



The Spectrum

Newsletter of the Western Colorado
Astronomy Club



Members of the Astronomical
League, MARS Region



Members of the International
Dark-Sky Association

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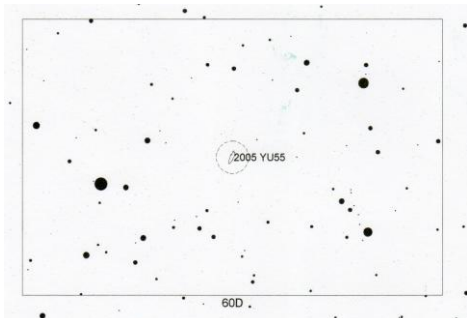
Capturing an Asteroid

By Dave Copley

When I heard that an asteroid was going to pass close to the Earth, I decided that if I could determine approximately when and where I could find it, I would try to photograph it. Software Bisque's The Sky planetarium program has a feature where you can add new comets and asteroids to its data base so I went online and found its ephemeris. An ephemeris is all the values needed to plot the orbit of an object in the solar system. My Sky program is out of date so I can no longer download those values directly. That means I had to enter them by hand. They look like this:

Orbital and Physical Characteristics
Eccentricity (e) 0.4289483
Perihelion Distance (q) 0.6525501
Orbital inclination (i) 0.51346 deg
Longitude of the ascending node 39.31611
Argument of perihelion (w) 268.77402
Absolute magnitude (H) 21.9

After that lengthy and tedious job I was able to plot and plan an area of sky to capture it. I came up with this star field:



Continued on page 3

Exploring the Starscape of Scenic Gateway, Colorado

By Thad V'Soske

While camping out along the scenic Dolores River just outside of Gateway, Ricky Smith and I had a very successful stargazing event with students from Gateway School. We eagerly volunteered our time and telescopes for the kids on Friday evening, September 30, as they had plans to be studying astronomy in their curriculum later this year. The school's secondary math/science teacher, Mr. Damian Nash, was very grateful for our effort and even offered Ricky and I sandwiches to start off the evening. Hot chocolate and cider were also available, but Ricky and I had our usual star party beverage; coffee.

The handful of students of various ages and grade levels included the small school's one graduating senior and a pair of rambunctious elementary girlz who were quite the entertainment. In fact, when the two first approached Ricky's Schmidt-Cassegrain Telescope (SCT) all setup at night - with those cool red-orange string lights surrounding the mount's tripod feet - they immediately launched into a brief animated cheer. In what seemed like perfect syncopation the girls moved their arms and legs into some superhero-like running stance while they cheered the words "M-Y-S-T-E-R-Y T-E-L-E-S-C-O-P-E-!!" in perfect unison. It was so

continued on page 3

WESTERN COLORADO ASTRONOMY CLUB

The Western Colorado Astronomy Club formed in 1989 as a non-profit organization for the purpose of astronomy education. Members have a wide range of skill levels from beginner to advanced. Club activities include observing, astrophotography, and discussion and lectures related to astronomy. Meetings are held at 7:00 PM on the first Tuesday every month at Colorado Mesa University in room 160 of the Horace Wubben science building. Monthly observing sessions are held throughout the Western Slope, including an annual star party lasting a couple of days and nights including camping and observing. Club members visit schools in District #51 at various times to give telescope viewing time to the students, and to lecture on astronomy-related science and current events. Several times a year we visit the Colorado National Monument and Highline Lake Park for observing and public outreach events.

Membership is open to anyone interested in astronomy and the night sky -- no telescope is required! Several loaner telescopes are available for members who complete the requisite training in their use. We are members of the IDA (International Dark-Sky Association) and the AL (Astronomical League). Membership benefits include discounted astronomical publications, AL services, and newsletters. Also an annual national event takes place in various areas of the United States. For current events log onto the internet and visit the WCAC web site, at:

www.wcacastronomy.org

WCAC OFFICERS for 2011

President	David Copley	434-4364
Vice President	Hank Schoch	858-9317
Treasurer	Blanche Godel	241-1482
Secretary	Dave Bertrand	434-6055
Community Liaison	Jeff Dershem	243-1351
Newsletter Editor	David Copley	434-4364
Web Master	Jim Maddox	243-2353

Upcoming Events

Please note that all event dates and times are subject to change. Check our web site at:

<http://www.wcacastronomy.org>

or for the latest information please visit our Yahoo group calendar at:

<http://groups.yahoo.com/group/WCAC-Group/cal>

Events are subject to change but WITH notice as we like people to come to them!

It's Winter! Stay in and keep warm!

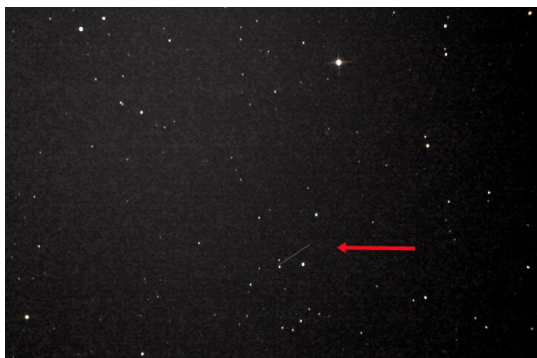
Monthly Meeting December 6th.

No Meeting in January. Next Meeting is Feb. 7th.

Elections Dec. 6th.

This is the last Newsletter before our elections. Be sure to check our web site for the results. Since I am stepping down as President, we will definitely have a new President. I wish him or her luck and ask everyone to give them all the support you have given me and thank you all for a great 6 years!

My window of opportunity was 7:03 PM to 7:11 PM. I had started setting things up when the phone rang. ("Hello, Jim!" ☺) I was finally set up, aligned and ready to photograph at 7:15. So I found my star field and started imaging it to get a good idea of exposure. Then I moved a little to the East with the next exposure. I found a streak after only one image. Cool! I then made several exposures at 30 seconds each. This is one of them:



After a few minutes I realized that this might make a neat video so I moved the asteroid outside of the field of view, estimating that it would travel from the lower left to the upper right. I decided on 15 second exposures to extend the video to at least 30 frames. When I finished I put in an eyepiece and tried to find it visually. I was sure I was in the correct star field but could not tell which "star" was moving. After several minutes I realized that it would be out of the field of view and I would be hard pressed to find it. The Moon was full and the sky was quite bright in the eyepiece. It is possible that the sky would have been too bright to see the asteroid anyway.

One thing kept coming to mind. This was an aircraft carrier sized object, closer to us than the Moon. This would be a good example to show those people who keep asking me if I can see the flag on the Moon with my scope! If I could barely capture an aircraft carrier at that distance, a small 3x5 flag is definitely out of the question!

This was one of the most fun and rewarding searches and images I have ever made, even though visually, it is not too exciting.

Video can be seen on our web site at :

<http://www.wcacastronomy.org/page19.html#Kodak>



highly entertaining that we requested (and received) an enthusiastic encore.

Twilight clouds gave way to what turned out to be a perfectly clear, warm, dry, and windless evening under an inky-dark sky. The dramatic topography of the surrounding canyon walls was as stunning in nighttime silhouette as it is in the direct light of our closest star. But it was the exploration of a richly contrasted overhead arch of Milky Way stars with a handful of young and eager minds that made it a truly stellar night.

Ricky and I have Kate Graham to thank for her work in arranging this volunteer evening under the stars with Gateway School. It was a terrific idea! Kate is our contact with Friends of Northern Dolores (FOND) and invites us out to participate in FOND's semi-annual weekend campouts along the Dolores river near Gateway. We look forward to volunteering for the next campout in spring 2012. Thank you, Kate!!

Learn more about Gateway school here:

<http://gateway.mesa.k12.co.us/>

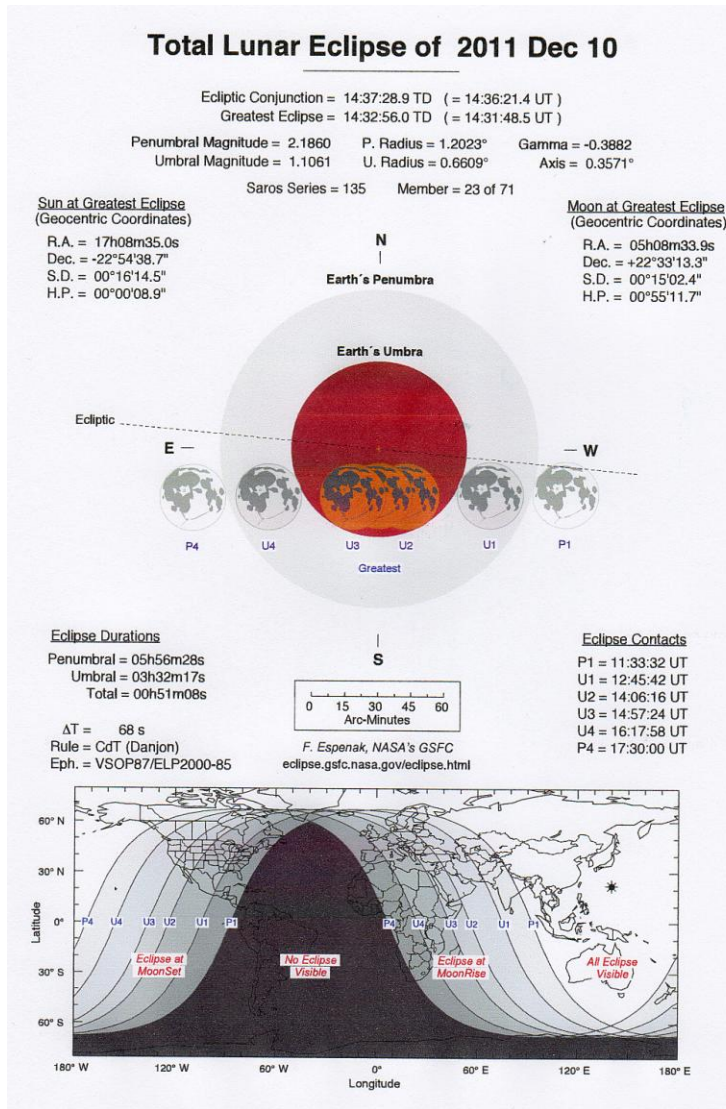
Here's more information about the campout:

<http://www.ourcolorado.org/get-involved/calendar/fonds-fall-fest.html>

Eclipses Coming Our Way

By Dave Copley

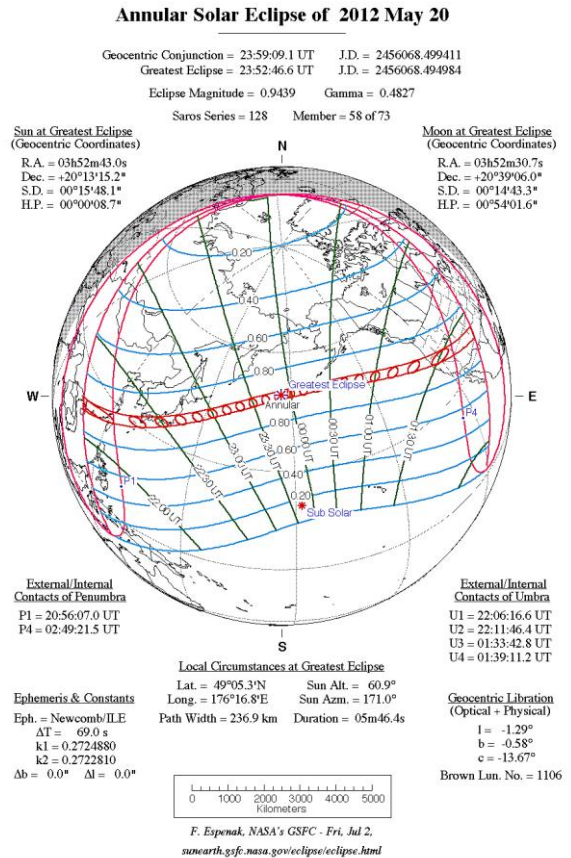
It has been a while since I have seen an eclipse and both types are coming our way! Up first is a total lunar eclipse on Dec. 10th just before sunrise. First contact is about 4 AM our time. Totality starts at 7:06 AM but the Moon sets at about 7:25 AM. The Chart below, courtesy of NASA, may help in planning your morning.



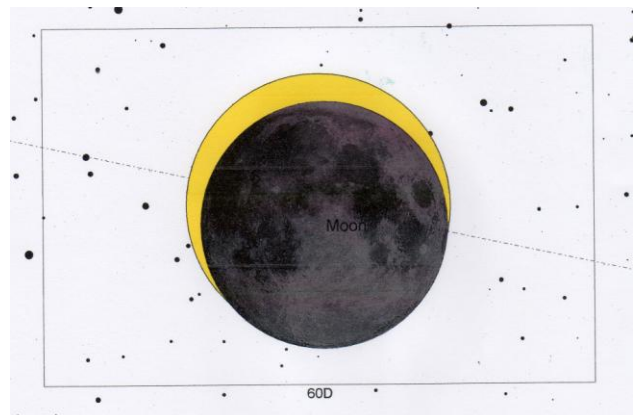
Annular Solar Eclipse May, 20, 2012

There is an annular eclipse next year I just heard about. It will take place just before sunset as well. We are placed for a partial eclipse with maximum at about 7:30 PM about an hour before Sunset. The Sun will be over 90% covered for us.

Below is another chart from NASA showing the eclipse's path. This will be our best chance at a solar eclipse until Aug. 21, 2017 when we will have totality over the northern states. I am planning a vacation to Montana for that one!



Here is a frame from The Sky showing its prediction of the eclipse. It will be a very interesting sunset that day!



Member Photos



Crab Nebula by Dave Copley.
Taken Oct 21st. 30 second exposure ay ISO 3200
Canon 60D through 10" Newtonian



Gateway area by Thad V'Soske



M45 taken Oct. 21st by Dave Copley.
Stack of 17 images, 30 seconds each at ISO 3200. Canon
60D, 10" Newtonian.



Oct. 22 Star Party by Ricky Smith



M42, taken Oct. 21st by Dave Copley,
Stack of 12 images at ISO 3200, 5 to 30 seconds.
Canon 60D through 10" Newtonian.



Meteor above CNMA by Ricky Smith

Application for Membership in the Western
Colorado Astronomy Club

New _____ Renewal _____

Name: _____

Address: _____

City, State, Zip: _____

TEL: Home () _____ Work () _____

E-mail: _____

Other Interests: _____

How did you hear about the club? _____

Please Circle all that apply:

Regular Membership: \$36 \$ _____

Associate: (students) \$15 \$ _____

Sky and telescope Magazine \$32.95 \$ _____

Astronomy Magazine \$34.00 \$ _____

Donation to Colorado Astronomy \$ _____

TOTAL \$ _____

Please make checks payable to Western Colorado
Astronomy

Club (WCAC) and mail with form to: WCAC Treasurer, PO
Box 40537, Grand Junction, CO 81504

**Don't miss our monthly
meetings!**

The Western Colorado Astronomy Club meets on the first Tuesday of every month at 7 PM, and all members, invited guests, and visitors are welcome. Meetings are held at Wubben lecture hall, Room 264, on the Mesa State College downtown campus (1175 Texas Ave.). For additional information and directions, please visit our web site at:

<http://www.wcacastronomy.org/>

Western Colorado Astronomy Club
PO Box 40537
Grand Junction CO 81504

Address Correction Requested