

The Objective View October 2002

Newsletter of the Northern Colorado Astronomical Society

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Meetings first Thursday of each month

Next Meeting: October 3 7:30 pm

Astronomy with CCD Cameras:

You, too, can do serious astronomy at home
by Gary Emerson

NCAS Business at 7 pm

Meeting directions

Discovery Science Center

703 East Prospect Rd, Fort Collins

<http://www.dcsm.org/index.html>

In Fort Collins, from the intersection of College Ave and Prospect Rd, head East about 1/2 mile. See the Discovery Center sign to the South. Enter the West Wing at the NE corner. From I-25, take Exit 268, West to Lemay Ave, continue West 1/2 mile, see Discovery Center on the left.

NCAS Star Party Dates

October 5,6, 26, 27

Cactus Flats site is on undeveloped parcel of prairie about 6 miles West of Briggsdale. Take Colo Hwy 14 East from I-25 (Exit 269). Go 19 miles East to Ault. Continue 18 miles East of Ault. At County Rd 65 (Milepost 170), turn North, go one mile.

Site is through the wire gate on the right, no road, close gate and set up. Beware of the cactus. Our standard nights are the weekend of the New Moon, sometimes a weekend before and after. The site is now officially wheelchair accessible, but there are no facilities so bring essentials. Call **Tom Teters**, starmon@jymis.com, with questions about star party status or dates, 482-5702 or 482-0807.

Discovery Science Center Starwatching

October 11 6:30 pm

November 8 6:30 pm

Longmont Astronomical Society 1st Quarter Moon Public Viewing Nights, Flanders Park

October 12, November 9, December 7

Other Events

Little Thompson Observatory Star Night, Berthoud
October 18 Star Night 7 – 10 pm
<http://www.starkids.org>

Cheyenne Astronomical Society
October 18 Cheyenne Botanical Garden
<http://users.sisna.com/mcurran>

Open House, Chamberlain Observatory, dusk to 10 PM
Oct 12, Nov 16, Dec 14 303 871 5172
<http://www.du.edu/~rstencel/Chamberlain/>

Longmont Astronomical Society
October 17, Longmont Christian School, 550 Coffman St
<http://laps.fsl.noaa.gov/cgi/las.cgi>

September 5 Program

Close Encounter: Flyby of Asteroid 2002 NY 40 by Brad Jarvis

2002 NY40 was discovered on July 14, 2002 by the LINEAR one-meter telescope. Its trajectory through space has been calculated based on at least 646 observations.

Period of orbit = 2.91 years (1063.8 days)

Perihelion distance = 0.59 AU

Aphelion distance = 3.49 AU

Magnitude = 19.32

Orbital elements (as of 8/15/02):

Semimajor axis = 2.0394372 AU

Eccentricity = 0.7100960

Inclination of orbit = 5.7710000 degrees

Argument of perihelion = 268.2793000 degrees

Long. ascending node = 146.8581000 degrees

Mean anomaly = 308.5669000 degrees

Epoch of elements = JD 2452400.5 (6 May 2002 0:00)

Based on its orbit and brightness, we believe it is an asteroid. Assuming it is an asteroid, 2002 NY40 has a diameter of 370-820 meters. Closest approach was around 1:40 a.m. on 8/18. Closest distance 525,000 km (326,000 miles). Brightest (mag 9.71) occurred between 7:45 and 8:55 p.m. on 8/17. Object rose at 12:53 p.m. on 8/17 and set at 6:14 a.m. on 8/18. Transit is at 9:34 p.m. on 8/17. Moon was ~ 60° from object and ~80% illuminated. This object is significant because Near Earth Asteroids (NEAs) can hit the Earth. Over long time spans there is significant risk. Asteroids can also be sources of valuable resources. Asteroids can teach us about the history and composition of the Solar System. The event had special significance because the object became bright enough to see with amateur equipment; Sun angle was favorable. A few asteroids get within 2 lunar distances per year (0-3 for 1991-2001). It was an uncommon opportunity to study a NEA close up.

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View Brad's presentation with animations online at:

<http://www.jymis.com/~bjarvis/Space/Asteroids/2002NY40/index.htm>

Brad also posted animations on my Web site of two of the asteroids JPL identified as having a chance of hitting Earth. Since then, one of them (2002 QF15) has been downgraded to a Torino 0 from a Torino 1.
<http://neo.jpl.nasa.gov/risks/>

See the link at
<http://www.jymis.com/~bjarvis/Space/Asteroids/index.htm>

Scope for Sale

Coulter 10 inch Dobsonian. Like new. Includes Kellner eyepiece, eyepiece rack, red-dot aiming device, aperture stop, dustcap. \$600. Call Gene, 970-568-0545.

Local Astronomy Internet Group

"Astro-Colorado is a Yahoo Group moderated by NCAS member Dave Larison. The site can be used for announcements, discussion of current observations, equipment questions, and file uploads. Anyone can view contents, but only members may post. See:
<http://groups.yahoo.com/group/astro-colo>

From Archer Sully: Sky Transparency and Seeing Forecast
I've altered the following link for Colorado.

http://cleardarksky.com/csk/prov/Colorado_clocks.shtml

Best Looks

| | |
|---------|---|
| Moon | by Mars and Mercury on 10/5, by Antares 10/9 by Saturn 10/25, by Jupiter 10/2, 10/29 |
| Mercury | low in E predawn, most of month |
| Venus | low in SW at dusk, early in month |
| Mars | By Mercury predawn, within 4 degrees from 10/7 to 10/14 |
| Jupiter | High in E predawn 10/10 am, moon Europa occults Io 1:18 to 1:23 MDT |
| Saturn | Overhead predawn |
| Uranus | in Capricornus late evening |
| Neptune | in Capricornus late evening |

Orionid Meteors best on October 17, 18, after moonset. The peak dates of the shower will be spoiled by the Full Moon.

From Jim S: Best Moon Site I've Seen:
<http://www.moon-phases.com/>

Saturn Rocket Stage returns to Earth Orbit, 15th magnitude
See attached Ephemeris for Fort Collins-Loveland

From LeRoy Guatney:

JPL Horizons Ephemeris generator, for J002E3

<http://ssd.jpl.nasa.gov/cgi-bin/eph>

select the "Target Body" button
choose from a list of "Spacecraft"
click "Display List" button
highlight "J002E3 Spacecraft (UNCONFIRMED)"
and click "Select Indicated Body"

Use buttons to correct location and time desired. For accurate predictions, it is important to use your own latitude and longitude. The object is close enough to show parallax displacement, viewed from different sites on Earth.

For orbit animations:

<http://neo.jpl.nasa.gov/j002e3a.html>

Local Bolide Views September 6

On Sat, 7 Sep 2002, William Possel wrote: Did anyone see the bolide last night around 8:30pm? My wife and I were walking and saw a very bright greenish bolide skim the horizon from north to northeast. It appeared to break into pieces and left a smoke trail behind. Venus was visible and this was significantly brighter. Very cool!
> Bill

From Andrea Schweitzer:
I saw it, too, and it was a good one! I saw it break into at least 4 or 5 bright, distinct pieces.

However, it was even further north than over Longmont. I saw it from the N side of Ft. Collins, and it was moving from the N to the NE, just as you saw it. However, from here it was higher up in the sky, not skimming the horizon.

Reply to Tom Teters:

Thank you very much for your submission of a fireball report for the event on September 6. Over 200 reports were submitted to the Denver Museum of Nature and Science through my website, and we now have an estimated path for the fireball. It probably began near Yellowstone, and ended over southeast Nebraska, a distance of over 700 miles. It may have been skipping across the atmosphere at a very high altitude, possibly leaving without dropping any meteorites onto the ground. If material did survive, it would likely be found southwest of Lincoln, NE in the region between I70 and I80. This is, of course, a very large area to search!

A summary of what we have learned about this fireball so far is available at

<http://www.cloudbait.com/science/fireball20020906.html>

. Please check back from time to time, as this event is still being studied and new information will be posted when it becomes available. I remain interested in hearing from new witnesses. If you know of anyone else who saw this event, particularly from near the projected path, please

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encourage them to submit a report at
<http://www.cloudbait.com/science/fireballs.html>

Also, if you know of anyone fortunate enough to have captured the meteor in a photograph or on video, please have them contact me, as that information could prove extremely useful.

Once again, thank you for your help. This type of research depends very much on the willingness of people to step forward with their reports. If you have any specific questions, feel free to contact me personally and I'll try my best to answer them.

Chris Peterson <http://www.cloudbait.com>

Clear Sky Clock Update from Tom Teters

Attila has just published new area Clear Clocks for some of our favorite sites. See the NCAS weather page!!
Now we'll NEVER make that 40-80 mile trip and experience clouds skies again, whewwww. tomt

From SKY & TELESCOPE's AstroAlert for Novae

The following was issued September 23, 2002, by the American Association of Variable Star Observers:

AAVSO ALERT NOTICE 297 (September 23, 2002)

SUBJECT: 1855-22 NOVA SAGITTARII 2002 NO. 3 -
ANOTHER NOVA IN SAGITTARIUS

1855-22 NOVA SAGITTARII 2002 NO. 3

Discovered By: Katsumi Haseda, Aichi, Japan (IAUC No. 7975)

Discovery **Magnitude: 5.0** photographic (120-mm f/3.5 camera lens and Tri-X film; IAUC No. 7975)

Discovery Date: September 20.431 UT (IAUC No. 7975)

R.A. (2000): 19h 01m 09s.38
Decl. (2000): -22° 00' 05".9 +/- 0".75 (D. West, Mulvane, KS; IAUC No. 7975)

AAVSO Chart(s): 'a' and 'b' scale chart

for full 300 dpi images

http://www.aavso.org/charts/SGR/N_SGR_02_3/NSGR02_3-A.GIF

http://www.aavso.org/charts/SGR/N_SGR_02_3/NSGR02_3-B.JPG

for web browser printable images

http://www.aavso.org/cgi-bin/shrinkwrap.pl?path=/charts/SGR/R_SGR/RSGR-A.GIF

http://www.aavso.org/cgi-bin/shrinkwrap.pl?path=/charts/SGR/N_SGR_02_3/NSGR02_3-B.JPG

Report Object to the AAVSO as: 1855-22 N SGR 02#3

From: Dan Laszlo
2001 S Shields St Building H
Fort Collins CO 80526

TO: