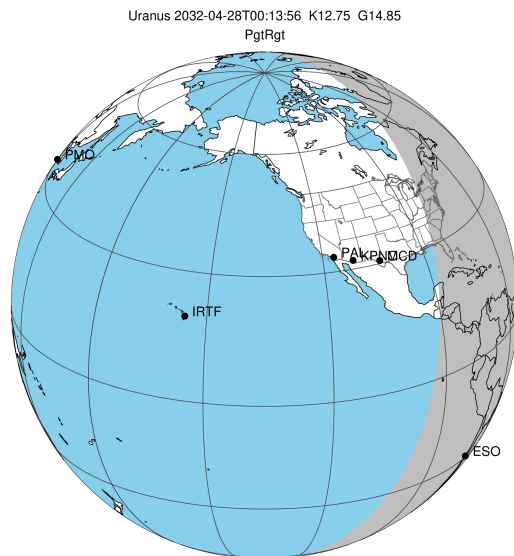


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2032-04-28T00:13:56.530
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3404550451610610176
 2Mass ID (if available) : 05343008+2328095

Uranus 2032-04-28T00:13:56 K12.75 G14.85 PgtRgt

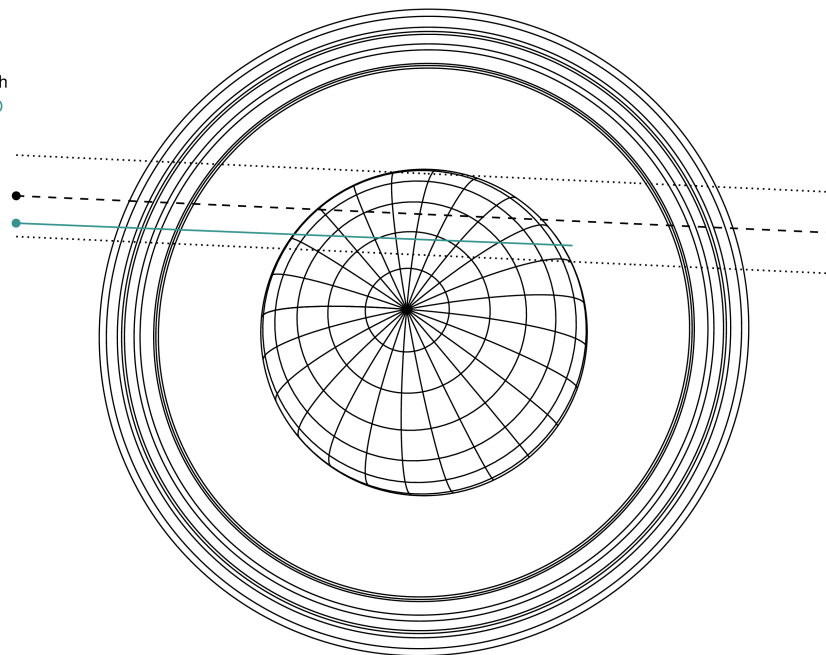
ICRS Star Coord at Epoch: 05h 34m 30.09764s +23:28:09.56753s

RUWE (>1.4 is poor) : 0.94
 K magnitude : 12.751
 G magnitude : 14.849
 RP magnitude : 14.150
 BP magnitude : 15.378
 DUPflag : 0
 Distance (au) : 19.744
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 26.90
 Sun-Target sep (deg) : 46.32
 Sun-Moon sep (deg) : 162.85
 B (ring opening deg) : 79.79
 PA of pole (deg) : 36.79



2032-04-28T00:13:56.5300 ex: 05 34 30.0976 s: +23 28 09.568 C/A 1.297" PA 177.41 deg v_sky +26.90 km/s D 19.74 AU
 Credit: Styled after SORA/Lucky Star

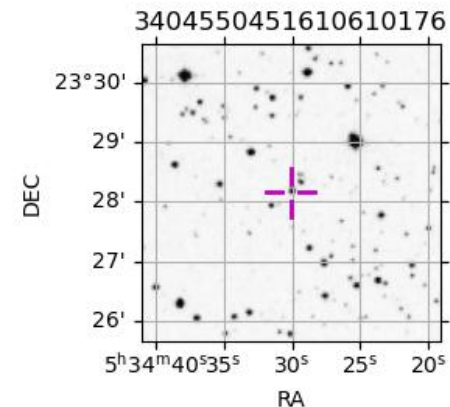
Earth
 ESO



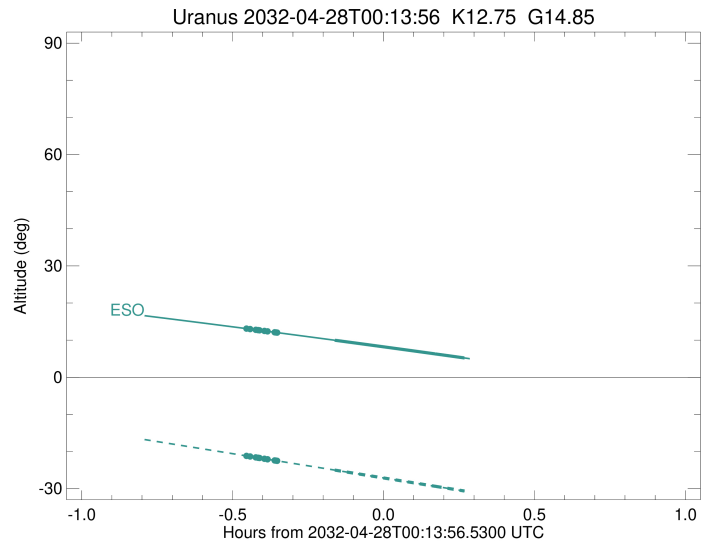
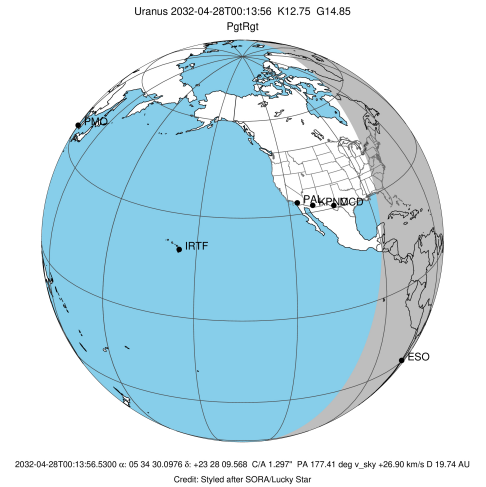
#	a(km)	ring
1	41837.2	6
2	42235.0	5
3	42571.2	4
4	44718.5	alpha
5	45661.1	beta
6	47176.1	eta
7	47626.3	gamma
8	48300.3	delta
9	50026.7	lambda
10	51149.4	epsilon

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					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	+++++	+ +		APR 27 23:46 - APR 28 00:30	PieRin
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 : 2032-04-28T00:16:56.750
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Observer code : ESO
 Location : European Southern Obs. (3.6m)
 Latitude (deg) : -29.26097
 E. Longitude (deg) : 289.26831
 Altitude (km) : 2.400
 Gaia source ID : 3404550451610610176
 2Mass ID (if available) : 05343008+2328095
 ICRS Star Coord at Epoch: 05h 34m 30.09764s +23:28:09.56753s
 RUWE (>1.4 is poor) : 0.94
 K magnitude : 12.751
 G magnitude : 14.849
 RP magnitude : 14.150
 BP magnitude : 15.378
 DUPflag : 0
 Distance (au) : 19.744
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 26.90
 Sun-Target sep (deg) : 46.32
 Sun-Moon sep (deg) : 163.49
 B (ring opening deg) : 79.79
 PA of pole (deg) : 36.79
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 1.015
 C/A sky separation (km) : 14535.1
 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	2032-04-27T23:46:29.042		13.15	-21.13	51503.10	-25.76		
lambda	I	2032-04-27T23:47:26.499		12.98	-21.34	50026.71	-25.66		
delta	I	2032-04-27T23:48:33.886		12.78	-21.59	48300.35	-25.57		
gamma	I	2032-04-27T23:49:00.444		12.70	-21.68	47621.64	-25.54		
eta	I	2032-04-27T23:49:17.898		12.65	-21.75	47176.12	-25.51		
beta	I	2032-04-27T23:50:17.564		12.47	-21.96	45656.68	-25.42		
alpha	I	2032-04-27T23:50:54.260		12.37	-22.10	44723.03	-25.35		
4	I	2032-04-27T23:52:19.314		12.12	-22.41	42570.87	-25.21		
5	I	2032-04-27T23:52:29.879		12.08	-22.44	42314.60	-25.18		
6	I	2032-04-27T23:52:48.627		12.03	-22.51	41840.27	-25.13		
Uranus	I	2032-04-28T00:04:14.147		9.98	-25.00	25030.43		9.84	10.29
Uranus	E	2032-04-28T00:30:02.667		5.20	-30.64	25555.52		-0.78	-0.82
6	E	2032-04-28T00:41:18.221	3.06x	-33.10	41807.09	25.22			
5	E	2032-04-28T00:41:33.084	3.02x	-33.16	42181.17	25.27			
4	E	2032-04-28T00:41:49.790	2.96x	-33.22	42600.76	25.30			
alpha	E	2032-04-28T00:43:12.272	2.70x	-33.52	44694.14	25.44			
beta	E	2032-04-28T00:43:49.876	2.58x	-33.65	45652.76	25.51			
eta	E	2032-04-28T00:44:49.462	2.39x	-33.87	47176.12	25.61			
gamma	E	2032-04-28T00:45:07.116	2.33x	-33.94	47628.49	25.64			
delta	E	2032-04-28T00:45:33.302	2.25x	-34.03	48300.35	25.68			
lambda	E	2032-04-28T00:46:40.419	2.03x	-34.28	50026.71	25.77			
epsilon	E	2032-04-28T00:47:16.567	1.92x	-34.41	50958.97	25.87			