

target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2031-04-02T08:06:06.120
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4070203209299434496
 2Mass ID (if available) : 17523044-2253083

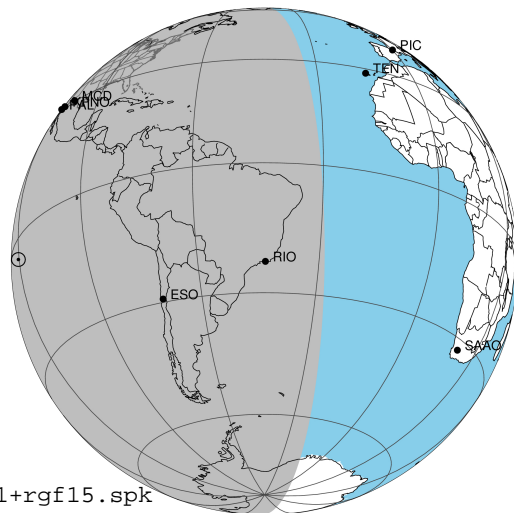
Jupiter 2031-04-02T08:06:06 K8.79 G14.86 Pgt

ICRS Star Coord at Epoch: 17h 52m 30.44083s -22:53:08.61299s

RUWE (>1.4 is poor) : 0.87
 K magnitude : 8.787
 G magnitude : 14.860
 RP magnitude : 13.370
 BP magnitude : 17.742
 DUPflag : 0
 Distance (au) : 4.979
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 6.11
 Sun-Target sep (deg) : 103.69
 Sun-Moon sep (deg) : 140.73
 B (ring opening deg) : -2.62
 PA of pole (deg) : -0.03
 Pole direction: RA (deg): 268.05698
 Dec (deg): 64.49651
 C/A sky separation (") : 15.574
 C/A sky separation (km) : 56239.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2031-04-02T08:06:06 K8.79 G14.86

Pgt

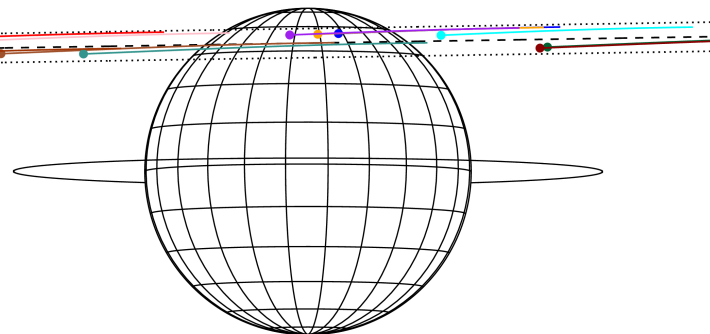


2031-04-02T08:06:06.1200 α: 17 52 30.4408 δ: -22 53 08.613 C/A ***** PA 180.91 deg v_sky + 6.11 km/s D 04.98 AU

Credit: Styled after SORA/Lucky Star

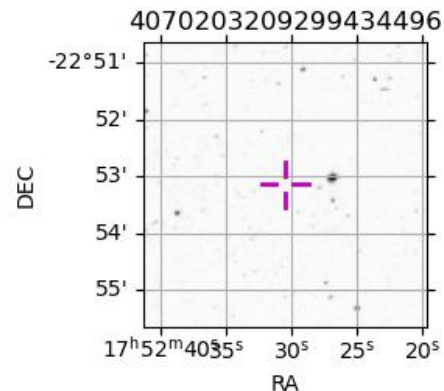
Earth

- PIC
- PAL
- KPNO
- MCD
- TEN
- IRTF
- KAV
- RIO
- ESO
- AAT
- SAAO
- MSO



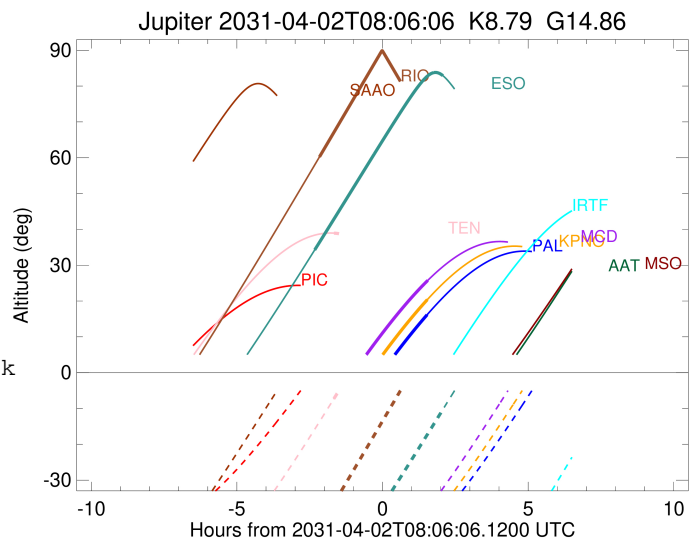
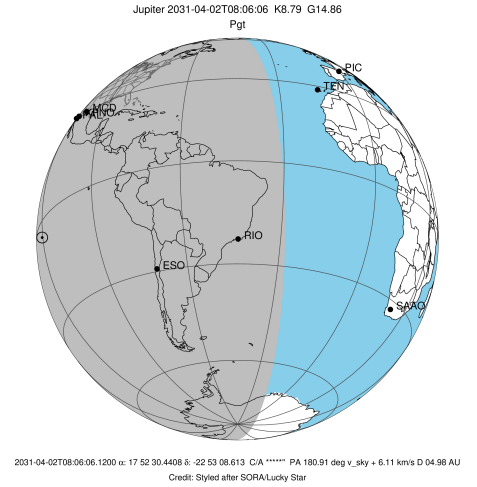
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+	APR 02 09:37 - APR 02 09:37	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	APR 02 09:38 - APR 02 09:38	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+	APR 02 09:39 - APR 02 09:39	Pne
TEN	Teide Obs./Tenerife	28.3	343.5	+	APR 02 06:25 - APR 02 06:25	Pin
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	+	APR 02 05:56 - APR 02 05:56	Pin
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	APR 02 05:46 - APR 02 10:10	Pie
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            : 2031-04-02T07:47:42.490
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : PAL
Location            : Palomar Mt (200")
Latitude (deg)      : 33.35622
E. Longitude (deg) : 243.13601
Altitude (km)       : 1.706
Gaia source ID      : 4070203209299434496
2Mass ID (if available) : 17523044-2253083
ICRS Star Coord at Epoch: 17h 52m 30.44083s -22:53:08.61299s
RUWE (>1.4 is poor) : 0.87
K magnitude          : 8.787
G magnitude          : 14.860
RP magnitude         : 13.370
BP magnitude         : 17.742
DUPflag             : 0
Distance (au)       : 4.979
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 6.11
Sun-Target sep (deg) : 103.69
Sun-Moon sep (deg)  : 141.25
B (ring opening deg) : -2.62
PA of pole (deg)    : -0.03
Pole direction: RA (deg): 268.05698
Dec (deg): 64.49651
C/A sky separation ("): 16.569
C/A sky separation (km): 59834.0
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
    
```

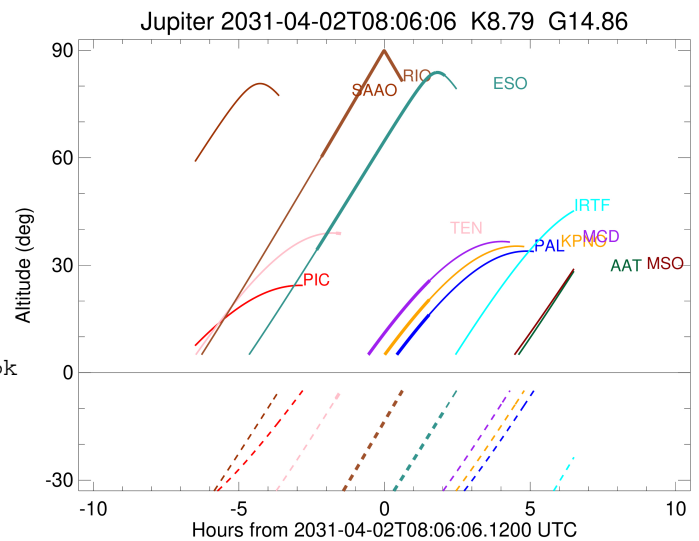
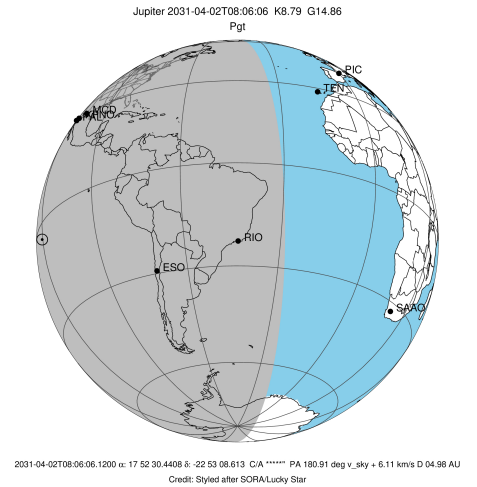


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-04-02T06:01:37.711	-24.08x	-43.95	71485.8	54.40	57.80
Jupiter	E	2031-04-02T09:37:55.920	16.15	-44.26	71485.1	58.99	62.12

```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch              : 2031-04-02T07:47:49.020
Event type             : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code          : KPNO
Location               : Kitt Peak Natl Obs
Latitude (deg)         : 31.96333
E. Longitude (deg)    : 248.40000
Altitude (km)         : 2.120
Gaia source ID         : 4070203209299434496
2Mass ID (if available) : 17523044-2253083
ICRS Star Coord at Epoch: 17h 52m 30.44083s -22:53:08.61299s
RUWE (>1.4 is poor)  : 0.87
K magnitude            : 8.787
G magnitude            : 14.860
RP magnitude           : 13.370
BP magnitude           : 17.742
DUPflag                : 0
Distance (au)         : 4.979
f0 (km)                : 0.00
g0 (km)                : 0.00
skyplane vel. (km/s)  : 6.11
Sun-Target sep (deg)  : 103.69
Sun-Moon sep (deg)    : 141.28
B (ring opening deg)  : -2.62
PA of pole (deg)      : -0.03
Pole direction: RA (deg): 268.05698
Dec (deg): 64.49651
C/A sky separation (") : 16.590
C/A sky separation (km) : 59910.0
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
    
```

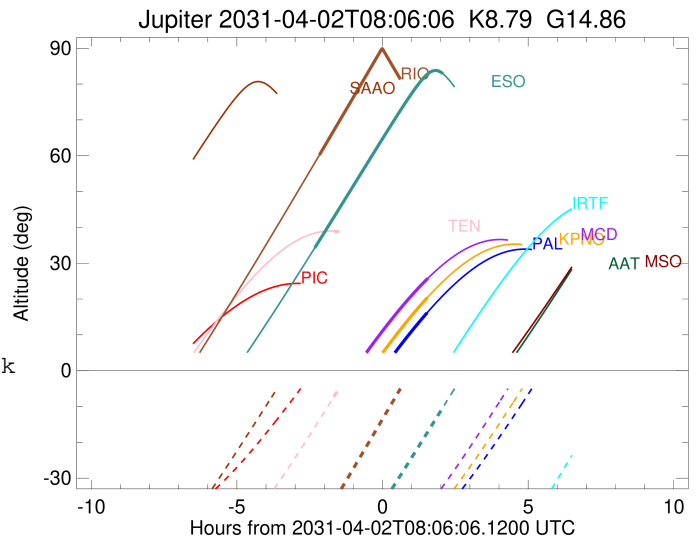
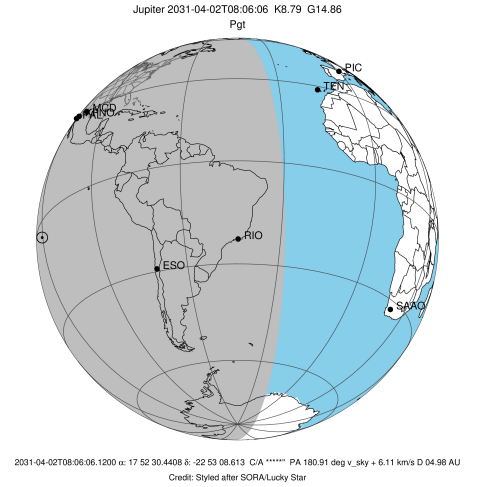


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-04-02T06:01:21.106	-19.49x	-47.69	71485.8	54.48	57.88
Jupiter	E	2031-04-02T09:38:28.017	20.39	-42.23	71485.1	59.07	62.20

```

target          : Jupiter
target radius (km) : 71492.00
C/A epoch       : 2031-04-02T07:48:25.920
Event type      : Pgt
                : Jupiter occs: geocentric, topocentric
                : Not a ringed target
Observer code   : MCD
Location        : McDonald Obs. 2.7m
Latitude (deg)  : 30.67158
E. Longitude (deg) : 255.97844
Altitude (km)   : 2.075
Gaia source ID  : 4070203209299434496
2Mass ID (if available) : 17523044-2253083
ICRS Star Coord at Epoch: 17h 52m 30.44083s -22:53:08.61299s
RUWE (>1.4 is poor) : 0.87
K magnitude     : 8.787
G magnitude     : 14.860
RP magnitude    : 13.370
BP magnitude    : 17.742
DUPflag        : 0
Distance (au)   : 4.979
f0 (km)         : 0.00
g0 (km)         : 0.00
skyplane vel. (km/s) : 6.11
Sun-Target sep (deg) : 103.69
Sun-Moon sep (deg) : 141.31
B (ring opening deg) : -2.62
PA of pole (deg) : -0.03
Pole direction: RA (deg): 268.05698
Dec (deg): 64.49651
C/A sky separation (") : 16.636
C/A sky separation (km) : 60076.2
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
    
```

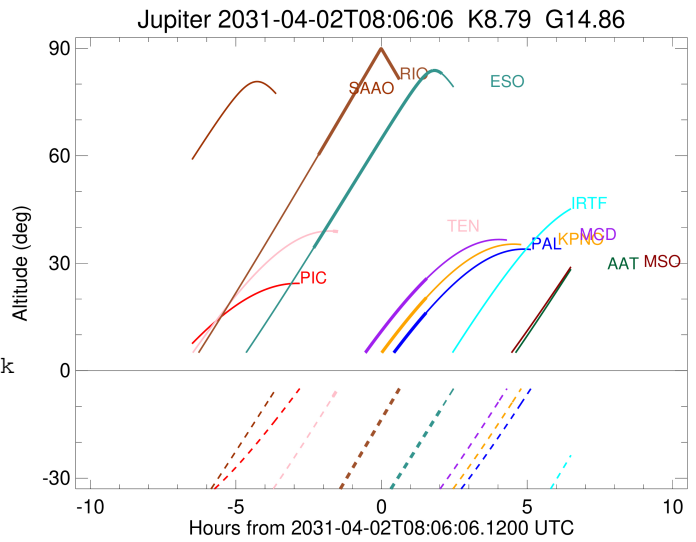
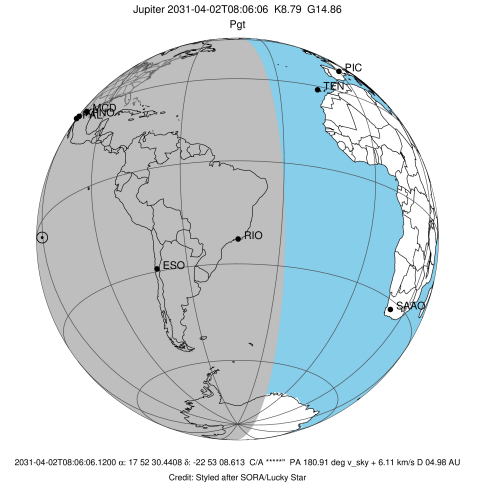


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-04-02T06:01:36.107	-12.87x	-51.99	71485.8	54.72	58.10
Jupiter	E	2031-04-02T09:39:23.769	25.76	-37.94	71485.1	59.23	62.35

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2031-04-02T08:15:34.830
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        : 4070203209299434496
2Mass ID (if available) : 17523044-2253083
ICRS Star Coord at Epoch: 17h 52m 30.44083s -22:53:08.61299s
RUWE (>1.4 is poor) : 0.87
K magnitude           : 8.787
G magnitude           : 14.860
RP magnitude          : 13.370
BP magnitude          : 17.742
DUPflag              : 0
Distance (au)         : 4.979
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 6.11
Sun-Target sep (deg)  : 103.69
Sun-Moon sep (deg)    : 140.70
B (ring opening deg) : -2.62
PA of pole (deg)     : -0.03
Pole direction: RA (deg): 268.05698
Dec (deg): 64.49651
C/A sky separation (") : 16.880
C/A sky separation (km) : 60955.3
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
    
```

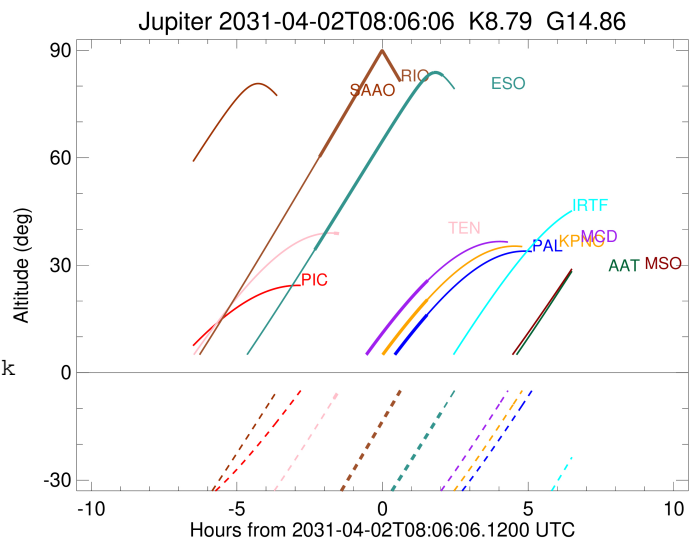
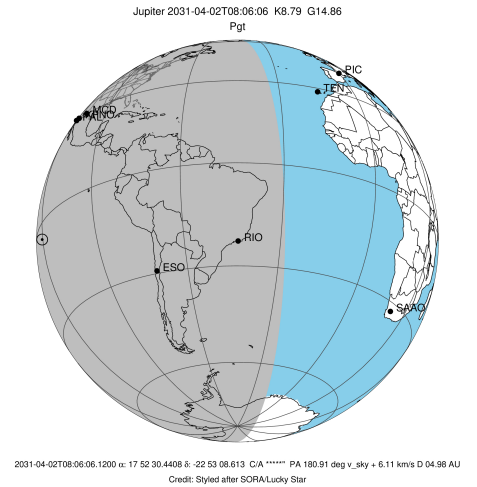


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-04-02T06:25:49.758	38.95	-7.30	71485.3	57.84	61.05
Jupiter	E	2031-04-02T10:04:03.866	15.38	40.28x	71485.2	58.32	61.50

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-04-02T08:06:00.820
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      : 4070203209299434496
2Mass ID (if available) : 17523044-2253083
ICRS Star Coord at Epoch: 17h 52m 30.44083s -22:53:08.61299s
RUWE (>1.4 is poor) : 0.87
K magnitude          : 8.787
G magnitude          : 14.860
RP magnitude         : 13.370
BP magnitude         : 17.742
DUPflag             : 0
Distance (au)       : 4.979
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : 6.11
Sun-Target sep (deg) : 103.69
Sun-Moon sep (deg)  : 141.30
B (ring opening deg) : -2.62
PA of pole (deg)    : -0.03
Pole direction: RA (deg): 268.05698
Dec (deg): 64.49651
C/A sky separation (") : 15.578
C/A sky separation (km) : 56254.2
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
    
```

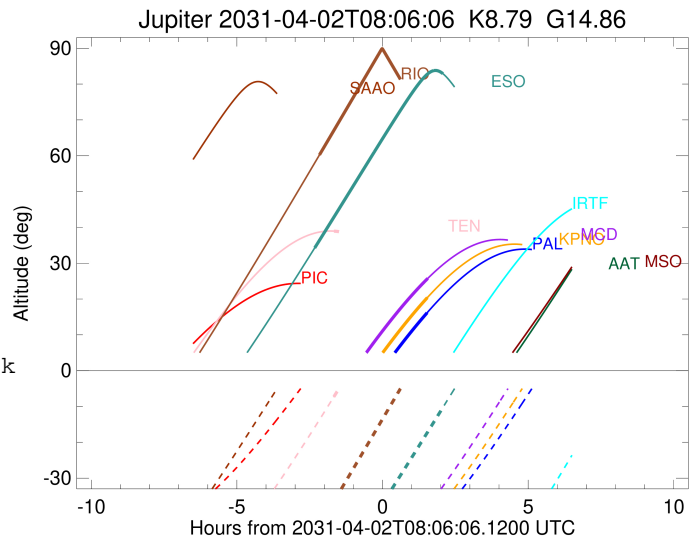
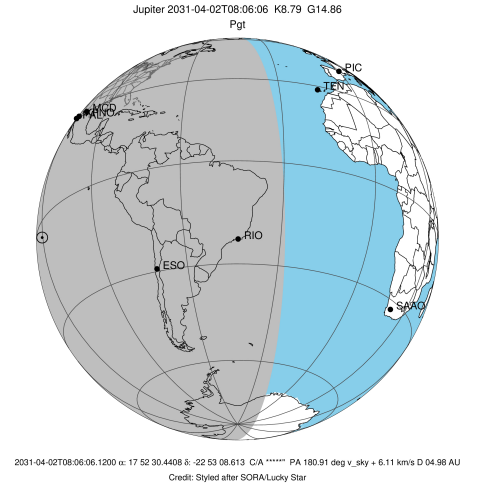


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2031-04-02T05:56:13.131	60.23	-43.13	71486.5	50.38	53.95
Jupiter	E	2031-04-02T10:16:52.285	59.68	16.39x	71486.1	52.34	55.84

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2031-04-02T07:56:25.390
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      : 4070203209299434496
2Mass ID (if available) : 17523044-2253083
ICRS Star Coord at Epoch: 17h 52m 30.44083s -22:53:08.61299s
RUWE (>1.4 is poor) : 0.87
K magnitude          : 8.787
G magnitude          : 14.860
RP magnitude         : 13.370
BP magnitude         : 17.742
DUPflag             : 0
Distance (au)       : 4.979
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 6.11
Sun-Target sep (deg) : 103.69
Sun-Moon sep (deg)  : 141.54
B (ring opening deg) : -2.62
PA of pole (deg)    : -0.03
Pole direction: RA (deg): 268.05698
Dec (deg): 64.49651
C/A sky separation (") : 15.295
C/A sky separation (km) : 55235.4
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	2031-04-02T05:46:24.455	34.26	-61.94	71486.8	48.45	52.09
Jupiter	E	2031-04-02T10:10:24.123	82.91	-10.29	71486.2	51.86	55.38