

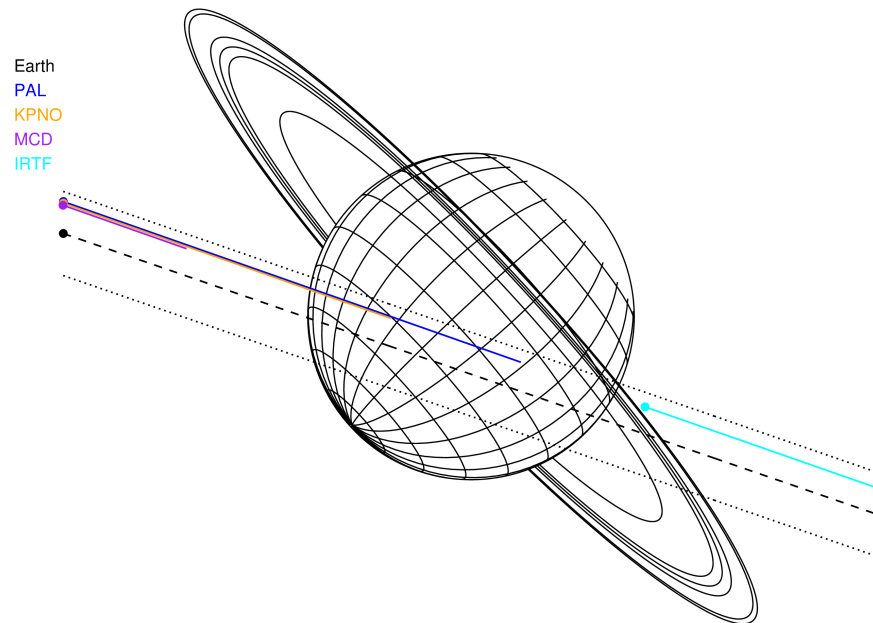
target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2036-06-16T12:09:48.360
 Event type : PgtRg
 : Neptune occs: geocentric, topocentric
 : Ring occs: geocentric, not topocentric
 Gaia source ID : 2571943656567597312
 2Mass ID (if available) : 01382166+0826492

Neptune 2036-06-16T12:09:48 K11.27 G13.05 PgtRg

ICRS Star Coord at Epoch: 01h 38m 21.67204s +08:26:48.47893s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 11.274
 G magnitude : 13.051
 RP magnitude : 12.453
 BP magnitude : 13.485
 DUPflag : 0
 Distance (au) : 30.332
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 20.49
 Sun-Target sep (deg) : 59.58
 Sun-Moon sep (deg) : 36.46
 B (ring opening deg) : -9.37
 PA of pole (deg) : -47.63



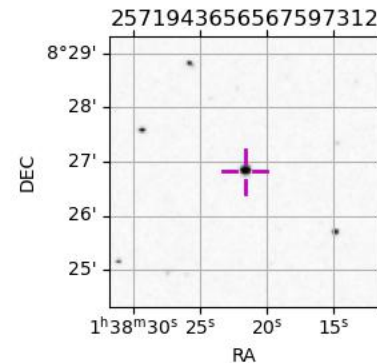
2036-06-16T12:09:48.3600 ex: 01 38 21.6720 s: +08 26 48.479 C/A 0.376° PA 340.96 deg v_sky +20.49 km/s D 30.33 AU
 Credit: Styled after SORA/Lucky Star



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

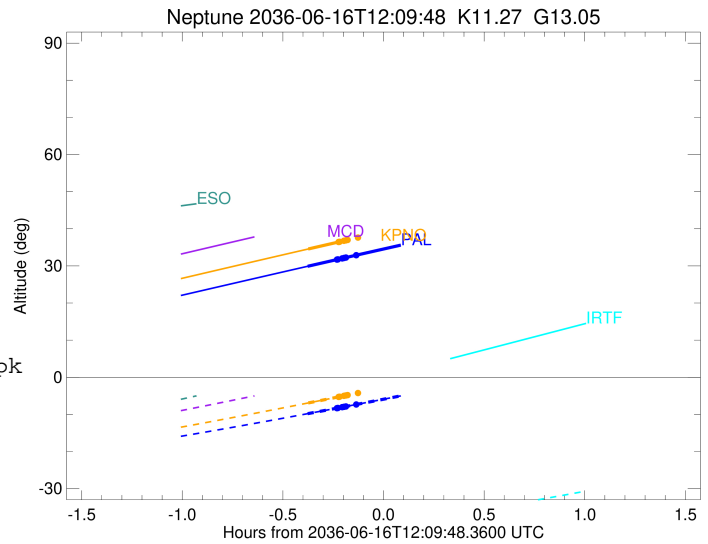
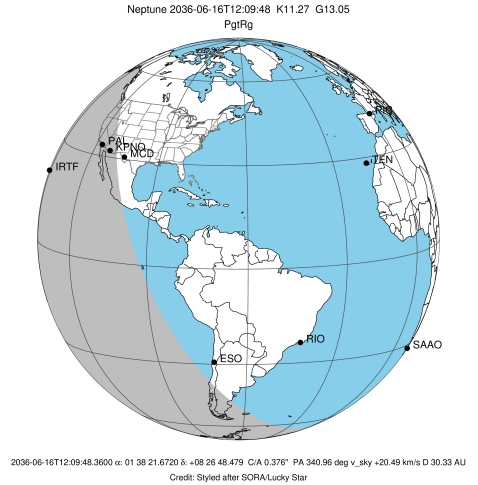
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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 16 11:47 - JUN 16 11:47	PinRnn
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4		+		JUN 16 11:47 - JUN 16 11:47	PinRnn
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					PnnRnn
SAAO	So. Afr. Astro. Obs.	-32.4	20.8					PnnRnn
MSO	Mt. Stromlo Observato	-35.3	149.0					PnnRnn



```

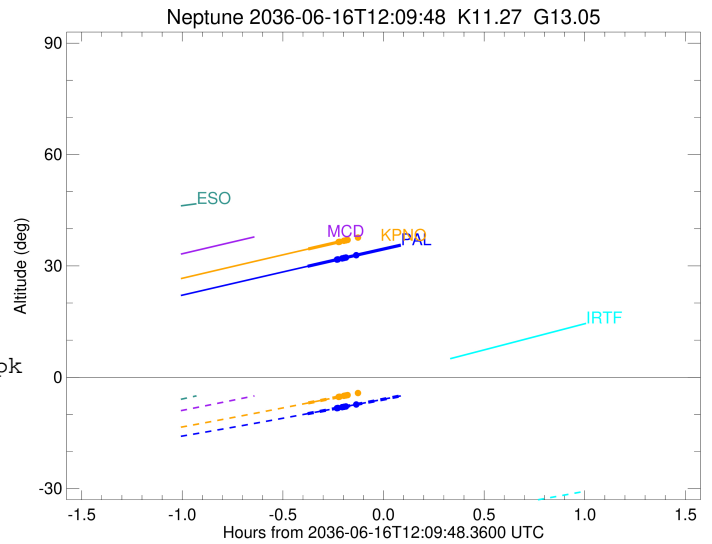
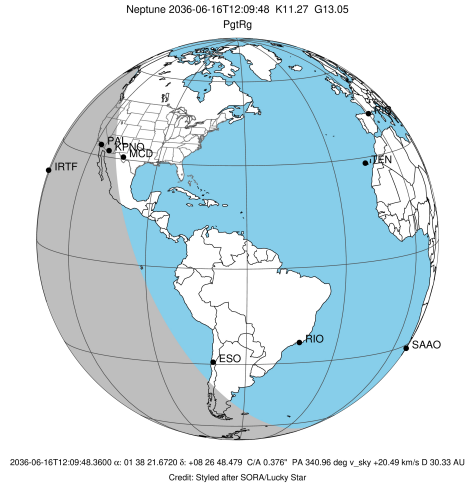
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2036-06-16T12:07:13.450
Event type            : PgtRg
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, not topocentric
Observer code         : PAL
Location              : Palomar Mt (200")
Latitude (deg)        : 33.35622
E. Longitude (deg)    : 243.13601
Altitude (km)         : 1.706
Gaia source ID        : 2571943656567597312
2Mass ID (if available) : 01382166+0826492
ICRS Star Coord at Epoch: 01h 38m 21.67204s +08:26:48.47893s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 11.274
G magnitude           : 13.051
RP magnitude          : 12.453
BP magnitude          : 13.485
DUPflag              : 0
Distance (au)         : 30.332
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 20.49
Sun-Target sep (deg) : 59.58
Sun-Moon sep (deg)   : 36.46
B (ring opening deg) : -9.37
PA of pole (deg)     : -47.63
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.184
C/A sky separation (km) : 4038.4
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.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	2036-06-16T11:55:58.691	b	31.71	-8.31	62933.00	-60.44		
Galatea	I	2036-06-16T11:56:14.912	b	31.77	-8.27	61953.00	-60.38		
Arago	I	2036-06-16T11:57:33.839	b	32.04	-8.04	57200.00	-60.04		
Lassell	I	2036-06-16T11:58:07.200	b	32.15	-7.95	55200.00	-59.86		
LeVerrier	I	2036-06-16T11:58:40.670	b	32.27	-7.85	53200.00	-59.65		
Galle	I	2036-06-16T12:01:51.155	b	32.92	-7.30	42000.00	-57.72		
Neptune	I	2036-06-16T11:47:10.889		29.90	-9.81	24759.85		-37.06	-38.01
Neptune	E	2036-06-16T12:27:18.126		38.09	-2.80x	24762.84		18.60	19.21
Galle	E	2036-06-16T12:23:50.384	b	37.39	-3.43x	42000.00	60.29		
LeVerrier	E	2036-06-16T12:26:55.400	b	38.01	-2.87x	53200.00	60.73		
Lassell	E	2036-06-16T12:27:28.320		38.12	-2.77x	55200.00	60.78		
Arago	E	2036-06-16T12:28:01.214		38.24	-2.67x	57200.00	60.82		
Galatea	E	2036-06-16T12:29:19.299		38.50	-2.44x	61953.00	60.91		
Adams	E	2036-06-16T12:29:35.385		38.55	-2.39x	62933.00	60.93		

```

target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2036-06-16T12:07:21.230
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       : 2571943656567597312
2Mass ID (if available) : 01382166+0826492
ICRS Star Coord at Epoch: 01h 38m 21.67204s +08:26:48.47893s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 11.274
G magnitude           : 13.051
RP magnitude          : 12.453
BP magnitude          : 13.485
DUPflag              : 0
Distance (au)        : 30.332
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 20.49
Sun-Target sep (deg) : 59.58
Sun-Moon sep (deg)   : 36.51
B (ring opening deg) : -9.37
PA of pole (deg)     : -47.63
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.195
C/A sky separation (km) : 4300.3
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	2036-06-16T11:56:27.976	b	36.45	-5.28	62933.00	-60.17		
Galatea	I	2036-06-16T11:56:44.271	b	36.50	-5.24	61953.00	-60.11		
Arago	I	2036-06-16T11:58:03.584	b	36.78	-5.00x	57200.00	-59.73		
Lassell	I	2036-06-16T11:58:37.124	b	36.89	-4.90x	55200.00	-59.53		
LeVerrier	I	2036-06-16T11:59:10.783	b	37.01	-4.79x	53200.00	-59.30		
Galle	I	2036-06-16T12:02:22.523	b	37.67	-4.21x	42000.00	-57.34		
Neptune	I	2036-06-16T11:47:18.981		34.55	-6.93	24759.74		-37.64	-38.60
Neptune	E	2036-06-16T12:27:25.533		42.77	0.43x	24762.91		17.97	18.56
Galle	E	2036-06-16T12:24:20.180	b	42.15	-0.15x	42000.00	60.01		
LeVerrier	E	2036-06-16T12:27:25.957		42.77	0.43x	53200.00	60.51		
Lassell	E	2036-06-16T12:27:58.996		42.88	0.54x	55200.00	60.56		
Arago	E	2036-06-16T12:28:32.005		42.99	0.64x	57200.00	60.61		
Galatea	E	2036-06-16T12:29:50.350		43.25	0.89x	61953.00	60.72		
Adams	E	2036-06-16T12:30:06.488		43.31	0.94x	62933.00	60.73		