



IYA- An Eventful Year Ahead

2009 promises to be an exciting year with our club celebrating the 20th anniversary of its founding in 1989, and the official kickoff of the International Year of Astronomy (IYA) which celebrates the 400th anniversary of Galileo's first use of a telescope for astronomy.



The International Year of Astronomy (IYA2009) is a global celebration of astronomy and its contributions to society and culture. The aim of IYA is to stimulate worldwide interest, especially among youth, in astronomy and science under the central theme: *The Universe: Yours to Discover*. The U.S. IYA program seeks to offer an engaging astronomy experience to every person in the country, to nurture existing partnerships, and to build new connections to sustain public interest in astronomy. Throughout the year, WCAC will support these goals with several public outreach and viewing events in the Grand Valley area. More info at: <http://tinyurl.com/d3f9uu>.

Club News and Events

October General Meeting

Blanche Godel read from a 1995 club newsletter article detailing the dedication of the Loma observatory built by WCAC members. KJCT TV ran a feature on the observatory and longtime member Dave Bertrand presented the first public program at the new building. To round out the meeting, Dave Copley gave a brief presentation of some of his work over the years in astrophotography and his usual dose of puns and humor.

Chick-fil-A Viewing Event, 10-14-08

Club Members set up telescopes at our local CFA restaurant for a public viewing event.

CNM Viewing, 10-25 & 10-26-08

Club members closed out the season at CNM with a viewing event over the weekend of October 25th. Conditions were excellent and it was a fitting end to a very busy and successful year at CNM.

November General Meeting

Jim McSheehy gave a presentation on Occultation Astronomy and described early techniques used to improve mapping accuracy, and modern uses of occultation events for imaging the surface details on distant stars.

December General Meeting

Nominations were opened for the 2009 elections for club officers. The basic roster of candidates was unchanged from 2008. Hank Schoch gave a presentation on the history of the Cincinnati Observatory, which at its founding in 1845 housed the largest telescope in the United States.

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, telescope making, and discussion and lectures related to astronomy. Meetings are held at 7:00 PM on the first Tuesday every month at Mesa State College in the Weldon room of the Horace Wubben science building. Monthly observing sessions are held throughout the Western Slope, including an annual star party lasting several 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. The club also presents an annual program at Mesa Mall to recognize astronomy day in our community.

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 2008-2009

President	Dave Copley	434-4364
Vice President	Jim McSheehy	243-2887
Treasurer	Blanche Godel	241-1482
Secretary	Dave Bertrand	434-6055
Community Liaison	Jeff Dershem	243-1351
Newsletter Editor	Copley/McSheehy	434-4364
Web Master	Jim Maddox	243-2353
ALCor Representative	Jim McSheehy	243-2887

Did you know?

Galileo did not make the lenses for his telescopes. He ordered lenses in lots of several hundred at a time and then hand picked the best from each lot to use in his work. His desire for secrecy and a rivalry with the Dutch held back progress in the design of these first telescopes.

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>

- Feb 3rd Monthly club meeting at 7 PM
Topic: Galileo's Telescope
- Mar 16th-28th 2009 Globe at Night Survey
Volunteers Needed (see article in this newsletter)
- Mar 27th-28th Annual Messier Marathon at
CNM/Saddlehorn, Starts at sundown
- Mar 31st Public viewing event at Chick-fil-A
All members invited – please bring a Telescope; starts at O-dark-thirty
- Apr 4th CNMA volunteer event at Saddlehorn,
Starts at sundown;
Commemorating IYA 2009
- Apr 7th Monthly club meeting at 7 PM
Topic: TBA
- Apr 25th CNMA volunteer event at Saddlehorn,
Starts at sundown
- May 5th Monthly club meeting at 7 PM
Topic: TBA
- May 16th Public Viewing Event at Highline Lake
State Park, Starts at sundown
- Jun 2nd Monthly club meeting at 7 PM
Topic: TBA
- Jun 19th-21st Colorado West Star Party 2009
Loop-C Campground and Observing
site on the CNM (tentative)
- July No monthly club meeting scheduled
- Jul 25th Public Viewing Event at Highline Lake
State Park, Starts at 9 PM

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Globe at Night Survey - 2009

The annual Globe at Night (GaN) survey of local light pollution and sky visibility will be held from March 16th through the 28th. The survey is seeking inputs from volunteers and amateur astronomers to help build a model of sky visibility and light pollution world-wide. Last year the program received inputs from observers in 62 countries and the goal this year is to expand the inputs to include all 110 GaN countries as part of the IYA activities.

Observers first find their map location in latitude and longitude and then go outside on a clear night at the specified time and estimate their local sky darkness using a star chart (download from the GaN web site) or with a small device called a Sky Quality Meter. These inputs, called “ground truth”, are then combined and used to calibrate the data provided by satellites. The satellites can only measure light coming up from the ground, so the data from ground-based observers is important because it allows scientists to compare the readings from the satellite instruments with local estimates of sky brightness. With these two numbers they can refine the model they use to measure and predict sky brightness in different areas.

For more information, star charts, and directions for participating, visit:

<http://www.globe.gov/GaN/>

Daytime Astronomy – The Analemma

Have you ever seen this figure-8 on a globe and wondered what it is? It’s called an analemma and represents the path of a shadow on the ground if you record the position of the shadow at the same time every day. Or, projected into the sky, it is the path the sun would appear to take if you took a picture of the southern sky at the same time every day. Photographers have done exactly that and they end up with a photo similar to the one shown opposite. You might notice that at certain times throughout the year the sun's position not only varies higher and lower (North and South) as you would expect with the change of the seasons, but also slightly east



Analemma on Globe.

and west. You might notice that at certain times throughout the year the sun's position not only varies higher and lower (North and South) as you would expect with the change of the seasons, but also slightly east and west. On some days you might notice that the sun is not in the sky where, according to the time on your watch, you would expect it to be.



Photograph of an analemma.

The difference in time between what your watch reads and the position of the sun (clock time vs. sun

time) is called the Equation-of-Time. If you are in the northern hemisphere and the sun's position is to the east of where your watch indicates it would be, the Equation-of-Time is negative. If the sun is to the west, the Equation-of-Time is positive. These time differences accumulate on a daily basis and alter the position of the sun from where we would expect it based on the local time. The analemma and the Equation-of-Time are a result of the sum of the effects of the Earth's elliptical orbit around the sun and the tilt of the Earth's axis in relation to the plane of its orbit around the sun. These two effects interact in a complex way and result in some noticeable changes in early summer and late fall when the equation of time accumulates large differences between the sun time and its clock time. Even though the longest day of the year is around June 21st, the latest sunset of the year occurs a few days after that. While the shortest day of the year is around December 21st, the latest sunrise does not occur until several days after that.

Dark Sky Communities

Most of us interested in amateur astronomy eventually have to deal with the issues of light pollution from our neighbors or from general development as cities expand and populations swell. While some cities have enacted stricter ordinances for outdoor lighting, most do not regulate these lights with specific rules and even then, architects and builders often ignore the rules and use fixtures that greatly increase glare and excess light. A recent trend to counter this problem is the establishment of dark sky communities (DSC) where most properties are owned by astronomers, and all residents are required to abide by strict lighting ordinances.

The first DSC in the United States was founded in Chiefland, Florida, by Billy and Alice Dodd. After an exhaustive search for the darkest skies, they purchased an 80-acre parcel in 1985 and subdivided the property. It was an experiment with no previous precedent and many real estate agents scoffed at the idea that anyone would buy lots with the all the restrictions he imposed in the covenants. But it was wildly successful, and his lots sold out quickly to amateur astronomers from all over the country and as

far away as Canada and South America. The Chiefland Astronomy Village offers the rare combination of dark skies and the extremely good seeing conditions found in coastal Florida.

Several other DSCs have since been established in Arizona, Georgia, Idaho, New Mexico, and Utah. In New Mexico, the Stars End Estates and Top of the World offer building lots at low prices but are located in fairly remote areas. Several DSCs near Flagstaff, Scottsdale, and Tucson Arizona are closer to creature comforts and services such as hospitals and schools. One of the newest is the Deerlick Astronomy Village located about 50 miles east of Atlanta, GA. Unlike some other DSCs, Deerlick is home to both retirees living there permanently, and "weekend-warrior" types who have set up cabins and observatories to pursue their hobby part-time while still living and working in the surrounding towns. Utah's Castle Valley is probably the DSC nearest to Grand Junction. The tiny town is located off of Route 128 on the way to Moab, and probably has the darkest, easily accessible skies remaining in the continental U.S.

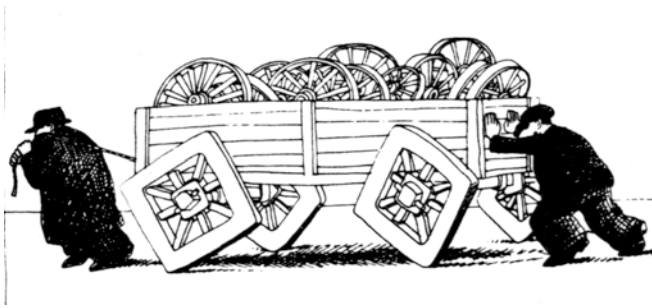


M33 in Triangulum, photo by Paul Tankersley
Taken at the Deerlick Astronomy Village.

Of course not all DSCs are successful, and one of the key predictors of success is the size of the community. Studies have shown that these common-interest communities operate best when they have between 25 and 90 residents. With too few residents the development may not reach the critical mass

needed to form community relationships. Sizes over 90 residents tend to become unmanageable under the strict ordinances needed to maintain the character of the DSC.

Odds & Ends



Club members are keeping busy even though the weather conditions this winter have been less than “stellar”. Here are a few of their photos taken under conditions that might send polar bears into snow caves.



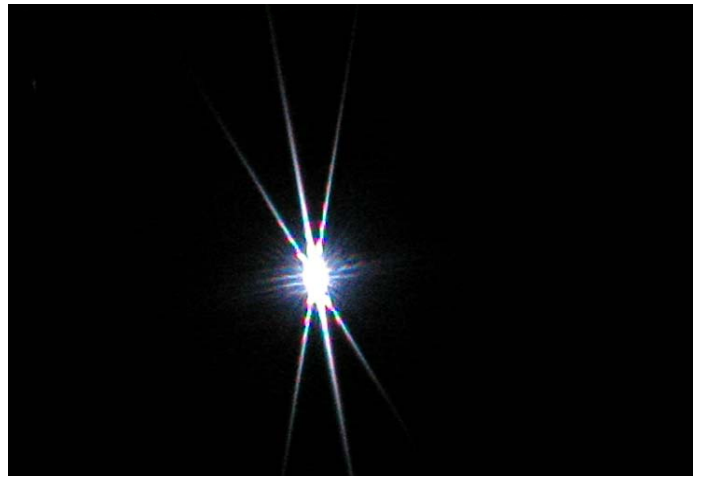
M42, the Orion Nebula, by Ricky Smith.



First Quarter Moon, by Ricky Smith.



Moon Detail, by Ricky Smith.



Sirius as seen through a Bahtinov focusing mask
By Dave Copley.



Another M42, by Dave Copley.

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: \$35 \$ _____

Associate: (age 22 and younger) \$15 \$ _____

Sky and telescope Magazine \$32.95 \$ _____

Astronomy Magazine \$34.00 \$ _____

Donation to Colorado Astronomy

Day events at Lincoln Park \$ _____

TOTAL \$ _____

Please make checks payable to Western Colorado Astronomy
Club (WCAC) and mail with form to: WCAC Treasurer,
PO Box 55032, Grand Junction, CO 81505

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 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 55032
Grand Junction CO 81505

Address Correction Requested