

* NOVA *

N. 2270 - 9 GENNAIO 2023

ASSOCIAZIONE ASTROFILI SEGUSINI

COMETA C/2022 E3 (ZTF)

La cometa C/2022 E3 (ZTF) è stata scoperta dagli astronomi Bryce Bolin e Frank Masci utilizzando la Zwicky Transient Facility (ZTF) il 2 marzo 2022, quando era a 4.3 UA (640 milioni di km) dal Sole ed aveva una magnitudine apparente di 17.3. Inizialmente l'oggetto fu ritenuto un asteroide, ma osservazioni successive mostrarono una chioma molto condensata, aspetto tipico di una cometa.

È una cometa di lungo periodo, circa 50 mila anni: per questo motivo qualche articolo l'ha definita "Cometa di Neanderthal".

All'inizio di novembre 2022, la cometa, di magnitudine 10, era visibile nelle costellazioni del Serpente e della Corona Boreale.

Il 12 gennaio 2023 sarà al perielio, a 1.11 UA (166 milioni di km) dal Sole, visibile nelle ultime ore della notte nelle costellazioni della Corona Boreale e di Boote, e il 1° febbraio 2023 sarà nel punto più vicino alla Terra, a 0.28 UA (42 milioni di km). Potrebbe raggiungere una magnitudine 6, o anche meno, e quindi visibile a occhio nudo, ma meglio con un binocolo o un piccolo telescopio, da un cielo buio.

Negli ultimi dieci giorni di gennaio, essendo circumpolare nelle costellazioni del Drago e dell'Orsa Minore, sarà visibile tutta la notte dalle nostre latitudini.

Ecco le effemeridi calcolate dal Jet Propulsion Laboratory per il Grange Observatory a Bussoleno (TO), nostro Centro di Calcolo.

Ephemeris / WWW_USER Tue Jan 3 13:19:38 2023 Pasadena, USA / Horizons

Target body name: ZTF (C/2022 E3) {source: JPL#34}

Center body name: Earth (399) {source: DE441}

Center-site name: Grange Observatory, Bussoleno

Start time : A.D. 2023-Jan-20 00:00:00.0000 UT

Stop time : A.D. 2023-Feb-20 00:00:00.0000 UT

Step-size : 1440 minutes

Date (UT) HR:MN	R.A. (ICRF) DEC	Azi (a-app) Elev	T-mag	N-mag	S-O-T /r	Cnst
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2023-Jan-20 00:00	15 35 58.49 +49 06 46.3	42.724557 23.143922	8.774	n.a.	91.5485 /L	Boo
2023-Jan-21 00:00	15 32 41.05 +51 12 58.7	41.877545 25.419546	8.662	n.a.	93.4532 /L	Boo
2023-Jan-22 00:00	15 28 33.99 +53 33 35.7	40.776940 27.878446	8.546	n.a.	95.4804 /L	Dra
2023-Jan-23 00:00	15 23 17.95 +56 10 27.9	39.359953 30.537511	8.428	n.a.	97.6407 /L	Dra
2023-Jan-24 00:00	15 16 22.33 +59 05 25.3	37.542817 33.410174	8.309	n.a.	99.9423 /L	Dra
2023-Jan-25 00:00	15 06 55.94 +62 20 00.9	35.212651 36.501755	8.189	n.a.	102.3888 /L	Dra
2023-Jan-26 00:00	14 53 27.21 +65 54 52.9	32.216512 39.801559	8.072	n.a.	104.9740 /L	UMi
2023-Jan-27 00:00	14 32 58.03 +69 48 17.8	28.348139 43.270154	7.959	n.a.	107.6767 /L	UMi
2023-Jan-28 00:00	13 59 08.50 +73 52 29.5	23.336441 46.820169	7.854	n.a.	110.4527 /L	UMi
2023-Jan-29 00:00 m	12 57 45.82 +77 42 53.4	16.850009 50.290581	7.761	n.a.	113.2257 /L	Cam
2023-Jan-30 00:00 m	11 05 40.27 +80 09 32.5	8.554222 53.420753	7.685	n.a.	115.8821 /L	Cam
2023-Jan-31 00:00 m	08 44 22.70 +79 19 29.1	358.283111 55.846354	7.631	n.a.	118.2733 /T	Cam
2023-Feb-01 00:00 m	07 07 59.97 +75 19 59.6	346.340968 57.160960	7.603	n.a.	120.2329 /T	Cam
2023-Feb-02 00:00 m	06 16 22.29 +69 50 37.8	333.703332 57.071050	7.605	n.a.	121.6107 /T	Cam
2023-Feb-03 00:00 m	05 47 13.52 +63 50 34.3	321.703422 55.561120	7.636	n.a.	122.3132 /T	Cam
2023-Feb-04 00:00 m	05 29 08.94 +57 48 13.5	311.342080 52.903894	7.695	n.a.	122.3304 /T	Cam
2023-Feb-05 00:00 m	05 17 03.02 +51 59 20.0	302.949513 49.505045	7.779	n.a.	121.7344 /T	Aur
2023-Feb-06 00:00 m	05 08 28.87 +46 32 57.4	296.372582 45.742143	7.883	n.a.	120.6503 /T	Aur
2023-Feb-07 00:00 m	05 02 09.09 +41 33 41.0	291.279196 41.892742	8.001	n.a.	119.2192 /T	Aur

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

La Nova è pubblicazione telematica aperiodica dell'A.A.S. - Associazione Astrofili Segusini APS di Susa (TO) riservata a Soci e Simpatizzanti.

È pubblicata senza alcuna periodicità regolare (v. Legge 7 marzo 2001, n. 62, art. 1, comma 3) e pertanto non è sottoposta agli obblighi previsti dalla Legge 8 febbraio 1948, n. 47, art. 5. I dati personali utilizzati per l'invio telematico della Nova sono trattati dall'AAS secondo i principi del Regolamento generale sulla protezione dei dati (GDPR - Regolamento UE 2016/679).

www.astrofilisusa.it

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*****
Date__ (UT) __HR:MN      R.A.____ (ICRF)____ DEC  Azi____ (a-app) __Elev      T-mag      N-mag      S-O-T /r  Cnst
*****
2023-Feb-08 00:00  m  04 57 19.56 +37 02 57.6  287.336114  38.131941  8.130      n.a.      117.5698 /T  Aur
2023-Feb-09 00:00  m  04 53 33.46 +33 00 10.8  284.269456  34.556228  8.264      n.a.      115.8041 /T  Aur
2023-Feb-10 00:00  m  04 50 33.61 +29 23 31.7  281.870446  31.209578  8.402      n.a.      113.9957 /T  Tau
2023-Feb-11 00:00  m  04 48 08.53 +26 10 36.9  279.984186  28.103903  8.541      n.a.      112.1935 /T  Tau
2023-Feb-12 00:00  m  04 46 10.26 +23 18 52.1  278.496349  25.233043  8.678      n.a.      110.4277 /T  Tau
2023-Feb-13 00:00  m  04 44 33.11 +20 45 46.8  277.322117  22.581620  8.814      n.a.      108.7153 /T  Tau
2023-Feb-14 00:00  m  04 43 12.94 +18 29 01.9  276.397945  20.130342  8.946      n.a.      107.0648 /T  Tau
2023-Feb-15 00:00  m  04 42 06.63 +16 26 32.8  275.675649  17.859020  9.076      n.a.      105.4789 /T  Tau
2023-Feb-16 00:00  m  04 41 11.81 +14 36 29.8  275.118234  15.748171  9.202      n.a.      103.9570 /T  Tau
2023-Feb-17 00:00  m  04 40 26.62 +12 57 17.8  274.696944  13.779791  9.324      n.a.      102.4966 /T  Tau
2023-Feb-18 00:00  m  04 39 49.61 +11 27 34.5  274.389157  11.937660  9.443      n.a.      101.0942 /T  Tau
2023-Feb-19 00:00  m  04 39 19.64 +10 06 09.4  274.176881  10.207374  9.558      n.a.      99.7458 /T  Tau
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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 dates prior to 1582-Oct-15 are in the Julian calendar system. Later calendar dates are in the Gregorian system.

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:

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'*' 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

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LUNAR PRESENCE (OBSERVING SITE)

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

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

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'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:

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

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'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 longitude 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

'Cnst' =

Constellation ID; the 3-letter abbreviation for the name of the constellation containing the target centers' astrometric position, as defined by IAU (1930) boundary delineation. See documentation for list of abbreviations.

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>

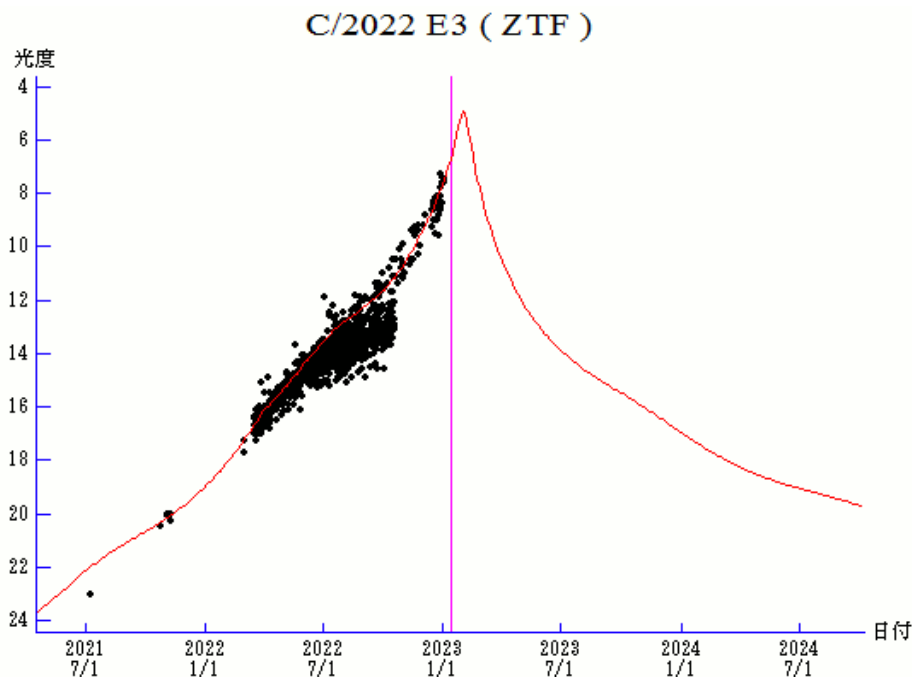
API <https://ssd-api.jpl.nasa.gov/doc/horizons.html>

command-line telnet ssd.jpl.nasa.gov 6775

e-mail/batch https://ssd.jpl.nasa.gov/ftp/ssd/hrzn_batch.txt

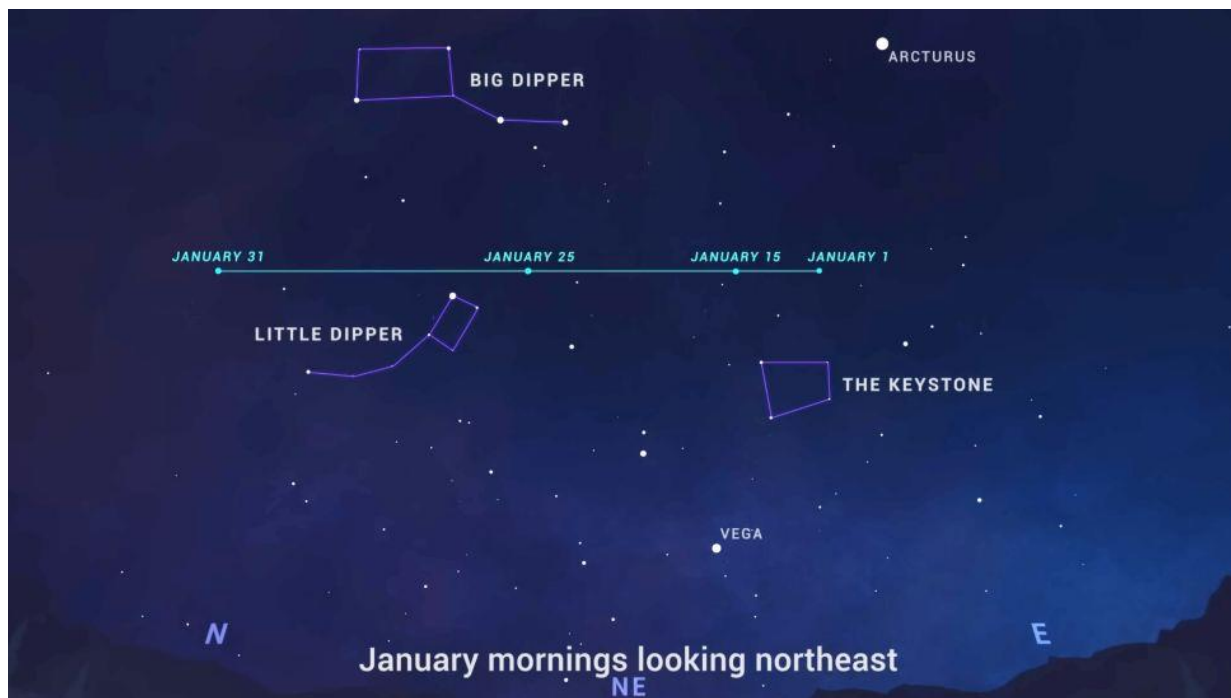
scripts <https://ssd.jpl.nasa.gov/ftp/ssd/SCRIPTS>

Author : Jon.D.Giorgini@jpl.nasa.gov

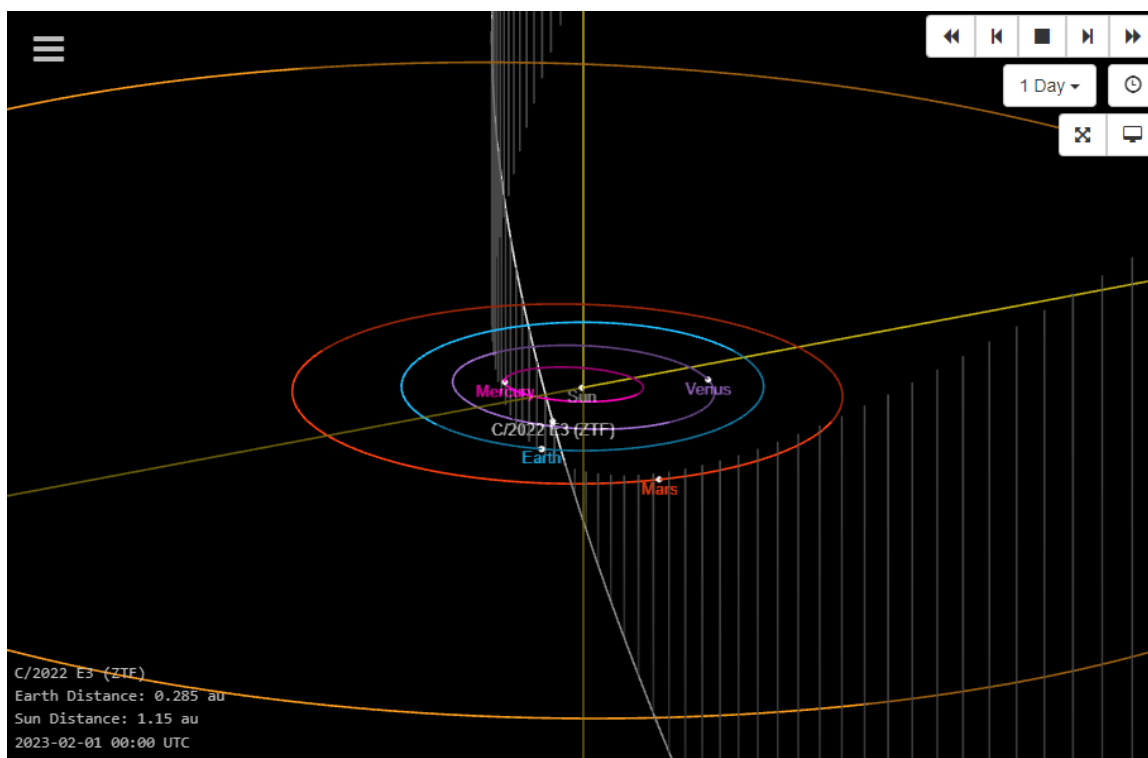


Curva di luce della cometa C/2022 E3 (ZTF),
da Seiichi Yoshida, <http://www.aerith.net/index.html>.





Percorso della cometa C/2022 E3 (ZTF) nel cielo di gennaio 2023 per l'emisfero settentrionale (NASA/JPL-Caltech).
V. anche le cartine della [British Astronomical Association](https://www.baa.org.uk/) (BAA).



Posizione della cometa C/2022 E3 (ZTF) il 1° febbraio 2023 (da Solar System Dynamics - JPL).

Links:

<https://minorplanetcenter.net/mpec/K22/K22F13.html>

https://ssd.jpl.nasa.gov/tools/sbdb_lookup.html#/?sstr=C%2F2022%20E3

<https://theskylive.com/c2022e3-info#position>

https://britastro.org/section_news_item/comet-of-the-month-c-2022-e3-ztf

<http://www.aerith.net/comet/catalog/2022E3/2022E3.html>

<https://www.space.com/comet-c2022-e3-ztf-visible-naked-eye-january-2023>

