

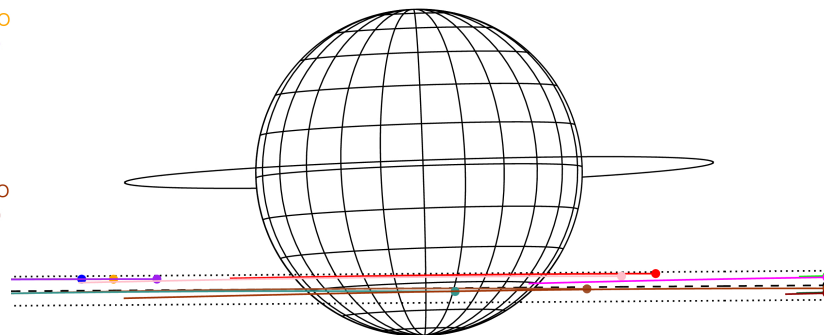
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-07-27T22:48:53.810
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116696402084465792
 2Mass ID (if available) : 17335637-2303241

Jupiter 2043-07-27T22:48:53 K9.42 G14.27 Pgt

ICRS Star Coord at Epoch: 17h 33m 56.37023s -23°03:24.22224s
 RUWE (>1.4 is poor) : 0.94
 K magnitude : 9.419
 G magnitude : 14.267
 RP magnitude : 12.990
 BP magnitude : 15.901
 DUPflag : 0
 Distance (au) : 4.437
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -9.55
 Sun-Target sep (deg) : 139.80
 Sun-Moon sep (deg) : 111.97
 B (ring opening deg) : -2.37
 PA of pole (deg) : 1.97
 Pole direction: RA (deg): 268.05671
 Dec (deg): 64.49731
 C/A sky separation (") : 15.766
 C/A sky separation (km) : 50731.8
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



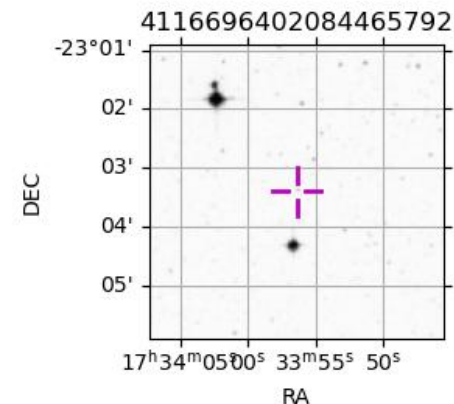
Earth
 PIC
 PAL
 PMO
 KPNO
 MCD
 TEN
 KAV
 RIO
 ESO
 AAT
 SAAO
 MSO



2043-07-27T22:48:53.8100 α: 17 33 56.3702 δ: -23 03 24.222 C/A ***** PA 0.41 deg v_sky -9.55 km/s D 04.44 AU
 Credit: Styled after SORA/Lucky Star

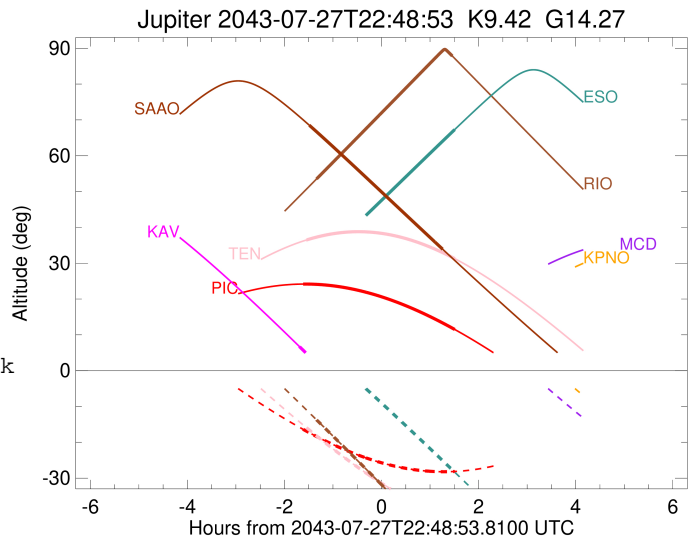
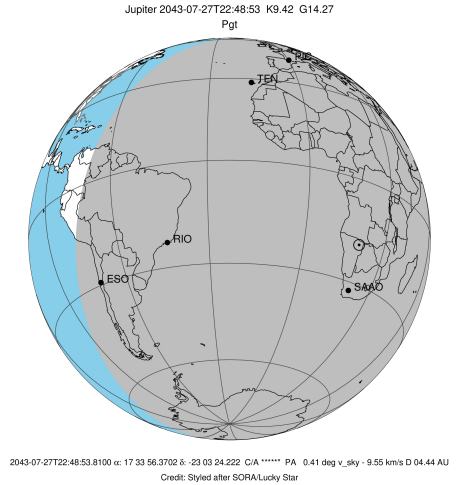
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+ +	JUL 27 21:12 - JUL 28 00:19	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	+ +	JUL 27 21:16 - JUL 28 00:19	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+	JUL 27 21:07 - JUL 27 21:07	Pin
RIO	Rio de Janeiro	-22.9	316.8	+ +	JUL 27 21:28 - JUL 28 00:16	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	JUL 28 00:19 - JUL 28 00:19	Pne
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	JUL 27 21:19 - JUL 28 00:04	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-27T22:45:20.610
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       : 4116696402084465792
2Mass ID (if available) : 17335637-2303241
ICRS Star Coord at Epoch: 17h 33m 56.37023s -23:03:24.22224s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.419
G magnitude           : 14.267
RP magnitude         : 12.990
BP magnitude         : 15.901
DUPflag              : 0
Distance (au)        : 4.437
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -9.55
Sun-Target sep (deg) : 139.80
Sun-Moon sep (deg)  : 112.40
B (ring opening deg) : -2.37
PA of pole (deg)    : 1.97
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (" ) : 14.003
C/A sky separation (km) : 45059.1
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
    
```

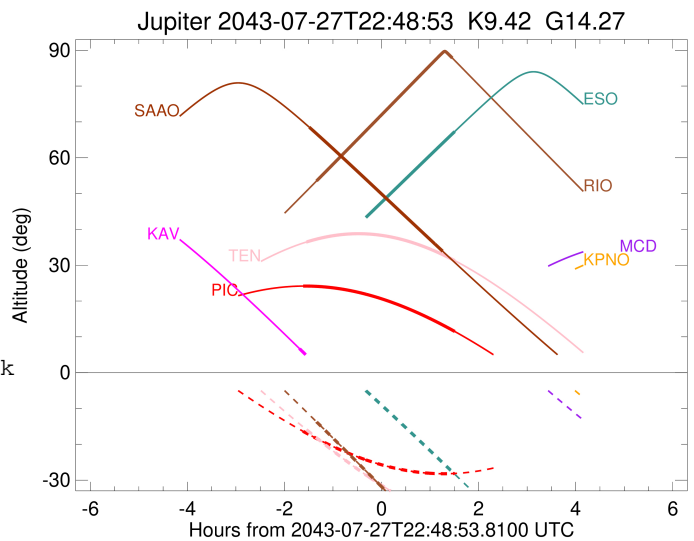
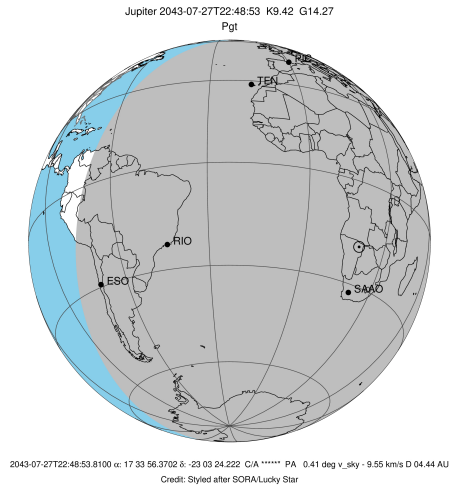


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-27T21:12:03.612	24.17	-16.38	71488.7	-40.44	-44.15
Jupiter	E	2043-07-28T00:19:20.921	11.51	-28.14	71489.1	-37.91	-41.59

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-27T22:47:36.910
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        : 4116696402084465792
2Mass ID (if available) : 17335637-2303241
ICRS Star Coord at Epoch: 17h 33m 56.37023s -23:03:24.22224s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.419
G magnitude           : 14.267
RP magnitude          : 12.990
BP magnitude          : 15.901
DUPflag              : 0
Distance (au)         : 4.437
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -9.55
Sun-Target sep (deg)  : 139.80
Sun-Moon sep (deg)    : 112.57
B (ring opening deg) : -2.37
PA of pole (deg)      : 1.97
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 14.226
C/A sky separation (km) : 45775.5
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
    
```

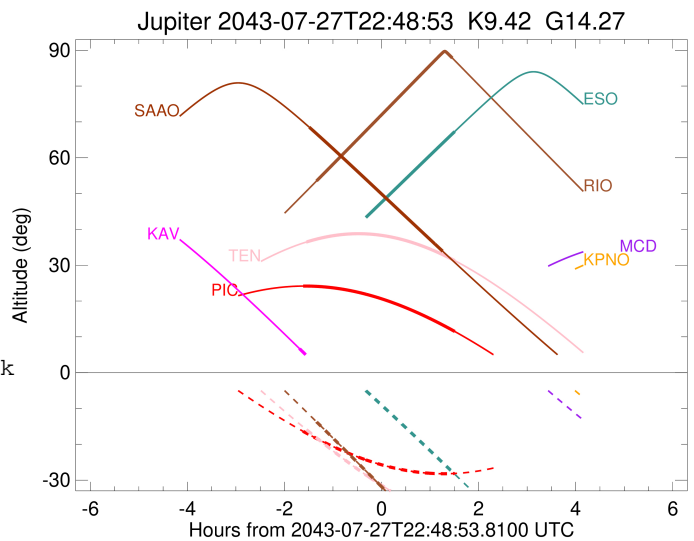
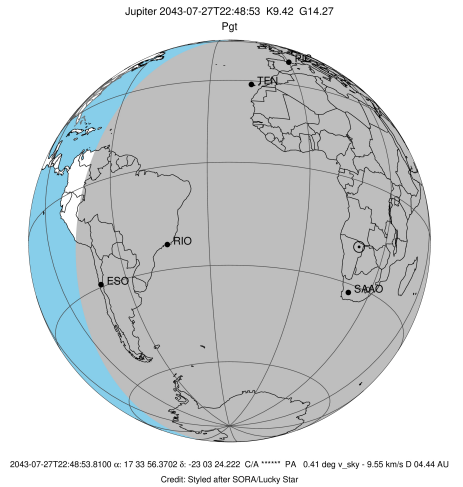


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-27T21:16:02.590	36.47	-15.89	71488.6	-41.41	-45.12
Jupiter	E	2043-07-28T00:19:33.365	31.25	-41.12	71489.0	-38.50	-42.19

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-27T22:36:34.040
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : KAV
Location             : Kavalur Observatory
Latitude (deg)       : 12.57556
E. Longitude (deg)   : 78.83167
Altitude (km)        : 0.722
Gaia source ID       : 4116696402084465792
2Mass ID (if available) : 17335637-2303241
ICRS Star Coord at Epoch: 17h 33m 56.37023s -23:03:24.22224s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.419
G magnitude           : 14.267
RP magnitude          : 12.990
BP magnitude          : 15.901
DUPflag              : 0
Distance (au)         : 4.437
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -9.55
Sun-Target sep (deg) : 139.80
Sun-Moon sep (deg)   : 112.07
B (ring opening deg) : -2.37
PA of pole (deg)     : 1.97
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation (") : 15.493
C/A sky separation (km) : 49851.5
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
    
```

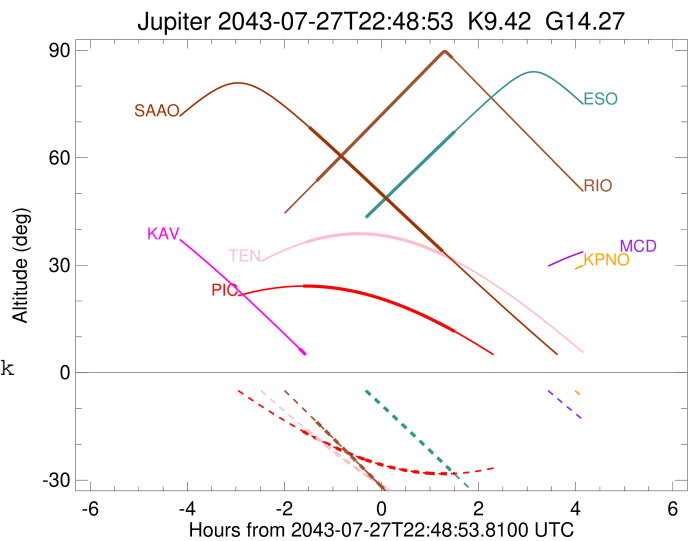
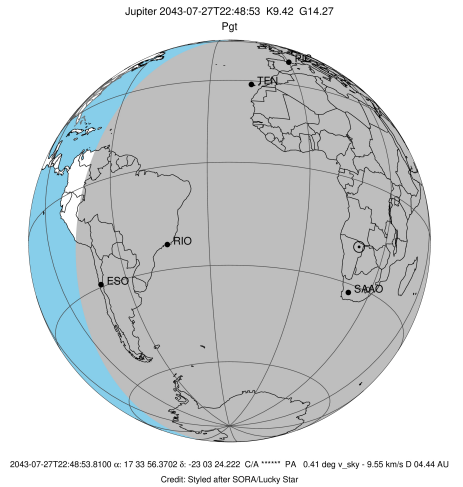


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-27T21:07:26.054	6.73	-43.92	71488.2	-44.66	-48.37
Jupiter	E	2043-07-28T00:07:37.983	-34.28x	-5.95	71488.3	-43.62	-47.34

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-27T22:52:40.140
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        : 4116696402084465792
2Mass ID (if available) : 17335637-2303241
ICRS Star Coord at Epoch: 17h 33m 56.37023s -23:03:24.22224s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.419
G magnitude           : 14.267
RP magnitude          : 12.990
BP magnitude          : 15.901
DUPflag              : 0
Distance (au)         : 4.437
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -9.55
Sun-Target sep (deg) : 139.80
Sun-Moon sep (deg)   : 112.71
B (ring opening deg) : -2.37
PA of pole (deg)     : 1.97
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation ("): 15.794
C/A sky separation (km): 50822.3
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
    
```

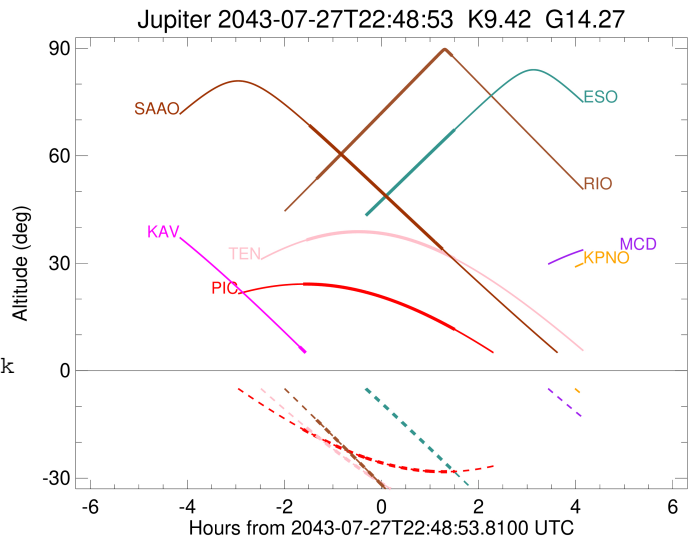
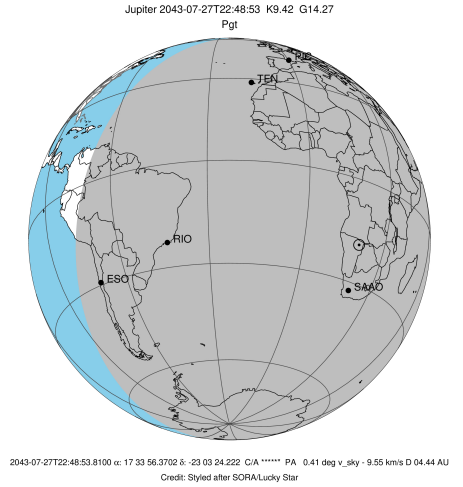


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-27T21:28:32.336	53.50	-13.71	71487.8	-47.28	-50.95
Jupiter	E	2043-07-28T00:16:31.092	87.80	-51.90	71488.3	-43.56	-47.28

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-07-27T22:56:49.860
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       : 4116696402084465792
2Mass ID (if available) : 17335637-2303241
ICRS Star Coord at Epoch: 17h 33m 56.37023s -23:03:24.22224s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.419
G magnitude           : 14.267
RP magnitude          : 12.990
BP magnitude          : 15.901
DUPflag              : 0
Distance (au)        : 4.437
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -9.55
Sun-Target sep (deg) : 139.80
Sun-Moon sep (deg)   : 112.40
B (ring opening deg) : -2.37
PA of pole (deg)     : 1.97
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation ("): 16.178
C/A sky separation (km): 52056.7
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
    
```

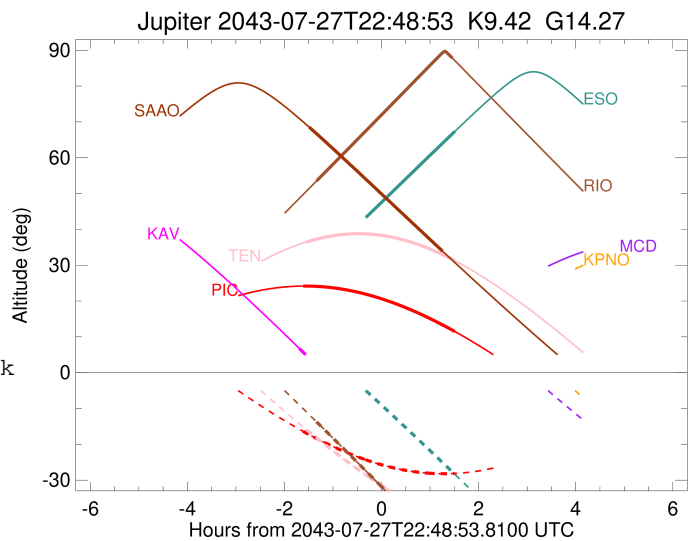
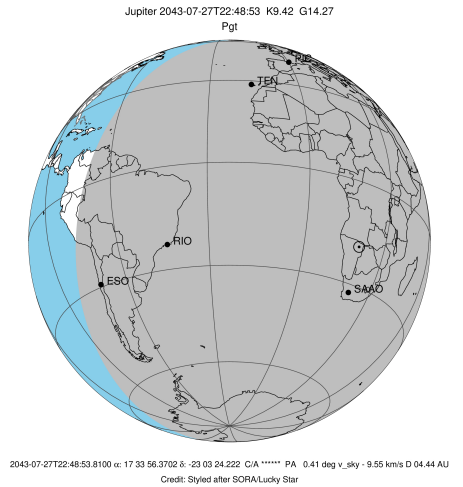


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-07-27T21:33:33.770	31.16	6.29x	71487.6	-49.00	-52.62
Jupiter	E	2043-07-28T00:19:20.814	67.29	-28.33	71488.2	-44.60	-48.31

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-07-27T22:41:33.700
Event type          : Pgt
                    : Jupiter occs: geocentric, topocentric
                    : Not a ringed target
Observer code       : SAAO
Location            : So. Afr. Astro. Obs. (Sutherland)
Latitude (deg)      : -32.37953
E. Longitude (deg)  : 20.81070
Altitude (km)       : 1.768
Gaia source ID      : 4116696402084465792
2Mass ID (if available) : 17335637-2303241
ICRS Star Coord at Epoch: 17h 33m 56.37023s -23:03:24.22224s
RUWE (>1.4 is poor) : 0.94
K magnitude          : 9.419
G magnitude          : 14.267
RP magnitude         : 12.990
BP magnitude         : 15.901
DUPflag             : 0
Distance (au)       : 4.437
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -9.55
Sun-Target sep (deg) : 139.80
Sun-Moon sep (deg)  : 112.89
B (ring opening deg) : -2.37
PA of pole (deg)    : 1.97
Pole direction: RA (deg): 268.05671
Dec (deg): 64.49731
C/A sky separation ("): 16.251
C/A sky separation (km): 52292.9
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
    
```



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	2043-07-27T21:19:38.800	68.50	-67.10	71487.7	-48.04	-51.68
Jupiter	E	2043-07-28T00:04:27.383	33.91	-67.53	71488.0	-46.12	-49.80