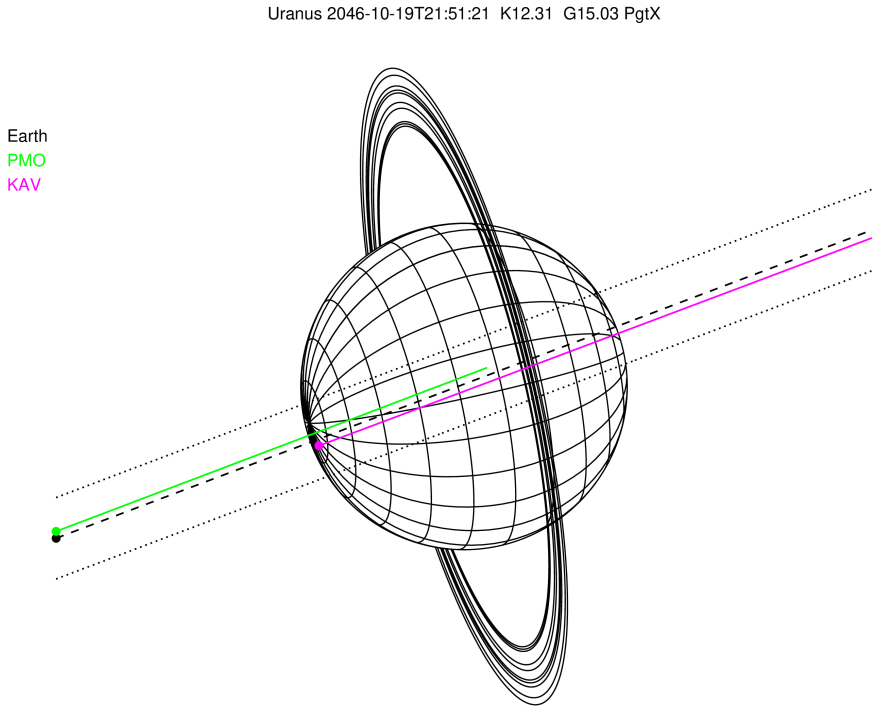
Stellar occultation prediction by rfrench@wellesley.edu Sun Jun 25 02:45:02 2023

target : Uranus
target radius (km) : 25559.00
C/A epoch : 2046-10-19T21:51:21.760
Event type : PgtX
: Uranus occs: geocentric, topocentric
: No ring occs
Gaia source ID : 3882408684760792448
2Mass ID (if available) : 10263396+1032208

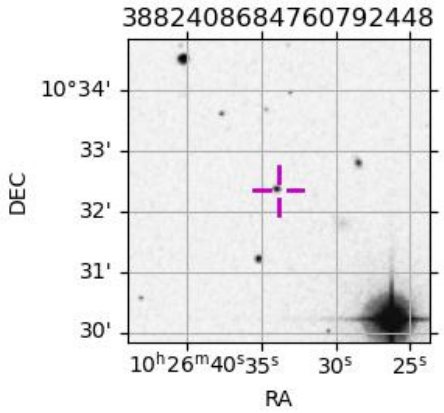
ICRS Star Coord at Epoch: 10h 26m 33.90803s +10:32:20.39981s
RUWE (>1.4 is poor) : 20.32
K magnitude : 12.313
G magnitude : 15.027
RP magnitude : 14.153
BP magnitude : 15.804
DUPflag : 0
Distance (au) : 18.924
f0 (km) : 0.000
g0 (km) : 0.000
skyplane vel. (km/s) : 25.34
Sun-Target sep (deg) : 51.52
Sun-Moon sep (deg) : 73.40
B (ring opening deg) : 12.92
PA of pole (deg) : 103.33

#	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

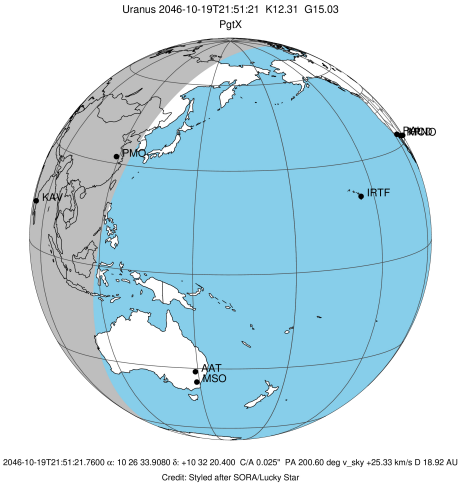


Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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		+		OCT 19 21:31 - OCT 19 21:31	PinRnn
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			+	OCT 19 22:04 - OCT 19 22:04	PneRnn
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



Uranus_2046-10-19T21_51_21.7600_PMO.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:21:29 2023

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target                  : Uranus
target radius (km)      :  25559.00
C/A epoch               : 2046-10-19T21:48:29.630
Event type              : PgtX
: Uranus occs: geocentric, topocentric
: No ring occs
Observer code           : PMO
Location                : Purple Mtn Obs. Nanking
Latitude (deg)          :  32.06667
E. Longitude (deg)      : 118.82089
Altitude (km)           :   0.364
Gaia source ID          : 3882408684760792448
2Mass ID (if available) : 10263396+1032208
ICRS Star Coord at Epoch: 10h 26m 33.90803s +10:32:20.39981s
RUWE (>1.4 is poor)     :  20.32
K magnitude             : 12.313
G magnitude             : 15.027
RP magnitude            : 14.153
BP magnitude            : 15.804
DUPflag                 : 0
Distance (au)           : 18.924
f0 (km)                 :       0.000
g0 (km)                 :       0.000
skyplane vel. (km/s)    :  25.34
Sun-Target sep (deg)    :   51.52
Sun-Moon sep (deg)      :   73.86
B (ring opening deg)    :   12.92
PA of pole (deg)        :  103.33
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (")  :   0.107
C/A sky separation (km) :   1469.9
NAIF SPICE kernels      : RAJobs_U111+rgf15.spk
URKALLv1.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
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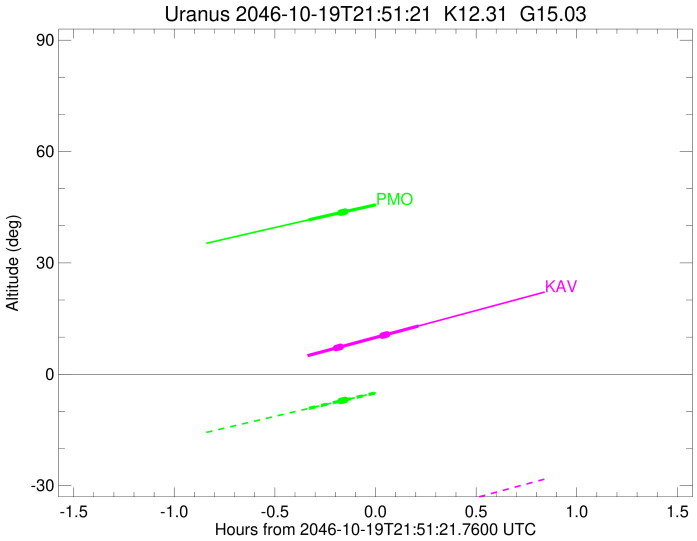
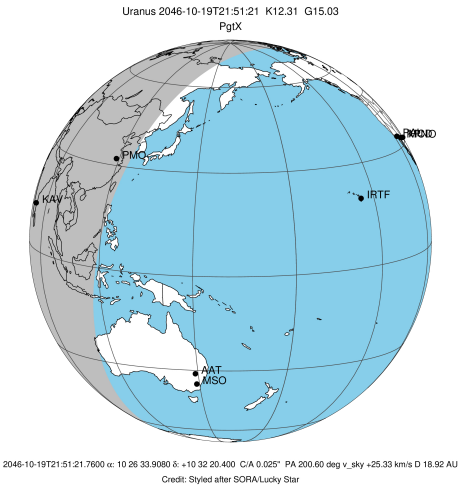


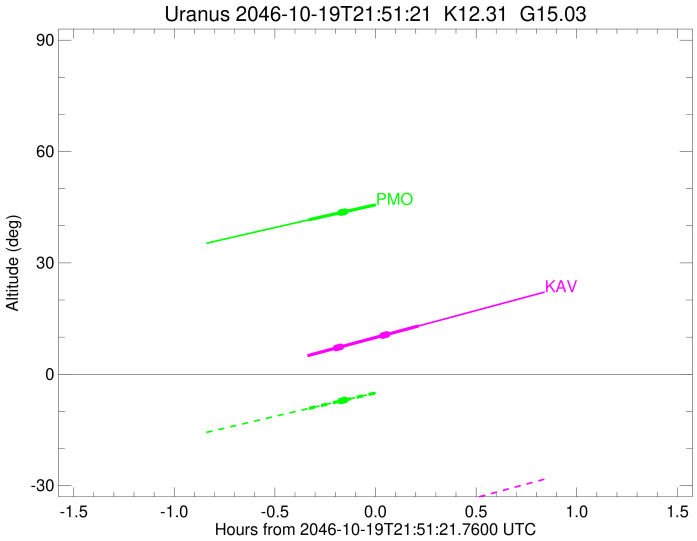
b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2046-10-19T21:40:56.528	b	43.53	-7.21	51487.64	-110.57		
lambda	I	2046-10-19T21:41:09.745	b	43.58	-7.16	50026.71	-110.52		
delta	I	2046-10-19T21:41:25.369	b	43.63	-7.10	48300.35	-110.47		
gamma	I	2046-10-19T21:41:31.432	b	43.65	-7.08	47630.54	-110.45		
eta	I	2046-10-19T21:41:35.547	b	43.67	-7.07	47176.12	-110.44		
beta	I	2046-10-19T21:41:49.254	b	43.71	-7.02	45679.24	-110.43		
alpha	I	2046-10-19T21:41:57.512	b	43.74	-6.99	44711.58	-110.26		
4	I	2046-10-19T21:42:16.329	b	43.80	-6.93	42600.93	-110.10		
5	I	2046-10-19T21:42:20.024	b	43.82	-6.91	42271.87	-110.25		
6	I	2046-10-19T21:42:22.648	b	43.83	-6.90	41839.88	-109.88		
Uranus	I	2046-10-19T21:31:32.564		41.62	-9.18	25530.19		76.43	77.01
Uranus	E	2046-10-19T22:05:27.621		48.44	-2.07x	25531.05		-73.21	-73.92
6	E	2046-10-19T21:54:51.675	b	46.34	-4.29x	41837.54	109.90		
5	E	2046-10-19T21:54:53.637	b	46.34	-4.28x	42193.07	110.27		
4	E	2046-10-19T21:54:57.367	b	46.36	-4.27x	42543.97	110.11		
alpha	E	2046-10-19T21:55:16.830	b	46.42	-4.20x	44723.19	110.26		
beta	E	2046-10-19T21:55:24.677	b	46.45	-4.17x	45642.51	110.43		
eta	E	2046-10-19T21:55:38.713	b	46.49	-4.12x	47176.12	110.43		
gamma	E	2046-10-19T21:55:42.749	b	46.51	-4.11x	47621.82	110.44		
delta	E	2046-10-19T21:55:48.893	b	46.53	-4.09x	48300.34	110.45		
lambda	E	2046-10-19T21:56:04.519	b	46.58	-4.03x	50026.71	110.49		
epsilon	E	2046-10-19T21:56:11.721	b	46.60	-4.01x	50822.54	110.53		

Uranus_2046-10-19T21_51_21.7600_KAV.txt
Occultation predictions computed by rfrench@wellesley.edu Sun Jun 11 11:32:12 2023

target : Uranus
target radius (km) : 25559.00
C/A epoch : 2046-10-19T21:47:16.500
Event type : PgtX
: Uranus occs: geocentric, topocentric
: No ring occs
Observer code : KAV
Location : Kavalur Observatory
Latitude (deg) : 12.57556
E. Longitude (deg) : 78.83167
Altitude (km) : 0.722
Gaia source ID : 3882408684760792448
2Mass ID (if available) : 10263396+1032208
ICRS Star Coord at Epoch: 10h 26m 33.90803s +10:32:20.39981s
RUWE (>1.4 is poor) : 20.32
K magnitude : 12.313
G magnitude : 15.027
RP magnitude : 14.153
BP magnitude : 15.804
DUPflag : 0
Distance (au) : 18.924
f0 (km) : 0.000
g0 (km) : 0.000
skyplane vel. (km/s) : 25.34
Sun-Target sep (deg) : 51.52
Sun-Moon sep (deg) : 73.30
B (ring opening deg) : 12.92
PA of pole (deg) : 103.33
Pole direction: RA (deg): 257.31100
Dec (deg): -15.17500
C/A sky separation (") : 0.052
C/A sky separation (km) : 710.7
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.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





b: ring blocked by planet x: target alt < 5.0 deg or sun > -5.0 deg

Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
epsilon	I	2046-10-19T21:39:36.641	b	7.06	-43.40	51477.89	-111.62		
lambda	I	2046-10-19T21:39:49.643	b	7.11	-43.34	50026.71	-111.59		
delta	I	2046-10-19T21:40:05.116	b	7.18	-43.28	48300.35	-111.55		
gamma	I	2046-10-19T21:40:11.120	b	7.20	-43.26	47630.67	-111.53		
eta	I	2046-10-19T21:40:15.196	b	7.22	-43.24	47176.12	-111.52		
beta	I	2046-10-19T21:40:28.764	b	7.27	-43.19	45679.63	-111.51		
alpha	I	2046-10-19T21:40:36.949	b	7.30	-43.15	44713.21	-111.35		
4	I	2046-10-19T21:40:55.631	b	7.38	-43.08	42599.15	-111.18		
5	I	2046-10-19T21:40:59.126	b	7.39	-43.06	42275.48	-111.35		
6	I	2046-10-19T21:41:01.798	b	7.40	-43.05	41837.68	-110.96		
Uranus	I	2046-10-19T21:30:26.752		4.85x	-45.63	25530.71		74.40	75.06
Uranus	E	2046-10-19T22:04:07.653		13.00	-37.42	25530.31		-75.92	-76.52
6	E	2046-10-19T21:53:24.456	b	10.40	-40.03	41835.25	110.80		
5	E	2046-10-19T21:53:26.431	b	10.41	-40.03	42196.78	111.18		
4	E	2046-10-19T21:53:30.202	b	10.42	-40.01	42542.08	111.01		
alpha	E	2046-10-19T21:53:49.520	b	10.50	-39.93	44724.88	111.18		
beta	E	2046-10-19T21:53:57.270	b	10.53	-39.90	45642.90	111.34		
eta	E	2046-10-19T21:54:11.190	b	10.59	-39.84	47176.12	111.35		
gamma	E	2046-10-19T21:54:15.194	b	10.60	-39.83	47621.95	111.36		
delta	E	2046-10-19T21:54:21.286	b	10.63	-39.80	48300.35	111.38		
lambda	E	2046-10-19T21:54:36.783	b	10.69	-39.74	50026.72	111.42		
epsilon	E	2046-10-19T21:54:43.833	b	10.72	-39.71	50812.23	111.43		