

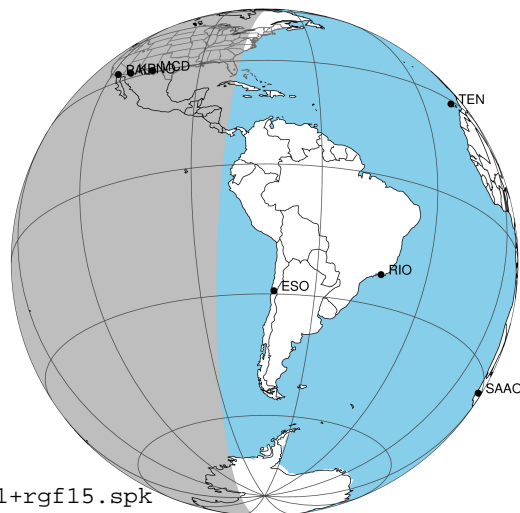
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-03-06T11:41:36.800  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4116882803655482368  
 2Mass ID (if available) : 17431771-2250203

Jupiter 2031-03-06T11:41:36 K8.91 G13.77 Pgt

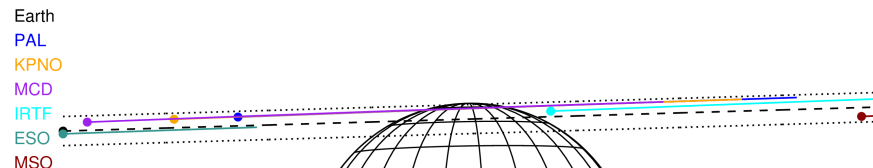
ICRS Star Coord at Epoch: 17h 43m 17.70690s -22:50:20.44407s

RUWE (>1.4 is poor) : 0.90  
 K magnitude : 8.913  
 G magnitude : 13.766  
 RP magnitude : 12.534  
 BP magnitude : 15.429  
 DUPflag : 0  
 Distance (au) : 5.411  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 18.75  
 Sun-Target sep (deg) : 79.12  
 Sun-Moon sep (deg) : 132.47  
 B (ring opening deg) : -2.65  
 PA of pole (deg) : 0.96  
 Pole direction: RA (deg): 268.05701  
 Dec (deg): 64.49651  
 C/A sky separation (") : 16.452  
 C/A sky separation (km) : 64567.1  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-03-06T11:41:36 K8.91 G13.77  
 Pgt

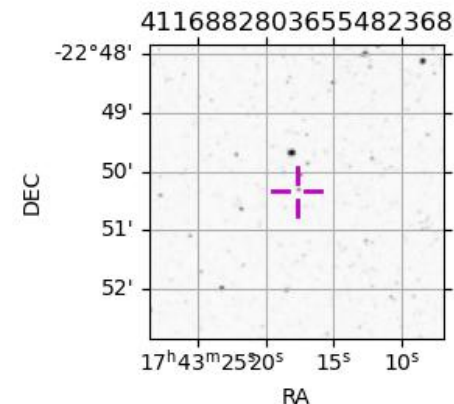


2031-03-06T11:41:36.8000 a: 17 43 17.7069 s: -22 50 20.444 C/A \*\*\*\*\* PA 181.69 deg v\_sky +18.75 km/s D 05.41 AU  
 Credit: Styled after SORA/Lucky Star



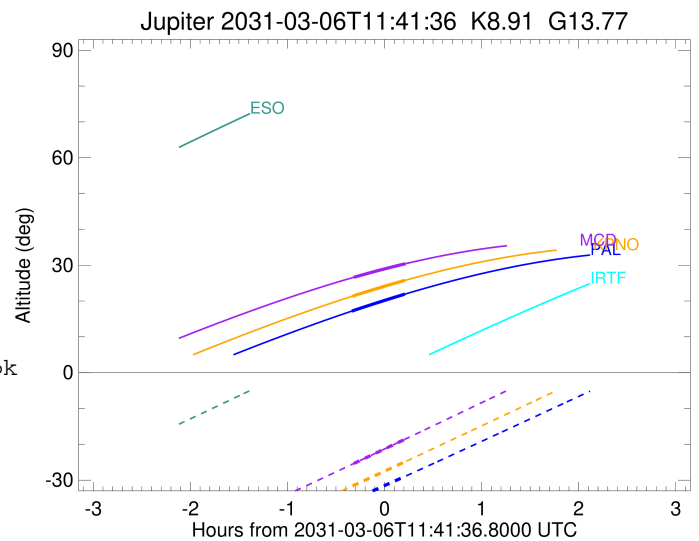
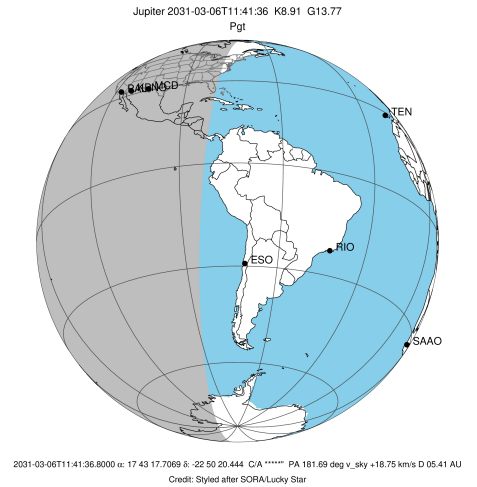
Observable events with sun below -5 deg and altitude above 5 deg

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 11:21 - MAR 06 11:54	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAR 06 11:21 - MAR 06 11:54	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAR 06 11:22 - MAR 06 11:54	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             : 2031-03-06T11:37:47.660
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: 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        : 4116882803655482368
2Mass ID (if available) : 17431771-2250203
ICRS Star Coord at Epoch: 17h 43m 17.70690s -22:50:20.44407s
RUWE (>1.4 is poor) : 0.90
K magnitude           : 8.913
G magnitude           : 13.766
RP magnitude          : 12.534
BP magnitude          : 15.429
DUPflag              : 0
Distance (au)         : 5.411
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 18.75
Sun-Target sep (deg) : 79.12
Sun-Moon sep (deg)   : 133.03
B (ring opening deg) : -2.65
PA of pole (deg)     : 0.96
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 17.621
C/A sky separation (km) : 69155.5
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
    
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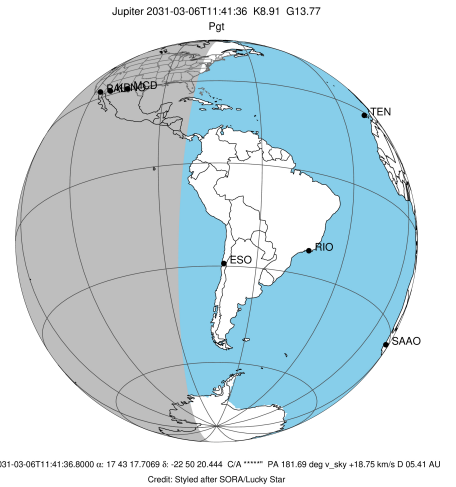


x: target alt < 5.0 deg or sun > -5.0 deg

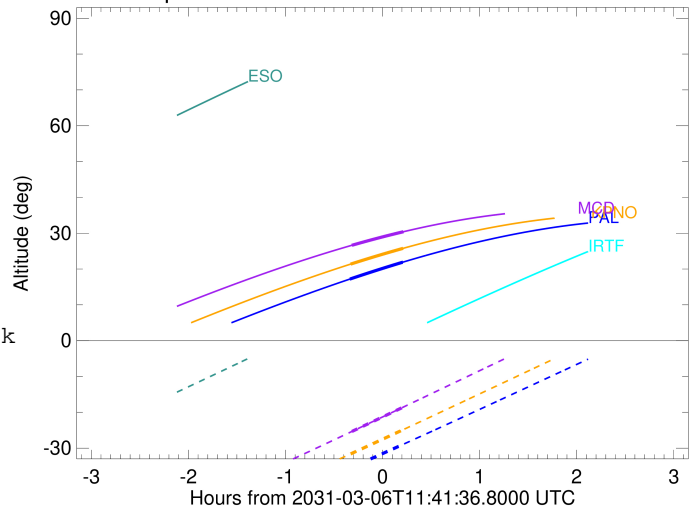
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-06T11:21:28.671	17.19	-35.56	71483.2	74.04	75.85
Jupiter	E	2031-03-06T11:54:08.000	21.90	-28.99	71483.0	76.15	77.75

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-06T11:38:06.040
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : 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      : 4116882803655482368
2Mass ID (if available) : 17431771-2250203
ICRS Star Coord at Epoch: 17h 43m 17.70690s -22:50:20.44407s
RUWE (>1.4 is poor) : 0.90
K magnitude          : 8.913
G magnitude          : 13.766
RP magnitude         : 12.534
BP magnitude         : 15.429
DUPflag             : 0
Distance (au)       : 5.411
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 18.75
Sun-Target sep (deg) : 79.12
Sun-Moon sep (deg)  : 133.04
B (ring opening deg) : -2.65
PA of pole (deg)    : 0.96
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (" ) : 17.632
C/A sky separation (km) : 69198.2
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
    
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Jupiter 2031-03-06T11:41:36 K8.91 G13.77

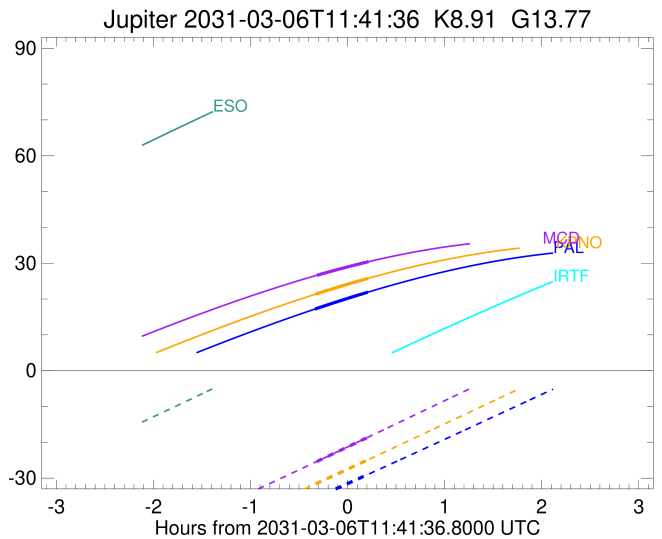
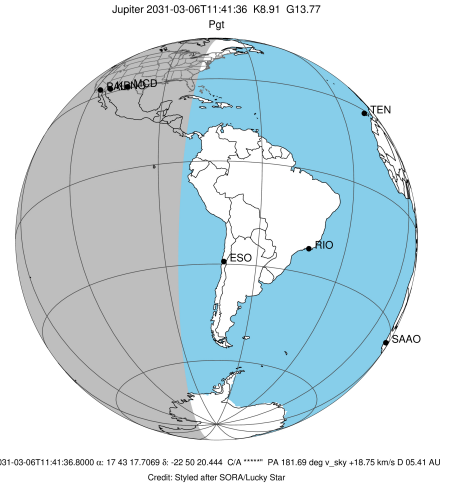


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-03-06T11:21:54.270	21.37	-31.61	71483.2	74.19	75.99
Jupiter	E	2031-03-06T11:54:19.075	25.77	-24.86	71483.0	76.26	77.84

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-03-06T11:38:38.380
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: 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      : 4116882803655482368
2Mass ID (if available) : 17431771-2250203
ICRS Star Coord at Epoch: 17h 43m 17.70690s -22:50:20.44407s
RUWE (>1.4 is poor) : 0.90
K magnitude          : 8.913
G magnitude          : 13.766
RP magnitude         : 12.534
BP magnitude         : 15.429
DUPflag             : 0
Distance (au)       : 5.411
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 18.75
Sun-Target sep (deg) : 79.12
Sun-Moon sep (deg)  : 133.03
B (ring opening deg) : -2.65
PA of pole (deg)    : 0.96
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 17.655
C/A sky separation (km) : 69288.6
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	2031-03-06T11:22:43.638	26.63	-25.34	71483.1	74.52	76.29
Jupiter	E	2031-03-06T11:54:34.184	30.41	-18.52	71483.0	76.50	78.06