

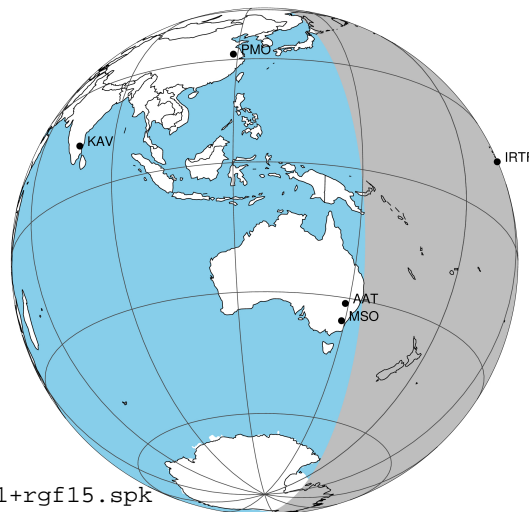
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-10-10T07:48:07.100
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4111479219372425728
 2Mass ID (if available) : 17295223-2305522

Jupiter 2031-10-10T07:48:07 K8.88 G14.47 Pgt

ICRS Star Coord at Epoch: 17h 29m 52.22010s -23:05:52.36860s

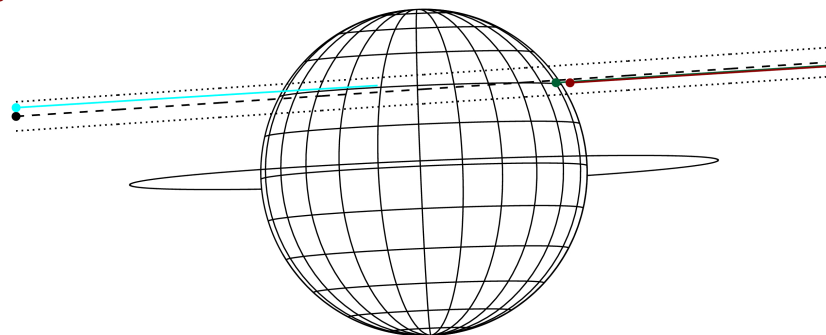
RUWE (>1.4 is poor) : 0.89
 K magnitude : 8.883
 G magnitude : 14.471
 RP magnitude : 13.081
 BP magnitude : 16.847
 DUPflag : 0
 Distance (au) : 5.554
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 24.89
 Sun-Target sep (deg) : 66.70
 Sun-Moon sep (deg) : 136.09
 B (ring opening deg) : -2.30
 PA of pole (deg) : 2.41
 Pole direction: RA (deg): 268.05682
 Dec (deg): 64.49652
 C/A sky separation (") : 9.044
 C/A sky separation (km) : 36430.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-10-10T07:48:07 K8.88 G14.47
 Pgt



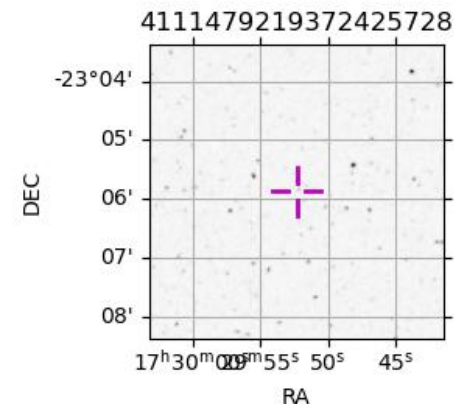
2031-10-10T07:48:07.1000 cc: 17 29 52.2201 s: -23 05 52.3689 C/A 9.036° PA 183.82 deg v_sky +24.89 km/s D 05.55 AU
 Credit: Styled after SORA/Lucky Star

Earth
 IRTF
 AAT
 MSO



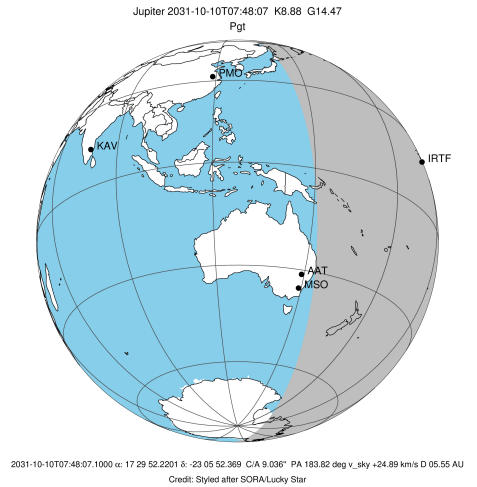
Observable events with sun below -5 deg and altitude above 5 deg

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			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	OCT 10 07:11 - OCT 10 07:11	Pin
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 10 08:31 - OCT 10 08:31	Pne
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

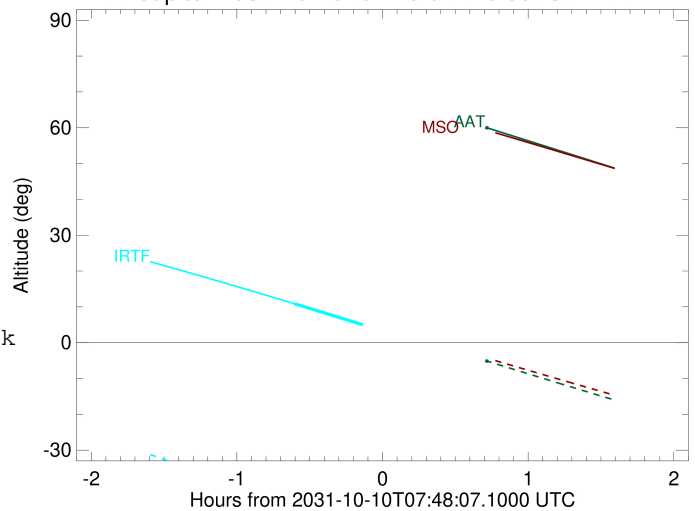


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-10-10T07:52:07.060
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : IRTF
Location             : Mauna Kea/IRTF
Latitude (deg)       : 19.82622
E. Longitude (deg)   : 204.52800
Altitude (km)        : 4.168
Gaia source ID       : 4111479219372425728
2Mass ID (if available) : 17295223-2305522
ICRS Star Coord at Epoch: 17h 29m 52.22010s -23:05:52.36860s
RUWE (>1.4 is poor) : 0.89
K magnitude           : 8.883
G magnitude           : 14.471
RP magnitude         : 13.081
BP magnitude         : 16.847
DUPflag              : 0
Distance (au)        : 5.554
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 24.89
Sun-Target sep (deg) : 66.70
Sun-Moon sep (deg)   : 135.51
B (ring opening deg) : -2.30
PA of pole (deg)     : 2.41
Pole direction: RA (deg): 268.05682
Dec (deg): 64.49652
C/A sky separation ("): 9.745
C/A sky separation (km): 39252.9
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
    
```



Jupiter 2031-10-10T07:48:07 K8.88 G14.47

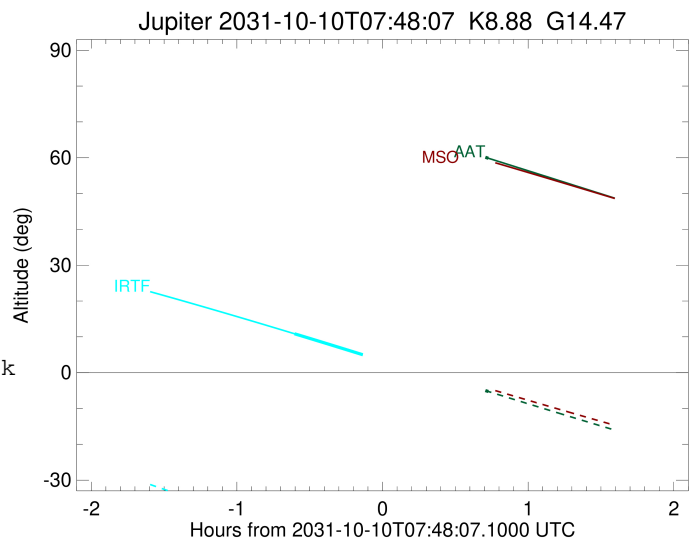
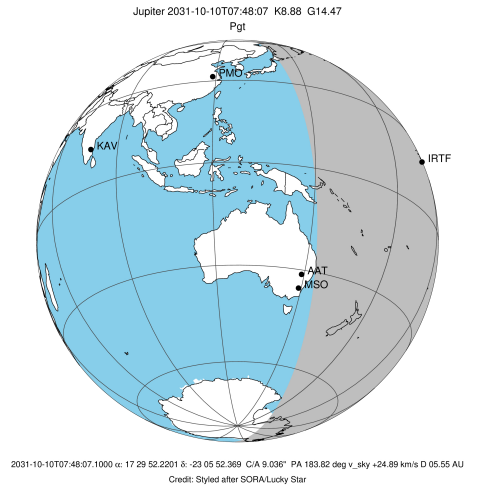


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-10-10T07:11:52.400	10.86	-45.11	71489.9	32.22	35.71
Jupiter	E	2031-10-10T08:32:13.065	-6.20x	-63.12	71489.7	34.30	37.87

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-10-10T07:49:34.650
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       : 4111479219372425728
2Mass ID (if available) : 17295223-2305522
ICRS Star Coord at Epoch: 17h 29m 52.22010s -23:05:52.36860s
RUWE (>1.4 is poor) : 0.89
K magnitude           : 8.883
G magnitude           : 14.471
RP magnitude         : 13.081
BP magnitude         : 16.847
DUPflag              : 0
Distance (au)        : 5.554
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 24.89
Sun-Target sep (deg) : 66.70
Sun-Moon sep (deg)   : 136.47
B (ring opening deg) : -2.30
PA of pole (deg)     : 2.41
Pole direction: RA (deg): 268.05682
Dec (deg): 64.49652
C/A sky separation (") : 8.818
C/A sky separation (km) : 35517.8
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
    
```



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	2031-10-10T07:07:21.485	76.92	12.69x	71490.4	28.40	31.67
Jupiter	E	2031-10-10T08:31:43.685	59.85	-5.26	71490.1	31.06	34.49