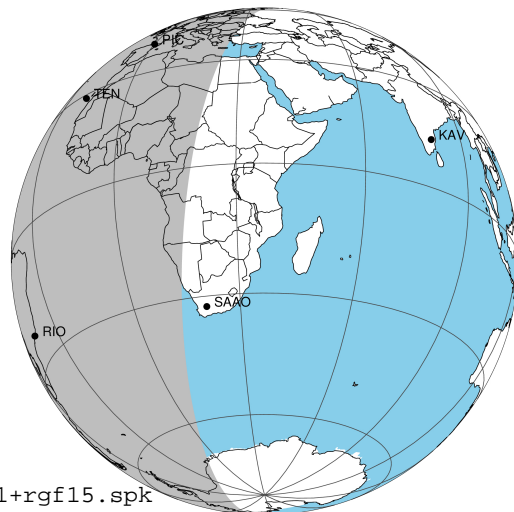


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-02-25T04:54:41.300
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116765155898060800
 2Mass ID (if available) : 17381439-2248079

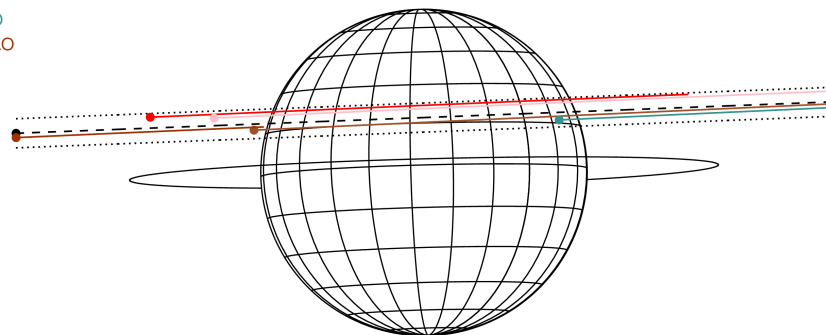
Jupiter 2031-02-25T04:54:41 K9.41 G14.87 Pgt

ICRS Star Coord at Epoch: 17h 38m 14.37684s -22:48:08.01108s
 RUWE (>1.4 is poor) : 1.01
 K magnitude : 9.411
 G magnitude : 14.874
 RP magnitude : 13.523
 BP magnitude : 17.068
 DUPflag : 0
 Distance (au) : 5.557
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 22.85
 Sun-Target sep (deg) : 70.97
 Sun-Moon sep (deg) : 115.98
 B (ring opening deg) : -2.66
 PA of pole (deg) : 1.51
 Pole direction: RA (deg): 268.05701
 Dec (deg): 64.49651
 C/A sky separation (") : 5.967
 C/A sky separation (km) : 24047.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



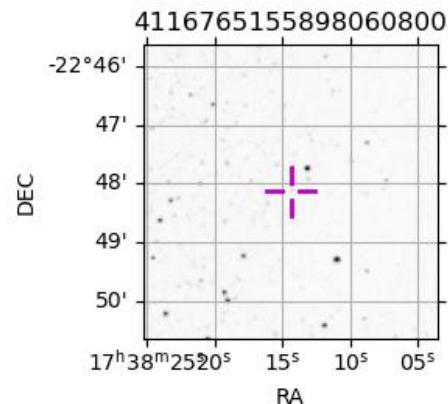
2031-02-25T04:54:41.3000 cc: 17 38 14.3768 s: -22 48 08.011 C/A 5.957" PA 182.21 deg v_sky +22.85 km/s D 05.56 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 TEN
 RIO
 ESO
 SAAO



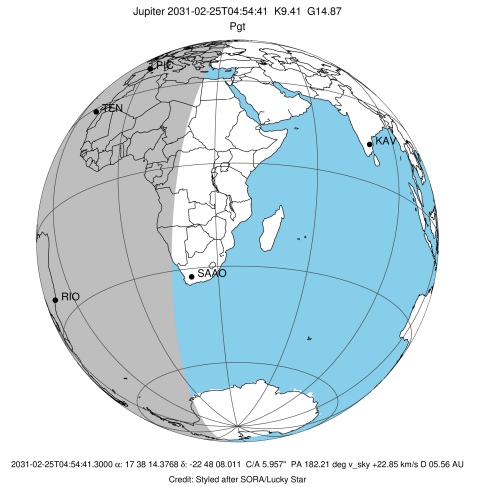
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+ +	FEB 25 04:04 - FEB 25 05:40	Pie
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 25 04:02 - FEB 25 05:39	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 25 04:00 - FEB 25 05:40	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	FEB 25 05:40 - FEB 25 05:40	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

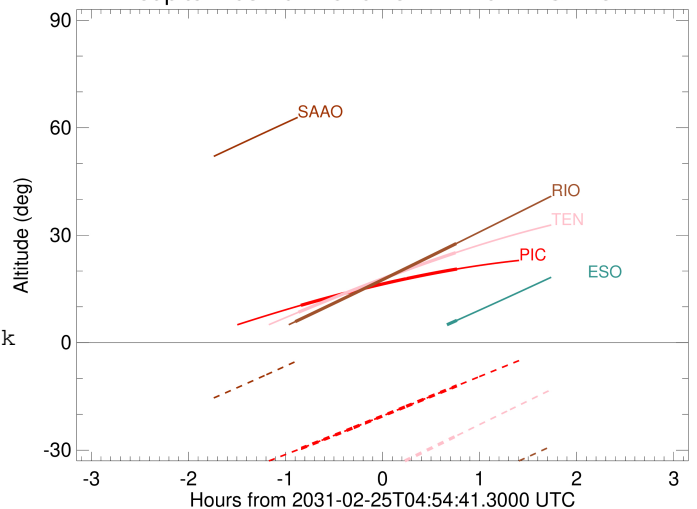


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-25T04:52:24.940
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      : 4116765155898060800
2Mass ID (if available) : 17381439-2248079
ICRS Star Coord at Epoch: 17h 38m 14.37684s -22:48:08.01108s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 9.411
G magnitude          : 14.874
RP magnitude         : 13.523
BP magnitude         : 17.068
DUPflag             : 0
Distance (au)       : 5.557
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.85
Sun-Target sep (deg) : 70.97
Sun-Moon sep (deg)   : 116.05
B (ring opening deg) : -2.66
PA of pole (deg)     : 1.51
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation ("): 7.291
C/A sky separation (km): 29381.7
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 2031-02-25T04:54:41 K9.41 G14.87

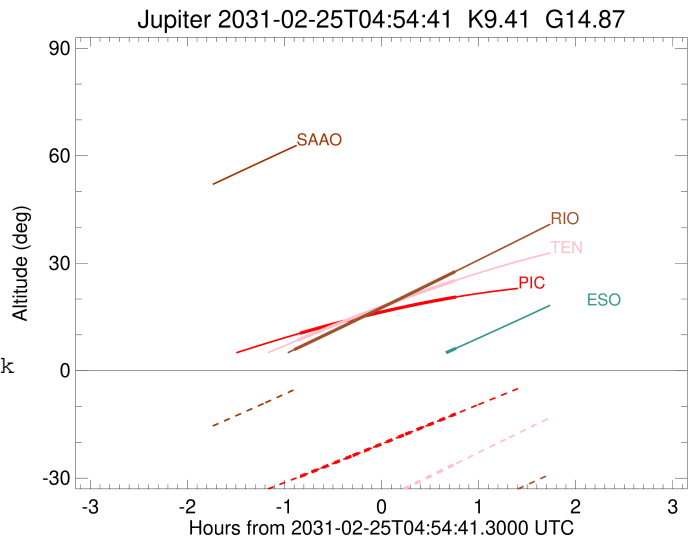
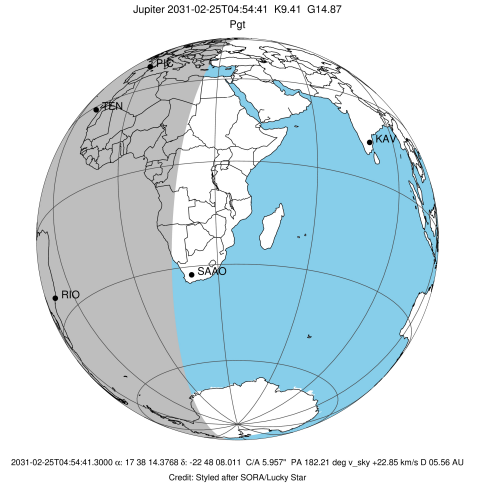


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-25T04:04:22.225	10.44	-29.53	71490.5	23.29	26.17
Jupiter	E	2031-02-25T05:40:35.429	20.55	-12.05	71490.3	25.14	28.17

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-25T04:51:09.020
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      : 4116765155898060800
2Mass ID (if available) : 17381439-2248079
ICRS Star Coord at Epoch: 17h 38m 14.37684s -22:48:08.01108s
RUWE (>1.4 is poor) : 1.01
K magnitude          : 9.411
G magnitude          : 14.874
RP magnitude         : 13.523
BP magnitude         : 17.068
DUPflag             : 0
Distance (au)       : 5.557
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 22.85
Sun-Target sep (deg) : 70.97
Sun-Moon sep (deg)  : 115.96
B (ring opening deg) : -2.66
PA of pole (deg)    : 1.51
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 6.933
C/A sky separation (km) : 27941.7
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
    
```

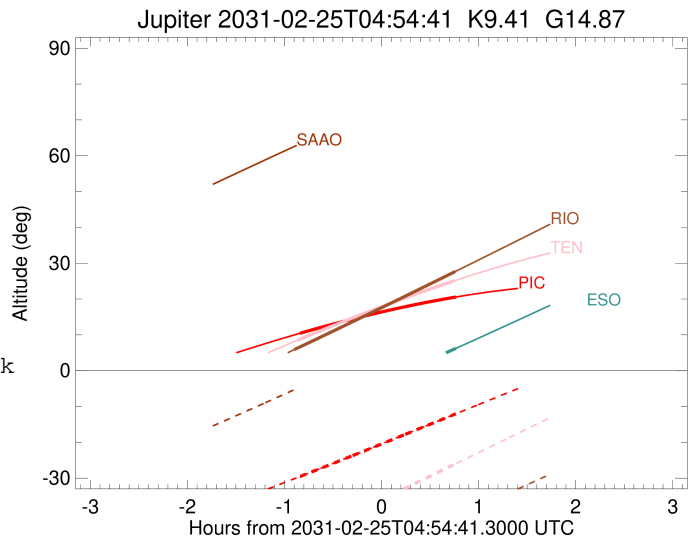
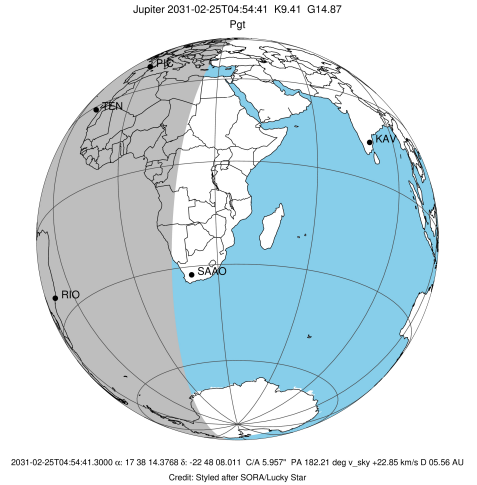


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-25T04:02:44.584	8.49	-47.15	71490.7	21.92	24.68
Jupiter	E	2031-02-25T05:39:44.820	25.09	-26.15	71490.4	24.00	26.95

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-02-25T04:50:23.430
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        : 4116765155898060800
2Mass ID (if available) : 17381439-2248079
ICRS Star Coord at Epoch: 17h 38m 14.37684s -22:48:08.01108s
RUWE (>1.4 is poor)  : 1.01
K magnitude           : 9.411
G magnitude           : 14.874
RP magnitude          : 13.523
BP magnitude          : 17.068
DUPflag               : 0
Distance (au)         : 5.557
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : 22.85
Sun-Target sep (deg)  : 70.97
Sun-Moon sep (deg)    : 115.86
B (ring opening deg)  : -2.66
PA of pole (deg)      : 1.51
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (") : 5.443
C/A sky separation (km) : 21936.5
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
    
```

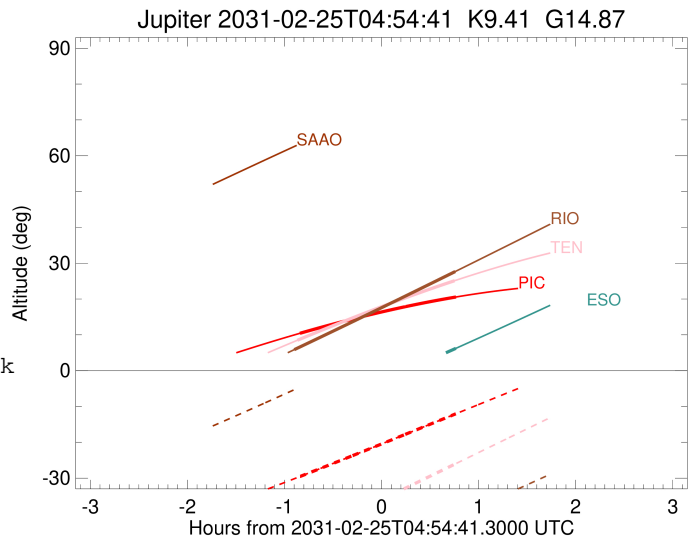
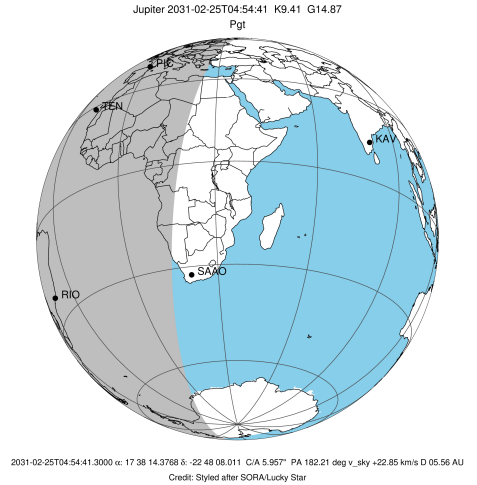


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-02-25T04:00:44.842	5.86	-55.37	71491.2	16.73	18.96
Jupiter	E	2031-02-25T05:40:16.411	27.67	-40.56	71491.0	18.96	21.43

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-02-25T04:50:49.650
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       : 4116765155898060800
2Mass ID (if available) : 17381439-2248079
ICRS Star Coord at Epoch: 17h 38m 14.37684s -22:48:08.01108s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 9.411
G magnitude           : 14.874
RP magnitude         : 13.523
BP magnitude         : 17.068
DUPflag              : 0
Distance (au)        : 5.557
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 22.85
Sun-Target sep (deg) : 70.97
Sun-Moon sep (deg)   : 115.59
B (ring opening deg) : -2.66
PA of pole (deg)     : 1.51
Pole direction: RA (deg): 268.05701
Dec (deg): 64.49651
C/A sky separation (" ) : 5.045
C/A sky separation (km) : 20331.4
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	2031-02-25T04:01:14.173	-12.80x	-49.51	71491.3	15.46	17.54
Jupiter	E	2031-02-25T05:40:38.208	6.23	-50.27	71491.1	17.58	19.90