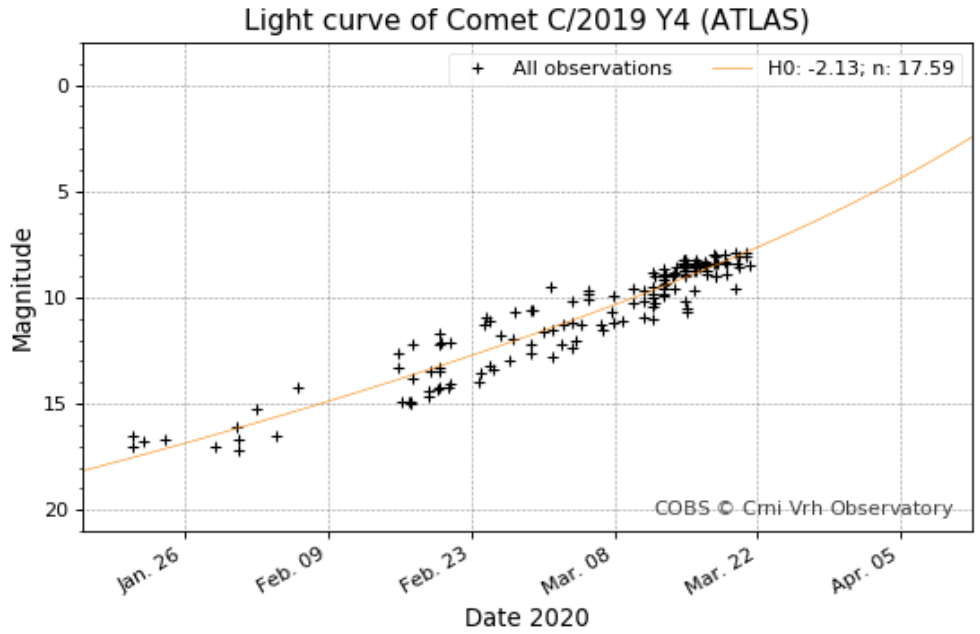
* NOVA *

N. 1710 - 24 MARZO 2020

ASSOCIAZIONE ASTROFILI SEGUSINI

COMETA C/2019 Y4 (ATLAS)

La cometa C/2019 Y4 (ATLAS) è stata scoperta dall'Asteroid Terrestrial-impact Last Alert System (ATLAS, https://atlas.fallingstar.com/home.php), alle Hawaii, il 28 dicembre 2019, quando era di diciannovesima magnitudine e ad una distanza di 2.95 AU.
L'orbita – che percorre in 5500 anni – è simile a quella della Grande Cometa del 1844 (C/1844 Y1): entrambe potrebbero avere un corpo celeste progenitore comune. Attualmente si trova nella costellazione dell'Orsa Maggiore ai confini con la Giraffa (v. cartina della British Astronomical Association, https://www.britastro.org/sites/default/files/2019y4.pdf).
All'inizio di febbraio la cometa aveva raggiunto la diciassettesima magnitudine, e l'ottava magnitudine a metà marzo (un aumento della luminosità di 4000 volte). Se mantenesse questo ritmo potrebbe diventare debolmente visibile ad occhio nudo già all'inizio di aprile e potrebbe raggiungere, in maggio, una magnitudine da +1 a –5. La cometa passerà al perielio il 31 maggio a 0.25 AU (37.8 milioni di km). Allora potrebbe essere un poco più luminosa di Venere e diventare visibile in pieno giorno. Una cosa simile era successa tredici anni fa alla cometa McNaught (C/2006 P1): il 13 gennaio 2007 raggiunse la magnitudine –5, visibile nel cielo a mezzogiorno, ma dall'emisfero meridionale.



Credit: COBS Comet Observation Database (https://www.cobs.si/)

Ma le comete sono imprevedibili. L'abbiamo già sperimentato con la cometa Kohoutek (C/1973 E1 o 1973 f) nel 1974 (v. *Circolare AAS* n. 1, novembre 1973, pp. 1-4, n. 3, gennaio-febbraio 1974, p. 1, e n. 94, ottobre 2000, pp. 3-4), e poi anche con la Austin (C/1989 X1) nel 1990 e la ISON (C/2012 S1) nel 2013 (v. *Circolare AAS* n. 169, dicembre 2013, pp. 1-4). Karl Battams del Naval Research Lab., Washington DC, ha detto: «Penso che la cometa ATLAS stia ottenendo, in luminosità, risultati eccessivi, e non sarei sorpreso di vederla svanire rapidamente e forse anche disintegrarsi prima di raggiungere il Sole».

Staremo a vedere… È da molti anni che non vediamo comete luminose nei cieli settentrionali: le ultime sono state la cometa Hale-Bopp nella primavera del 1997 e la cometa Hyakutake nel 1996.

(a.a.- p.p.)

https://www.britastro.org/node/20911
https://spaceweatherarchive.com/2020/03/16/comet-atlas-is-brightening-faster-than-expected/
https://www.space.com/comet-atlas-may-be-brightenting.html
https://theskylive.com/c2019y4-info

```
*******************************************************************************
JPL/HORIZONS                  ATLAS (C/2019 Y4)            2020-Mar-23 13:52:46
*******************************************************************************
Ephemeris / WWW_USER Mon Mar 23 13:52:46 2020 Pasadena, USA      / Horizons
*******************************************************************************
Target body name: ATLAS (C/2019 Y4)               {source: JPL#5}
Center body name: Earth (399)                     {source: DE431}
Center-site name: Grange Observatory, Bussoleno
*******************************************************************************
Start time      : A.D. 2020-Mar-29 21:00:00.0000 UT
Stop  time      : A.D. 2020-May-31 21:00:00.0000 UT
Step-size       : 1440 minutes
*******************************************************************************
*******************************************************************************************
 Date__(UT)__HR:MN     R.A._____(ICRF)_____DEC Azi_(a-appr)_Elev  T-mag  N-mag    S-O-T /r
*******************************************************************************************
 2020-Mar-29 21:00  m  08 10 01.19 +68 33 54.4 338.7072  62.8881  11.79  15.54  95.0316 /T
 2020-Mar-30 21:00  m  08 02 39.22 +68 33 27.4 337.1537  62.1426  11.67  15.53  93.7396 /T
 2020-Mar-31 21:00  m  07 55 22.11 +68 31 33.5 335.7200  61.3699  11.55  15.52  92.4481 /T
 2020-Apr-01 21:00  m  07 48 10.85 +68 28 15.8 334.4000  60.5732  11.43  15.51  91.1575 /T
 2020-Apr-02 21:00  m  07 41 06.31 +68 23 37.4 333.1874  59.7551  11.31  15.49  89.8681 /T
 2020-Apr-03 21:00  m  07 34 09.23 +68 17 41.5 332.0761  58.9182  11.18  15.48  88.5803 /T
 2020-Apr-04 21:00  m  07 27 20.25 +68 10 31.7 331.0599  58.0646  11.06  15.47  87.2941 /T
 2020-Apr-05 21:00  m  07 20 39.91 +68 02 11.3 330.1327  57.1963  10.93  15.45  86.0098 /T
 2020-Apr-06 21:00  m  07 14 08.60 +67 52 43.8 329.2890  56.3151  10.80  15.44  84.7274 /T
 2020-Apr-07 21:00  m  07 07 46.64 +67 42 12.6 328.5233  55.4225  10.66  15.42  83.4471 /T
 2020-Apr-08 21:00  m  07 01 34.21 +67 30 40.9 327.8305  54.5198  10.53  15.41  82.1689 /T
 2020-Apr-09 21:00  m  06 55 31.43 +67 18 12.0 327.2058  53.6082  10.39  15.39  80.8927 /T
 2020-Apr-10 21:00     06 49 38.32 +67 04 48.8 326.6450  52.6888  10.25  15.37  79.6186 /T
 2020-Apr-11 21:00     06 43 54.83 +66 50 34.3 326.1438  51.7624  10.10  15.36  78.3464 /T
 2020-Apr-12 21:00     06 38 20.81 +66 35 31.0 325.6986  50.8297   9.96  15.34  77.0762 /T
 2020-Apr-13 21:00     06 32 56.09 +66 19 41.6 325.3058  49.8913   9.81  15.32  75.8076 /T
 2020-Apr-14 21:00     06 27 40.38 +66 03 08.2 324.9623  48.9475   9.65  15.30  74.5405 /T
 2020-Apr-15 21:00     06 22 33.40 +65 45 52.8 324.6652  47.9989   9.49  15.28  73.2746 /T
 2020-Apr-16 21:00     06 17 34.77 +65 27 57.0 324.4118  47.0455   9.33  15.26  72.0098 /T
 2020-Apr-17 21:00     06 12 44.10 +65 09 22.3 324.1996  46.0874   9.17  15.24  70.7455 /T
 2020-Apr-18 21:00     06 08 00.96 +64 50 09.7 324.0264  45.1246   9.00  15.22  69.4816 /T
 2020-Apr-19 21:00     06 03 24.89 +64 30 19.9 323.8902  44.1571   8.83  15.19  68.2174 /T
 2020-Apr-20 21:00     05 58 55.42 +64 09 53.3 323.7891  43.1845   8.65  15.17  66.9525 /T
 2020-Apr-21 21:00     05 54 32.05 +63 48 49.8 323.7214  42.2065   8.47  15.15  65.6863 /T
 2020-Apr-22 21:00     05 50 14.26 +63 27 09.2 323.6857  41.2227   8.28  15.12  64.4182 /T
 2020-Apr-23 21:00     05 46 01.54 +63 04 50.4 323.6806  40.2324   8.09  15.10  63.1475 /T
 2020-Apr-24 21:00     05 41 53.34 +62 41 52.4 323.7047  39.2351   7.89  15.07  61.8734 /T
 2020-Apr-25 21:00  m  05 37 49.15 +62 18 13.2 323.7572  38.2299   7.69  15.04  60.5950 /T
 2020-Apr-26 21:00  m  05 33 48.41 +61 53 50.7 323.8369  37.2159   7.48  15.01  59.3115 /T
 2020-Apr-27 21:00  m  05 29 50.59 +61 28 42.1 323.9430  36.1921   7.26  14.98  58.0217 /T
 2020-Apr-28 21:00  m  05 25 55.15 +61 02 44.0 324.0747  35.1571   7.04  14.95  56.7246 /T
 2020-Apr-29 21:00  m  05 22 01.57 +60 35 52.3 324.2315  34.1097   6.81  14.92  55.4189 /T
 2020-Apr-30 21:00  m  05 18 09.32 +60 08 02.3 324.4126  33.0484   6.57  14.89  54.1033 /T
 2020-May-01 21:00  m  05 14 17.89 +59 39 08.5 324.6176  31.9714   6.33  14.85  52.7762 /T
 2020-May-02 21:00  m  05 10 26.78 +59 09 04.6 324.8462  30.8769   6.07  14.82  51.4361 /T
 2020-May-03 21:00  m  05 06 35.50 +58 37 43.4 325.0979  29.7627   5.81  14.78  50.0812 /T
 2020-May-04 21:00  m  05 02 43.61 +58 04 56.6 325.3725  28.6266   5.54  14.75  48.7095 /T
 2020-May-05 21:00  m  04 58 50.67 +57 30 34.8 325.6698  27.4658   5.26  14.71  47.3191 /T
 2020-May-06 21:00  m  04 54 56.28 +56 54 27.4 325.9896  26.2777   4.97  14.68  45.9077 /T
 2020-May-07 21:00  m  04 51 00.09 +56 16 22.6 326.3317  25.0590   4.67  14.64  44.4728 /T
 2020-May-08 21:00  m  04 47 01.80 +55 36 06.7 326.6961  23.8061   4.35  14.60  43.0119 /T
 2020-May-09 21:00     04 43 01.15 +54 53 24.8 327.0827  22.5153   4.03  14.56  41.5222 /T
 2020-May-10 21:00     04 38 57.95 +54 07 59.9 327.4915  21.1823   3.69  14.52  40.0008 /T
 2020-May-11 21:00     04 34 52.10 +53 19 32.9 327.9222  19.8022   3.33  14.49  38.4446 /T
 2020-May-12 21:00     04 30 43.62 +52 27 42.6 328.3748  18.3699   2.96  14.45  36.8506 /T
 2020-May-13 21:00 A   04 26 32.62 +51 32 05.4 328.8490  16.8796   2.57  14.41  35.2154 /T
 2020-May-14 21:00 A   04 22 19.39 +50 32 15.2 329.3442  15.3250   2.17  14.37  33.5362 /T
 2020-May-15 21:00 A   04 18 04.42 +49 27 43.2 329.8598  13.6994   1.75  14.34  31.8102 /T
 2020-May-16 21:00 A   04 13 48.41 +48 17 58.2 330.3947  11.9956   1.31  14.30  30.0355 /T
 2020-May-17 21:00 A   04 09 32.39 +47 02 26.6 330.9471  10.2059   0.85  14.27  28.2112 /T
*******************************************************************************************
```

```
*****************************************************************************************************
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:
        '*'  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)
         DEC in degrees-minutes-seconds of arc  (sDD MN SC.f)

 Azi_(a-appr)_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 =
   Comet's approximate apparent visual total magnitude ("T-mag") and nuclear magnitude ("N-mag") by
following standard IAU definitions:
    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 angle; target's apparent SOLAR ELONGATION seen from the observer location at
print-time. Angular units: DEGREES
    The '/r' column indicates the target's apparent position relative to the Sun in the observer's
sky, as described below:
    For an observing location on the surface of a rotating body (considering its rotational sense):
    /T indicates target TRAILS Sun (evening sky; rises and sets AFTER Sun)
    /L indicates target LEADS Sun  (morning sky; rises and sets BEFORE Sun)

For an observing point NOT on a rotating body (such as a spacecraft), the "leading" and "trailing"
condition is defined by the observer's heliocentric orbital motion: if continuing in the observer's
current direction of heliocentric motion would encounter the target's 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 target's, the target TRAILS the Sun.

NOTE: 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 are defined in the equator of a spherical coordinate system.

 Computations by ...
     Solar System Dynamics Group, Horizons On-Line Ephemeris System
     4800 Oak Grove Drive, Jet Propulsion Laboratory - Pasadena, CA  91109  USA
     Information: http://ssd.jpl.nasa.gov/
     Connect:  telnet://ssd.jpl.nasa.gov:6775 (via browser)
               telnet ssd.jpl.nasa.gov 6775 (via command-line)
     Author: Jon.D.Giorgini@jpl.nasa.gov
*****************************************************************************************************
```