

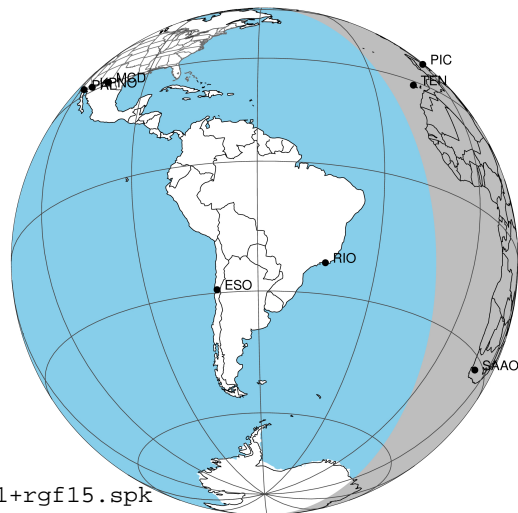
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-11-02T18:54:56.080
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068776764749312896
 2Mass ID (if available) : 17471177-2317418

Jupiter 2031-11-02T18:54:56 K9.36 G14.84 Pgt

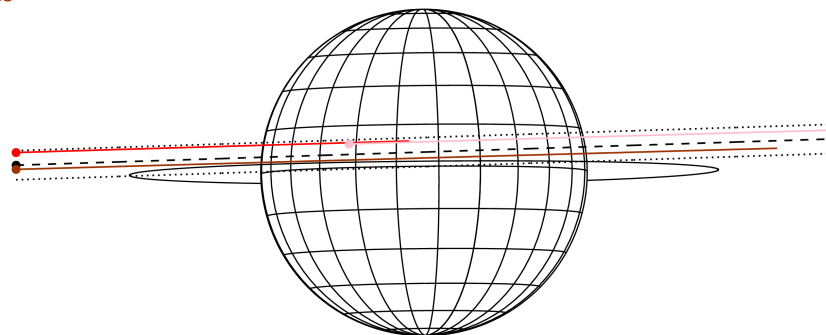
ICRS Star Coord at Epoch: 17h 47m 11.76373s -23:17:41.85936s

RUWE (>1.4 is poor) : 1.03
 K magnitude : 9.355
 G magnitude : 14.838
 RP magnitude : 13.435
 BP magnitude : 17.255
 DUPflag : 0
 Distance (au) : 5.852
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 33.41
 Sun-Target sep (deg) : 47.35
 Sun-Moon sep (deg) : 172.74
 B (ring opening deg) : -2.20
 PA of pole (deg) : 0.54
 Pole direction: RA (deg): 268.05680
 Dec (deg): 64.49652
 C/A sky separation (") : 2.107
 C/A sky separation (km) : 8943.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-11-02T18:54:56 K9.36 G14.84
 Pgt



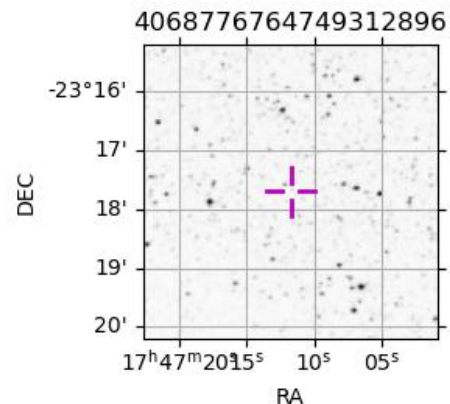
Earth
 PIC
 TEN
 SAAO



2031-11-02T18:54:56.0800 cc: 17 47 11.76373 s: -23 17 41.859 C/A 2.099" PA 181.85 deg v_sky +33.41 km/s D 05.85 AU
 Credit: Styled after SORA/Lucky Star

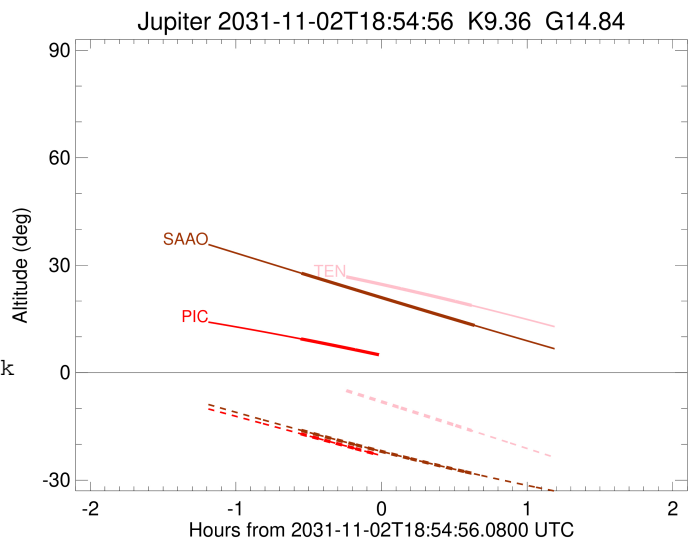
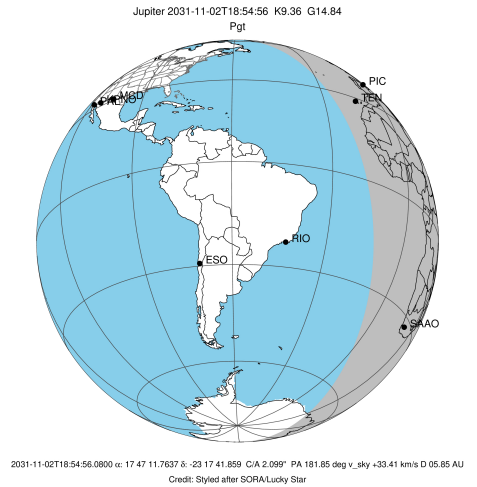
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1	+	NOV 02 18:21 - NOV 02 18:21	Pin
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4			Pnn
MCD	McDonald Obs. 2.7m	30.7	256.0			Pnn
TEN	Teide Obs./Tenerife	28.3	343.5	+	NOV 02 19:32 - NOV 02 19:32	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	NOV 02 18:22 - NOV 02 19:33	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-11-02T18:56:53.140
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PIC
Location           : Pic du Midi
Latitude (deg)     : 42.93656
E. Longitude (deg) : 0.14231
Altitude (km)     : 2.890
Gaia source ID     : 4068776764749312896
2Mass ID (if available) : 17471177-2317418
ICRS Star Coord at Epoch: 17h 47m 11.76373s -23:17:41.85936s
RUWE (>1.4 is poor) : 1.03
K magnitude        : 9.355
G magnitude        : 14.838
RP magnitude       : 13.435
BP magnitude       : 17.255
DUPflag           : 0
Distance (au)     : 5.852
f0 (km)           : 0.00
g0 (km)           : 0.00
skyplane vel. (km/s) : 33.41
Sun-Target sep (deg) : 47.35
Sun-Moon sep (deg) : 172.94
B (ring opening deg) : -2.20
PA of pole (deg)   : 0.54
Pole direction: RA (deg): 268.05680
Dec (deg): 64.49652
C/A sky separation (") : 3.295
C/A sky separation (km) : 13983.8
NAIF SPICE kernels : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
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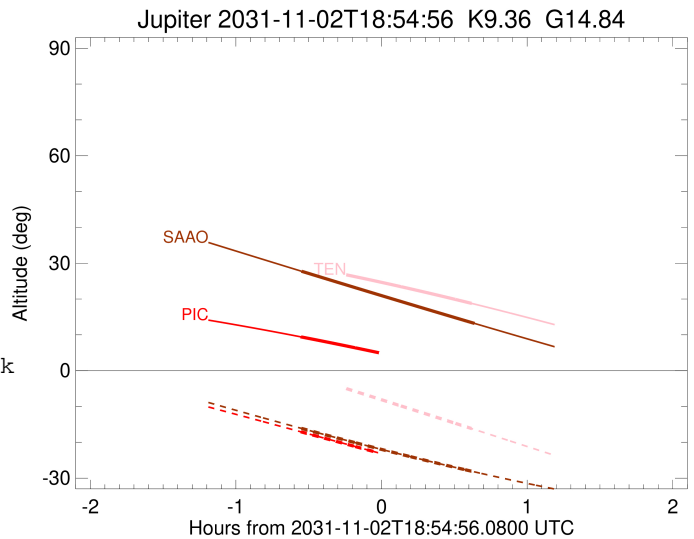
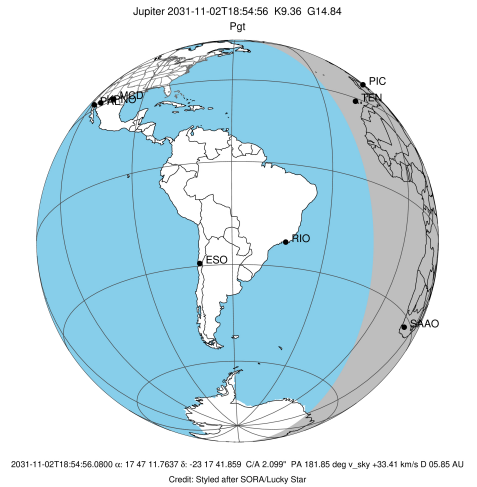


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-11-02T18:21:41.686	9.43	-17.06	71491.8	10.15	11.57
Jupiter	E	2031-11-02T19:32:01.165	-0.75x	-29.96	71491.7	12.37	14.07

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-11-02T18:56:46.660
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 4068776764749312896
2Mass ID (if available) : 17471177-2317418
ICRS Star Coord at Epoch: 17h 47m 11.76373s -23:17:41.85936s
RUWE (>1.4 is poor) : 1.03
K magnitude           : 9.355
G magnitude           : 14.838
RP magnitude          : 13.435
BP magnitude          : 17.255
DUPflag              : 0
Distance (au)         : 5.852
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 33.41
Sun-Target sep (deg)  : 47.35
Sun-Moon sep (deg)   : 172.99
B (ring opening deg) : -2.20
PA of pole (deg)     : 0.54
Pole direction: RA (deg): 268.05680
Dec (deg): 64.49652
C/A sky separation (") : 3.171
C/A sky separation (km) : 13457.7
NAIF SPICE kernels   : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```

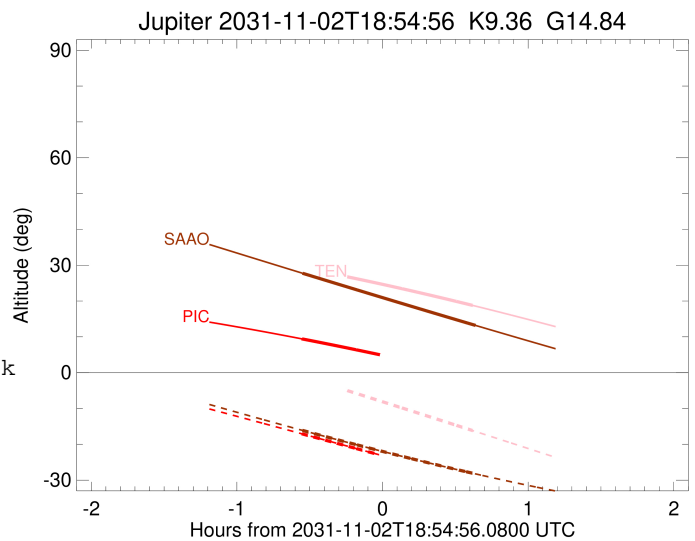
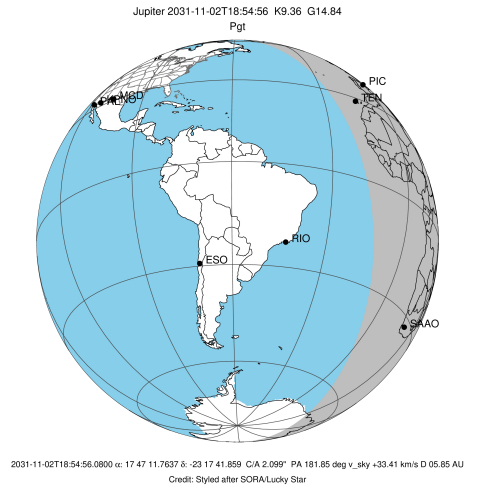


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-11-02T18:21:24.041	29.31	-0.95x	71491.8	9.70	11.05
Jupiter	E	2031-11-02T19:32:05.969	18.77	-16.17	71491.7	11.95	13.60

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-11-02T18:57:38.100
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : SAAO
Location            : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)      : -32.37953
E. Longitude (deg)  : 20.81070
Altitude (km)       : 1.768
Gaia source ID      : 4068776764749312896
2Mass ID (if available) : 17471177-2317418
ICRS Star Coord at Epoch: 17h 47m 11.76373s -23:17:41.85936s
RUWE (>1.4 is poor) : 1.03
K magnitude          : 9.355
G magnitude          : 14.838
RP magnitude         : 13.435
BP magnitude         : 17.255
DUPflag             : 0
Distance (au)        : 5.852
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 33.41
Sun-Target sep (deg) : 47.35
Sun-Moon sep (deg)   : 173.62
B (ring opening deg) : -2.20
PA of pole (deg)     : 0.54
Pole direction: RA (deg): 268.05680
Dec (deg): 64.49652
C/A sky separation ("): 1.497
C/A sky separation (km): 6355.9
NAIF SPICE kernels  : RAJobs_U111+rgf15.spk
URKALLv1.spk
naif0012.tls
nep097.bsp
nep101.bsp
sat4401.bsp
de440.bsp
earth_720101_070426.bpc
jup365.bsp
urall6.bsp
IAU_SATURN_for_RINGFIT.tpc
pck00010.tpc
earth_200101_990628_predict.bpc
uranus_ringframes_rfrench20220627_v1.tf
neptune_ringframes_rfrench20220702a_v1.tf
earth_flat_IAU.spk
    
```



x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-11-02T18:21:59.911	27.75	-16.12	71492.0	4.05	4.63
Jupiter	E	2031-11-02T19:33:11.831	13.20	-28.24	71491.9	6.13	7.00