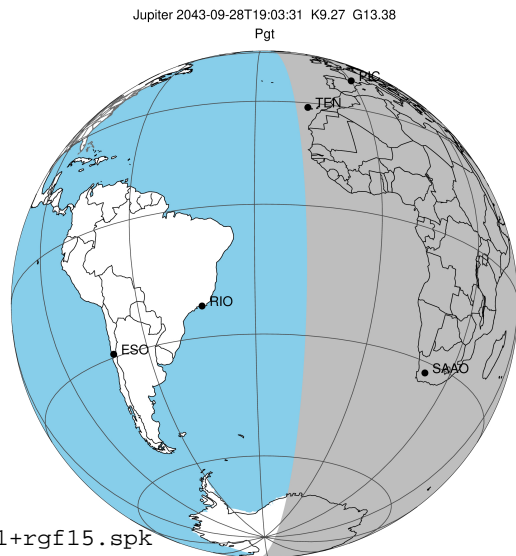


target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-09-28T19:03:31.940
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4116514050554064256
 2Mass ID (if available) : 17400344-2315523

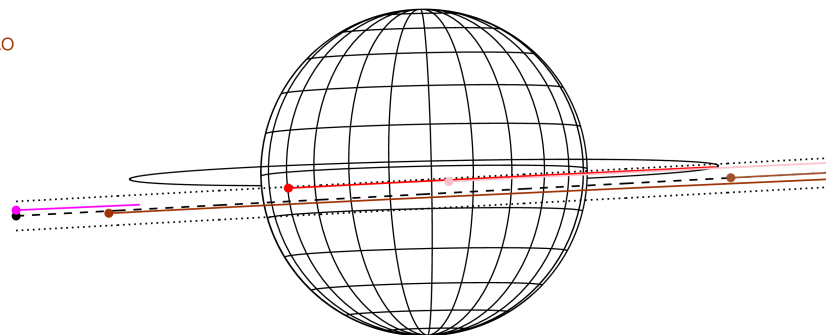
Jupiter 2043-09-28T19:03:31 K9.27 G13.38 Pgt

ICRS Star Coord at Epoch: 17h 40m 03.44517s -23:15:52.47994s
 RUWE (>1.4 is poor) : 0.94
 K magnitude : 9.272
 G magnitude : 13.375
 RP magnitude : 12.271
 BP magnitude : 14.630
 DUPflag : 0
 Distance (au) : 5.303
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 18.02
 Sun-Target sep (deg) : 80.48
 Sun-Moon sep (deg) : 131.93
 B (ring opening deg) : -2.21
 PA of pole (deg) : 1.31
 Pole direction: RA (deg): 268.05674
 Dec (deg): 64.49731
 C/A sky separation (") : 2.469
 C/A sky separation (km) : 9494.7
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk



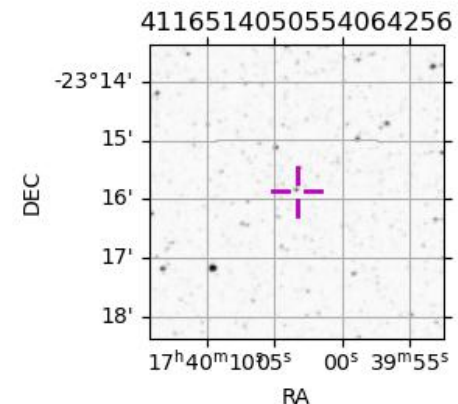
2043-09-28T19:03:31.9400 @: 17 40 03.4452 @: -23 15 52.480 C/A 2.477" PA 3.05 deg v_sky +18.02 km/s D 05.30 AU
 Credit: Styled after SORA/Lucky Star

Earth
 PIC
 TEN
 KAV
 RIO
 SAAO



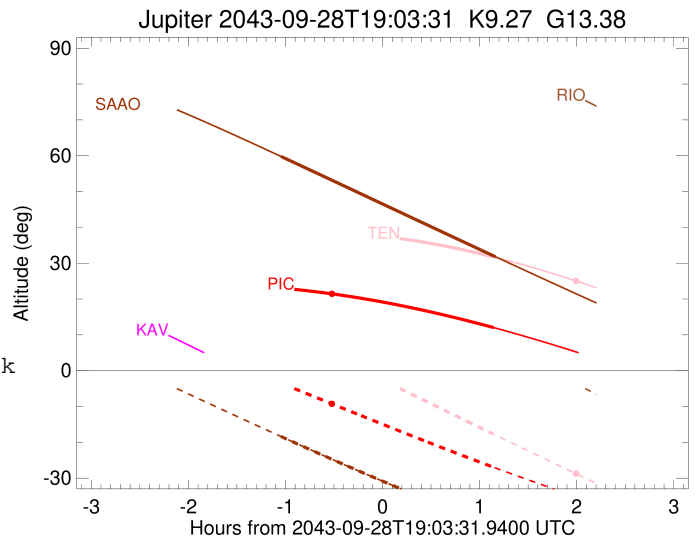
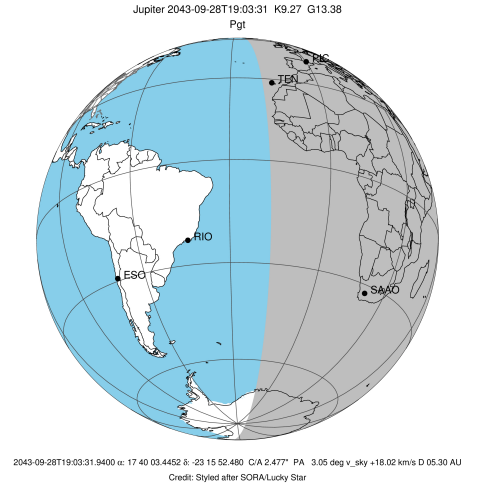
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	SEP 28 20:12 - SEP 28 20:12	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	+	SEP 28 20:11 - SEP 28 20:11	Pne
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			Pnn
ESO	European Southern Obs. (3.6m)	-29.3	289.3			Pnn
AAT	Siding Spring (AAT)	-31.3	149.1			Pnn
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8	+	SEP 28 18:00 - SEP 28 20:13	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-28T19:05:19.060
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       : 4116514050554064256
2Mass ID (if available) : 17400344-2315523
ICRS Star Coord at Epoch: 17h 40m 03.44517s -23:15:52.47994s
RUWE (>1.4 is poor) : 0.94
K magnitude          : 9.272
G magnitude          : 13.375
RP magnitude         : 12.271
BP magnitude         : 14.630
DUPflag             : 0
Distance (au)        : 5.303
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 18.02
Sun-Target sep (deg) : 80.48
Sun-Moon sep (deg)  : 132.01
B (ring opening deg) : -2.21
PA of pole (deg)    : 1.31
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (" ) : 0.986
C/A sky separation (km) : 3792.5
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
    
```

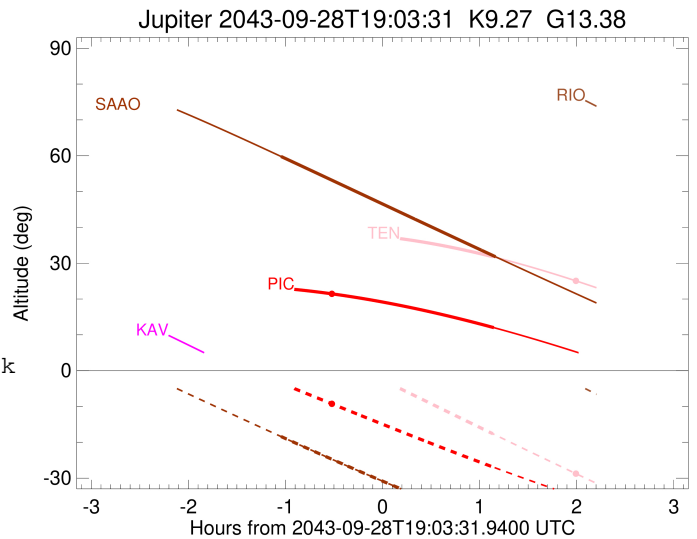
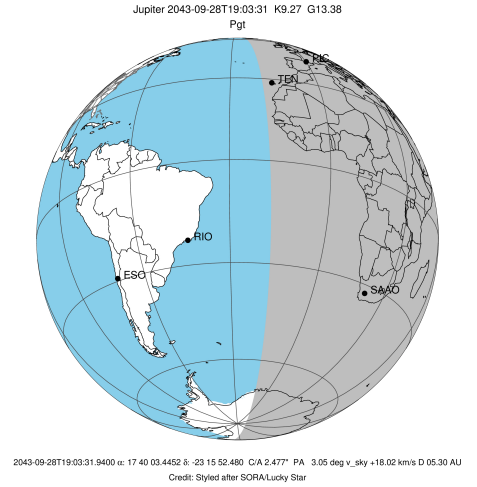


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-28T17:58:03.301	23.13	-2.98x	71492.0	-4.68	-5.35
Jupiter	E	2043-09-28T20:12:19.240	12.01	-26.98	71492.0	-1.52	-1.73

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-28T19:04:19.940
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        : 4116514050554064256
2Mass ID (if available) : 17400344-2315523
ICRS Star Coord at Epoch: 17h 40m 03.44517s -23:15:52.47994s
RUWE (>1.4 is poor) : 0.94
K magnitude           : 9.272
G magnitude           : 13.375
RP magnitude          : 12.271
BP magnitude          : 14.630
DUPflag              : 0
Distance (au)         : 5.303
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 18.02
Sun-Target sep (deg)  : 80.48
Sun-Moon sep (deg)   : 132.31
B (ring opening deg) : -2.21
PA of pole (deg)     : 1.31
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (") : 1.172
C/A sky separation (km) : 4506.3
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
    
```

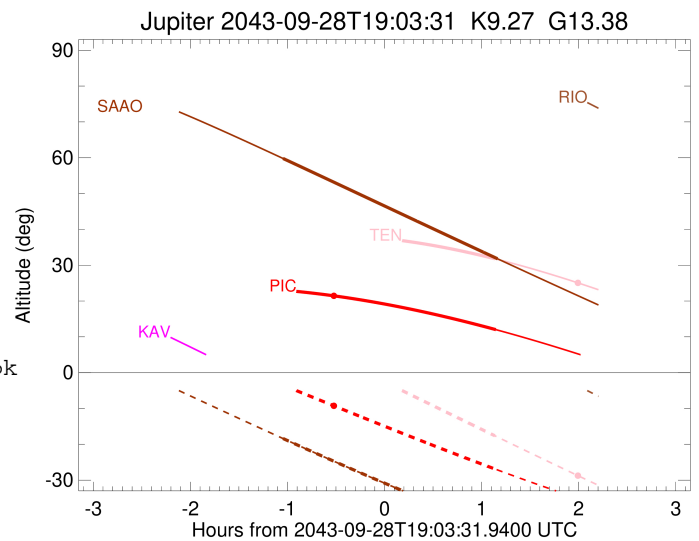
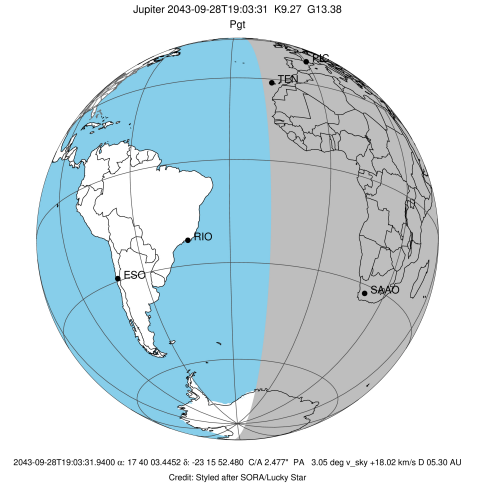


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-28T17:56:46.780	38.30	12.06x	71491.9	-5.39	-6.16
Jupiter	E	2043-09-28T20:11:42.832	31.80	-17.61	71492.0	-1.99	-2.27

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-28T19:07:20.070
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     : 4116514050554064256
2Mass ID (if available) : 17400344-2315523
ICRS Star Coord at Epoch: 17h 40m 03.44517s -23:15:52.47994s
RUWE (>1.4 is poor) : 0.94
K magnitude         : 9.272
G magnitude         : 13.375
RP magnitude        : 12.271
BP magnitude        : 14.630
DUPflag            : 0
Distance (au)      : 5.303
f0 (km)            : 0.00
g0 (km)            : 0.00
skyplane vel. (km/s) : 18.02
Sun-Target sep (deg) : 80.48
Sun-Moon sep (deg)  : 132.03
B (ring opening deg) : -2.21
PA of pole (deg)   : 1.31
Pole direction: RA (deg): 268.05674
Dec (deg): 64.49731
C/A sky separation (") : 2.867
C/A sky separation (km) : 11027.6
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	2043-09-28T18:00:52.550	59.78	-18.39	71491.8	-10.33	-11.77
Jupiter	E	2043-09-28T20:13:23.646	31.79	-43.21	71491.9	-7.52	-8.58