

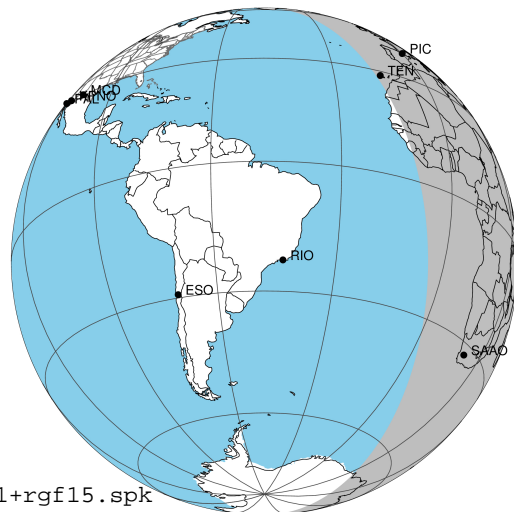
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-10-30T18:22:00.340  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068806348432373504  
 2Mass ID (if available) : 17444433-2316464

Jupiter 2031-10-30T18:22:00 K8.75 G14.61 Pgt

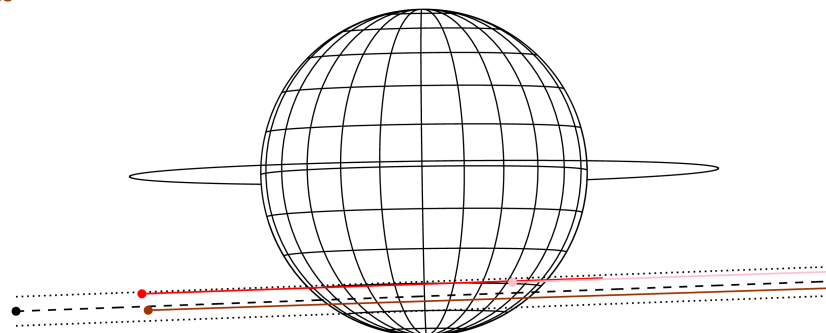
ICRS Star Coord at Epoch: 17h 44m 44.32908s -23:16:46.73361s

RUWE (>1.4 is poor) : 0.92  
 K magnitude : 8.750  
 G magnitude : 14.609  
 RP magnitude : 13.144  
 BP magnitude : 17.476  
 DUPflag : 0  
 Distance (au) : 5.818  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 32.44  
 Sun-Target sep (deg) : 49.81  
 Sun-Moon sep (deg) : 135.63  
 B (ring opening deg) : -2.21  
 PA of pole (deg) : 0.81  
 Pole direction: RA (deg): 268.05681  
 Dec (deg): 64.49652  
 C/A sky separation (") : 12.838  
 C/A sky separation (km) : 54170.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-10-30T18:22:00 K8.75 G14.61  
 Pgt



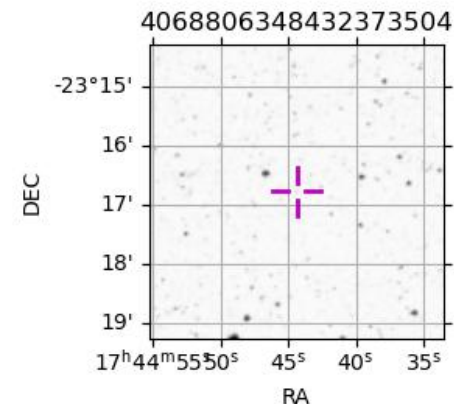
Earth  
 PIC  
 TEN  
 SAAO



2031-10-30T18:22:00.3400 α: 17 44 44.3291 δ: -23 16 46.734 C/A \*\*\*\*\* PA 2.11 deg v\_sky +32.44 km/s D 05.82 AU  
 Credit: Styled after SORA/Lucky Star

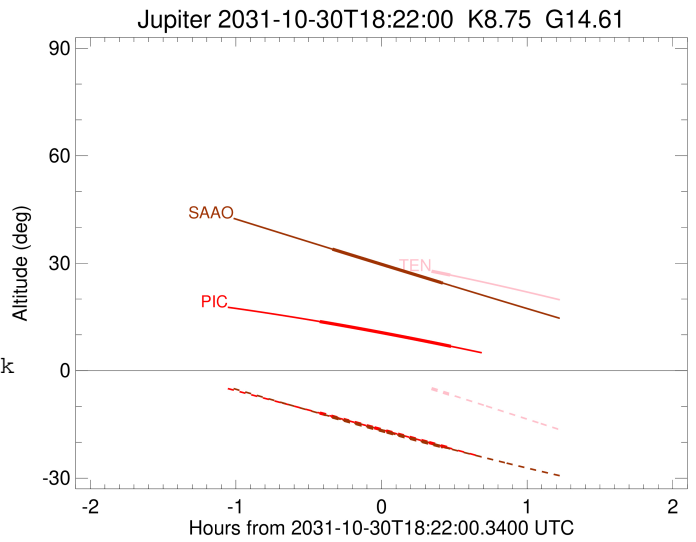
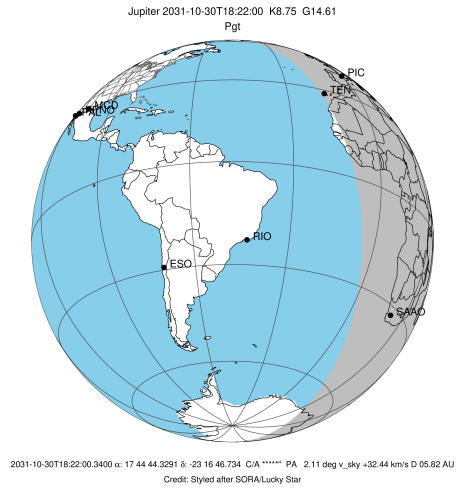
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1	+ +	OCT 30 17:56 - OCT 30 18:50	Pie
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	+ +	OCT 30 18:50 - OCT 30 18:50	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	+ +	OCT 30 18:01 - OCT 30 18:47	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-30T18:23:38.200
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      : 4068806348432373504
2Mass ID (if available) : 17444433-2316464
ICRS Star Coord at Epoch: 17h 44m 44.32908s -23:16:46.73361s
RUWE (>1.4 is poor) : 0.92
K magnitude          : 8.750
G magnitude          : 14.609
RP magnitude         : 13.144
BP magnitude         : 17.476
DUPflag             : 0
Distance (au)       : 5.818
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 32.44
Sun-Target sep (deg) : 49.81
Sun-Moon sep (deg)  : 136.11
B (ring opening deg) : -2.21
PA of pole (deg)    : 0.81
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (" ) : 11.578
C/A sky separation (km) : 48853.6
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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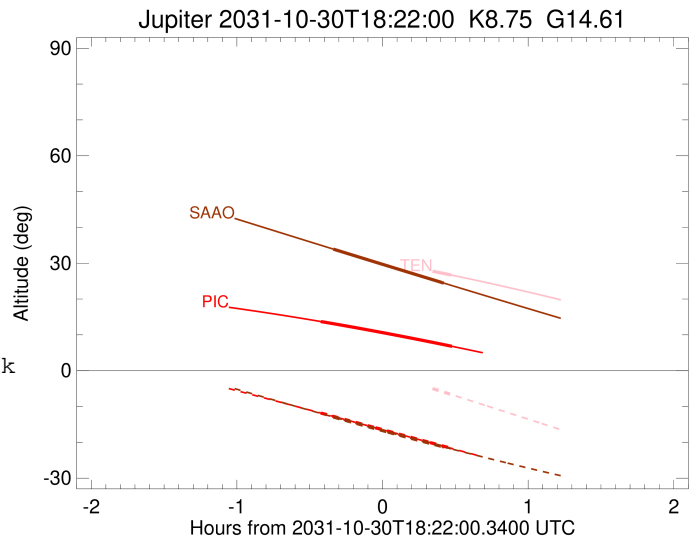
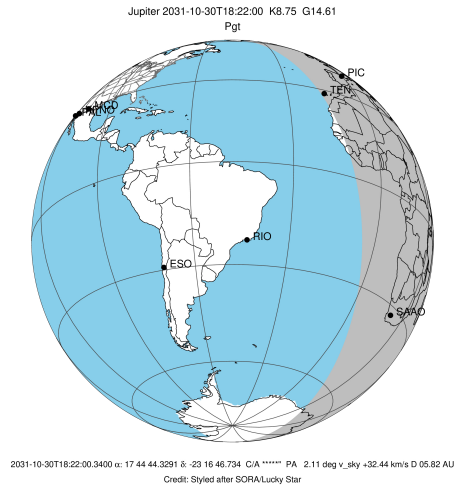


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-30T17:56:37.254	13.71	-11.83	71488.7	-44.21	-47.92
Jupiter	E	2031-10-30T18:50:37.315	6.80	-21.73	71489.0	-41.94	-45.66

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-10-30T18:23:22.730
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        : 4068806348432373504
2Mass ID (if available) : 17444433-2316464
ICRS Star Coord at Epoch: 17h 44m 44.32908s -23:16:46.73361s
RUWE (>1.4 is poor) : 0.92
K magnitude           : 8.750
G magnitude           : 14.609
RP magnitude          : 13.144
BP magnitude          : 17.476
DUPflag              : 0
Distance (au)         : 5.818
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 32.44
Sun-Target sep (deg)  : 49.81
Sun-Moon sep (deg)    : 136.27
B (ring opening deg) : -2.21
PA of pole (deg)      : 0.81
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 11.712
C/A sky separation (km) : 49419.6
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
    
```

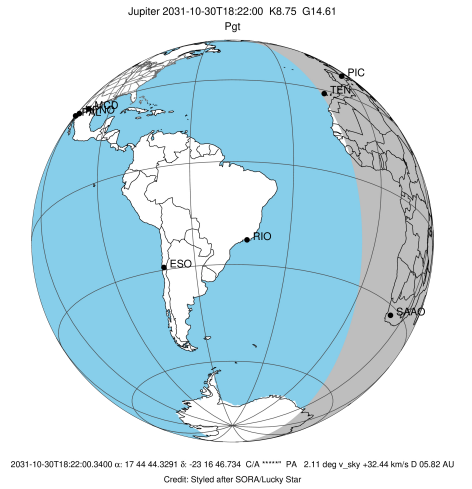


x: target alt < 5.0 deg or sun > -5.0 deg

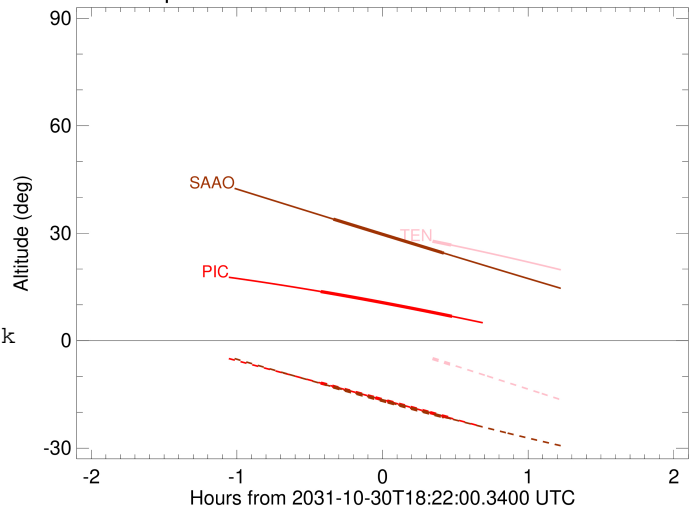
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-30T17:56:32.614	33.28	4.78x	71488.7	-44.88	-48.58
Jupiter	E	2031-10-30T18:50:11.282	26.71	-6.63	71488.9	-42.54	-46.26

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-10-30T18:24:30.480
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        : 4068806348432373504
2Mass ID (if available) : 17444433-2316464
ICRS Star Coord at Epoch: 17h 44m 44.32908s -23:16:46.73361s
RUWE (>1.4 is poor)  : 0.92
K magnitude           : 8.750
G magnitude           : 14.609
RP magnitude          : 13.144
BP magnitude          : 17.476
DUPflag              : 0
Distance (au)         : 5.818
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 32.44
Sun-Target sep (deg)  : 49.81
Sun-Moon sep (deg)   : 136.49
B (ring opening deg) : -2.21
PA of pole (deg)     : 0.81
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 13.358
C/A sky separation (km) : 56362.7
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
    
```



Jupiter 2031-10-30T18:22:00 K8.75 G14.61



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	2031-10-30T18:01:48.213	33.91	-12.94	71487.7	-53.04	-56.51
Jupiter	E	2031-10-30T18:47:10.992	24.46	-21.28	71488.0	-50.94	-54.49