

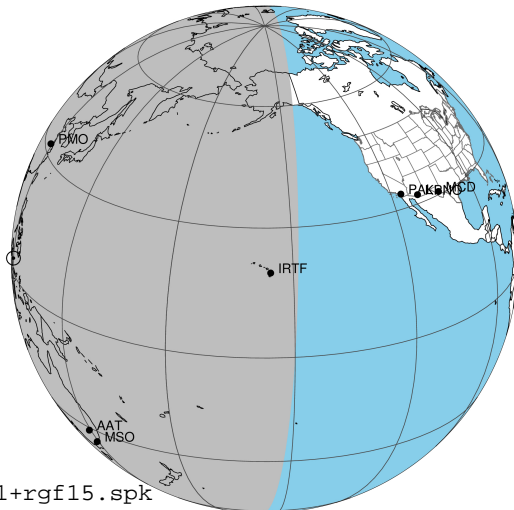
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2048-09-30T15:49:25.640
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3424549258154873856
 2Mass ID (if available) : 05590932+2255520

Jupiter 2048-09-30T15:49:25 K8.89 G13.77 Pgt

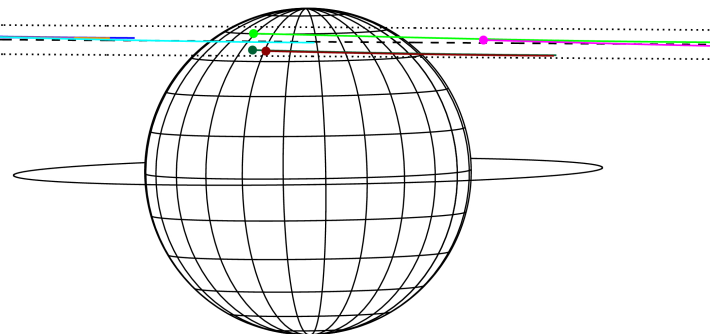
ICRS Star Coord at Epoch: 05h 59m 09.32999s +22:55:52.02324s

RUWE (>1.4 is poor) : 1.12
 K magnitude : 8.893
 G magnitude : 13.768
 RP magnitude : 12.558
 BP magnitude : 15.373
 DUPflag : 0
 Distance (au) : 4.848
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 8.54
 Sun-Target sep (deg) : 97.68
 Sun-Moon sep (deg) : 13.66
 B (ring opening deg) : 2.56
 PA of pole (deg) : 0.75
 Pole direction: RA (deg): 268.05734
 Dec (deg): 64.49722
 C/A sky separation (") : 16.163
 C/A sky separation (km) : 56835.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2048-09-30T15:49:25 K8.89 G13.77
 Pgt



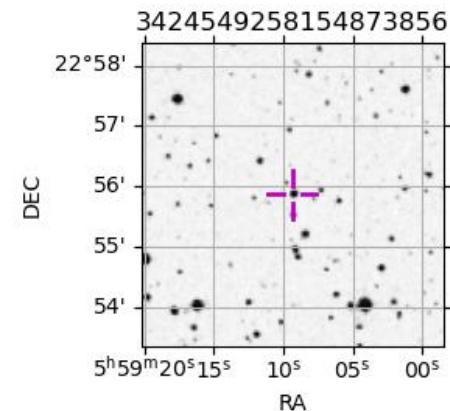
Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 ESO
 AAT
 MSO



2048-09-30T15:49:25.6400 a: 05 59 09.3300 d: +22 55 52.023 C/A ***** PA 179.60 deg v_sky + 8.54 km/s D 04.85 AU
 Credit: Styled after SORA/Lucky Star

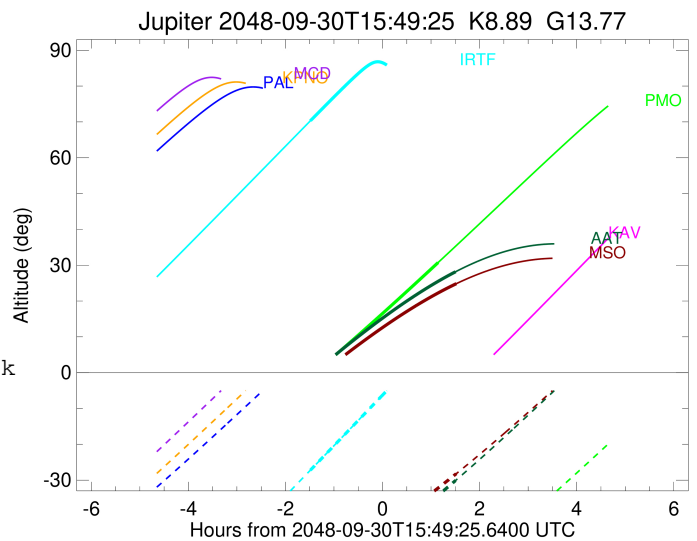
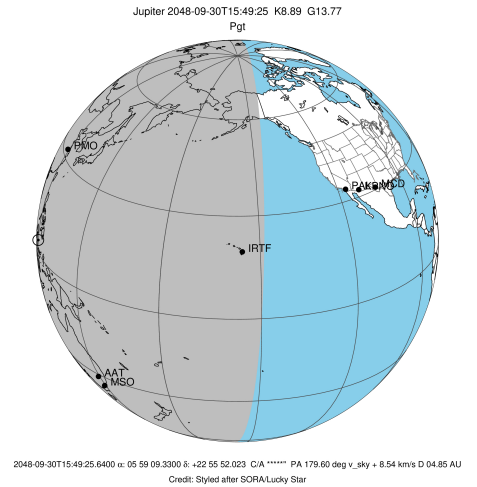
Observable events with sun below -5 deg and altitude above 5 deg

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			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	SEP 30 16:58 - SEP 30 16:58	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	+	SEP 30 14:20 - SEP 30 14:20	Pin
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	+	SEP 30 17:19 - SEP 30 17:19	Pne
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	SEP 30 17:20 - SEP 30 17:20	Pne



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2048-09-30T15:41:00.270
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      : 3424549258154873856
2Mass ID (if available) : 05590932+2255520
ICRS Star Coord at Epoch: 05h 59m 09.32999s +22:55:52.02324s
RUWE (>1.4 is poor) : 1.12
K magnitude         : 8.893
G magnitude         : 13.768
RP magnitude        : 12.558
BP magnitude        : 15.373
DUPflag            : 0
Distance (au)       : 4.848
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 8.54
Sun-Target sep (deg) : 97.68
Sun-Moon sep (deg)  : 14.50
B (ring opening deg) : 2.56
PA of pole (deg)    : 0.75
Pole direction: RA (deg): 268.05734
Dec (deg): 64.49722
C/A sky separation (") : 17.012
C/A sky separation (km) : 59821.2
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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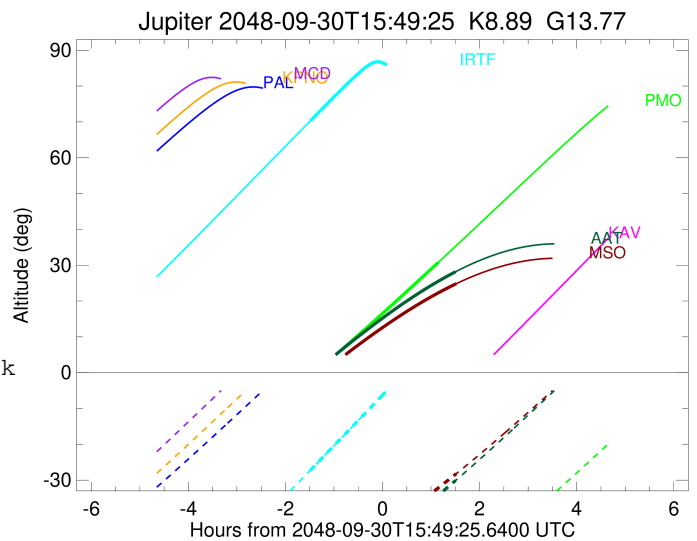
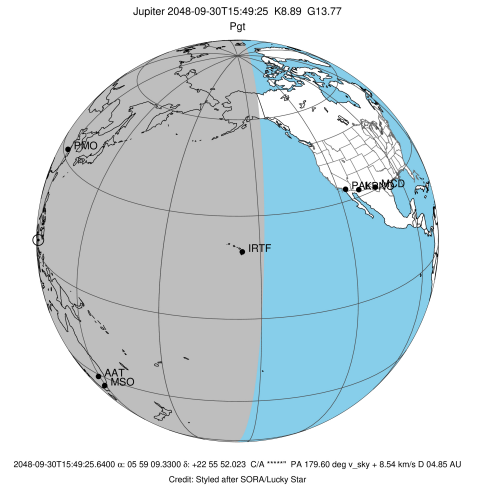


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-09-30T14:25:07.180	-0.09x	-54.48	71485.4	58.87	62.01
Jupiter	E	2048-09-30T16:58:13.583	30.75	-57.66	71486.0	54.57	57.96

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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2048-09-30T15:49:41.140
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       : 3424549258154873856
2Mass ID (if available) : 05590932+2255520
ICRS Star Coord at Epoch: 05h 59m 09.32999s +22:55:52.02324s
RUWE (>1.4 is poor) : 1.12
K magnitude           : 8.893
G magnitude           : 13.768
RP magnitude          : 12.558
BP magnitude          : 15.373
DUPflag              : 0
Distance (au)        : 4.848
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 8.54
Sun-Target sep (deg) : 97.68
Sun-Moon sep (deg)   : 13.85
B (ring opening deg) : 2.56
PA of pole (deg)     : 0.75
Pole direction: RA (deg): 268.05734
Dec (deg): 64.49722
C/A sky separation (") : 16.061
C/A sky separation (km) : 56476.6
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
    
```

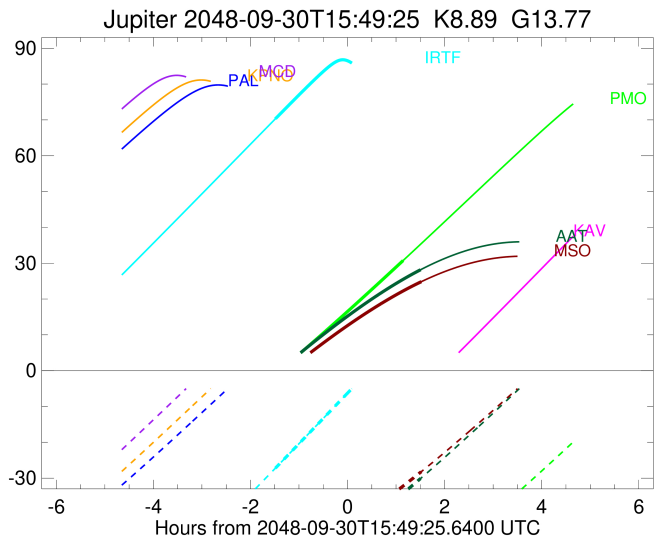
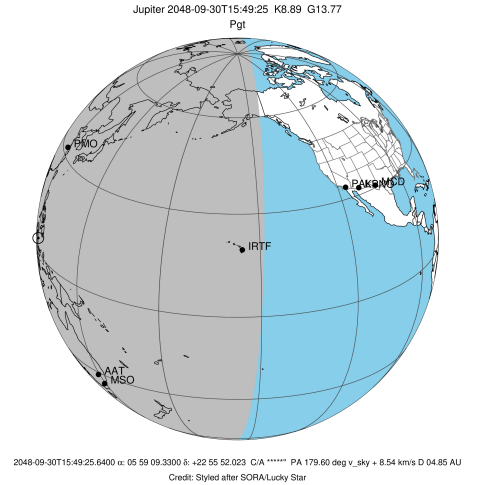


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-09-30T14:20:17.501	70.30	-27.21	71486.2	53.46	56.91
Jupiter	E	2048-09-30T17:19:22.498	67.43	14.79x	71486.5	51.23	54.78

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2048-09-30T15:42:11.540
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       : 3424549258154873856
2Mass ID (if available) : 05590932+2255520
ICRS Star Coord at Epoch: 05h 59m 09.32999s +22:55:52.02324s
RUWE (>1.4 is poor) : 1.12
K magnitude          : 8.893
G magnitude           : 13.768
RP magnitude         : 12.558
BP magnitude         : 15.373
DUPflag             : 0
Distance (au)        : 4.848
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 8.54
Sun-Target sep (deg) : 97.68
Sun-Moon sep (deg)   : 14.27
B (ring opening deg) : 2.56
PA of pole (deg)     : 0.75
Pole direction: RA (deg): 268.05734
Dec (deg): 64.49722
C/A sky separation (") : 14.964
C/A sky separation (km) : 52622.1
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
    
```

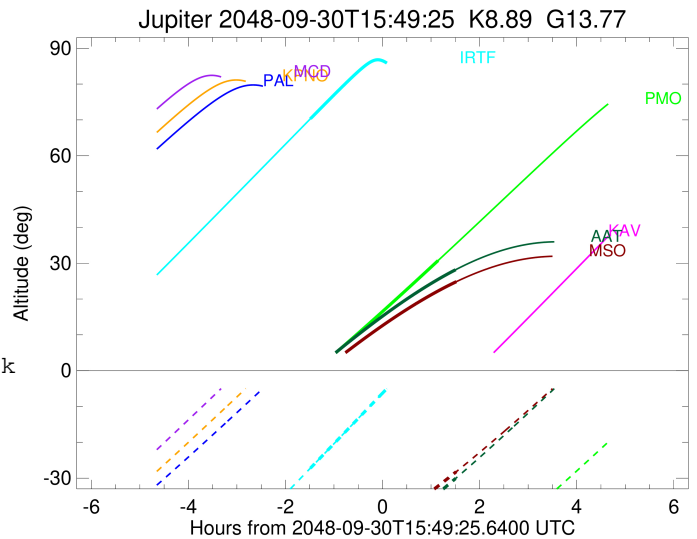
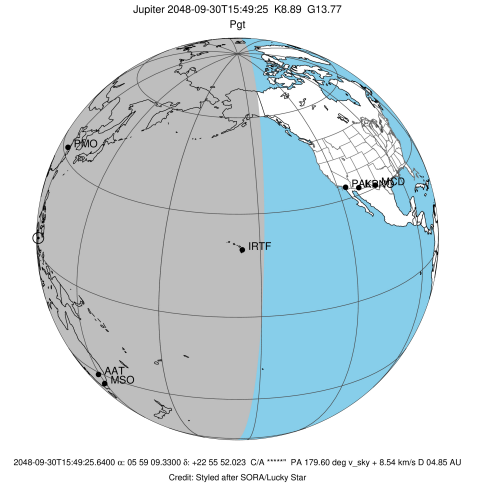


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-09-30T14:06:29.593	-3.54x	-55.54	71486.8	49.45	53.05
Jupiter	E	2048-09-30T17:19:46.321	28.17	-30.09	71487.4	45.46	49.15

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2048-09-30T15:42:30.540
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       : 3424549258154873856
2Mass ID (if available) : 05590932+2255520
ICRS Star Coord at Epoch: 05h 59m 09.32999s +22:55:52.02324s
RUWE (>1.4 is poor) : 1.12
K magnitude           : 8.893
G magnitude           : 13.768
RP magnitude          : 12.558
BP magnitude          : 15.373
DUPflag              : 0
Distance (au)        : 4.848
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 8.54
Sun-Target sep (deg) : 97.68
Sun-Moon sep (deg)   : 14.23
B (ring opening deg) : 2.56
PA of pole (deg)     : 0.75
Pole direction: RA (deg): 268.05734
Dec (deg): 64.49722
C/A sky separation (") : 14.881
C/A sky separation (km) : 52329.5
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	2048-09-30T14:06:15.332	-5.30x	-51.54	71486.9	49.06	52.68
Jupiter	E	2048-09-30T17:20:35.637	24.83	-28.20	71487.5	45.15	48.85