

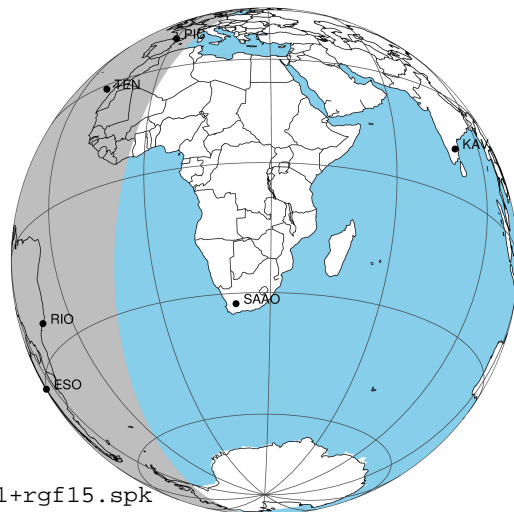
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-02-09T06:35:02.430  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 4116868368186197504  
 2Mass ID (if available) : 17432846-2255108

Jupiter 2043-02-09T06:35:02 K8.50 G14.96 Pgt

ICRS Star Coord at Epoch: 17h 43m 28.45367s -22:55:11.12514s

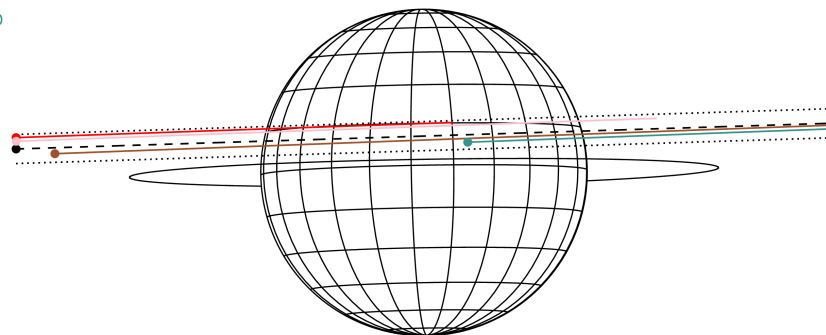
RUWE (>1.4 is poor) : 1.00  
 K magnitude : 8.501  
 G magnitude : 14.956  
 RP magnitude : 13.429  
 BP magnitude : 18.258  
 DUPflag : 0  
 Distance (au) : 5.836  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 30.89  
 Sun-Target sep (deg) : 53.60  
 Sun-Moon sep (deg) : 46.06  
 B (ring opening deg) : -2.57  
 PA of pole (deg) : 0.94  
 Pole direction: RA (deg): 268.05661  
 Dec (deg): 64.49732  
 C/A sky separation (") : 3.766  
 C/A sky separation (km) : 15939.3  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-02-09T06:35:02 K8.50 G14.96  
 Pgt



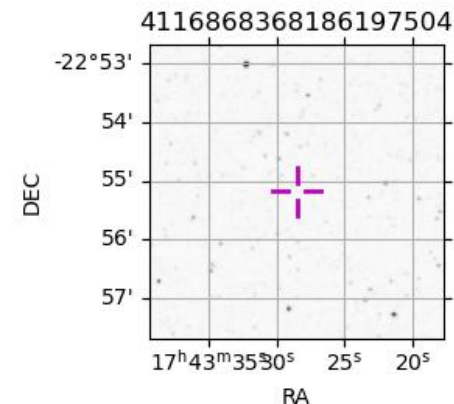
2043-02-09T06:35:02.4300 cc: 17 43 28.4537 s: -22 55 11.125 C/A 3.757" PA 181.81 deg v\_sky +30.89 km/s D 05.84 AU  
 Credit: Styled after SORA/Lucky Star

Earth  
 PIC  
 TEN  
 RIO  
 ESO



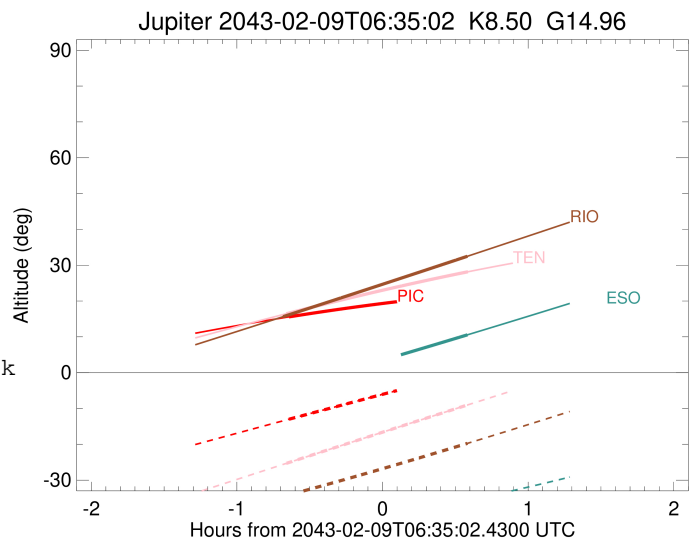
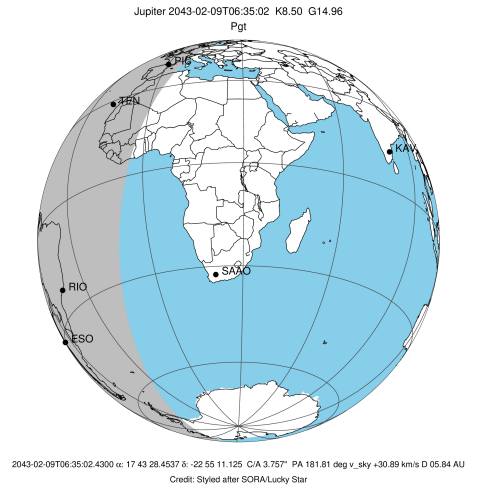
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	FEB 09 05:56 - FEB 09 05:56	Pin
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	+ +	FEB 09 05:55 - FEB 09 07:10	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	FEB 09 05:54 - FEB 09 07:10	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	FEB 09 07:10 - FEB 09 07:10	Pne
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             : 2043-02-09T06:33:43.260
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        : 4116868368186197504
2Mass ID (if available) : 17432846-2255108
ICRS Star Coord at Epoch: 17h 43m 28.45367s -22:55:11.12514s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.501
G magnitude           : 14.956
RP magnitude          : 13.429
BP magnitude          : 18.258
DUPflag               : 0
Distance (au)         : 5.836
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 30.89
Sun-Target sep (deg) : 53.60
Sun-Moon sep (deg)   : 46.61
B (ring opening deg) : -2.57
PA of pole (deg)     : 0.94
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (") : 5.070
C/A sky separation (km) : 21459.0
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
    
```

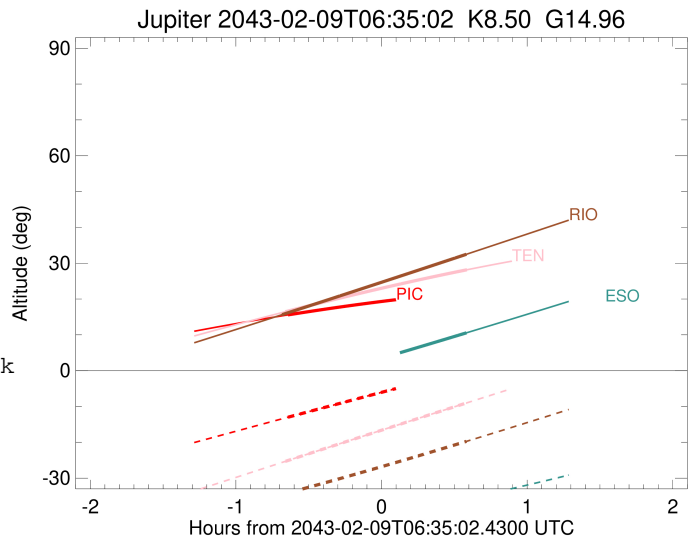
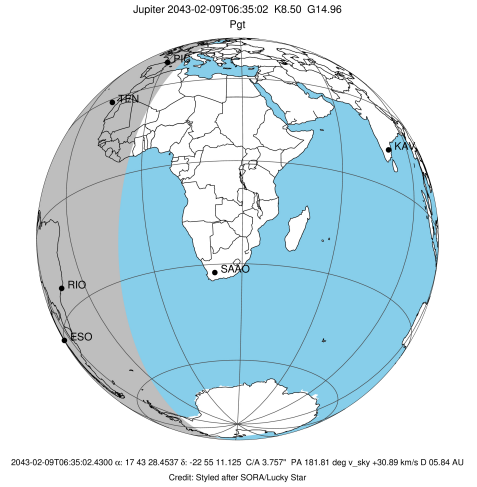


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-09T05:56:35.088	15.58	-12.98	71491.3	16.43	18.62
Jupiter	E	2043-02-09T07:10:54.209	21.93	0.23x	71491.1	18.43	20.84

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-02-09T06:32:46.170
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       : 4116868368186197504
2Mass ID (if available) : 17432846-2255108
ICRS Star Coord at Epoch: 17h 43m 28.45367s -22:55:11.12514s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.501
G magnitude           : 14.956
RP magnitude         : 13.429
BP magnitude         : 18.258
DUPflag              : 0
Distance (au)        : 5.836
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 30.89
Sun-Target sep (deg) : 53.60
Sun-Moon sep (deg)   : 46.81
B (ring opening deg) : -2.57
PA of pole (deg)     : 0.94
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (") : 4.757
C/A sky separation (km) : 20132.4
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
    
```

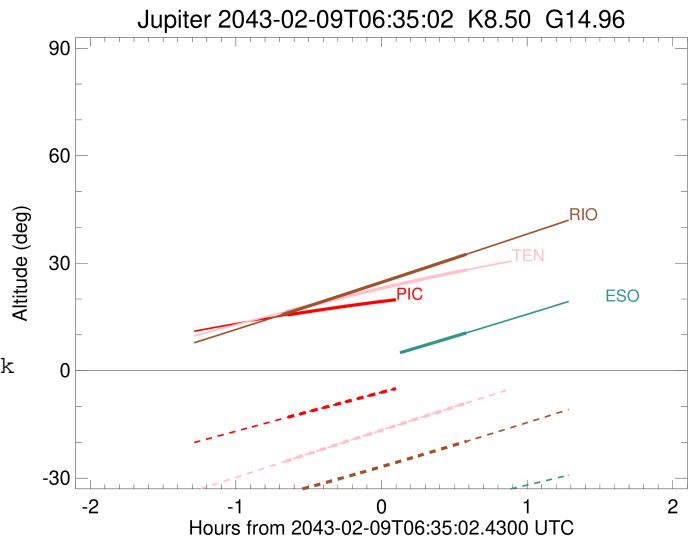
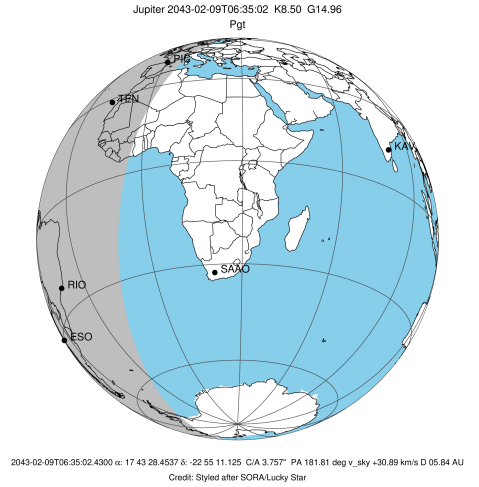


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-09T05:55:26.648	16.45	-25.31	71491.4	15.23	17.28
Jupiter	E	2043-02-09T07:10:10.045	28.15	-8.99	71491.2	17.41	19.72

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-02-09T06:31:59.950
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       : 4116868368186197504
2Mass ID (if available) : 17432846-2255108
ICRS Star Coord at Epoch: 17h 43m 28.45367s -22:55:11.12514s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.501
G magnitude           : 14.956
RP magnitude         : 13.429
BP magnitude         : 18.258
DUPflag              : 0
Distance (au)        : 5.836
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 30.89
Sun-Target sep (deg) : 53.60
Sun-Moon sep (deg)   : 46.91
B (ring opening deg) : -2.57
PA of pole (deg)     : 0.94
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (") : 3.357
C/A sky separation (km) : 14207.7
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
    
```

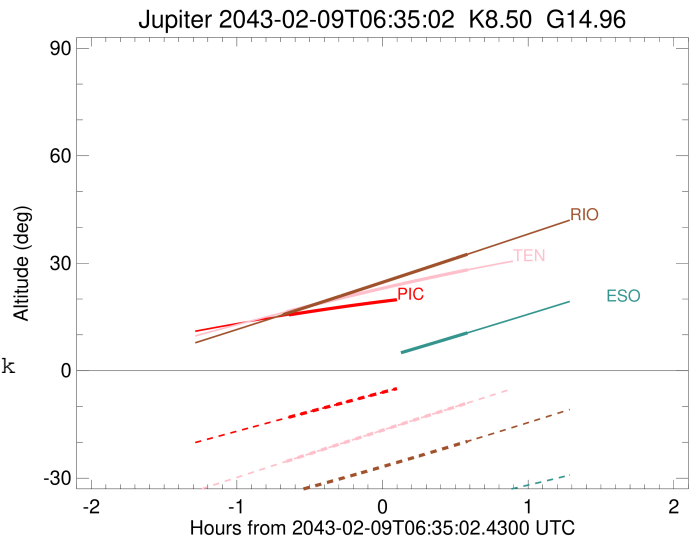
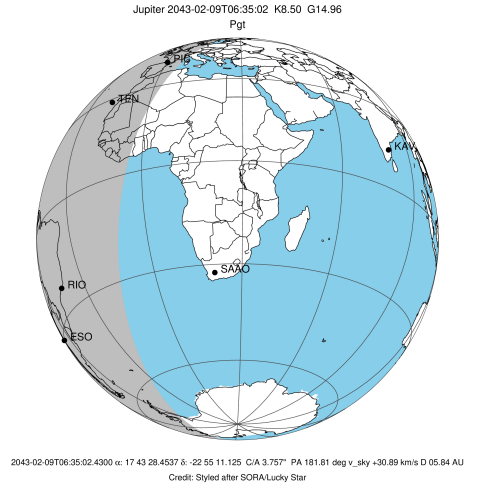


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-02-09T05:54:05.196	15.63	-34.54	71491.7	10.28	11.71
Jupiter	E	2043-02-09T07:10:00.588	32.48	-19.74	71491.6	12.61	14.34

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-02-09T06:32:05.650
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : ESO
Location              : European Southern Obs. (3.6m)
Latitude (deg)        : -29.26097
E. Longitude (deg)    : 289.26831
Altitude (km)         : 2.400
Gaia source ID        : 4116868368186197504
2Mass ID (if available) : 17432846-2255108
ICRS Star Coord at Epoch: 17h 43m 28.45367s -22:55:11.12514s
RUWE (>1.4 is poor) : 1.00
K magnitude           : 8.501
G magnitude           : 14.956
RP magnitude          : 13.429
BP magnitude          : 18.258
DUPflag              : 0
Distance (au)         : 5.836
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 30.89
Sun-Target sep (deg)  : 53.60
Sun-Moon sep (deg)    : 46.63
B (ring opening deg) : -2.57
PA of pole (deg)      : 0.94
Pole direction: RA (deg): 268.05661
Dec (deg): 64.49732
C/A sky separation (") : 2.968
C/A sky separation (km) : 12561.9
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	2043-02-09T05:54:15.329	-4.49x	-44.08	71491.8	8.97	10.23
Jupiter	E	2043-02-09T07:10:01.647	10.56	-35.71	71491.7	11.26	12.83