

The Objective View August 2002

Newsletter of the Northern Colorado Astronomical Society

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Meetings first Thursday of each month

Next Meeting: August 1 7:30 PM
Teen Astronomy Camp 2002
University of Arizona
by Max Moe

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
August 2,3

You might find a few amateur astronomers on the plains on these nights. 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**, tomt@jymis.com, with questions about star party status or dates, 482-5702 or 482-0807.

Discovery Science Center Starwatching

September 13 6:30 pm
October 11 6:30 pm
November 8 6:30 pm

Longmont Astronomical Society 1st Quarter Moon Public Viewing Nights, Flanders Park
August 17, September 14, October 12, November 9, December 7

Other Events

Little Thompson Observatory Star Night, Berthoud
August 16 Star Night 7 – 10 pm
<http://www.starkids.org>

Cheyenne Astronomical Society
Aug 8-11 Weekend Under the Stars, Foxpark WY
<http://users.sisna.com/mcurran>

Open House, Chamberlain Observatory, dusk to 10 PM
Aug 17, Sep 14, Oct 12, Nov 16, Dec 14 303 871 5172
<http://www.du.edu/~rstencel/Chamberlain/>

Longmont Astronomical Society
August 13, Longmont Christian School, 550 Coffman St
<http://laps.fsl.noaa.gov/cgi/las.cgi>

Rocky Mountain National Park Starwatching

Site is the end of the Upper Beaver Meadows Road. Dates for Summer 2002 are August 2, 16 and 30. Contact Dan Laszlo if you can volunteer, djlaszlo@aol.com, or 498-9226

Carter Lake Knolls Starparties

Dates for Summer 2002 are: Aug 16, Sept 13
Contact Tom Teters if you can volunteer, 482-5702
tomt@jymis.com

CAS Weekend Under the Stars, August 8-10, Foxpark WY

Site is about 36 miles SW of Laramie, off SR 130. Turn right onto CR 512, go 1.5 miles to Foxpark gate. Follow the main road left from the Foxpark gate for 0.4 miles, and look for the entrance to the meadow on the right.
<http://users.sisna.com/mcurran/wuts.html>

July 11 Program

Optics for Professionals and

Arizona Observing

Thom Peck, Senior Optician

University of Arizona Optical Sciences Laboratory

Former NCAS President, mirror mentor, and active amateur observer Thom Peck showed the challenging optical elements he successfully produced in the last few years. The Optical Sciences Laboratory is placed 4 stories underground for temperature stability. A hatch allows access for optics up to 4.5 meters. A 4 meter mirror with the extreme f ratio f/0.5 has been produced. Such a mirror has a center depth of 22 inches. Thom works with Bob C, a mirror maker since 1962, who still comes in about 20 hours a week. A 2 meter demonstration mirror for the NGST proposal was cut to 3mm thick, ground to 2.1mm, then polished, floating on pitch pads. Retroreflectors were made for the figure control system in the massive new radio telescope at Green Bank, West Virginia. Thom holds the record for the largest lens successfully produced, a 72 inch test plate for the MMT secondary mirror. The plate has a coating which is

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holographically etched. He made a 5 inch, f/0.3 test optic for Samsung projection TV production. In addition to traditional glasses and pitch, Thom has used exotic materials including a nickel-beryllium blank, and a granite support block. Lithium tantalate and niobate have the unpleasant property of accumulating charge like a capacitor, and can deliver a nasty shock. An unorthodox project was production of five 24 inch, four inch-thick off-axis paraboloids for a defense project. He has also made and enjoys the quirks of testing toroidal surfaces. Thom still makes time for observing. He is Vice President of the Tucson Amateur Astronomical Association. Its 400 members include Dean Ketelson, Spacewatch asteroid hunters, and David Levy of Comet SL-9 fame. The club regularly escapes the lights of Tucson for excellent observing sites. Thom's move has been our loss, but he has found a rewarding niche for his rare talent.

From the Astronomical League Reps:

As the MARS Regional Representative I sending you this reminder and, at the same time, asking for your cooperation. By the way, the e-mail address I have for the Great Falls Astronomical Society is no longer valid so if any of you know the new address would you please let me and Ginny Kramer (ginnyorion@aol.com).

1. I hope you are all aware, and making your club members aware, that the League's national convention, ALCON2002, begins July 31st and runs thru Aug. 3rd. The people in Salt Lake City have worked hard for over a year to put together a good convention and they deserve your support. I hope that many of you will attend. More complete information on the convention can be found at www.alcon2002.org

2. At this meeting we will have a MARS business meeting and if you know of any of your club members coming to the convention PLEASE encourage them to attend the regional business meeting and give them a proxy to vote for your club.

3. As part of the business meeting we will have an election of regional officers. Although we have a candidate for each office, this does not mean that additional candidates are not encouraged and welcomed! Elections imply candidates and if you, or some member of your club, wishes to run for office you (they) are most welcome to. The current list of candidates are as follows: Regional Chairperson: Mrs. Ginny Kramer (Denver, CO)....Vice-Chairperson: Mr. Mike Murray (Bozeman, MT...soon to be living in Salt Lake City)....Secretary-Treasurer: Mr. Gene Schermerhorn (Colorado Springs, CO) and Regional Representative: Jerry Sherlin (Centennial, CO).

I hope to see many of you in Salt Lake City soon. By the way....I know that many people use the closing statement "Clear Skies." Let me make you aware of something I heard last night....the government now has an operation called "Operation Clear Skies" -- you might want to consider the possibilities.

Sincerely,

Jerry M. Sherlin
MARS Regional Representative
sherlinj@aol.com

Ginny Kramer
MARS Regional Chairperson
ginnyorion@aol.com

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 Saturn 8/5, by Mercury 8/9, by Venus 8/11
Venus	bright in WSW at dusk, by Spica 8/31
Mercury	low in W eves, end of month
Jupiter	low in E, dawn
Saturn	High in E predawn
Uranus	in Capricornus predawn
Neptune	in Capricornus predawn

Perseid Meteor Maximum August 12-13

Find a dark site for this moonless Perseid shower. Peak is expected in the hours just before dawn.

Meteorites at the Loveland Museum

BTW there is an exhibit of Marty Tippmanns' many meteorites and Judy Cunninghams' meteorite jewelry at the Loveland Museum. There are a couple of my Leonid2K1 pics there, too. Tom T.

From Jim S: Best Moon Site I've Seen:

<http://www.moon-phases.com/>

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

TO:

=====
This Is SKY & TELESCOPE's AstroAlert for Minor Planets
=====

NEXT MONTH'S FLYBY OF 2002 NY40

In mid-August, a newly discovered asteroid will pass close enough to Earth that it should be easy to spot in small telescopes and even binoculars. This object was first detected on July 14th by astronomers using the LINEAR 1-meter survey telescope in New Mexico, and it has now been designated 2002 NY40 by the Minor Planet Center in Cambridge, Massachusetts. According to calculations by the center's associate director, Gareth V. Williams, it is traveling in a low-inclination, Apollo-type orbit with a period of 3.03 years. Its August 18th flyby should bring it to within 530,000 kilometers (330,000 miles) of Earth, which is just outside the Moon's distance.

There are several key differences between this encounter and that of 2002 MN, which made news a few weeks ago. That object came well inside our own Moon's orbit and was not detected until several days after the fact. The new asteroid was found on its way in toward the Sun, a full month before its own flyby. But 2002 NY40 is about 10 times larger than 2002 MN; the best current estimates make it about half a kilometer (a third of a mile) across.

Still quite faint at magnitude 18 in the constellation Aquarius, 2002 NY40 is making a very tight loop around the star Beta Aquarii. During the next few weeks it will brighten tremendously and yet remain almost motionless in the sky -- the eerie signature of an asteroid hurtling right toward the Earth! Then it veers off to the northwest as it goes by, racing past the double star Albireo in Cygnus for observers in the Western Hemisphere on the night of August 17-18.

On that Saturday evening, 2002 NY40 should become as bright as magnitude 9.3 during the period when it is well placed for viewing from North America. Its angular velocity will exceed 4 arcminutes per minute, a motion easily perceptible in small telescopes. Sky & Telescope plans to issue detailed observing instructions, through AstroAlerts and SkyandTelescope.com, in the days leading up to this rare event.

A mere 24 hours after it goes by, 2002 NY40 plunges hopelessly beyond reach of Earth-based telescopes as it heads in toward the Sun. (We are then viewing its unilluminated backside, which explains why it becomes so faint, so fast.)

Meanwhile, professional astronomers are gearing up to make the most of this encounter. "2002 NY40 is a potentially very good radar target for mid-August," notes Mike Nolan of Arecibo Observatory and Cornell University. In a message posted on the Minor Planet Mailing List (<http://www.bitnik.com/mp>), Nolan urges advanced amateurs to obtain detailed photometry of the asteroid on the nights leading up to the flyby. A good light curve, revealing the object's rotation rate, would help in selecting the instrumentation to be used with the Arecibo 1,000-foot radio dish.

While there is no danger of 2002 NY40 striking the Earth during this flyby, a future impact has not been ruled out. Both NEODyS, operated by the University of Pisa, and NASA's Near-Earth Object Program Office at JPL have identified a number of very close encounters in the years to come. These occur either around August 18th as the asteroid heads in toward the Sun, or else near February 14th when it is on the way out. Both agencies are focusing a flyby just 20 years from now (on August 18, 2022), when there appears to be a 1-in-500,000 chance of an impact -- extremely unlikely, but worrisome just the same.

Roger W. Sinnott
Senior Editor Sky & Telescope

The following ephemeris, adapted from the Minor Planet Ephemeris Service at <http://cfa-www.harvard.edu/iau/mpc.html>, gives the object's right ascension and declination at 0h Universal Time on successive dates. Also listed are its distance from the Earth

(Delta) and Sun (r) in astronomical units, 1 a.u. being 149,600,000 kilometers. The last column is the predicted visual magnitude.

Because this is a newly discovered object passing fairly close to the Earth, the ephemeris is still somewhat uncertain (especially on the final dates listed). Keep in mind that these positions are geocentric; parallax at closest approach could shift the object's position by 1/2 degree or more depending on observer's geographic location. (To display the ephemeris properly, your e-mail program should be set to use a fixed-space font such as Courier.)

Ephemeris of 2002 NY40

Date (0h UT)	R.A. (2000) h m	Decl. o ' "	Delta a.u.	r a.u.	V mag.
Jul 29	21 34.7	-05 13	0.253	1.255	17.3
Jul 30	21 34.8	-05 09	0.240	1.243	17.1
Jul 31	21 34.8	-05 04	0.227	1.232	17.0
Aug 01	21 34.7	-04 59	0.214	1.220	16.8
Aug 02	21 34.7	-04 54	0.201	1.208	16.6
Aug 03	21 34.6	-04 49	0.188	1.196	16.5
Aug 04	21 34.5	-04 43	0.176	1.185	16.3
Aug 05	21 34.3	-04 37	0.163	1.173	16.1
Aug 06	21 34.0	-04 31	0.151	1.161	15.9
Aug 07	21 33.7	-04 24	0.138	1.149	15.6
Aug 08	21 33.4	-04 16	0.126	1.137	15.4
Aug 09	21 32.9	-04 08	0.113	1.125	15.1
Aug 10	21 32.3	-03 57	0.101	1.113	14.8
Aug 11	21 31.5	-03 44	0.089	1.101	14.5
Aug 12	21 30.5	-03 28	0.077	1.089	14.2
Aug 13	21 29.1	-03 06	0.065	1.077	13.8
Aug 14	21 27.0	-02 35	0.053	1.064	13.3
Aug 15	21 23.7	-01 46	0.040	1.052	12.8
Aug 16	21 17.7	-00 16	0.028	1.040	12.1
Aug 17	21 03.1	+03 23	0.017	1.028	11.0
Aug 18	19 39.2	+22 26	0.005	1.016	9.4
Aug 19	10 50.2	+21 39	0.009	1.004	21.0
Aug 20	10 06.4	+12 09	0.020	0.992	49.7
