

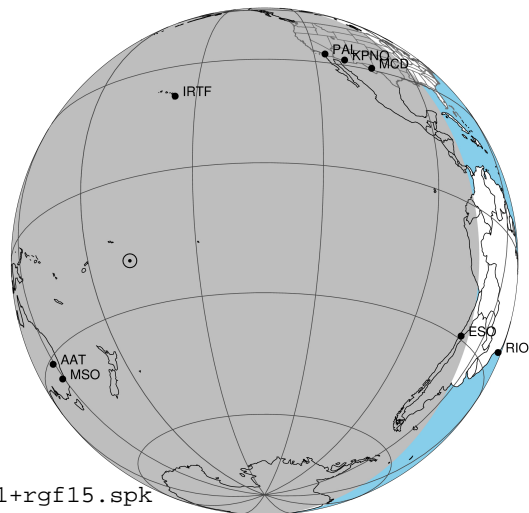
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2031-05-16T11:07:03.140  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4068933651303556352  
 2Mass ID (if available) : 17472202-2253082

Jupiter 2031-05-16T11:07:03 K9.15 G14.68 Pgt

ICRS Star Coord at Epoch: 17h 47m 22.02725s -22:53:08.48987s

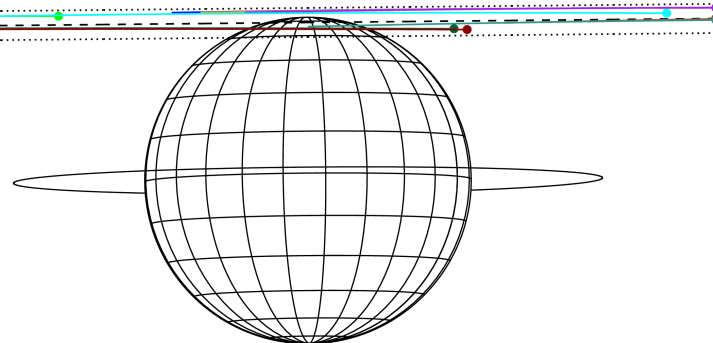
RUWE (>1.4 is poor) : 1.02  
 K magnitude : 9.154  
 G magnitude : 14.675  
 RP magnitude : 13.272  
 BP magnitude : 17.086  
 DUPflag : 0  
 Distance (au) : 4.407  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -11.93  
 Sun-Target sep (deg) : 147.88  
 Sun-Moon sep (deg) : 91.40  
 B (ring opening deg) : -2.61  
 PA of pole (deg) : 0.52  
 Pole direction: RA (deg): 268.05694  
 Dec (deg): 64.49651  
 C/A sky separation (") : 21.652  
 C/A sky separation (km) : 69205.6  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2031-05-16T11:07:03 K9.15 G14.68  
 Pgt



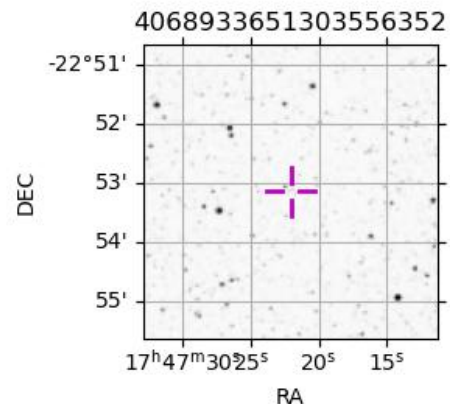
2031-05-16T11:07:03.1400 a: 17 47 22.0272 & -22 53 08.490 C/A \*\*\*\*\* PA 180.57 deg v\_sky -11.93 km/s D 04.41 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PAL  
 PMO  
 KPNO  
 MCD  
 IRTF  
 RIO  
 ESO  
 AAT  
 MSO



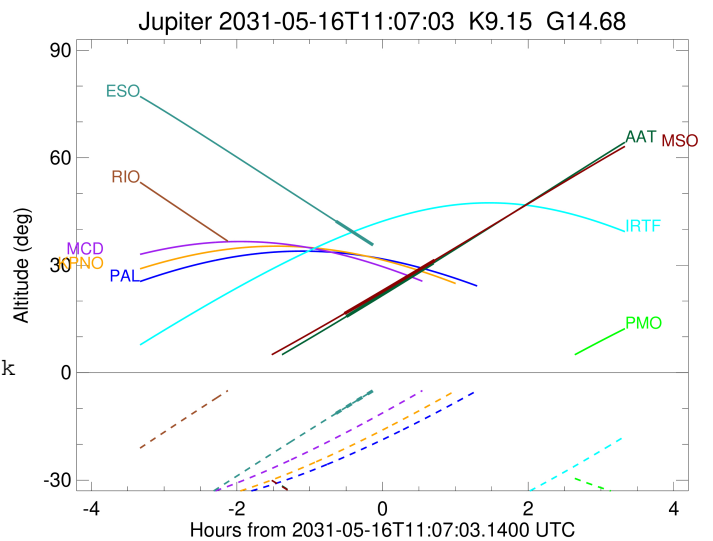
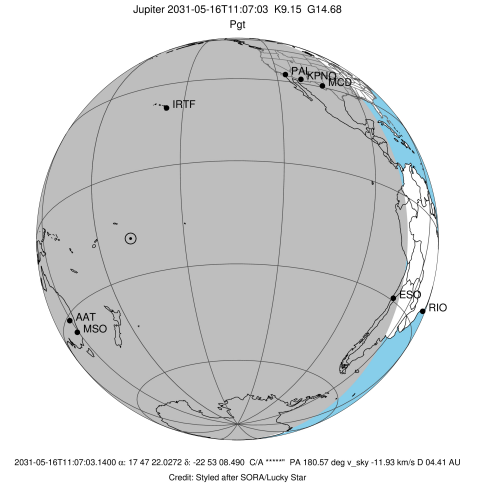
Observable events with sun below -5 deg and altitude above 5 deg

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	+	MAY 16 10:28 - MAY 16 10:28	Pin
AAT	Siding Spring (AAT)	-31.3	149.1	+	MAY 16 10:37 - MAY 16 11:48	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAY 16 10:35 - MAY 16 11:50	Pie



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-05-16T11:01:16.740
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : ESO
Location            : European Southern Obs. (3.6m)
Latitude (deg)      : -29.26097
E. Longitude (deg)  : 289.26831
Altitude (km)       : 2.400
Gaia source ID      : 4068933651303556352
2Mass ID (if available) : 17472202-2253082
ICRS Star Coord at Epoch: 17h 47m 22.02725s -22:53:08.48987s
RUWE (>1.4 is poor) : 1.02
K magnitude         : 9.154
G magnitude         : 14.675
RP magnitude        : 13.272
BP magnitude        : 17.086
DUPflag            : 0
Distance (au)       : 4.407
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -11.93
Sun-Target sep (deg) : 147.88
Sun-Moon sep (deg)  : 91.95
B (ring opening deg) : -2.61
PA of pole (deg)    : 0.52
Pole direction: RA (deg): 268.05694
Dec (deg): 64.49651
C/A sky separation (") : 21.096
C/A sky separation (km) : 67428.8
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
    
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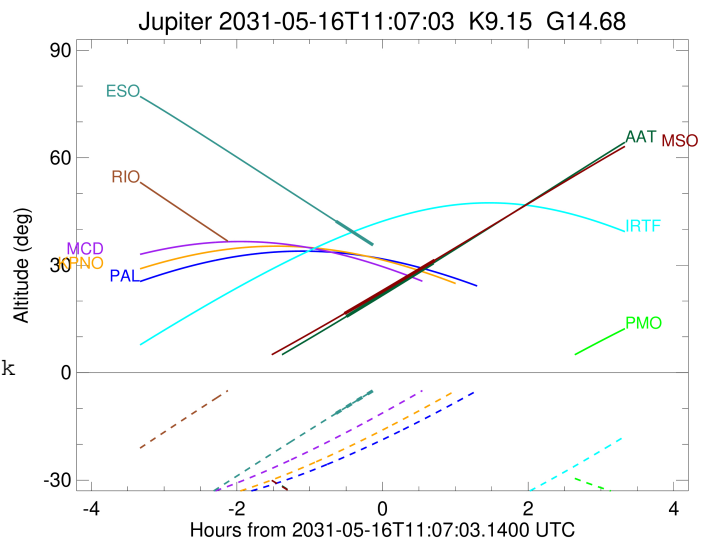
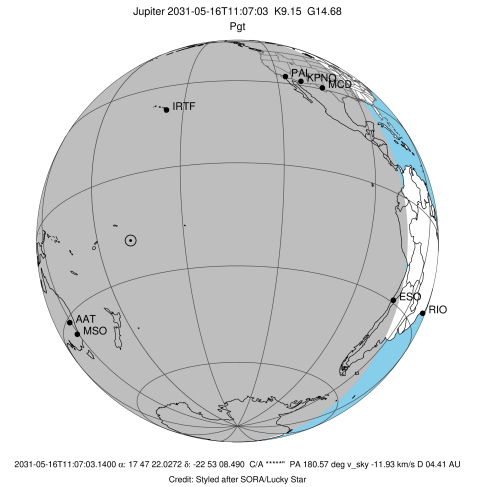


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-05-16T10:28:40.052	42.29	-11.39	71483.7	71.10	73.21
Jupiter	E	2031-05-16T11:34:00.254	28.15	2.06x	71483.8	69.73	71.97

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-05-16T11:13:15.420
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      : 4068933651303556352
2Mass ID (if available) : 17472202-2253082
ICRS Star Coord at Epoch: 17h 47m 22.02725s -22:53:08.48987s
RUWE (>1.4 is poor) : 1.02
K magnitude          : 9.154
G magnitude          : 14.675
RP magnitude         : 13.272
BP magnitude         : 17.086
DUPflag             : 0
Distance (au)       : 4.407
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -11.93
Sun-Target sep (deg) : 147.88
Sun-Moon sep (deg)  : 91.73
B (ring opening deg) : -2.61
PA of pole (deg)    : 0.52
Pole direction: RA (deg): 268.05694
Dec (deg): 64.49651
C/A sky separation (") : 20.855
C/A sky separation (km) : 66657.5
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
    
```

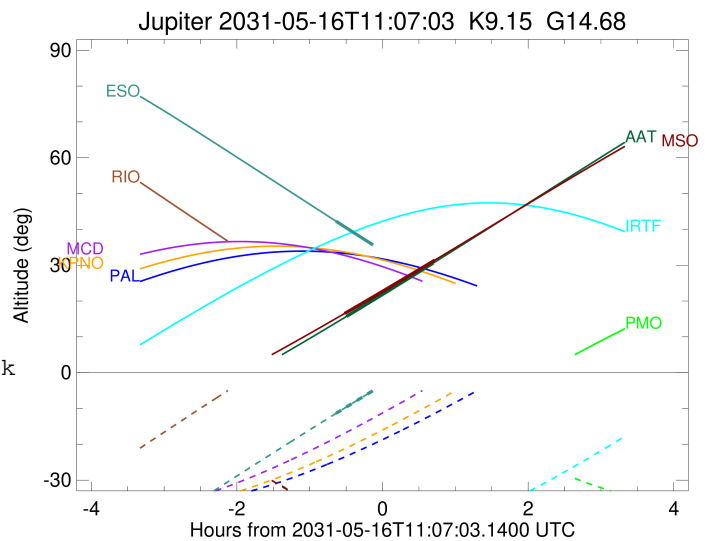
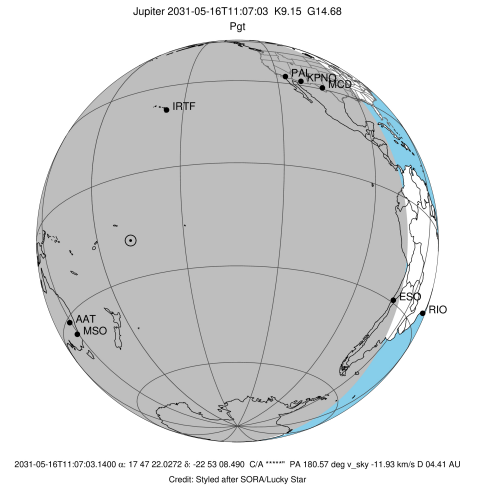


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-05-16T10:37:21.270	15.68	-42.97	71484.0	67.99	70.40
Jupiter	E	2031-05-16T11:48:58.104	30.61	-58.14	71483.9	69.32	71.61

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-05-16T11:12:58.870
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      : 4068933651303556352
2Mass ID (if available) : 17472202-2253082
ICRS Star Coord at Epoch: 17h 47m 22.02725s -22:53:08.48987s
RUWE (>1.4 is poor) : 1.02
K magnitude          : 9.154
G magnitude          : 14.675
RP magnitude         : 13.272
BP magnitude         : 17.086
DUPflag             : 0
Distance (au)       : 4.407
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -11.93
Sun-Target sep (deg) : 147.88
Sun-Moon sep (deg)  : 91.74
B (ring opening deg) : -2.61
PA of pole (deg)    : 0.52
Pole direction: RA (deg): 268.05694
Dec (deg): 64.49651
C/A sky separation (") : 20.739
C/A sky separation (km) : 66286.0
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
    
```



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	2031-05-16T10:35:45.475	16.51	-42.31	71484.1	67.22	69.70
Jupiter	E	2031-05-16T11:50:00.447	31.38	-57.09	71484.0	68.49	70.85