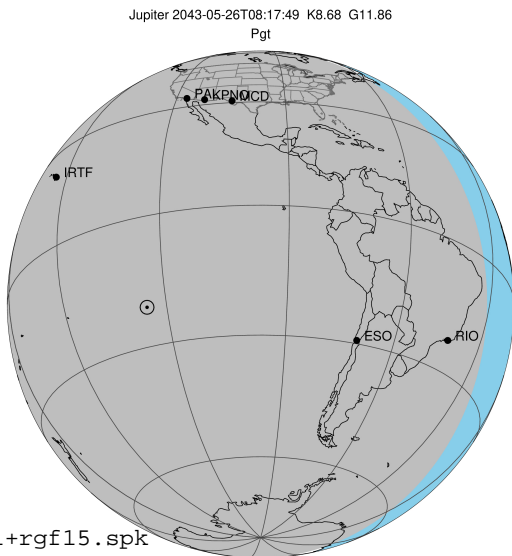


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-05-26T08:17:49.200
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4069587512752878336
 2Mass ID (if available) : 18043059-2302073

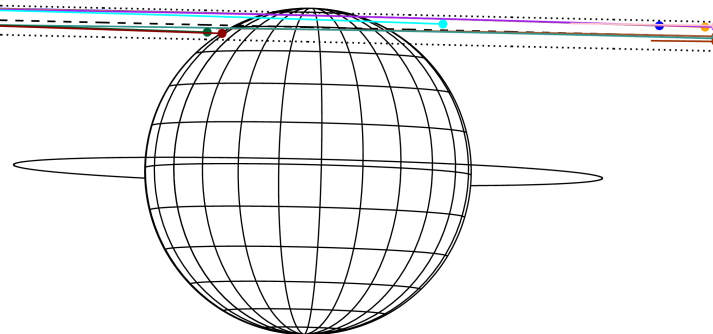
Jupiter 2043-05-26T08:17:49 K8.68 G11.86 Pgt

ICRS Star Coord at Epoch: 18h 04m 30.59128s -23°02'07.50432s
 RUWE (>1.4 is poor) : 0.82
 K magnitude : 8.684
 G magnitude : 11.862
 RP magnitude : 10.964
 BP magnitude : 12.703
 DUPflag : 0
 Distance (au) : 4.350
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -13.26
 Sun-Target sep (deg) : 153.37
 Sun-Moon sep (deg) : 5.46
 B (ring opening deg) : -2.43
 PA of pole (deg) : -1.32
 Pole direction: RA (deg): 268.05667
 Dec (deg): 64.49732
 C/A sky separation (") : 20.032
 C/A sky separation (km) : 63200.0
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk
 URKALLv1.spk
 naif0012.tls
 nep097.bsp
 nep101.bsp
 sat4401.bsp



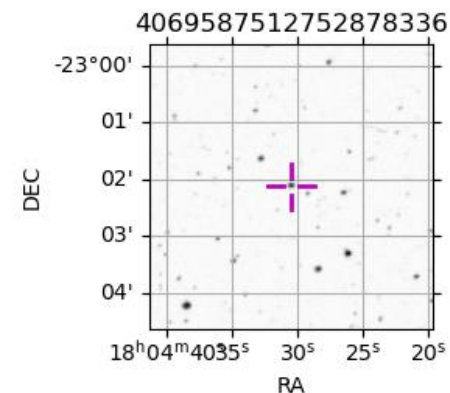
2043-05-26T08:17:49.2000 a: 18 04 30.5913 s -23 02 07.504 C/A ***** PA 178.70 deg v_sky -13.26 km/s D 04.35 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PAL
 KPNO
 MCD
 TEN
 IRTF
 RIO
 ESO
 AAT
 SAAO
 MSO



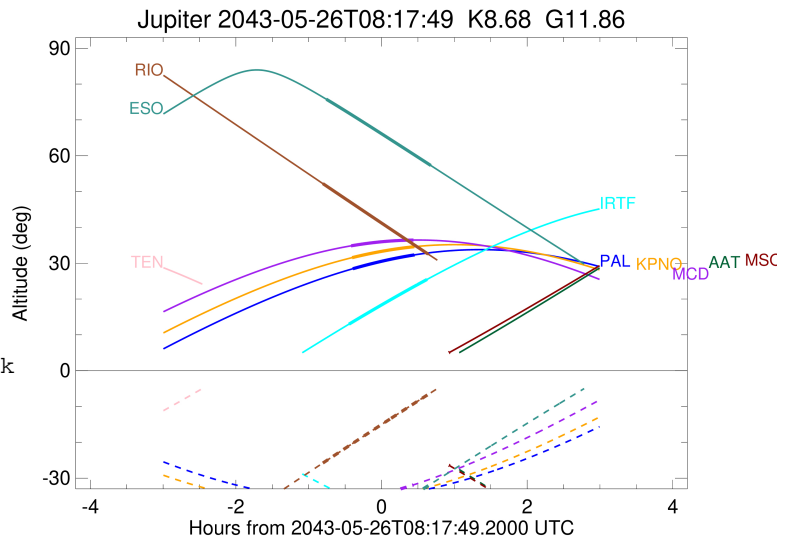
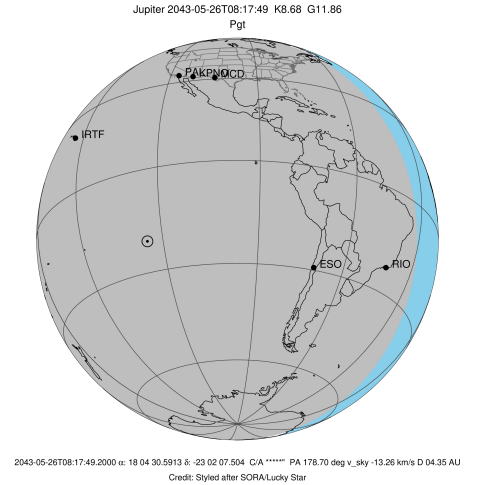
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+ +	MAY 26 07:54 - MAY 26 08:45	Pie
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+ +	MAY 26 07:53 - MAY 26 08:44	Pie
MCD	McDonald Obs. 2.7m	30.7	256.0	+ +	MAY 26 07:52 - MAY 26 08:44	Pie
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
IRTF	Mauna Kea/IRTF	19.8	204.5	+ +	MAY 26 07:50 - MAY 26 08:55	Pie
KAV	Kavalur Observatory	12.6	78.8			Pnn
RIO	Rio de Janeiro	-22.9	316.8	+ +	MAY 26 07:29 - MAY 26 08:56	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	MAY 26 07:32 - MAY 26 08:58	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	+ +	MAY 26 09:13 - MAY 26 09:13	Pne



```

target                : Jupiter
target radius (km)    : 71492.00
C/A epoch              : 2043-05-26T08:19:39.620
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        : 4069587512752878336
2Mass ID (if available) : 18043059-2302073
ICRS Star Coord at Epoch: 18h 04m 30.59128s -23:02:07.50432s
RUWE (>1.4 is poor)  : 0.82
K magnitude            : 8.684
G magnitude            : 11.862
RP magnitude           : 10.964
BP magnitude           : 12.703
DUPflag               : 0
Distance (au)         : 4.350
f0 (km)                : 0.00
g0 (km)                : 0.00
skyplane vel. (km/s)  : -13.26
Sun-Target sep (deg)  : 153.37
Sun-Moon sep (deg)    : 6.23
B (ring opening deg)  : -2.43
PA of pole (deg)      : -1.32
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation (") : 21.687
C/A sky separation (km) : 68420.2
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
    
```

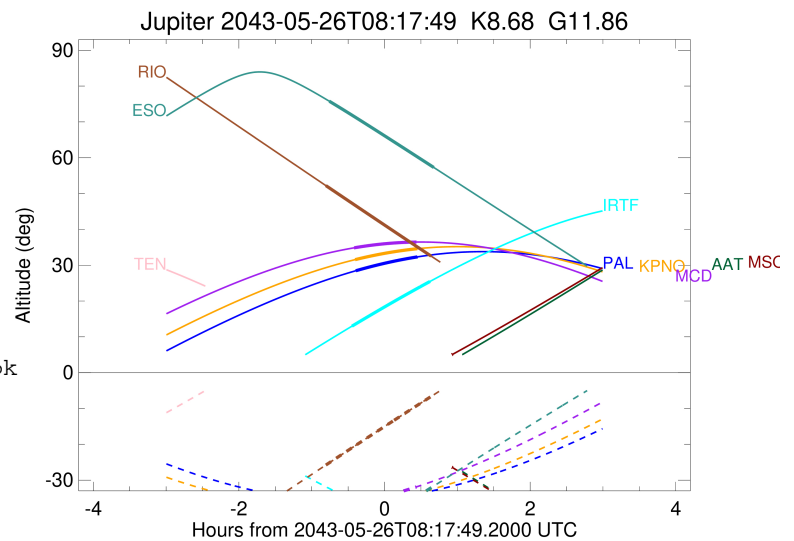
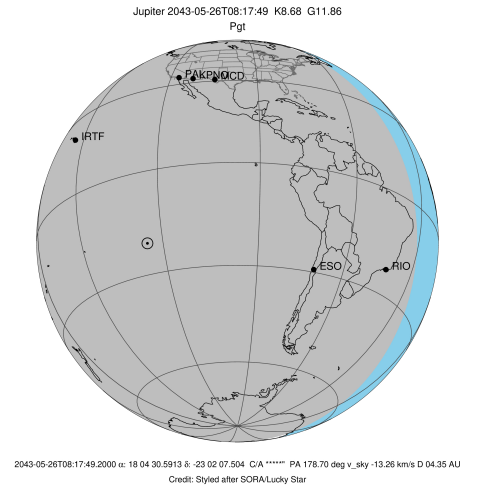


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-26T07:54:16.269	28.46	-35.64	71484.6	72.81	74.75
Jupiter	E	2043-05-26T08:45:00.992	32.32	-33.80	71484.6	73.11	75.02

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-26T08:19:11.710
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      : 4069587512752878336
2Mass ID (if available) : 18043059-2302073
ICRS Star Coord at Epoch: 18h 04m 30.59128s -23:02:07.50432s
RUWE (>1.4 is poor) : 0.82
K magnitude          : 8.684
G magnitude          : 11.862
RP magnitude         : 10.964
BP magnitude         : 12.703
DUPflag             : 0
Distance (au)       : 4.350
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.26
Sun-Target sep (deg) : 153.37
Sun-Moon sep (deg)  : 6.23
B (ring opening deg) : -2.43
PA of pole (deg)    : -1.32
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation ("): 21.673
C/A sky separation (km): 68376.2
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
    
```

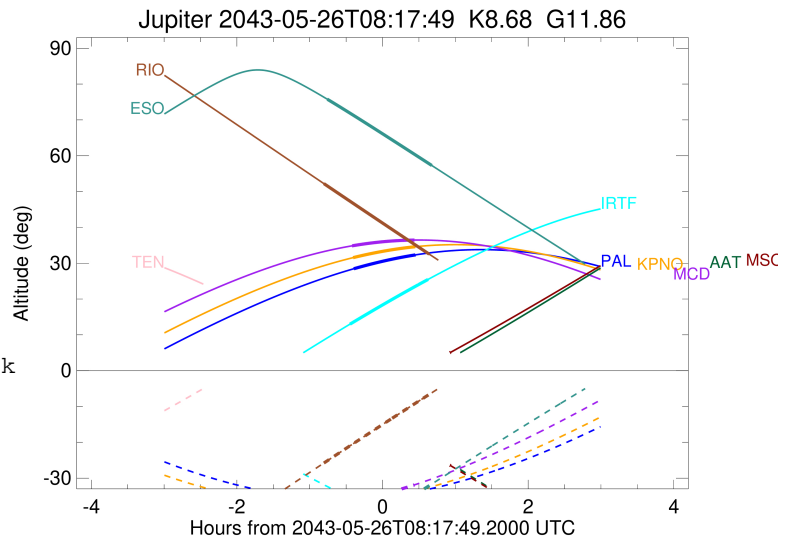
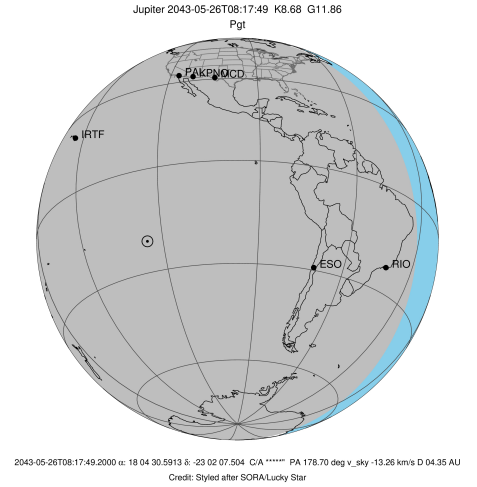


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-26T07:53:39.564	31.55	-36.59	71484.6	72.74	74.69
Jupiter	E	2043-05-26T08:44:42.259	34.59	-33.61	71484.6	72.94	74.87

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-26T08:18:28.250
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       : 4069587512752878336
2Mass ID (if available) : 18043059-2302073
ICRS Star Coord at Epoch: 18h 04m 30.59128s -23:02:07.50432s
RUWE (>1.4 is poor) : 0.82
K magnitude          : 8.684
G magnitude          : 11.862
RP magnitude         : 10.964
BP magnitude         : 12.703
DUPflag             : 0
Distance (au)        : 4.350
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.26
Sun-Target sep (deg) : 153.37
Sun-Moon sep (deg)   : 6.23
B (ring opening deg) : -2.43
PA of pole (deg)     : -1.32
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation (") : 21.657
C/A sky separation (km) : 68326.2
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
    
```

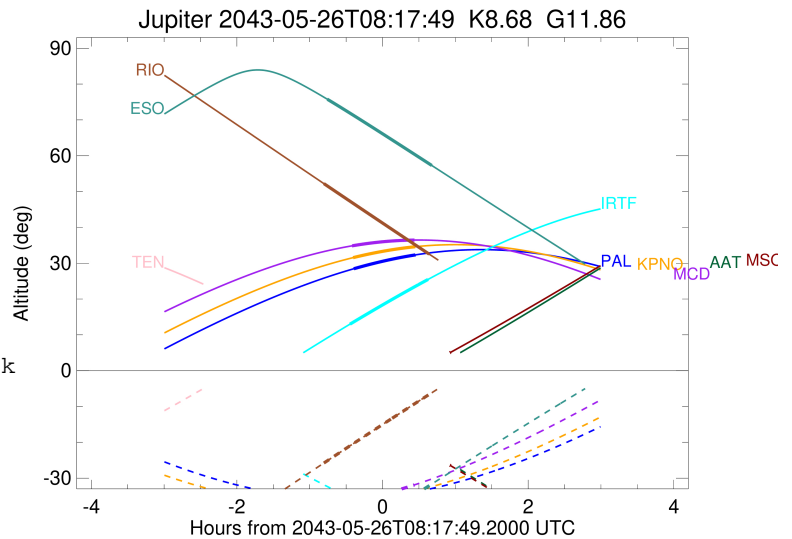
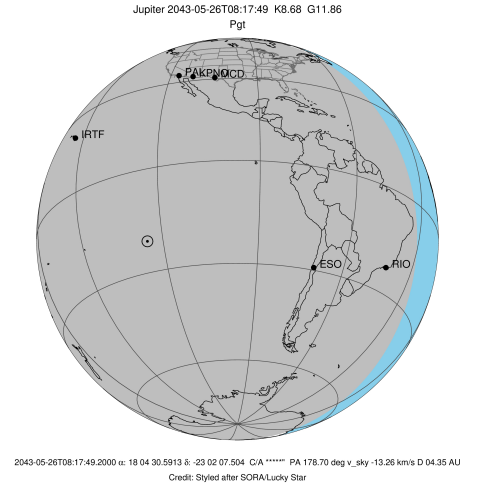


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-26T07:52:45.959	34.84	-36.42	71484.6	72.68	74.64
Jupiter	E	2043-05-26T08:44:09.501	36.45	-31.88	71484.6	72.72	74.67

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-26T08:23:13.450
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : IRTF
Location             : Mauna Kea/IRTF
Latitude (deg)       : 19.82622
E. Longitude (deg)   : 204.52800
Altitude (km)        : 4.168
Gaia source ID       : 4069587512752878336
2Mass ID (if available) : 18043059-2302073
ICRS Star Coord at Epoch: 18h 04m 30.59128s -23:02:07.50432s
RUWE (>1.4 is poor) : 0.82
K magnitude          : 8.684
G magnitude          : 11.862
RP magnitude         : 10.964
BP magnitude         : 12.703
DUPflag             : 0
Distance (au)        : 4.350
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.26
Sun-Target sep (deg) : 153.37
Sun-Moon sep (deg)  : 5.93
B (ring opening deg) : -2.43
PA of pole (deg)    : -1.32
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation (") : 21.103
C/A sky separation (km) : 66578.8
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
    
```

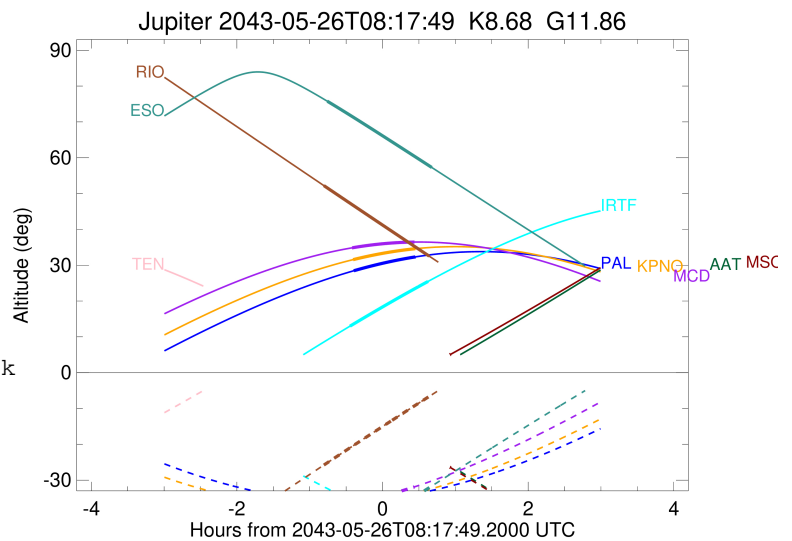
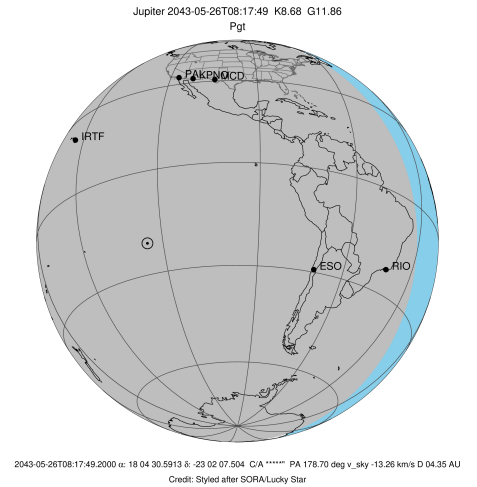


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-26T07:50:59.027	12.97	-35.46	71485.1	67.92	70.34
Jupiter	E	2043-05-26T08:55:20.097	25.46	-44.34	71485.0	69.05	71.36

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-26T08:12:50.020
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        : 4069587512752878336
2Mass ID (if available) : 18043059-2302073
ICRS Star Coord at Epoch: 18h 04m 30.59128s -23:02:07.50432s
RUWE (>1.4 is poor) : 0.82
K magnitude           : 8.684
G magnitude           : 11.862
RP magnitude          : 10.964
BP magnitude          : 12.703
DUPflag              : 0
Distance (au)         : 4.350
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -13.26
Sun-Target sep (deg)  : 153.37
Sun-Moon sep (deg)   : 5.49
B (ring opening deg) : -2.43
PA of pole (deg)     : -1.32
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation (") : 19.722
C/A sky separation (km) : 62222.8
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
    
```

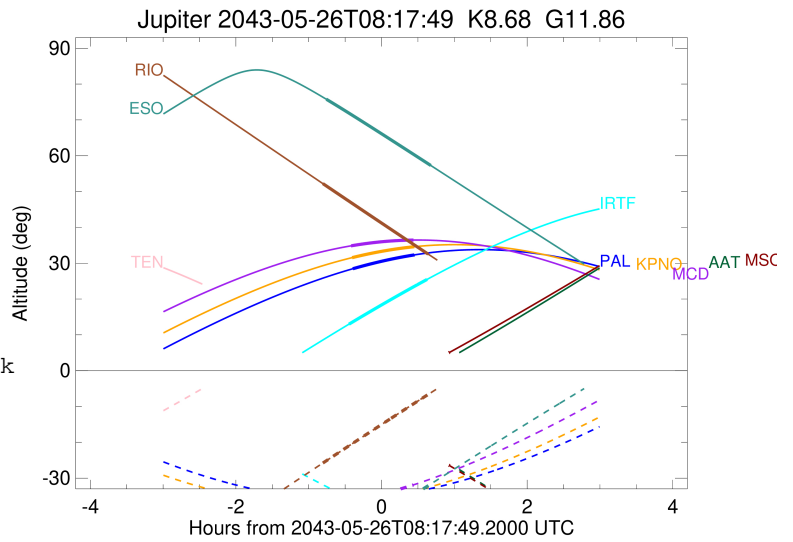
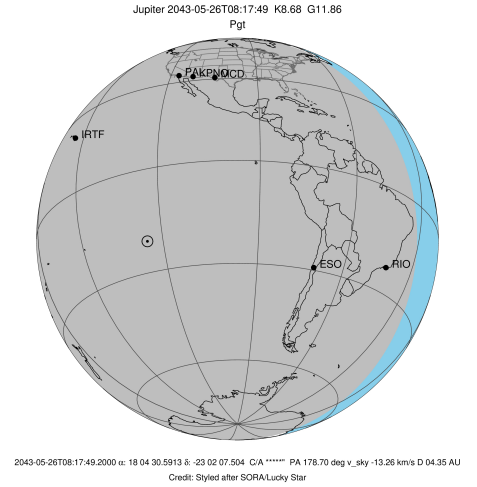


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-26T07:29:29.091	52.22	-25.79	71485.8	60.98	63.97
Jupiter	E	2043-05-26T08:56:21.549	32.51	-6.62	71486.0	59.77	62.85

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-26T08:15:19.340
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       : 4069587512752878336
2Mass ID (if available) : 18043059-2302073
ICRS Star Coord at Epoch: 18h 04m 30.59128s -23:02:07.50432s
RUWE (>1.4 is poor) : 0.82
K magnitude          : 8.684
G magnitude          : 11.862
RP magnitude         : 10.964
BP magnitude         : 12.703
DUPflag             : 0
Distance (au)        : 4.350
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -13.26
Sun-Target sep (deg) : 153.37
Sun-Moon sep (deg)   : 5.46
B (ring opening deg) : -2.43
PA of pole (deg)     : -1.32
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation (") : 19.733
C/A sky separation (km) : 62256.6
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
    
```

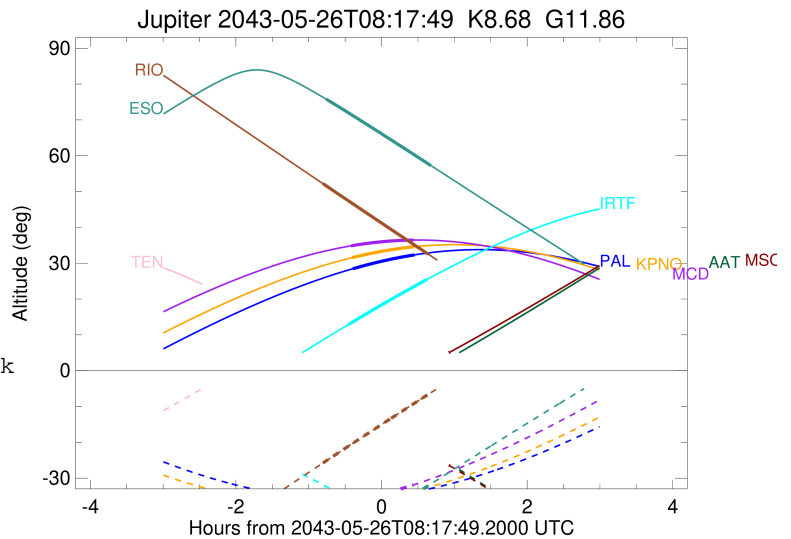
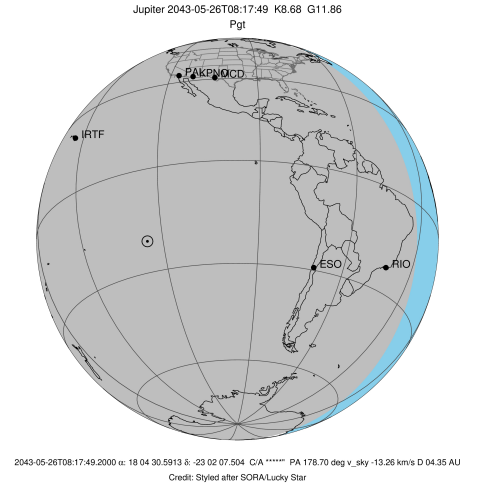


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-26T07:32:18.662	75.77	-50.39	71485.9	60.76	63.77
Jupiter	E	2043-05-26T08:58:24.751	57.28	-31.65	71485.9	60.07	63.13


```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-26T08:23:11.070
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      : 4069587512752878336
2Mass ID (if available) : 18043059-2302073
ICRS Star Coord at Epoch: 18h 04m 30.59128s -23:02:07.50432s
RUWE (>1.4 is poor) : 0.82
K magnitude         : 8.684
G magnitude         : 11.862
RP magnitude        : 10.964
BP magnitude        : 12.703
DUPflag            : 0
Distance (au)       : 4.350
f0 (km)             : 0.00
g0 (km)             : 0.00
skyplane vel. (km/s) : -13.26
Sun-Target sep (deg) : 153.37
Sun-Moon sep (deg)  : 4.84
B (ring opening deg) : -2.43
PA of pole (deg)    : -1.32
Pole direction: RA (deg): 268.05667
Dec (deg): 64.49732
C/A sky separation (" ) : 18.751
C/A sky separation (km) : 59159.4
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	2043-05-26T07:32:04.023	-12.52x	-6.41	71486.6	55.21	58.57
Jupiter	E	2043-05-26T09:13:58.913	5.12	-26.52	71486.4	56.38	59.68