

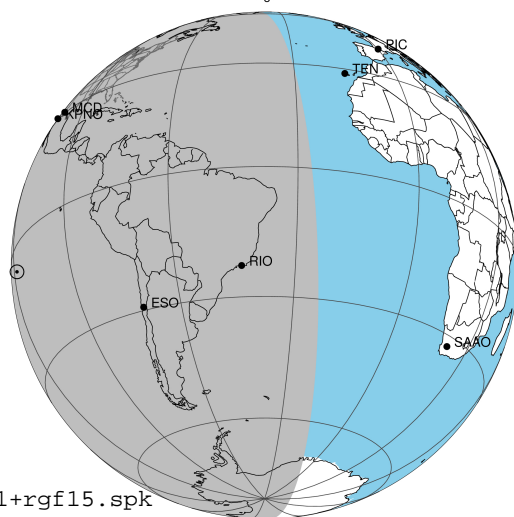
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2043-04-05T07:50:15.020  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 406662446635551744  
 2Mass ID (if available) : 18112871-2258363

Jupiter 2043-04-05T07:50:15 K6.42 G14.24 Pgt

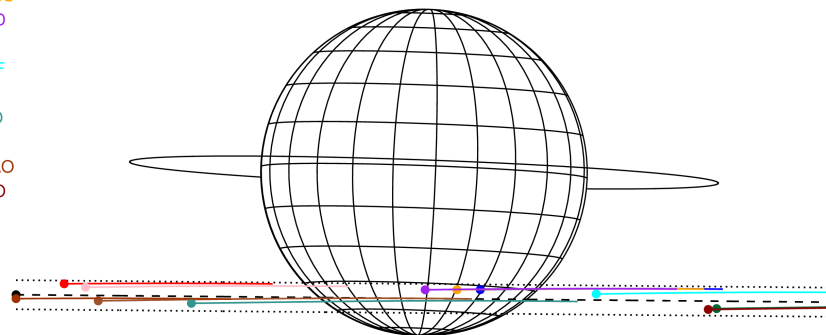
ICRS Star Coord at Epoch: 18h 11m 28.71800s -22:58:36.28403s

RUWE (>1.4 is poor) : 1.01  
 K magnitude : 6.423  
 G magnitude : 14.238  
 RP magnitude : 12.610  
 BP magnitude : 18.795  
 DUPflag : 0  
 Distance (au) : 4.990  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 6.92  
 Sun-Target sep (deg) : 102.19  
 Sun-Moon sep (deg) : 42.68  
 B (ring opening deg) : -2.45  
 PA of pole (deg) : -2.07  
 Pole direction: RA (deg): 268.05664  
 Dec (deg): 64.49732  
 C/A sky separation (") : 15.250  
 C/A sky separation (km) : 55189.9  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2043-04-05T07:50:15 K6.42 G14.24  
 Pgt



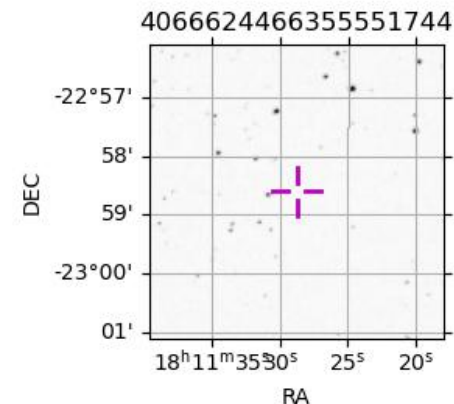
Earth  
 PIC  
 PAL  
 KPNO  
 MCD  
 TEN  
 IRTF  
 RIO  
 ESO  
 AAT  
 SAAO  
 MSO



2043-04-05T07:50:15.0200 α: 18 11 28.7180 δ: -22 58 36.284 C/A \*\*\*\*\* PA 359.47 deg v\_sky + 6.92 km/s D 04.99 AU  
 Credit: Styled after SORA/Lucky Star

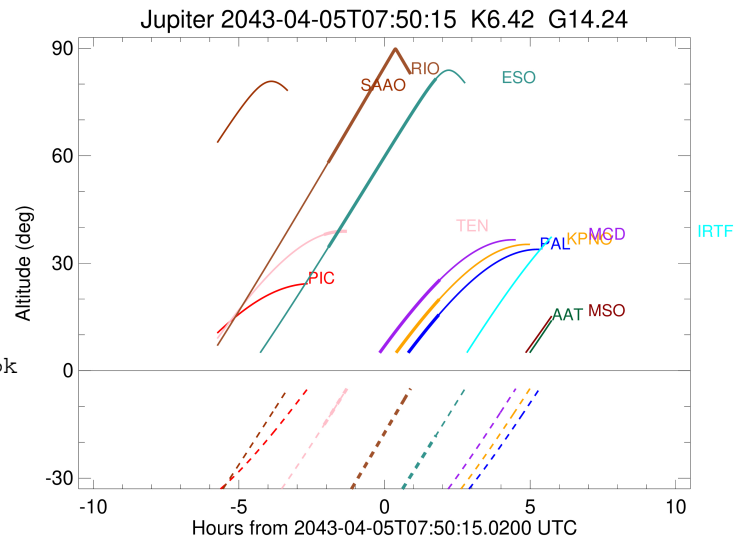
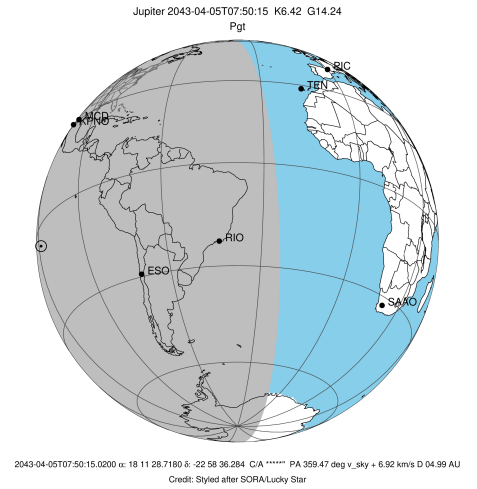
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1	+	APR 05 09:42 - APR 05 09:42	Pne
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	APR 05 09:43 - APR 05 09:43	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+	APR 05 09:44 - APR 05 09:44	Pne
TEN	Teide Obs./Tenerife	28.3	343.5	+	APR 05 05:45 - APR 05 05:45	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 05 05:54 - APR 05 05:54	Pin
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	APR 05 05:54 - APR 05 09:36	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             : 2043-04-05T07:40:21.440
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        : 4066624466355551744
2Mass ID (if available) : 18112871-2258363
ICRS Star Coord at Epoch: 18h 11m 28.71800s -22:58:36.28403s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 6.423
G magnitude           : 14.238
RP magnitude          : 12.610
BP magnitude          : 18.795
DUPflag              : 0
Distance (au)         : 4.990
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 6.92
Sun-Target sep (deg) : 102.19
Sun-Moon sep (deg)   : 43.25
B (ring opening deg) : -2.45
PA of pole (deg)     : -2.07
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation ("): 14.263
C/A sky separation (km): 51620.4
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
    
```

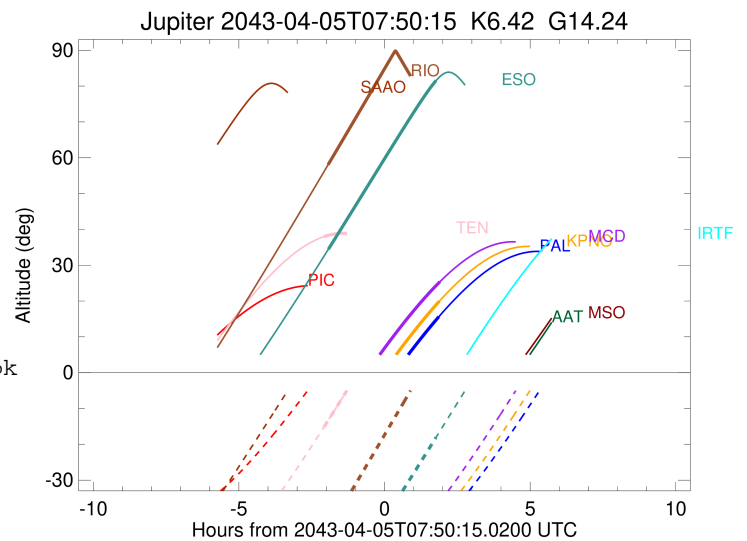
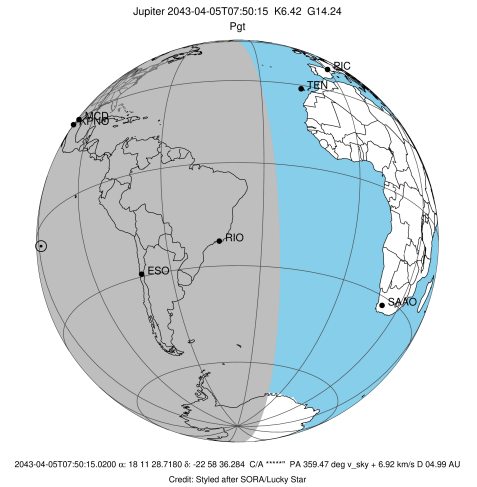


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-05T05:42:18.876	-29.61x	-40.43	71487.3	-48.94	-52.56
Jupiter	E	2043-04-05T09:42:19.365	15.63	-42.55	71488.1	-43.48	-47.20

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-05T07:40:22.920
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        : 4066624466355551744
2Mass ID (if available) : 18112871-2258363
ICRS Star Coord at Epoch: 18h 11m 28.71800s -22:58:36.28403s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 6.423
G magnitude           : 14.238
RP magnitude          : 12.610
BP magnitude          : 18.795
DUPflag              : 0
Distance (au)         : 4.990
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 6.92
Sun-Target sep (deg) : 102.19
Sun-Moon sep (deg)   : 43.30
B (ring opening deg) : -2.45
PA of pole (deg)     : -2.07
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 14.242
C/A sky separation (km) : 51544.5
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
    
```

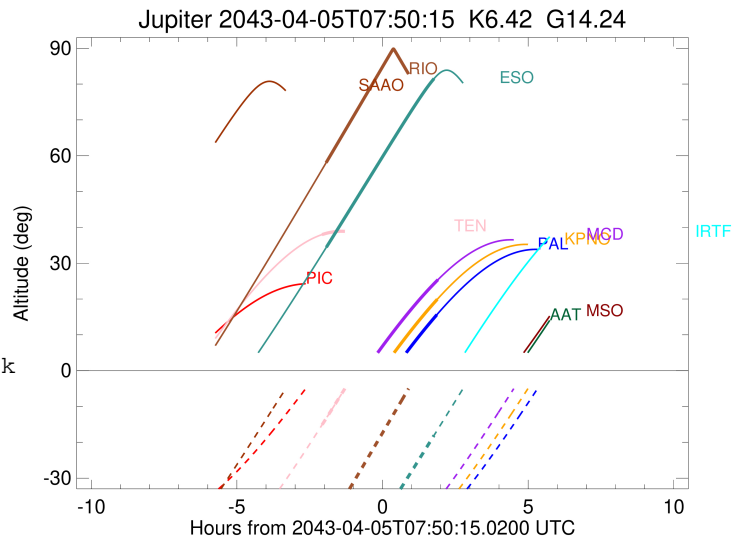
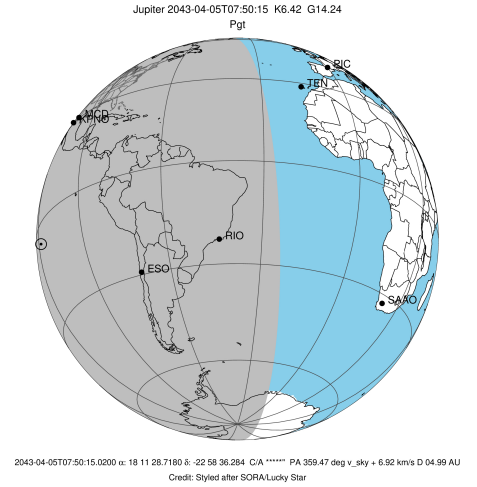


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-05T05:41:37.726	-25.13x	-44.31	71487.3	-48.88	-52.50
Jupiter	E	2043-04-05T09:43:06.723	19.92	-40.44	71488.1	-43.43	-47.14

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-05T07:40:39.720
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        : 4066624466355551744
2Mass ID (if available) : 18112871-2258363
ICRS Star Coord at Epoch: 18h 11m 28.71800s -22:58:36.28403s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 6.423
G magnitude           : 14.238
RP magnitude          : 12.610
BP magnitude          : 18.795
DUPflag              : 0
Distance (au)         : 4.990
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 6.92
Sun-Target sep (deg)  : 102.19
Sun-Moon sep (deg)   : 43.35
B (ring opening deg) : -2.45
PA of pole (deg)     : -2.07
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 14.197
C/A sky separation (km) : 51378.9
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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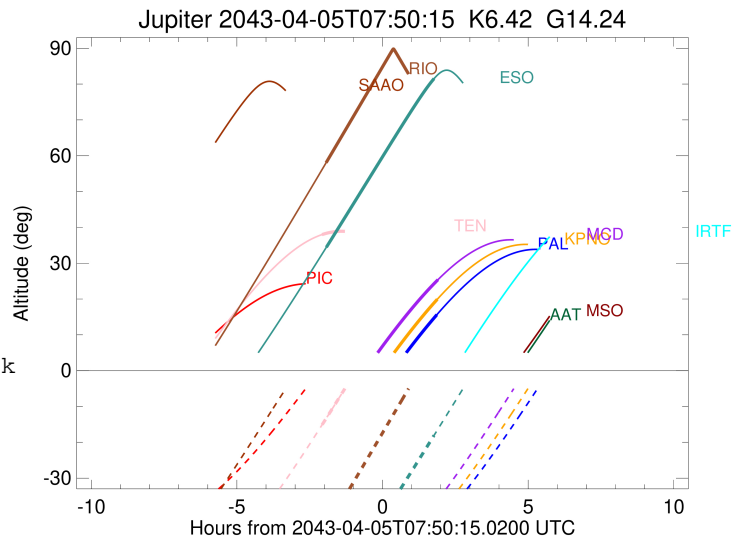
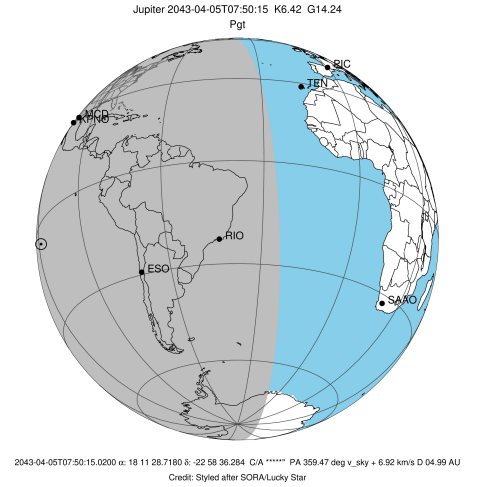


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-05T05:40:42.318	-18.72x	-48.95	71487.4	-48.70	-52.33
Jupiter	E	2043-04-05T09:44:36.073	25.40	-36.02	71488.1	-43.31	-47.03

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-05T07:54:17.340
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       : 4066624466355551744
2Mass ID (if available) : 18112871-2258363
ICRS Star Coord at Epoch: 18h 11m 28.71800s -22:58:36.28403s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 6.423
G magnitude           : 14.238
RP magnitude          : 12.610
BP magnitude          : 18.795
DUPflag              : 0
Distance (au)        : 4.990
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 6.92
Sun-Target sep (deg) : 102.19
Sun-Moon sep (deg)   : 42.89
B (ring opening deg) : -2.45
PA of pole (deg)     : -2.07
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 13.932
C/A sky separation (km) : 50421.3
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
    
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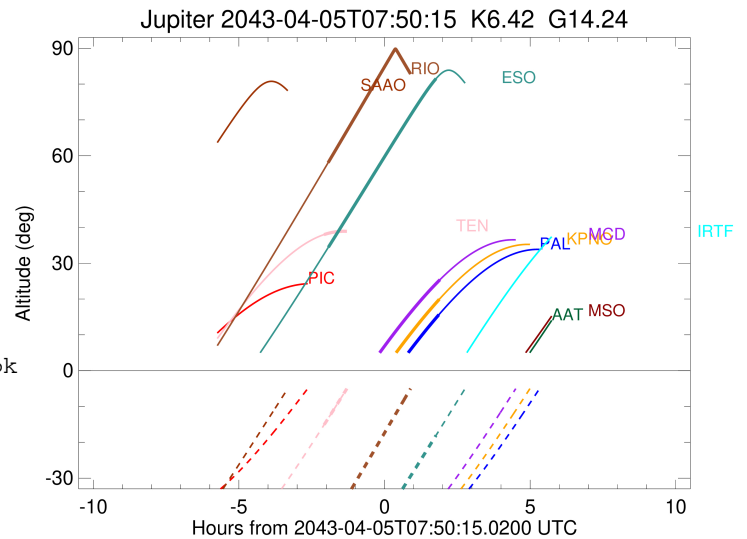
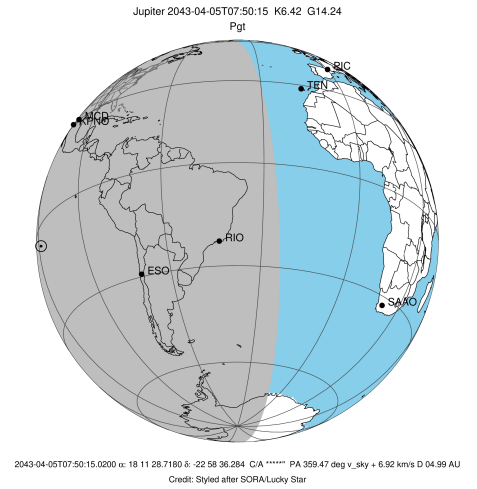


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-05T05:45:55.205	37.99	-15.09	71487.7	-46.15	-49.84
Jupiter	E	2043-04-05T10:01:59.591	16.99	40.68x	71488.0	-44.14	-47.85

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-05T07:49:00.960
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        : 4066624466355551744
2Mass ID (if available) : 18112871-2258363
ICRS Star Coord at Epoch: 18h 11m 28.71800s -22:58:36.28403s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 6.423
G magnitude           : 14.238
RP magnitude          : 12.610
BP magnitude          : 18.795
DUPflag              : 0
Distance (au)         : 4.990
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 6.92
Sun-Target sep (deg) : 102.19
Sun-Moon sep (deg)   : 43.41
B (ring opening deg) : -2.45
PA of pole (deg)     : -2.07
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 15.245
C/A sky separation (km) : 55170.8
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
    
```

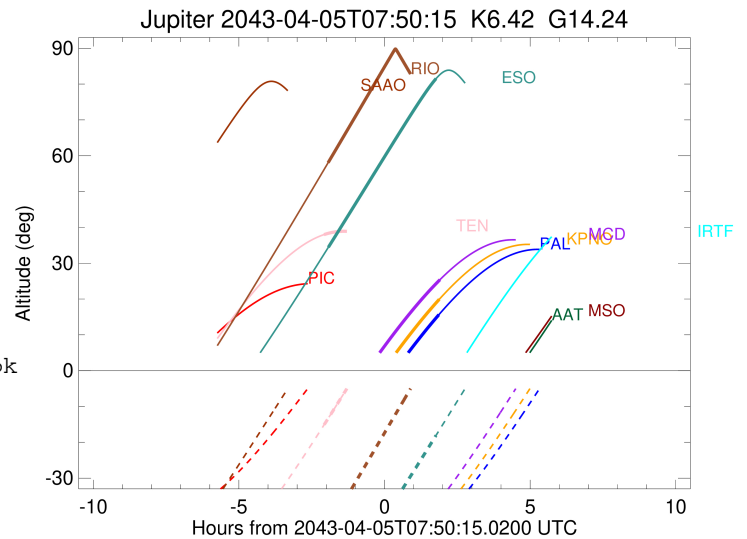
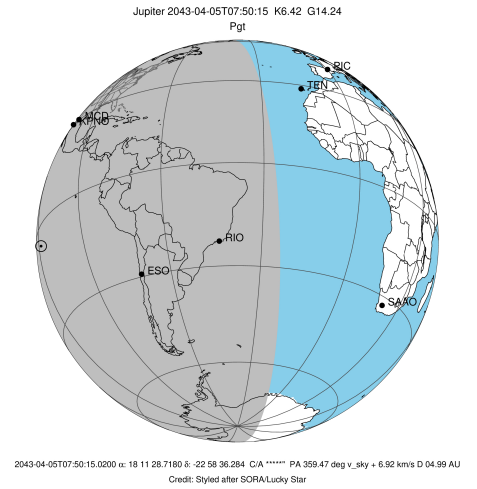


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-04-05T05:54:01.893	58.03	-43.92	71486.8	-52.44	-55.94
Jupiter	E	2043-04-05T09:45:02.318	68.71	8.93x	71487.3	-49.17	-52.78

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-04-05T07:44:20.750
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        : 4066624466355551744
2Mass ID (if available) : 18112871-2258363
ICRS Star Coord at Epoch: 18h 11m 28.71800s -22:58:36.28403s
RUWE (>1.4 is poor) : 1.01
K magnitude           : 6.423
G magnitude           : 14.238
RP magnitude          : 12.610
BP magnitude          : 18.795
DUPflag              : 0
Distance (au)         : 4.990
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 6.92
Sun-Target sep (deg)  : 102.19
Sun-Moon sep (deg)   : 43.58
B (ring opening deg) : -2.45
PA of pole (deg)     : -2.07
Pole direction: RA (deg): 268.05664
Dec (deg): 64.49732
C/A sky separation (") : 15.534
C/A sky separation (km) : 56217.2
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	2043-04-05T05:54:35.361	34.45	-61.78	71486.6	-54.30	-57.70
Jupiter	E	2043-04-05T09:36:24.454	81.50	-18.07	71487.2	-49.80	-53.39