

* NOVA *

N. 663 - 29 GIUGNO 2014

ASSOCIAZIONE ASTROFILI SEGUSINI

“DAMOCLOID” 2013 UQ4

Sapete cos'è un "damocloid"? Non vi preoccupate se non lo sapete – scrive *Spaceweather.com* –, anche molti astronomi professionisti non sanno cos'è. Tuttavia, almeno 50 esemplari orbitano nel nostro sistema solare. Prendono il nome dell'oggetto 5335 Damocle: un *damocloid* è un asteroide che segue un'orbita altamente eccentrica, tipica di una cometa periodica (come quella di Halley). In realtà, molti *damocloids* si rivelano essere comete quando, senza preavviso, improvvisamente mostrano una coda. L'ultimo a fare questa trasformazione è il damocloid 2013 UQ4.

Scoperto il 23 ottobre 2013, quando era di 18.4 magnitudini, dal Catalina Sky Survey, 2013 UQ4 in un primo momento sembrava essere un asteroide. Il 7 maggio 2014, tuttavia, gli astronomi hanno notato un'atmosfera sfocata intorno al nucleo dell'oggetto. Neanche due mesi dopo ha mostrato una coda ed è apparso innegabilmente come una cometa.

Sarà al perielio il 6 luglio, a 1.081 UA dal Sole, e si prevede potrà essere visibile con un binocolo (7^a magnitudine) il 10 luglio quando sarà a 0.309 UA (circa 47 milioni di km) di distanza dalla Terra, nella costellazione di Cefeo.

Da fine luglio la luminosità si ridurrà progressivamente: la cometa si allontanerà da noi per tornare a farci visita tra 470 anni, nel 2484.



C/2013 UQ4 Catalina, ripresa dall'astrofilo Michael Jäger il 23 giugno 2014 dal suo Osservatorio a Stixendorf in Austria (da http://spaceweathergallery.com/indiv_upload.php?upload_id=98680)

http://en.wikipedia.org/wiki/Damocloid_asteroid

<http://www2.ess.ucla.edu/~jewitt/damocloid.html>

<http://www2.ess.ucla.edu/~jewitt/papers/DAMO/Jewitt.damo.pdf>

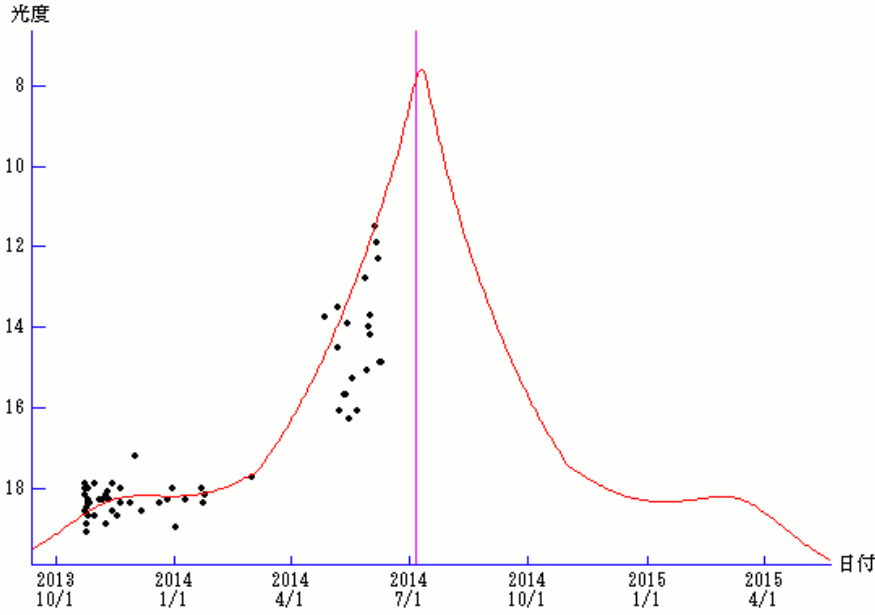
Articolo *A First Look at the Damocloids* di David Jewitt

<http://www.universetoday.com/112598/asteroid-turned-comet-2013-ug4-catalina-brightens-how-to-see-it-this-summer/>

Articolo di David Dickinson con mappe del cielo e consigli per l'osservazione

<http://ssd.jpl.nasa.gov/sbdb.cgi?sstr=2013%20UQ4;orb=1;cov=0;log=0;cad=0#orb>

C/2013 UQ4 (Catalina)



Curva di luce di C/2013 UQ4 (Catalina). Credit: Seiichi Yoshida
<http://www.aerith.net/comet/catalog/2013UQ4/2013UQ4.html>

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*****
JPL/HORIZONS          Catalina (C/2013 UQ4)          2014-Jun-25 00:40:50
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Ephemeris / WWW_USER Wed Jun 25 00:40:50 2014 Pasadena, USA / Horizons
*****
Target body name: Catalina (C/2013 UQ4)          {source: JPL#45}
Center body name: Earth (399)                    {source: DE-0431LE-0431}
Center-site name: Grange Observatory, Bussoleno
*****
Start time           : A.D. 2014-Jul-05 21:00:00.0000 UT
Stop time            : A.D. 2014-Aug-08 21:00:00.0000 UT
Step-size            : 1440 minutes
*****
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*****
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2014-Jul-06 21:00 Am 23 04 20.12 +47 32 44.4 48.0050 26.5112 9.32 15.45 0.34368347140702 -27.1996103 91.3886 /L
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2014-Jul-24 21:00 A 14 34 33.68 +34 57 56.1 269.8767 53.9538 10.81 16.67 0.63241013229248 56.6390559 82.4992 /T
2014-Jul-25 21:00 A 14 30 30.54 +33 32 33.7 269.2927 51.8023 10.94 16.76 0.66521096522734 57.3310083 81.4973 /T
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2014-Jul-27 21:00 A 14 23 53.50 +31 03 33.0 268.6976 47.8769 11.19 16.94 0.73179150113591 58.3066253 79.5226 /T
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2014-Jul-29 21:00 A 14 18 45.01 +28 58 14.3 268.6052 44.3686 11.42 17.10 0.79922782086974 58.8663563 77.5851 /T
2014-Jul-30 21:00 A 14 16 35.88 +28 02 51.0 268.6863 42.7433 11.53 17.18 0.83313409888432 59.0258050 76.6294 /T
2014-Jul-31 21:00 A 14 14 40.37 +27 11 36.4 268.8313 41.1918 11.64 17.25 0.86710933965241 59.1190396 75.6819 /T
2014-Aug-01 21:00 Am 14 12 56.70 +26 24 03.9 269.0288 39.7063 11.74 17.32 0.90111804201059 59.1543923 74.7420 /T
2014-Aug-02 21:00 Am 14 11 23.34 +25 39 50.5 269.2699 38.2801 11.85 17.39 0.93512908597870 59.1388412 73.8094 /T
2014-Aug-03 21:00 Am 14 09 59.06 +24 58 35.8 269.5475 36.9073 11.95 17.45 0.96911503355477 59.0782740 72.8836 /T
2014-Aug-04 21:00 m 14 08 42.80 +24 20 02.2 269.8561 35.5827 12.05 17.51 1.00305156518587 58.9776983 71.9644 /T
2014-Aug-05 21:00 m 14 07 33.66 +23 43 54.0 270.1908 34.3017 12.14 17.57 1.03691702379211 58.8414068 71.0514 /T
2014-Aug-06 21:00 m 14 06 30.89 +23 09 57.7 270.5481 33.0603 12.24 17.62 1.07069204309088 58.6731067 70.1443 /T
2014-Aug-07 21:00 m 14 05 33.84 +22 38 01.0 270.9248 31.8550 12.33 17.68 1.10435923993113 58.4760135 69.2428 /T
2014-Aug-08 21:00 m 14 04 41.95 +22 07 53.2 271.3183 30.6826 12.42 17.73 1.13790295228642 58.2529167 68.3467 /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

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 = $M1 + 5 \cdot \log_{10}(\text{delta}) + k1 \cdot \log_{10}(r)$

N-mag = $M2 + 5 \cdot \log_{10}(\text{delta}) + k2 \cdot \log_{10}(r) + \text{phcof} \cdot \text{beta}$

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 is a Sun-relative code, output for observing sites with defined rotation models only.

/T indicates target trails Sun (evening sky)

/L indicates target leads Sun (morning sky)

NOTE: The S-O-T solar elongation angle is the total separation in any direction. It does not indicate the angle of Sun leading or trailing.

Computations by ...

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