

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2029-08-19T14:59:12.560
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3418379215512270976
 2Mass ID (if available) : 05060952+2252216

Uranus 2029-08-19T14:59:12 K14.12 G16.35 PgtRgt

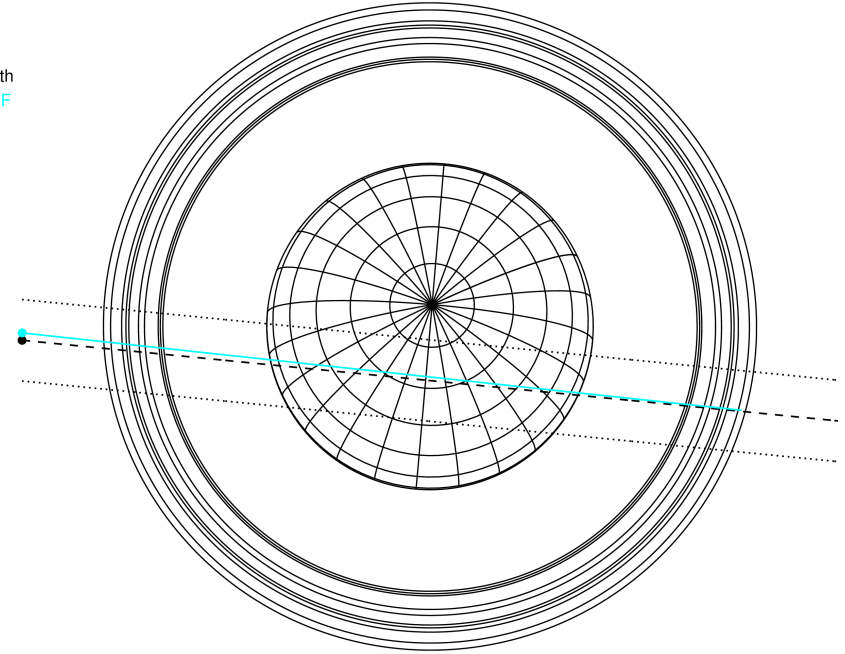
ICRS Star Coord at Epoch: 05h 06m 09.51747s +22:52:21.53476s

RUWE (>1.4 is poor) : 1.92
 K magnitude : 14.123
 G magnitude : 16.354
 RP magnitude : 15.341
 BP magnitude : 16.435
 DUPflag : 0
 Distance (au) : 19.587
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 17.05
 Sun-Target sep (deg) : 68.89
 Sun-Moon sep (deg) : 164.83
 B (ring opening deg) : 82.27
 PA of pole (deg) : -5.54



2029-08-19T14:59:12.5600 ex: 05 06 09.5175 s: +22 52 21.535 C/A 0.589° PA 354.36 deg v_sky +17.05 km/s D 19.59 AU
 Credit: Styled after SORA/Lucky Star

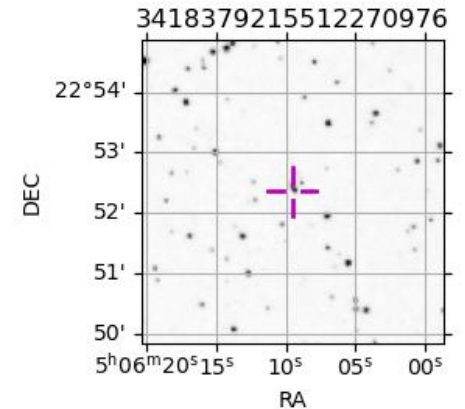
Earth
 IRTF



#	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

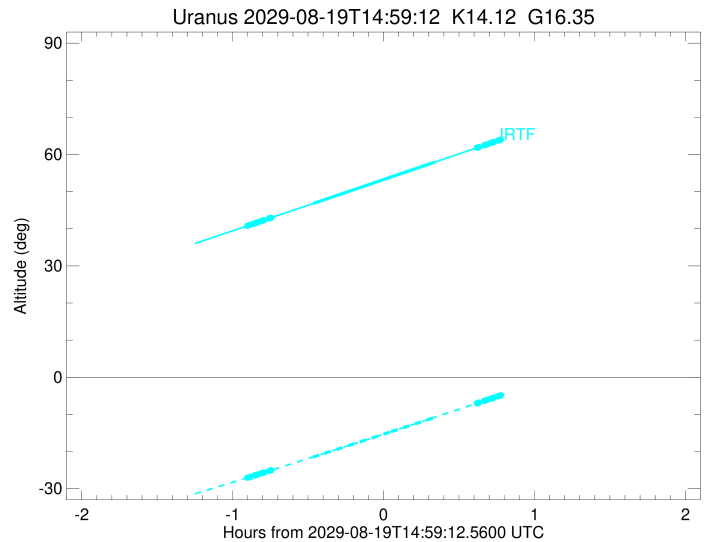
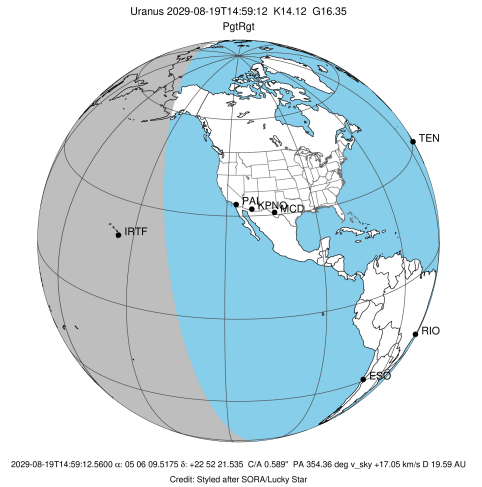
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1					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	+++++	+ +	+++++	AUG 19 14:04 - AUG 19 15:44	PieRie
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            : 2029-08-19T14:55:22.580
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      : 3418379215512270976
2Mass ID (if available) : 05060952+2252216
ICRS Star Coord at Epoch: 05h 06m 09.51747s +22:52:21.53476s
RUWE (>1.4 is poor) : 1.92
K magnitude          : 14.123
G magnitude          : 16.354
RP magnitude         : 15.341
BP magnitude         : 16.435
DUPflag             : 0
Distance (au)       : 19.587
f0 (km)             : 0.000
g0 (km)             : 0.000
skyplane vel. (km/s) : 17.05
Sun-Target sep (deg) : 68.89
Sun-Moon sep (deg)  : 165.58
B (ring opening deg) : 82.27
PA of pole (deg)    : -5.54
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 0.553
C/A sky separation (km) : 7861.8
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLvl.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	2029-08-19T14:04:53.314		40.76	-27.11	51424.28	-16.62		
lambda	I	2029-08-19T14:06:17.501		41.08	-26.81	50026.71	-16.59		
delta	I	2029-08-19T14:08:01.600		41.47	-26.44	48300.35	-16.57		
gamma	I	2029-08-19T14:08:42.574		41.63	-26.30	47621.40	-16.57		
eta	I	2029-08-19T14:09:09.457		41.73	-26.20	47176.12	-16.56		
beta	I	2029-08-19T14:10:41.597		42.09	-25.88	45651.11	-16.54		
alpha	I	2029-08-19T14:11:37.214		42.30	-25.68	44731.65	-16.53		
4	I	2029-08-19T14:13:50.515		42.81	-25.21	42530.99	-16.49		
5	I	2029-08-19T14:14:12.227		42.89	-25.13	42171.82	-16.49		
6	I	2029-08-19T14:14:34.523		42.98	-25.05	41805.66	-16.48		
Uranus	I	2029-08-19T14:31:13.518		46.80	-21.47	25506.24		-2.30	-2.41
Uranus	E	2029-08-19T15:19:34.601		57.95	-10.79	25499.11		-2.45	-2.57
6	E	2029-08-19T15:36:23.339		61.83	-7.01	41855.84	16.35		
5	E	2029-08-19T15:36:48.929		61.93	-6.91	42275.26	16.35		
4	E	2029-08-19T15:37:08.885		62.01	-6.84	42600.99	16.36		
alpha	E	2029-08-19T15:39:18.082		62.51	-6.35	44717.13	16.39		
beta	E	2029-08-19T15:40:15.861		62.73	-6.13	45664.58	16.40		
eta	E	2029-08-19T15:41:47.992		63.08	-5.78	47176.12	16.41		
gamma	E	2029-08-19T15:42:15.652		63.19	-5.68	47630.16	16.42		
delta	E	2029-08-19T15:42:56.467		63.35	-5.52	48300.35	16.42		
lambda	E	2029-08-19T15:44:41.541		63.75	-5.13	50026.71	16.44		
epsilon	E	2029-08-19T15:45:39.196		63.97	-4.91x	50974.57	16.46		