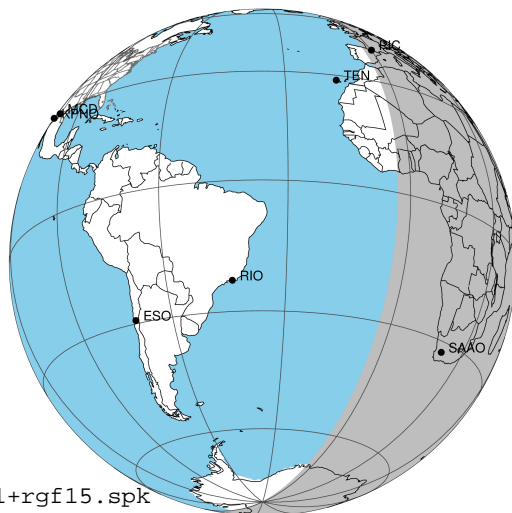


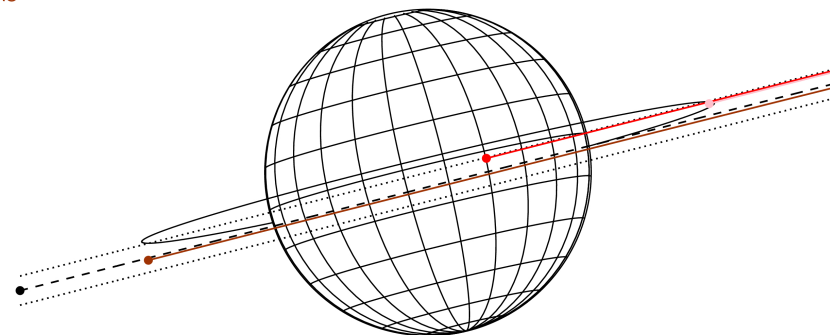
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2042-09-20T18:06:13.190  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 6254291248561277312  
 2Mass ID (if available) : 15395007-1850524

Jupiter 2042-09-20T18:06:13 K9.44 G10.83 Pgt

ICRS Star Coord at Epoch: 15h 39m 50.07818s -18:50:52.35637s  
 RUWE (>1.4 is poor) : 1.04  
 K magnitude : 9.440  
 G magnitude : 10.833  
 RP magnitude : 10.344  
 BP magnitude : 11.152  
 DUPflag : 0  
 Distance (au) : 5.788  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 27.80  
 Sun-Target sep (deg) : 59.76  
 Sun-Moon sep (deg) : 10.81  
 B (ring opening deg) : -2.85  
 PA of pole (deg) : 13.62  
 Pole direction: RA (deg): 268.05653  
 Dec (deg): 64.49731  
 C/A sky separation (") : 1.456  
 C/A sky separation (km) : 6113.4  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk



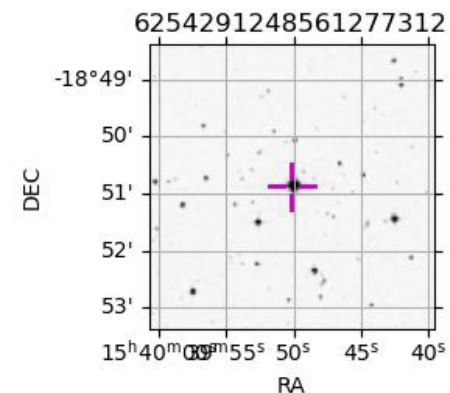
Earth  
 PIC  
 TEN  
 SAAO



2042-09-20T18:06:13.1900 α: 15 39 50.0782 δ: -18 50 52.356 C/A 1.466° PA 14.27 deg v\_sky +27.80 km/s D 05.79 AU  
 Credit: Styled after SORA/Lucky Star

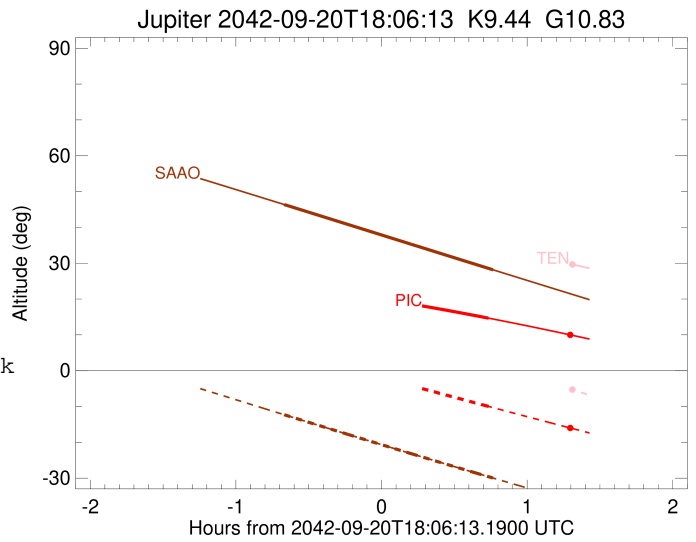
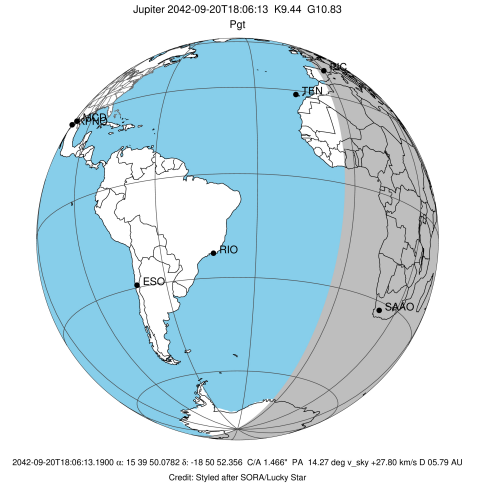
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+	SEP 20 18:50 - SEP 20 18:50	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			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			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 20 17:26 - SEP 20 18:52	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2042-09-20T18:07:02.970
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       : 6254291248561277312
2Mass ID (if available) : 15395007-1850524
ICRS Star Coord at Epoch: 15h 39m 50.07818s -18:50:52.35637s
RUWE (>1.4 is poor) : 1.04
K magnitude          : 9.440
G magnitude          : 10.833
RP magnitude         : 10.344
BP magnitude         : 11.152
DUPflag             : 0
Distance (au)        : 5.788
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 27.80
Sun-Target sep (deg) : 59.76
Sun-Moon sep (deg)   : 11.07
B (ring opening deg) : -2.85
PA of pole (deg)     : 13.62
Pole direction: RA (deg): 268.05653
Dec (deg): 64.49731
C/A sky separation (") : 0.068
C/A sky separation (km) : 284.6
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
    
```

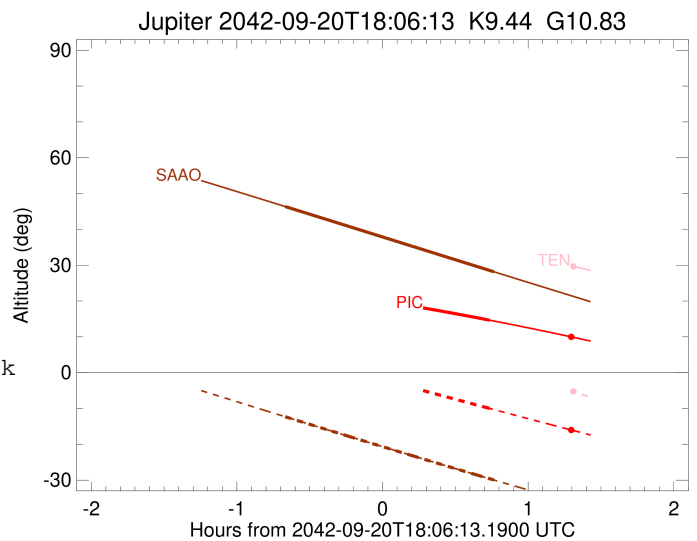
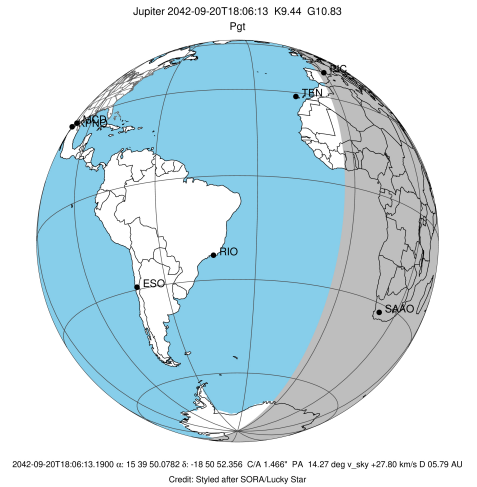


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2042-09-20T17:23:42.968	24.03	5.88x	71492.0	-0.91	-1.04
Jupiter	E	2042-09-20T18:50:18.673	14.66	-9.97	71492.0	0.40	0.45

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2042-09-20T18:09:10.880
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        : 6254291248561277312
2Mass ID (if available) : 15395007-1850524
ICRS Star Coord at Epoch: 15h 39m 50.07818s -18:50:52.35637s
RUWE (>1.4 is poor) : 1.04
K magnitude           : 9.440
G magnitude           : 10.833
RP magnitude          : 10.344
BP magnitude          : 11.152
DUPflag              : 0
Distance (au)         : 5.788
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 27.80
Sun-Target sep (deg)  : 59.76
Sun-Moon sep (deg)    : 10.22
B (ring opening deg) : -2.85
PA of pole (deg)      : 13.62
Pole direction: RA (deg): 268.05653
Dec (deg): 64.49731
C/A sky separation (") : 1.717
C/A sky separation (km) : 7208.2
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	2042-09-20T17:26:07.929	46.36	-12.30	71491.9	-6.34	-7.24
Jupiter	E	2042-09-20T18:52:07.286	28.17	-29.96	71491.9	-5.28	-6.03