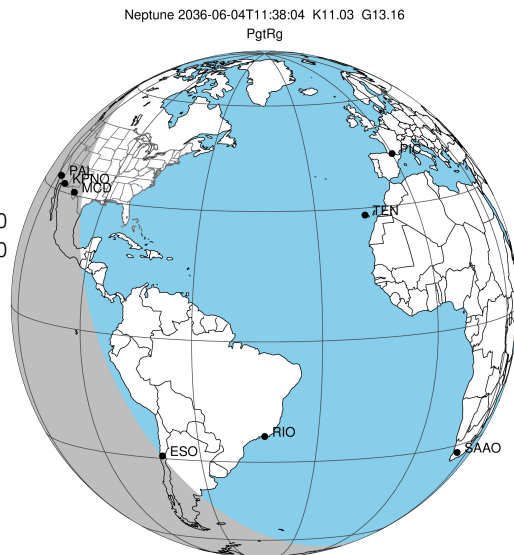


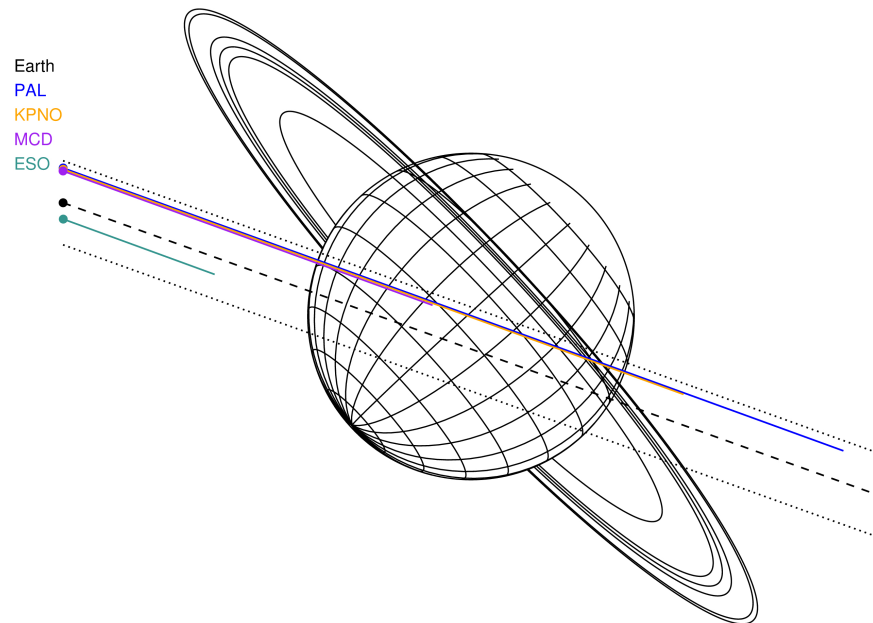
target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2036-06-04T11:38:04.680
 Event type : PgtRg
 : Neptune occs: geocentric, topocentric
 : Ring occs: geocentric, not topocentric
 Gaia source ID : 2571920768686360320
 2Mass ID (if available) : 01371318+0820506

Neptune 2036-06-04T11:38:04 K11.03 G13.16 PgtRg

ICRS Star Coord at Epoch: 01h 37m 13.19027s +08:20:50.47105s
 RUWE (>1.4 is poor) : 1.03
 K magnitude : 11.032
 G magnitude : 13.163
 RP magnitude : 12.496
 BP magnitude : 13.670
 DUPflag : 0
 Distance (au) : 30.495
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 25.17
 Sun-Target sep (deg) : 48.39
 Sun-Moon sep (deg) : 175.30
 B (ring opening deg) : -9.52
 PA of pole (deg) : -47.63



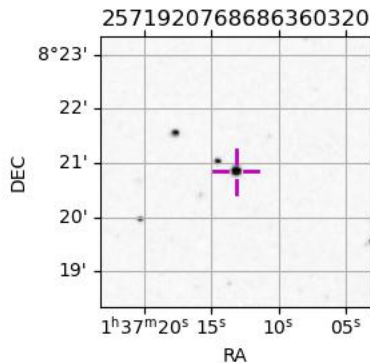
2036-06-04T11:38:04.6800 cc: 01 37 13.1903 s: +08 20 50.471 C/A 0.210° PA 340.28 deg v_sky +25.17 km/s D 30.49 AU
 Credit: Styled after SORA/Lucky Star



#	a(km)	ring
1	42000.0	Galle
2	53200.0	LeVerrier
3	55200.0	Lassell
4	57200.0	Arago
5	61953.0	Galatea
6	62933.0	Adams

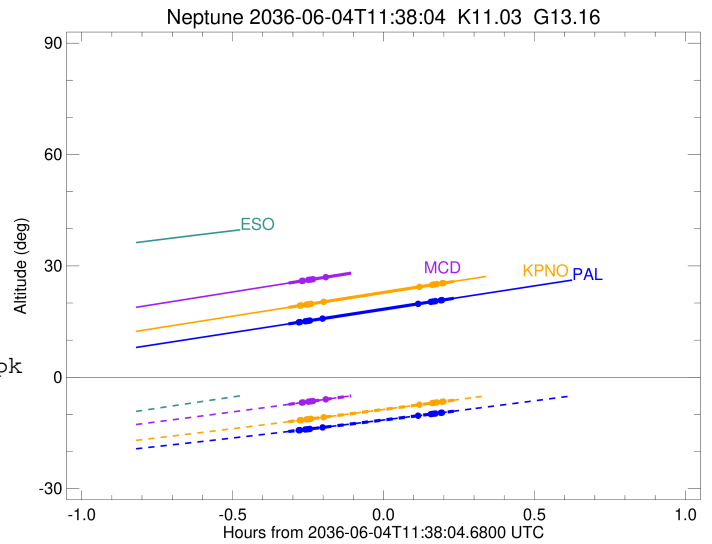
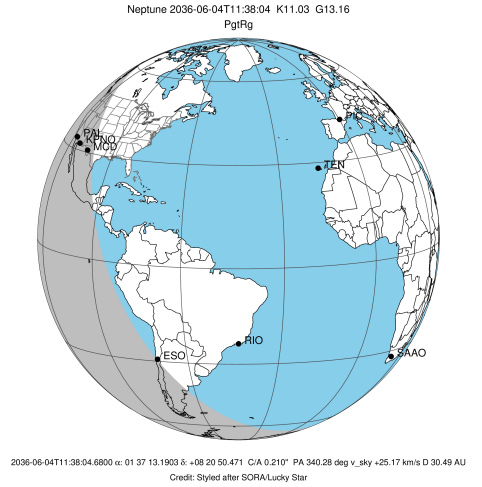
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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		+	+	JUN 04 11:19 - JUN 04 11:52	PieRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4		+	+	JUN 04 11:19 - JUN 04 11:52	PieRnn
MCD	McDonald Obs. 2.7m	30.7	256.0			+	JUN 04 11:19 - JUN 04 11:19	PinRnn
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					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



```

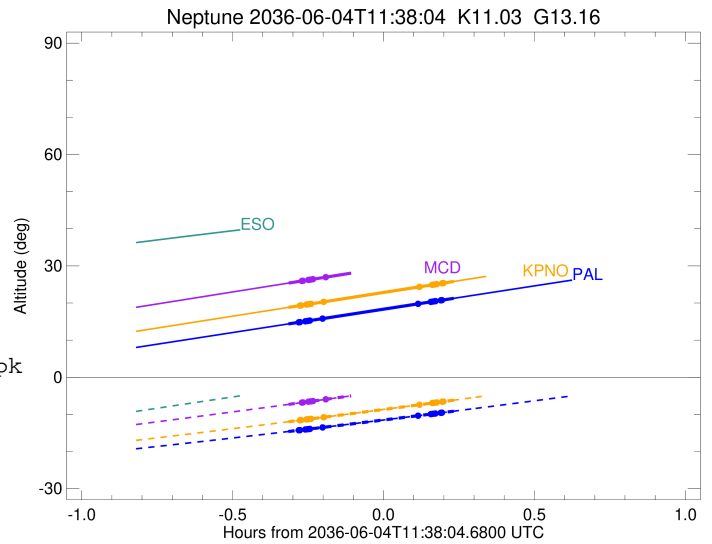
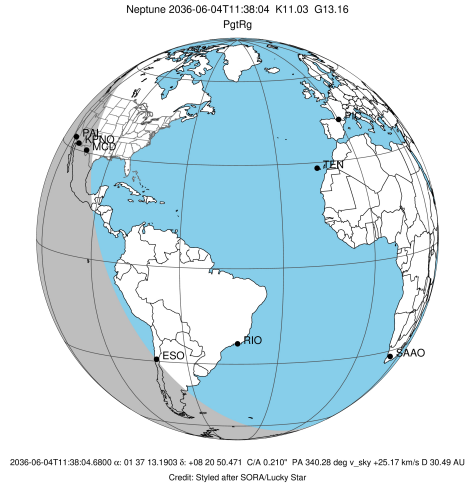
target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2036-06-04T11:35:35.770
Event type          : PgtRg
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, not topocentric
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 25719207688686360320
2Mass ID (if available) : 01371318+0820506
ICRS Star Coord at Epoch: 01h 37m 13.19027s +08:20:50.47105s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 11.032
G magnitude          : 13.163
RP magnitude         : 12.496
BP magnitude         : 13.670
DUPflag             : 0
Distance (au)       : 30.495
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : 25.17
Sun-Target sep (deg) : 48.39
Sun-Moon sep (deg)  : 175.26
B (ring opening deg) : -9.52
PA of pole (deg)    : -47.63
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.005
C/A sky separation (km) : 120.7
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	2036-06-04T11:21:20.002	b	14.82	-14.26	62933.00	-73.85		
Galatea	I	2036-06-04T11:21:33.274	b	14.87	-14.23	61953.01	-73.84		
Arago	I	2036-06-04T11:22:37.666	b	15.10	-14.05	57200.00	-73.79		
Lassell	I	2036-06-04T11:23:04.775	b	15.19	-13.98	55200.01	-73.76		
LeVerrier	I	2036-06-04T11:23:31.894	b	15.29	-13.91	53200.00	-73.74		
Galle	I	2036-06-04T11:26:03.986	b	15.82	-13.50	42000.00	-73.52		
Neptune	I	2036-06-04T11:19:09.324		14.37	-14.61	24761.57		-27.02	-27.83
Neptune	E	2036-06-04T11:52:03.397		21.27	-9.14	24761.48		27.55	28.37
Galle	E	2036-06-04T11:44:51.722	b	19.76	-10.37	42000.00	73.31		
LeVerrier	E	2036-06-04T11:47:24.245	b	20.29	-9.94	53200.00	73.52		
Lassell	E	2036-06-04T11:47:51.443	b	20.39	-9.86	55200.00	73.55		
Arago	E	2036-06-04T11:48:18.634	b	20.48	-9.78	57200.00	73.57		
Galatea	E	2036-06-04T11:49:23.225	b	20.71	-9.60	61953.00	73.60		
Adams	E	2036-06-04T11:49:36.539	b	20.75	-9.56	62932.99	73.61		

```

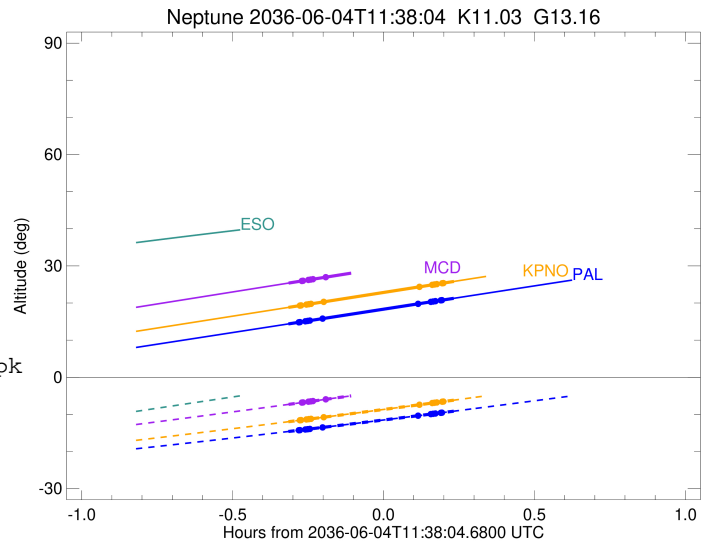
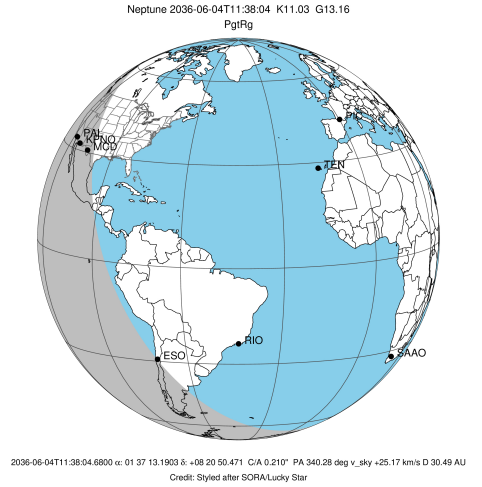
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2036-06-04T11:35:35.910
Event type            : PgtRg
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, not topocentric
Observer code        : KPNO
Location              : Kitt Peak Natl Obs
Latitude (deg)       : 31.96333
E. Longitude (deg)   : 248.40000
Altitude (km)        : 2.120
Gaia source ID       : 25719207688686360320
2Mass ID (if available) : 01371318+0820506
ICRS Star Coord at Epoch: 01h 37m 13.19027s +08:20:50.47105s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 11.032
G magnitude           : 13.163
RP magnitude          : 12.496
BP magnitude          : 13.670
DUPflag              : 0
Distance (au)        : 30.495
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 25.17
Sun-Target sep (deg) : 48.39
Sun-Moon sep (deg)   : 175.25
B (ring opening deg) : -9.52
PA of pole (deg)     : -47.63
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.004
C/A sky separation (km) : 95.8
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.urall1.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	2036-06-04T11:21:32.885	b	19.33	-11.57	62933.00	-73.67		
Galatea	I	2036-06-04T11:21:46.189	b	19.37	-11.53	61953.00	-73.66		
Arago	I	2036-06-04T11:22:50.738	b	19.60	-11.34	57200.00	-73.61		
Lassell	I	2036-06-04T11:23:17.915	b	19.70	-11.27	55200.00	-73.58		
LeVerrier	I	2036-06-04T11:23:45.102	b	19.79	-11.19	53200.00	-73.55		
Galle	I	2036-06-04T11:26:17.605	b	20.34	-10.75	42000.00	-73.30		
Neptune	I	2036-06-04T11:19:08.107		18.81	-11.98	24761.49		-27.49	-28.30
Neptune	E	2036-06-04T11:52:04.881		25.81	-6.17	24761.56		27.04	27.84
Galle	E	2036-06-04T11:45:07.803	b	24.34	-7.42	42000.00	73.21		
LeVerrier	E	2036-06-04T11:47:40.569	b	24.88	-6.96	53200.00	73.39		
Lassell	E	2036-06-04T11:48:07.815	b	24.98	-6.88	55199.99	73.41		
Arago	E	2036-06-04T11:48:35.055	b	25.07	-6.80	57200.00	73.43		
Galatea	E	2036-06-04T11:49:39.767	b	25.30	-6.60	61953.00	73.46		
Adams	E	2036-06-04T11:49:53.106	b	25.35	-6.56	62933.00	73.47		

```

target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2036-06-04T11:35:41.710
Event type           : PgtRg
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, not topocentric
Observer code        : MCD
Location             : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)   : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 25719207688686360320
2Mass ID (if available) : 01371318+0820506
ICRS Star Coord at Epoch: 01h 37m 13.19027s +08:20:50.47105s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 11.032
G magnitude           : 13.163
RP magnitude          : 12.496
BP magnitude          : 13.670
DUPflag              : 0
Distance (au)        : 30.495
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : 25.17
Sun-Target sep (deg) : 48.39
Sun-Moon sep (deg)   : 175.26
B (ring opening deg) : -9.52
PA of pole (deg)     : -47.63
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.017
C/A sky separation (km) : 385.0
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.urall1.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	2036-06-04T11:21:55.926	b	25.96	-6.80	62933.00	-73.42		
Galatea	I	2036-06-04T11:22:09.275	b	26.01	-6.76	61953.00	-73.41		
Arago	I	2036-06-04T11:23:14.048	b	26.24	-6.56	57200.00	-73.35		
Lassell	I	2036-06-04T11:23:41.321	b	26.34	-6.48	55200.00	-73.32		
LeVerrier	I	2036-06-04T11:24:08.606	b	26.44	-6.40	53200.00	-73.28		
Galle	I	2036-06-04T11:26:41.709	b	26.98	-5.92	42000.01	-72.99		
Neptune	I	2036-06-04T11:19:12.119		25.37	-7.31	24761.38		-28.11	-28.94
Neptune	E	2036-06-04T11:52:12.462		32.44	-1.11x	24761.68		26.34	27.14
Galle	E	2036-06-04T11:45:35.010	b	31.03	-2.37x	42000.00	73.06		
LeVerrier	E	2036-06-04T11:48:08.135	b	31.57	-1.89x	53200.00	73.21		
Lassell	E	2036-06-04T11:48:35.450	b	31.67	-1.80x	55200.00	73.23		
Arago	E	2036-06-04T11:49:02.760	b	31.77	-1.71x	57200.00	73.24		
Galatea	E	2036-06-04T11:50:07.642	b	32.00	-1.51x	61953.00	73.27		
Adams	E	2036-06-04T11:50:21.016	b	32.05	-1.46x	62933.00	73.28		