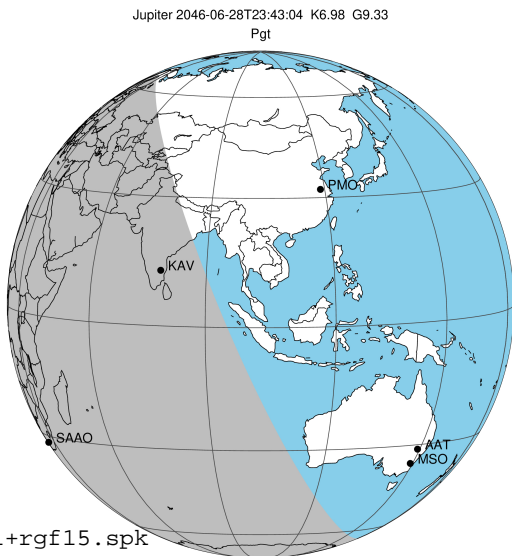


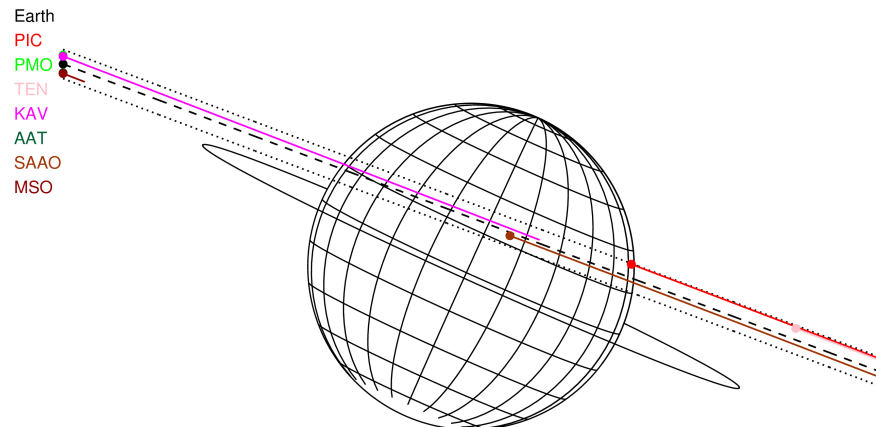
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2046-06-28T23:43:04.720
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 2552250716119601920
 2Mass ID (if available) : 01001832+0502522

Jupiter 2046-06-28T23:43:04 K6.98 G9.33 Pgt

ICRS Star Coord at Epoch: 01h 00m 18.38277s +05°02'51.74415s
 RUWE (>1.4 is poor) : 1.09
 K magnitude : 6.984
 G magnitude : 9.333
 RP magnitude : 8.616
 BP magnitude : 9.904
 DUPflag : 0
 Distance (au) : 5.015
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 18.11
 Sun-Target sep (deg) : 80.98
 Sun-Moon sep (deg) : 20.28
 B (ring opening deg) : 2.64
 PA of pole (deg) : -24.34
 Pole direction: RA (deg): 268.05712
 Dec (deg): 64.49722
 C/A sky separation (") : 5.501
 C/A sky separation (km) : 20006.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp

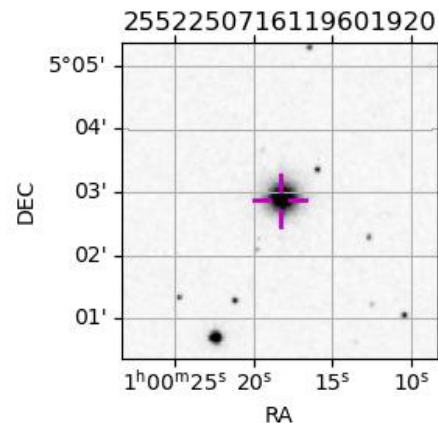


2046-06-28T23:43:04.7200 ex: 01 00 18.3828 s: +05 02 51.744 C/A 5.507" PA 159.37 deg v_sky +18.11 km/s D 05.01 AU
 Credit: Styled after SORA/Lucky Star



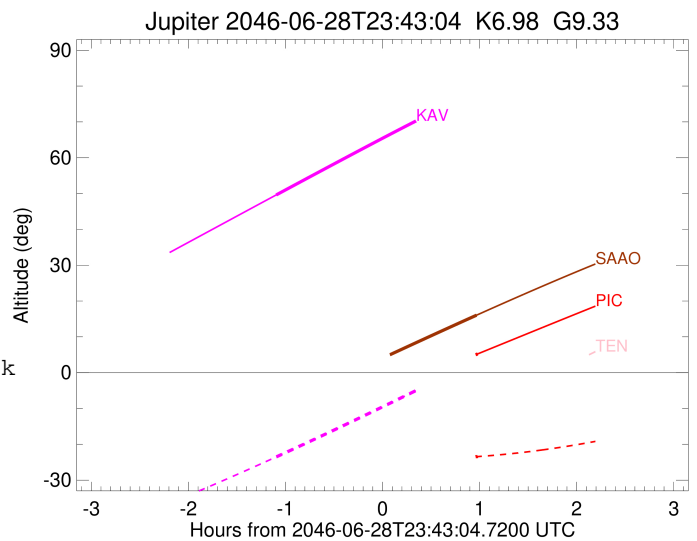
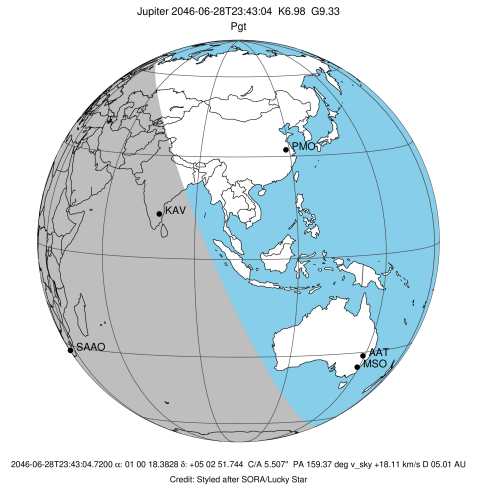
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	JUN 29 00:41 - JUN 29 00:41	Pne
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
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 28 22:37 - JUN 28 22:37	Pin
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 29 00:41 - JUN 29 00:41	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-06-28T23:40:34.680
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)        : 42.93656
E. Longitude (deg)    : 0.14231
Altitude (km)         : 2.890
Gaia source ID        : 2552250716119601920
2Mass ID (if available) : 01001832+0502522
ICRS Star Coord at Epoch: 01h 00m 18.38277s +05:02:51.74415s
RUWE (>1.4 is poor) : 1.09
K magnitude           : 6.984
G magnitude           : 9.333
RP magnitude          : 8.616
BP magnitude          : 9.904
DUPflag              : 0
Distance (au)         : 5.015
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 18.11
Sun-Target sep (deg)  : 80.98
Sun-Moon sep (deg)    : 20.34
B (ring opening deg) : 2.64
PA of pole (deg)      : -24.34
Pole direction: RA (deg): 268.05712
Dec (deg): 64.49722
C/A sky separation (") : 7.075
C/A sky separation (km) : 25731.0
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
    
```

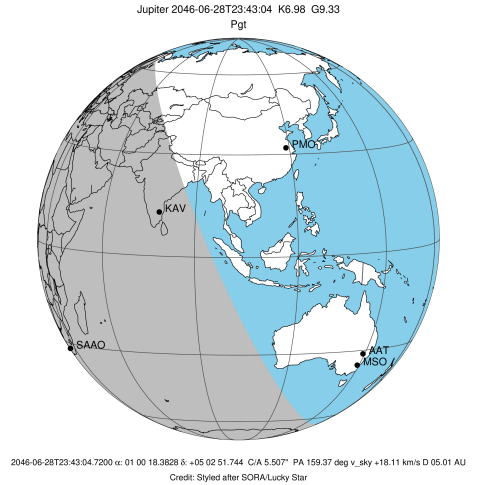


x: target alt < 5.0 deg or sun > -5.0 deg

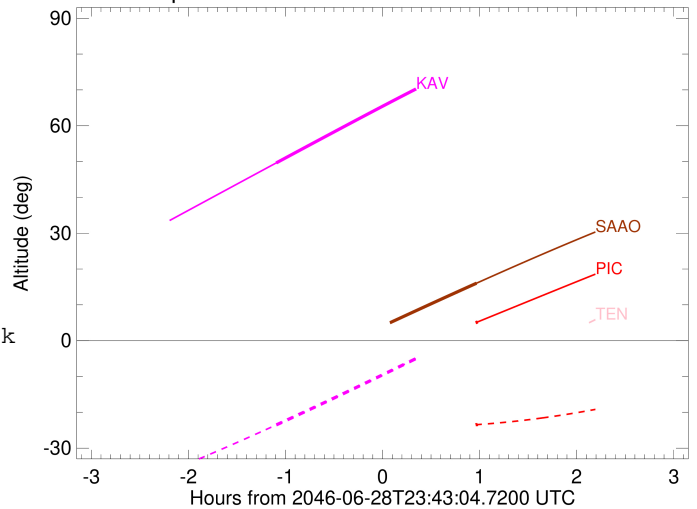
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-06-28T22:39:36.958	-16.57x	-21.30	71491.2	17.33	19.62
Jupiter	E	2046-06-29T00:41:53.057	5.23	-23.42	71490.3	24.72	27.72

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2046-06-28T23:41:19.860
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        : 2552250716119601920
2Mass ID (if available) : 01001832+0502522
ICRS Star Coord at Epoch: 01h 00m 18.38277s +05:02:51.74415s
RUWE (>1.4 is poor)  : 1.09
K magnitude           : 6.984
G magnitude           : 9.333
RP magnitude          : 8.616
BP magnitude          : 9.904
DUPflag              : 0
Distance (au)         : 5.015
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 18.11
Sun-Target sep (deg)  : 80.98
Sun-Moon sep (deg)    : 20.76
B (ring opening deg) : 2.64
PA of pole (deg)     : -24.34
Pole direction: RA (deg): 268.05712
Dec (deg): 64.49722
C/A sky separation (") : 5.967
C/A sky separation (km) : 21701.7
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 2046-06-28T23:43:04 K6.98 G9.33

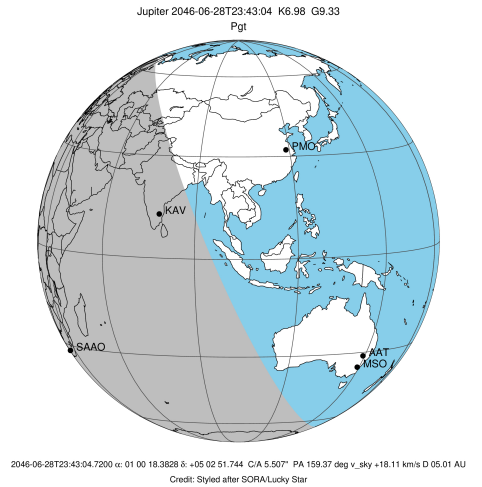


x: target alt < 5.0 deg or sun > -5.0 deg

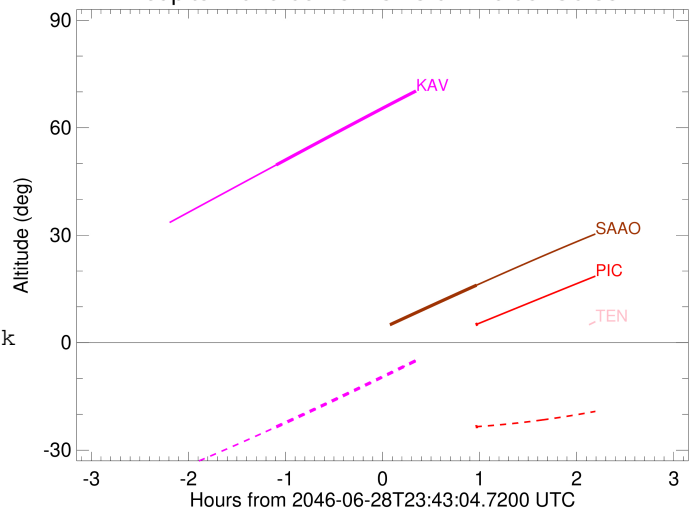
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-06-28T22:37:25.852	49.62	-23.51	71491.4	14.45	16.41
Jupiter	E	2046-06-29T00:45:29.523	79.19	4.31x	71490.8	20.82	23.48

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-06-28T23:37:23.900
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      : 2552250716119601920
2Mass ID (if available) : 01001832+0502522
ICRS Star Coord at Epoch: 01h 00m 18.38277s +05:02:51.74415s
RUWE (>1.4 is poor) : 1.09
K magnitude          : 6.984
G magnitude          : 9.333
RP magnitude         : 8.616
BP magnitude         : 9.904
DUPflag             : 0
Distance (au)       : 5.015
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 18.11
Sun-Target sep (deg) : 80.98
Sun-Moon sep (deg)  : 21.15
B (ring opening deg) : 2.64
PA of pole (deg)    : -24.34
Pole direction: RA (deg): 268.05712
Dec (deg): 64.49722
C/A sky separation (" ) : 5.132
C/A sky separation (km) : 18666.9
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
    
```



Jupiter 2046-06-28T23:43:04 K6.98 G9.33



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	2046-06-28T22:33:58.502	-10.56x	-80.92	71491.6	11.52	13.11
Jupiter	E	2046-06-29T00:41:15.146	16.05	-61.85	71491.0	18.60	21.03