

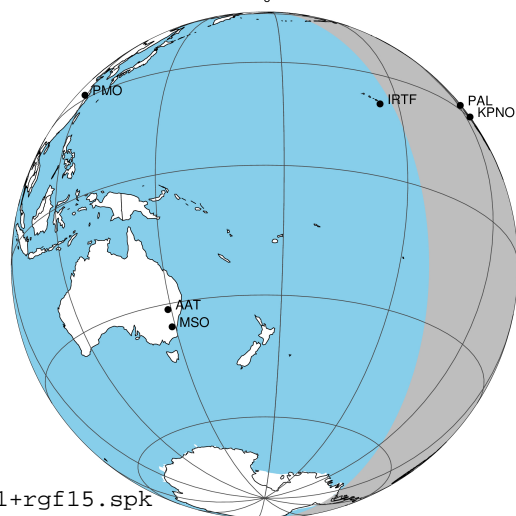
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-10-31T03:27:38.120
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068806176694591104
 2Mass ID (if available) : 17450269-2316298

Jupiter 2031-10-31T03:27:38 K8.77 G14.11 Pgt

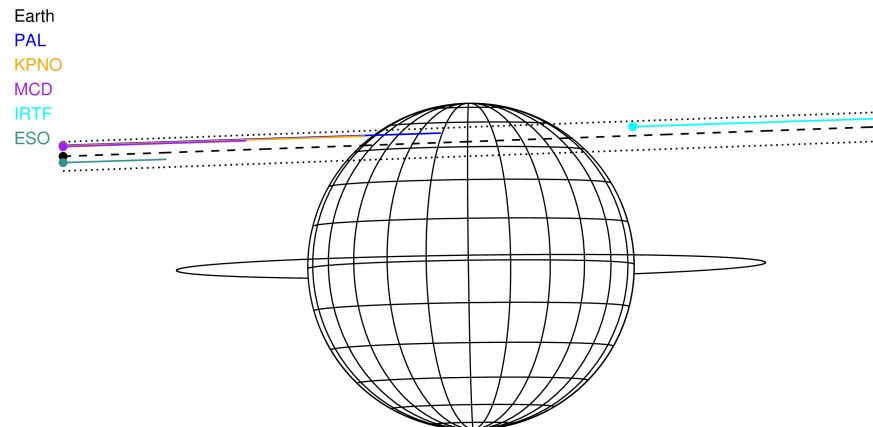
ICRS Star Coord at Epoch: 17h 45m 02.67935s -23:16:30.16532s

RUWE (>1.4 is poor) : 0.83
 K magnitude : 8.773
 G magnitude : 14.110
 RP magnitude : 12.749
 BP magnitude : 16.379
 DUPflag : 0
 Distance (au) : 5.822
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 32.56
 Sun-Target sep (deg) : 49.50
 Sun-Moon sep (deg) : 140.49
 B (ring opening deg) : -2.22
 PA of pole (deg) : 0.77
 Pole direction: RA (deg): 268.05681
 Dec (deg): 64.49652
 C/A sky separation (") : 12.953
 C/A sky separation (km) : 54695.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-10-31T03:27:38 K8.77 G14.11 Pgt

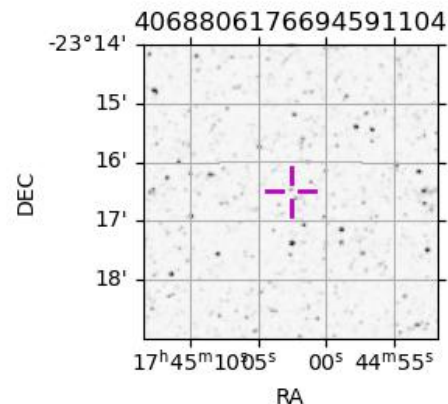


2031-10-31T03:27:38.1200 a: 17 45 02.6794 s: -23 16 30.165 C/A ***** PA 182.08 deg v_sky +32.56 km/s D 05.82 AU
 Credit: Styled after SORA/Lucky Star



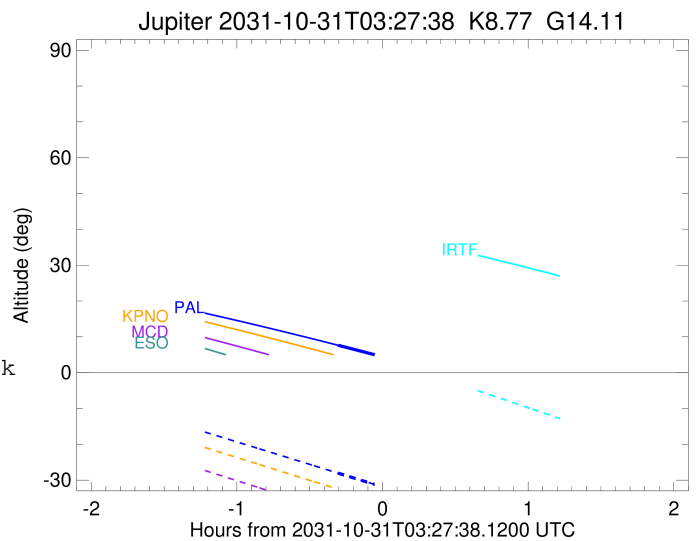
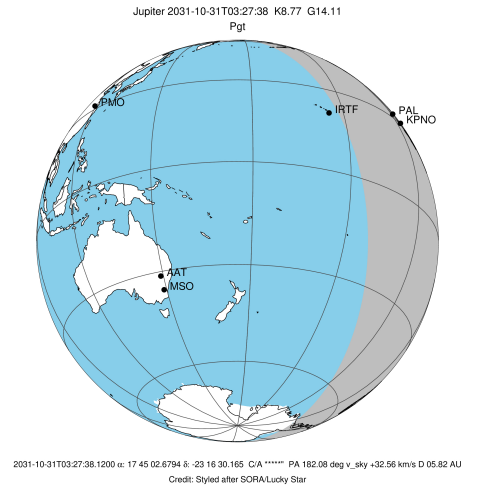
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+	OCT 31 03:09 - OCT 31 03:09	Pin
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			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-31T03:30:13.800
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg) : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 4068806176694591104
2Mass ID (if available) : 17450269-2316298
ICRS Star Coord at Epoch: 17h 45m 02.67935s -23:16:30.16532s
RUWE (>1.4 is poor) : 0.83
K magnitude          : 8.773
G magnitude          : 14.110
RP magnitude         : 12.749
BP magnitude         : 16.379
DUPflag             : 0
Distance (au)        : 5.822
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 32.56
Sun-Target sep (deg) : 49.50
Sun-Moon sep (deg)   : 141.09
B (ring opening deg) : -2.22
PA of pole (deg)     : 0.77
Pole direction: RA (deg): 268.05681
Dec (deg): 64.49652
C/A sky separation ("): 13.935
C/A sky separation (km): 58843.5
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	2031-10-31T03:09:20.527	7.64	-28.04	71487.6	54.27	57.68
Jupiter	E	2031-10-31T03:51:05.549	0.17x	-36.76	71487.3	56.39	59.68