

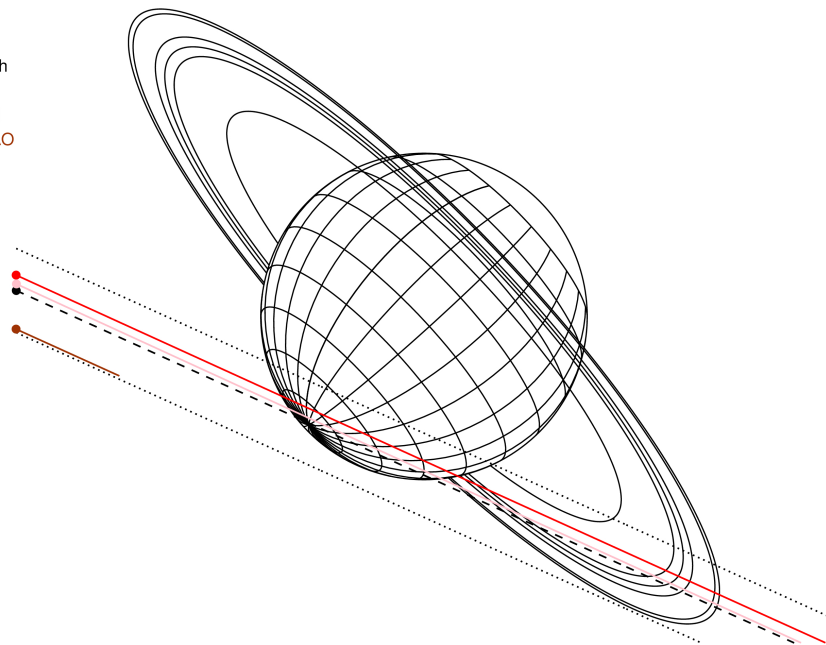
target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2033-02-05T20:23:16.970
 Event type : PgtRgt
 : Neptune occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 252157287695444864
 2Mass ID (if available) : 00580412+0429378

Neptune 2033-02-05T20:23:16 K14.42 G17.54 PgtRgt

ICRS Star Coord at Epoch: 00h 58m 04.11907s +04:29:37.37077s
 RUWE (>1.4 is poor) : 1.10
 K magnitude : 14.424
 G magnitude : 17.540
 RP magnitude : 16.566
 BP magnitude : 18.518
 DUPflag : 0
 Distance (au) : 30.352
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : 21.18
 Sun-Target sep (deg) : 58.22
 Sun-Moon sep (deg) : 22.70
 B (ring opening deg) : -14.04
 PA of pole (deg) : -46.76



Earth
 PIC
 TEN
 SAAO

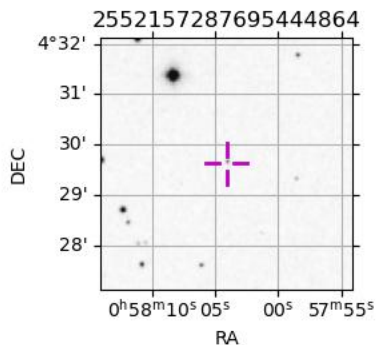


2033-02-05T20:23:16.9700 ex: 00 58 04.1191 s: +04 29 37.371 C/A 0.9977 PA 335.63 deg v_sky +21.18 km/s D 30.35 AU
 Credit: Styled after SORA/Lucky Star

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

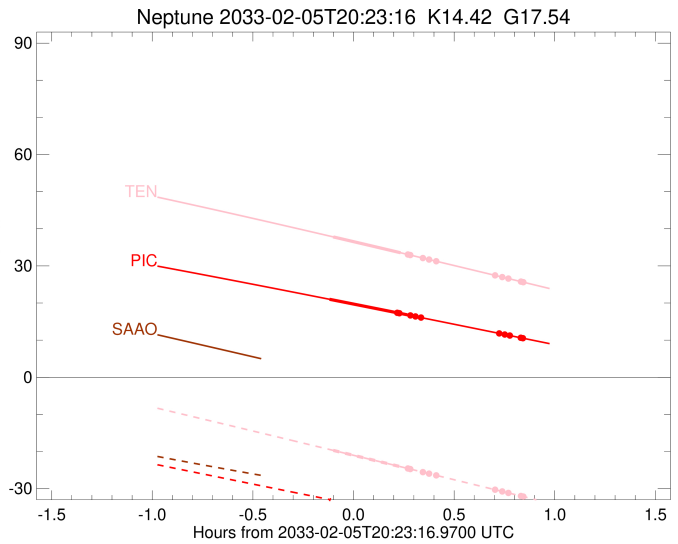
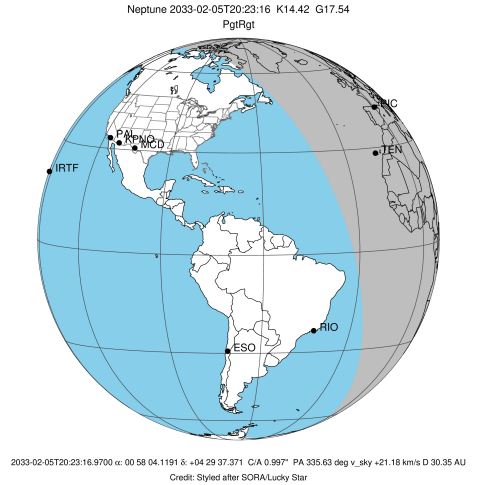
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

Obs	Location	lat	Elon	Rings I	Planet	Rings E	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+	+	+	FEB 05 20:16 - FEB 05 21:13	PieRie
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	+	+	+	FEB 05 20:17 - FEB 05 21:13	PieRie
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



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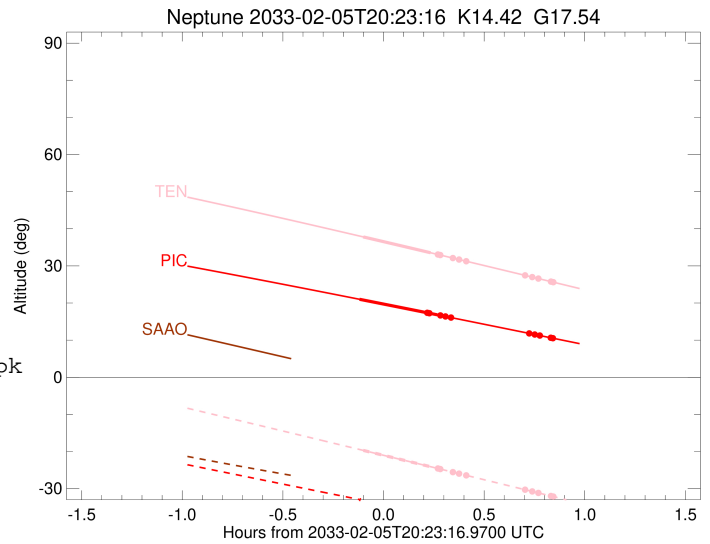
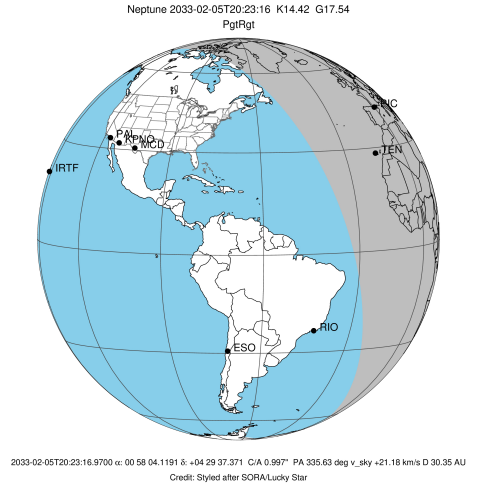
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2033-02-05T20:27:44.040
Event type            : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code        : PIC
Location              : Pic du Midi
Latitude (deg)       : 42.93656
E. Longitude (deg)   : 0.14231
Altitude (km)        : 2.890
Gaia source ID       : 2552157287695444864
2Mass ID (if available) : 00580412+0429378
ICRS Star Coord at Epoch: 00h 58m 04.11907s +04:29:37.37077s
RUWE (>1.4 is poor) : 1.10
K magnitude           : 14.424
G magnitude           : 17.540
RP magnitude         : 16.566
BP magnitude         : 18.518
DUPflag              : 0
Distance (au)        : 30.352
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : 21.18
Sun-Target sep (deg) : 58.22
Sun-Moon sep (deg)   : 22.03
B (ring opening deg) : -14.04
PA of pole (deg)     : -46.76
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation ("): 0.906
C/A sky separation (km): 19934.1
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
    
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Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
Adams	I	2033-02-05T20:35:35.928	b	17.50	-36.44	62933.00	-26.82		
Galatea	I	2033-02-05T20:36:12.784	b	17.39	-36.55	61953.00	-26.36		
Arago	I	2033-02-05T20:39:22.600		16.81	-37.11	57200.01	-23.61		
Lassell	I	2033-02-05T20:40:50.043		16.55	-37.37	55200.02	-22.11		
LeVerrier	I	2033-02-05T20:42:24.290		16.26	-37.65	53200.04	-20.30		
Neptune	I	2033-02-05T20:16:07.549		21.01	-32.94	24740.77		-70.26	-70.87
Neptune	E	2033-02-05T20:39:21.272		16.82	-37.11	24757.35		-30.27	-31.13
LeVerrier	E	2033-02-05T21:06:41.942		11.82	-41.91	53200.00	20.29		
Lassell	E	2033-02-05T21:08:16.275		11.54	-42.18	55200.00	22.09		
Arago	E	2033-02-05T21:09:43.814		11.27	-42.43	57200.00	23.58		
Galatea	E	2033-02-05T21:12:53.860		10.69	-42.98	61953.00	26.33		
Adams	E	2033-02-05T21:13:30.757		10.57	-43.08	62933.00	26.79		

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target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2033-02-05T20:27:15.650
Event type            : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code        : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)       : 28.30050
E. Longitude (deg)   : 343.48909
Altitude (km)        : 2.395
Gaia source ID       : 2552157287695444864
2Mass ID (if available) : 00580412+0429378
ICRS Star Coord at Epoch: 00h 58m 04.11907s +04:29:37.37077s
RUWE (>1.4 is poor) : 1.10
K magnitude           : 14.424
G magnitude           : 17.540
RP magnitude         : 16.566
BP magnitude         : 18.518
DUPflag              : 0
Distance (au)        : 30.352
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : 21.18
Sun-Target sep (deg) : 58.22
Sun-Moon sep (deg)   : 22.21
B (ring opening deg) : -14.04
PA of pole (deg)     : -46.76
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation ("): 0.967
C/A sky separation (km): 21287.2
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
    
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Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
Adams	I	2033-02-05T20:38:35.790		33.27	-24.37	62933.01	-24.33		
Galatea	I	2033-02-05T20:39:16.551		33.12	-24.52	61953.01	-23.75		
Arago	I	2033-02-05T20:42:51.940		32.35	-25.31	57200.04	-20.24		
Lassell	I	2033-02-05T20:44:35.804		31.98	-25.69	55200.11	-18.23		
LeVerrier	I	2033-02-05T20:46:33.497		31.55	-26.12	53200.40	-15.70		
Neptune	I	2033-02-05T20:17:13.128		37.82	-19.69	24739.87		-73.65	-74.17
Neptune	E	2033-02-05T20:37:19.140		33.54	-24.09	24755.01		-35.84	-36.78
LeVerrier	E	2033-02-05T21:05:44.527		27.40	-30.34	53200.00	15.71		
Lassell	E	2033-02-05T21:07:42.192		26.97	-30.77	55200.00	18.24		
Arago	E	2033-02-05T21:09:26.036		26.59	-31.15	57200.00	20.25		
Galatea	E	2033-02-05T21:13:01.404		25.81	-31.94	61953.00	23.76		
Adams	E	2033-02-05T21:13:42.161		25.66	-32.09	62933.00	24.33		