

target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-11-03T19:46:07.380
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068771370265627136
 2Mass ID (if available) : 17480302-2318221

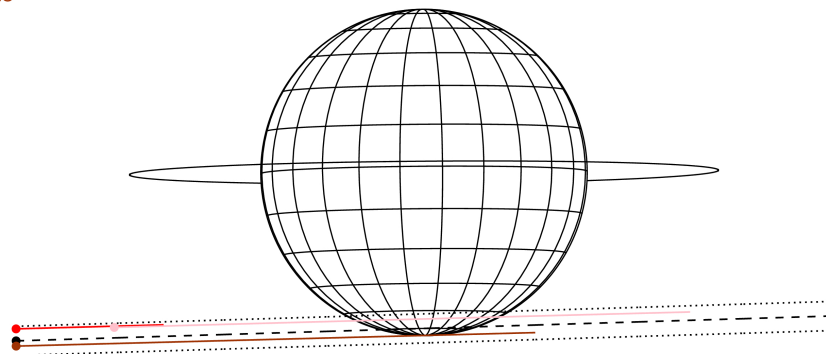
Jupiter 2031-11-03T19:46:07 K8.49 G14.20 Pgt

ICRS Star Coord at Epoch: 17h 48m 03.02018s -23:18:22.17398s
 RUWE (>1.4 is poor) : 1.12
 K magnitude : 8.489
 G magnitude : 14.203
 RP magnitude : 12.754
 BP magnitude : 16.944
 DUPflag : 0
 Distance (au) : 5.864
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 33.74
 Sun-Target sep (deg) : 46.51
 Sun-Moon sep (deg) : 173.32
 B (ring opening deg) : -2.19
 PA of pole (deg) : 0.45
 Pole direction: RA (deg): 268.05680
 Dec (deg): 64.49652
 C/A sky separation (") : 16.054
 C/A sky separation (km) : 68274.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp



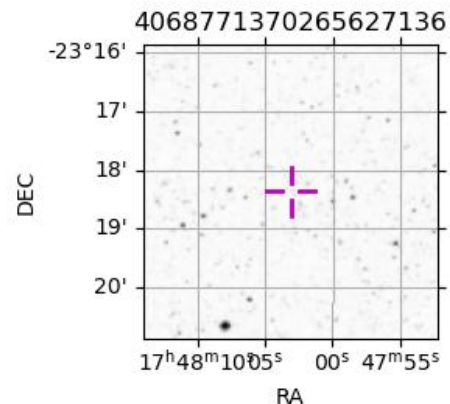
2031-11-03T19:46:07.3800 α: 17 48 03.0202 δ: -23 18 22.174 C/A ***** PA 1.75 deg v_sky +33.74 km/s D 05.86 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 TEN
 SAAO



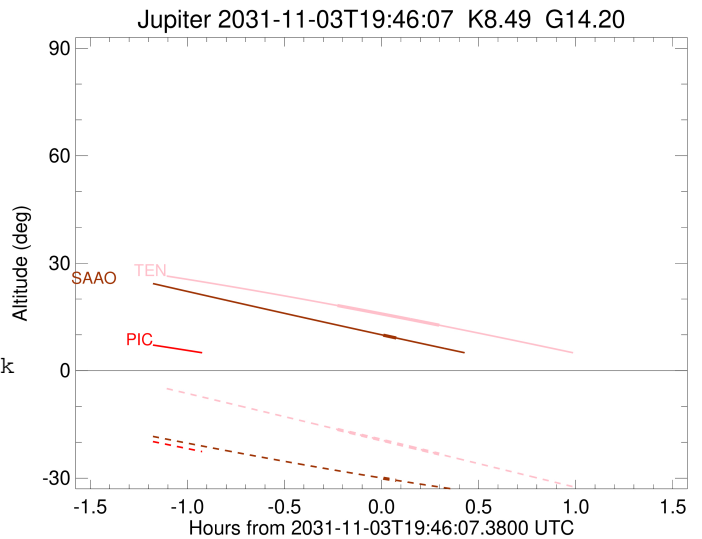
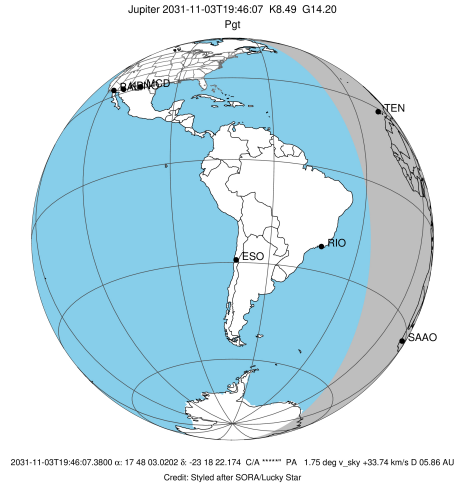
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
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 03 19:32 - NOV 03 20:03	Pie
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 03 19:46 - NOV 03 19:50	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-11-03T19:48:14.920
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      : 4068771370265627136
2Mass ID (if available) : 17480302-2318221
ICRS Star Coord at Epoch: 17h 48m 03.02018s -23:18:22.17398s
RUWE (>1.4 is poor) : 1.12
K magnitude          : 8.489
G magnitude          : 14.203
RP magnitude         : 12.754
BP magnitude         : 16.944
DUPflag             : 0
Distance (au)        : 5.864
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 33.74
Sun-Target sep (deg) : 46.51
Sun-Moon sep (deg)  : 172.50
B (ring opening deg) : -2.19
PA of pole (deg)    : 0.45
Pole direction: RA (deg): 268.05680
Dec (deg): 64.49652
C/A sky separation (") : 15.082
C/A sky separation (km) : 64143.1
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
    
```

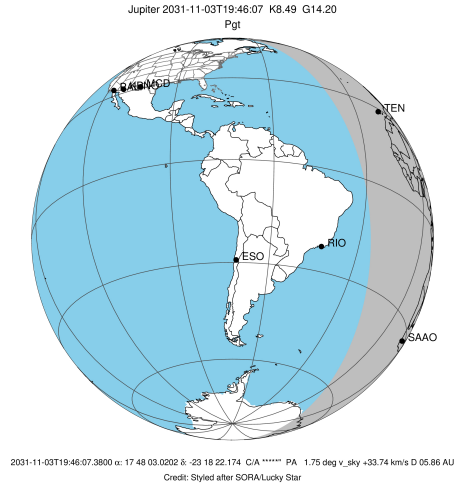


x: target alt < 5.0 deg or sun > -5.0 deg

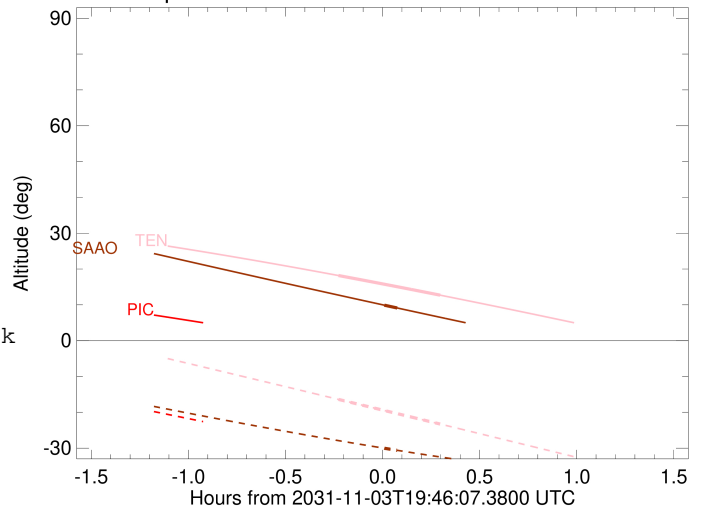
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-11-03T19:32:32.840	18.17	-16.40	71486.6	-64.80	-67.49
Jupiter	E	2031-11-03T20:03:56.251	12.70	-23.27	71486.8	-62.65	-65.51

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-11-03T19:48:39.730
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        : 4068771370265627136
2Mass ID (if available) : 17480302-2318221
ICRS Star Coord at Epoch: 17h 48m 03.02018s -23:18:22.17398s
RUWE (>1.4 is poor) : 1.12
K magnitude           : 8.489
G magnitude           : 14.203
RP magnitude          : 12.754
BP magnitude          : 16.944
DUPflag              : 0
Distance (au)         : 5.864
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 33.74
Sun-Target sep (deg) : 46.51
Sun-Moon sep (deg)   : 172.89
B (ring opening deg) : -2.19
PA of pole (deg)     : 0.45
Pole direction: RA (deg): 268.05680
Dec (deg): 64.49652
C/A sky separation ("): 16.782
C/A sky separation (km): 71372.5
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
    
```



Jupiter 2031-11-03T19:46:07 K8.49 G14.20



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	2031-11-03T19:46:40.733	9.91	-30.03	71485.4	-86.90	-87.26
Jupiter	E	2031-11-03T19:50:38.737	9.13	-30.60	71485.4	-85.21	-85.78