

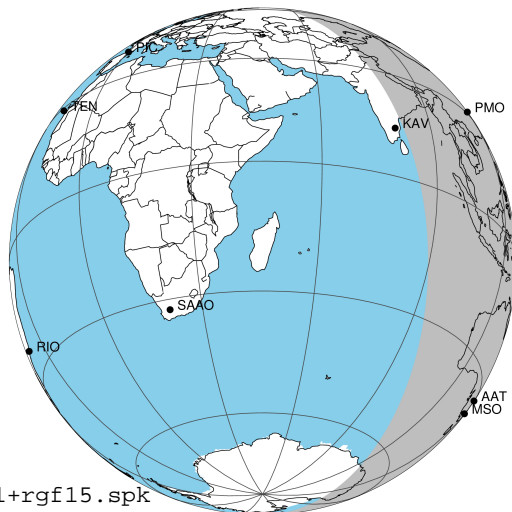
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-10-31T12:03:07.470  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068806726450090752  
 2Mass ID (if available) : 17451999-2316383

Jupiter 2031-10-31T12:03:07 K9.90 G14.84 Pgt

ICRS Star Coord at Epoch: 17h 45m 20.00323s -23:16:38.33113s

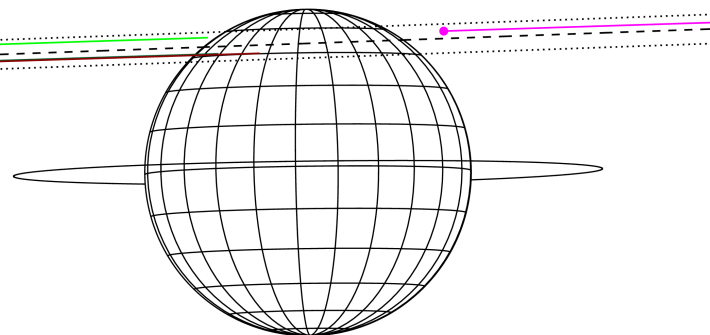
RUWE (>1.4 is poor) : 0.00  
 K magnitude : 9.903  
 G magnitude : 14.838  
 RP magnitude : 13.290  
 BP magnitude : 15.994  
 DUPflag : 0  
 Distance (au) : 5.826  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 32.68  
 Sun-Target sep (deg) : 49.21  
 Sun-Moon sep (deg) : 145.03  
 B (ring opening deg) : -2.22  
 PA of pole (deg) : 0.74  
 Pole direction: RA (deg): 268.05681  
 Dec (deg): 64.49652  
 C/A sky separation (") : 13.374  
 C/A sky separation (km) : 56516.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-10-31T12:03:07 K9.90 G14.84  
 Pgt



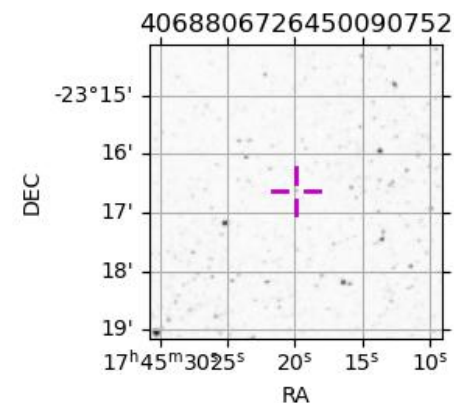
2031-10-31T12:03:07.4700 a: 17 45 20.00323 s: -23 16 38.33113 C/A \*\*\*\*\* PA 182.05 deg v\_sky +32.68 km/s D 05.83 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PMO  
 KAV  
 AAT  
 MSO



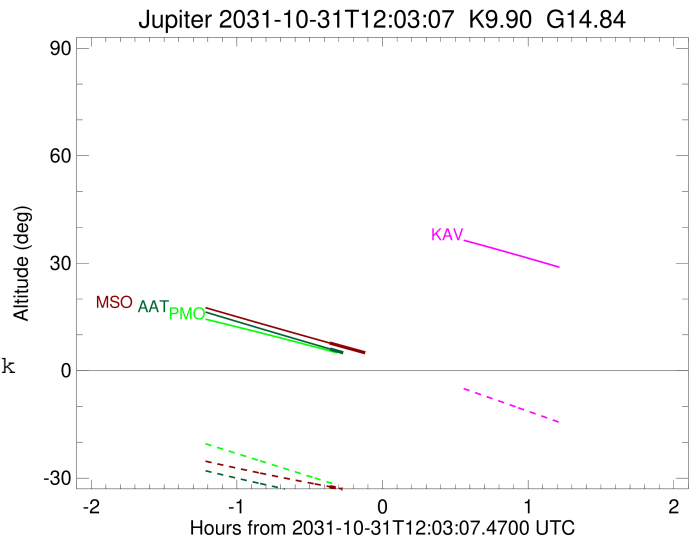
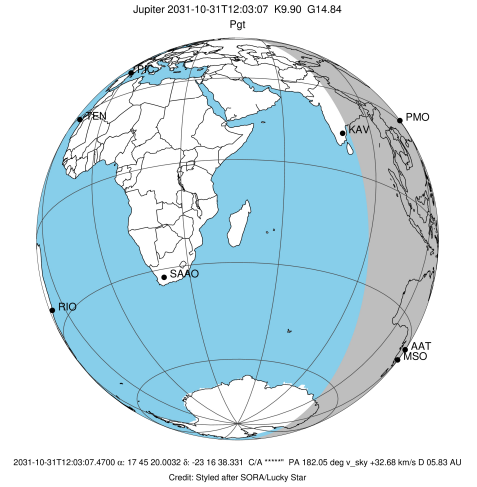
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEncode
PIC	Pic du Midi	42.9	0.1			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			Pnn
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	+	OCT 31 11:41 - OCT 31 11:41	Pin
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	OCT 31 11:41 - OCT 31 11:41	Pin



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-31T12:06:01.090
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : AAT
Location             : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 4068806726450090752
2Mass ID (if available) : 17451999-2316383
ICRS Star Coord at Epoch: 17h 45m 20.00323s -23:16:38.33113s
RUWE (>1.4 is poor) : 0.00
K magnitude           : 9.903
G magnitude           : 14.838
RP magnitude         : 13.290
BP magnitude         : 15.994
DUPflag              : 0
Distance (au)        : 5.826
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 32.68
Sun-Target sep (deg) : 49.21
Sun-Moon sep (deg)   : 145.71
B (ring opening deg) : -2.22
PA of pole (deg)     : 0.74
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (") : 12.582
C/A sky separation (km) : 53167.5
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
    
```

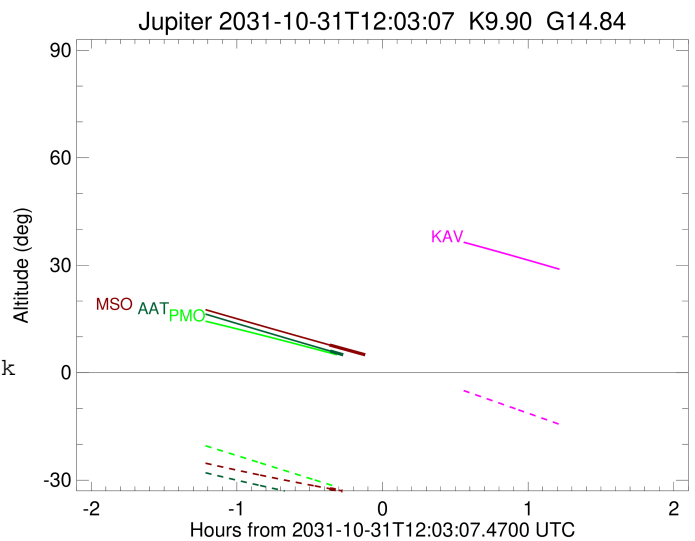
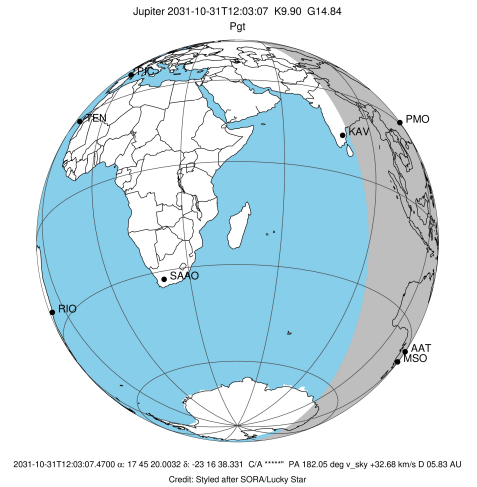


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-31T11:41:41.575	6.02	-35.63	71488.4	46.97	50.64
Jupiter	E	2031-10-31T12:30:18.444	-3.30x	-41.12	71488.2	49.03	52.65

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-31T12:05:53.730
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : MSO
Location            : Mt. Stromlo Observatory
Latitude (deg)      : -35.32000
E. Longitude (deg)  : 149.00833
Altitude (km)       : 0.770
Gaia source ID      : 4068806726450090752
2Mass ID (if available) : 17451999-2316383
ICRS Star Coord at Epoch: 17h 45m 20.00323s -23:16:38.33113s
RUWE (>1.4 is poor) : 0.00
K magnitude          : 9.903
G magnitude          : 14.838
RP magnitude         : 13.290
BP magnitude         : 15.994
DUPflag             : 0
Distance (au)       : 5.826
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 32.68
Sun-Target sep (deg) : 49.21
Sun-Moon sep (deg)  : 145.69
B (ring opening deg) : -2.22
PA of pole (deg)    : 0.74
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation (" ) : 12.505
C/A sky separation (km) : 52841.5
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
    
```



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	2031-10-31T11:41:23.041	7.72	-32.37	71488.5	46.57	50.25
Jupiter	E	2031-10-31T12:30:22.318	-1.26x	-37.44	71488.2	48.66	52.29