

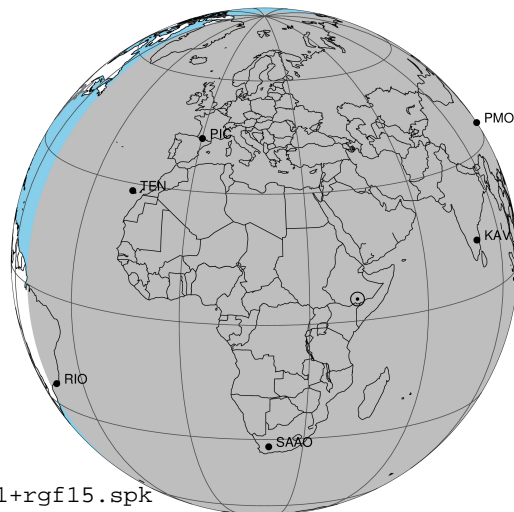
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2039-03-07T21:25:38.640
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 619269447256900736
 2Mass ID (if available) : 09441644+1449147

Jupiter 2039-03-07T21:25:38 K9.02 G11.70 Pgt

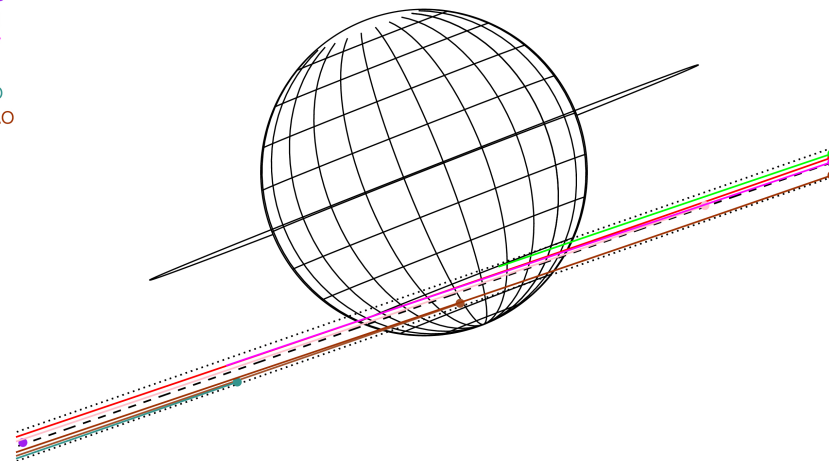
ICRS Star Coord at Epoch: 09h 44m 16.43237s +14:49:14.52997s

RUWE (>1.4 is poor) : 1.46
 K magnitude : 9.022
 G magnitude : 11.701
 RP magnitude : 10.910
 BP magnitude : 12.369
 DUPflag : 0
 Distance (au) : 4.441
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -15.08
 Sun-Target sep (deg) : 156.70
 Sun-Moon sep (deg) : 12.47
 B (ring opening deg) : -0.59
 PA of pole (deg) : 21.42
 Pole direction: RA (deg): 268.05613
 Dec (deg): 64.49697
 C/A sky separation (") : 16.975
 C/A sky separation (km) : 54668.1
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2039-03-07T21:25:38 K9.02 G11.70
 Pgt



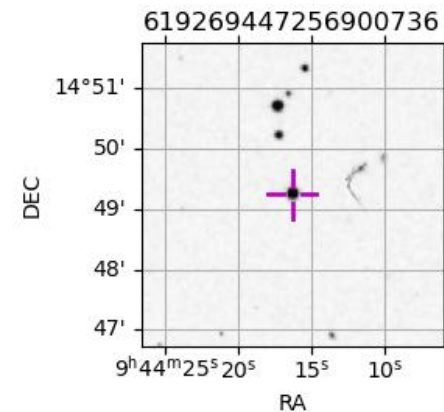
Earth
 PIC
 PMO
 MCD
 TEN
 KAV
 RIO
 ESO
 SAAO



2039-03-07T21:25:38.6400 a: 09 44 16.4324 s: +14 49 14.530 C/A ***** PA 19.21 deg v_sky -15.08 km/s D 04.44 AU
 Credit: Styled after SORA/Lucky Star

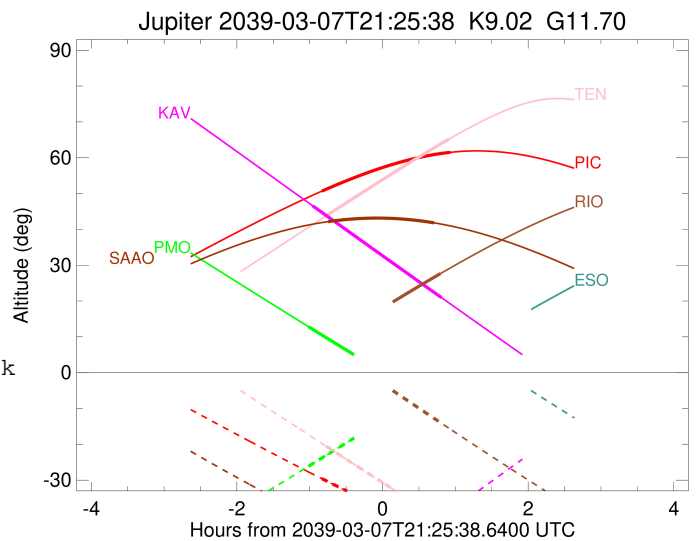
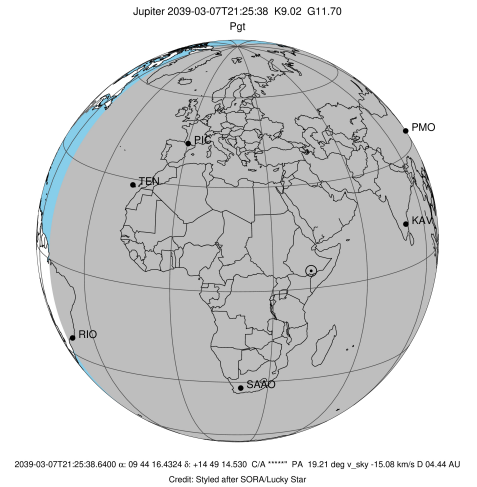
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+ +	MAR 07 20:35 - MAR 07 22:21	Pie
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	MAR 07 20:24 - MAR 07 20:24	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	+ +	MAR 07 20:39 - MAR 07 22:20	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+ +	MAR 07 20:28 - MAR 07 22:14	Pie
RIO	Rio de Janeiro	-22.9	316.8	+	MAR 07 22:13 - MAR 07 22:13	Pne
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	+ +	MAR 07 20:40 - MAR 07 22:07	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2039-03-07T21:28:38.520
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        : 619269447256900736
2Mass ID (if available) : 09441644+1449147
ICRS Star Coord at Epoch: 09h 44m 16.43237s +14:49:14.52997s
RUWE (>1.4 is poor) : 1.46
K magnitude           : 9.022
G magnitude           : 11.701
RP magnitude          : 10.910
BP magnitude          : 12.369
DUPflag              : 0
Distance (au)         : 4.441
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -15.08
Sun-Target sep (deg) : 156.70
Sun-Moon sep (deg)   : 12.22
B (ring opening deg) : -0.59
PA of pole (deg)     : 21.42
Pole direction: RA (deg): 268.05613
Dec (deg): 64.49697
C/A sky separation ("): 16.232
C/A sky separation (km): 52276.7
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
    
```

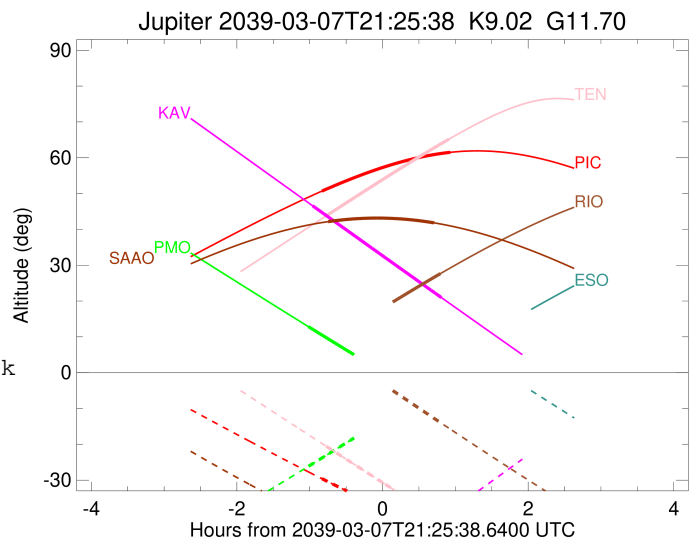
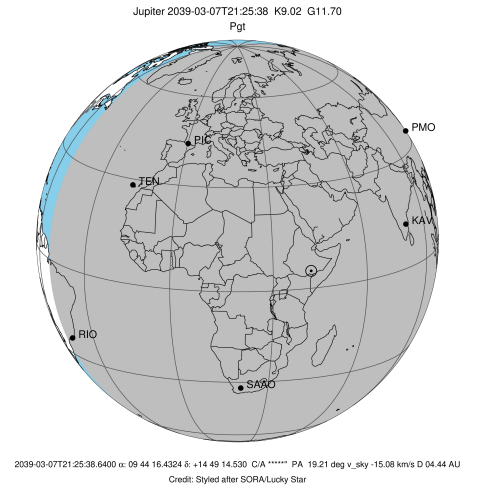


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2039-03-07T20:35:46.126	50.68	-29.60	71491.7	-49.45	-53.05
Jupiter	E	2039-03-07T22:21:28.502	61.50	-45.27	71491.8	-44.43	-48.13

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2039-03-07T21:21:35.630
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       : 619269447256900736
2Mass ID (if available) : 09441644+1449147
ICRS Star Coord at Epoch: 09h 44m 16.43237s +14:49:14.52997s
RUWE (>1.4 is poor) : 1.46
K magnitude           : 9.022
G magnitude           : 11.701
RP magnitude         : 10.910
BP magnitude         : 12.369
DUPflag              : 0
Distance (au)        : 4.440
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.08
Sun-Target sep (deg) : 156.70
Sun-Moon sep (deg)   : 12.91
B (ring opening deg) : -0.59
PA of pole (deg)     : 21.42
Pole direction: RA (deg): 268.05613
Dec (deg): 64.49697
C/A sky separation ("): 15.413
C/A sky separation (km): 49640.1
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
    
```

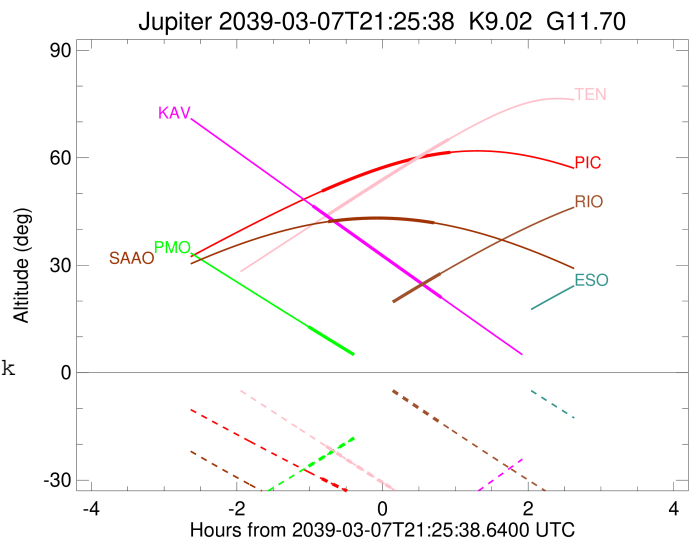
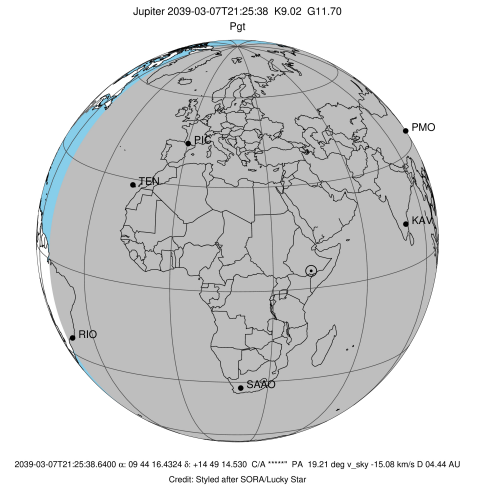


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2039-03-07T20:24:40.097	12.83	-26.13	71491.7	-46.53	-50.21
Jupiter	E	2039-03-07T22:18:53.354	-10.38x	-1.97x	71491.8	-41.54	-45.26

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2039-03-07T21:29:52.260
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       : 619269447256900736
2Mass ID (if available) : 09441644+1449147
ICRS Star Coord at Epoch: 09h 44m 16.43237s +14:49:14.52997s
RUWE (>1.4 is poor) : 1.46
K magnitude           : 9.022
G magnitude           : 11.701
RP magnitude          : 10.910
BP magnitude          : 12.369
DUPflag              : 0
Distance (au)        : 4.441
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.08
Sun-Target sep (deg) : 156.70
Sun-Moon sep (deg)   : 12.08
B (ring opening deg) : -0.59
PA of pole (deg)     : 21.42
Pole direction: RA (deg): 268.05613
Dec (deg): 64.49697
C/A sky separation (") : 16.796
C/A sky separation (km) : 54091.9
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
    
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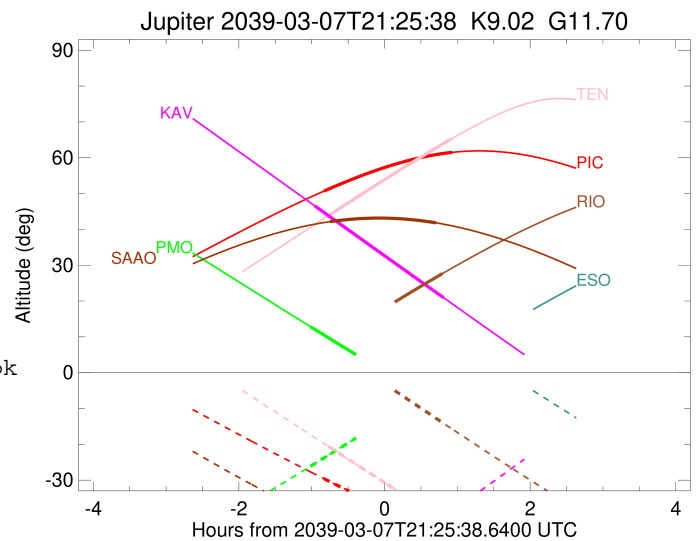
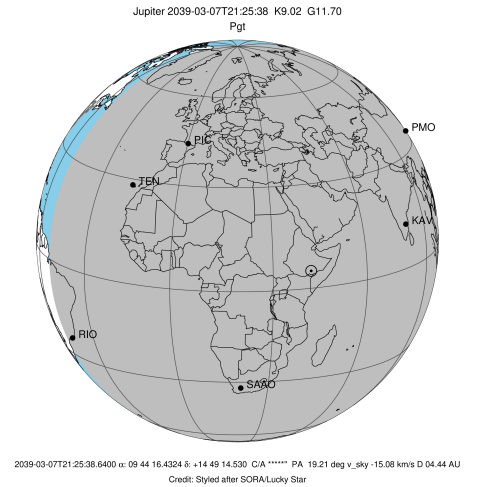


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2039-03-07T20:39:12.000	43.76	-20.53	71491.7	-51.51	-55.04
Jupiter	E	2039-03-07T22:20:25.251	65.18	-42.25	71491.7	-46.68	-50.36

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2039-03-07T21:20:58.460
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      : 619269447256900736
2Mass ID (if available) : 09441644+1449147
ICRS Star Coord at Epoch: 09h 44m 16.43237s +14:49:14.52997s
RUWE (>1.4 is poor) : 1.46
K magnitude          : 9.022
G magnitude          : 11.701
RP magnitude         : 10.910
BP magnitude         : 12.369
DUPflag             : 0
Distance (au)       : 4.440
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.08
Sun-Target sep (deg) : 156.70
Sun-Moon sep (deg)  : 13.23
B (ring opening deg) : -0.59
PA of pole (deg)    : 21.42
Pole direction: RA (deg): 268.05613
Dec (deg): 64.49697
C/A sky separation ("): 16.287
C/A sky separation (km): 52452.9
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
    
```

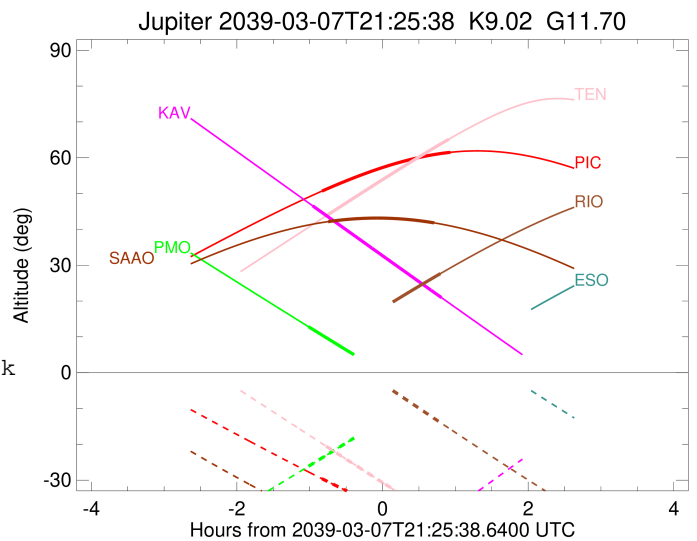
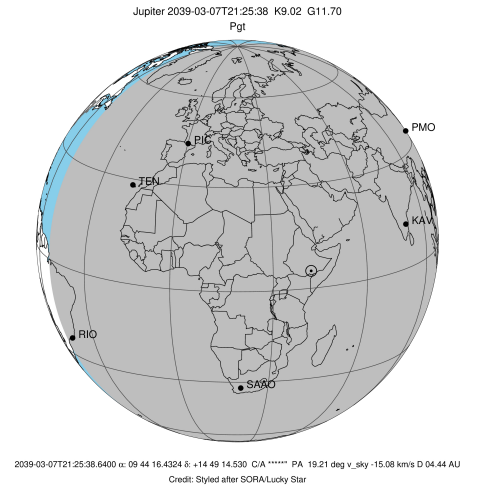


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2039-03-07T20:28:09.820	46.56	-65.97	71491.7	-50.07	-53.66
Jupiter	E	2039-03-07T22:14:06.429	20.98	-40.45	71491.8	-44.37	-48.08

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2039-03-07T21:29:49.360
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : RIO
Location             : Rio de Janeiro
Latitude (deg)       : -22.89506
E. Longitude (deg)   : 316.77708
Altitude (km)        : 0.033
Gaia source ID       : 619269447256900736
2Mass ID (if available) : 094416444+1449147
ICRS Star Coord at Epoch: 09h 44m 16.43237s +14:49:14.52997s
RUWE (>1.4 is poor) : 1.46
K magnitude           : 9.022
G magnitude           : 11.701
RP magnitude          : 10.910
BP magnitude          : 12.369
DUPflag              : 0
Distance (au)        : 4.441
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.08
Sun-Target sep (deg) : 156.70
Sun-Moon sep (deg)   : 12.13
B (ring opening deg) : -0.59
PA of pole (deg)     : 21.42
Pole direction: RA (deg): 268.05613
Dec (deg): 64.49697
C/A sky separation ("): 18.412
C/A sky separation (km): 59296.7
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
    
```

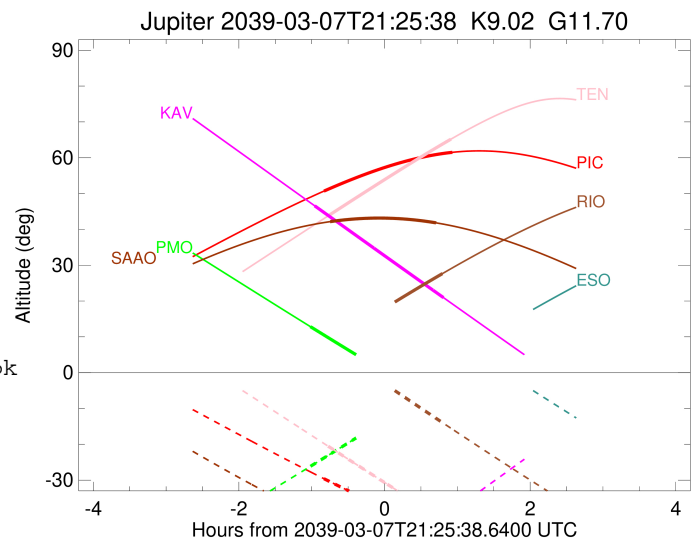
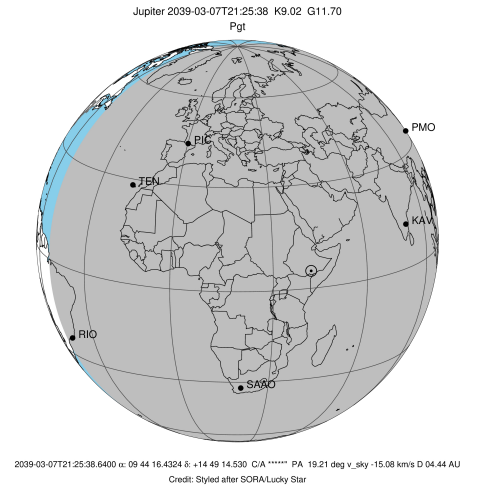


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2039-03-07T20:46:10.179	9.53	6.01x	71491.7	-58.10	-61.29
Jupiter	E	2039-03-07T22:13:18.621	27.64	-13.92	71491.7	-53.85	-57.27


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2039-03-07T21:24:25.240
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      : 619269447256900736
2Mass ID (if available) : 09441644+1449147
ICRS Star Coord at Epoch: 09h 44m 16.43237s +14:49:14.52997s
RUWE (>1.4 is poor) : 1.46
K magnitude          : 9.022
G magnitude          : 11.701
RP magnitude         : 10.910
BP magnitude         : 12.369
DUPflag             : 0
Distance (au)       : 4.441
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -15.08
Sun-Target sep (deg) : 156.70
Sun-Moon sep (deg)  : 12.98
B (ring opening deg) : -0.59
PA of pole (deg)    : 21.42
Pole direction: RA (deg): 268.05613
Dec (deg): 64.49697
C/A sky separation ("): 18.330
C/A sky separation (km): 59033.2
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	2039-03-07T20:40:53.977	42.16	-42.07	71491.6	-58.32	-61.50
Jupiter	E	2039-03-07T22:07:58.375	41.82	-51.56	71491.7	-52.93	-56.40