

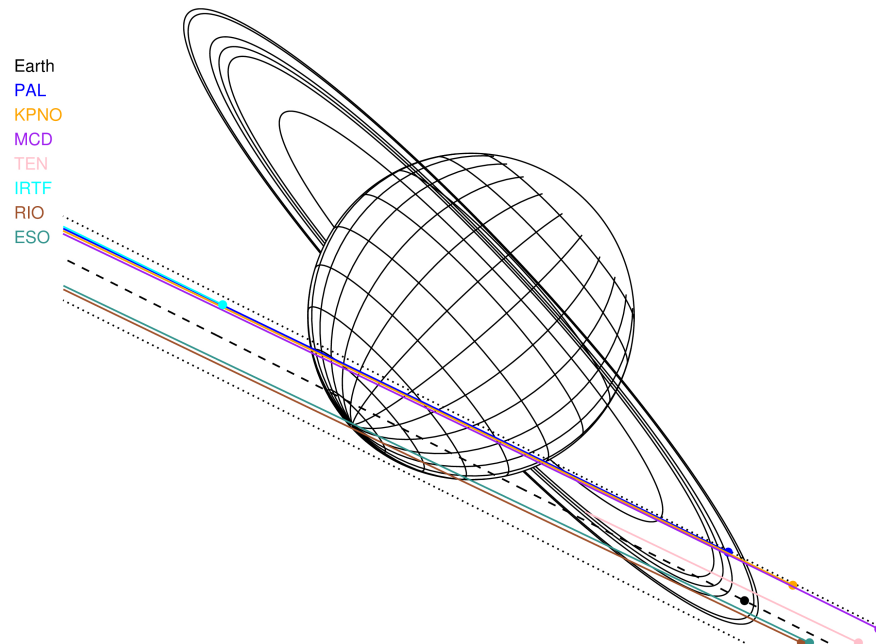
target : Neptune
 target radius (km) : 24764.00
 C/A epoch : 2035-08-16T07:14:52.830
 Event type : PgtRgt
 : Neptune occs: geocentric, topocentric
 : Ring occs: geocentric, topocentric
 Gaia source ID : 2566532444451350144
 2Mass ID (if available) : 01313048+0744330

Neptune 2035-08-16T07:14:52 K14.31 G17.46 PgtRgt

ICRS Star Coord at Epoch: 01h 31m 30.58676s +07:44:32.63788s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 14.314
 G magnitude : 17.457
 RP magnitude : 16.450
 BP magnitude : 18.457
 DUPflag : 0
 Distance (au) : 29.335
 f0 (km) : 0.000
 g0 (km) : 0.000
 skyplane vel. (km/s) : -8.98
 Sun-Target sep (deg) : 118.76
 Sun-Moon sep (deg) : 92.11
 B (ring opening deg) : -10.15
 PA of pole (deg) : -47.58



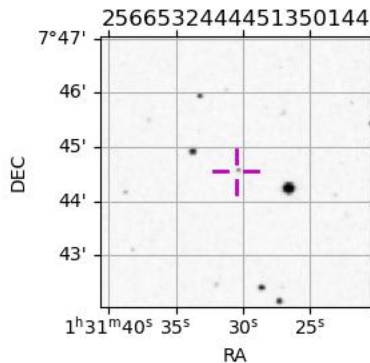
2035-08-16T07:14:52.8300 α: 01 31 30.5868 δ: +07 44 32.638 C/A 0.935° PA 333.32 deg v_sky - 8.98 km/s D 29.33 AU
 Credit: Styled after SORA/Lucky Star



#	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

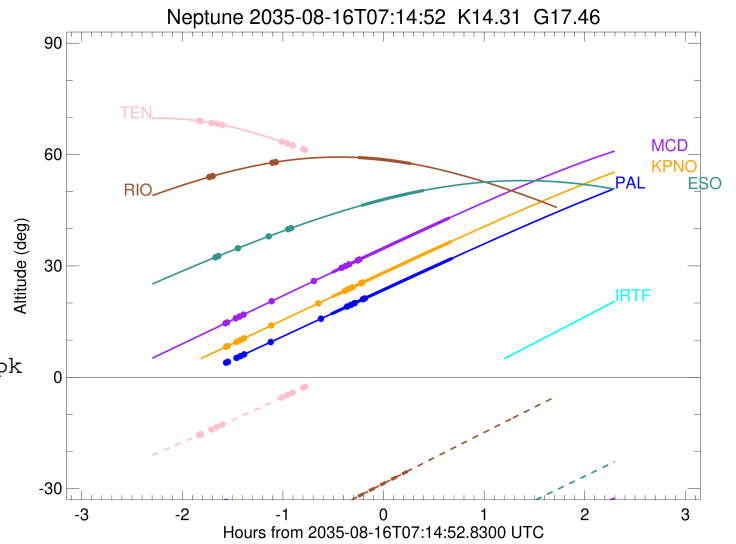
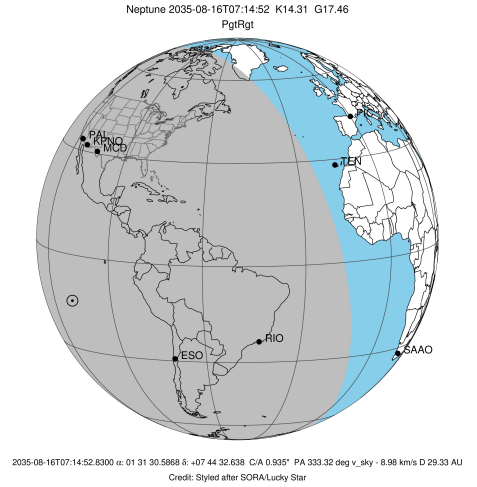
Observable events with sun below -5 deg and altitude above 5 deg unblocked by planet

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	+	+	+	AUG 16 05:48 - AUG 16 07:56	PieRie
PMO	Purple Mtn Obs. Nanki	32.1	118.8					PnnRnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	+	+	AUG 16 05:42 - AUG 16 07:55	PieRie
MCD	McDonald Obs. 2.7m	30.7	256.0	+	+	+	AUG 16 05:41 - AUG 16 07:54	PieRie
TEN	Teide Obs./Tenerife	28.3	343.5	+	+	+	AUG 16 05:25 - AUG 16 05:38	PnnRin
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	+	+		AUG 16 05:31 - AUG 16 07:31	PieRie
ESO	European Southern Obs	-29.3	289.3	+	+		AUG 16 05:35 - AUG 16 07:38	PieRie
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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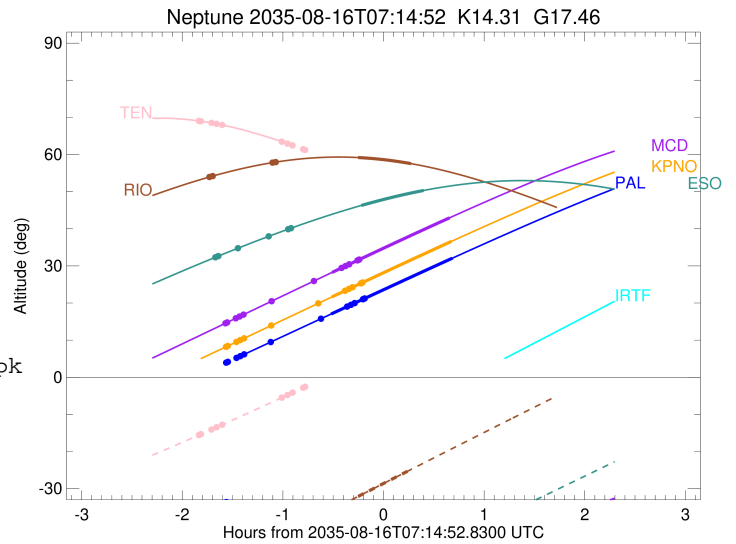
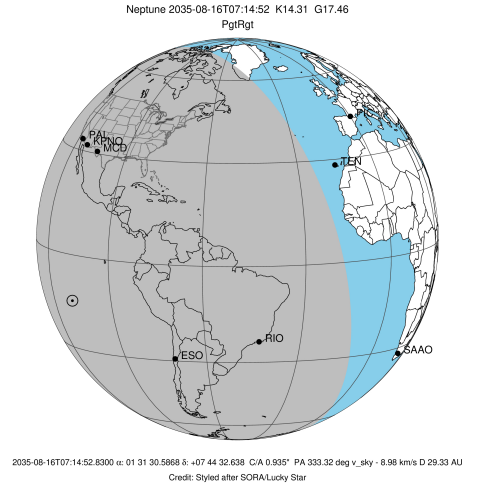
target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2035-08-16T07:19:58.640
Event type           : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code        : PAL
Location             : Palomar Mt (200")
Latitude (deg)       : 33.35622
E. Longitude (deg)  : 243.13601
Altitude (km)        : 1.706
Gaia source ID       : 25665324444451350144
2Mass ID (if available) : 01313048+0744330
ICRS Star Coord at Epoch: 01h 31m 30.58676s +07:44:32.63788s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 14.314
G magnitude           : 17.457
RP magnitude         : 16.450
BP magnitude         : 18.457
DUPflag              : 0
Distance (au)        : 29.335
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -8.98
Sun-Target sep (deg) : 118.76
Sun-Moon sep (deg)   : 92.49
B (ring opening deg) : -10.15
PA of pole (deg)     : -47.58
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.700
C/A sky separation (km) : 14887.2
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.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	2035-08-16T05:42:13.093		4.17x	-33.78	62933.00	-16.27		
Galatea	I	2035-08-16T05:43:13.558		4.38x	-33.92	61953.00	-16.14		
Arago	I	2035-08-16T05:48:14.915		5.43	-34.56	57200.00	-15.37		
Lassell	I	2035-08-16T05:50:26.737		5.89	-34.84	55200.00	-14.97		
LeVerrier	I	2035-08-16T05:52:42.452		6.36	-35.12	53200.00	-14.50		
Galle	I	2035-08-16T06:07:51.419		9.53	-36.91	42000.00	-9.54		
Neptune	I	2035-08-16T06:43:38.959		17.04	-40.32	24763.09		-15.15	-15.66
Neptune	E	2035-08-16T07:56:02.352		32.10	-43.07	24754.51		-57.22	-58.11
Galle	E	2035-08-16T06:39:51.190		16.24	-40.02	42000.32	9.68		
LeVerrier	E	2035-08-16T06:54:39.906	b	19.35	-41.12	53200.00	14.95		
Lassell	E	2035-08-16T06:56:51.370	b	19.81	-41.27	55200.00	15.47		
Arago	E	2035-08-16T06:58:58.753	b	20.25	-41.40	57200.00	15.93		
Galatea	E	2035-08-16T07:03:48.860	b	21.26	-41.69	61953.00	16.81		
Adams	E	2035-08-16T07:04:46.897	b	21.47	-41.75	62933.00	16.96		

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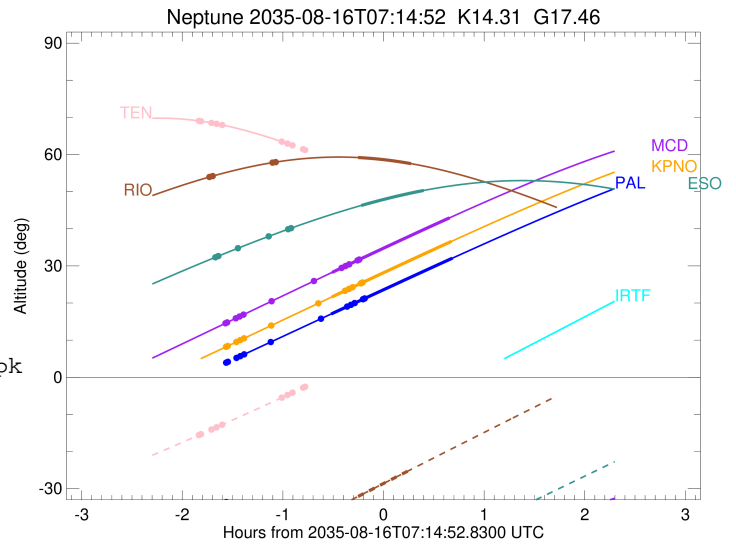
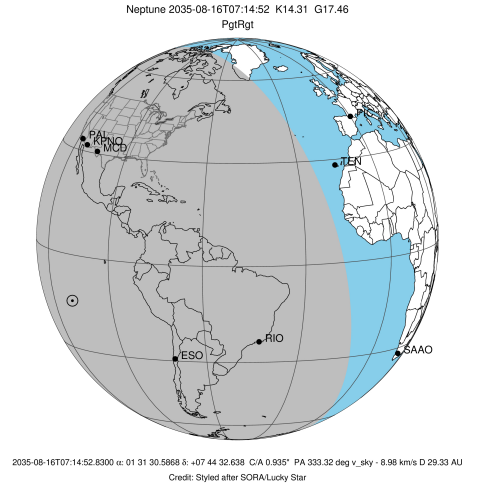
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2035-08-16T07:19:50.730
Event type           : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code        : KPNO
Location             : Kitt Peak Natl Obs
Latitude (deg)       : 31.96333
E. Longitude (deg)   : 248.40000
Altitude (km)        : 2.120
Gaia source ID       : 25665324444451350144
2Mass ID (if available) : 01313048+0744330
ICRS Star Coord at Epoch: 01h 31m 30.58676s +07:44:32.63788s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 14.314
G magnitude           : 17.457
RP magnitude          : 16.450
BP magnitude          : 18.457
DUPflag              : 0
Distance (au)        : 29.335
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -8.98
Sun-Target sep (deg) : 118.76
Sun-Moon sep (deg)   : 92.56
B (ring opening deg) : -10.15
PA of pole (deg)     : -47.58
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.711
C/A sky separation (km) : 15127.3
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
    
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Ring	I/E	UTC	b?	alt	alt-sun	radius	r-dot	lat-geo	lat-geodetic
Adams	I	2035-08-16T05:42:08.245		8.45	-37.53	62933.00	-16.28		
Galatea	I	2035-08-16T05:43:08.691		8.66	-37.65	61953.00	-16.14		
Arago	I	2035-08-16T05:48:10.314		9.73	-38.23	57200.00	-15.34		
Lassell	I	2035-08-16T05:50:22.491		10.20	-38.48	55200.00	-14.92		
LeVerrier	I	2035-08-16T05:52:38.766		10.68	-38.73	53200.00	-14.43		
Galle	I	2035-08-16T06:08:03.224		13.96	-40.32	42000.00	-9.16		
Neptune	I	2035-08-16T06:43:58.847		21.61	-43.09	24763.02		-15.75	-16.27
Neptune	E	2035-08-16T07:55:27.339		36.62	-44.09	24754.35		-57.96	-58.83
Galle	E	2035-08-16T06:38:20.806		20.41	-42.75	42000.49	9.29		
LeVerrier	E	2035-08-16T06:53:25.862	b	23.62	-43.58	53200.00	14.85		
Lassell	E	2035-08-16T06:55:38.066	b	24.09	-43.68	55200.00	15.39		
Arago	E	2035-08-16T06:57:45.989	b	24.54	-43.77	57200.00	15.87		
Galatea	E	2035-08-16T07:02:36.816	b	25.56	-43.96	61953.00	16.78		
Adams	E	2035-08-16T07:03:34.926	b	25.77	-43.99	62933.00	16.94		

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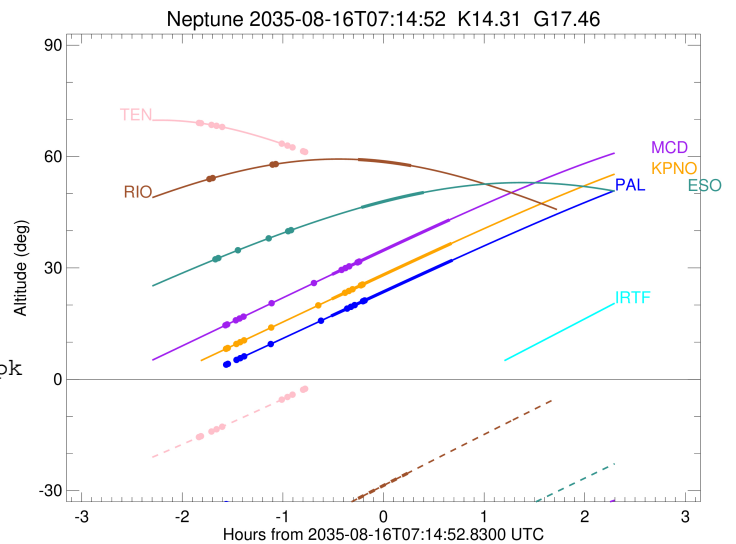
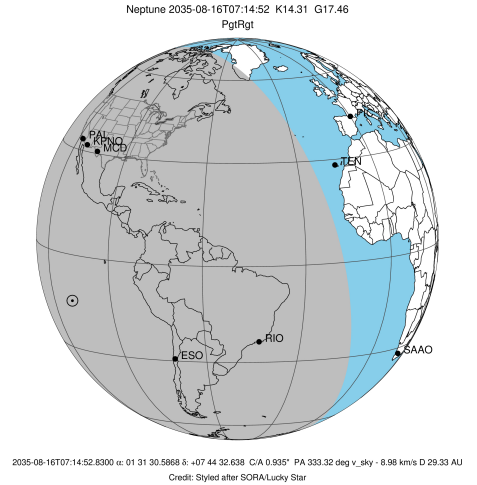
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2035-08-16T07:19:24.730
Event type            : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code        : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)   : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 2566532444451350144
2Mass ID (if available) : 01313048+0744330
ICRS Star Coord at Epoch: 01h 31m 30.58676s +07:44:32.63788s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 14.314
G magnitude           : 17.457
RP magnitude          : 16.450
BP magnitude          : 18.457
DUPflag              : 0
Distance (au)        : 29.335
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -8.98
Sun-Target sep (deg) : 118.76
Sun-Moon sep (deg)   : 92.64
B (ring opening deg) : -10.15
PA of pole (deg)     : -47.58
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.727
C/A sky separation (km) : 15461.3
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	2035-08-16T05:41:45.960		14.79	-41.85	62933.00	-16.29		
Galatea	I	2035-08-16T05:42:46.404		15.01	-41.94	61953.00	-16.14		
Arago	I	2035-08-16T05:47:48.561		16.10	-42.40	57200.00	-15.28		
Lassell	I	2035-08-16T05:50:01.330		16.58	-42.60	55200.00	-14.83		
LeVerrier	I	2035-08-16T05:52:18.517		17.07	-42.79	53200.00	-14.31		
Galle	I	2035-08-16T06:08:08.603		20.49	-43.98	42000.00	-8.56		
Neptune	I	2035-08-16T06:44:11.858		28.24	-45.57	24762.90		-16.60	-17.15
Neptune	E	2035-08-16T07:54:23.548		42.98	-43.89	24754.13		-58.98	-59.83
Galle	E	2035-08-16T06:35:54.921		26.47	-45.35	42000.92	8.67		
LeVerrier	E	2035-08-16T06:51:27.021	b	29.79	-45.69	53200.00	14.70		
Lassell	E	2035-08-16T06:53:40.435	b	30.27	-45.71	55200.00	15.27		
Arago	E	2035-08-16T06:55:49.260	b	30.72	-45.73	57200.00	15.77		
Galatea	E	2035-08-16T07:00:41.384	b	31.76	-45.75	61953.00	16.73		
Adams	E	2035-08-16T07:01:39.652	b	31.97	-45.74	62933.00	16.90		

```

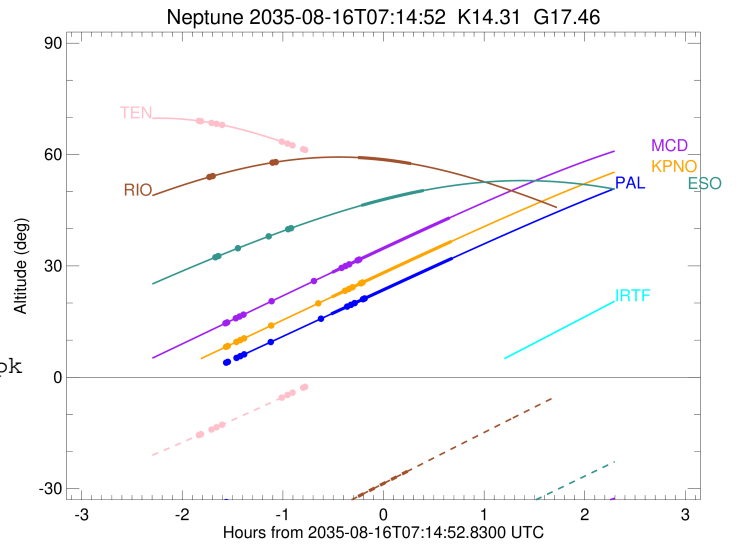
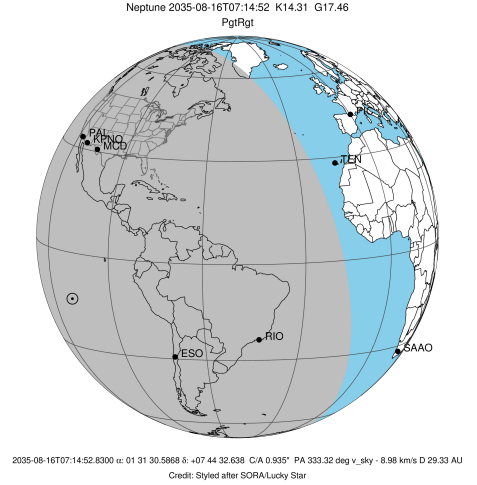
target                : Neptune
target radius (km)   : 24764.00
C/A epoch             : 2035-08-16T07:07:34.260
Event type            : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 2566532444451350144
2Mass ID (if available) : 01313048+0744330
ICRS Star Coord at Epoch: 01h 31m 30.58676s +07:44:32.63788s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 14.314
G magnitude           : 17.457
RP magnitude          : 16.450
BP magnitude          : 18.457
DUPflag              : 0
Distance (au)         : 29.335
f0 (km)               : 0.000
g0 (km)               : 0.000
skyplane vel. (km/s) : -8.98
Sun-Target sep (deg) : 118.76
Sun-Moon sep (deg)   : 92.80
B (ring opening deg) : -10.15
PA of pole (deg)     : -47.58
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 0.899
C/A sky separation (km) : 19129.3
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	2035-08-16T05:25:46.736		69.00	-15.38	62933.00	-14.29		
Galatea	I	2035-08-16T05:26:56.023		68.92	-15.15	61953.00	-14.00		
Arago	I	2035-08-16T05:32:57.769		68.47	-13.94	57200.00	-12.21		
Lassell	I	2035-08-16T05:35:48.385		68.23	-13.37	55200.00	-11.21		
LeVerrier	I	2035-08-16T05:38:56.846		67.94	-12.74	53200.00	-9.99		
Neptune	I	2035-08-16T06:39:23.499		59.28	-0.19x	24760.99		-28.34	-29.17
Neptune	E	2035-08-16T07:35:46.004		48.34	11.93x	24752.20		-69.64	-70.27
LeVerrier	E	2035-08-16T06:17:03.060		63.03	-4.90x	53200.49	9.97		
Lassell	E	2035-08-16T06:20:11.805		62.54	-4.24x	55200.18	11.20		
Arago	E	2035-08-16T06:23:02.699		62.08	-3.64x	57200.08	12.19		
Galatea	E	2035-08-16T06:29:05.073		61.07	-2.37x	61953.02	13.97		
Adams	E	2035-08-16T06:30:14.482		60.88	-2.13x	62933.01	14.27		

```

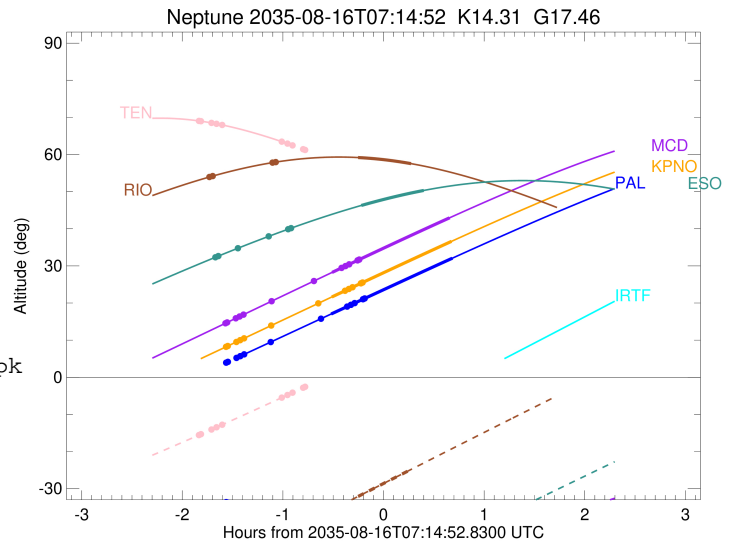
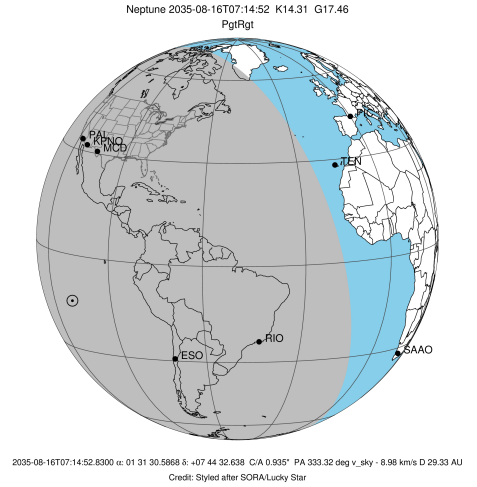
target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2035-08-16T07:15:34.220
Event type          : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code       : RIO
Location            : Rio de Janeiro
Latitude (deg)      : -22.89506
E. Longitude (deg)  : 316.77708
Altitude (km)       : 0.033
Gaia source ID      : 2566532444451350144
2Mass ID (if available) : 01313048+0744330
ICRS Star Coord at Epoch: 01h 31m 30.58676s +07:44:32.63788s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 14.314
G magnitude          : 17.457
RP magnitude         : 16.450
BP magnitude         : 18.457
DUPflag             : 0
Distance (au)       : 29.335
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -8.98
Sun-Target sep (deg) : 118.76
Sun-Moon sep (deg)  : 92.88
B (ring opening deg) : -10.15
PA of pole (deg)    : -47.58
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 1.086
C/A sky separation (km) : 23102.9
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	2035-08-16T05:31:15.467		53.97	-52.48	62933.00	-9.62		
Galatea	I	2035-08-16T05:33:00.888		54.20	-52.07	61953.00	-8.97		
Neptune	I	2035-08-16T06:59:43.236		59.19	-32.11	24757.05		-45.94	-46.92
Neptune	E	2035-08-16T07:31:23.143		57.54	-24.82	24751.01		-79.80	-80.14
Galatea	E	2035-08-16T06:12:22.126		58.08	-43.03	61954.48	9.01		
Adams	E	2035-08-16T06:14:07.084		58.20	-42.62	62933.85	9.66		


```

target                : Neptune
target radius (km)   : 24764.00
C/A epoch            : 2035-08-16T07:20:16.440
Event type           : PgtRgt
: Neptune occs: geocentric, topocentric
: Ring occs: geocentric, topocentric
Observer code        : ESO
Location             : European Southern Obs. (3.6m)
Latitude (deg)       : -29.26097
E. Longitude (deg)   : 289.26831
Altitude (km)        : 2.400
Gaia source ID       : 2566532444451350144
2Mass ID (if available) : 01313048+0744330
ICRS Star Coord at Epoch: 01h 31m 30.58676s +07:44:32.63788s
RUWE (>1.4 is poor) : 0.99
K magnitude          : 14.314
G magnitude          : 17.457
RP magnitude         : 16.450
BP magnitude         : 18.457
DUPflag             : 0
Distance (au)        : 29.335
f0 (km)              : 0.000
g0 (km)              : 0.000
skyplane vel. (km/s) : -8.98
Sun-Target sep (deg) : 118.76
Sun-Moon sep (deg)  : 92.80
B (ring opening deg) : -10.15
PA of pole (deg)    : -47.58
Pole direction: RA (deg): 299.33374
Dec (deg): 42.95036
C/A sky separation (") : 1.055
C/A sky separation (km) : 22446.9
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	2035-08-16T05:35:03.035		32.40	-71.10	62933.00	-10.38		
Galatea	I	2035-08-16T05:36:39.927		32.70	-70.88	61953.00	-9.84		
Arago	I	2035-08-16T05:46:35.297		34.50	-69.42	57200.11	-5.96		
Neptune	I	2035-08-16T07:01:34.392		46.27	-55.37	24757.96		-42.16	-43.14
Neptune	E	2035-08-16T07:38:54.743		50.33	-47.50	24751.03		-79.46	-79.81
Arago	E	2035-08-16T06:11:31.228		38.82	-65.20	57233.15	6.04		
Galatea	E	2035-08-16T06:21:21.386		40.42	-63.37	61953.60	9.96		
Adams	E	2035-08-16T06:22:57.150		40.68	-63.07	62933.38	10.51		