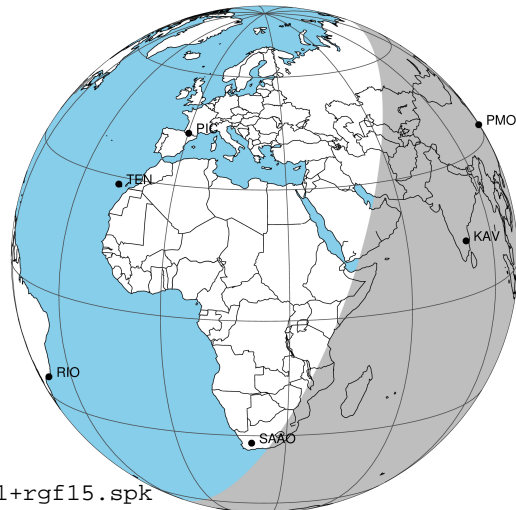


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2039-06-06T15:13:40.580
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 616178071531699712
 2Mass ID (if available) : 09482202+1419056

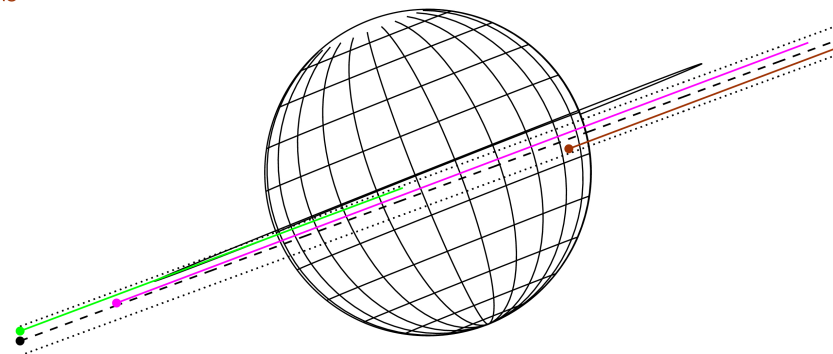
Jupiter 2039-06-06T15:13:40 K9.71 G10.89 Pgt

ICRS Star Coord at Epoch: 09h 48m 21.91129s +14:19:05.36312s
 RUWE (>1.4 is poor) : 0.97
 K magnitude : 9.713
 G magnitude : 10.892
 RP magnitude : 10.467
 BP magnitude : 11.157
 DUPflag : 0
 Distance (au) : 5.665
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 22.68
 Sun-Target sep (deg) : 69.20
 Sun-Moon sep (deg) : 108.66
 B (ring opening deg) : -0.49
 PA of pole (deg) : 21.67
 Pole direction: RA (deg): 268.05613
 Dec (deg): 64.49700
 C/A sky separation (") : 1.832
 C/A sky separation (km) : 7527.4
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2039-06-06T15:13:40 K9.71 G10.89
 Pgt



Earth
 PMO
 KAV
 SAAO

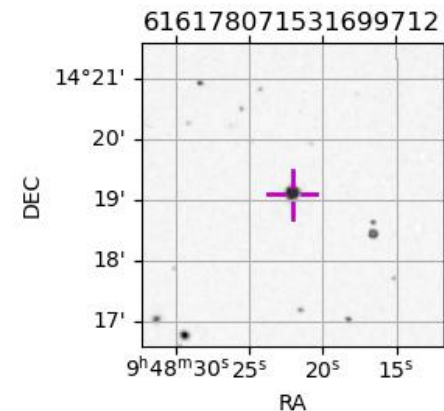


2039-06-06T15:13:40.5800 ex: 09 48 21.9113 s: +14 19 05.363 C/A 1.833" PA 20.21 deg v_sky +22.68 km/s D 05.67 AU

Credit: Styled after SORA/Lucky Star

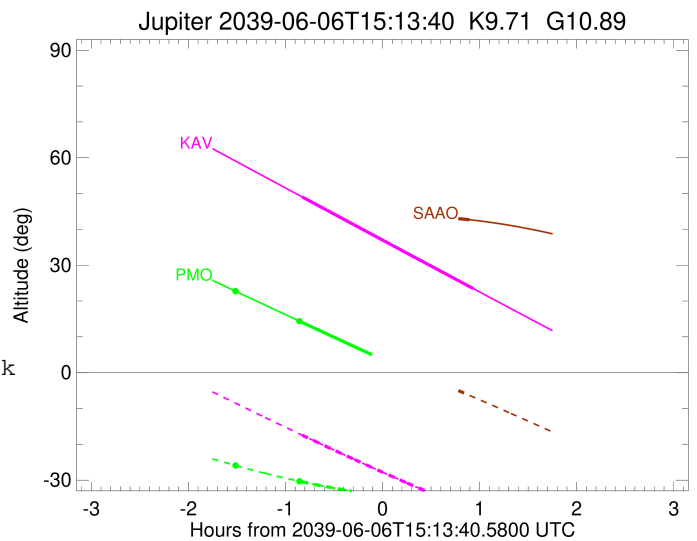
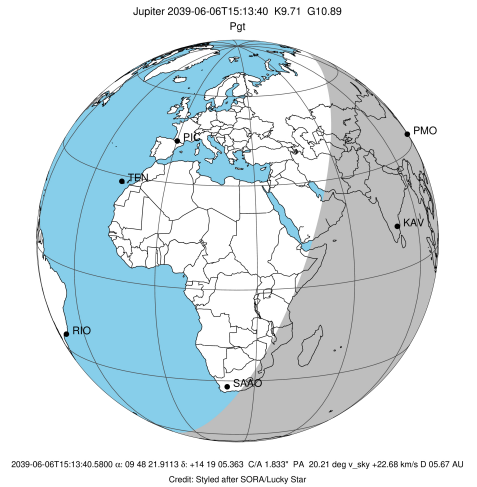
Observable events with sun below -5 deg and altitude above 5 deg

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	+	JUN 06 14:24 - JUN 06 14:24	Pin
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	+ +	JUN 06 14:24 - JUN 06 16:09	Pie
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			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	JUN 06 16:07 - JUN 06 16:07	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2039-06-06T15:16:31.860
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       : 616178071531699712
2Mass ID (if available) : 09482202+1419056
ICRS Star Coord at Epoch: 09h 48m 21.91129s +14:19:05.36312s
RUWE (>1.4 is poor) : 0.97
K magnitude           : 9.713
G magnitude           : 10.892
RP magnitude         : 10.467
BP magnitude         : 11.157
DUPflag              : 0
Distance (au)        : 5.665
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 22.68
Sun-Target sep (deg) : 69.20
Sun-Moon sep (deg)   : 108.93
B (ring opening deg) : -0.49
PA of pole (deg)     : 21.67
Pole direction: RA (deg): 268.05613
Dec (deg): 64.49700
C/A sky separation (") : 0.604
C/A sky separation (km) : 2480.8
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
    
```

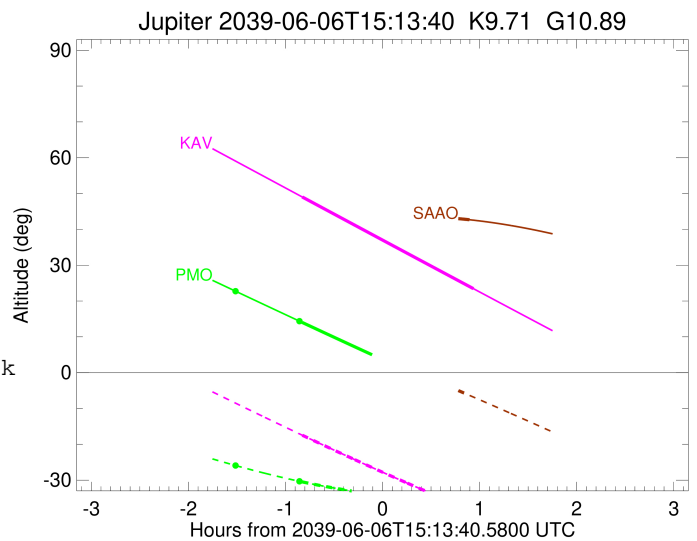
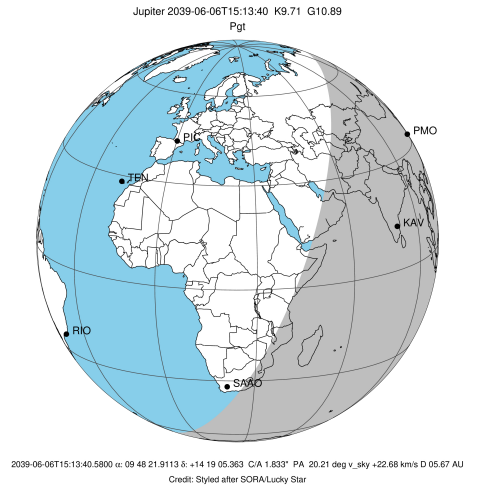


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2039-06-06T14:24:03.645	14.02	-30.49	71492.0	-0.76	-0.87
Jupiter	E	2039-06-06T16:08:46.270	-7.47x	-35.41	71492.0	-3.30	-3.77

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2039-06-06T15:17:07.070
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      : 616178071531699712
2Mass ID (if available) : 09482202+1419056
ICRS Star Coord at Epoch: 09h 48m 21.91129s +14:19:05.36312s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 9.713
G magnitude          : 10.892
RP magnitude         : 10.467
BP magnitude         : 11.157
DUPflag             : 0
Distance (au)       : 5.665
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.68
Sun-Target sep (deg) : 69.20
Sun-Moon sep (deg)  : 109.49
B (ring opening deg) : -0.49
PA of pole (deg)    : 21.67
Pole direction: RA (deg): 268.05613
Dec (deg): 64.49700
C/A sky separation (" ) : 1.290
C/A sky separation (km) : 5301.9
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
    
```

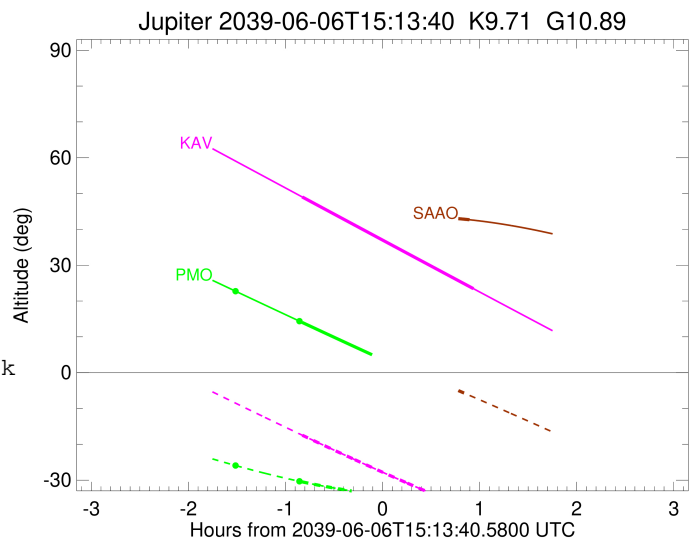
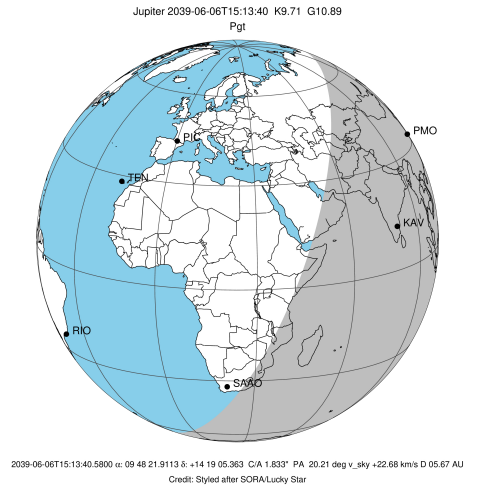


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2039-06-06T14:24:07.050	49.03	-17.46	71492.0	-3.26	-3.72
Jupiter	E	2039-06-06T16:09:52.587	23.45	-38.52	71492.0	-5.29	-6.04

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2039-06-06T15:14:41.740
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : SAAO
Location            : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)      : -32.37953
E. Longitude (deg)  : 20.81070
Altitude (km)       : 1.768
Gaia source ID      : 616178071531699712
2Mass ID (if available) : 09482202+1419056
ICRS Star Coord at Epoch: 09h 48m 21.91129s +14:19:05.36312s
RUWE (>1.4 is poor) : 0.97
K magnitude          : 9.713
G magnitude          : 10.892
RP magnitude         : 10.467
BP magnitude         : 11.157
DUPflag             : 0
Distance (au)       : 5.665
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.68
Sun-Target sep (deg) : 69.20
Sun-Moon sep (deg)   : 109.38
B (ring opening deg) : -0.49
PA of pole (deg)     : 21.67
Pole direction: RA (deg): 268.05613
Dec (deg): 64.49700
C/A sky separation ("): 2.910
C/A sky separation (km): 11955.1
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	2039-06-06T14:22:00.804	41.06	12.93x	71492.0	-8.47	-9.66
Jupiter	E	2039-06-06T16:07:19.815	42.69	-6.32	71492.0	-10.72	-12.21