

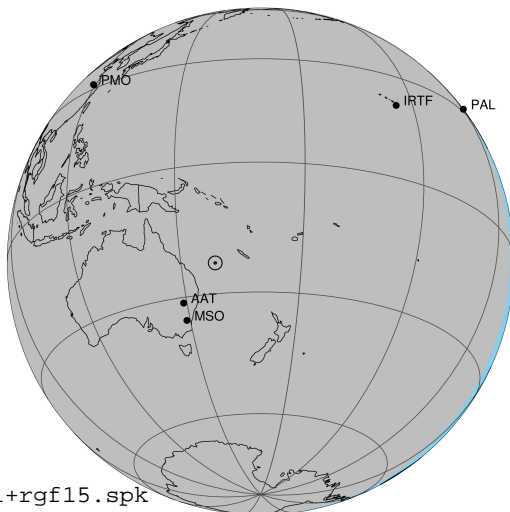
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-10T13:24:48.170
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4069397297243228928
 2Mass ID (if available) : 17565933-2304133

Jupiter 2043-06-10T13:24:48 K6.42 G12.07 Pgt

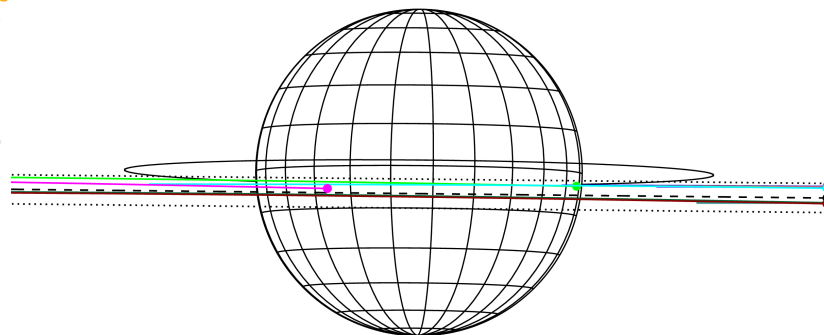
ICRS Star Coord at Epoch: 17h 56m 59.32921s -23:04:13.50753s

RUWE (>1.4 is poor) : 0.78
 K magnitude : 6.415
 G magnitude : 12.070
 RP magnitude : 10.729
 BP magnitude : 14.266
 DUPflag : 0
 Distance (au) : 4.268
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.94
 Sun-Target sep (deg) : 169.68
 Sun-Moon sep (deg) : 147.19
 B (ring opening deg) : -2.43
 PA of pole (deg) : -0.51
 Pole direction: RA (deg): 268.05668
 Dec (deg): 64.49732
 C/A sky separation (") : 2.993
 C/A sky separation (km) : 9265.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-06-10T13:24:48 K6.42 G12.07
 Pgt



Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 ESO
 AAT
 MSO

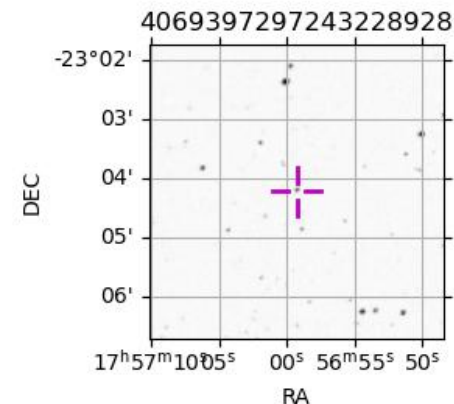


2043-06-10T13:24:48.1700 at: 17 56 59.3292 s: -23 04 13.508 C/A 3.005" PA 359.39 deg v_sky -15.94 km/s D 04.27 AU

Credit: Styled after SORA/Lucky Star

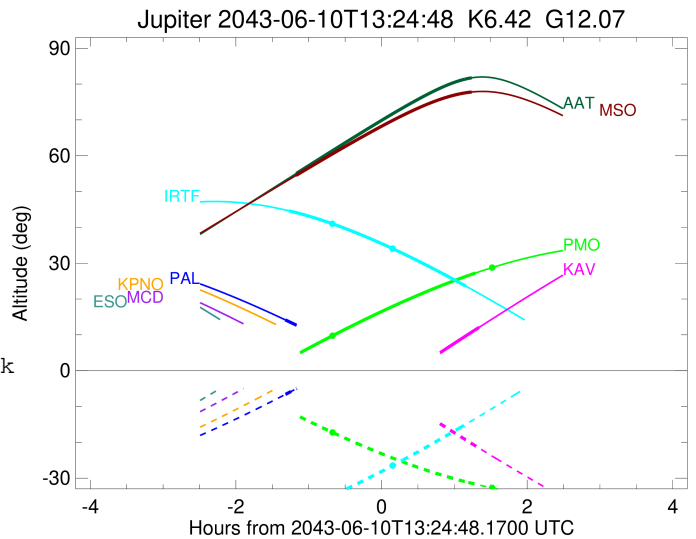
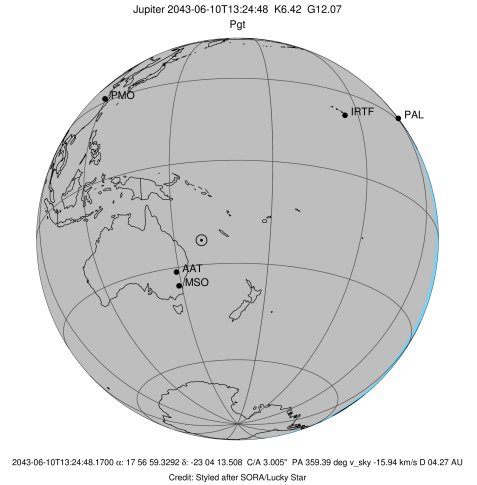
Observable events with sun below -5 deg and altitude above 5 deg

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	+	JUN 10 12:05 - JUN 10 12:05	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	JUN 10 14:42 - JUN 10 14:42	Pne
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	+	JUN 10 12:08 - JUN 10 14:34	Pie
KAV	Kavalur Observatory	12.6	78.8	+	JUN 10 14:45 - JUN 10 14:45	Pne
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	+	JUN 10 12:14 - JUN 10 14:39	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	JUN 10 12:14 - JUN 10 14:38	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-10T13:19:23.330
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      : 4069397297243228928
2Mass ID (if available) : 17565933-2304133
ICRS Star Coord at Epoch: 17h 56m 59.32921s -23:04:13.50753s
RUWE (>1.4 is poor) : 0.78
K magnitude          : 6.415
G magnitude          : 12.070
RP magnitude         : 10.729
BP magnitude         : 14.266
DUPflag             : 0
Distance (au)       : 4.268
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.94
Sun-Target sep (deg) : 169.68
Sun-Moon sep (deg)  : 146.61
B (ring opening deg) : -2.43
PA of pole (deg)    : -0.51
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (" ) : 1.772
C/A sky separation (km) : 5484.9
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
    
```

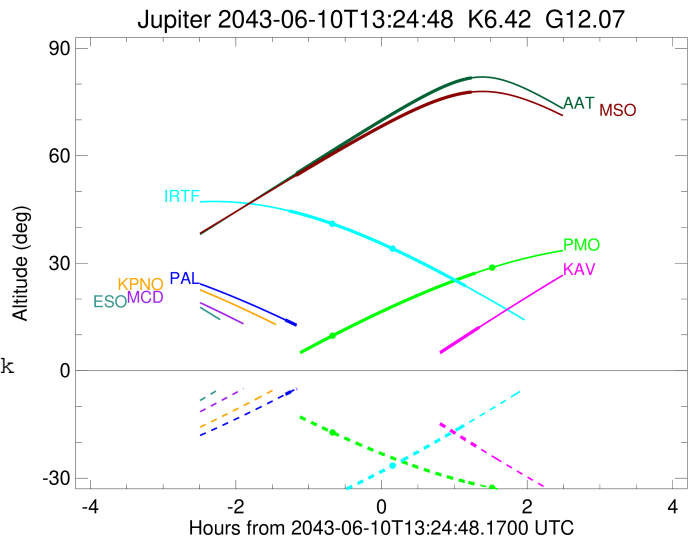
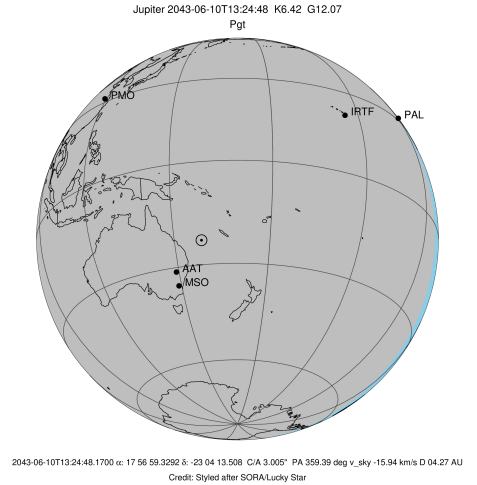


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-10T12:05:40.506	14.15	-6.62	71492.0	-4.01	-4.58
Jupiter	E	2043-06-10T14:33:37.841	-12.79x	21.72x	71491.9	-4.84	-5.53

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch              : 2043-06-10T13:29:05.900
Event type             : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code          : PMO
Location               : Purple Mtn Obs. Nanking
Latitude (deg)         : 32.06667
E. Longitude (deg)    : 118.82089
Altitude (km)         : 0.364
Gaia source ID         : 4069397297243228928
2Mass ID (if available) : 17565933-2304133
ICRS Star Coord at Epoch: 17h 56m 59.32921s -23:04:13.50753s
RUWE (>1.4 is poor)  : 0.78
K magnitude            : 6.415
G magnitude            : 12.070
RP magnitude           : 10.729
BP magnitude           : 14.266
DUPflag                : 0
Distance (au)         : 4.268
f0 (km)                : 0.00
g0 (km)                : 0.00
skyplane vel. (km/s)  : -15.94
Sun-Target sep (deg)  : 169.68
Sun-Moon sep (deg)    : 147.96
B (ring opening deg)  : -2.43
PA of pole (deg)      : -0.51
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (") : 1.532
C/A sky separation (km) : 4742.0
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
    
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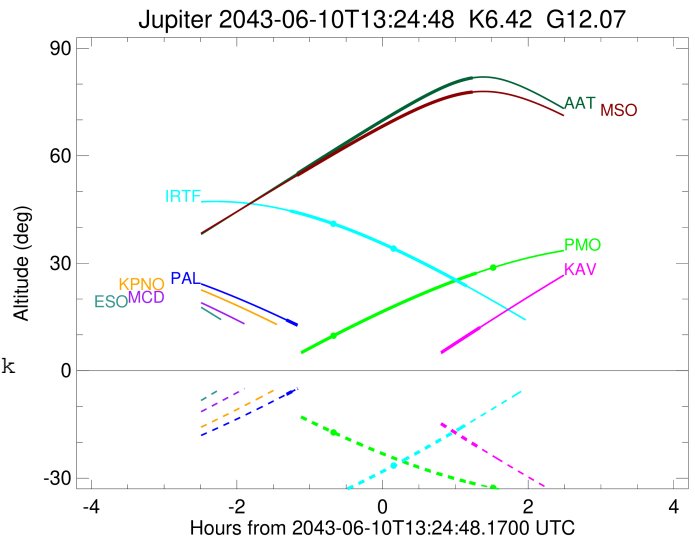
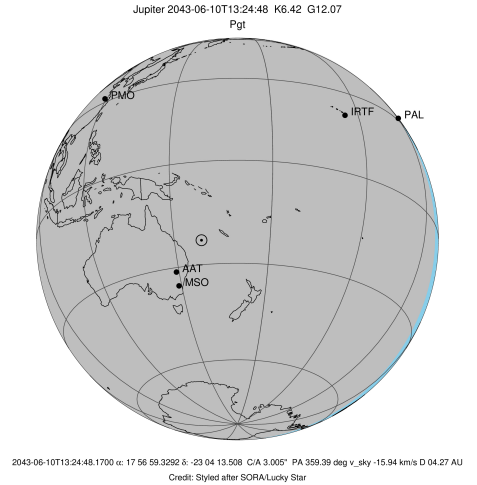


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-10T12:15:27.446	4.58x	-12.53	71492.0	-4.36	-4.98
Jupiter	E	2043-06-10T14:42:17.095	27.26	-31.69	71492.0	-3.36	-3.85

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-10T13:21:13.050
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 4069397297243228928
2Mass ID (if available) : 17565933-2304133
ICRS Star Coord at Epoch: 17h 56m 59.32921s -23:04:13.50753s
RUWE (>1.4 is poor) : 0.78
K magnitude           : 6.415
G magnitude           : 12.070
RP magnitude          : 10.729
BP magnitude          : 14.266
DUPflag              : 0
Distance (au)         : 4.268
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.94
Sun-Target sep (deg) : 169.68
Sun-Moon sep (deg)   : 147.13
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.51
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 1.738
C/A sky separation (km): 5380.5
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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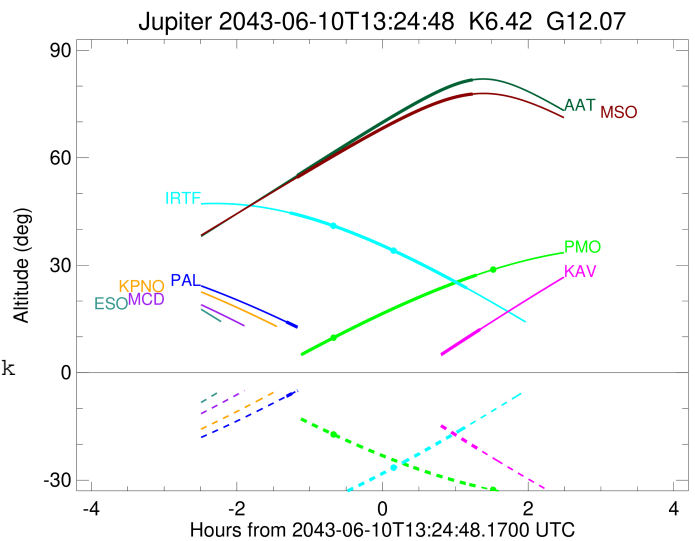
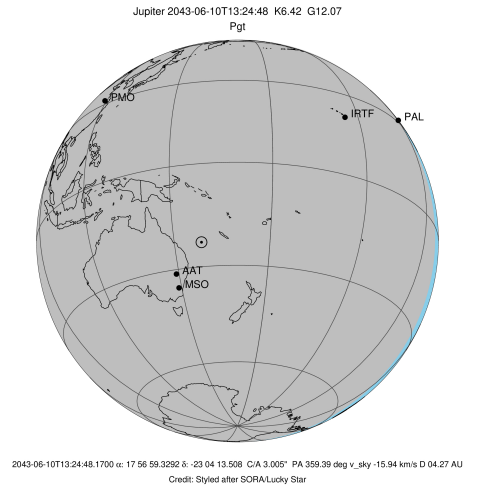


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-10T12:08:29.379	44.62	-39.91	71492.0	-4.14	-4.73
Jupiter	E	2043-06-10T14:34:16.369	23.60	-14.97	71491.9	-4.64	-5.30

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-10T13:31:22.960
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : KAV
Location             : Kavalur Observatory
Latitude (deg)       : 12.57556
E. Longitude (deg)   : 78.83167
Altitude (km)        : 0.722
Gaia source ID       : 4069397297243228928
2Mass ID (if available) : 17565933-2304133
ICRS Star Coord at Epoch: 17h 56m 59.32921s -23:04:13.50753s
RUWE (>1.4 is poor) : 0.78
K magnitude           : 6.415
G magnitude           : 12.070
RP magnitude         : 10.729
BP magnitude         : 14.266
DUPflag              : 0
Distance (au)        : 4.268
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.94
Sun-Target sep (deg) : 169.68
Sun-Moon sep (deg)   : 147.96
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.51
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (") : 2.545
C/A sky separation (km) : 7876.3
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
    
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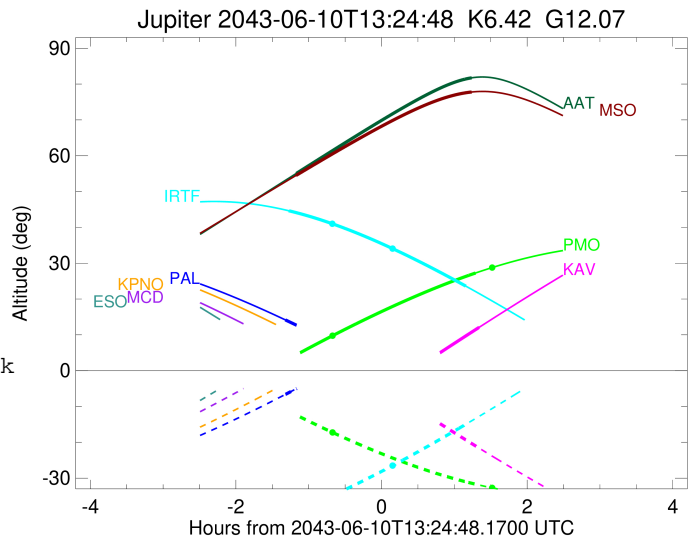
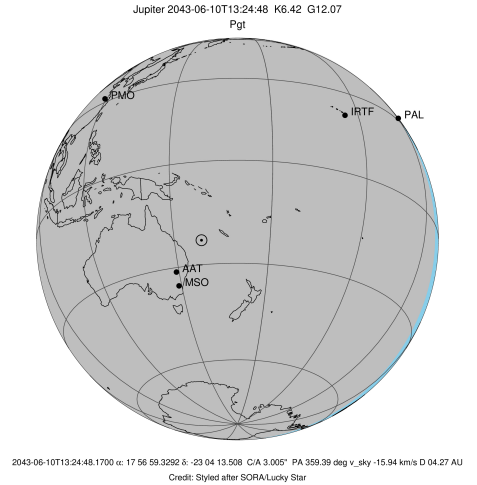


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-10T12:16:46.944	-21.34x	11.04x	71491.9	-7.05	-8.05
Jupiter	E	2043-06-10T14:45:16.711	12.10	-21.63	71491.9	-5.60	-6.40

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-10T13:26:49.860
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      : 4069397297243228928
2Mass ID (if available) : 17565933-2304133
ICRS Star Coord at Epoch: 17h 56m 59.32921s -23:04:13.50753s
RUWE (>1.4 is poor) : 0.78
K magnitude          : 6.415
G magnitude          : 12.070
RP magnitude         : 10.729
BP magnitude         : 14.266
DUPflag             : 0
Distance (au)       : 4.268
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.94
Sun-Target sep (deg) : 169.68
Sun-Moon sep (deg)  : 147.91
B (ring opening deg) : -2.43
PA of pole (deg)    : -0.51
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 3.315
C/A sky separation (km) : 10260.0
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
    
```

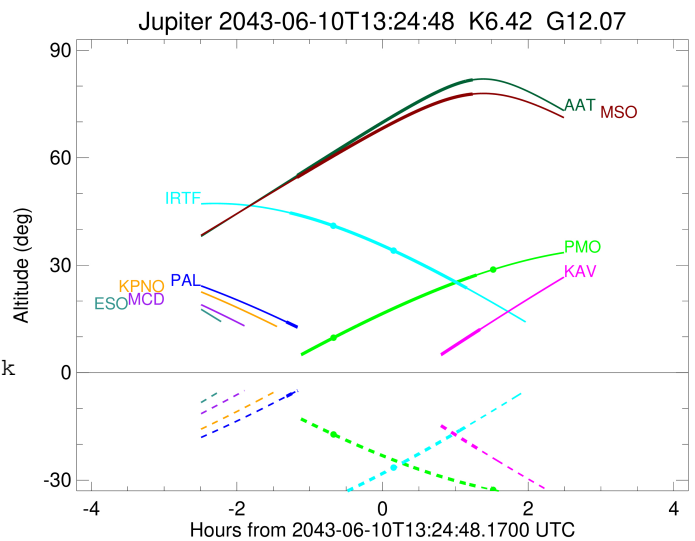
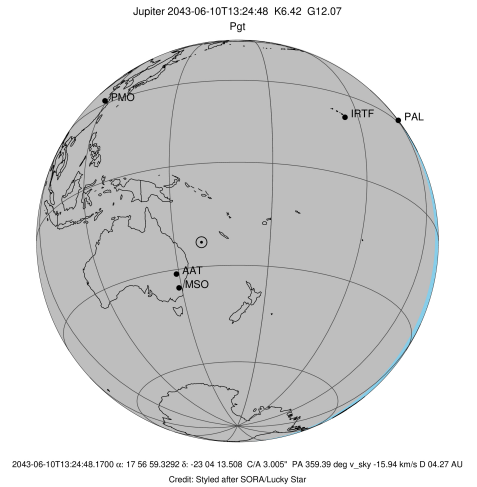


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-10T12:14:26.570	55.01	-64.56	71491.8	-8.59	-9.80
Jupiter	E	2043-06-10T14:39:00.633	81.73	-78.66	71491.8	-8.06	-9.20

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-10T13:26:45.330
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       : 4069397297243228928
2Mass ID (if available) : 17565933-2304133
ICRS Star Coord at Epoch: 17h 56m 59.32921s -23:04:13.50753s
RUWE (>1.4 is poor) : 0.78
K magnitude          : 6.415
G magnitude           : 12.070
RP magnitude         : 10.729
BP magnitude         : 14.266
DUPflag             : 0
Distance (au)        : 4.268
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.94
Sun-Target sep (deg) : 169.68
Sun-Moon sep (deg)   : 147.88
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.51
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 3.456
C/A sky separation (km): 10697.3
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
    
```



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	2043-06-10T12:14:21.764	54.49	-63.40	71491.8	-8.94	-10.19
Jupiter	E	2043-06-10T14:38:56.818	77.77	-75.64	71491.8	-8.42	-9.60