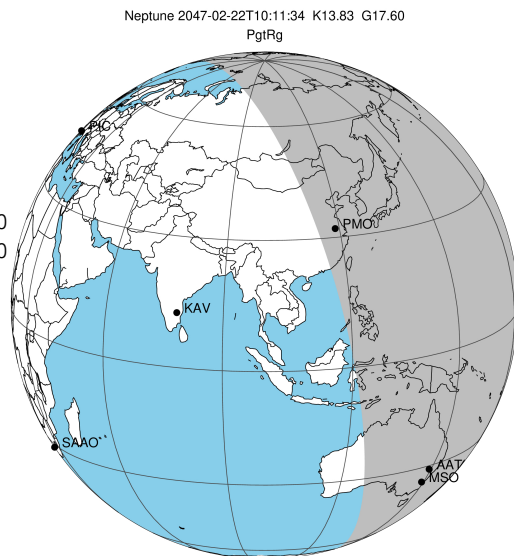


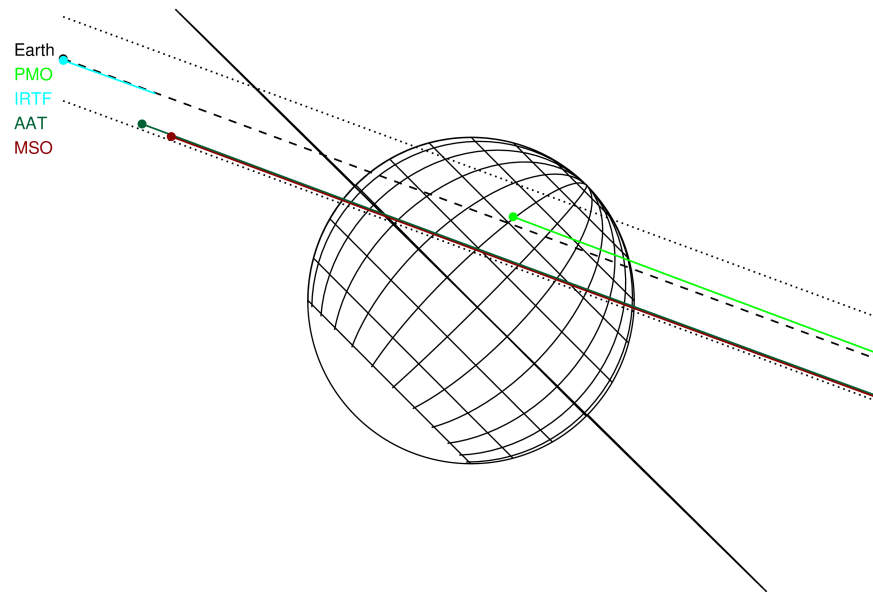
target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2047-02-22T10:11:34.650
 Event type : PgtRg
 : Neptune occs: geocentric, topocentric
 : Ring occs: geocentric, not topocentric
 Gaia source ID : 32554512074144128
 2Mass ID (if available) : 02563679+1459068

ICRS Star Coord at Epoch: 02h 56m 36.80343s +14:59:06.12774s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 13.828
 G magnitude : 17.604
 RP magnitude : 16.411
 BP magnitude : 19.106
 DUPflag : 0
 Distance (au) : 30.088
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 13.93
 Sun-Target sep (deg) : 73.07
 Sun-Moon sep (deg) : 100.00
 B (ring opening deg) : 0.05
 PA of pole (deg) : -45.08
 # a(km) ring



2047-02-22T10:11:34.6500 cc: 02 56 36.8034 s: +14 59 06.1278 C/A 0.595° PA 159.74 deg v_sky +13.93 km/s D 30.09 AU
 Credit: Styled after SORA/Lucky Star

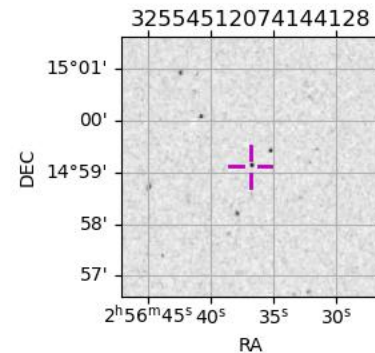
Neptune 2047-02-22T10:11:34 K13.83 G17.60 PgtRg



- 1 42000.0 Galle
- 2 53200.0 LeVerrier
- 3 55200.0 Lassell
- 4 57200.0 Arago
- 5 61953.0 Galatea
- 6 62933.0 Adams

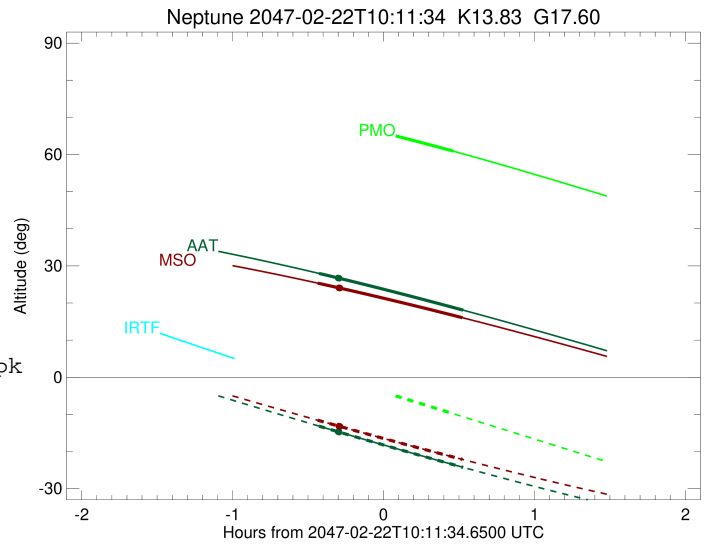
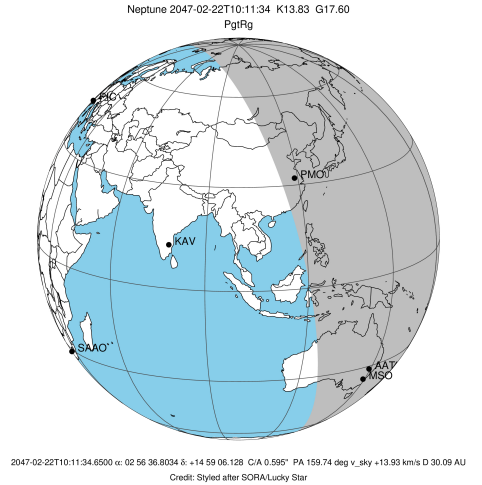
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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		+		FEB 22 10:39 - FEB 22 10:39	PneRnn
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		+	+	FEB 22 09:45 - FEB 22 10:43	PieRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0		+	+	FEB 22 09:45 - FEB 22 10:43	PieRnn



```

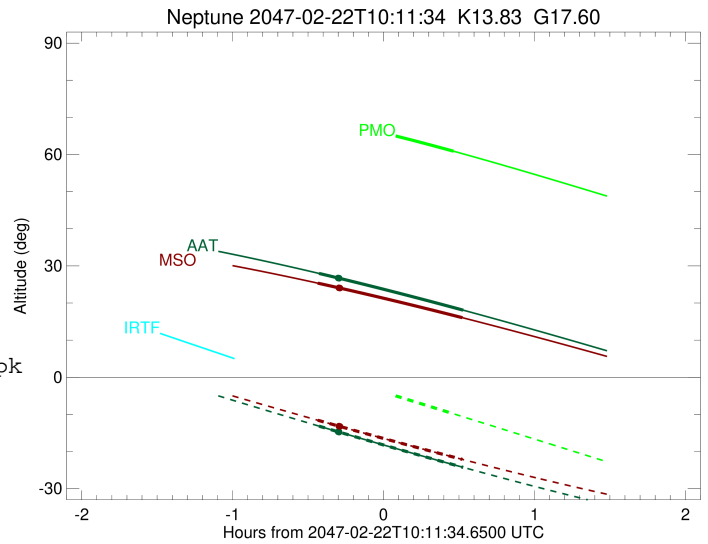
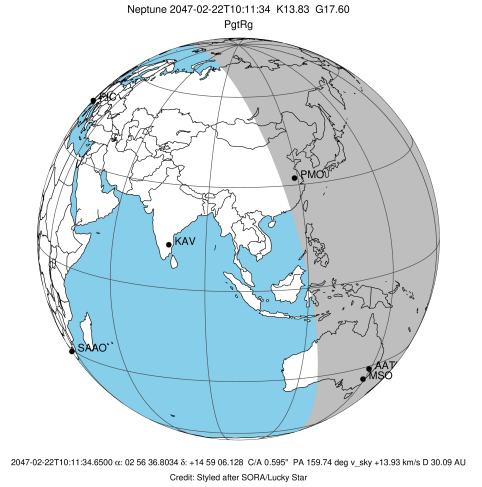
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2047-02-22T10:14:33.350
Event type            : PgtRg
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, not topocentric
Observer code        : PMO
Location              : Purple Mtn Obs. Nanking
Latitude (deg)       : 32.06667
E. Longitude (deg)   : 118.82089
Altitude (km)        : 0.364
Gaia source ID       : 32554512074144128
2Mass ID (if available) : 02563679+1459068
ICRS Star Coord at Epoch: 02h 56m 36.80343s +14:59:06.12774s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 13.828
G magnitude           : 17.604
RP magnitude          : 16.411
BP magnitude          : 19.106
DUPflag              : 0
Distance (au)         : 30.088
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 13.93
Sun-Target sep (deg) : 73.07
Sun-Moon sep (deg)   : 100.78
B (ring opening deg) : 0.05
PA of pole (deg)     : -45.08
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.648
C/A sky separation (km) : 14143.0
NAIF SPICE kernels   : RAJobs_U111+rgf16.spk
URKALLv1.spk
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
earthstns_itr93_040916.bsp
earth_200101_990628_predict.bpc
pck00010.tpc
pck.urall11.tpc.Neptune
naif0012.tls
IAU_NEPTUNE_for_RINGFIT.tpc.BECAREFUL
earth_flat_IAU.spk
    
```



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
Adams	I	2047-02-22T09:36:02.664		70.83	3.39x	63029.45	-5046.79		
Galatea	I	2047-02-22T09:36:02.859		70.83	3.38x	62058.50	-5012.72		
Arago	I	2047-02-22T09:36:03.824		70.83	3.38x	57365.54	-4818.46		
Lassell	I	2047-02-22T09:36:04.243		70.83	3.38x	55400.73	-4719.14		
LeVerrier	I	2047-02-22T09:36:04.672		70.83	3.38x	53446.52	-4606.82		
Galle	I	2047-02-22T09:36:07.396		70.83	3.37x	42838.33	-3581.55		
Neptune	I	2047-02-22T09:49:34.604		69.15	0.59x	24764.01		10.43	10.79
Neptune	E	2047-02-22T10:39:30.007		60.88	-9.86	24764.00		59.29	60.14
Galle	E	2047-02-22T09:36:07.396		70.83	3.37x	42805.15	-3576.47		
LeVerrier	E	2047-02-22T09:36:04.672		70.83	3.38x	53405.87	-4604.32		
Lassell	E	2047-02-22T09:36:04.243		70.83	3.38x	55363.36	-4717.14		
Arago	E	2047-02-22T09:36:03.824		70.83	3.38x	57330.29	-4816.78		
Galatea	E	2047-02-22T09:36:02.859		70.83	3.38x	62030.38	-5011.72		
Adams	E	2047-02-22T09:36:02.664		70.83	3.39x	63002.66	-5045.88		

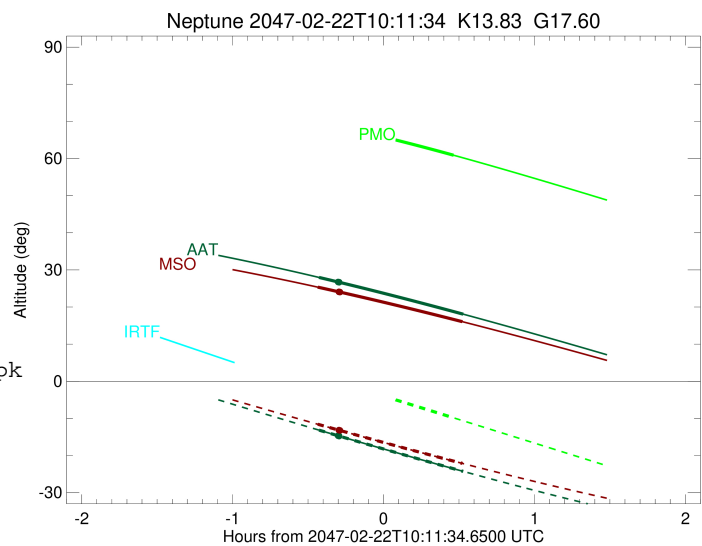
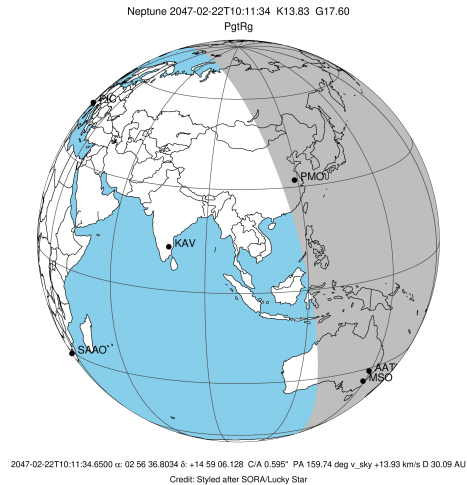
```

target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2047-02-22T10:14:37.050
Event type           : PgtRg
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, not topocentric
Observer code        : AAT
Location              : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 32554512074144128
2Mass ID (if available) : 02563679+1459068
ICRS Star Coord at Epoch: 02h 56m 36.80343s +14:59:06.12774s
RUWE (>1.4 is poor) : 0.96
K magnitude           : 13.828
G magnitude           : 17.604
RP magnitude         : 16.411
BP magnitude         : 19.106
DUPflag              : 0
Distance (au)        : 30.088
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 13.93
Sun-Target sep (deg) : 73.07
Sun-Moon sep (deg)   : 100.29
B (ring opening deg) : 0.05
PA of pole (deg)     : -45.08
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.352
C/A sky separation (km) : 7691.4
NAIF SPICE kernels   : RAJobs_U111+rgf16.spk
URKALLv1.spk
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
earthstns_itr93_040916.bsp
earth_200101_990628_predict.bpc
pck00010.tpc
pck.urall11.tpc.Neptune
naif0012.tls
IAU_NEPTUNE_for_RINGFIT.tpc.BECAREFUL
earth_flat_IAU.spk
    
```



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
Adams	I	2047-02-22T09:54:04.325	b	26.66	-14.79	62933.85	-5897.23		
Galatea	I	2047-02-22T09:54:04.491	b	26.66	-14.79	61954.02	-5888.27		
Arago	I	2047-02-22T09:54:05.301	b	26.65	-14.79	57201.64	-5837.74		
Lassell	I	2047-02-22T09:54:05.644	b	26.65	-14.79	55202.31	-5812.31		
LeVerrier	I	2047-02-22T09:54:05.989	b	26.65	-14.79	53202.79	-5783.81		
Galle	I	2047-02-22T09:54:07.961	b	26.65	-14.80	42013.81	-5535.40		
Neptune	I	2047-02-22T09:45:51.653		27.99	-13.15	24764.00		-6.63	-6.86
Neptune	E	2047-02-22T10:43:17.019		18.07	-24.28	24764.00		42.91	43.89
Galle	E	2047-02-22T09:54:07.961	b	26.65	-14.80	42006.60	-5535.18		
LeVerrier	E	2047-02-22T09:54:05.989	b	26.65	-14.79	53200.48	-5783.77		
Lassell	E	2047-02-22T09:54:05.644	b	26.65	-14.79	55199.98	-5812.28		
Arago	E	2047-02-22T09:54:05.301	b	26.65	-14.79	57199.89	-5837.73		
Galatea	E	2047-02-22T09:54:04.491	b	26.66	-14.79	61952.84	-5888.26		
Adams	E	2047-02-22T09:54:04.325	b	26.66	-14.79	62933.26	-5897.23		

target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2047-02-22T10:14:15.730
 Event type : PgtRg
 : Neptune occs: geocentric, topocentric
 : Ring occs: geocentric, not topocentric
 Observer code : MSO
 Location : Mt. Stromlo Observatory
 Latitude (deg) : -35.32000
 E. Longitude (deg) : 149.00833
 Altitude (km) : 0.770
 Gaia source ID : 32554512074144128
 2Mass ID (if available) : 02563679+1459068
 ICRS Star Coord at Epoch: 02h 56m 36.80343s +14:59:06.12774s
 RUWE (>1.4 is poor) : 0.96
 K magnitude : 13.828
 G magnitude : 17.604
 RP magnitude : 16.411
 BP magnitude : 19.106
 DUPflag : 0
 Distance (au) : 30.088
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 13.93
 Sun-Target sep (deg) : 73.07
 Sun-Moon sep (deg) : 100.27
 B (ring opening deg) : 0.05
 PA of pole (deg) : -45.08
 Pole direction: RA (deg): 299.33374
 Dec (deg): 42.95036
 C/A sky separation (") : 0.342
 C/A sky separation (km) : 7456.0
 NAIF SPICE kernels : RAJobs_U111+rgf16.spk
 URKALLv1.spk
 nep097.bsp
 nep101.bsp
 sat4401.bsp
 de440.bsp
 earth_720101_070426.bpc
 earthstns_itr93_040916.bsp
 earth_200101_990628_predict.bpc
 pck00010.tpc
 pck.urall11.tpc.Neptune
 naif0012.tls
 IAU_NEPTUNE_for_RINGFIT.tpc.BECAREFUL
 earth_flat_IAU.spk



Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
Adams	I	2047-02-22T09:54:21.618	b	24.01	-13.27	62933.75	-5922.51		
Galatea	I	2047-02-22T09:54:21.783	b	24.01	-13.27	61953.85	-5914.12		
Arago	I	2047-02-22T09:54:22.589	b	24.01	-13.27	57201.29	-5866.69		
Lassell	I	2047-02-22T09:54:22.931	b	24.00	-13.27	55201.80	-5842.84		
LeVerrier	I	2047-02-22T09:54:23.274	b	24.00	-13.27	53202.04	-5816.09		
Galle	I	2047-02-22T09:54:25.232	b	24.00	-13.28	42010.24	-5583.47		
Neptune	I	2047-02-22T09:45:26.274		25.36	-11.57	24764.00		-7.21	-7.46
Neptune	E	2047-02-22T10:42:59.928		16.04	-22.13	24764.00		42.34	43.32
Galle	E	2047-02-22T09:54:25.232	b	24.00	-13.28	42004.65	-5583.30		
LeVerrier	E	2047-02-22T09:54:23.274	b	24.00	-13.27	53200.30	-5816.06		
Lassell	E	2047-02-22T09:54:22.931	b	24.00	-13.27	55200.05	-5842.82		
Arago	E	2047-02-22T09:54:22.589	b	24.01	-13.27	57200.12	-5866.69		
Galatea	E	2047-02-22T09:54:21.783	b	24.01	-13.27	61953.26	-5914.11		
Adams	E	2047-02-22T09:54:21.618	b	24.01	-13.27	62933.17	-5922.53		