

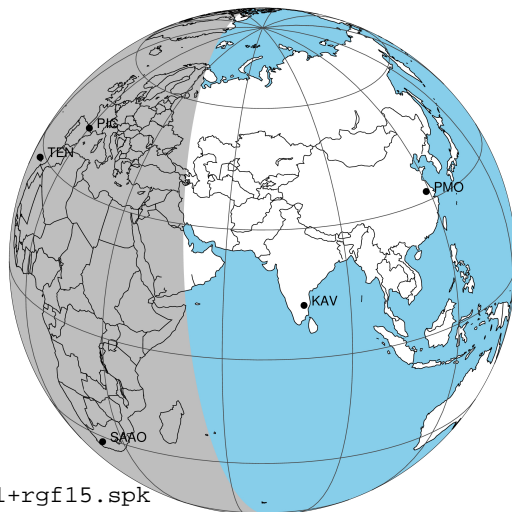
target : Jupiter  
 target radius (km) : 71492.00  
 C/A epoch : 2048-09-01T02:28:41.240  
 Event type : Pgt  
 : Jupiter occs: geocentric, topocentric  
 : Not a ringed target  
 Gaia source ID : 3427524884512732288  
 2Mass ID (if available) : 05462262+2252443

Jupiter 2048-09-01T02:28:41 K7.71 G11.45 Pgt

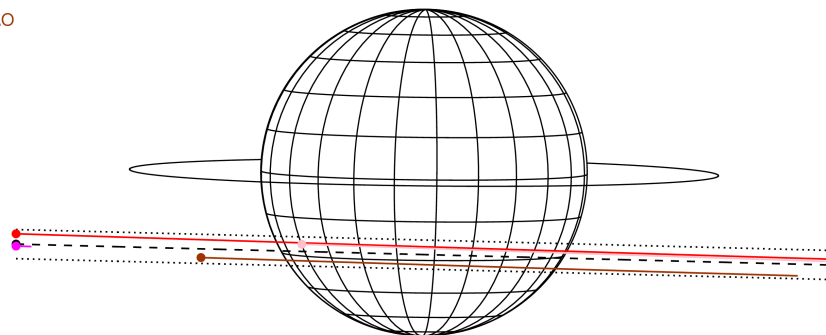
ICRS Star Coord at Epoch: 05h 46m 22.63007s +22:52:44.29524s

RUWE (>1.4 is poor) : 1.25  
 K magnitude : 7.715  
 G magnitude : 11.446  
 RP magnitude : 10.408  
 BP magnitude : 12.551  
 DUPflag : 0  
 Distance (au) : 5.294  
 f0 (km) : 0.00  
 g0 (km) : 0.00  
 skyplane vel. (km/s) : 21.88  
 Sun-Target sep (deg) : 71.81  
 Sun-Moon sep (deg) : 9.77  
 B (ring opening deg) : 2.62  
 PA of pole (deg) : -0.63  
 Pole direction: RA (deg): 268.05733  
 Dec (deg): 64.49722  
 C/A sky separation (") : 9.362  
 C/A sky separation (km) : 35946.6  
 NAIF SPICE kernels : RAJobs\_U111+rgf15.spk

Jupiter 2048-09-01T02:28:41 K7.71 G11.45  
 Pgt



Earth  
 PIC  
 TEN  
 KAV  
 SAAO

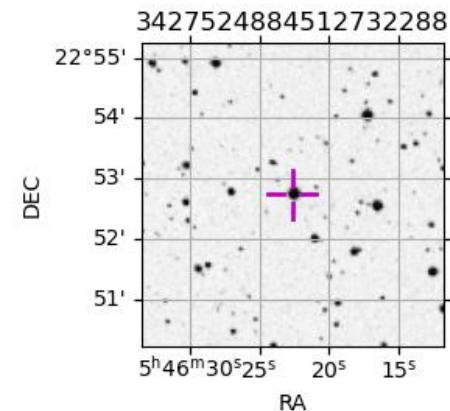


2048-09-01T02:28:41.2400 ex: 05 46 22.6301 s: +22 52 44.295 C/A 9.352" PA 358.53 deg v\_sky +21.88 km/s D 05.29 AU

Credit: Styled after SORA/Lucky Star

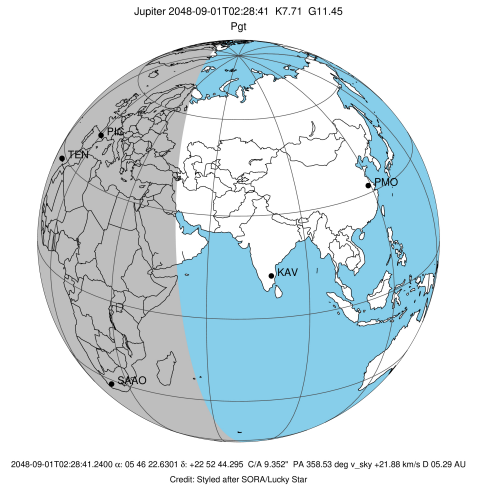
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1	+ +	SEP 01 01:36 - SEP 01 03:14	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	+ +	SEP 01 03:12 - SEP 01 03:12	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 01 01:39 - SEP 01 03:10	Pie
MSO	Mt. Stromlo Observatory	-35.3	149.0			Pnn

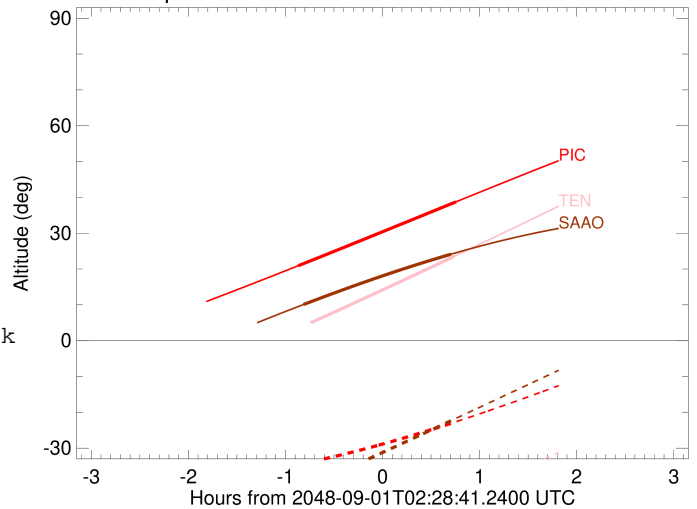


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target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2048-09-01T02:25:14.900
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PIC
Location              : Pic du Midi
Latitude (deg)       : 42.93656
E. Longitude (deg)   : 0.14231
Altitude (km)        : 2.890
Gaia source ID       : 3427524884512732288
2Mass ID (if available) : 05462262+2252443
ICRS Star Coord at Epoch: 05h 46m 22.63007s +22:52:44.29524s
RUWE (>1.4 is poor) : 1.25
K magnitude           : 7.715
G magnitude           : 11.446
RP magnitude         : 10.408
BP magnitude         : 12.551
DUPflag              : 0
Distance (au)        : 5.294
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 21.88
Sun-Target sep (deg) : 71.81
Sun-Moon sep (deg)  : 9.20
B (ring opening deg) : 2.62
PA of pole (deg)    : -0.63
Pole direction: RA (deg): 268.05733
Dec (deg): 64.49722
C/A sky separation (") : 8.464
C/A sky separation (km) : 32499.2
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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Jupiter 2048-09-01T02:28:41 K7.71 G11.45

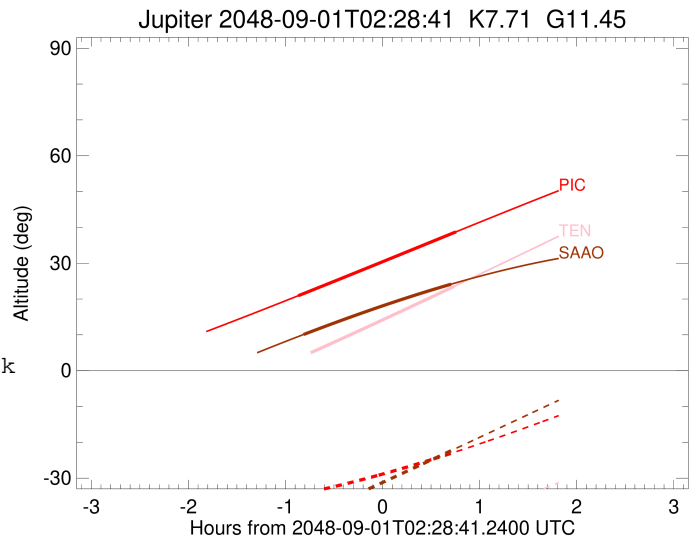
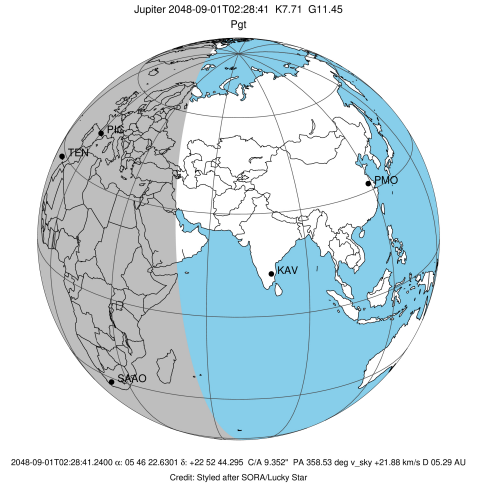


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-09-01T01:36:34.625	20.91	-34.56	71490.2	-25.83	-28.92
Jupiter	E	2048-09-01T03:14:06.639	38.75	-22.63	71489.9	-28.17	-31.43

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2048-09-01T02:24:16.090
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       : 3427524884512732288
2Mass ID (if available) : 05462262+2252443
ICRS Star Coord at Epoch: 05h 46m 22.63007s +22:52:44.29524s
RUWE (>1.4 is poor) : 1.25
K magnitude           : 7.715
G magnitude           : 11.446
RP magnitude         : 10.408
BP magnitude         : 12.551
DUPflag              : 0
Distance (au)        : 5.294
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 21.88
Sun-Target sep (deg) : 71.81
Sun-Moon sep (deg)   : 9.00
B (ring opening deg) : 2.62
PA of pole (deg)     : -0.63
Pole direction: RA (deg): 268.05733
Dec (deg): 64.49722
C/A sky separation (") : 8.643
C/A sky separation (km) : 33185.8
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
    
```

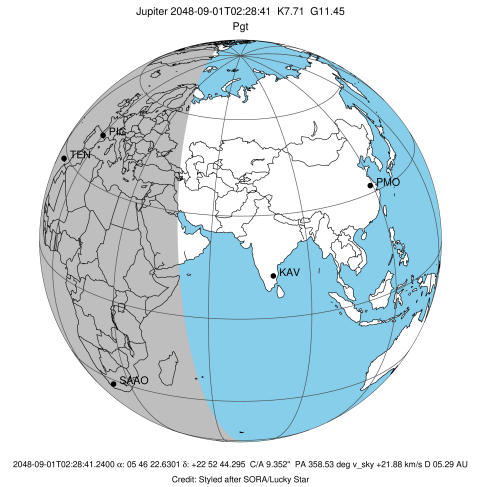


x: target alt < 5.0 deg or sun > -5.0 deg

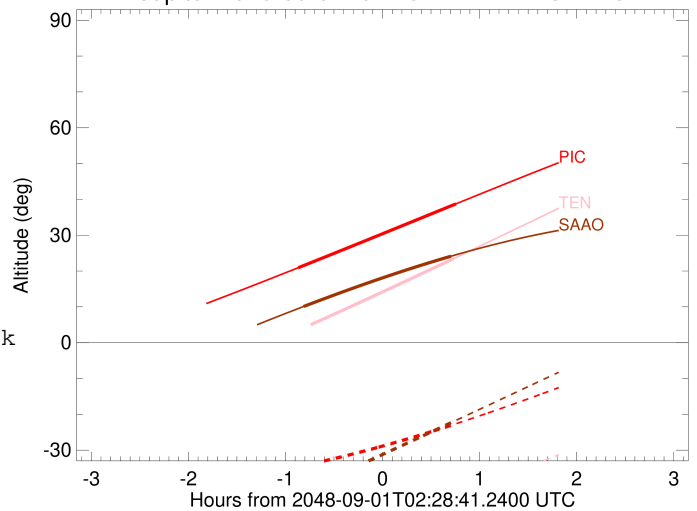
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2048-09-01T01:36:06.136	3.34x	-53.06	71490.2	-26.37	-29.50
Jupiter	E	2048-09-01T03:12:39.721	23.47	-42.59	71489.8	-28.88	-32.19

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2048-09-01T02:25:20.060
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       : 3427524884512732288
2Mass ID (if available) : 05462262+2252443
ICRS Star Coord at Epoch: 05h 46m 22.63007s +22:52:44.29524s
RUWE (>1.4 is poor) : 1.25
K magnitude           : 7.715
G magnitude           : 11.446
RP magnitude         : 10.408
BP magnitude         : 12.551
DUPflag              : 0
Distance (au)        : 5.294
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 21.88
Sun-Target sep (deg) : 71.81
Sun-Moon sep (deg)   : 9.34
B (ring opening deg) : 2.62
PA of pole (deg)     : -0.63
Pole direction: RA (deg): 268.05733
Dec (deg): 64.49722
C/A sky separation (") : 10.512
C/A sky separation (km) : 40362.2
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
    
```



Jupiter 2048-09-01T02:28:41 K7.71 G11.45



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	2048-09-01T01:39:55.487	10.10	-41.19	71489.2	-33.15	-36.68
Jupiter	E	2048-09-01T03:10:54.156	24.11	-22.37	71488.8	-35.47	-39.08