

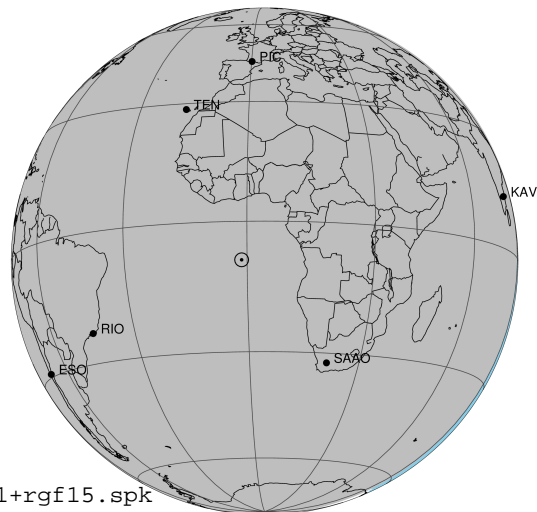
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2041-04-12T00:05:44.390
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 3618139553196283136
 2Mass ID (if available) : 13420103-0855153

Jupiter 2041-04-12T00:05:44 K9.93 G12.06 Pgt

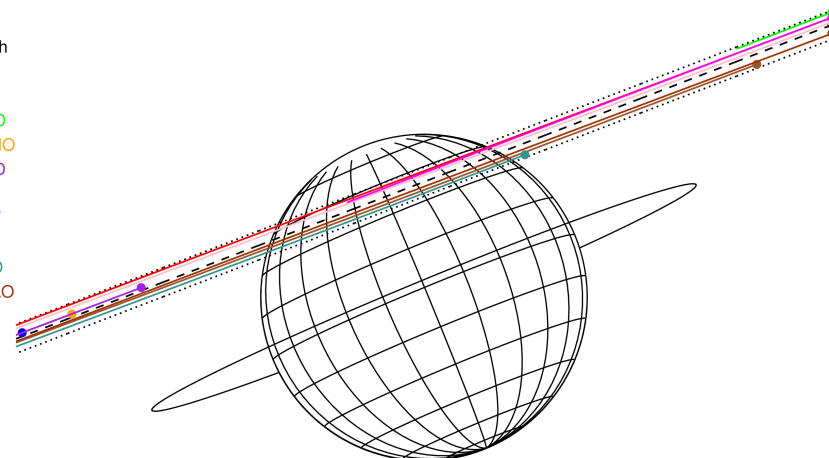
ICRS Star Coord at Epoch: 13h 42m 00.98614s -08:55:15.78682s

RUWE (>1.4 is poor) : 1.10
 K magnitude : 9.933
 G magnitude : 12.064
 RP magnitude : 11.412
 BP magnitude : 12.557
 DUPflag : 0
 Distance (au) : 4.449
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -17.09
 Sun-Target sep (deg) : 174.79
 Sun-Moon sep (deg) : 55.62
 B (ring opening deg) : -3.22
 PA of pole (deg) : 22.50
 Pole direction: RA (deg): 268.05626
 Dec (deg): 64.49721
 C/A sky separation (") : 14.655
 C/A sky separation (km) : 47287.9
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2041-04-12T00:05:44 K9.93 G12.06
 Pgt



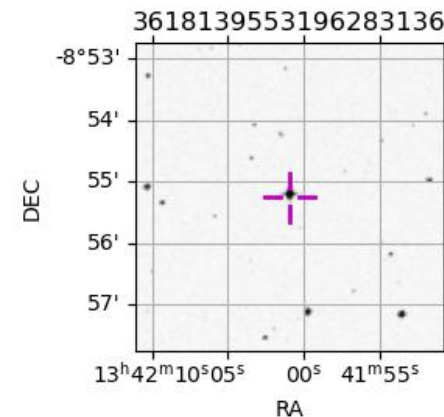
Earth
 PIC
 PAL
 PMO
 KPNO
 MCD
 TEN
 KAV
 RIO
 ESO
 SAAO



2041-04-12T00:05:44.3900 a: 13 42 00.9861 s: -08 55 15.787 C/A ***** PA 201.05 deg v_sky -17.09 km/s D 04.45 AU
 Credit: Styled after SORA/Lucky Star

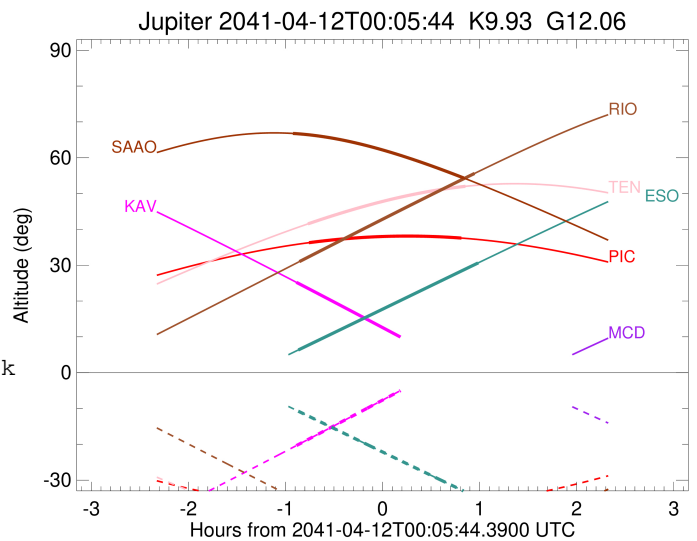
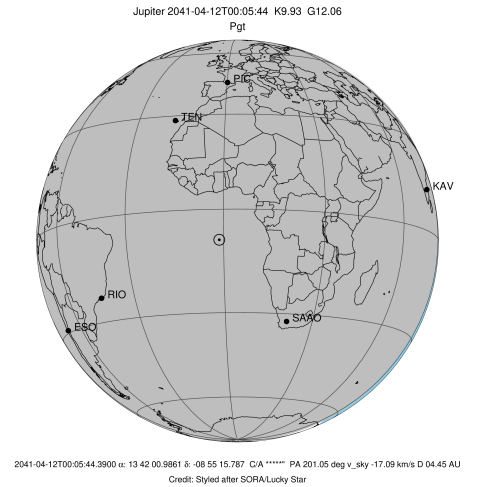
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+ +	APR 11 23:20 - APR 12 00:54	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	+ +	APR 11 23:19 - APR 12 00:57	Pie
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+	APR 11 23:12 - APR 11 23:12	Pin
RIO	Rio de Janeiro	-22.9	316.8	+ +	APR 11 23:14 - APR 12 01:02	Pie
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+ +	APR 11 23:13 - APR 12 01:04	Pie
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+ +	APR 11 23:10 - APR 12 00:55	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2041-04-12T00:07:22.910
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       : 3618139553196283136
2Mass ID (if available) : 13420103-0855153
ICRS Star Coord at Epoch: 13h 42m 00.98614s -08:55:15.78682s
RUWE (>1.4 is poor) : 1.10
K magnitude           : 9.933
G magnitude           : 12.064
RP magnitude          : 11.412
BP magnitude          : 12.557
DUPflag              : 0
Distance (au)        : 4.449
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.09
Sun-Target sep (deg) : 174.79
Sun-Moon sep (deg)   : 55.89
B (ring opening deg) : -3.22
PA of pole (deg)     : 22.50
Pole direction: RA (deg): 268.05626
Dec (deg): 64.49721
C/A sky separation (") : 16.074
C/A sky separation (km) : 51867.5
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
    
```

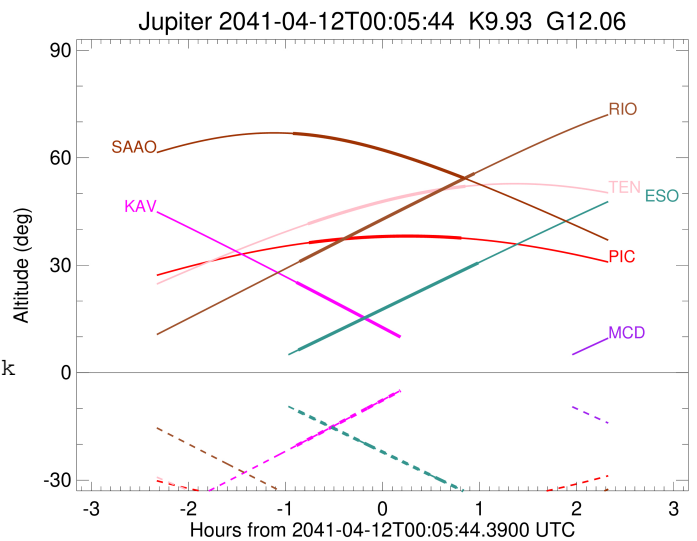
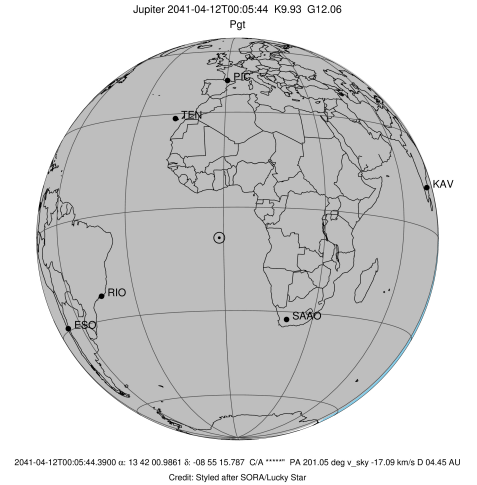


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-11T23:20:14.500	36.28	-37.72	71485.0	44.55	48.26
Jupiter	E	2041-04-12T00:54:30.042	37.57	-37.03	71484.1	48.26	51.90

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2041-04-12T00:08:21.760
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        : 3618139553196283136
2Mass ID (if available) : 13420103-0855153
ICRS Star Coord at Epoch: 13h 42m 00.98614s -08:55:15.78682s
RUWE (>1.4 is poor)  : 1.10
K magnitude           : 9.933
G magnitude           : 12.064
RP magnitude          : 11.412
BP magnitude          : 12.557
DUPflag              : 0
Distance (au)         : 4.449
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -17.09
Sun-Target sep (deg)  : 174.79
Sun-Moon sep (deg)    : 55.90
B (ring opening deg)  : -3.22
PA of pole (deg)      : 22.50
Pole direction: RA (deg): 268.05626
Dec (deg): 64.49721
C/A sky separation (") : 15.546
C/A sky separation (km) : 50162.6
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
    
```

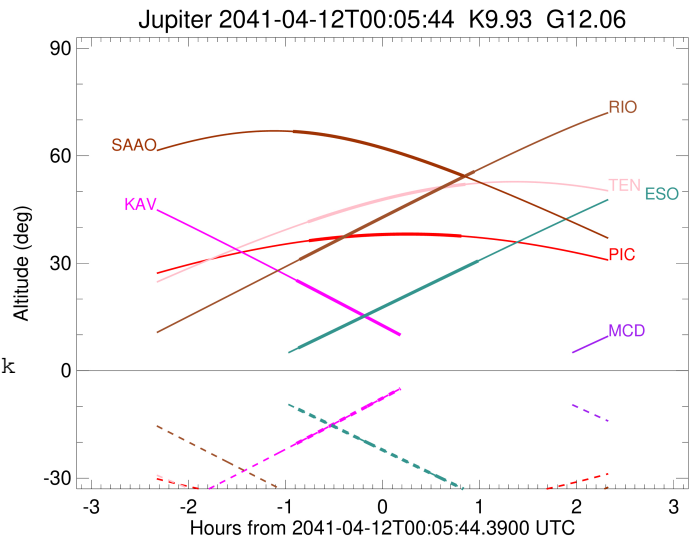
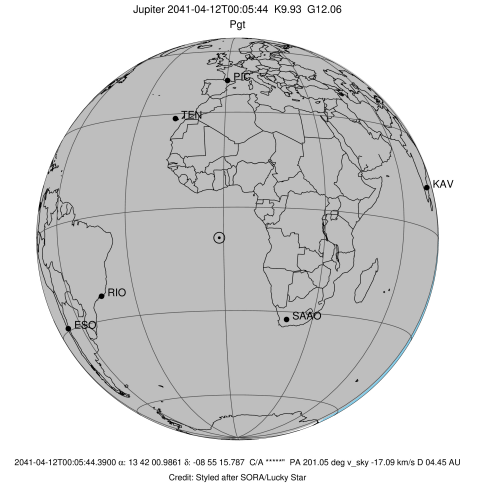


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-11T23:19:37.957	41.53	-44.96	71485.5	42.51	46.23
Jupiter	E	2041-04-12T00:57:00.231	52.01	-53.04	71484.6	46.44	50.12

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2041-04-12T00:00:55.440
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      : 3618139553196283136
2Mass ID (if available) : 13420103-0855153
ICRS Star Coord at Epoch: 13h 42m 00.98614s -08:55:15.78682s
RUWE (>1.4 is poor) : 1.10
K magnitude          : 9.933
G magnitude          : 12.064
RP magnitude         : 11.412
BP magnitude         : 12.557
DUPflag             : 0
Distance (au)       : 4.449
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.09
Sun-Target sep (deg) : 174.79
Sun-Moon sep (deg)  : 56.16
B (ring opening deg) : -3.22
PA of pole (deg)    : 22.50
Pole direction: RA (deg): 268.05626
Dec (deg): 64.49721
C/A sky separation (") : 15.791
C/A sky separation (km) : 50956.1
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
    
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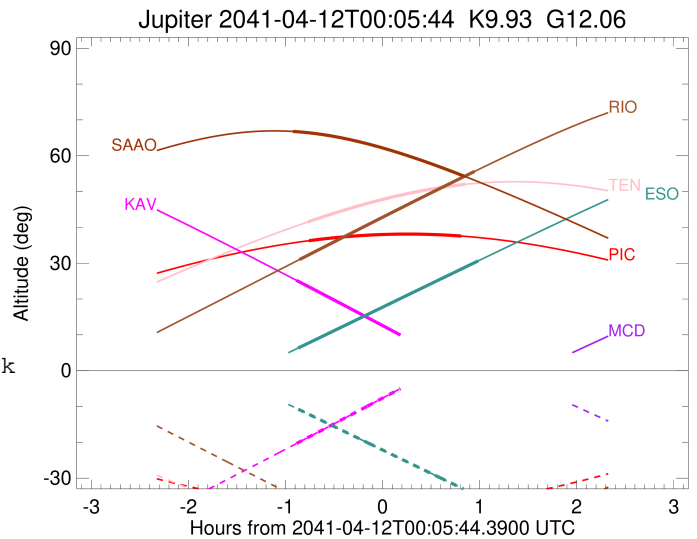
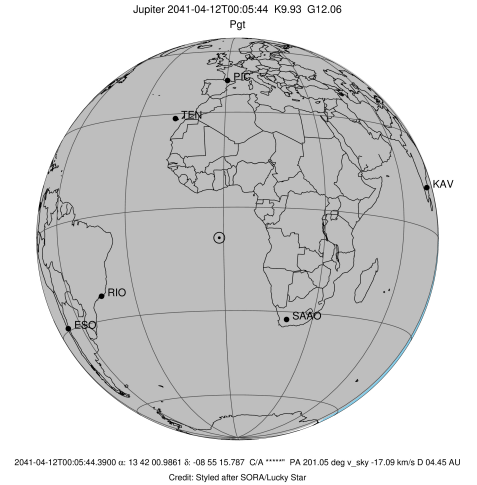


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-11T23:12:29.215	25.22	-20.36	71485.2	43.92	47.64
Jupiter	E	2041-04-12T00:49:35.656	2.06x	2.89x	71484.5	46.70	50.38

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2041-04-12T00:08:37.480
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       : 3618139553196283136
2Mass ID (if available) : 13420103-0855153
ICRS Star Coord at Epoch: 13h 42m 00.98614s -08:55:15.78682s
RUWE (>1.4 is poor) : 1.10
K magnitude           : 9.933
G magnitude           : 12.064
RP magnitude          : 11.412
BP magnitude          : 12.557
DUPflag              : 0
Distance (au)        : 4.449
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.09
Sun-Target sep (deg) : 174.79
Sun-Moon sep (deg)   : 55.89
B (ring opening deg) : -3.22
PA of pole (deg)     : 22.50
Pole direction: RA (deg): 268.05626
Dec (deg): 64.49721
C/A sky separation (") : 13.664
C/A sky separation (km) : 44090.2
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
    
```

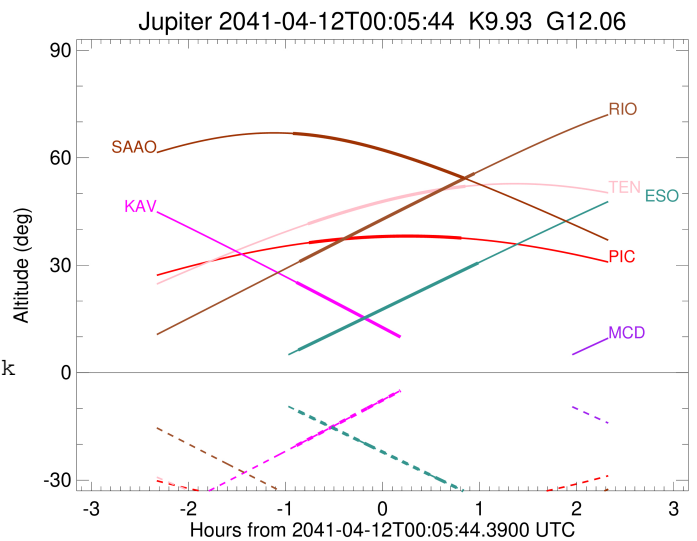
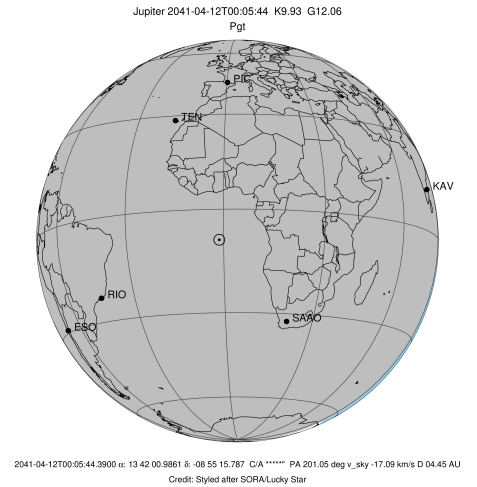


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-11T23:14:26.976	31.01	-35.74	71487.1	36.09	39.72
Jupiter	E	2041-04-12T01:02:34.482	55.60	-59.93	71486.2	39.98	43.69

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2041-04-12T00:09:23.640
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       : 3618139553196283136
2Mass ID (if available) : 13420103-0855153
ICRS Star Coord at Epoch: 13h 42m 00.98614s -08:55:15.78682s
RUWE (>1.4 is poor) : 1.10
K magnitude           : 9.933
G magnitude           : 12.064
RP magnitude          : 11.412
BP magnitude          : 12.557
DUPflag              : 0
Distance (au)        : 4.449
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -17.09
Sun-Target sep (deg) : 174.79
Sun-Moon sep (deg)   : 55.56
B (ring opening deg) : -3.22
PA of pole (deg)     : 22.50
Pole direction: RA (deg): 268.05626
Dec (deg): 64.49721
C/A sky separation (") : 13.247
C/A sky separation (km) : 42746.8
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
    
```

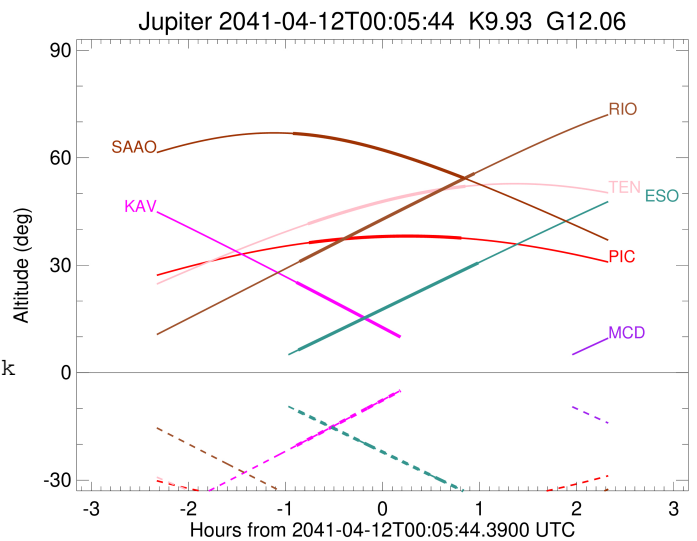
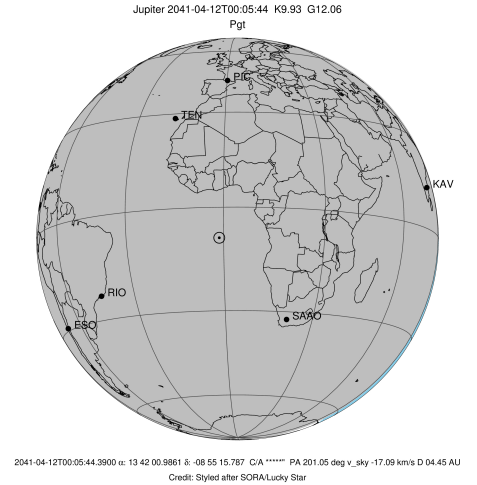


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2041-04-11T23:13:39.524	6.33	-10.75	71487.4	34.93	38.53
Jupiter	E	2041-04-12T01:04:50.210	30.63	-34.96	71486.5	38.48	42.17

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2041-04-12T00:03:11.270
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        : 3618139553196283136
2Mass ID (if available) : 13420103-0855153
ICRS Star Coord at Epoch: 13h 42m 00.98614s -08:55:15.78682s
RUWE (>1.4 is poor) : 1.10
K magnitude           : 9.933
G magnitude           : 12.064
RP magnitude          : 11.412
BP magnitude          : 12.557
DUPflag              : 0
Distance (au)         : 4.449
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : -17.09
Sun-Target sep (deg)  : 174.79
Sun-Moon sep (deg)    : 56.48
B (ring opening deg) : -3.22
PA of pole (deg)      : 22.50
Pole direction: RA (deg): 268.05626
Dec (deg): 64.49721
C/A sky separation (") : 14.088
C/A sky separation (km) : 45460.5
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	2041-04-11T23:10:28.241	66.77	-65.31	71486.8	37.54	41.21
Jupiter	E	2041-04-12T00:55:57.665	54.34	-50.30	71485.9	41.22	44.93