

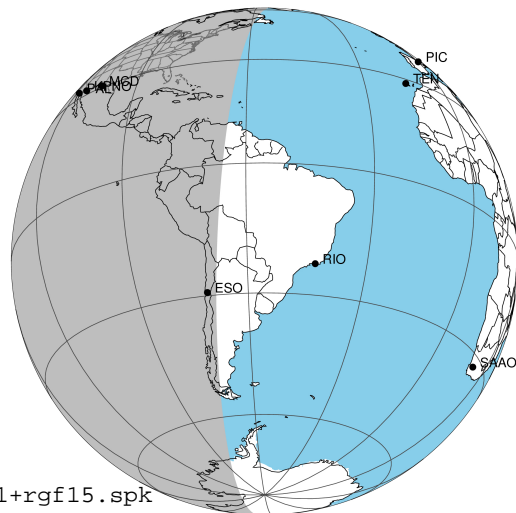
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-03-06T10:32:12.710  
 Event type : Pt  
 : Jupiter occs: topocentric, not geocentric  
 : Not a ringed target  
 Gaia source ID : 4116882769295726592  
 2Mass ID (if available) : 17431620-2250547

Jupiter 2031-03-06T10:32:12 K8.08 G14.78 Pt

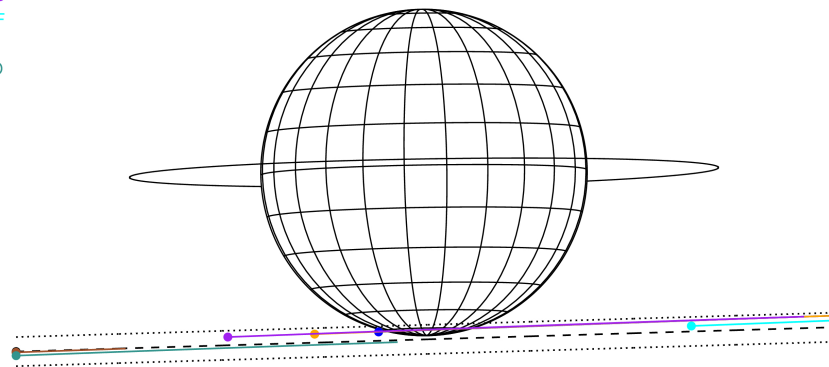
ICRS Star Coord at Epoch: 17h 43m 16.19217s -22:50:54.91694s

RUWE (>1.4 is poor) : 1.04  
 K magnitude : 8.083  
 G magnitude : 14.783  
 RP magnitude : 13.216  
 BP magnitude : 18.223  
 DUPflag : 0  
 Distance (au) : 5.412  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 18.78  
 Sun-Target sep (deg) : 79.07  
 Sun-Moon sep (deg) : 133.06  
 B (ring opening deg) : -2.64  
 PA of pole (deg) : 0.97  
 Pole direction: RA (deg): 268.05701  
 Dec (deg): 64.49651  
 C/A sky separation (") : 18.625  
 C/A sky separation (km) : 73103.1  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-03-06T10:32:12 K8.08 G14.78  
 Pt



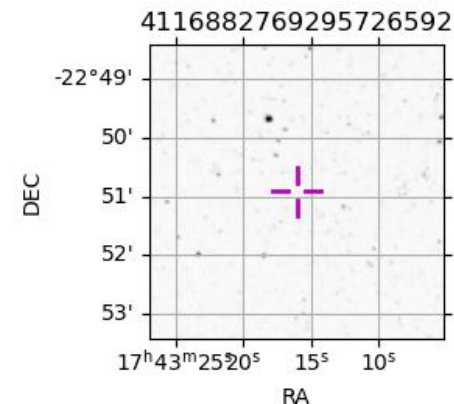
Earth  
 PAL  
 KPNO  
 MCD  
 IRTF  
 RIO  
 ESO



2031-03-06T10:32:12.7100 α: 17 43 16.1922 δ: -22 50 54.917 C/A \*\*\*\*\* PA 1.70 deg v\_sky +18.78 km/s D 05.41 AU  
 Credit: Styled after SORA/Lucky Star

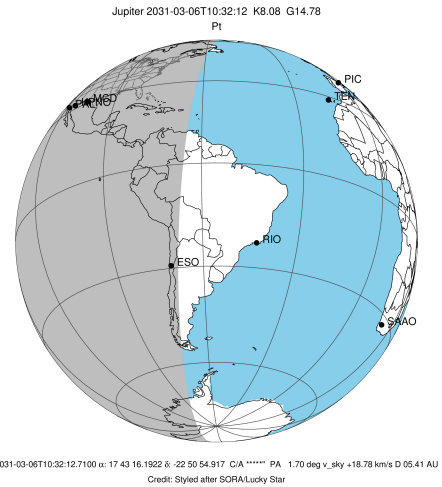
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	MAR 06 10:11 - MAR 06 10:44	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAR 06 10:11 - MAR 06 10:45	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAR 06 10:11 - MAR 06 10:46	Pie
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

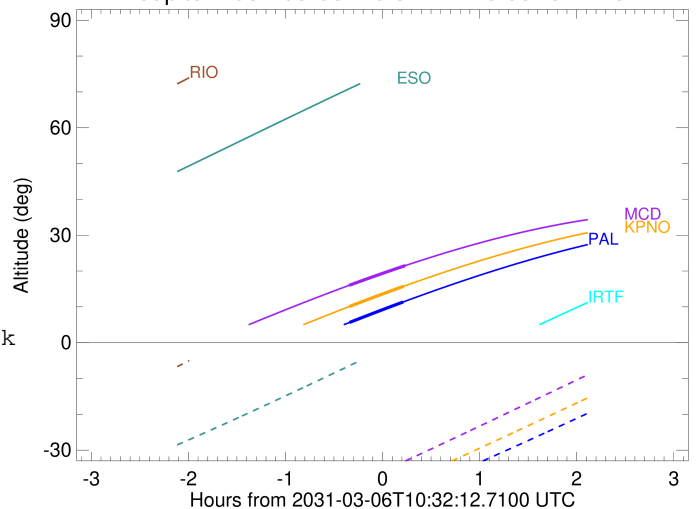


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-06T10:28:23.200
Event type          : Pt
                    : Jupiter occs: topocentric, not geocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg) : 243.13601
Altitude (km)      : 1.706
Gaia source ID     : 4116882769295726592
2Mass ID (if available) : 17431620-2250547
ICRS Star Coord at Epoch: 17h 43m 16.19217s -22:50:54.91694s
RUWE (>1.4 is poor) : 1.04
K magnitude         : 8.083
G magnitude         : 14.783
RP magnitude        : 13.216
BP magnitude        : 18.223
DUPflag            : 0
Distance (au)      : 5.412
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 18.78
Sun-Target sep (deg) : 79.07
Sun-Moon sep (deg) : 133.59
B (ring opening deg) : -2.64
PA of pole (deg)   : 0.97
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (" ) : 17.591
C/A sky separation (km) : 69047.0
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 2031-03-06T10:32:12 K8.08 G14.78

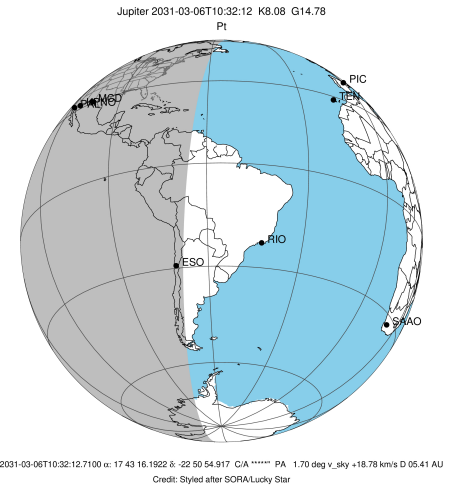


x: target alt < 5.0 deg or sun > -5.0 deg

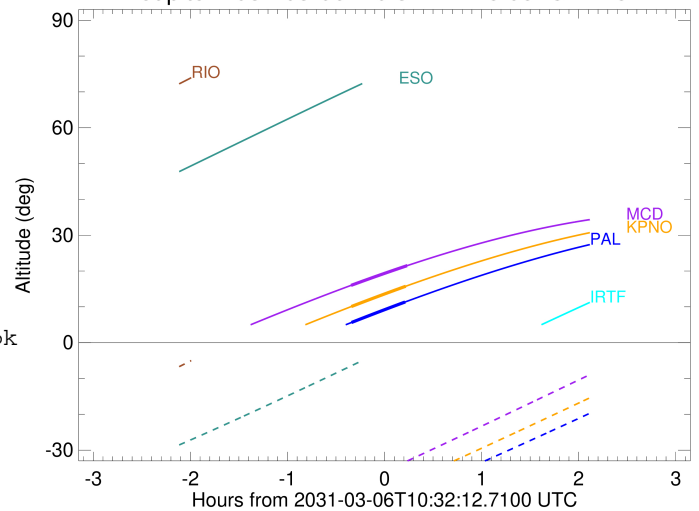
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-06T10:11:49.652	5.64	-48.62	71483.0	-75.93	-77.54
Jupiter	E	2031-03-06T10:44:58.394	11.36	-42.62	71483.2	-73.63	-75.49

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-06T10:28:31.930
Event type           : Pt
                    : Jupiter occs: topocentric, not geocentric
                    : Not a ringed target
Observer code        : KPNO
Location             : Kitt Peak Natl Obs
Latitude (deg)       : 31.96333
E. Longitude (deg)   : 248.40000
Altitude (km)        : 2.120
Gaia source ID       : 4116882769295726592
2Mass ID (if available) : 17431620-2250547
ICRS Star Coord at Epoch: 17h 43m 16.19217s -22:50:54.91694s
RUWE (>1.4 is poor) : 1.04
K magnitude           : 8.083
G magnitude           : 14.783
RP magnitude          : 13.216
BP magnitude          : 18.223
DUPflag              : 0
Distance (au)         : 5.412
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 18.78
Sun-Target sep (deg) : 79.07
Sun-Moon sep (deg)   : 133.63
B (ring opening deg) : -2.64
PA of pole (deg)     : 0.97
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation ("): 17.574
C/A sky separation (km): 68978.9
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
    
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Jupiter 2031-03-06T10:32:12 K8.08 G14.78

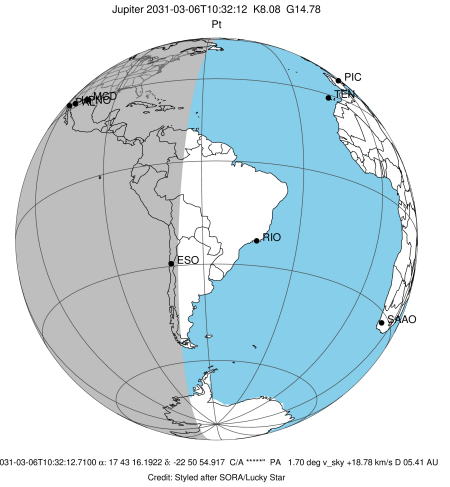


x: target alt < 5.0 deg or sun > -5.0 deg

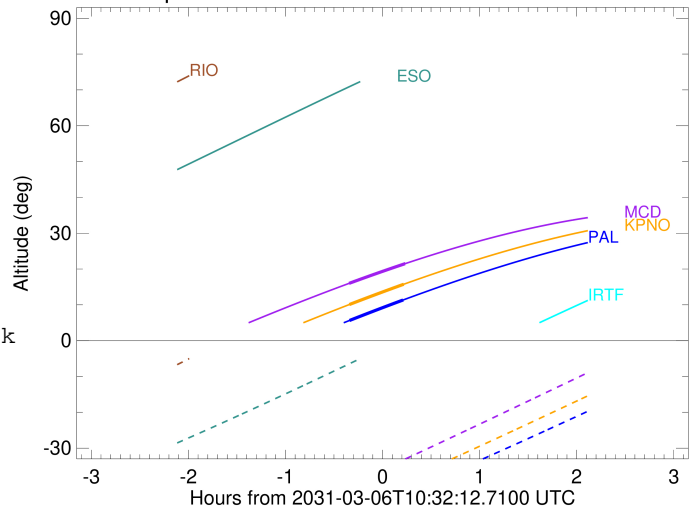
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-06T10:11:43.060	10.08	-45.55	71483.0	-75.71	-77.35
Jupiter	E	2031-03-06T10:45:22.439	15.75	-39.02	71483.2	-73.44	-75.32

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-03-06T10:28:50.060
Event type            : Pt
: Jupiter occs: topocentric, not geocentric
: Not a ringed target
Observer code         : MCD
Location              : McDonald Obs. 2.7m
Latitude (deg)       : 30.67158
E. Longitude (deg)   : 255.97844
Altitude (km)        : 2.075
Gaia source ID       : 4116882769295726592
2Mass ID (if available) : 17431620-2250547
ICRS Star Coord at Epoch: 17h 43m 16.19217s -22:50:54.91694s
RUWE (>1.4 is poor) : 1.04
K magnitude           : 8.083
G magnitude           : 14.783
RP magnitude         : 13.216
BP magnitude         : 18.223
DUPflag              : 0
Distance (au)        : 5.412
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 18.78
Sun-Target sep (deg) : 79.07
Sun-Moon sep (deg)   : 133.65
B (ring opening deg) : -2.64
PA of pole (deg)     : 0.97
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 17.538
C/A sky separation (km) : 68838.3
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 2031-03-06T10:32:12 K8.08 G14.78



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	2031-03-06T10:11:31.308	15.99	-40.19	71483.1	-75.27	-76.95
Jupiter	E	2031-03-06T10:46:10.451	21.49	-33.06	71483.3	-73.05	-74.97