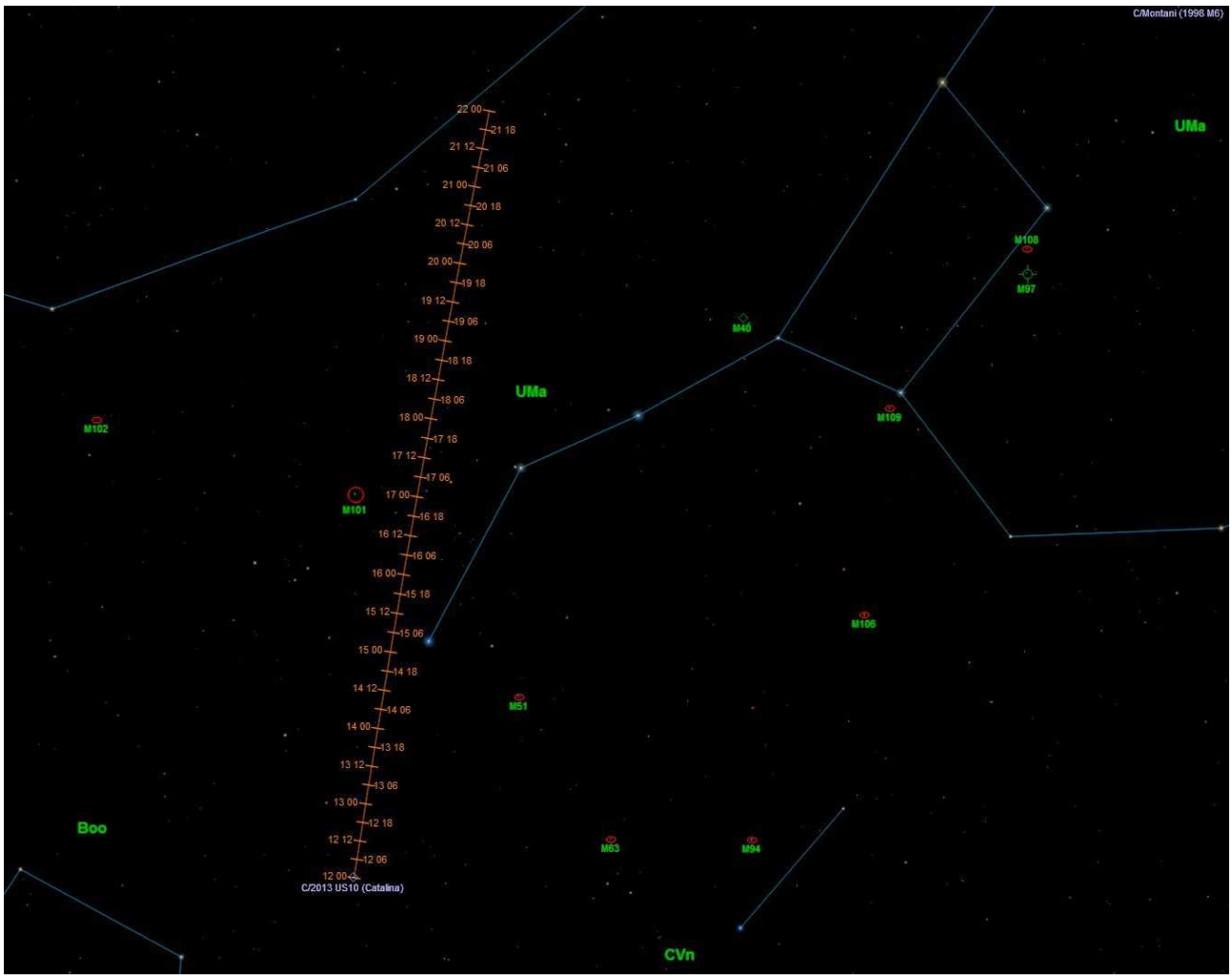
* NOVA *

N. 938 - 13 GENNAIO 2016

ASSOCIAZIONE ASTROFILI SEGUSINI

COMETA CATALINA (C/2013 US10)

Come già annunciato sulla *Nova* n. 911 dell'8 novembre 2015, la cometa C/2013 US10 (Catalina) è diventata circumpolare. Nei prossimi giorni, facilmente osservabile con un binocolo, è apparentemente molto vicina (circa 1°) a Alkaid, ultima stella della coda dell'Orsa Maggiore (v. cartina).
Nelle prossime settimane la cometa fa un arco verso Nord passando vicino alla Polare; l'orbita è leggermente iperbolica, ma risulta parabolica agli effetti pratici.
Raggiunge il punto più vicino alla Terra a 0.72 UA (circa 108 milioni di kilometri) il 17 gennaio, a circa 2° dalla galassia M101. *(p.p.-a.a.)*



Traiettoria della cometa Catalina nella costellazione dell'Orsa maggiore dal 12 al 22 gennaio 2015. Le tacche mostrano giorni e ore delle varie posizioni. Cartina realizzata col programma *Perseus. (a.g.)*

Nelle pagine seguenti riportiamo le effemeridi della cometa, calcolate dal Jet Propulsion Laboratory per il nostro Grange Obs. dal 12 al 31 gennaio 2016.

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JPL/HORIZONS                  Catalina (C/2013 US10)
*******************************************************************************
*******************************************************************************
Ephemeris / WWW_USER Tue Jan 12 23:41:48 2016 Pasadena, USA      / Horizons
*******************************************************************************
Target body name: Catalina (C/2013 US10)          {source: JPL#57}
Center body name: Earth (399)                     {source: DE431}
Center-site name: Grange Observatory, Bussoleno
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Start time      : A.D. 2016-Jan-12 20:00:00.0000 UT
Stop  time      : A.D. 2016-Jan-31 20:00:00.0000 UT
Step-size       : 1440 minutes
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 Date__(UT)__HR:MN     R.A._(ICRF/J2000.0)_DEC Azi_(a-appr)_Elev a-mass mag_ex  T-mag  N-mag           delta      deldot    S-O-T /r
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 2016-Jan-12 20:00     14 00 54.45 +43 29 29.6  20.3018   2.1141 17.539  4.185   7.04   n.a. 0.73959409403287 -11.6543468 100.1396 /L
 2016-Jan-13 20:00  m  13 58 36.34 +46 02 41.7  20.4629   4.8937 10.209  2.436   7.05   n.a. 0.73364700102052  -9.1525736 101.9854 /L
 2016-Jan-14 20:00  m  13 55 57.60 +48 38 09.4  20.5625   7.7140  6.993  1.669   7.07   n.a. 0.72917078361354  -6.5636845 103.7725 /L
 2016-Jan-15 20:00  m  13 52 54.40 +51 15 11.6  20.5982  10.5635  5.268  1.257   7.10   n.a. 0.72621088770173  -3.9035827 105.4867 /L
 2016-Jan-16 20:00  m  13 49 21.96 +53 53 02.7  20.5677  13.4301  4.214  1.006   7.13   n.a. 0.72480301101159  -1.1900238 107.1137 /L
 2016-Jan-17 20:00  m  13 45 14.27 +56 30 53.5  20.4683  16.3009  3.512  0.838   7.16   n.a. 0.72497218010558   1.5578901 108.6396 /L
 2016-Jan-18 20:00  m  13 40 23.65 +59 07 51.4  20.2972  19.1626  3.016  0.720   7.20   n.a. 0.72673214819883   4.3203079 110.0513 /L
 2016-Jan-19 20:00  m  13 34 40.15 +61 43 01.4  20.0513  22.0018  2.649  0.632   7.24   n.a. 0.73008515452286   7.0772765 111.3372 /L
 2016-Jan-20 20:00  m  13 27 50.80 +64 15 25.4  19.7272  24.8053  2.370  0.566   7.29   n.a. 0.73502205948203   9.8093883 112.4875 /L
 2016-Jan-21 20:00  m  13 19 38.37 +66 44 02.5  19.3215  27.5606  2.152  0.513   7.34   n.a. 0.74152284138072  12.4983801 113.4945 /L
 2016-Jan-22 20:00  m  13 09 39.80 +69 07 46.8  18.8303  30.2557  1.977  0.472   7.39   n.a. 0.74955741380222  15.1276416 114.3532 /L
 2016-Jan-23 20:00  m  12 57 23.87 +71 25 25.2  18.2499  32.8800  1.836  0.438   7.45   n.a. 0.75908670152381  17.6826024 115.0610 /L
 2016-Jan-24 20:00  m  12 42 08.33 +73 35 31.6  17.5761  35.4236  1.721  0.411   7.52   n.a. 0.77006389983940  20.1509830 115.6182 /L
 2016-Jan-25 20:00  m  12 22 56.66 +75 36 19.8  16.8048  37.8781  1.625  0.388   7.58   n.a. 0.78243583821063  22.5229102 116.0274 /L
 2016-Jan-26 20:00  m  11 58 36.38 +77 25 31.3  15.9319  40.2362  1.545  0.369   7.65   n.a. 0.79614437331657  24.7909103 116.2935 /L
 2016-Jan-27 20:00     11 27 44.38 +79 00 02.6  14.9534  42.4918  1.478  0.353   7.72   n.a. 0.81112774661736  26.9497998 116.4232 /L
 2016-Jan-28 20:00     10 49 11.45 +80 15 58.0  13.8653  44.6402  1.421  0.339   7.79   n.a. 0.82732185494289  28.9965006 116.4246 /L
 2016-Jan-29 20:00     10 02 59.79 +81 08 52.8  12.6641  46.6773  1.373  0.328   7.87   n.a. 0.84466139713023  30.9298013 116.3069 /L
 2016-Jan-30 20:00     09 11 36.48 +81 35 15.3  11.3469  48.6003  1.332  0.318   7.95   n.a. 0.86308087372168  32.7500918 116.0799 /L
 2016-Jan-31 20:00     08 19 54.16 +81 34 32.3   9.9113  50.4070  1.296  0.309   8.02   n.a. 0.88251542911547  34.4590869 115.7538 /T

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Column meaning:

TIME

Prior to 1962, times are UT1. Dates thereafter are UTC. 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.

Time tags refer to the same instant throughout the universe, regardless of where the observer is located.

The dynamical Coordinate Time scale is used internally. It is equivalent to the current IAU definition of "TDB". Conversion between CT and the selected non-uniform UT output scale has not been determined for UTC times after the next July or January 1st. The last known leap-second is used over any future interval.

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/J2000.0)_DEC =

J2000.0 astrometric right ascension and declination of target center. Adjusted for light-time. Units: HMS (HH MM SS.ff) and DMS (DD MM SS.f)

Azi_(a-appr)_Elev =

Airless apparent azimuth and elevation of target center. Adjusted for light-time, the gravitational deflection of light, stellar aberration, precession and nutation. Azimuth measured North(0) -> East(90) -> South(180) -> West(270) -> North (360). Elevation is with respect to plane perpendicular to local zenith direction. TOPOCENTRIC ONLY. Units: DEGREES

a-mass mag_ex=

RELATIVE optical airmass and visual magnitude extinction. Airmass is the ratio between the absolute optical airmass for the target's refracted CENTER point to the absolute optical airmass at zenith. Also output is the estimated visual magnitude extinction due to the atmosphere, as seen by the observer.
AVAILABLE ONLY FOR TOPOCENTRIC EARTH SITES WHEN THE TARGET IS ABOVE THE HORIZON
Units: None (airmass) and magnitudes (extinction).

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

delta deldot =

Range ("delta") and range-rate ("delta-dot") of target center with respect to the observer at the instant light seen by the observer at print-time would have left the target center (print-time minus down-leg light-time); the distance traveled by a light ray emanating from the center of the target and recorded by the observer at print-time. "deldot" is a projection of the velocity vector along this ray, the light-time-corrected line-of-sight from the coordinate center, and indicates relative motion. A positive "deldot" means the target center is moving away from the observer (coordinate center). A negative "deldot" means the target center is moving toward the observer.
Units: AU and KM/S

S-O-T /r =

Sun-Observer-Target angle; target's apparent solar elongation seen from observer location at print-time. If negative, the target center is behind the Sun. Angular units: DEGREES.
The '/r' column indicates target 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:
/T indicates target trails Sun (evening sky)
/L indicates target leads Sun (morning sky)
For an observing point not on a rotating body (such as a spacecraft):
/T indicates target trails Sun (RA_target - RA_sun < 0, 'west of Sun')
/L indicates target leads Sun (RA_target - RA_sun > 0, 'east of Sun')
NOTE: The S-O-T solar elongation angle is the minimum separation angle of the Sun and target in any direction. It does not indicate the separation in the leading or trailing directions.

Computations by ...

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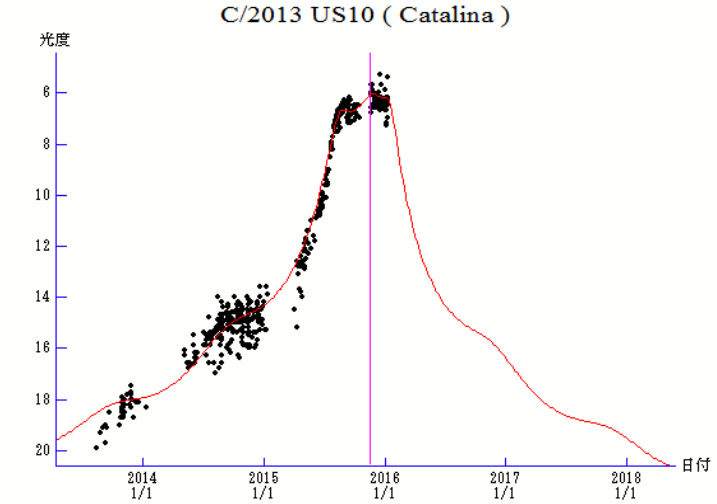
Altri dati e cartine per l'osservazione su:

http://www.heavens-above.com/comet.aspx?cid=C%2F2013%20US10&
http://www.aerith.net/comet/catalog/2013US10/2013US10.html
http://www.skyandtelescope.com/observing/comet-catalina-sails-into-northern-skies111120151111/
http://www.skyandtelescope.com/wp-content/uploads/Web_Dec15_Catalina_BW.pdf



Curva di luce della cometa C/2013 US10 (Catalina) secondo Seiichi Yoshida
(da http://www.aerith.net/comet/catalog/2013US10/2013US10.html)