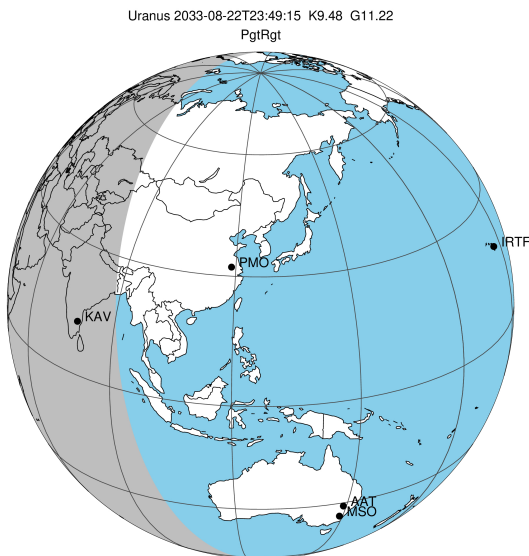


target : Uranus
 target radius (km) : 25559.00
 C/A epoch : 2033-08-22T23:49:15.470
 Event type : PgtRgt
 : Uranus occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 3377537095886180096
 2Mass ID (if available) : 06200348+2335312

ICRS Star Coord at Epoch: 06h 20m 03.48814s +23:35:31.11192s

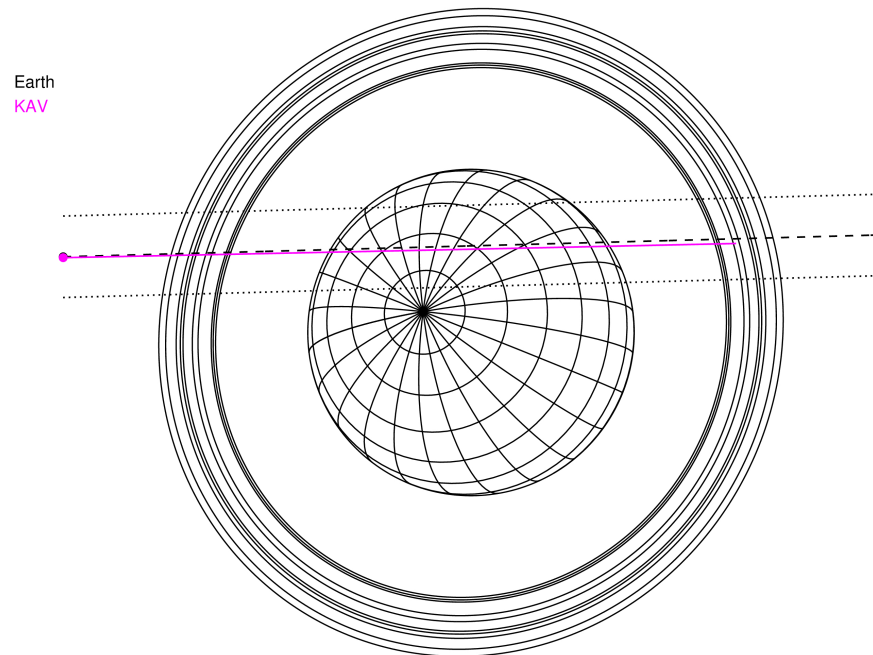
RUWE (>1.4 is poor) : 0.79
 K magnitude : 9.480
 G magnitude : 11.220
 RP magnitude : 10.622
 BP magnitude : 11.643
 DUPflag : 0
 Distance (au) : 19.536
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 23.43
 Sun-Target sep (deg) : 55.13
 Sun-Moon sep (deg) : 33.68
 B (ring opening deg) : 71.32
 PA of pole (deg) : 66.42

#	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



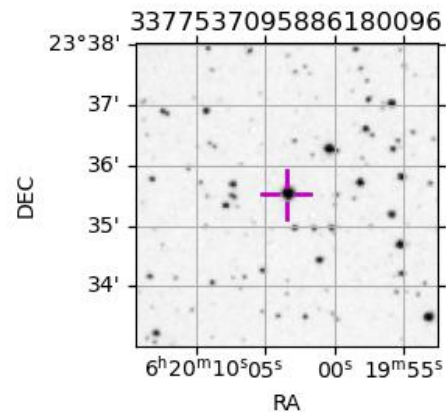
2033-08-22T23:49:15.4700 ex: 06 20 03.4881 s: +23 35 31.112 C/A 0.962° PA 181.53 deg v_sky +23.43 km/s D 19.54 AU
 Credit: Styled after SORA/Lucky Star

Uranus 2033-08-22T23:49:15 K9.48 G11.22 PgtRgt

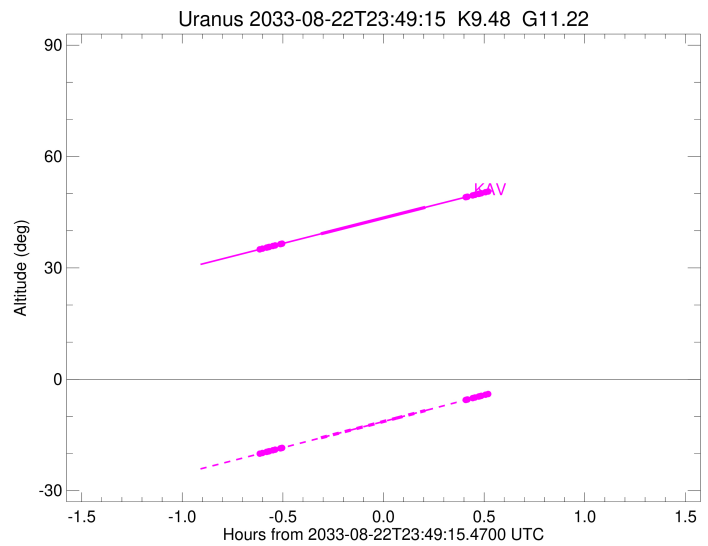
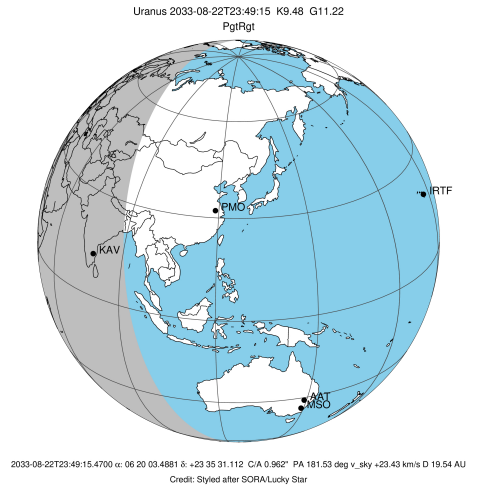


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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	+++++	+ +	++++	AUG 22 23:12 - AUG 23 00:15	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 : 2033-08-22T23:45:59.740
 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 : 3377537095886180096
 2Mass ID (if available) : 06200348+2335312
 ICRS Star Coord at Epoch: 06h 20m 03.48814s +23:35:31.11192s
 RUWE (>1.4 is poor) : 0.79
 K magnitude : 9.480
 G magnitude : 11.220
 RP magnitude : 10.622
 BP magnitude : 11.643
 DUPflag : 0
 Distance (au) : 19.536
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 23.43
 Sun-Target sep (deg) : 55.13
 Sun-Moon sep (deg) : 34.57
 B (ring opening deg) : 71.32
 PA of pole (deg) : 66.42
 Pole direction: RA (deg): 257.31100
 Dec (deg): -15.17500
 C/A sky separation (") : 0.920
 C/A sky separation (km) : 13036.8
 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	2033-08-22T23:12:22.912		35.00	-20.04	51127.75	-23.48		
lambda	I	2033-08-22T23:13:09.944		35.18	-19.85	50026.71	-23.39		
delta	I	2033-08-22T23:14:23.853		35.47	-19.57	48300.35	-23.32		
gamma	I	2033-08-22T23:14:52.755		35.58	-19.46	47626.62	-23.30		
eta	I	2033-08-22T23:15:12.101		35.65	-19.38	47176.12	-23.28		
beta	I	2033-08-22T23:16:16.470		35.90	-19.13	45681.23	-23.21		
alpha	I	2033-08-22T23:16:56.924		36.05	-18.97	44738.16	-23.16		
4	I	2033-08-22T23:18:30.895		36.41	-18.61	42578.53	-23.04		
5	I	2033-08-22T23:18:48.296		36.48	-18.54	42159.30	-23.02		
6	I	2033-08-22T23:19:00.436		36.52	-18.49	41876.03	-23.00		
Uranus	I	2033-08-22T23:30:35.802		39.18	-15.78	25040.43		18.55	19.36
Uranus	E	2033-08-23T00:01:42.377		46.31	-8.43	25388.64		-10.40	-10.88
6	E	2033-08-23T00:13:43.958		49.05	-5.58	41816.42	22.90		
5	E	2033-08-23T00:14:05.366		49.13	-5.49	42311.74	22.92		
4	E	2033-08-23T00:14:14.913		49.16	-5.46	42539.02	22.94		
alpha	E	2033-08-23T00:15:48.655		49.52	-5.08	44686.73	23.05		
beta	E	2033-08-23T00:16:29.972		49.68	-4.92x	45644.26	23.10		
eta	E	2033-08-23T00:17:36.231		49.93	-4.66x	47176.12	23.17		
gamma	E	2033-08-23T00:17:55.762		50.00	-4.58x	47628.78	23.19		
delta	E	2033-08-23T00:18:24.712		50.11	-4.47x	48300.35	23.21		
lambda	E	2033-08-23T00:19:38.989		50.39	-4.17x	50026.71	23.27		
epsilon	E	2033-08-23T00:20:36.412		50.61	-3.94x	51364.35	23.36		