

target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2033-04-20T15:20:30.110
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3427506158454978688
 2Mass ID (if available) : 05512649+2338188

Uranus 2033-04-20T15:20:30 K13.24 G17.56 PgtRgt

ICRS Star Coord at Epoch: 05h 51m 26.53870s +23:38:19.63661s

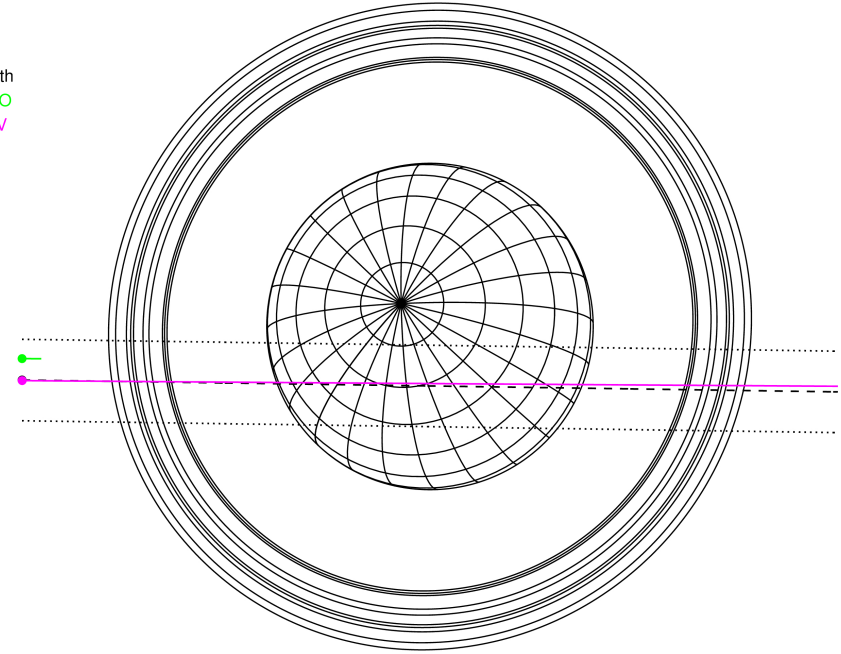
RUWE (>1.4 is poor) : 0.00
 K magnitude : 13.239
 G magnitude : 17.563
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.516
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 22.29
 Sun-Target sep (deg) : 57.64
 Sun-Moon sep (deg) : 169.23
 B (ring opening deg) : 76.95
 PA of pole (deg) : 51.48

Uranus 2033-04-20T15:20:30 K13.24 G17.56
 PgtRgt



2033-04-20T15:20:30.1100 ex: 05 51 26.5387 s: +23 38 19.637 C/A 0.652° PA 359.17 deg v_sky +22.29 km/s D 19.52 AU
 Credit: Styled after SORA/Lucky Star

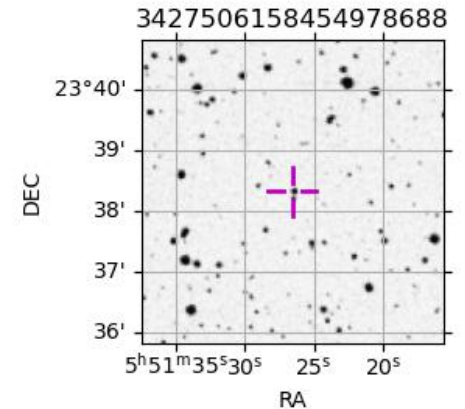
Earth
 PMO
 KAV



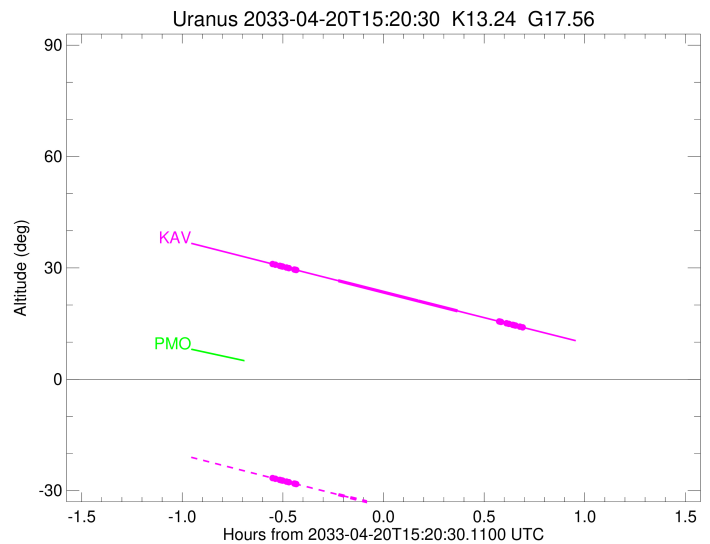
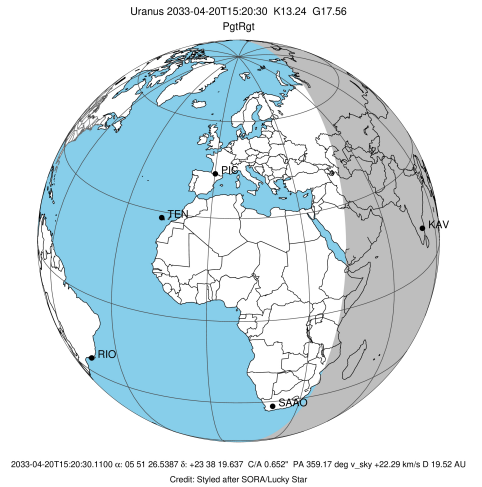
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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	OCode
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					PnnRnn
KAV	Kavalur Observatory	12.6	78.8	+++++	+ +	+++++	APR 20 14:47 - APR 20 16:02	PieRie
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 : 2033-04-20T15:24:57.120
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : KAV
 Location : Kavalur Observatory
 Latitude (deg) : 12.57556
 E. Longitude (deg) : 78.83167
 Altitude (km) : 0.722
 Gaia source ID : 3427506158454978688
 2Mass ID (if available) : 05512649+2338188
 ICRS Star Coord at Epoch: 05h 51m 26.53870s +23:38:19.63661s
 RUWE (>1.4 is poor) : 0.00
 K magnitude : 13.239
 G magnitude : 17.563
 RP magnitude : 0.000
 BP magnitude : 0.000
 DUPflag : 0
 Distance (au) : 19.517
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 22.29
 Sun-Target sep (deg) : 57.64
 Sun-Moon sep (deg) : 168.58
 B (ring opening deg) : 76.95
 PA of pole (deg) : 51.48
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.631
 C/A sky separation (km) : 8936.4
 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_itrfr93_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	2033-04-20T14:47:20.524		31.07	-26.60	51274.94	-22.10		
lambda	I	2033-04-20T14:48:17.113		30.85	-26.81	50026.71	-22.05		
delta	I	2033-04-20T14:49:35.450		30.55	-27.11	48300.35	-22.02		
gamma	I	2033-04-20T14:50:05.850		30.44	-27.23	47630.96	-22.01		
eta	I	2033-04-20T14:50:26.514		30.36	-27.30	47176.12	-22.01		
beta	I	2033-04-20T14:51:35.204		30.10	-27.57	45665.06	-21.98		
alpha	I	2033-04-20T14:52:18.912		29.93	-27.73	44705.34	-21.97		
4	I	2033-04-20T14:53:56.122		29.56	-28.10	42574.26	-21.92		
5	I	2033-04-20T14:54:15.081		29.48	-28.17	42157.65	-21.90		
6	I	2033-04-20T14:54:28.024		29.43	-28.22	41869.99	-21.89		
Uranus	I	2033-04-20T15:07:01.919		26.55	-31.08	25405.46		6.74	7.05
Uranus	E	2033-04-20T15:42:33.306		18.42	-38.97	25050.54		-12.46	-13.03
6	E	2033-04-20T15:54:57.246		15.59	-41.66	41796.11	22.02		
5	E	2033-04-20T15:55:19.714		15.50	-41.74	42296.38	22.04		
4	E	2033-04-20T15:55:32.603		15.46	-41.78	42587.23	22.06		
alpha	E	2033-04-20T15:57:10.471		15.08	-42.13	44742.99	22.11		
beta	E	2033-04-20T15:57:52.152		14.93	-42.28	45665.18	22.13		
eta	E	2033-04-20T15:59:00.396		14.67	-42.52	47176.12	22.15		
gamma	E	2033-04-20T15:59:20.556		14.59	-42.59	47622.84	22.16		
delta	E	2033-04-20T15:59:51.116		14.47	-42.70	48300.35	22.18		
lambda	E	2033-04-20T16:01:08.908		14.18	-42.98	50026.71	22.21		
epsilon	E	2033-04-20T16:01:59.903		13.99	-43.16	51159.65	22.26		