

* NOVA *

N. 2632 - 29 SETTEMBRE 2024

ASSOCIAZIONE ASTROFILI SEGUSINI

COMETA C/2023 A3 (TSUCHINSHAN-ATLAS)

Scoperta il 9 gennaio 2023 (v. *Nova* 2320 del 2 aprile 2023), al Tsuchinshan Chinese Observatory (Purple Mountain Observatory, Chinese Academy of Sciences) e, indipendentemente, dall'Asteroid Terrestrial-impact Last Alert System (ATLAS) il 22 febbraio 2023.

Ad agosto 2024 la cometa C/2023 A3 era tra la Terra e Marte. A settembre la cometa C/2023 A3 è entrata nell'orbita di Venere e, alla fine del mese, la cometa si avvicinerà alla Terra fino a 1,76 UA.

Il 27 settembre, la cometa è passata al perielio, ossia al massimo avvicinamento al Sole, a una distanza di 0,39 UA. Durante questo periodo la cometa potrebbe esplodere e frantumarsi sotto l'impatto dell'alta temperatura.

Il 12 ottobre, se la C/2023 A3 sopravviverà al perielio, sarà al massimo avvicinamento alla Terra, ad una distanza di 0,48 UA dal nostro pianeta. Raggiungerà la massima luminosità e sarà osservabile anche a occhio nudo.

Dalla Valle di Susa non sarà facilmente visibile, perché bassa sull'orizzonte ovest, mentre dal 15-16 ottobre avrà già un'altezza di 15° e ancora una magnitudine 7 a fine ottobre.

Ecco le effemeridi del JPL, calcolate per il nostro Grange Observatory, per le ore 20 CEST dal 16 al 30 ottobre 2024: prima la cometa non è sopra l'orizzonte; è meglio visibile dal 16 al 20 ottobre..

Ephemeris / WWW_USER Wed Sep 11 02:04:14 2024 Pasadena, USA / Horizons										

Target body name: Tsuchinshan-ATLAS (C/2023 A3) {source: JPL#56}										
Center body name: Earth (399) {source: DE441}										
Center-site name: Grange Observatory, Bussoleno										

Start time : A.D. 2024-Oct-16 18:00:00.0000 UT										
Stop time : A.D. 2024-Oct-30 18:00:00.0000 UT										
Step-size : 1440 minutes										

NEWSLETTER TELEMATICA APERIODICA DELL'A.A.S. - ASSOCIAZIONE ASTROFILI SEGUSINI APS – ANNO XIX

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Column meaning:

TIME

Times PRIOR to 1962 are UT1, a mean-solar time closely related to the prior but now-deprecated GMT. Times AFTER 1962 are in UTC, the current civil or "wall-clock" time-scale. UTC is kept within 0.9 seconds of UT1 using integer leap-seconds for 1972 and later years.

Conversion from the internal Barycentric Dynamical Time (TDB) of solar system dynamics to the non-uniform civil UT time-scale requested for output has not been determined for UTC times after the next July or January 1st. Therefore, the last known leap-second is used as a constant over future intervals.

Time tags refer to the UT time-scale conversion from TDB on Earth regardless of observer location within the solar system, although clock rates may differ due to the local gravity field and no analog to "UT" may be defined for that location.

Any 'b' symbol in the 1st-column denotes a B.C. date. First-column blank(" ") denotes an A.D. date.

CALENDAR SYSTEM

Mixed calendar mode was active such that calendar dates after AD 1582-Oct-15 (if any) are in the modern Gregorian system. Dates prior to 1582-Oct-5 (if any) are in the Julian calendar system, which is automatically extended for dates prior to its adoption on 45-Jan-1 BC. The Julian calendar is useful for matching historical dates. The Gregorian calendar more accurately corresponds to the Earth's orbital motion and seasons. A "Gregorian-only" calendar mode is available if such physical events are the primary interest.

NOTE: "n.a." in output means quantity "not available" at the print-time.

SOLAR PRESENCE (OBSERVING SITE)

Time tag is followed by a blank, then a solar-presence symbol:

'*' Daylight (refracted solar upper-limb on or above apparent horizon)
'C' Civil twilight/dawn
'N' Nautical twilight/dawn
'A' Astronomical twilight/dawn
' ' Night OR geocentric ephemeris

LUNAR PRESENCE (OBSERVING SITE)

The solar-presence symbol is immediately followed by a lunar-presence symbol:

'm' Refracted upper-limb of Moon on or above apparent horizon
' ' Refracted upper-limb of Moon below apparent horizon OR geocentric ephemeris

'R.A.____(ICRF)____DEC' =

Astrometric right ascension and declination of the target center with respect to the observing site (coordinate origin) in the reference frame of the planetary ephemeris (ICRF). Compensated for down-leg light-time delay aberration.

Units: RA in hours-minutes-seconds of time, HH MM SS.ff{ffff}
DEC in degrees-minutes-seconds of arc, sDD MN SC.f{ffff}

'Azi____(a-app)____Elev' =

Airless apparent azimuth and elevation of target center. Compensated for light-time, the gravitational deflection of light, stellar aberration, precession and nutation. Azimuth is measured clockwise from north: North(0) -> East(90) -> South(180) -> West(270) -> North (360)

Elevation angle is with respect to a plane perpendicular to the reference surface local zenith direction. TOPOCENTRIC ONLY.

Units: DEGREES

'T-mag N-mag' =

Comets' apparent visual total magnitude ("T-mag") and nuclear magnitude ("N-mag") using the standard IAU model:

T-mag= M1 + 5*log10(delta) + k1*log10(r)
N-mag= M2 + 5*log10(delta) + k2*log10(r) + phcof*beta
Units: MAGNITUDES

'S-O-T /r' =

Sun-Observer-Target apparent SOLAR ELONGATION ANGLE seen from the observers' location at print-time.

The '/r' column provides a code indicating the targets' apparent position relative to the Sun in the observers' sky, as described below:

Case A: For an observing location on the surface of a rotating body, that body rotational sense is considered:

/T indicates target TRAILS Sun (evening sky: rises and sets AFTER Sun)
/L indicates target LEADS Sun (morning sky: rises and sets BEFORE Sun)



Case B: For an observing point that does not have a rotational model (such as a spacecraft), the "leading" and "trailing" condition is defined by the observers' heliocentric ORBITAL motion:

- * If continuing in the observers' current direction of heliocentric motion would encounter the targets' apparent longitude first, followed by the Sun's, the target LEADS the Sun as seen by the observer.

- * If the Sun's apparent longitudini would be encountered first, followed by the targets', the target TRAILS the Sun.

Two other codes can be output:

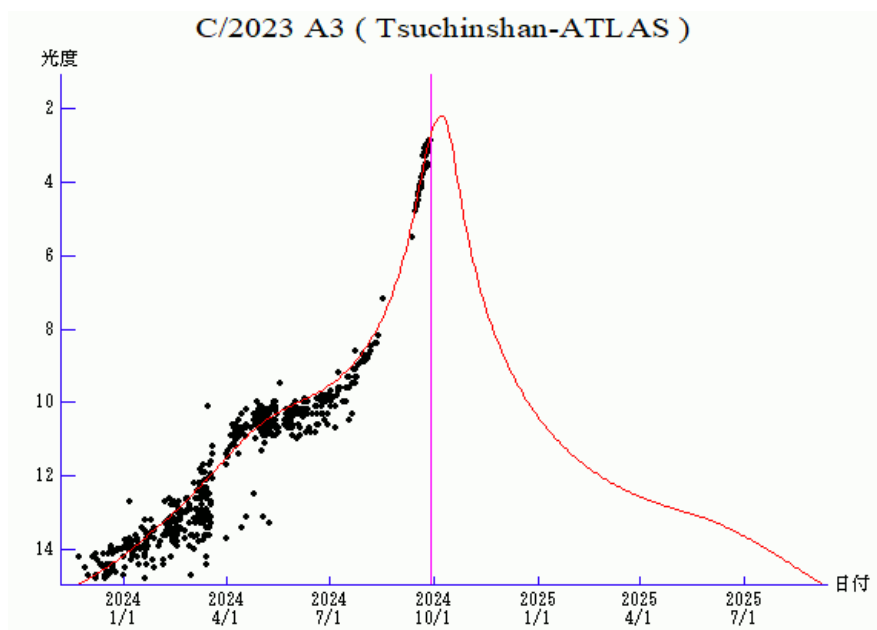
```
/* indicates observer is Sun-centered      (undefined)
/? Target is aligned with Sun center      (no lead or trail)
```

The S-O-T solar elongation angle is numerically the minimum separation angle of the Sun and target in the sky in any direction. It does NOT indicate the amount of separation in the leading or trailing directions, which would be defined along the equator of a spherical coordinate system.

Units: DEGREES

Computations by ...

Solar System Dynamics Group, Horizons On-Line Ephemeris System
 4800 Oak Grove Drive, Jet Propulsion Laboratory Pasadena, CA 91109 USA
 General site: <https://ssd.jpl.nasa.gov/>
 Mailing list: https://ssd.jpl.nasa.gov/email_list.html
 System news : <https://ssd.jpl.nasa.gov/horizons/news.html>
 User Guide : <https://ssd.jpl.nasa.gov/horizons/manual.html>
 Connect : browser <https://ssd.jpl.nasa.gov/horizons/app.html#/x>
 API <https://ssd-api.jpl.nasa.gov/doc/horizons.html>
 command-line telnet ssd.jpl.nasa.gov 6775
 e-mail/batch https://ssd.jpl.nasa.gov/ftp/ssd/hrzn_batch.txt
 scripts <https://ssd.jpl.nasa.gov/ftp/ssd/SCRIPTS>
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Curva di luce della cometa C/2023 A3 (Tsuchinshan-ATLAS)
 (da Seiichi Yoshida - comet@aerith.net)

Links:

<http://www.cbat.eps.harvard.edu/iau/cbet/005200/CBET005228.txt>

<http://www.aerith.net/comet/catalog/2023A3/2023A3.html>

https://britastro.org/section_news_item/comet-c-2023-a3-tsuchinshan-atlas-looking-good-for-october

<https://theskylive.com/c2023a3-info>

