

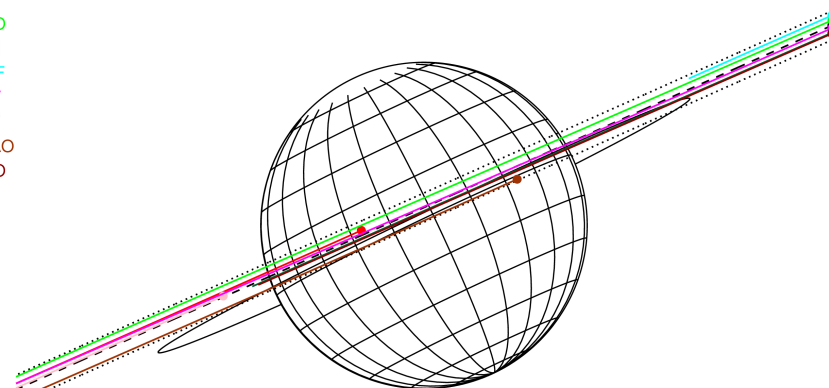
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2040-03-09T18:29:25.100
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3892583771522770176
 2Mass ID (if available) : 11522887+0229396

Jupiter 2040-03-09T18:29:25 K9.47 G12.47 Pgt

ICRS Star Coord at Epoch: 11h 52m 28.82917s +02:29:37.99296s
 RUWE (>1.4 is poor) : 1.33
 K magnitude : 9.475
 G magnitude : 12.472
 RP magnitude : 11.510
 BP magnitude : 13.409
 DUPflag : 0
 Distance (au) : 4.453
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -17.16
 Sun-Target sep (deg) : 171.81
 Sun-Moon sep (deg) : 127.95
 B (ring opening deg) : -2.28
 PA of pole (deg) : 25.52
 Pole direction: RA (deg): 268.05615
 Dec (deg): 64.49708
 C/A sky separation (") : 2.224
 C/A sky separation (km) : 7181.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



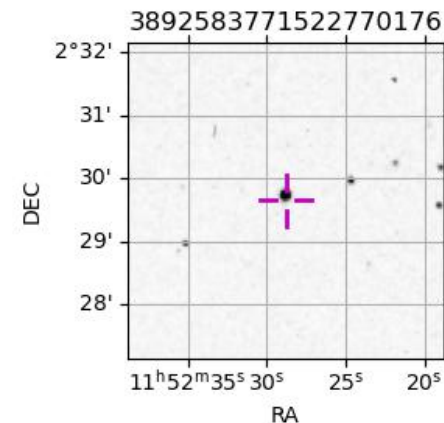
Earth
 PIC
 PMO
 TEN
 IRTF
 KAV
 AAT
 SAAO
 MSO



2040-03-09T18:29:25.1000 ex: 11 52 28.8292 s: +02 29 37.993 C/A 2.218" PA 204.05 deg v_sky -17.16 km/s D 04.45 AU
 Credit: Styled after SORA/Lucky Star

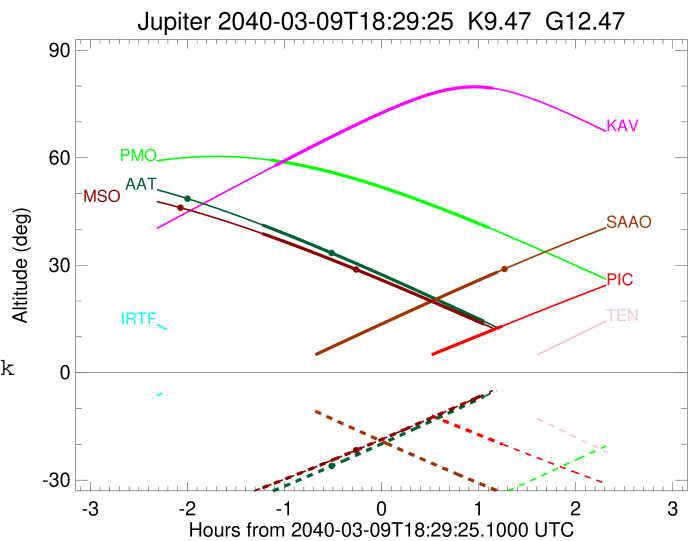
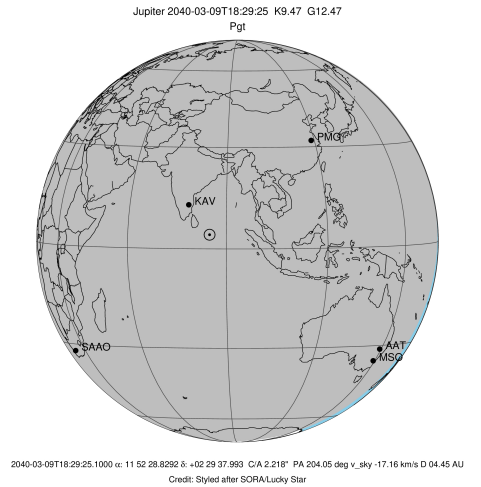
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+	MAR 09 19:43 - MAR 09 19:43	Pne
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	MAR 09 17:21 - MAR 09 19:35	Pie
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	+	MAR 09 17:23 - MAR 09 19:38	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	+	MAR 09 17:15 - MAR 09 19:32	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	MAR 09 19:41 - MAR 09 19:41	Pne
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	MAR 09 17:15 - MAR 09 19:32	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2040-03-09T18:35:17.230
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      : 3892583771522770176
2Mass ID (if available) : 11522887+0229396
ICRS Star Coord at Epoch: 11h 52m 28.82917s +02:29:37.99296s
RUWE (>1.4 is poor) : 1.33
K magnitude         : 9.475
G magnitude         : 12.472
RP magnitude        : 11.510
BP magnitude        : 13.409
DUPflag            : 0
Distance (au)       : 4.453
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -17.16
Sun-Target sep (deg) : 171.81
Sun-Moon sep (deg)  : 127.36
B (ring opening deg) : -2.28
PA of pole (deg)    : 25.52
Pole direction: RA (deg): 268.05615
Dec (deg): 64.49708
C/A sky separation (") : 2.856
C/A sky separation (km) : 9225.0
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
    
```

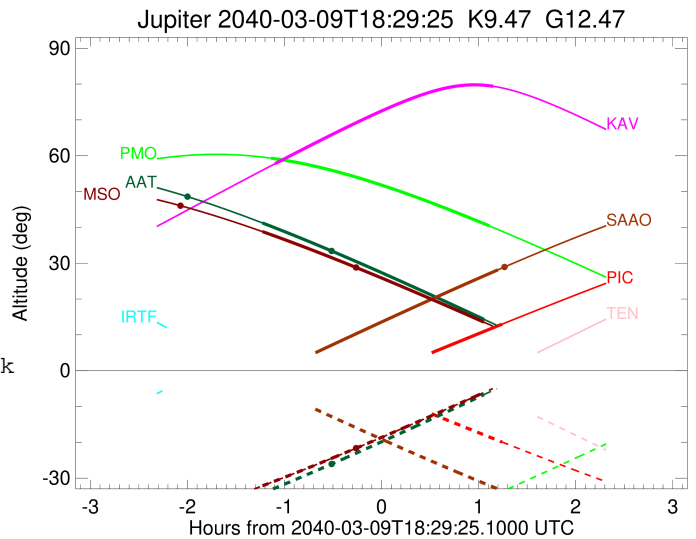
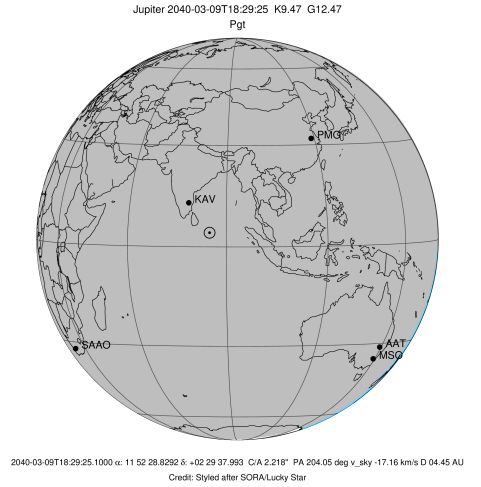


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2040-03-09T17:26:14.421	-12.17x	5.16x	71491.9	6.06	6.92
Jupiter	E	2040-03-09T19:43:56.767	12.98	-19.92	71491.8	8.90	10.15

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2040-03-09T18:28:31.410
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       : 3892583771522770176
2Mass ID (if available) : 11522887+0229396
ICRS Star Coord at Epoch: 11h 52m 28.82917s +02:29:37.99296s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 9.475
G magnitude           : 12.472
RP magnitude          : 11.510
BP magnitude          : 13.409
DUPflag              : 0
Distance (au)        : 4.453
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.16
Sun-Target sep (deg) : 171.81
Sun-Moon sep (deg)   : 128.62
B (ring opening deg) : -2.28
PA of pole (deg)     : 25.52
Pole direction: RA (deg): 268.05615
Dec (deg): 64.49708
C/A sky separation ("): 3.413
C/A sky separation (km): 11022.7
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
    
```

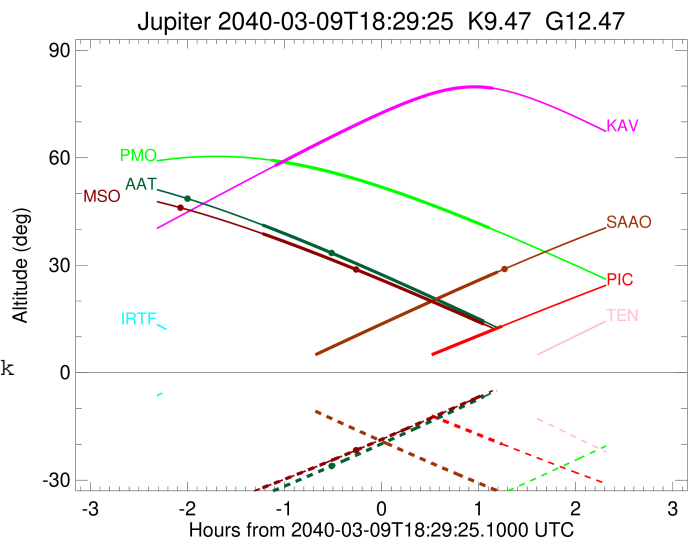
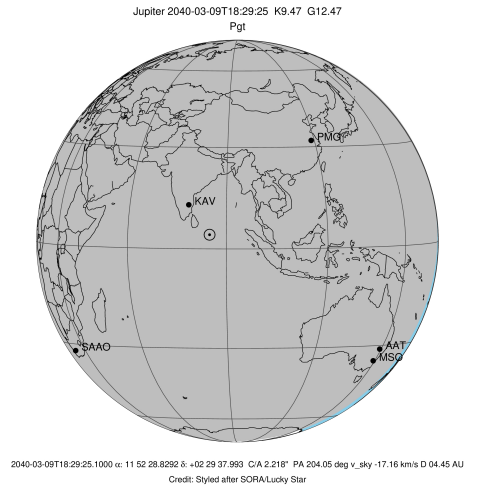


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2040-03-09T17:21:15.164	59.31	-58.11	71491.9	6.88	7.85
Jupiter	E	2040-03-09T19:35:57.885	40.42	-35.34	71491.7	10.80	12.30

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2040-03-09T18:31:07.570
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       : 3892583771522770176
2Mass ID (if available) : 11522887+0229396
ICRS Star Coord at Epoch: 11h 52m 28.82917s +02:29:37.99296s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 9.475
G magnitude           : 12.472
RP magnitude          : 11.510
BP magnitude          : 13.409
DUPflag              : 0
Distance (au)         : 4.453
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -17.16
Sun-Target sep (deg) : 171.81
Sun-Moon sep (deg)   : 128.51
B (ring opening deg) : -2.28
PA of pole (deg)     : 25.52
Pole direction: RA (deg): 268.05615
Dec (deg): 64.49708
C/A sky separation (") : 2.356
C/A sky separation (km) : 7610.2
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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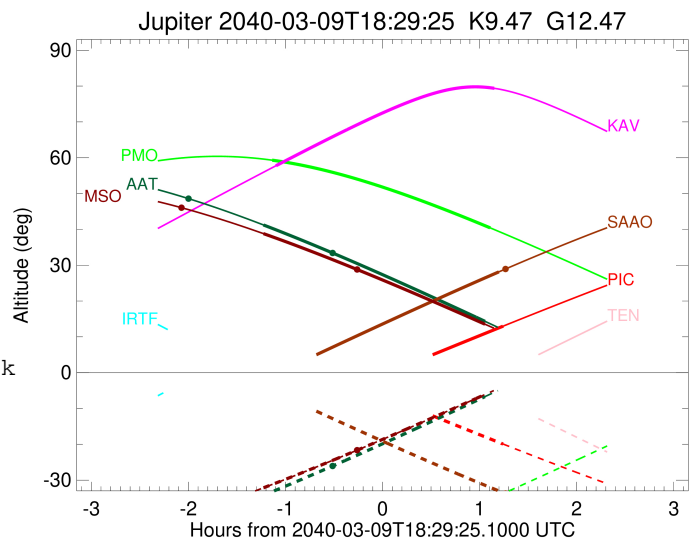
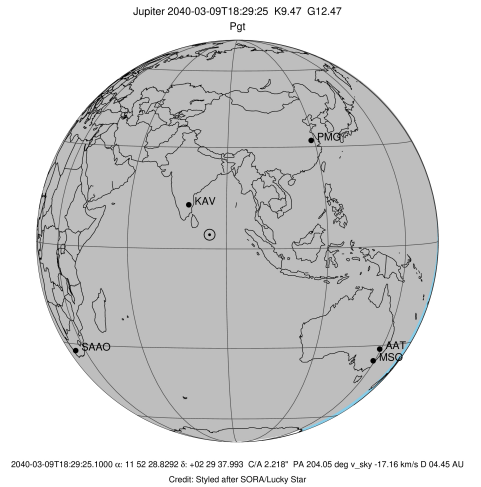


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2040-03-09T17:23:36.221	57.76	-65.92	71492.0	4.10	4.68
Jupiter	E	2040-03-09T19:38:31.941	79.37	-76.28	71491.9	8.17	9.32

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2040-03-09T18:24:05.400
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      : 3892583771522770176
2Mass ID (if available) : 11522887+0229396
ICRS Star Coord at Epoch: 11h 52m 28.82917s +02:29:37.99296s
RUWE (>1.4 is poor) : 1.33
K magnitude          : 9.475
G magnitude          : 12.472
RP magnitude         : 11.510
BP magnitude         : 13.409
DUPflag             : 0
Distance (au)       : 4.453
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.16
Sun-Target sep (deg) : 171.81
Sun-Moon sep (deg)  : 128.85
B (ring opening deg) : -2.28
PA of pole (deg)    : 25.52
Pole direction: RA (deg): 268.05615
Dec (deg): 64.49708
C/A sky separation (") : 1.819
C/A sky separation (km) : 5874.2
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
    
```

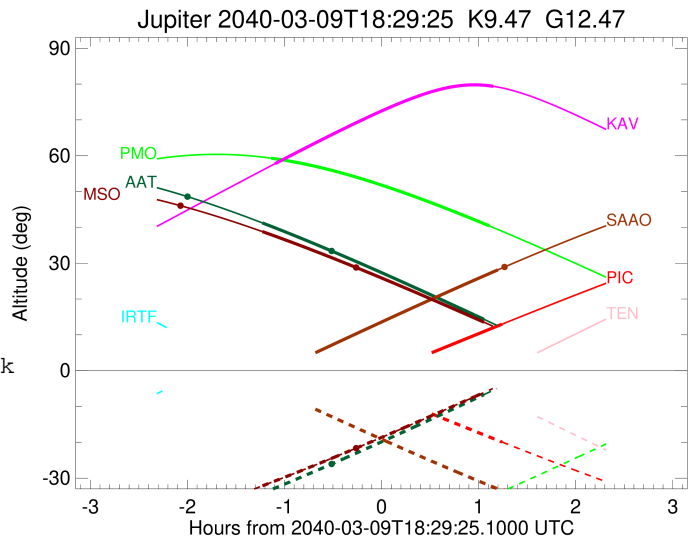
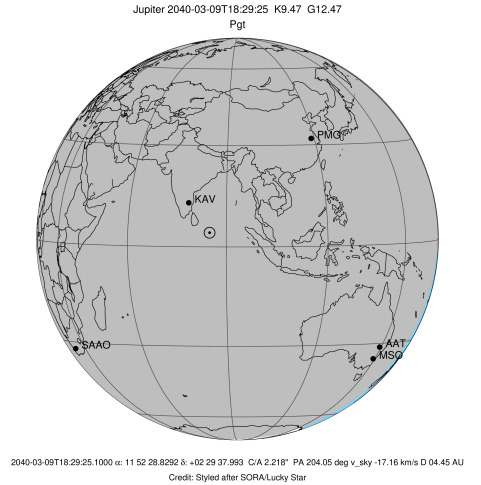


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2040-03-09T17:15:51.780	41.23	-34.22	71492.0	2.83	3.24
Jupiter	E	2040-03-09T19:32:39.357	14.35	-6.71	71491.9	6.47	7.38

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2040-03-09T18:32:34.920
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       : 3892583771522770176
2Mass ID (if available) : 11522887+0229396
ICRS Star Coord at Epoch: 11h 52m 28.82917s +02:29:37.99296s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 9.475
G magnitude           : 12.472
RP magnitude         : 11.510
BP magnitude         : 13.409
DUPflag              : 0
Distance (au)        : 4.453
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.16
Sun-Target sep (deg) : 171.81
Sun-Moon sep (deg)   : 127.85
B (ring opening deg) : -2.28
PA of pole (deg)     : 25.52
Pole direction: RA (deg): 268.05615
Dec (deg): 64.49708
C/A sky separation ("): 0.599
C/A sky separation (km): 1934.1
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
    
```

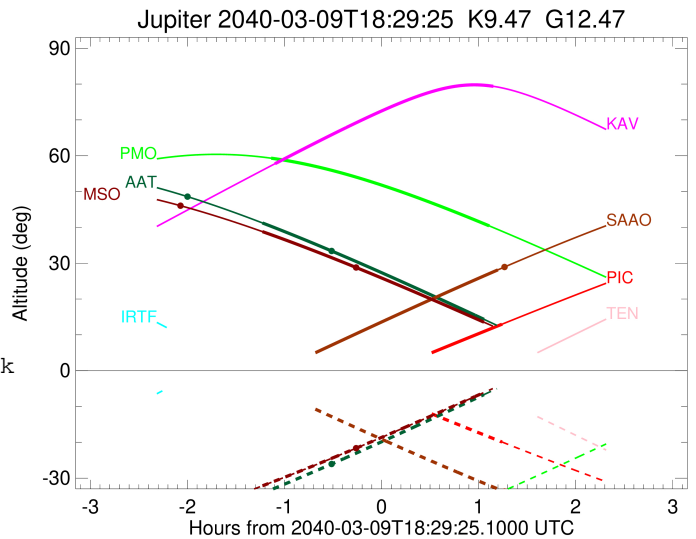
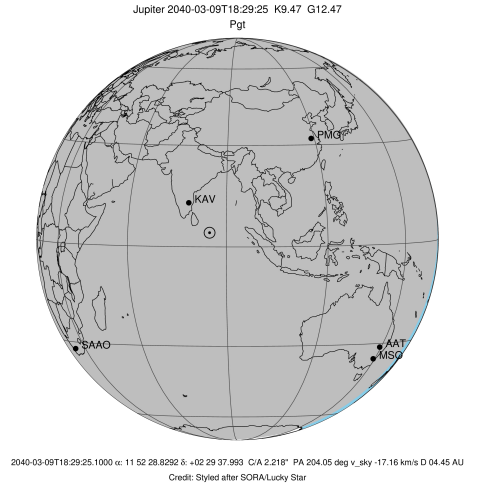


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2040-03-09T17:23:26.409	-0.31x	-5.51	71492.0	0.03	0.04
Jupiter	E	2040-03-09T19:41:18.298	28.13	-33.00	71492.0	3.22	3.68

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2040-03-09T18:24:07.690
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       : 3892583771522770176
2Mass ID (if available) : 11522887+0229396
ICRS Star Coord at Epoch: 11h 52m 28.82917s +02:29:37.99296s
RUWE (>1.4 is poor) : 1.33
K magnitude           : 9.475
G magnitude           : 12.472
RP magnitude         : 11.510
BP magnitude         : 13.409
DUPflag              : 0
Distance (au)        : 4.453
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.16
Sun-Target sep (deg) : 171.81
Sun-Moon sep (deg)  : 128.83
B (ring opening deg) : -2.28
PA of pole (deg)    : 25.52
Pole direction: RA (deg): 268.05615
Dec (deg): 64.49708
C/A sky separation ("): 1.689
C/A sky separation (km): 5454.6
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	2040-03-09T17:15:49.615	38.81	-32.14	71492.0	2.52	2.88
Jupiter	E	2040-03-09T19:32:45.178	13.53	-6.10	71491.9	6.12	6.99