

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2030-04-19T12:14:55.820
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3412547027880352512
 2Mass ID (if available) : 04565193+2241350

Uranus 2030-04-19T12:14:55 K12.39 G14.49 PgtRgt

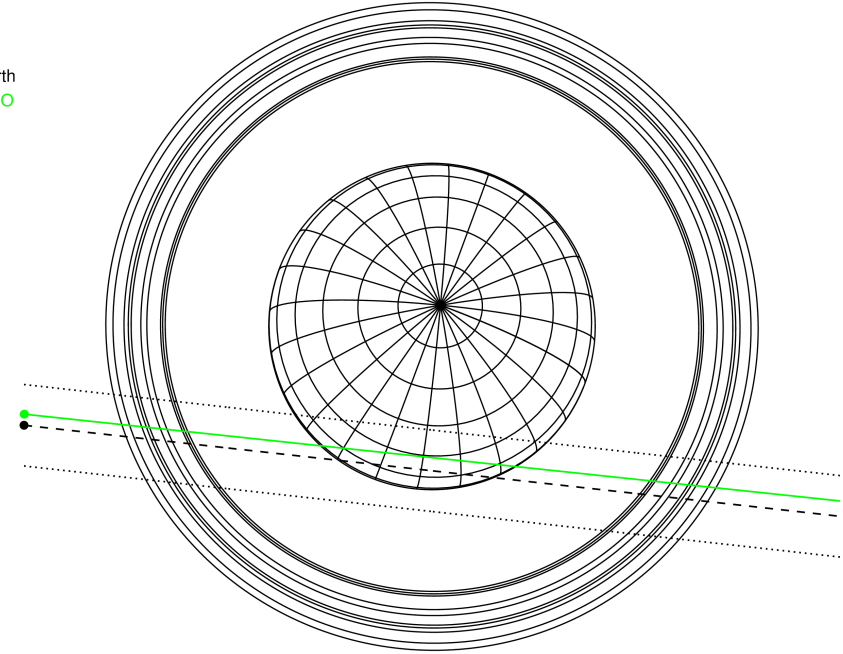
ICRS Star Coord at Epoch: 04h 56m 51.94143s +22:41:34.95149s

RUWE (>1.4 is poor) : 0.99
 K magnitude : 12.388
 G magnitude : 14.488
 RP magnitude : 13.783
 BP magnitude : 15.029
 DUPflag : 0
 Distance (au) : 19.879
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 26.86
 Sun-Target sep (deg) : 46.40
 Sun-Moon sep (deg) : 152.88
 B (ring opening deg) : 81.93
 PA of pole (deg) : -21.80



2030-04-19T12:14:55.8200 ex: 04 56 51.9414 s: +22 41 34.951 C/A 1.553° PA 353.63 deg v_sky +26.86 km/s D 19.88 AU
 Credit: Styled after SORA/Lucky Star

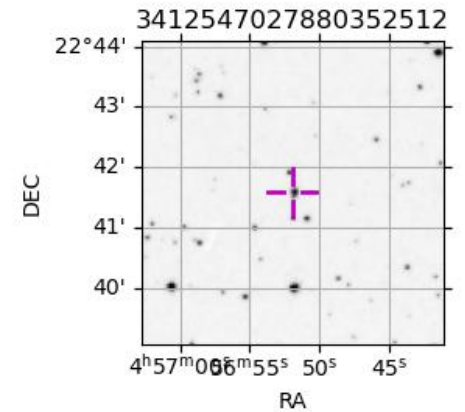
Earth
 PMO



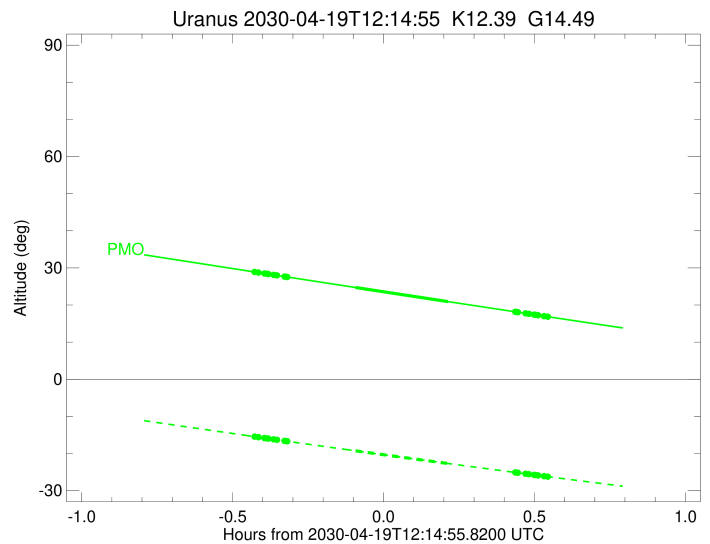
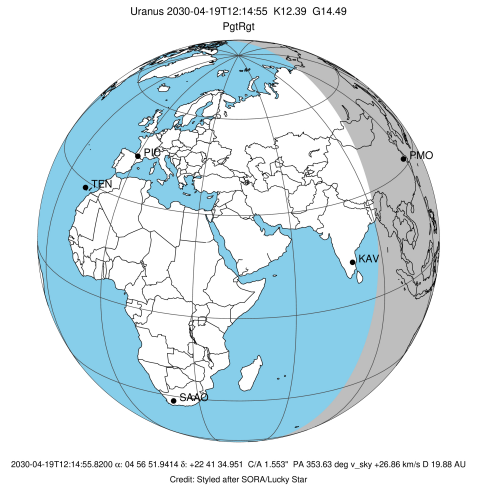
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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	+++++	+ +	+++++	APR 19 11:49 - APR 19 12:47	PieRie
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					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2030-04-19T12:18:24.870
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : PMO
 Location : Purple Mtn Obs. Nanking
 Latitude (deg) : 32.06667
 E. Longitude (deg) : 118.82089
 Altitude (km) : 0.364
 Gaia source ID : 3412547027880352512
 2Mass ID (if available) : 04565193+2241350
 ICRS Star Coord at Epoch: 04h 56m 51.94143s +22:41:34.95149s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 12.388
 G magnitude : 14.488
 RP magnitude : 13.783
 BP magnitude : 15.029
 DUPflag : 0
 Distance (au) : 19.879
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 26.86
 Sun-Target sep (deg) : 46.40
 Sun-Moon sep (deg) : 153.81
 B (ring opening deg) : 81.93
 PA of pole (deg) : -21.80
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.417
 C/A sky separation (km) : 20426.7
 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	2030-04-19T11:49:02.365		28.97	-15.40	51554.89	-24.48		
lambda	I	2030-04-19T11:50:04.982		28.75	-15.60	50026.71	-24.33		
delta	I	2030-04-19T11:51:16.192		28.50	-15.83	48300.35	-24.15		
gamma	I	2030-04-19T11:51:44.215		28.40	-15.92	47624.62	-24.07		
eta	I	2030-04-19T11:52:02.865		28.34	-15.98	47176.12	-24.02		
beta	I	2030-04-19T11:53:05.332		28.12	-16.18	45681.17	-23.83		
alpha	I	2030-04-19T11:53:46.918		27.98	-16.31	44692.44	-23.69		
4	I	2030-04-19T11:55:17.402		27.66	-16.60	42563.94	-23.38		
5	I	2030-04-19T11:55:33.632		27.60	-16.66	42186.03	-23.32		
6	I	2030-04-19T11:55:50.267		27.55	-16.71	41799.26	-23.24		
Uranus	I	2030-04-19T12:09:22.762		24.72	-19.28	25047.64		-7.59	-7.95
Uranus	E	2030-04-19T12:27:45.077		20.92	-22.69	25336.66		-4.96	-5.19
6	E	2030-04-19T12:41:08.466		18.17	-25.10	41873.08	23.32		
5	E	2030-04-19T12:41:27.465		18.11	-25.15	42314.80	23.40		
4	E	2030-04-19T12:41:40.117		18.06	-25.19	42613.02	23.46		
alpha	E	2030-04-19T12:43:09.133		17.76	-25.45	44715.69	23.78		
beta	E	2030-04-19T12:43:48.233		17.63	-25.57	45648.03	23.92		
eta	E	2030-04-19T12:44:51.864		17.41	-25.76	47176.12	24.11		
gamma	E	2030-04-19T12:45:10.391		17.35	-25.81	47623.35	24.17		
delta	E	2030-04-19T12:45:38.358		17.25	-25.89	48300.35	24.25		
lambda	E	2030-04-19T12:46:49.285		17.01	-26.10	50026.71	24.43		
epsilon	E	2030-04-19T12:47:24.432		16.89	-26.20	50886.90	24.58		