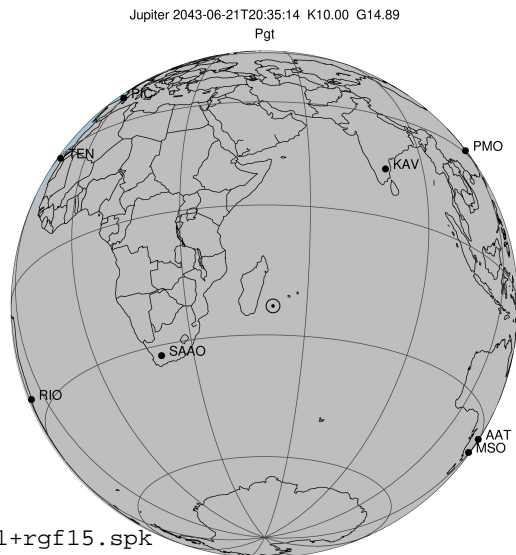


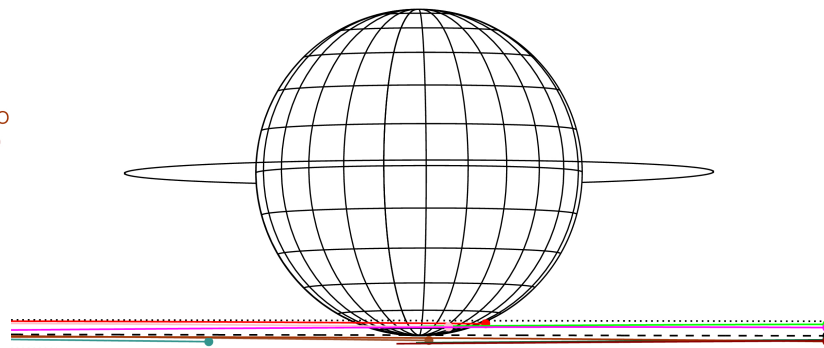
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-06-21T20:35:14.330
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4068704433123724544
 2Mass ID (if available) : 17504625-2305048

Jupiter 2043-06-21T20:35:14 K10.00 G14.89 Pgt

ICRS Star Coord at Epoch: 17h 50m 46.24312s -23:05:05.18270s
 RUWE (>1.4 is poor) : 0.99
 K magnitude : 9.999
 G magnitude : 14.891
 RP magnitude : 13.651
 BP magnitude : 16.540
 DUPflag : 0
 Distance (au) : 4.250
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -16.40
 Sun-Target sep (deg) : 178.07
 Sun-Moon sep (deg) : 8.25
 B (ring opening deg) : -2.42
 PA of pole (deg) : 0.16
 Pole direction: RA (deg): 268.05669
 Dec (deg): 64.49732
 C/A sky separation (") : 23.112
 C/A sky separation (km) : 71243.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp



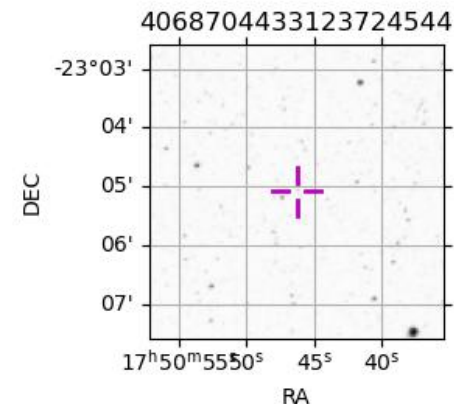
Earth
 PIC
 PMO
 TEN
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-06-21T20:35:14.3300 a: 17 50 46.2431 s: -23 05 05.183 C/A ***** PA 359.90 deg v_sky -16.40 km/s D 04.25 AU
 Credit: Styled after SORA/Lucky Star

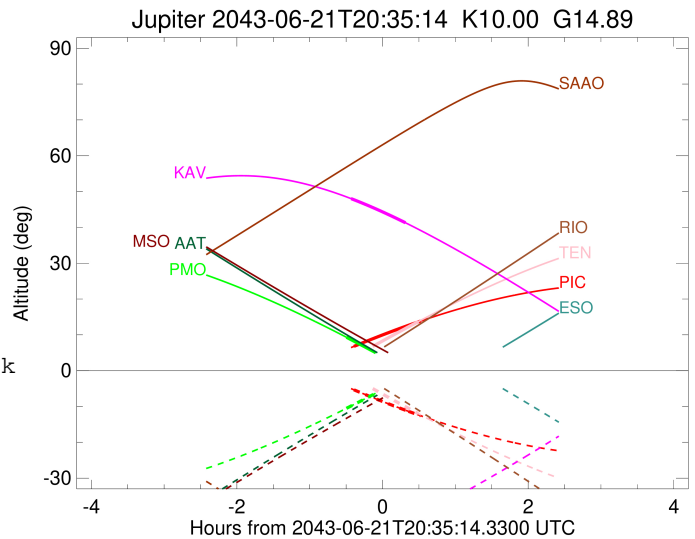
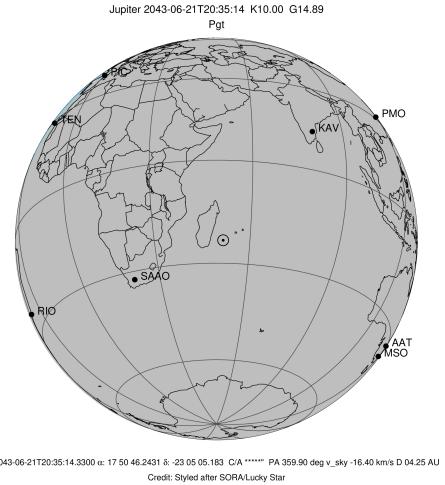
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+ +	JUN 21 20:11 - JUN 21 21:06	Pie
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	JUN 21 20:05 - JUN 21 20:05	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	+	JUN 21 21:04 - JUN 21 21:04	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	JUN 21 20:09 - JUN 21 20:54	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			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-21T20:39:09.790
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       : 4068704433123724544
2Mass ID (if available) : 17504625-2305048
ICRS Star Coord at Epoch: 17h 50m 46.24312s -23:05:05.18270s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 9.999
G magnitude           : 14.891
RP magnitude          : 13.651
BP magnitude          : 16.540
DUPflag              : 0
Distance (au)         : 4.250
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.40
Sun-Target sep (deg) : 178.07
Sun-Moon sep (deg)   : 8.39
B (ring opening deg) : -2.42
PA of pole (deg)     : 0.16
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 21.420
C/A sky separation (km): 66027.4
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
    
```

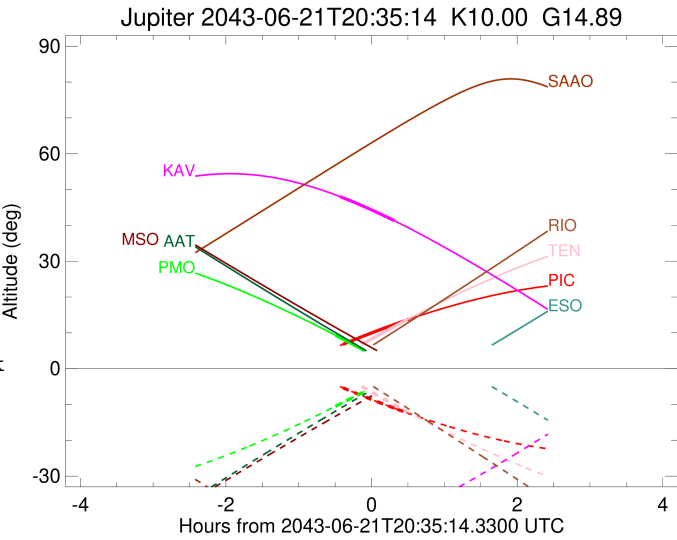
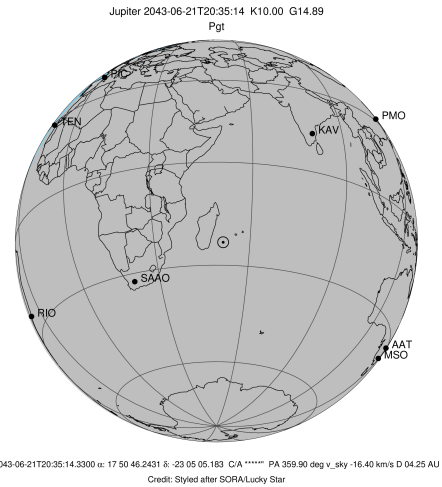


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-21T20:11:41.824	6.78	-5.35	71485.1	-67.95	-70.37
Jupiter	E	2043-06-21T21:06:34.685	13.84	-12.56	71485.2	-66.77	-69.29

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-21T20:29:31.550
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     : 4068704433123724544
2Mass ID (if available) : 17504625-2305048
ICRS Star Coord at Epoch: 17h 50m 46.24312s -23:05:05.18270s
RUWE (>1.4 is poor) : 0.99
K magnitude         : 9.999
G magnitude         : 14.891
RP magnitude        : 13.651
BP magnitude        : 16.540
DUPflag            : 0
Distance (au)      : 4.250
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : -16.40
Sun-Target sep (deg) : 178.07
Sun-Moon sep (deg)  : 9.16
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.16
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (" ) : 21.858
C/A sky separation (km) : 67378.4
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
    
```

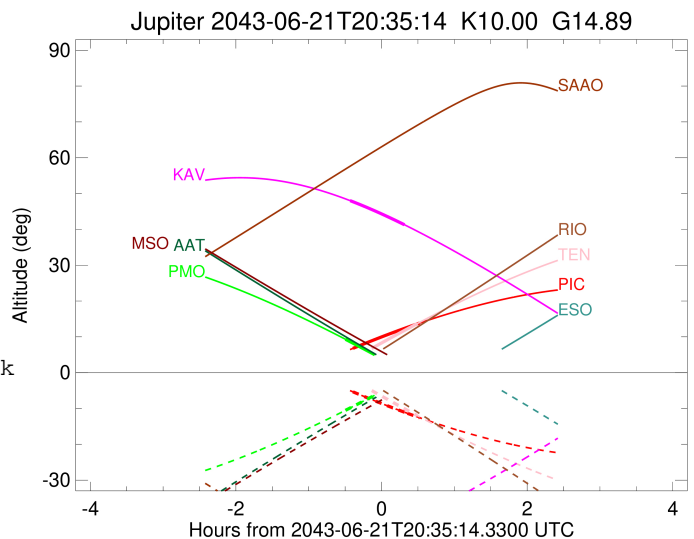
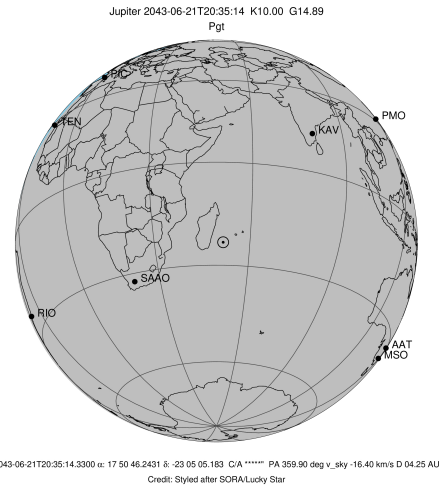


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-21T20:05:31.006	9.33	-10.51	71484.9	-70.11	-72.32
Jupiter	E	2043-06-21T20:53:35.579	0.58x	-1.94x	71484.8	-70.59	-72.76

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-06-21T20:40:58.550
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : TEN
Location              : Teide Obs./Tenerife
Latitude (deg)        : 28.30050
E. Longitude (deg)    : 343.48909
Altitude (km)         : 2.395
Gaia source ID        : 4068704433123724544
2Mass ID (if available) : 17504625-2305048
ICRS Star Coord at Epoch: 17h 50m 46.24312s -23:05:05.18270s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 9.999
G magnitude           : 14.891
RP magnitude          : 13.651
BP magnitude          : 16.540
DUPflag              : 0
Distance (au)         : 4.250
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -16.40
Sun-Target sep (deg)  : 178.07
Sun-Moon sep (deg)    : 8.08
B (ring opening deg) : -2.42
PA of pole (deg)      : 0.16
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation (" ) : 21.899
C/A sky separation (km) : 67504.0
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
    
```

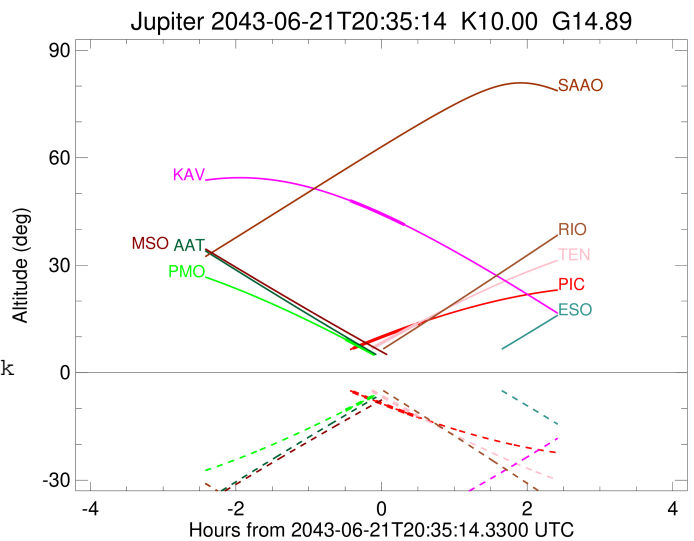
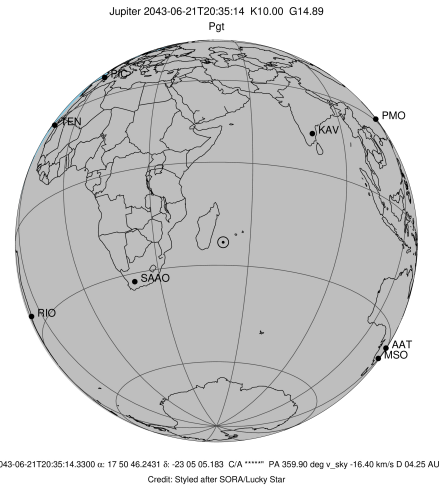


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-06-21T20:17:18.772	4.87x	-3.10x	71484.8	-71.40	-73.49
Jupiter	E	2043-06-21T21:04:34.975	13.67	-11.95	71484.9	-69.91	-72.14

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-06-21T20:31:50.960
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       : 4068704433123724544
2Mass ID (if available) : 17504625-2305048
ICRS Star Coord at Epoch: 17h 50m 46.24312s -23:05:05.18270s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 9.999
G magnitude           : 14.891
RP magnitude         : 13.651
BP magnitude         : 16.540
DUPflag              : 0
Distance (au)        : 4.250
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -16.40
Sun-Target sep (deg) : 178.07
Sun-Moon sep (deg)  : 8.99
B (ring opening deg) : -2.42
PA of pole (deg)    : 0.16
Pole direction: RA (deg): 268.05669
Dec (deg): 64.49732
C/A sky separation ("): 22.009
C/A sky separation (km): 67844.9
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	2043-06-21T20:09:33.037	47.99	-48.73	71484.8	-71.47	-73.55
Jupiter	E	2043-06-21T20:54:10.642	41.28	-42.41	71484.8	-71.55	-73.62