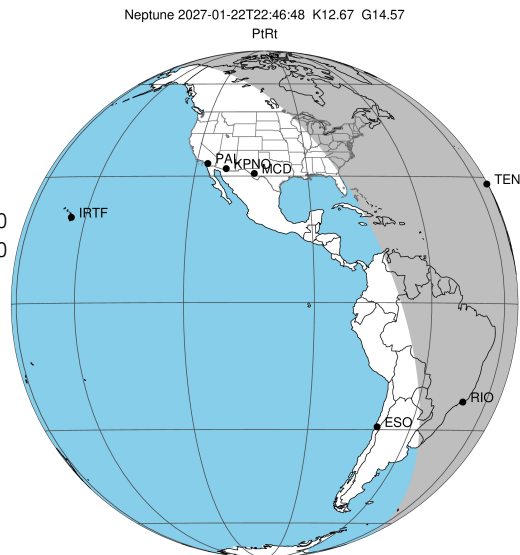


target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2027-01-22T22:46:48.390
 Event type : PtRt
 : Neptune occs: topocentric, not geocentric
 : Ring occs: topocentric, not geocentric
 Gaia source ID : 2545800534234589568
 2Mass ID (if available) : 00082705-0034132

ICRS Star Coord at Epoch: 00h 08m 27.08360s -00:34:13.91426s
 RUWE (>1.4 is poor) : 0.92
 K magnitude : 12.667
 G magnitude : 14.570
 RP magnitude : 13.928
 BP magnitude : 15.056
 DUPflag : 0
 Distance (au) : 30.364
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 20.72
 Sun-Target sep (deg) : 59.41
 Sun-Moon sep (deg) : 126.77
 B (ring opening deg) : -19.26
 PA of pole (deg) : -43.50

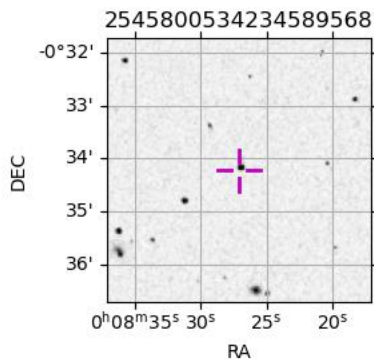
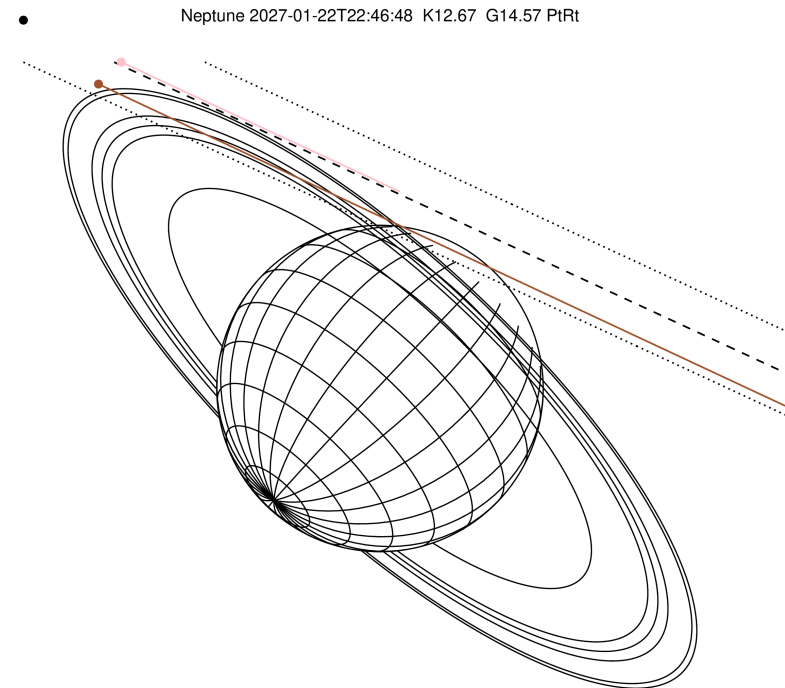


2027-01-22T22:46:48.3900 ex: 00 08 27.0836 s: -00 34 13.914 C/A 1.271° PA 155.16 deg v_sky +20.72 km/s D 30.36 AU
 Credit: Styled after SORA/Lucky Star

#	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

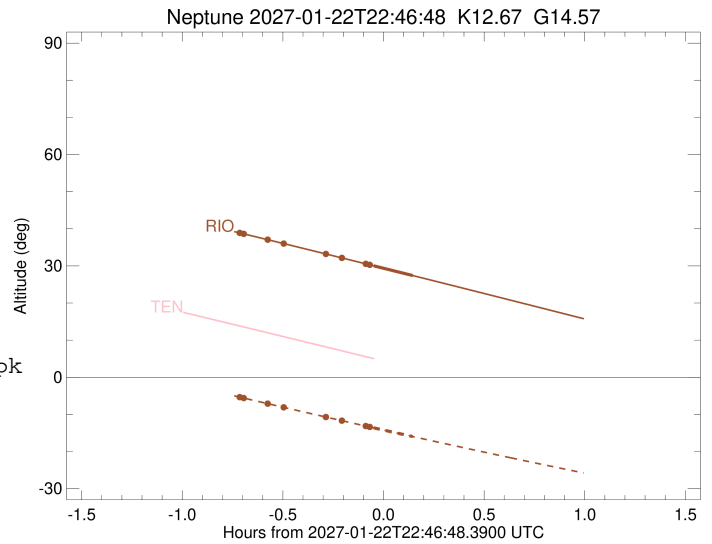
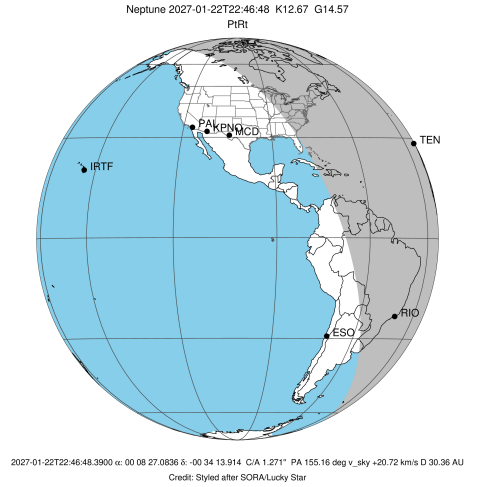
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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					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					PnnRnn
RIO	Rio de Janeiro	-22.9	316.8	+	+	+	JAN 22 22:03 - JAN 22 22:55	PieRie
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             : 2027-01-22T22:49:44.460
Event type            : PtRt
: Neptune occs: topocentric, not geocentric
: Ring occs: topocentric, not geocentric
Observer code        : RIO
Location              : Rio de Janeiro
Latitude (deg)       : -22.89506
E. Longitude (deg)   : 316.77708
Altitude (km)        : 0.033
Gaia source ID       : 2545800534234589568
2Mass ID (if available) : 00082705-0034132
ICRS Star Coord at Epoch: 00h 08m 27.08360s -00:34:13.91426s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 12.667
G magnitude           : 14.570
RP magnitude          : 13.928
BP magnitude          : 15.056
DUPflag              : 0
Distance (au)        : 30.364
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 20.72
Sun-Target sep (deg)  : 59.41
Sun-Moon sep (deg)   : 127.52
B (ring opening deg) : -19.26
PA of pole (deg)     : -43.50
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation ("): 1.074
C/A sky separation (km): 23660.5
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	2027-01-22T22:03:31.903		38.98	-5.27	62933.00	-14.62		
Galatea	I	2027-01-22T22:04:40.309		38.73	-5.51	61953.00	-14.02		
Arago	I	2027-01-22T22:11:13.614		37.29	-6.88	57200.03	-9.98		
Lassell	I	2027-01-22T22:15:06.429		36.44	-7.70	55201.61	-7.15		
Neptune	I	2027-01-22T22:43:53.281		30.03	-13.63	24733.54		50.38	51.33
Neptune	E	2027-01-22T22:55:32.908		27.40	-15.98	24718.36		70.68	71.28
Lassell	E	2027-01-22T22:32:21.230		32.61	-11.27	55207.91	7.19		
Arago	E	2027-01-22T22:36:12.799		31.75	-12.06	57200.40	10.05		
Galatea	E	2027-01-22T22:42:43.286		30.29	-13.39	61953.02	14.13		
Adams	E	2027-01-22T22:43:51.167		30.03	-13.62	62933.01	14.74		