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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Event-full Year!

By David Copley

I don't remember having so many events in one year! If it had not been for all the events that were clouded out, we may not have been so busy! It all started with the Messier Marathon and ended with the Clifton Christian Church. By my count we had twenty-three events. Ten of them were completely clouded out. Several of the events were some of the best skies I've seen. The August 15th event at Rifle Gap had some very steady skies where I took this image of Jupiter.

Photo by the author.

Our annual Star Party had a very good night the first night and then the rains came. On Sunday, I had to pack up the tent trailer while it was still

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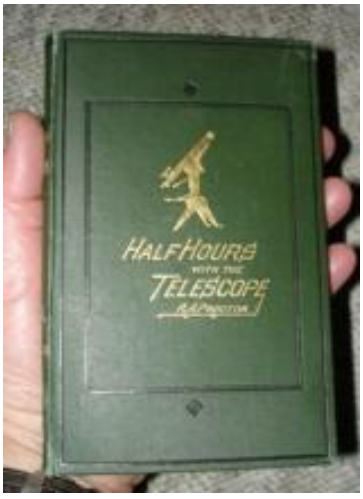
A Book Review
Half Hours with the Telescope

By Hank Schoch

A friend recently returned from a trip and presented me with a small gift. It turns out that he was visiting his hometown in rural Iowa and, stopping by the local library, ended up in the middle of a sale to dispose of some surplus volumes and raise some money. As he rummaged through the piles of old books, he stumbled across a copy of *Half Hours with the Telescope*, by R. A. Proctor. Knowing of my interest in backyard astronomy, he bought it. The book cost him two bits.



Proctor's book was originally published in 1868, but my edition, the thirteenth, dates back

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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 stronomy 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

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Secretary	Dave Bertrand	434-6055
Community Liaison	Jeff Dershem	243-1351
Newsletter Editor	David Copley	434-4364
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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

Jan. 5, 2010: Club Meeting in the Wubben Lecture Hall, Mesa State College at 7 PM Elections of club officers.

Jan. 16: Board Meeting at Blanche's.

Feb. 2: Club Meeting in the Wubben Lecture Hall, Mesa State College at 7 PM.

wet. During our raffle, Hank and Doug were the really big winners. Hank won the Telrad charts from Ducheck Consulting, Tele-Vue's 32mm eyepiece and Celestron's First Scope. Doug won the Oberwerk binoculars (I am jealous!!), a neutral density filter and a subscription to Astronomy Magazine. Next year's donations may be hard to come by because of the economy. If anyone does need to buy anything, think of the businesses that donated to our raffle first. Elsewhere in this newsletter will be a list of our Star Party supporters and what they donated.

Doug receiving his binoculars. Photo by Sue Goodman.

We had excellent nights at Rifle Gap as mentioned earlier, Highline on Aug. 29th, CNMA on Sept. 19th, the Northern Delores or NoDo event (attended by Ricky alone), CNMA on Oct. 17th, Garfield Middle School on Nov. 2nd and the Fruita Middle School on Nov. 6th.

Fruita Middle School. Photo by Thad V'Soske.

I missed a couple of the events and at some of them the clouds were as scarce as I was! The Math and Science Center event on June 22nd and the Tiara Rado event on Sept. 24th were excellent I hear.

Our Fall events fared well compared to our Spring events. We only had four cloud-outs after the Star Party, the Highline event on July 25th, CNMA Aug. 22, Galilean Nights Oct. 24th and Clifton Christian Church on Dec. 11th. The major snow storm we had on Dec. 8th should mark the end of our season. A lesson for next year. No events after the first week of November would you say?

Photo by the author.

All in all a great year.

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Don't forget to visit Thad's web site at http://www.cosmotions.com. His time-lapse videos are awesome!

Here's a list of major events for next year. Some of the dates are not set.

WCAC Star Party '10, June 11th – 13th.

Mars at opposition Jan. 29th (only a diameter of 14" this time!)

Messier Marathon about Mar. 13th.

Saturn at opposition on Mar. 21st.

Total Lunar Eclipse Dec. 21st.

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Review cont.

to 1902. As you might expect, the language is pretty flowery by today's standards, but the book is certainly readable, some parts more than others. During an introductory discourse on beginners' expectations, for example, the author flaunts his erudition by suddenly launching into a quotation from an ancient poem, as follows:

Subjecere oculis distantia sidera nostris,
Ætheraque ingenio supposuere suo.

I've got tell you that, with three years of high school Latin under my belt, I think I can still pronounce the words, but I haven't the foggiest notion what he was trying to get across to his readers. I recall the same frustrations when reading *Walden* back in my college days. A man with a classical Harvard education, Henry David Thoreau also seasoned his mid-nineteenth writings with lots of Latin and Greek quotations. While no doubt apropos of the topics at hand, those strange passages were, for me, completely inscrutable. But enough of that…

The little book isn't all that bad. Its approach, as regards observing, reminds me a little of *Turn Left at Orion*, though the illustrations are tiny and don't begin to measure up. Recommended observing sessions are geared to the quarters of the calendar year, starting with objects in Orion, Lepus, Taurus, etc. from January through March and progressing on to attractions in Andromeda and Cygnus, etc. from October through December. There's a separate chapter which deals exclusively with the planets, and another devoted to the Moon and Sun.

Although the Moon is our closest neighbor and offers infinitely more detail than anything else he could observe in the heavens with the gear available to him, Proctor preferred viewing other objects. "A very moderate telescope will show her most striking features," he wrote, "while each increase of power is repaid by a view of new details. Yet in one sense the moon is a disappointing object even to the possessor of a first-class instrument. For the most careful and persistent scrutiny, carried on for a long series of years, too often fails to reward the observer by any new discoveries of interest." In other words, it appeared changeless to him, and he therefore found it boring.

Apparently nothing that Proctor observed on the Moon led him to interpret the craters as impact features, neither those telltale rings of depression surrounding central rebounds, nor even the presence of conspicuous rays emanating outwards. What Proctor variously called craters, circular wells and circumvallations were, in his words, parts of "a dead and useless waste of extinct volcanoes." I wonder if he would have made the connection had he lived to see Harold Edgerton's sequential images of a milk drop frozen in time and space by the flashes of a strobe light.

The Sun was much more to his liking. He observed it directly through an achromatic refractor fitted at the eyepiece with a dark glass filter, and indirectly via projection onto a screen. The book describes at length strategies for plotting the courses of migrating sunspots, determining the position of the Sun's equator, and looking for solar faculae.

The chapter on planets describes them in order from Mercury to Neptune. Several pages are devoted to Jovian transit phenomena, but little space is dedicated to observing the planet's cloud bands, and there is no mention at all of the great red spot. Perhaps some omissions were intentional because Proctor anticipated that most would be using scopes of rather limited aperture. Indeed, the largest amateur instrument he mentioned had a 3 ½" objective.

The opening chapter discusses optical theory and the construction of telescopes. I suspect that any one of us would love to have a fully restored amateur achromatic scope from that era, if only as a curiosity worthy of display. Want to build a sturdy and vibration damping telescope tube? Proctor recommended

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reinforcing a light tin tube by gluing on alternate layers of paper and calico, of all things.

Compared with 1868 or 1902, we've got access to some remarkable media and equipment, and if someone today uses a telescope with a two-inch aperture, it's likely a matter of choice rather than necessity. Next time out, they might set up an 8-inch SCT with GPS and go-to, and if that doesn't afford the views they're seeking, they'll sneak a peek through their neighbor's 12-inch Dobsonian. Those who prefer to star-hop can consult their iPhones or Palm Pilots for an accurate rendering of the night sky.

We've learned a lot in the last century, and we might be tempted to dismiss Proctor's little book as merely quaint, but he knew, as do we, that the knowledge base would continue to expand and that equipment would certainly improve. Someday, our modern toys and references will seem quaint too. But consider this: *Half Hours with the Telescope* in its various editions remained in print for at least thirty-four years, and it's still a worthwhile read today. How many contemporary astronomy books will have such enduring appeal?

On the last two pages of the book are listed no less than eighteen other published works by Richard A. Proctor, including guides, atlases and collections of essays. Don't waste much time looking for them at your local bookstore.

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See our web site at http://wcacastronomy.org/ for contact info and links to their web sites.

December 23, 2009: The solar system is passing through an interstellar cloud that physics says should not exist. In the Dec. 24th issue of *Nature*, a team of scientists reveal how NASA's Voyager spacecraft have solved the mystery.

"Using data from Voyager, we have discovered a strong magnetic field just outside the solar system," explains lead author Merav Opher, a NASA Heliophysics Guest Investigator from George Mason University. "This magnetic field holds the interstellar cloud together and solves the long-standing puzzle of how it can exist at all."

The discovery has implications for the future when the solar system will eventually bump into other, similar clouds in our arm of the Milky Way galaxy.

Astronomers call the cloud we're running into now the Local Interstellar Cloud or "Local Fluff" for short. It's about 30 light years wide and contains a wispy mixture of hydrogen and helium atoms at a temperature of 6000 C. The existential mystery of the Fluff has to do with its surroundings. About 10 million years ago, a cluster of supernovas exploded nearby, creating a giant bubble of million-degree gas. The Fluff is completely surrounded by this high-pressure supernova exhaust and should be crushed or dispersed by it.

"The observed temperature and density of the local cloud do not provide enough pressure to resist the 'crushing action' of the hot gas around it," says Opher.

So how does the Fluff survive? The Voyagers have found an answer.

"Voyager data show that the Fluff is much more strongly magnetized than anyone had previously suspected—between 4 and 5 microgauss*," says Opher. "This magnetic field can provide the extra pressure required to resist destruction."

See http://science.nasa.gov/headlines/y2009/23dec_voyager.htm?list117158 for more information.

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 40537, Grand Junction, CO 81504

Western Colorado Astronomy Club
PO Box 40537
Grand Junction CO 81504

Address Correction Requested

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/