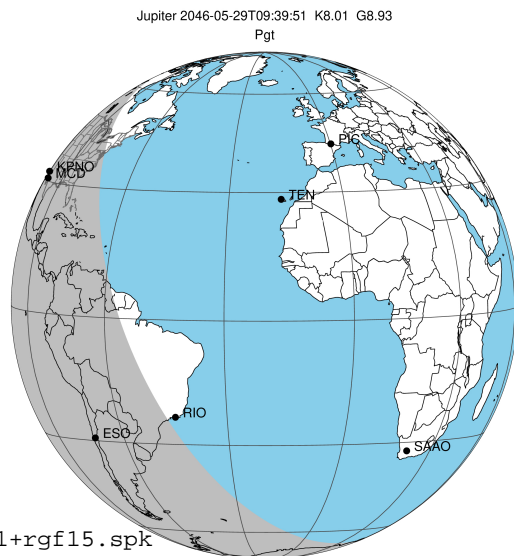


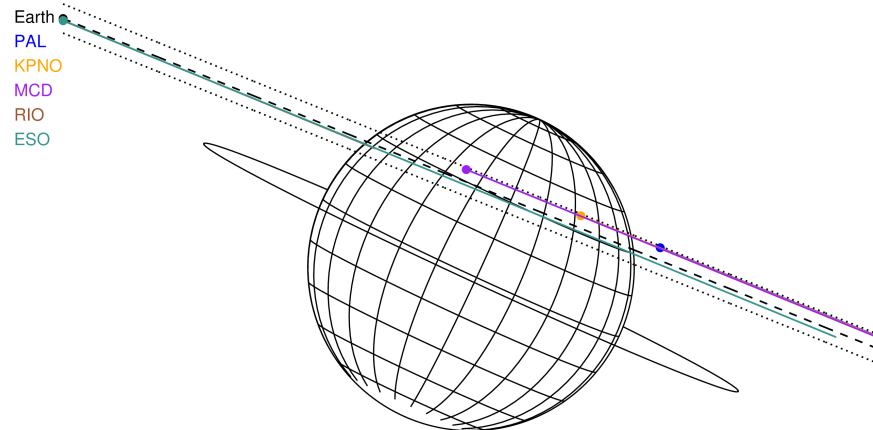
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2046-05-29T09:39:51.070  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 2551023592423593472  
 2Mass ID (if available) : 00425040+0320079

Jupiter 2046-05-29T09:39:51 K8.01 G8.93 Pgt

ICRS Star Coord at Epoch: 00h 42m 50.41666s +03:20:07.77520s  
 RUWE (>1.4 is poor) : 1.60  
 K magnitude : 8.007  
 G magnitude : 8.933  
 RP magnitude : 8.584  
 BP magnitude : 9.133  
 DUPflag : 0  
 Distance (au) : 5.449  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 30.02  
 Sun-Target sep (deg) : 56.42  
 Sun-Moon sep (deg) : 16.02  
 B (ring opening deg) : 2.39  
 PA of pole (deg) : -24.86  
 Pole direction: RA (deg): 268.05711  
 Dec (deg): 64.49722  
 C/A sky separation (") : 8.590  
 C/A sky separation (km) : 33946.4  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk  
 URKALLv1.spk  
 naif0012.tls  
 nep097.bsp  
 nep101.bsp  
 sat4401.bsp

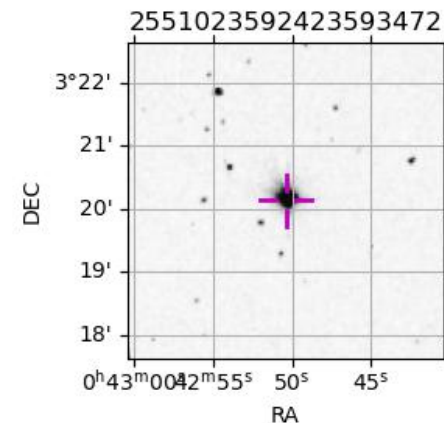


2046-05-29T09:39:51.0700 ex: 00 42 50.41667 s: +03 20 07.775 C/A 8.595" PA 157.94 deg v\_sky +30.02 km/s D 05.45 AU  
 Credit: Styled after SORA/Lucky Star



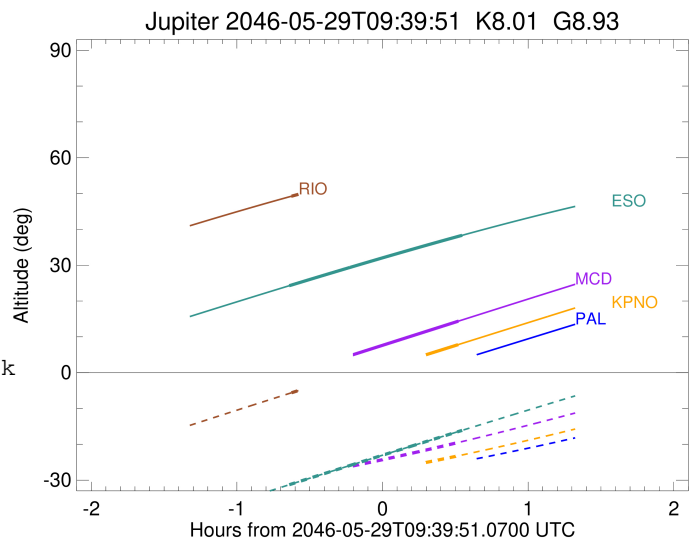
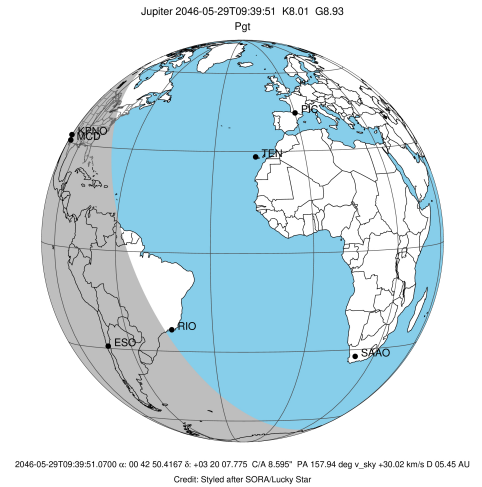
Observable events with sun below -5 deg and altitude above 5 deg

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			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8			Pnn
KPNO	Kitt Peak Natl Obs	32.0	248.4	+	MAY 29 10:11 - MAY 29 10:11	Pne
MCD	McDonald Obs. 2.7m	30.7	256.0	+	MAY 29 10:11 - MAY 29 10:11	Pne
TEN	Teide Obs./Tenerife	28.3	343.5			Pnn
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	+	MAY 29 09:02 - MAY 29 09:02	Pin
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	MAY 29 09:01 - MAY 29 10:12	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              : 2046-05-29T09:37:46.600
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         : 2551023592423593472
2Mass ID (if available) : 00425040+0320079
ICRS Star Coord at Epoch: 00h 42m 50.41666s +03:20:07.77520s
RUWE (>1.4 is poor)  : 1.60
K magnitude             : 8.007
G magnitude             : 8.933
RP magnitude           : 8.584
BP magnitude           : 9.133
DUPflag                : 0
Distance (au)          : 5.449
f0 (km)                : 0.00
g0 (km)                : 0.00
skyplane vel. (km/s)   : 30.02
Sun-Target sep (deg)   : 56.42
Sun-Moon sep (deg)     : 15.33
B (ring opening deg)   : 2.39
PA of pole (deg)       : -24.86
Pole direction: RA (deg): 268.05711
Dec (deg): 64.49722
C/A sky separation (") : 9.892
C/A sky separation (km) : 39091.1
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
    
```

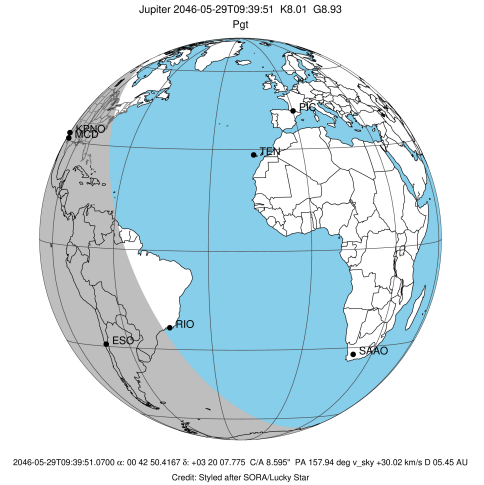


x: target alt < 5.0 deg or sun > -5.0 deg

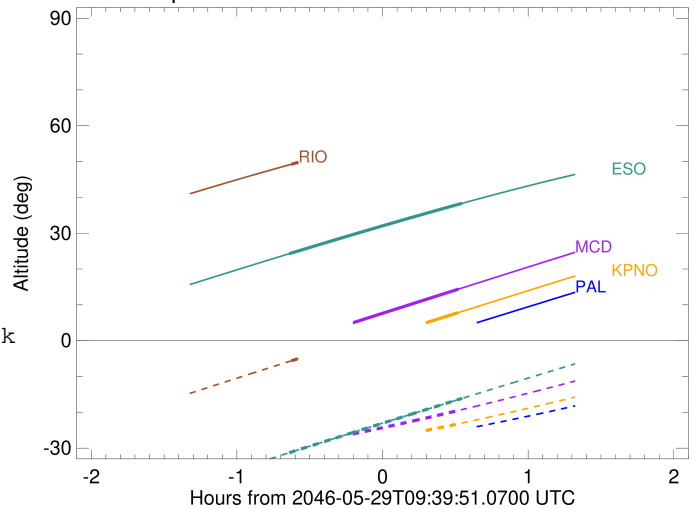
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-05-29T09:04:35.881	-6.28x	-31.35	71490.0	30.33	33.72
Jupiter	E	2046-05-29T10:11:01.450	7.82	-23.22	71489.3	35.86	39.48

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-05-29T09:37:44.030
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     : 2551023592423593472
2Mass ID (if available) : 00425040+0320079
ICRS Star Coord at Epoch: 00h 42m 50.41666s +03:20:07.77520s
RUWE (>1.4 is poor) : 1.60
K magnitude        : 8.007
G magnitude        : 8.933
RP magnitude       : 8.584
BP magnitude       : 9.133
DUPflag           : 0
Distance (au)     : 5.449
f0 (km)           : 0.00
g0 (km)           : 0.00
skyplane vel. (km/s) : 30.02
Sun-Target sep (deg) : 56.42
Sun-Moon sep (deg) : 15.35
B (ring opening deg) : 2.39
PA of pole (deg)  : -24.86
Pole direction: RA (deg): 268.05711
Dec (deg): 64.49722
C/A sky separation (") : 9.857
C/A sky separation (km) : 38952.3
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
    
```



Jupiter 2046-05-29T09:39:51 K8.01 G8.93

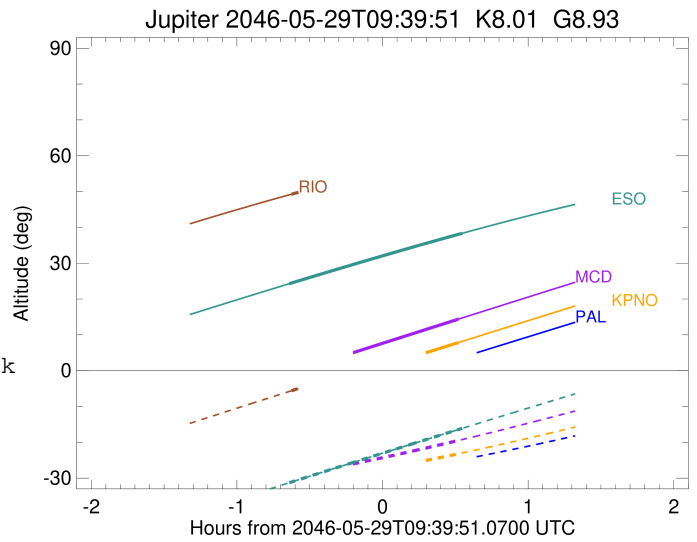
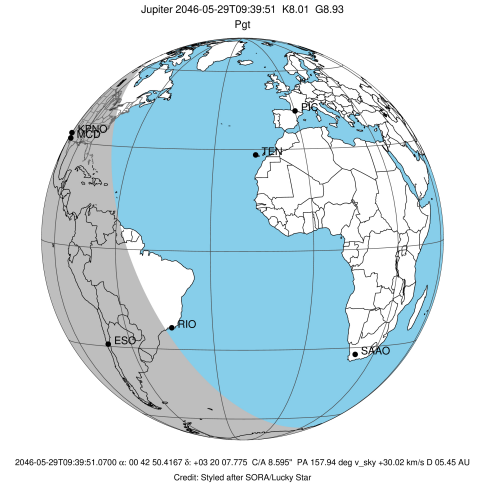


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-05-29T09:04:27.099	-0.00x	-29.08	71490.0	30.24	33.62
Jupiter	E	2046-05-29T10:11:05.146	14.37	-19.49	71489.3	35.69	39.31

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-05-29T09:38:11.270
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      : 2551023592423593472
2Mass ID (if available) : 00425040+0320079
ICRS Star Coord at Epoch: 00h 42m 50.41666s +03:20:07.77520s
RUWE (>1.4 is poor) : 1.60
K magnitude          : 8.007
G magnitude          : 8.933
RP magnitude         : 8.584
BP magnitude         : 9.133
DUPflag             : 0
Distance (au)       : 5.449
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 30.02
Sun-Target sep (deg) : 56.42
Sun-Moon sep (deg)  : 15.90
B (ring opening deg) : 2.39
PA of pole (deg)    : -24.86
Pole direction: RA (deg): 268.05711
Dec (deg): 64.49722
C/A sky separation (" ) : 8.150
C/A sky separation (km) : 32206.8
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
    
```

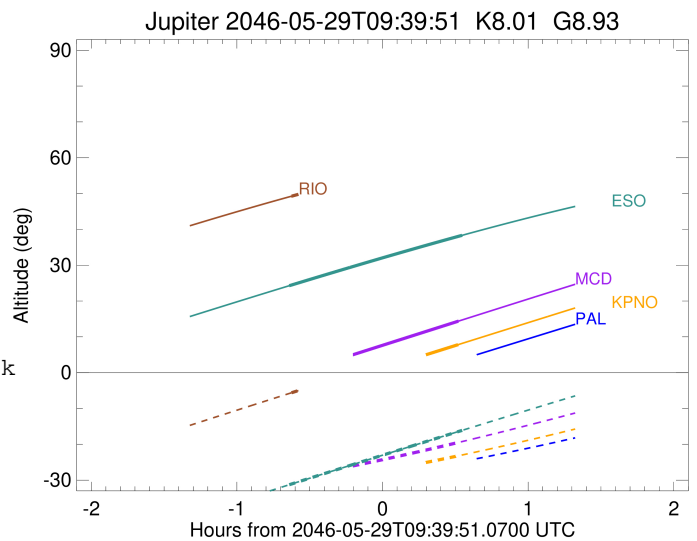
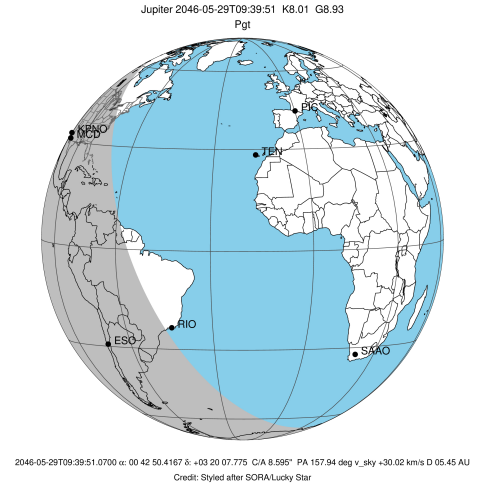


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2046-05-29T09:02:20.887	49.25	-5.61	71490.7	24.25	27.21
Jupiter	E	2046-05-29T10:14:04.193	60.37	9.41x	71490.1	29.24	32.57

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2046-05-29T09:37:00.790
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      : 2551023592423593472
2Mass ID (if available) : 00425040+0320079
ICRS Star Coord at Epoch: 00h 42m 50.41666s +03:20:07.77520s
RUWE (>1.4 is poor) : 1.60
K magnitude          : 8.007
G magnitude          : 8.933
RP magnitude         : 8.584
BP magnitude         : 9.133
DUPflag             : 0
Distance (au)       : 5.449
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 30.02
Sun-Target sep (deg) : 56.42
Sun-Moon sep (deg)  : 15.54
B (ring opening deg) : 2.39
PA of pole (deg)    : -24.86
Pole direction: RA (deg): 268.05711
Dec (deg): 64.49722
C/A sky separation (" ) : 8.221
C/A sky separation (km) : 32488.0
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	2046-05-29T09:01:25.174	24.27	-31.28	71490.7	24.41	27.39
Jupiter	E	2046-05-29T10:12:40.408	38.34	-16.10	71490.1	29.57	32.91