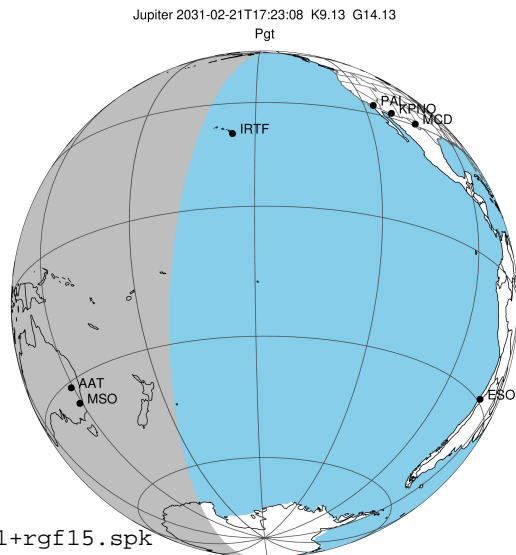


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-21T17:23:08.740
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116789448238138752
 2Mass ID (if available) : 17360775-2247153

Jupiter 2031-02-21T17:23:08 K9.13 G14.13 Pgt

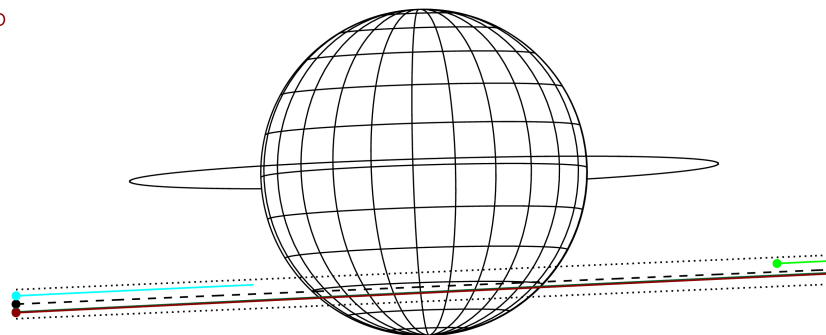
ICRS Star Coord at Epoch: 17h 36m 07.74408s -22:47:15.49819s

RUWE (>1.4 is poor) : 0.87
 K magnitude : 9.132
 G magnitude : 14.127
 RP magnitude : 12.835
 BP magnitude : 16.036
 DUPflag : 0
 Distance (au) : 5.610
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 24.33
 Sun-Target sep (deg) : 67.95
 Sun-Moon sep (deg) : 68.86
 B (ring opening deg) : -2.66
 PA of pole (deg) : 1.73
 Pole direction: RA (deg): 268.05702
 Dec (deg): 64.49651
 C/A sky separation (") : 12.302
 C/A sky separation (km) : 50049.5
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



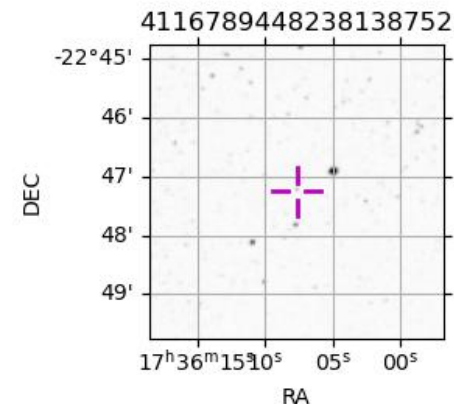
2031-02-21T17:23:08.7400 α: 17 36 07.7441 δ: -22 47 15.498 C/A ***** PA 2.43 deg v_sky +24.33 km/s D 05.61 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PMO
 IRTF
 AAT
 MSO



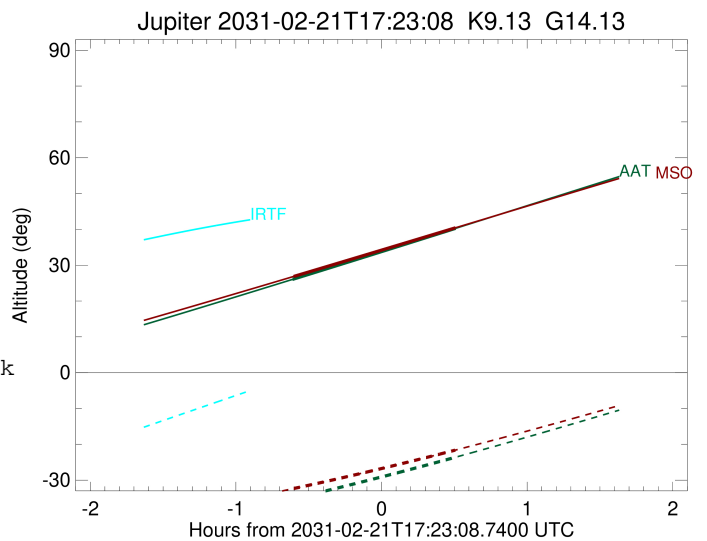
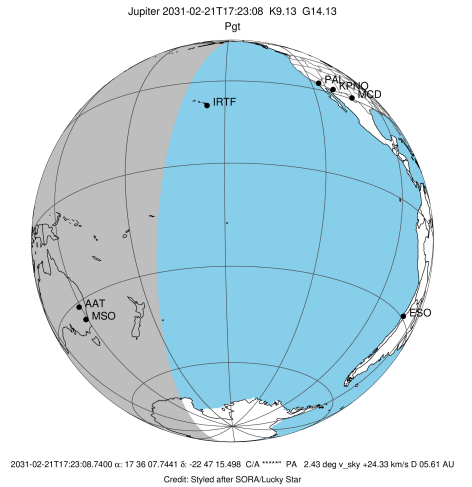
Observable events with sun below -5 deg and altitude above 5 deg

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			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 21 16:46 - FEB 21 17:53	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	FEB 21 16:46 - FEB 21 17:53	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-21T17:20:03.650
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       : 4116789448238138752
2Mass ID (if available) : 17360775-2247153
ICRS Star Coord at Epoch: 17h 36m 07.74408s -22:47:15.49819s
RUWE (>1.4 is poor) : 0.87
K magnitude           : 9.132
G magnitude           : 14.127
RP magnitude          : 12.835
BP magnitude          : 16.036
DUPflag              : 0
Distance (au)        : 5.610
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 24.33
Sun-Target sep (deg) : 67.95
Sun-Moon sep (deg)   : 69.64
B (ring opening deg) : -2.66
PA of pole (deg)     : 1.73
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 12.867
C/A sky separation (km) : 52347.9
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
    
```

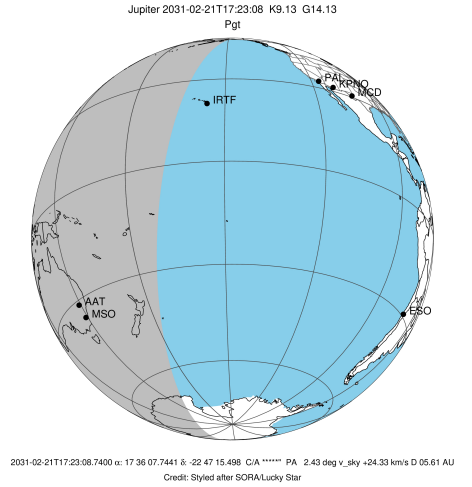


x: target alt < 5.0 deg or sun > -5.0 deg

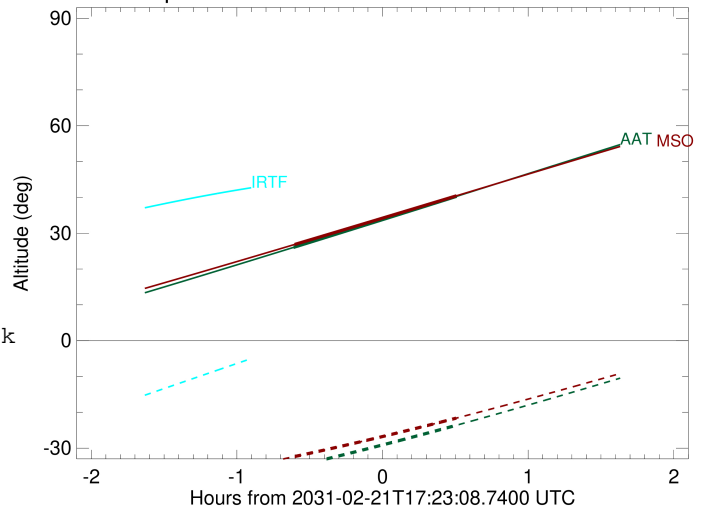
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-21T16:46:31.928	26.04	-35.17	71486.6	-48.05	-51.70
Jupiter	E	2031-02-21T17:53:40.644	40.28	-23.60	71487.0	-45.99	-49.67

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-02-21T17:20:12.840
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        : 4116789448238138752
2Mass ID (if available) : 17360775-2247153
ICRS Star Coord at Epoch: 17h 36m 07.74408s -22:47:15.49819s
RUWE (>1.4 is poor) : 0.87
K magnitude           : 9.132
G magnitude           : 14.127
RP magnitude          : 12.835
BP magnitude          : 16.036
DUPflag              : 0
Distance (au)         : 5.610
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 24.33
Sun-Target sep (deg)  : 67.95
Sun-Moon sep (deg)    : 69.63
B (ring opening deg) : -2.66
PA of pole (deg)      : 1.73
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 12.960
C/A sky separation (km) : 52726.7
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 2031-02-21T17:23:08 K9.13 G14.13



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	2031-02-21T16:46:58.584	26.86	-32.33	71486.6	-48.48	-52.12
Jupiter	E	2031-02-21T17:53:32.083	40.42	-21.62	71486.9	-46.45	-50.13