

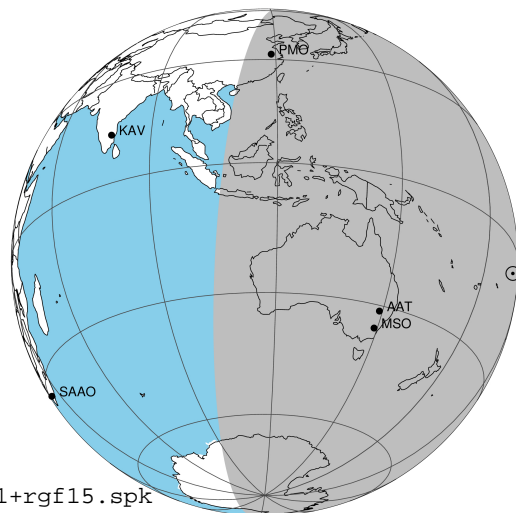
target : Jupiter
 target radius (km) : 71492.00
 C/A epoch : 2043-09-05T10:48:21.220
 Event type : Pgt
 : Jupiter occs: geocentric, topocentric
 : Not a ringed target
 Gaia source ID : 4117422629470469120
 2Mass ID (if available) : 17314821-2308051

Jupiter 2043-09-05T10:48:21 K9.97 G14.91 Pgt

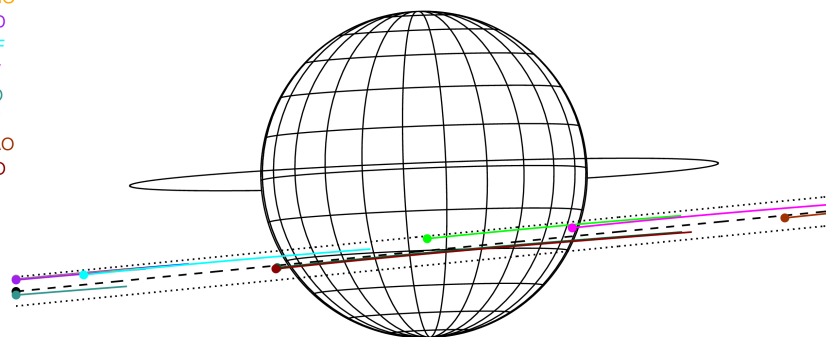
ICRS Star Coord at Epoch: 17h 31m 48.21530s -23°08'05.22799s

RUWE (>1.4 is poor) : 0.99
 K magnitude : 9.969
 G magnitude : 14.914
 RP magnitude : 13.617
 BP magnitude : 16.526
 DUPflag : 0
 Distance (au) : 4.947
 f0 (km) : 0.00
 g0 (km) : 0.00
 skyplane vel. (km/s) : 7.23
 Sun-Target sep (deg) : 101.34
 Sun-Moon sep (deg) : 78.86
 B (ring opening deg) : -2.28
 PA of pole (deg) : 2.20
 Pole direction: RA (deg): 268.05673
 Dec (deg): 64.49731
 C/A sky separation (") : 9.288
 C/A sky separation (km) : 33325.3
 NAIF SPICE kernels : RAJobs_U111+rgf15.spk

Jupiter 2043-09-05T10:48:21 K9.97 G14.91
 Pgt



Earth
 PAL
 PMO
 KPNO
 MCD
 IRTF
 KAV
 ESO
 AAT
 SAAO
 MSO

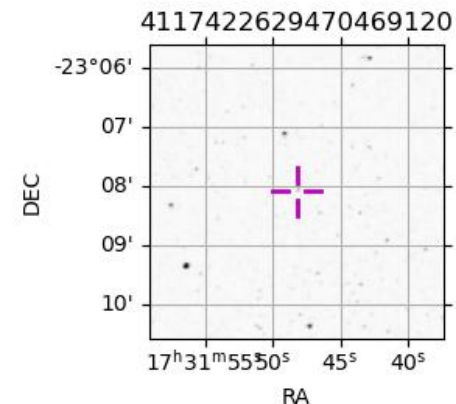


2043-09-05T10:48:21.2200 α: 17 31 48.2153 δ: -23 08 05.228 C/A 9.298" PA 5.64 deg v_sky + 7.23 km/s D 04.95 AU

Credit: Styled after SORA/Lucky Star

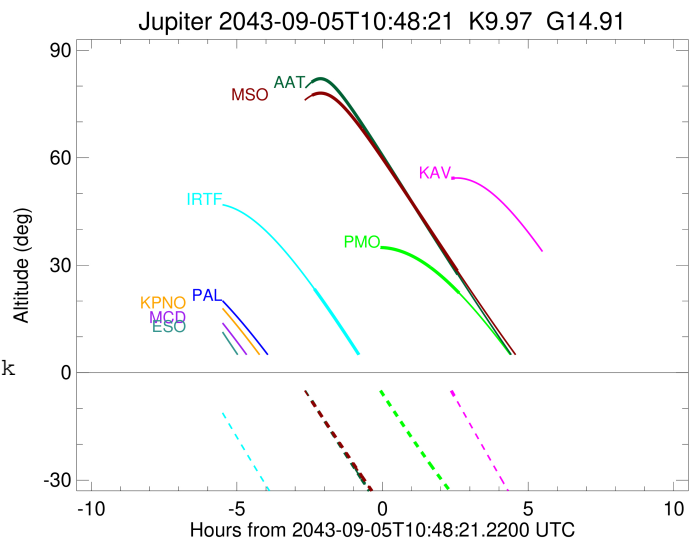
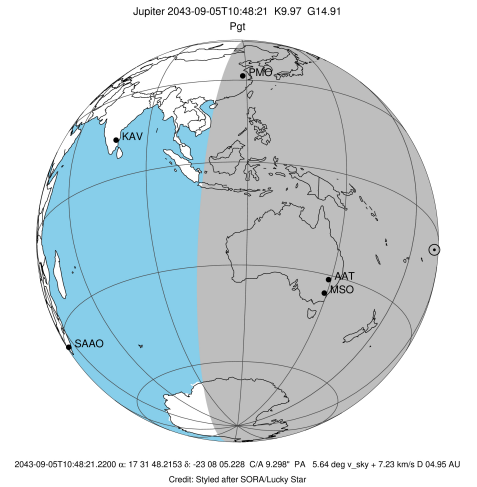
Observable events with sun below -5 deg and altitude above 5 deg

Obs	Location	lat	Elon	Target	Observed Events Interval	OCode
PIC	Pic du Midi	42.9	0.1			Pnn
PAL	Palomar Mt (200")	33.4	243.1			Pnn
PMO	Purple Mtn Obs. Nanking	32.1	118.8	+	SEP 05 13:26 - SEP 05 13:26	Pne
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	+	SEP 05 08:27 - SEP 05 08:27	Pin
KAV	Kavalur Observatory	12.6	78.8	+	SEP 05 13:16 - SEP 05 13:16	Pne
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	+	SEP 05 08:22 - SEP 05 13:23	Pie
SAAO	So. Afr. Astro. Obs. (Sutherland)	-32.4	20.8			Pnn
MSO	Mt. Stromlo Observatory	-35.3	149.0	+	SEP 05 08:23 - SEP 05 13:22	Pie



```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-05T10:47:53.380
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : PMO
Location              : Purple Mtn Obs. Nanking
Latitude (deg)       : 32.06667
E. Longitude (deg)   : 118.82089
Altitude (km)        : 0.364
Gaia source ID       : 4117422629470469120
2Mass ID (if available) : 17314821-2308051
ICRS Star Coord at Epoch: 17h 31m 48.21530s -23:08:05.22799s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 9.969
G magnitude           : 14.914
RP magnitude          : 13.617
BP magnitude          : 16.526
DUPflag              : 0
Distance (au)        : 4.947
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 7.23
Sun-Target sep (deg) : 101.34
Sun-Moon sep (deg)   : 79.38
B (ring opening deg) : -2.28
PA of pole (deg)     : 2.20
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 7.835
C/A sky separation (km) : 28111.1
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
    
```

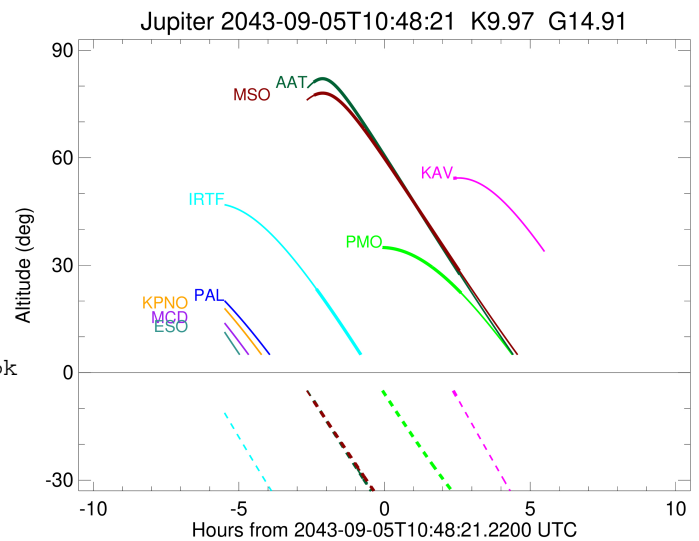
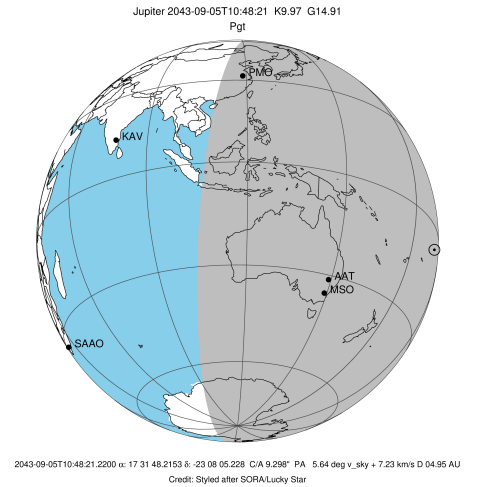


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-05T08:08:18.204	23.85	27.93x	71490.5	-27.28	-30.47
Jupiter	E	2043-09-05T13:26:15.136	22.22	-36.22	71491.2	-19.88	-22.45

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-05T11:00:01.100
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : IRTF
Location              : Mauna Kea/IRTF
Latitude (deg)        : 19.82622
E. Longitude (deg)    : 204.52800
Altitude (km)         : 4.168
Gaia source ID        : 4117422629470469120
2Mass ID (if available) : 17314821-2308051
ICRS Star Coord at Epoch: 17h 31m 48.21530s -23:08:05.22799s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 9.969
G magnitude           : 14.914
RP magnitude          : 13.617
BP magnitude          : 16.526
DUPflag              : 0
Distance (au)         : 4.947
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 7.23
Sun-Target sep (deg) : 101.34
Sun-Moon sep (deg)   : 78.94
B (ring opening deg) : -2.28
PA of pole (deg)     : 2.20
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 8.589
C/A sky separation (km) : 30818.2
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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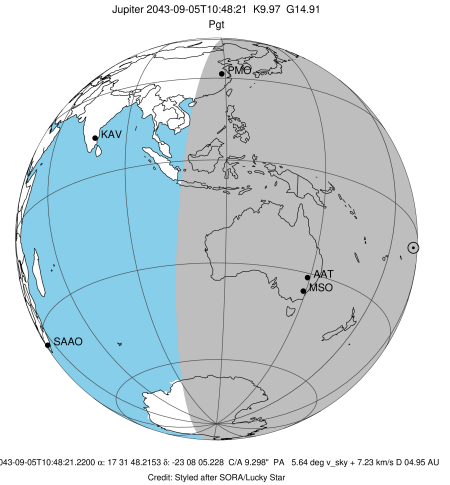


x: target alt < 5.0 deg or sun > -5.0 deg

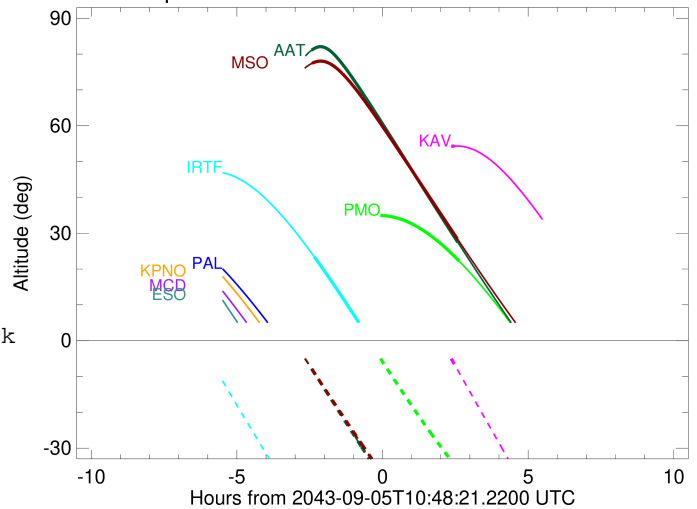
Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-05T08:27:55.701	23.39	-51.65	71490.5	-27.78	-31.01
Jupiter	E	2043-09-05T13:25:38.821	-40.71x	-37.36	71490.9	-23.42	-26.32

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-05T10:39:56.080
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        : 4117422629470469120
2Mass ID (if available) : 17314821-2308051
ICRS Star Coord at Epoch: 17h 31m 48.21530s -23:08:05.22799s
RUWE (>1.4 is poor)  : 0.99
K magnitude           : 9.969
G magnitude           : 14.914
RP magnitude          : 13.617
BP magnitude          : 16.526
DUPflag              : 0
Distance (au)         : 4.947
f0 (km)               : 0.00
g0 (km)               : 0.00
skyplane vel. (km/s) : 7.23
Sun-Target sep (deg)  : 101.34
Sun-Moon sep (deg)    : 79.32
B (ring opening deg) : -2.28
PA of pole (deg)      : 2.20
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 8.525
C/A sky separation (km) : 30588.5
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
    
```



Jupiter 2043-09-05T10:48:21 K9.97 G14.91

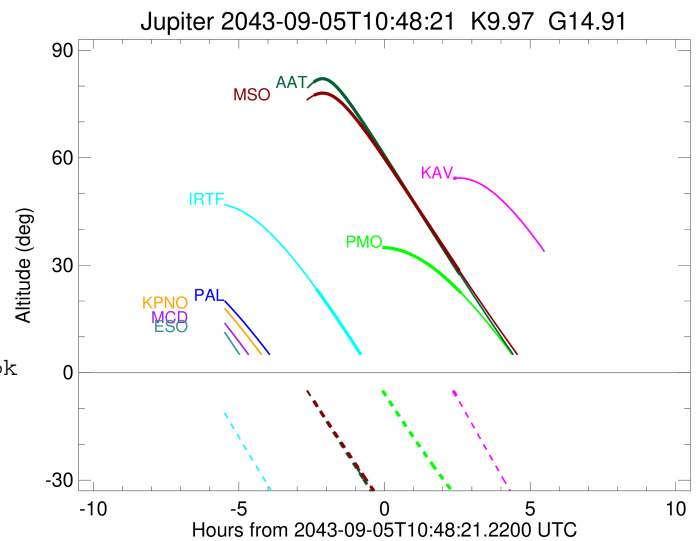
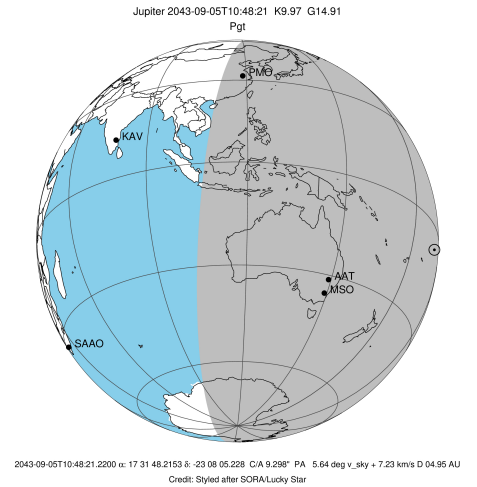


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-05T08:06:11.248	5.06	68.83x	71490.2	-30.17	-33.55
Jupiter	E	2043-09-05T13:16:43.603	54.33	-6.64	71491.1	-21.04	-23.71

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch            : 2043-09-05T10:54:55.550
Event type           : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code        : AAT
Location             : Siding Spring (AAT)
Latitude (deg)       : -31.27703
E. Longitude (deg)   : 149.06608
Altitude (km)        : 1.164
Gaia source ID       : 4117422629470469120
2Mass ID (if available) : 17314821-2308051
ICRS Star Coord at Epoch: 17h 31m 48.21530s -23:08:05.22799s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 9.969
G magnitude           : 14.914
RP magnitude          : 13.617
BP magnitude          : 16.526
DUPflag              : 0
Distance (au)        : 4.947
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 7.23
Sun-Target sep (deg) : 101.34
Sun-Moon sep (deg)   : 79.73
B (ring opening deg) : -2.28
PA of pole (deg)     : 2.20
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 9.553
C/A sky separation (km) : 34277.7
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
    
```

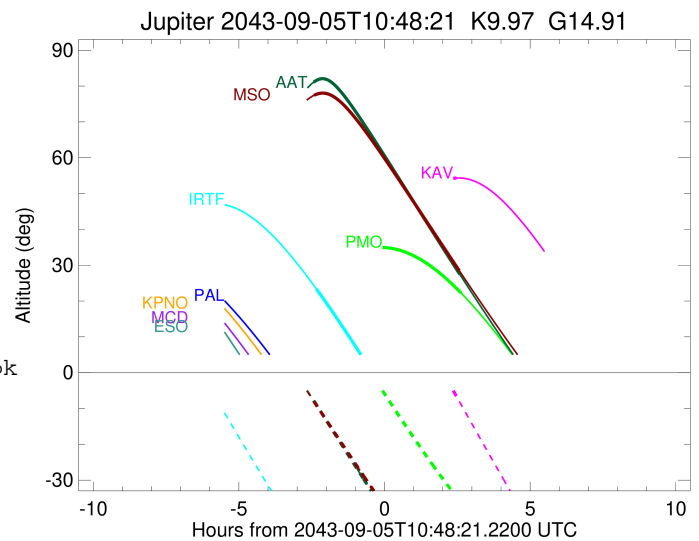
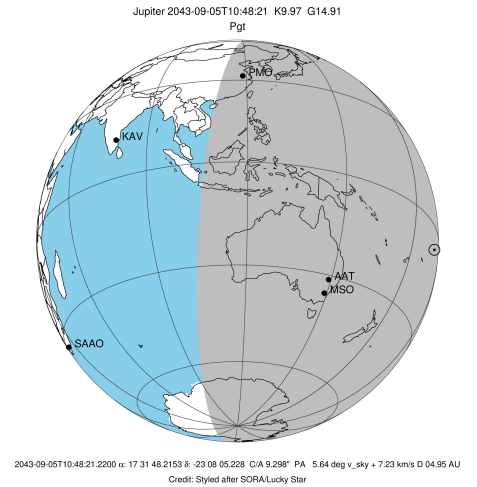


x: target alt < 5.0 deg or sun > -5.0 deg

Target	I/E	UTC	alt	alt-sun	radius	lat-geo	lat-geodetic
Jupiter	I	2043-09-05T08:22:24.881	81.08	-7.76	71490.0	-32.05	-35.53
Jupiter	E	2043-09-05T13:23:35.575	27.42	-63.98	71490.6	-26.00	-29.11

```

target                : Jupiter
target radius (km)   : 71492.00
C/A epoch             : 2043-09-05T10:54:42.590
Event type            : Pgt
: Jupiter occs: geocentric, topocentric
: Not a ringed target
Observer code         : MSO
Location              : Mt. Stromlo Observatory
Latitude (deg)       : -35.32000
E. Longitude (deg)   : 149.00833
Altitude (km)        : 0.770
Gaia source ID       : 4117422629470469120
2Mass ID (if available) : 17314821-2308051
ICRS Star Coord at Epoch: 17h 31m 48.21530s -23:08:05.22799s
RUWE (>1.4 is poor) : 0.99
K magnitude           : 9.969
G magnitude           : 14.914
RP magnitude          : 13.617
BP magnitude          : 16.526
DUPflag              : 0
Distance (au)        : 4.947
f0 (km)              : 0.00
g0 (km)              : 0.00
skyplane vel. (km/s) : 7.23
Sun-Target sep (deg) : 101.34
Sun-Moon sep (deg)   : 79.72
B (ring opening deg) : -2.28
PA of pole (deg)     : 2.20
Pole direction: RA (deg): 268.05673
Dec (deg): 64.49731
C/A sky separation (") : 9.674
C/A sky separation (km) : 34712.2
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	2043-09-05T08:23:08.331	77.41	-8.08	71489.9	-32.45	-35.95
Jupiter	E	2043-09-05T13:22:36.972	28.42	-60.13	71490.6	-26.36	-29.49