon	E	2039-10-01T16:23:05.816		66.88	1.61x	50823.55	24.77		