

target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-16T18:28:33.160
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4117459188246649984
 2Mass ID (if available) : 17325637-2245058

Jupiter 2031-02-16T18:28:33 K9.70 G14.79 Pgt

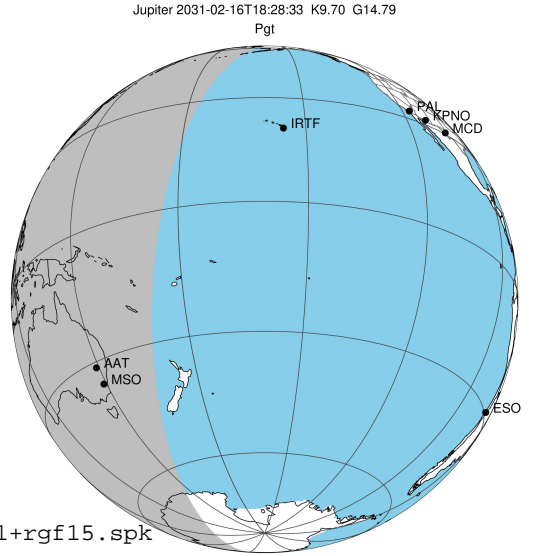
ICRS Star Coord at Epoch: 17h 32m 56.36846s -22:45:06.03175s

RUWE (>1.4 is poor) : 1.06
 K magnitude : 9.698
 G magnitude : 14.788
 RP magnitude : 13.498
 BP magnitude : 16.664
 DUPflag : 0
 Distance (au) : 5.683
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 26.36
 Sun-Target sep (deg) : 63.69
 Sun-Moon sep (deg) : 2.72
 B (ring opening deg) : -2.67
 PA of pole (deg) : 2.08
 Pole direction: RA (deg): 268.05702
 Dec (deg): 64.49651
 C/A sky separation (") : 2.274
 C/A sky separation (km) : 9374.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

URKALLvl.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

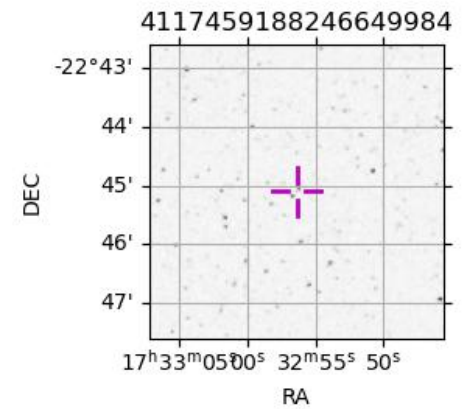
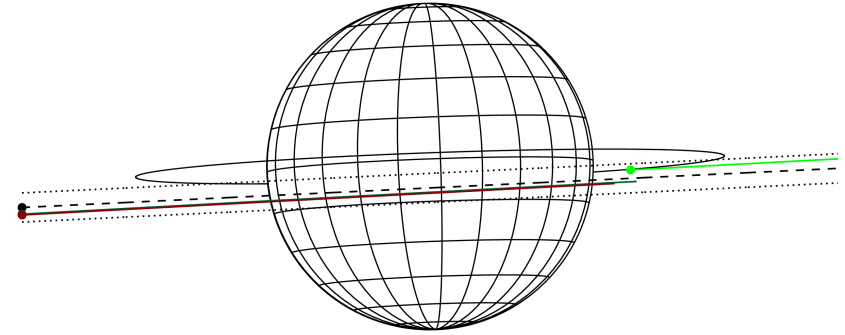
Observable events with sun below -5 deg and altitude above 5 deg

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			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 16 17:40 - FEB 16 19:11	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+ +	FEB 16 17:41 - FEB 16 19:11	Pie



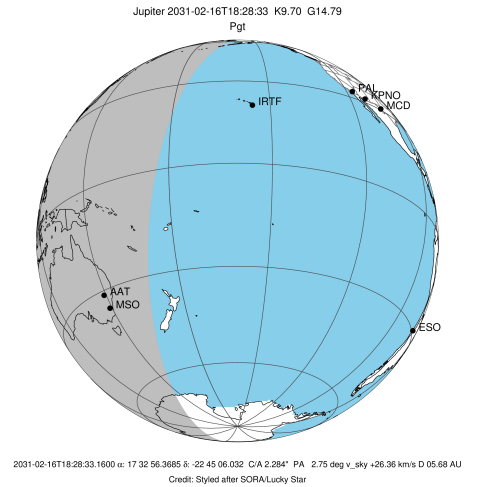
2031-02-16T18:28:33.1600 a: 17 32 56.3685 s -22 45 06.032 C/A 2.284" PA 2.75 deg v_sky +26.36 km/s D 05.68 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PMO
 AAT
 MSO

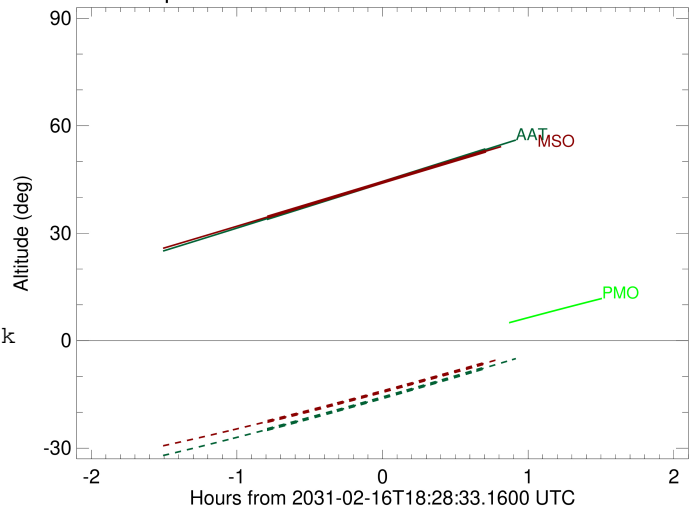


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-02-16T18:25:56.160
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : AAT
Location              : Siding Spring (AAT)
Latitude (deg)        : -31.27703
E. Longitude (deg)    : 149.06608
Altitude (km)         : 1.164
Gaia source ID        : 4117459188246649984
2Mass ID (if available) : 17325637-2245058
ICRS Star Coord at Epoch: 17h 32m 56.36846s -22:45:06.03175s
RUWE (>1.4 is poor) : 1.06
K magnitude           : 9.698
G magnitude           : 14.788
RP magnitude          : 13.498
BP magnitude          : 16.664
DUPflag              : 0
Distance (au)         : 5.683
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 26.36
Sun-Target sep (deg) : 63.69
Sun-Moon sep (deg)   : 2.32
B (ring opening deg) : -2.67
PA of pole (deg)     : 2.08
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation ("): 2.739
C/A sky separation (km): 11288.2
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 2031-02-16T18:28:33 K9.70 G14.79

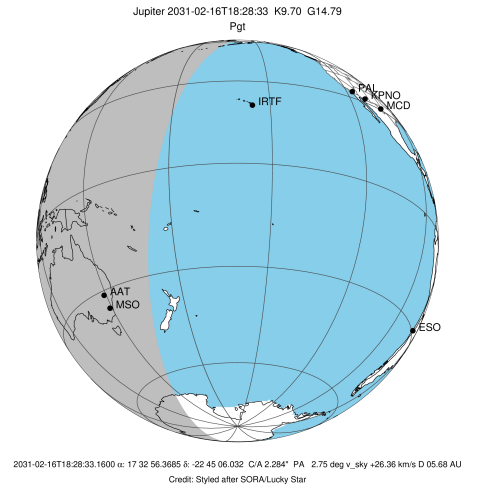


x: target alt < 5.0 deg or sun > -5.0 deg

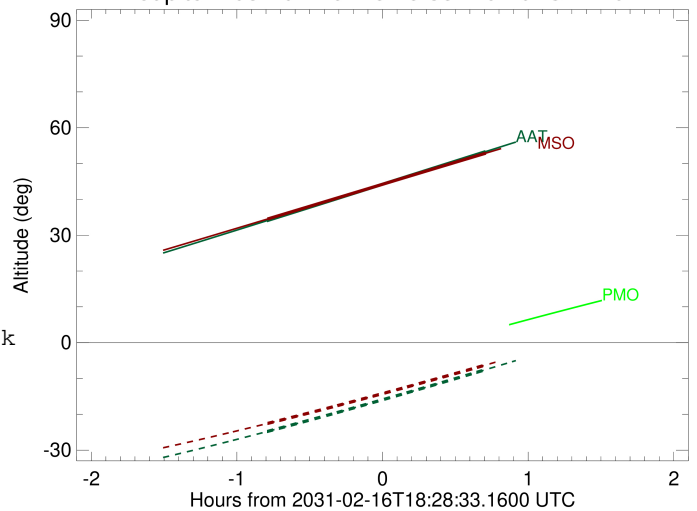
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-16T17:40:57.816	34.05	-24.81	71491.7	-10.05	-11.45
Jupiter	E	2031-02-16T19:11:02.429	53.33	-7.53	71491.8	-8.14	-9.28

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target                : Jupiter
target radius (km)    : 71492.00
C/A epoch              : 2031-02-16T18:26:04.090
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         : 4117459188246649984
2Mass ID (if available) : 17325637-2245058
ICRS Star Coord at Epoch: 17h 32m 56.36846s -22:45:06.03175s
RUWE (>1.4 is poor)  : 1.06
K magnitude            : 9.698
G magnitude            : 14.788
RP magnitude           : 13.498
BP magnitude           : 16.664
DUPflag               : 0
Distance (au)         : 5.683
f0 (km)                : 0.00
g0 (km)                : 0.00
skyplane vel. (km/s)  : 26.36
Sun-Target sep (deg)  : 63.69
Sun-Moon sep (deg)    : 2.39
B (ring opening deg)  : -2.67
PA of pole (deg)      : 2.08
Pole direction: RA (deg): 268.05702
Dec (deg): 64.49651
C/A sky separation (") : 2.835
C/A sky separation (km) : 11684.5
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 2031-02-16T18:28:33 K9.70 G14.79



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	2031-02-16T17:41:09.184	34.51	-22.55	71491.7	-10.36	-11.80
Jupiter	E	2031-02-16T19:11:06.606	52.89	-6.22	71491.8	-8.47	-9.66