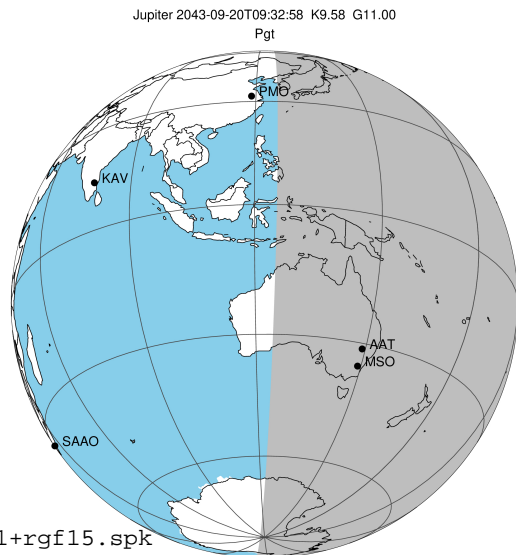


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-09-20T09:32:58.540
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116635585324536576
 2Mass ID (if available) : 17362073-2312407

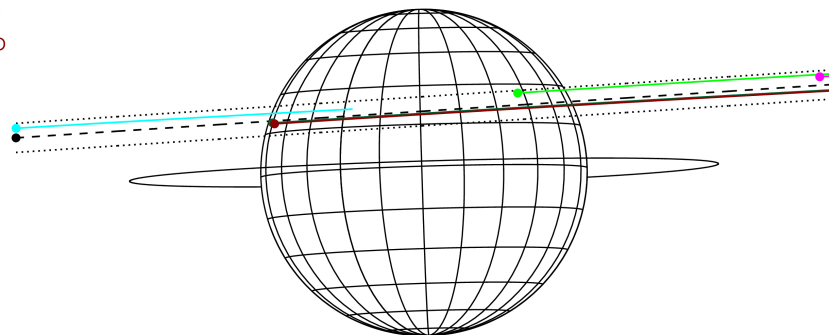
Jupiter 2043-09-20T09:32:58 K9.58 G11.00 Pgt

ICRS Star Coord at Epoch: 17h 36m 20.70607s -23:12:41.75256s
 RUWE (>1.4 is poor) : 0.69
 K magnitude : 9.577
 G magnitude : 11.003
 RP magnitude : 10.502
 BP magnitude : 11.324
 DUPflag : 0
 Distance (au) : 5.175
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 14.20
 Sun-Target sep (deg) : 87.84
 Sun-Moon sep (deg) : 109.77
 B (ring opening deg) : -2.24
 PA of pole (deg) : 1.71
 Pole direction: RA (deg): 268.05674
 Dec (deg): 64.49731
 C/A sky separation (") : 7.145
 C/A sky separation (km) : 26815.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp



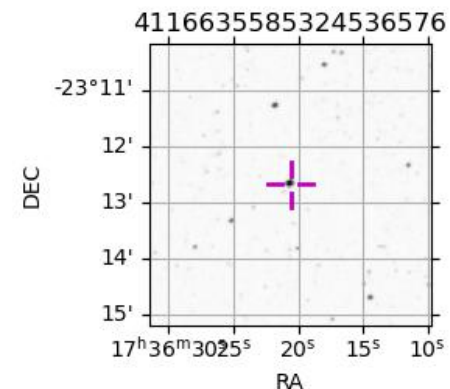
2043-09-20T09:32:58.5400 cc: 17 36 20.7061 s: -23 12 41.753 C/A 7.136 PA 183.74 deg v_sky +14.20 km/s D 05.17 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PMO
 IRTF
 KAV
 AAT
 MSO



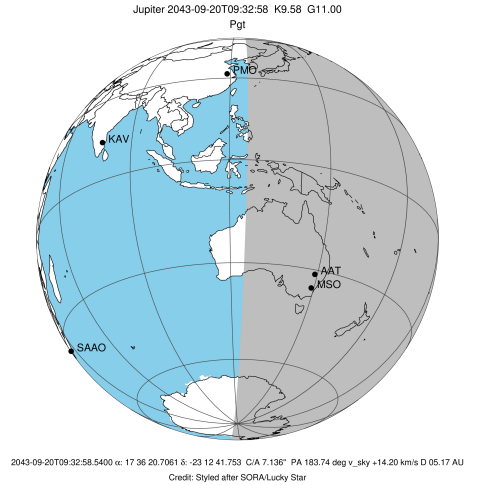
Observable events with sun below -5 deg and altitude above 5 deg

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	+	SEP 20 10:49 - SEP 20 10:49	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 20 08:22 - SEP 20 08:22	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 20 10:56 - SEP 20 10:56	Pne
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	SEP 20 10:56 - SEP 20 10:56	Pne

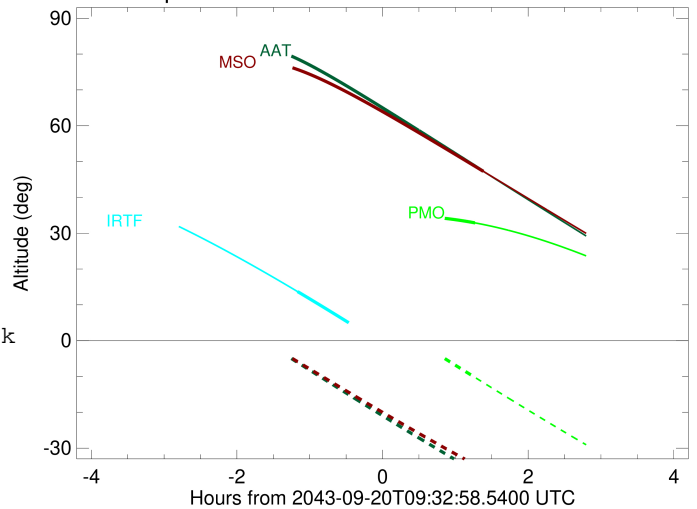


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-20T09:32:06.120
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        : 4116635585324536576
2Mass ID (if available) : 17362073-2312407
ICRS Star Coord at Epoch: 17h 36m 20.70607s -23:12:41.75256s
RUWE (>1.4 is poor) : 0.69
K magnitude           : 9.577
G magnitude           : 11.003
RP magnitude          : 10.502
BP magnitude          : 11.324
DUPflag              : 0
Distance (au)         : 5.175
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 14.20
Sun-Target sep (deg)  : 87.84
Sun-Moon sep (deg)   : 110.28
B (ring opening deg) : -2.24
PA of pole (deg)     : 1.71
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (") : 8.528
C/A sky separation (km) : 32008.7
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
    
```



Jupiter 2043-09-20T09:32:58 K9.58 G11.00

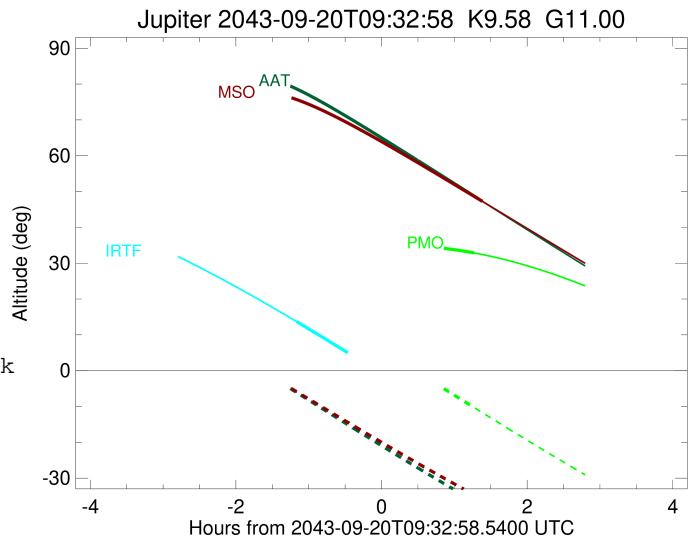
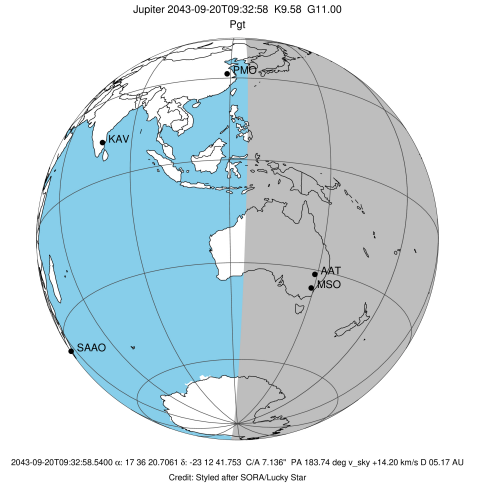


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-20T08:14:52.651	30.62	22.31x	71490.8	24.30	27.27
Jupiter	E	2043-09-20T10:49:14.715	32.87	-10.27	71490.4	28.63	31.92

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-20T09:40:13.580
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       : 4116635585324536576
2Mass ID (if available) : 17362073-2312407
ICRS Star Coord at Epoch: 17h 36m 20.70607s -23:12:41.75257s
RUWE (>1.4 is poor) : 0.69
K magnitude           : 9.577
G magnitude           : 11.003
RP magnitude          : 10.502
BP magnitude          : 11.324
DUPflag              : 0
Distance (au)         : 5.175
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 14.20
Sun-Target sep (deg) : 87.84
Sun-Moon sep (deg)   : 110.07
B (ring opening deg) : -2.24
PA of pole (deg)     : 1.71
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (") : 7.833
C/A sky separation (km) : 29398.2
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
    
```

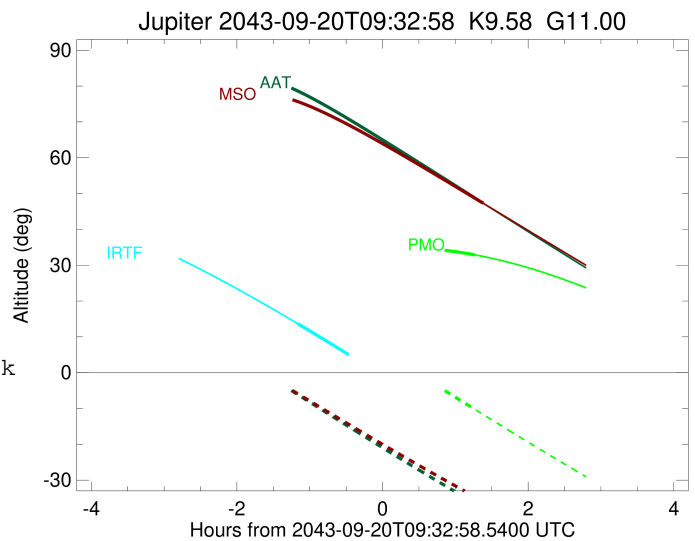
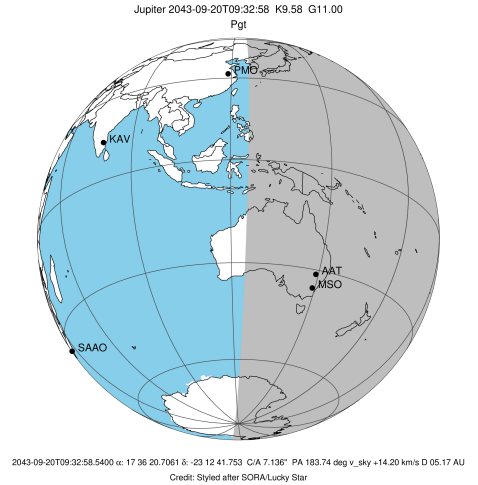


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-20T08:22:58.633	13.70	-55.50	71491.0	22.88	25.72
Jupiter	E	2043-09-20T10:56:31.801	-19.27x	-66.93	71490.7	25.59	28.67

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-20T09:36:07.400
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        : 4116635585324536576
2Mass ID (if available) : 17362073-2312407
ICRS Star Coord at Epoch: 17h 36m 20.70607s -23:12:41.75257s
RUWE (>1.4 is poor) : 0.69
K magnitude           : 9.577
G magnitude           : 11.003
RP magnitude          : 10.502
BP magnitude          : 11.324
DUPflag              : 0
Distance (au)         : 5.175
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 14.20
Sun-Target sep (deg)  : 87.84
Sun-Moon sep (deg)    : 110.75
B (ring opening deg) : -2.24
PA of pole (deg)      : 1.71
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (") : 6.889
C/A sky separation (km) : 25854.0
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
    
```

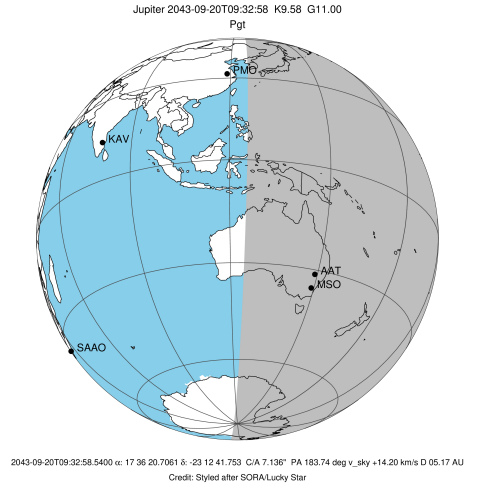


x: target alt < 5.0 deg or sun > -5.0 deg

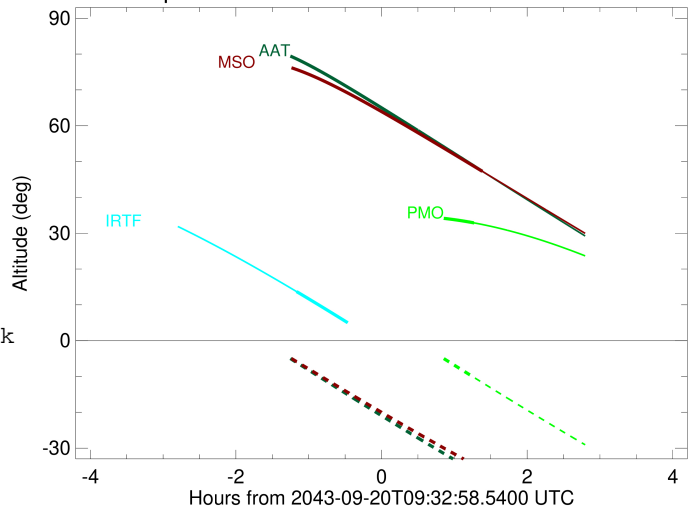
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-20T08:15:36.959	79.76	-4.51x	71491.3	19.25	21.75
Jupiter	E	2043-09-20T10:56:06.566	47.26	-37.73	71491.0	22.90	25.75

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-20T09:36:00.280
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       : 4116635585324536576
2Mass ID (if available) : 17362073-2312407
ICRS Star Coord at Epoch: 17h 36m 20.70607s -23:12:41.75257s
RUWE (>1.4 is poor) : 0.69
K magnitude          : 9.577
G magnitude          : 11.003
RP magnitude         : 10.502
BP magnitude         : 11.324
DUPflag             : 0
Distance (au)        : 5.175
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 14.20
Sun-Target sep (deg) : 87.84
Sun-Moon sep (deg)  : 110.74
B (ring opening deg) : -2.24
PA of pole (deg)    : 1.71
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (" ) : 6.772
C/A sky separation (km) : 25418.5
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
    
```



Jupiter 2043-09-20T09:32:58 K9.58 G11.00



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	2043-09-20T08:15:23.868	76.53	-4.30x	71491.3	18.87	21.33
Jupiter	E	2043-09-20T10:56:06.410	47.26	-35.83	71491.0	22.54	25.36