

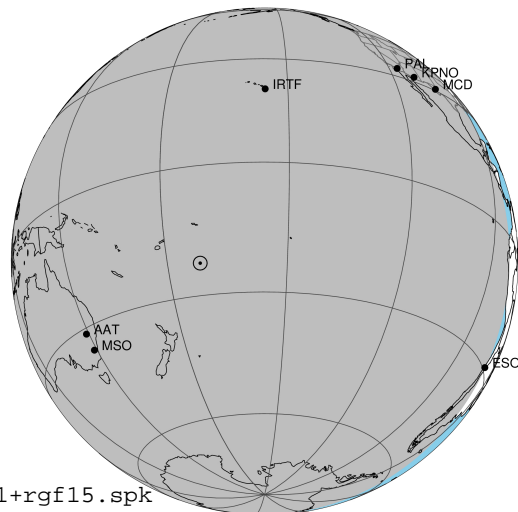
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-06-06T11:25:00.240  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4069443579809056384  
 2Mass ID (if available) : 17590884-2303398

Jupiter 2043-06-06T11:25:00 K9.21 G11.93 Pgt

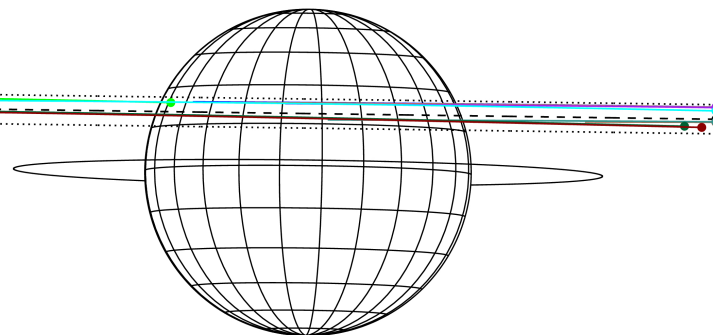
ICRS Star Coord at Epoch: 17h 59m 08.84159s -23°03'40.26971s

RUWE (>1.4 is poor) : 0.82  
 K magnitude : 9.206  
 G magnitude : 11.930  
 RP magnitude : 11.107  
 BP magnitude : 12.649  
 DUPflag : 0  
 Distance (au) : 4.284  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : -15.45  
 Sun-Target sep (deg) : 165.27  
 Sun-Moon sep (deg) : 151.23  
 B (ring opening deg) : -2.43  
 PA of pole (deg) : -0.75  
 Pole direction: RA (deg): 268.05668  
 Dec (deg): 64.49732  
 C/A sky separation (") : 8.308  
 C/A sky separation (km) : 25810.5  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-06-06T11:25:00 K9.21 G11.93  
 Pgt



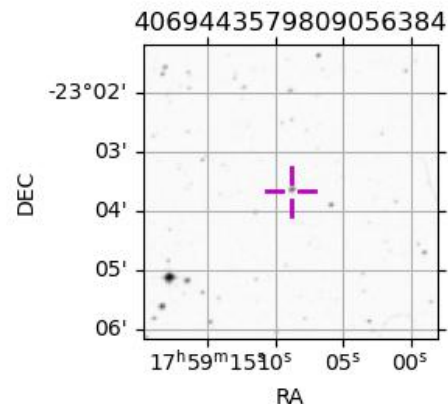
Earth  
 PAL  
 PMO  
 KPNO  
 MCD  
 IRTF  
 KAV  
 RIO  
 ESO  
 AAT  
 MSO



2043-06-06T11:25:00.2400 at: 17 59 08.8416 s: -23 03 40.270 C/A 8.296" PA 179.20 deg v\_sky -15.45 km/s D 04.28 AU  
 Credit: Styled after SORA/Lucky Star

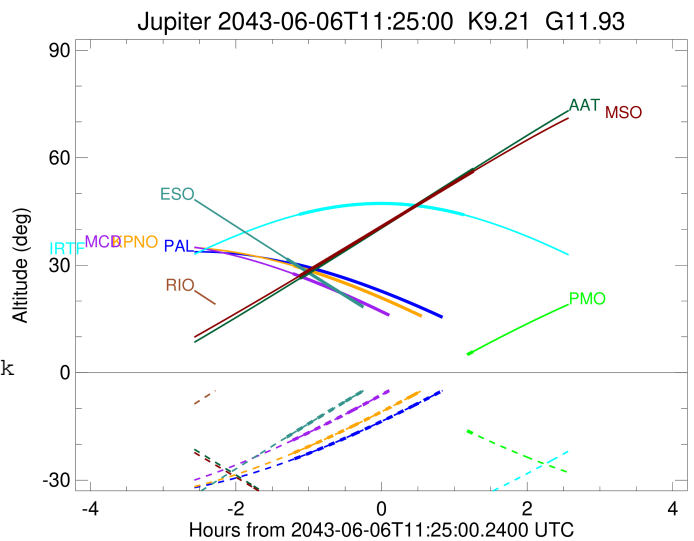
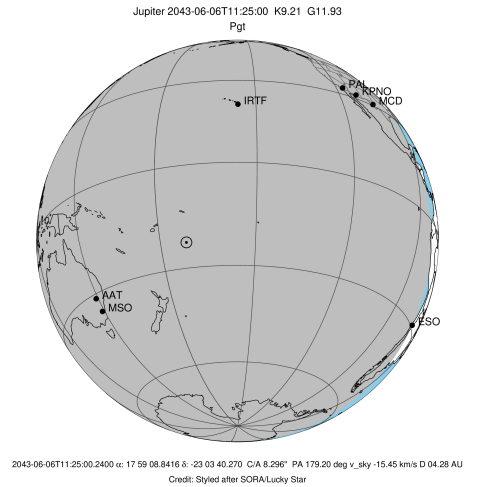
Observable events with sun below -5 deg and altitude above 5 deg

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 06 10:13 - JUN 06 10:13	Pin
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	JUN 06 12:40 - JUN 06 12:40	Pne
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	JUN 06 10:12 - JUN 06 10:12	Pin
MCD	McDonald Obs. 2.7m	30.7	256.0	+	JUN 06 10:11 - JUN 06 10:11	Pin
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+	JUN 06 10:16 - JUN 06 12:33	Pie
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	+	JUN 06 10:06 - JUN 06 10:06	Pin
AAT	Siding Spring (AAT)	-31.3	149.1	+	JUN 06 10:17 - JUN 06 12:40	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	JUN 06 10:17 - JUN 06 12:40	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-06T11:21:34.950
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       : 4069443579809056384
2Mass ID (if available) : 17590884-2303398
ICRS Star Coord at Epoch: 17h 59m 08.84159s -23:03:40.26971s
RUWE (>1.4 is poor) : 0.82
K magnitude           : 9.206
G magnitude           : 11.930
RP magnitude          : 11.107
BP magnitude          : 12.649
DUPflag              : 0
Distance (au)        : 4.284
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.45
Sun-Target sep (deg) : 165.27
Sun-Moon sep (deg)   : 151.99
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.75
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 9.852
C/A sky separation (km): 30608.4
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
    
```

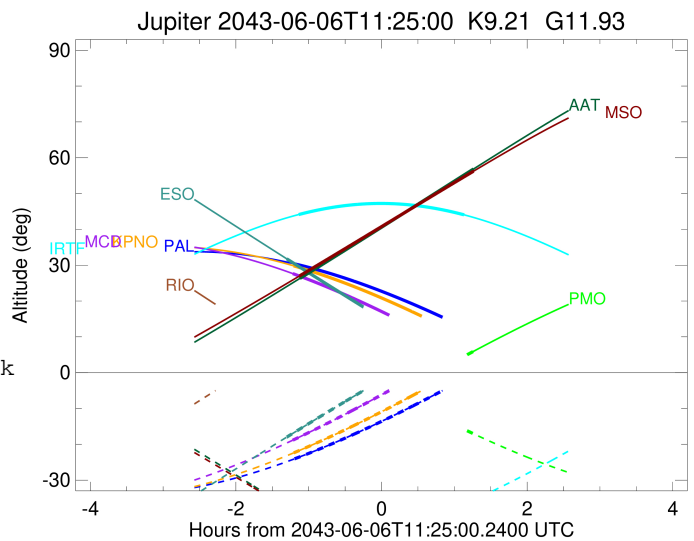
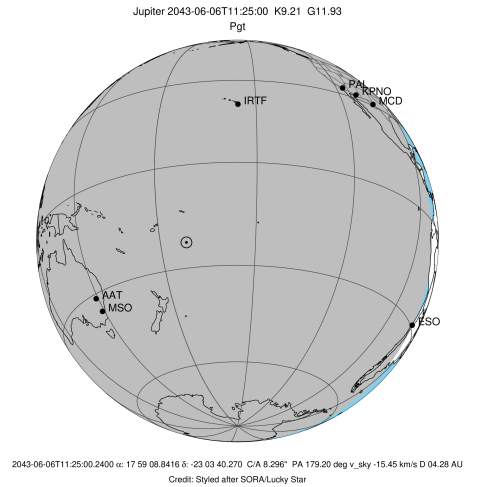


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-06T10:13:19.341	30.37	-24.05	71490.5	25.57	28.64
Jupiter	E	2043-06-06T12:30:07.283	13.09	-2.32x	71490.6	24.96	27.98

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch             : 2043-06-06T11:30:25.940
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        : 4069443579809056384
2Mass ID (if available) : 17590884-2303398
ICRS Star Coord at Epoch: 17h 59m 08.84159s -23:03:40.26971s
RUWE (>1.4 is poor) : 0.82
K magnitude           : 9.206
G magnitude           : 11.930
RP magnitude          : 11.107
BP magnitude          : 12.649
DUPflag              : 0
Distance (au)         : 4.284
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.45
Sun-Target sep (deg)  : 165.27
Sun-Moon sep (deg)    : 150.49
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.75
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (") : 9.406
C/A sky separation (km) : 29222.2
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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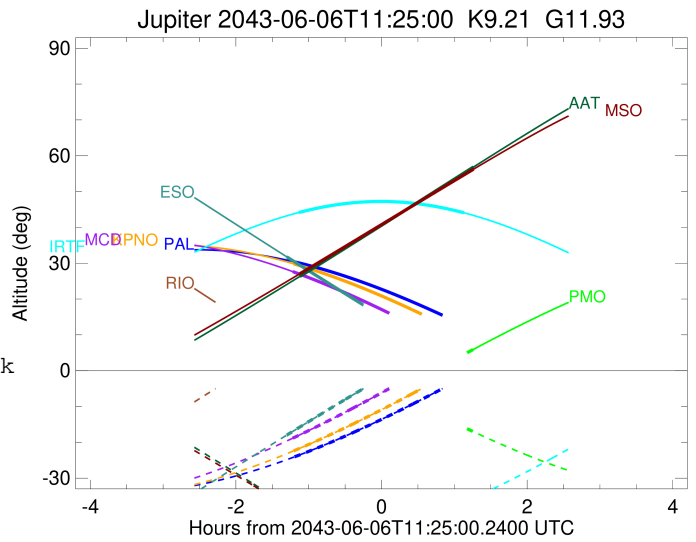
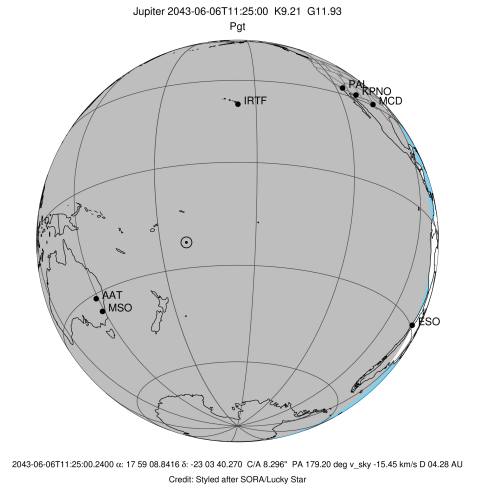


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-06T10:19:57.309	-21.59x	8.44x	71490.7	23.48	26.38
Jupiter	E	2043-06-06T12:40:21.003	5.87	-16.98	71490.6	24.69	27.70

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-06T11:21:09.270
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        : 4069443579809056384
2Mass ID (if available) : 17590884-2303398
ICRS Star Coord at Epoch: 17h 59m 08.84159s -23:03:40.26971s
RUWE (>1.4 is poor)  : 0.82
K magnitude           : 9.206
G magnitude           : 11.930
RP magnitude          : 11.107
BP magnitude          : 12.649
DUPflag              : 0
Distance (au)         : 4.284
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -15.45
Sun-Target sep (deg)  : 165.27
Sun-Moon sep (deg)    : 152.03
B (ring opening deg)  : -2.43
PA of pole (deg)      : -0.75
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (") : 9.780
C/A sky separation (km) : 30383.2
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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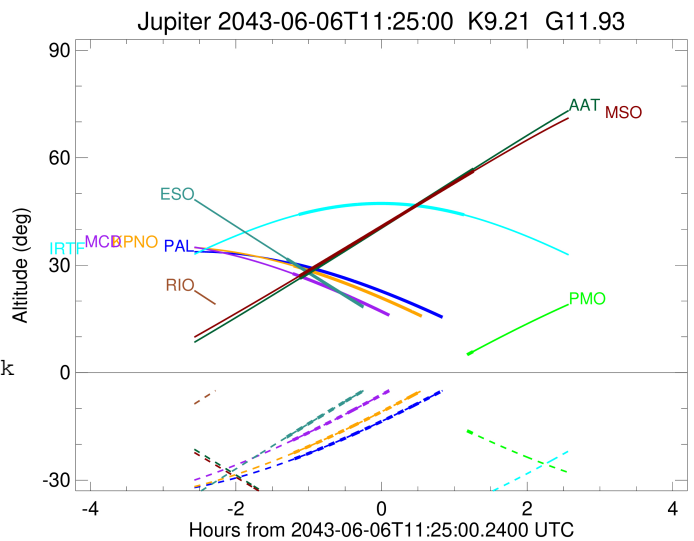
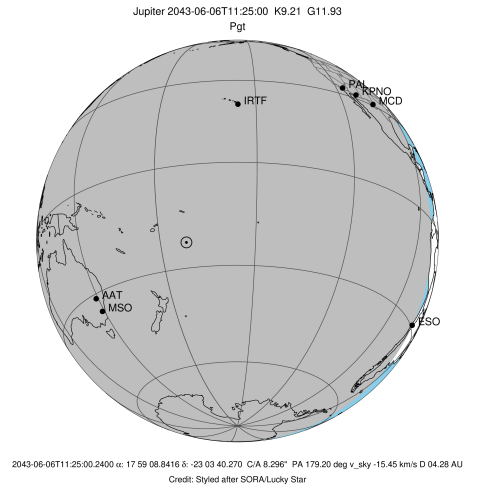


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-06T10:12:43.529	29.82	-22.37	71490.5	25.41	28.47
Jupiter	E	2043-06-06T12:29:54.192	10.45	0.92x	71490.6	24.72	27.72

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch              : 2043-06-06T11:20:36.450
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        : 4069443579809056384
2Mass ID (if available) : 17590884-2303398
ICRS Star Coord at Epoch: 17h 59m 08.84159s -23:03:40.26971s
RUWE (>1.4 is poor)  : 0.82
K magnitude            : 9.206
G magnitude            : 11.930
RP magnitude          : 11.107
BP magnitude          : 12.649
DUPflag               : 0
Distance (au)         : 4.284
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -15.45
Sun-Target sep (deg)  : 165.27
Sun-Moon sep (deg)    : 152.07
B (ring opening deg)  : -2.43
PA of pole (deg)      : -0.75
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (") : 9.682
C/A sky separation (km) : 30078.8
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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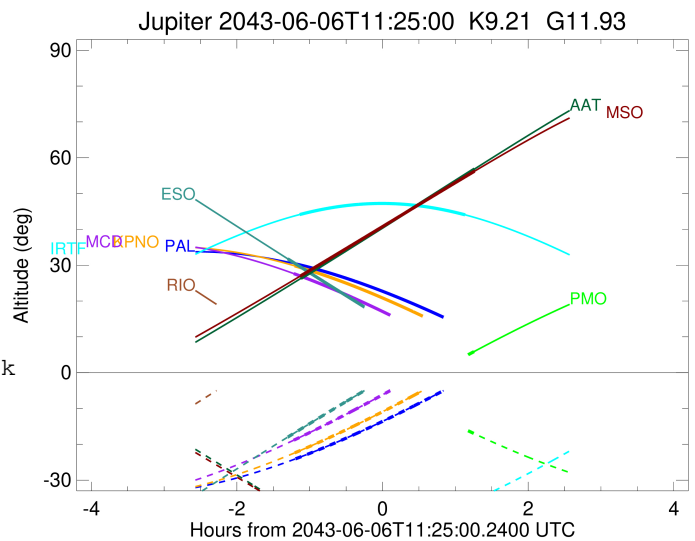
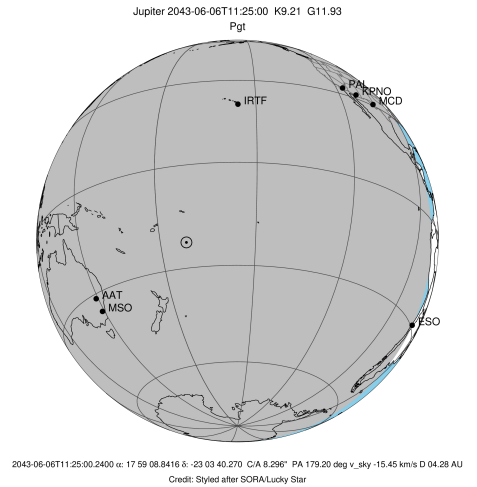


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-06T10:11:54.697	27.65	-18.84	71490.5	25.21	28.25
Jupiter	E	2043-06-06T12:29:40.623	5.78	6.25x	71490.6	24.40	27.38

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-06T11:24:55.350
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        : 4069443579809056384
2Mass ID (if available) : 17590884-2303398
ICRS Star Coord at Epoch: 17h 59m 08.84159s -23:03:40.26971s
RUWE (>1.4 is poor) : 0.82
K magnitude           : 9.206
G magnitude           : 11.930
RP magnitude          : 11.107
BP magnitude          : 12.649
DUPflag              : 0
Distance (au)         : 4.284
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.45
Sun-Target sep (deg) : 165.27
Sun-Moon sep (deg)   : 151.68
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.75
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 9.702
C/A sky separation (km): 30141.6
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
    
```

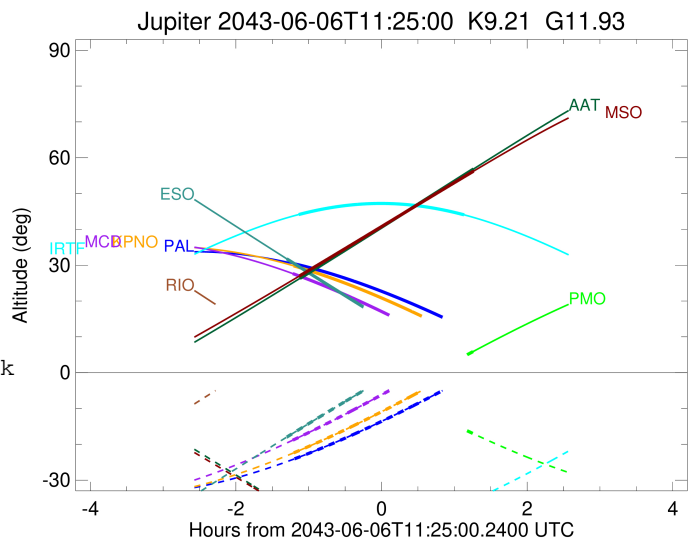
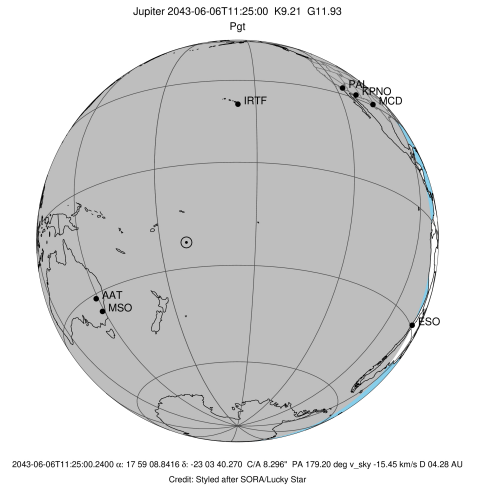


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-06T10:16:49.877	44.14	-47.63	71490.6	24.80	27.81
Jupiter	E	2043-06-06T12:32:59.573	44.06	-36.71	71490.6	24.84	27.85

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-06T11:19:20.540
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       : 4069443579809056384
2Mass ID (if available) : 17590884-2303398
ICRS Star Coord at Epoch: 17h 59m 08.84159s -23:03:40.26971s
RUWE (>1.4 is poor) : 0.82
K magnitude           : 9.206
G magnitude           : 11.930
RP magnitude         : 11.107
BP magnitude         : 12.649
DUPflag              : 0
Distance (au)        : 4.284
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.45
Sun-Target sep (deg) : 165.27
Sun-Moon sep (deg)   : 152.06
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.75
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (") : 7.437
C/A sky separation (km) : 23106.3
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
    
```



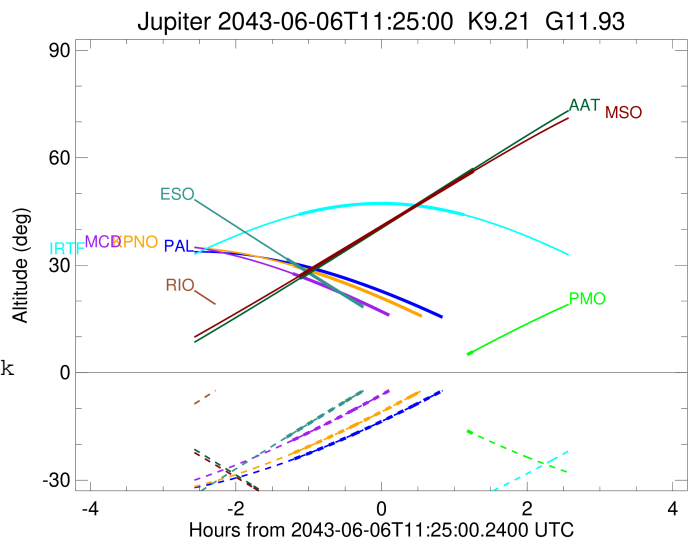
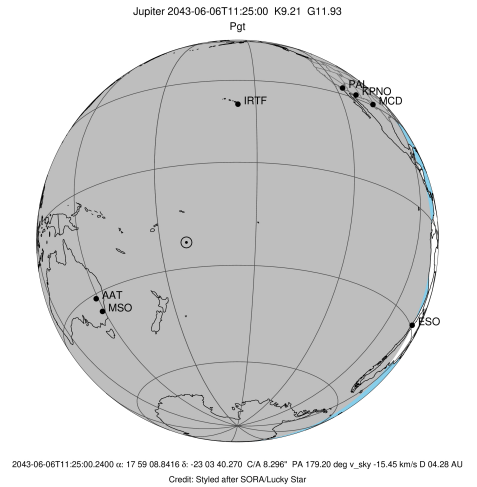
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-06T10:06:50.297	31.79	-18.01	71491.1	19.36	21.87
Jupiter	E	2043-06-06T12:32:24.427	1.52x	10.80x	71491.2	18.30	20.70



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-06T11:29:36.560
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      : 4069443579809056384
2Mass ID (if available) : 17590884-2303398
ICRS Star Coord at Epoch: 17h 59m 08.84159s -23:03:40.26971s
RUWE (>1.4 is poor) : 0.82
K magnitude          : 9.206
G magnitude          : 11.930
RP magnitude         : 11.107
BP magnitude         : 12.649
DUPflag             : 0
Distance (au)       : 4.284
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.45
Sun-Target sep (deg) : 165.27
Sun-Moon sep (deg)  : 150.89
B (ring opening deg) : -2.43
PA of pole (deg)    : -0.75
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation (") : 7.762
C/A sky separation (km) : 24114.9
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
    
```



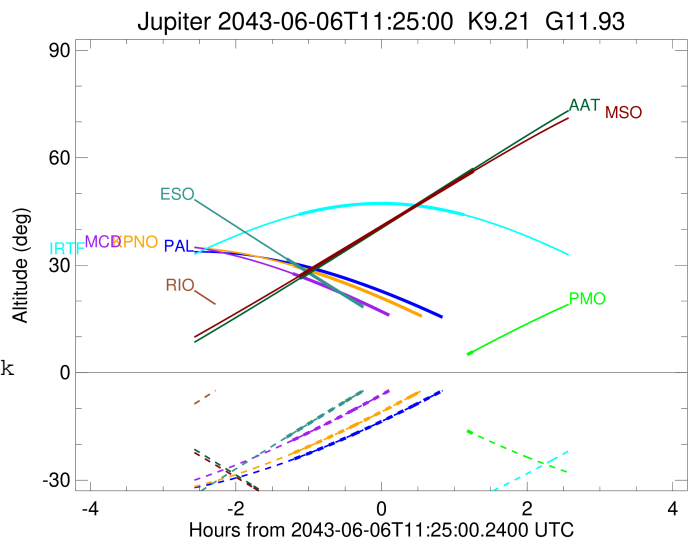
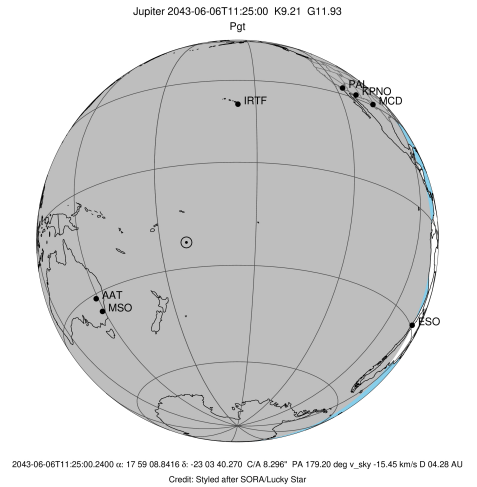
x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-06T10:17:49.151	26.33	-39.74	71491.1	19.15	21.64
Jupiter	E	2043-06-06T12:40:55.395	56.86	-70.02	71491.0	20.13	22.71



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-06T11:29:25.190
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       : 4069443579809056384
2Mass ID (if available) : 17590884-2303398
ICRS Star Coord at Epoch: 17h 59m 08.84159s -23:03:40.26971s
RUWE (>1.4 is poor) : 0.82
K magnitude          : 9.206
G magnitude          : 11.930
RP magnitude         : 11.107
BP magnitude         : 12.649
DUPflag             : 0
Distance (au)        : 4.284
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.45
Sun-Target sep (deg) : 165.27
Sun-Moon sep (deg)   : 150.91
B (ring opening deg) : -2.43
PA of pole (deg)     : -0.75
Pole direction: RA (deg): 268.05668
Dec (deg): 64.49732
C/A sky separation ("): 7.631
C/A sky separation (km): 23707.1
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	2043-06-06T10:17:26.111	26.99	-39.83	71491.2	18.82	21.28
Jupiter	E	2043-06-06T12:40:56.699	56.26	-68.28	71491.1	19.76	22.31