

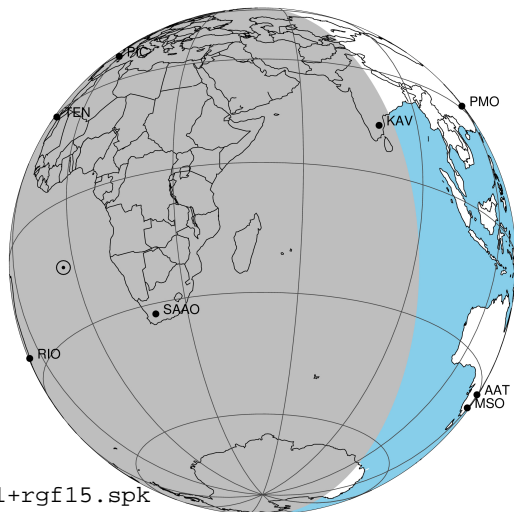
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-05-02T00:12:18.910
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4066622168613520256
 2Mass ID (if available) : 18120076-2259323

Jupiter 2043-05-02T00:12:18 K8.08 G13.37 Pgt

ICRS Star Coord at Epoch: 18h 12m 00.76290s -22:59:32.44137s

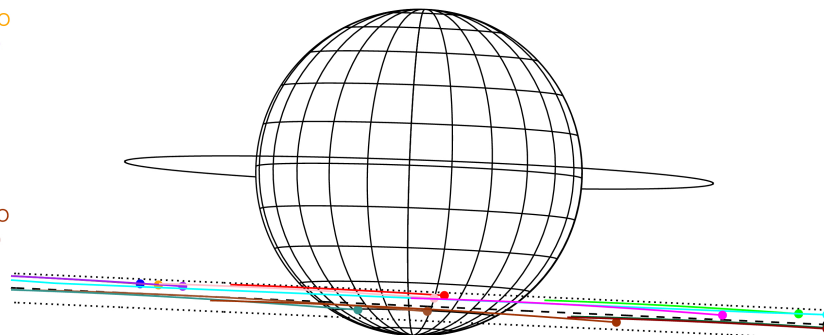
RUWE (>1.4 is poor) : 0.95
 K magnitude : 8.082
 G magnitude : 13.369
 RP magnitude : 12.072
 BP magnitude : 15.186
 DUPflag : 0
 Distance (au) : 4.601
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : -5.12
 Sun-Target sep (deg) : 128.15
 Sun-Moon sep (deg) : 34.13
 B (ring opening deg) : -2.43
 PA of pole (deg) : -2.13
 Pole direction: RA (deg): 268.05666
 Dec (deg): 64.49732
 C/A sky separation (") : 17.516
 C/A sky separation (km) : 58452.2
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-05-02T00:12:18 K8.08 G13.37
 Pgt



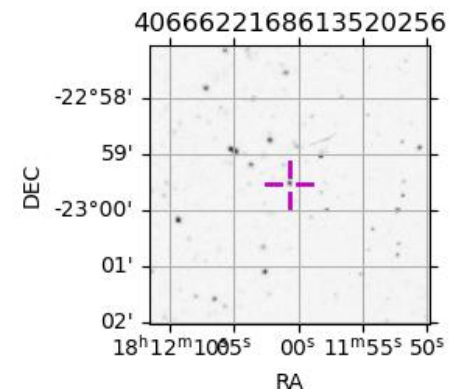
2043-05-02T00:12:18.9100 α: 18 12 00.7629 β: -22 59 32.441 C/A ***** PA 357.42 deg v_sky - 5.12 km/s D 04.60 AU
 Credit: Styled after SORA/Lucky Star

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



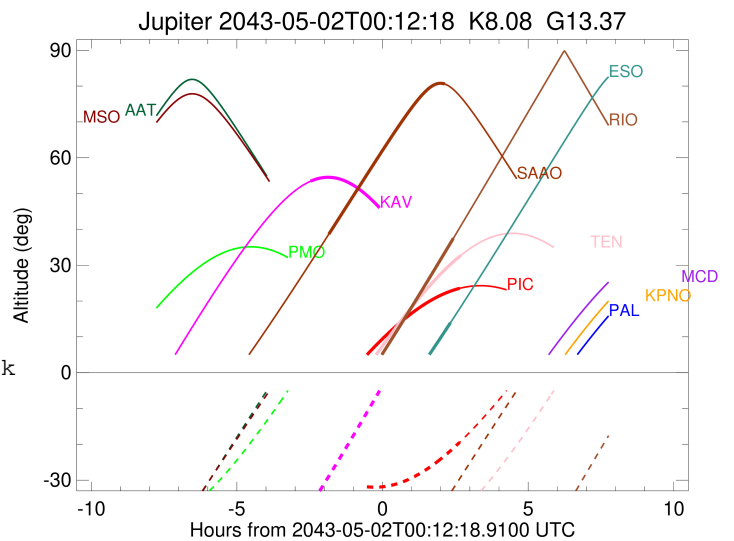
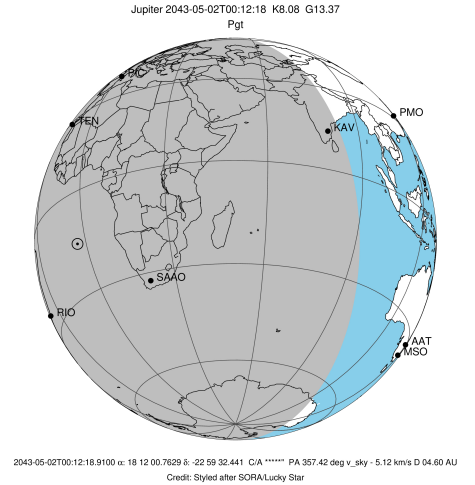
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OEcode
PIC	Pic du Midi	42.9	0.1	+	MAY 02 02:51 - MAY 02 02:51	Pne
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	+	MAY 02 02:53 - MAY 02 02:53	Pne
IRTF	Mauna Kea/IRTF	19.8	204.5			Pnn
KAV	Kavalur Observatory	12.6	78.8	+	MAY 01 21:44 - MAY 01 21:44	Pin
RIO	Rio de Janeiro	-22.9	316.8	+	MAY 02 02:38 - MAY 02 02:38	Pne
ESO	European Southern Obs. (3.6m)	-29.3	289.3	+	MAY 02 02:32 - MAY 02 02:32	Pne
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	MAY 01 22:21 - MAY 02 02:20	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-02T00:25:26.420
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      : 4066622168613520256
2Mass ID (if available) : 18120076-2259323
ICRS Star Coord at Epoch: 18h 12m 00.76290s -22:59:32.44137s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 8.082
G magnitude          : 13.369
RP magnitude         : 12.072
BP magnitude         : 15.186
DUPflag             : 0
Distance (au)       : 4.601
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -5.12
Sun-Target sep (deg) : 128.15
Sun-Moon sep (deg)  : 34.73
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.13
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 15.905
C/A sky separation (km): 53075.2
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
    
```

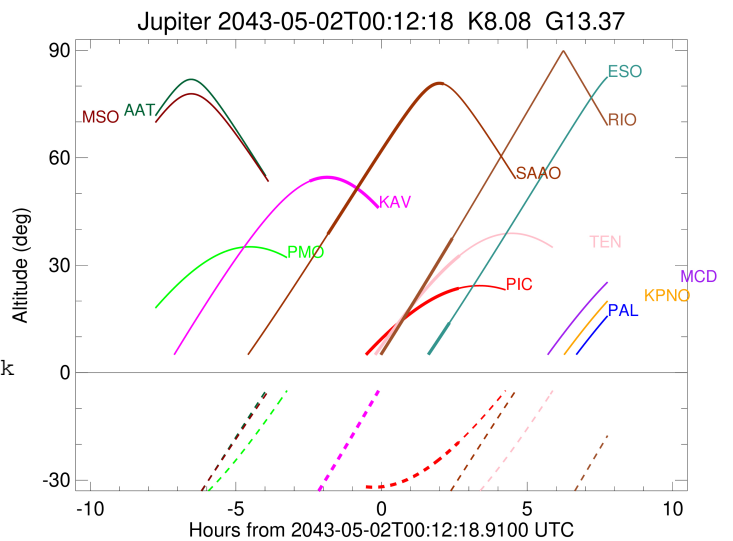
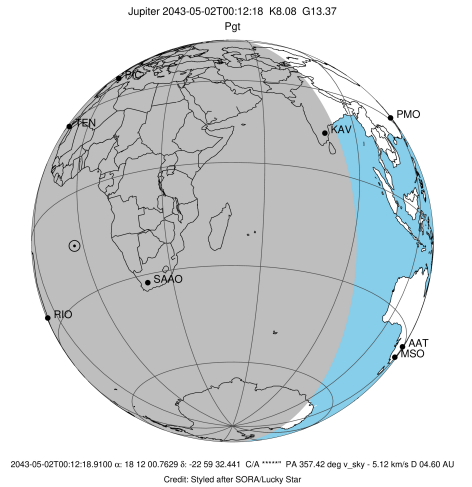


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-01T21:54:04.434	-12.07x	-25.55	71487.3	-49.57	-53.17
Jupiter	E	2043-05-02T02:51:06.395	23.53	-19.45	71487.7	-46.92	-50.59

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-02T00:32:16.490
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       : 4066622168613520256
2Mass ID (if available) : 18120076-2259323
ICRS Star Coord at Epoch: 18h 12m 00.76290s -22:59:32.44137s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 8.082
G magnitude           : 13.369
RP magnitude         : 12.072
BP magnitude         : 15.186
DUPflag             : 0
Distance (au)        : 4.601
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -5.12
Sun-Target sep (deg) : 128.15
Sun-Moon sep (deg)  : 34.88
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.13
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 16.313
C/A sky separation (km): 54436.7
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
    
```

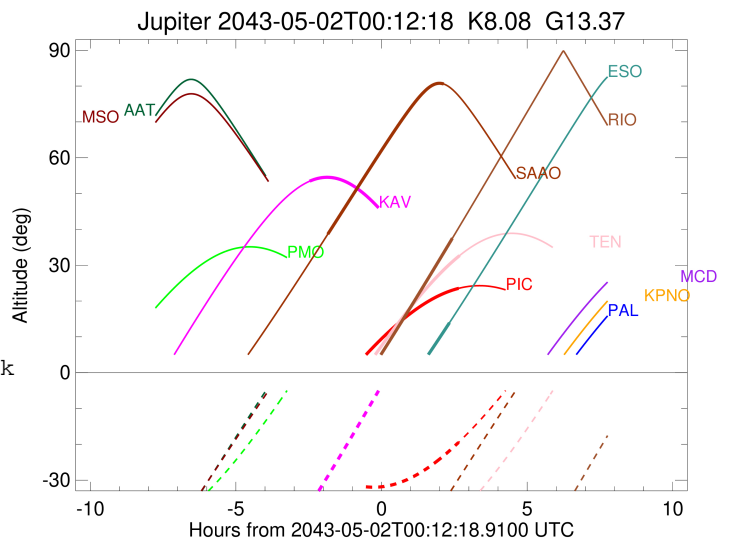
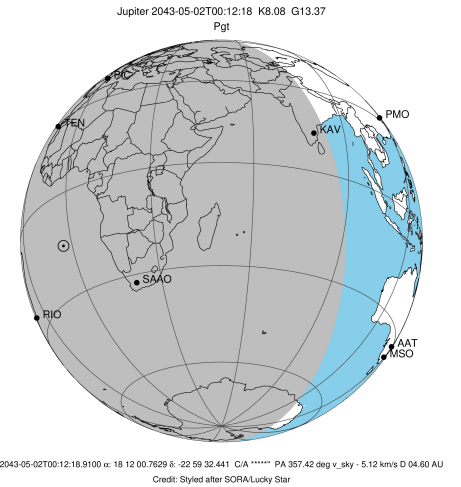


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-01T22:03:52.034	-18.50x	-28.67	71487.0	-51.67	-55.19
Jupiter	E	2043-05-02T02:53:11.345	32.68	-39.01	71487.5	-48.08	-51.72

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-05-02T00:00:05.000
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        : 4066622168613520256
2Mass ID (if available) : 18120076-2259323
ICRS Star Coord at Epoch: 18h 12m 00.76290s -22:59:32.44137s
RUWE (>1.4 is poor)  : 0.95
K magnitude           : 8.082
G magnitude           : 13.369
RP magnitude          : 12.072
BP magnitude          : 15.186
DUPflag              : 0
Distance (au)         : 4.601
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s)  : -5.12
Sun-Target sep (deg)  : 128.15
Sun-Moon sep (deg)    : 34.20
B (ring opening deg)  : -2.43
PA of pole (deg)     : -2.13
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 16.518
C/A sky separation (km) : 55122.2
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
    
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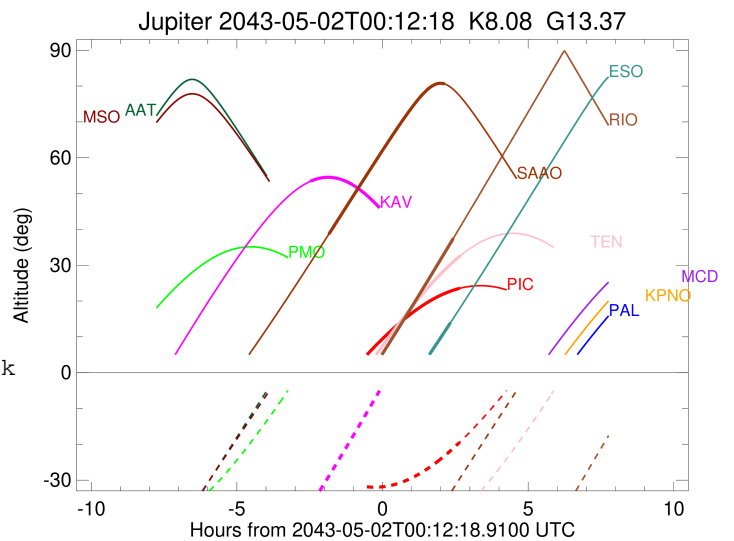
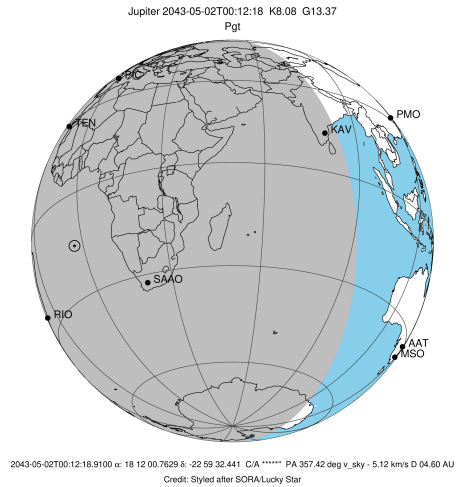


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-01T21:44:31.317	53.46	-36.93	71487.2	-50.36	-53.94
Jupiter	E	2043-05-02T02:17:51.150	21.77	26.16x	71487.1	-51.34	-54.88

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-02T00:38:05.320
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       : 4066622168613520256
2Mass ID (if available) : 18120076-2259323
ICRS Star Coord at Epoch: 18h 12m 00.76290s -22:59:32.44137s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 8.082
G magnitude           : 13.369
RP magnitude         : 12.072
BP magnitude         : 15.186
DUPflag             : 0
Distance (au)        : 4.601
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -5.12
Sun-Target sep (deg) : 128.15
Sun-Moon sep (deg)   : 34.84
B (ring opening deg) : -2.43
PA of pole (deg)     : -2.13
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 18.089
C/A sky separation (km): 60359.9
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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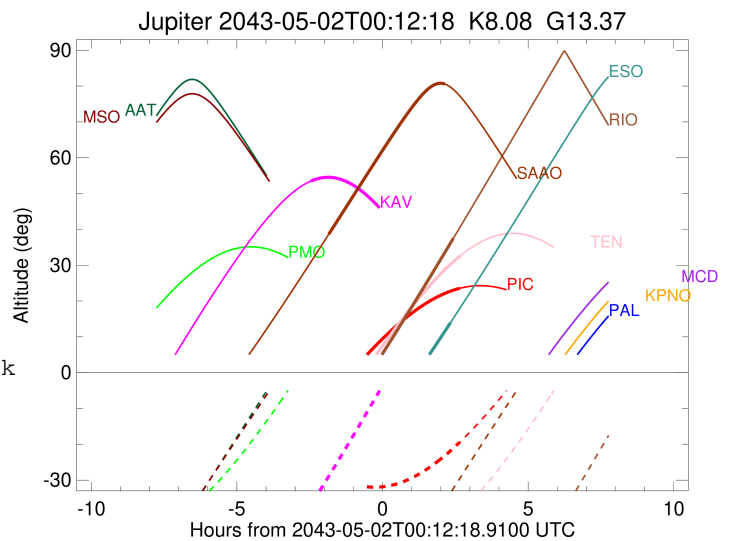
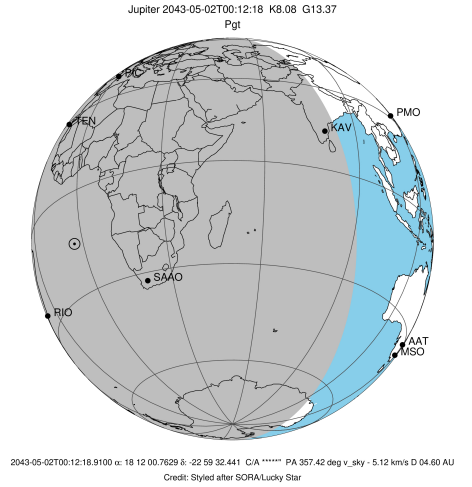


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-01T22:31:03.154	-15.38x	-28.81	71486.0	-59.86	-62.93
Jupiter	E	2043-05-02T02:38:21.170	37.52	-82.08	71486.5	-55.44	-58.79

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-02T00:35:25.150
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      : 4066622168613520256
2Mass ID (if available) : 18120076-2259323
ICRS Star Coord at Epoch: 18h 12m 00.76290s -22:59:32.44137s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 8.082
G magnitude          : 13.369
RP magnitude         : 12.072
BP magnitude         : 15.186
DUPflag             : 0
Distance (au)       : 4.601
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -5.12
Sun-Target sep (deg) : 128.15
Sun-Moon sep (deg)  : 34.52
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.13
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation ("): 18.587
C/A sky separation (km): 62024.3
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
    
```

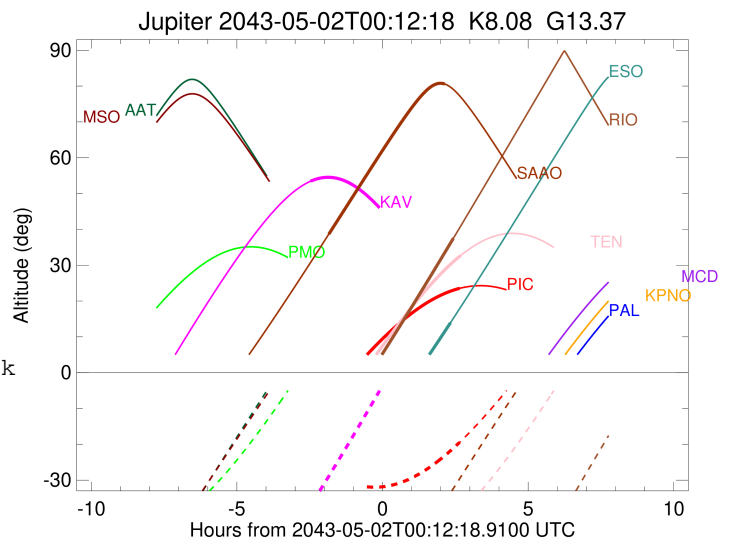
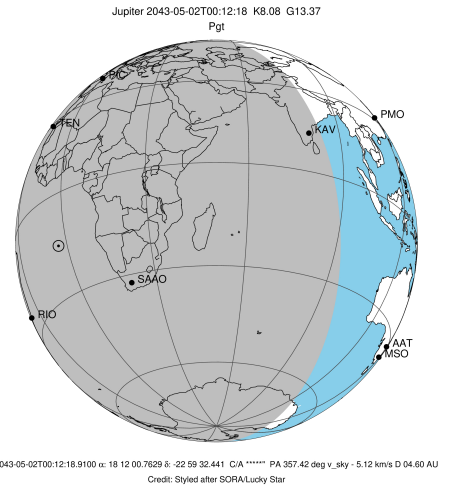


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-05-01T22:32:32.583	-28.75x	-5.79	71485.7	-62.09	-65.00
Jupiter	E	2043-05-02T02:32:18.341	13.93	-57.56	71486.2	-57.88	-61.08

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-05-02T00:22:28.370
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      : 4066622168613520256
2Mass ID (if available) : 18120076-2259323
ICRS Star Coord at Epoch: 18h 12m 00.76290s -22:59:32.44137s
RUWE (>1.4 is poor) : 0.95
K magnitude          : 8.082
G magnitude          : 13.369
RP magnitude         : 12.072
BP magnitude         : 15.186
DUPflag             : 0
Distance (au)       : 4.601
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : -5.12
Sun-Target sep (deg) : 128.15
Sun-Moon sep (deg)  : 34.90
B (ring opening deg) : -2.43
PA of pole (deg)    : -2.13
Pole direction: RA (deg): 268.05666
Dec (deg): 64.49732
C/A sky separation (") : 17.857
C/A sky separation (km) : 59588.2
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	2043-05-01T22:21:41.455	38.66	-72.84	71486.2	-57.78	-60.98
Jupiter	E	2043-05-02T02:20:30.386	80.57	-36.08	71486.5	-55.79	-59.12