

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2035-05-01T19:05:28.470  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Gaia source ID : 3382608735007214976  
 2Mass ID (if available) : 06302897+2334423

ICRS Star Coord at Epoch: 06h 30m 28.97976s +23:34:42.27694s

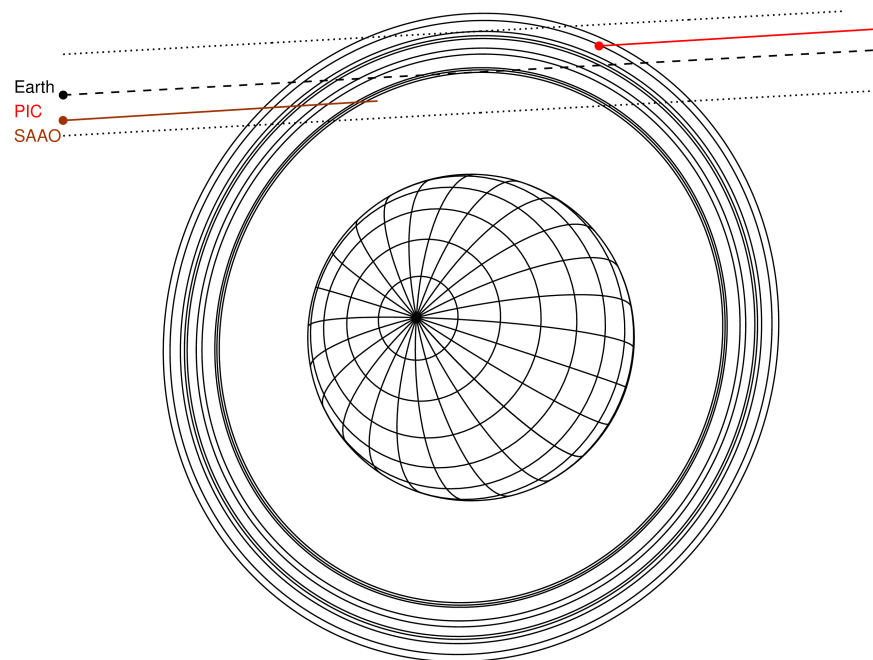
RUWE (>1.4 is poor) : 1.01  
 K magnitude : 12.738  
 G magnitude : 13.790  
 RP magnitude : 13.409  
 BP magnitude : 14.025  
 DUPflag : 0  
 Distance (au) : 19.410  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 22.96  
 Sun-Target sep (deg) : 56.22  
 Sun-Moon sep (deg) : 133.74  
 B (ring opening deg) : 69.11  
 PA of pole (deg) : 69.97

#	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



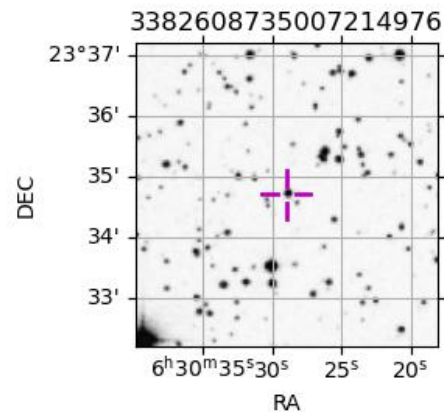
2035-05-01T19:05:28.4700 ex: 06 30 28.9798 s: +23 34 42.277 C/A 2.951" PA 183.17 deg v\_sky +22.96 km/s D 19.41 AU  
 Credit: Styled after SORA/Lucky Star

Uranus 2035-05-01T19:05:28 K12.74 G13.79 XRgt



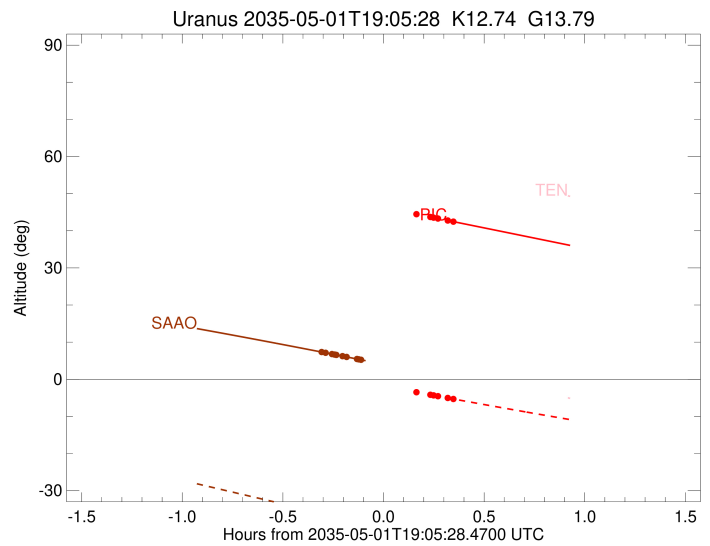
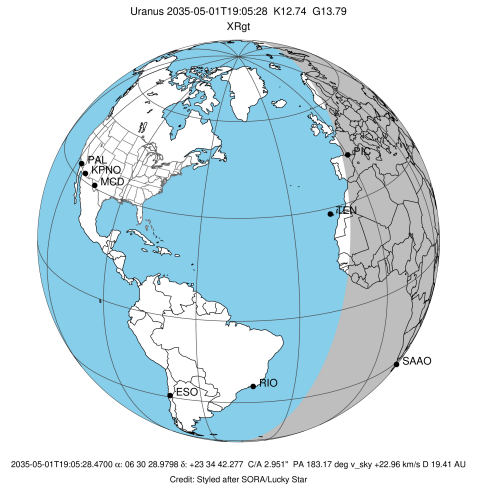
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1				++ MAY 01 19:24 - MAY 01 19:25	PnnRne
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					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	+++++			MAY 01 18:46 - MAY 01 18:58	PnnRin
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



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target                : Uranus
target radius (km)   : 25559.00
C/A epoch            : 2035-05-01T19:07:43.990
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      : 3382608735007214976
2Mass ID (if available) : 06302897+2334423
ICRS Star Coord at Epoch: 06h 30m 28.97976s +23:34:42.27694s
RUWE (>1.4 is poor) : 1.01
K magnitude         : 12.738
G magnitude         : 13.790
RP magnitude        : 13.409
BP magnitude        : 14.025
DUPflag            : 0
Distance (au)       : 19.410
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : 22.96
Sun-Target sep (deg) : 56.22
Sun-Moon sep (deg)  : 133.90
B (ring opening deg) : 69.11
PA of pole (deg)    : 69.97
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 3.152
C/A sky separation (km) : 44366.3
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl1.spk
urall11.bsp
IAU_URANUS_for_RINGFIT.tpc
vgr2.urall11.bsp
ural161.bsp
vgr2.ural161.bsp
peph.ural160.bsp
earthstns_itr93_040916.bsp
earth_720101_070426.bpc
earth_200101_990628_predict.bpc
pg3f0000r.bsp
pg490000r.bsp
naif0012.tls
earth_flat_IAU.spk
  
```

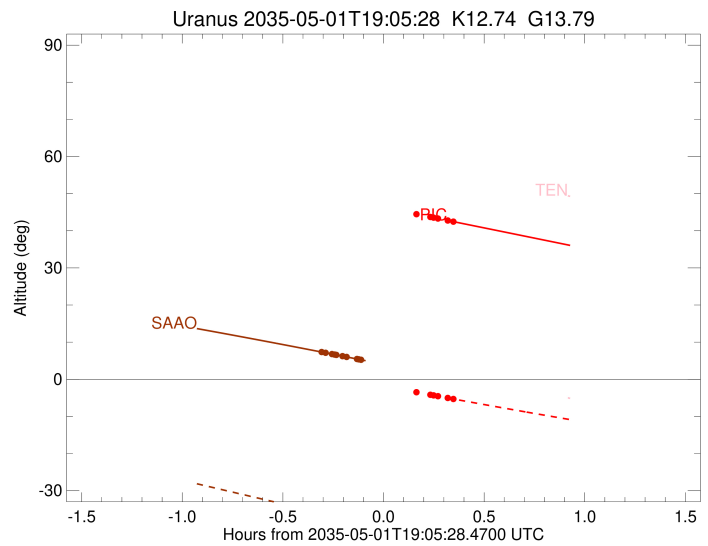
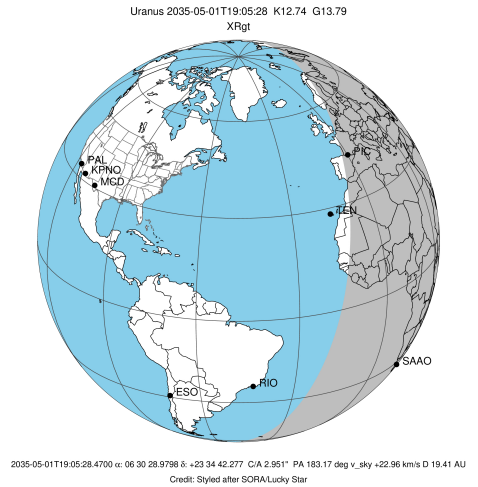


Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2035-05-01T18:52:05.068		48.67	0.44x	51262.91	-11.51		
lambda	I	2035-05-01T18:53:55.635		48.34	0.13x	50026.71	-10.68		
delta	I	2035-05-01T18:56:51.231		47.81	-0.37x	48300.35	-8.95		
gamma	I	2035-05-01T18:58:09.616		47.58	-0.60x	47630.73	-8.13		
eta	I	2035-05-01T18:59:07.834		47.40	-0.76x	47176.12	-7.49		
beta	I	2035-05-01T19:03:21.013		46.64	-1.48x	45649.50	-4.53		

No planet occultations

beta	E	2035-05-01T19:15:13.444		44.49	-3.48x	45656.38	4.53		
eta	E	2035-05-01T19:19:24.870		43.72	-4.18x	47176.12	7.50		
gamma	E	2035-05-01T19:20:23.110		43.54	-4.34x	47631.54	8.14		
delta	E	2035-05-01T19:21:41.279		43.31	-4.55x	48300.35	8.97		
lambda	E	2035-05-01T19:24:36.569		42.77	-5.04	50026.71	10.70		
epsilon	E	2035-05-01T19:25:54.073		42.54	-5.25	50883.59	11.53		

target : Uranus  
 target radius (km) : 25559.00  
 C/A epoch : 2035-05-01T19:09:06.810  
 Event type : XRgt  
 : No Uranus occs  
 : Ring occs: geocentric, topocentric  
 Observer code : SAAO  
 Location : So. Afr. Astro. Obs. (Sutherland)  
 Latitude (deg) : -32.37953  
 E. Longitude (deg) : 20.81070  
 Altitude (km) : 1.768  
 Gaia source ID : 3382608735007214976  
 2Mass ID (if available) : 06302897+2334423  
 ICRS Star Coord at Epoch: 06h 30m 28.97976s +23:34:42.27694s  
 RUWE (>1.4 is poor) : 1.01  
 K magnitude : 12.738  
 G magnitude : 13.790  
 RP magnitude : 13.409  
 BP magnitude : 14.025  
 DUPflag : 0  
 Distance (au) : 19.410  
 f0 (km) : 0.000  
 g0 (km) : 0.000  
 skyplane vel. (km/s) : 22.96  
 Sun-Target sep (deg) : 56.22  
 Sun-Moon sep (deg) : 133.25  
 B (ring opening deg) : 69.11  
 PA of pole (deg) : 69.97  
 Pole direction: RA (deg): 257.31100  
 Dec (deg): -15.17500  
 C/A sky separation (") : 2.691  
 C/A sky separation (km) : 37875.3  
 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	2035-05-01T18:46:50.260		7.37	-35.98	51347.29	-15.96		
lambda	I	2035-05-01T18:48:13.733		7.12	-36.27	50026.71	-15.54		
delta	I	2035-05-01T18:50:07.749		6.79	-36.67	48300.35	-14.72		
gamma	I	2035-05-01T18:50:53.848		6.65	-36.83	47629.70	-14.37		
eta	I	2035-05-01T18:51:25.698		6.56	-36.94	47176.12	-14.11		
beta	I	2035-05-01T18:53:17.968		6.22	-37.34	45644.16	-13.16		
alpha	I	2035-05-01T18:54:27.748		6.02	-37.58	44752.39	-12.51		
4	I	2035-05-01T18:57:34.687		5.46	-38.24	42585.23	-10.60		
5	I	2035-05-01T18:58:09.961		5.35	-38.36	42230.98	-10.15		
6	I	2035-05-01T18:58:48.048		5.24	-38.50	41849.06	-9.77		

No planet occultations

6	E	2035-05-01T19:22:06.538		0.98x	-43.38	41875.41	9.79		
5	E	2035-05-01T19:22:36.187		0.89x	-43.49	42171.29	10.17		
4	E	2035-05-01T19:23:18.742		0.76x	-43.63	42613.85	10.62		
alpha	E	2035-05-01T19:26:21.336		0.19x	-44.27	44732.64	12.54		
beta	E	2035-05-01T19:27:33.675		-0.03x	-44.52	45664.06	13.20		
eta	E	2035-05-01T19:29:24.116		-0.38x	-44.90	47176.12	14.16		
gamma	E	2035-05-01T19:29:55.962		-0.48x	-45.01	47631.14	14.42		
delta	E	2035-05-01T19:30:41.808		-0.62x	-45.17	48300.35	14.78		
lambda	E	2035-05-01T19:32:35.419		-0.98x	-45.56	50026.71	15.60		
epsilon	E	2035-05-01T19:33:25.867		-1.14x	-45.74	50822.43	16.03		