

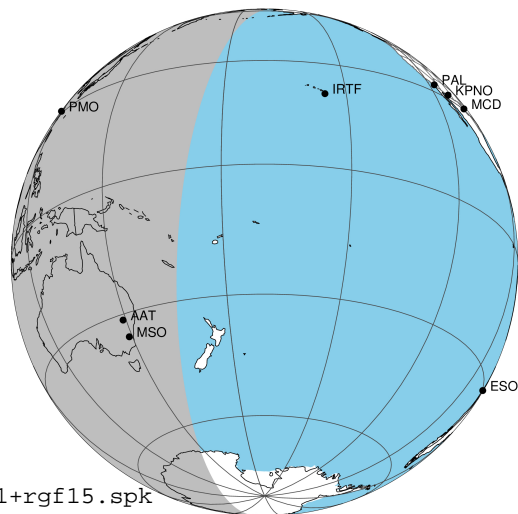
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-02-23T18:45:53.050  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4116745605201342592  
 2Mass ID (if available) : 17372345-2247362

Jupiter 2031-02-23T18:45:53 K9.46 G14.84 Pgt

ICRS Star Coord at Epoch: 17h 37m 23.45316s -22:47:36.36556s

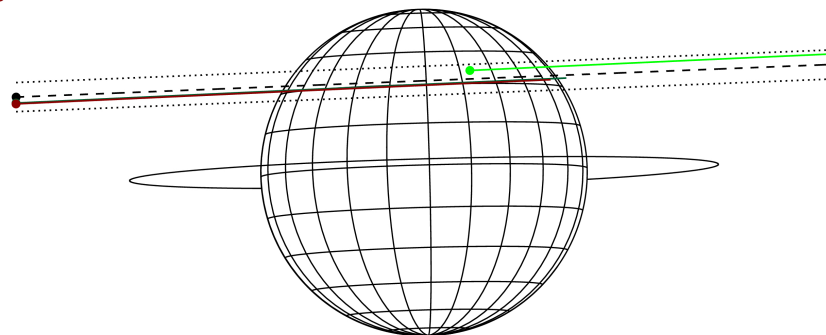
RUWE (>1.4 is poor) : 0.97  
 K magnitude : 9.461  
 G magnitude : 14.844  
 RP magnitude : 13.495  
 BP magnitude : 17.053  
 DUPflag : 0  
 Distance (au) : 5.578  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 23.46  
 Sun-Target sep (deg) : 69.73  
 Sun-Moon sep (deg) : 97.27  
 B (ring opening deg) : -2.66  
 PA of pole (deg) : 1.60  
 Pole direction: RA (deg): 268.05701  
 Dec (deg): 64.49651  
 C/A sky separation (") : 9.924  
 C/A sky separation (km) : 40151.4  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-02-23T18:45:53 K9.46 G14.84  
 Pgt



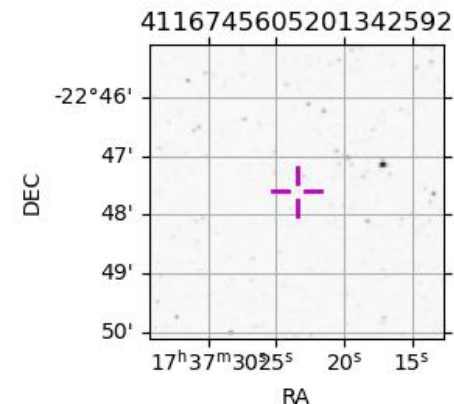
2031-02-23T18:45:53.0500 cc: 17 37 23.4532 s: -22 47 36.366 C/A 9.914" PA 182.29 deg v\_sky +23.46 km/s D 05.58 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PMO  
 AAT  
 MSO



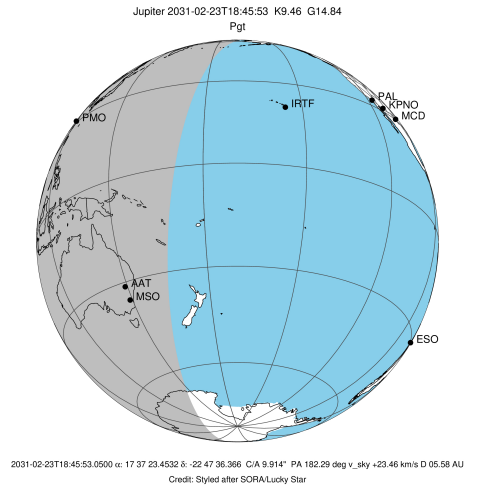
Observable events with sun below -5 deg and altitude above 5 deg

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	+	FEB 23 19:22 - FEB 23 19:22	Pne
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	+ +	FEB 23 17:59 - FEB 23 19:26	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	FEB 23 17:59 - FEB 23 17:59	Pin

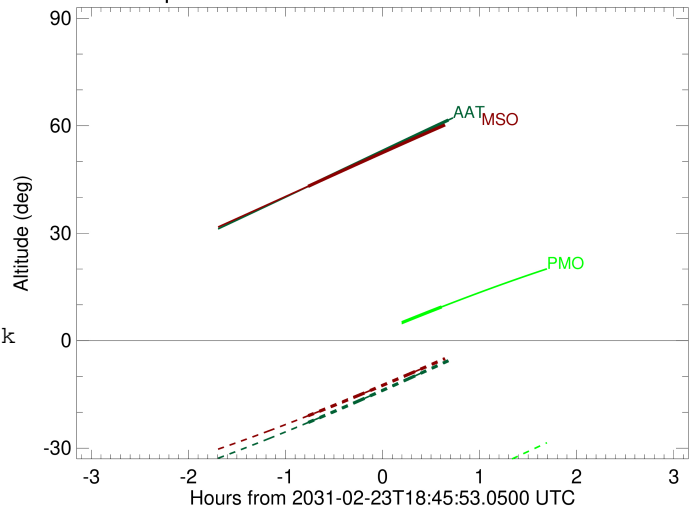


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-02-23T18:41:55.960
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PMO
Location              : Purple Mtn Obs. Nanking
Latitude (deg)        : 32.06667
E. Longitude (deg)    : 118.82089
Altitude (km)         : 0.364
Gaia source ID        : 4116745605201342592
2Mass ID (if available) : 17372345-2247362
ICRS Star Coord at Epoch: 17h 37m 23.45316s -22:47:36.36556s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 9.461
G magnitude           : 14.844
RP magnitude          : 13.495
BP magnitude          : 17.053
DUPflag              : 0
Distance (au)         : 5.578
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 23.46
Sun-Target sep (deg)  : 69.73
Sun-Moon sep (deg)    : 97.22
B (ring opening deg) : -2.66
PA of pole (deg)      : 1.60
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (" ) : 10.804
C/A sky separation (km) : 43711.0
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 2031-02-23T18:45:53 K9.46 G14.84

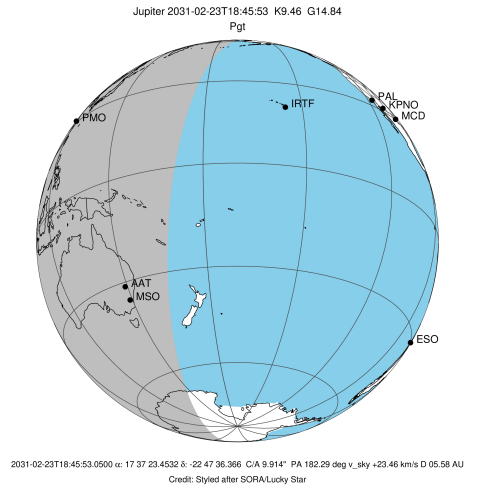


x: target alt < 5.0 deg or sun > -5.0 deg

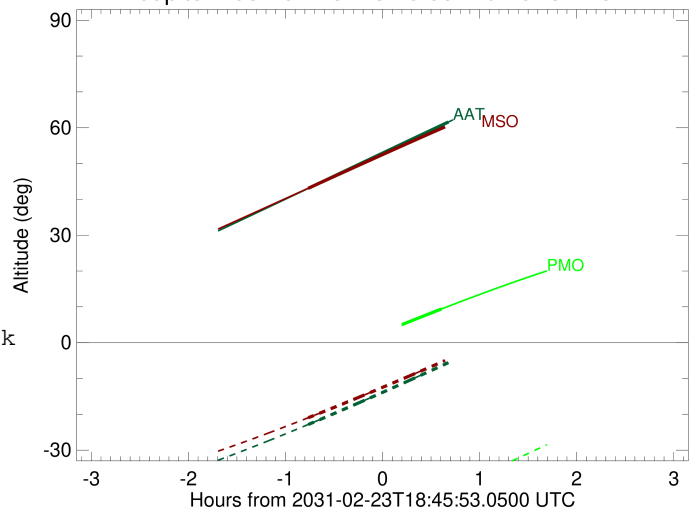
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-23T18:01:36.783	-5.62x	-57.34	71488.6	36.58	40.23
Jupiter	E	2031-02-23T19:22:23.590	9.42	-42.01	71488.2	38.70	42.39

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch             : 2031-02-23T18:43:13.300
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        : 4116745605201342592
2Mass ID (if available) : 17372345-2247362
ICRS Star Coord at Epoch: 17h 37m 23.45316s -22:47:36.36556s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 9.461
G magnitude           : 14.844
RP magnitude          : 13.495
BP magnitude          : 17.053
DUPflag              : 0
Distance (au)         : 5.578
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 23.46
Sun-Target sep (deg)  : 69.73
Sun-Moon sep (deg)    : 97.96
B (ring opening deg) : -2.66
PA of pole (deg)      : 1.60
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 9.533
C/A sky separation (km) : 38569.8
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
    
```



Jupiter 2031-02-23T18:45:53 K9.46 G14.84

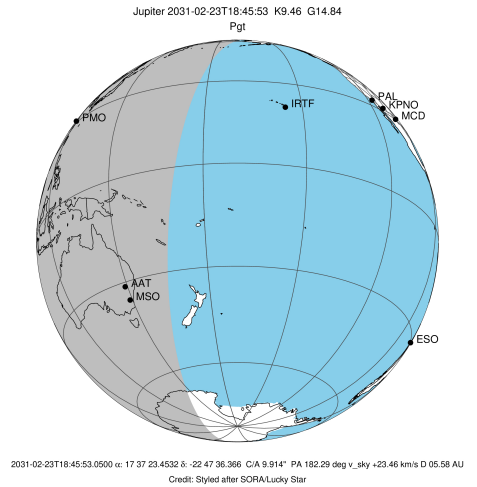


x: target alt < 5.0 deg or sun > -5.0 deg

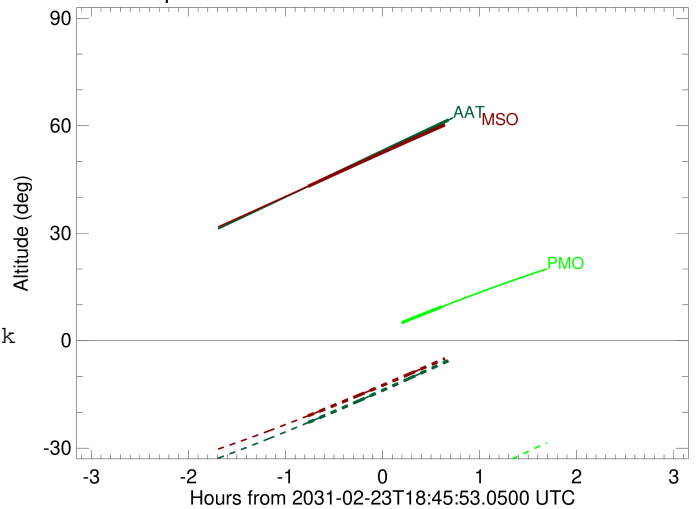
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-23T17:59:58.139	43.06	-22.84	71489.3	31.62	35.07
Jupiter	E	2031-02-23T19:26:35.900	61.59	-5.59	71489.0	33.56	37.10

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-23T18:43:21.280
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      : 4116745605201342592
2Mass ID (if available) : 17372345-2247362
ICRS Star Coord at Epoch: 17h 37m 23.45316s -22:47:36.36556s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 9.461
G magnitude          : 14.844
RP magnitude         : 13.495
BP magnitude         : 17.053
DUPflag             : 0
Distance (au)       : 5.578
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 23.46
Sun-Target sep (deg) : 69.73
Sun-Moon sep (deg)  : 97.96
B (ring opening deg) : -2.66
PA of pole (deg)    : 1.60
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (" ) : 9.432
C/A sky separation (km) : 38158.5
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 2031-02-23T18:45:53 K9.46 G14.84



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	2031-02-23T17:59:56.254	43.10	-20.96	71489.4	31.24	34.68
Jupiter	E	2031-02-23T19:26:53.540	60.69	-4.53x	71489.1	33.15	36.68