



# www.Rochester Skies.org



A publication of the Rochester Astronomy Club

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A Quarterly Newsletter

Rochester, Minnesota

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## The President's Corner

by Randy Hemann

“The sun never sets; it’s the horizon that rises.” I believe I had read that sentence in one of Bob Berman’s Astronomy Magazine columns. It defines the unique perspective of nature that we, as curious observers, continue to hone through our amateur astronomy endeavors. We seek to appreciate what is far beyond the horizons of our earthly boundaries. And the Rochester Astronomy Club appreciates what is rising on our own horizon with the resurrection of our quarterly newsletter by club member Bill Davidson! This is great news and is the start of what I believe will be an exciting year for

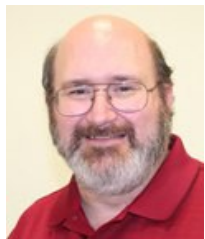


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## From the Editor

by Bill Davidson

Rochester Skies has not only returned after a hiatus of three years but has become an interactive digital newsletter, archived on the Rochester Astronomy Club webpage. Click on the [blue hyperlink](#) word or words to find more information on the subject you are reading.



*continues on page 3*

## Reflections on Star B-Q 2014

by Josef Chlachula (*in his own words*)

On Saturday, October 25, 2014, it was a beautiful day in Rochester; quite warm with an azure blue sky. It was a perfect day for garden work in a T-shirt. That afternoon I decided that I would spend the upcoming night at a Star B-Q.

If I understand it correctly, it was already the seventh Star B-Q organized by the Rochester Astronomy Club, coordinated by Dean Johnson. It takes place on the farm of Dean’s brother-in-law, about 77 miles south of Rochester, on the border with Iowa, specifically about 150 yards in Iowa, in a field of mowed alfalfa. Organic corn is grown on the adjacent field, alfalfa is plowed into the soil on the former, and crops on both fields are alternated.

Because of the weather and other obstacles, originally the two-day

August gastronomical event, with steaks in the afternoon and astronomical observations at night, became a one-day and night event on the last Saturday of October with benefit of no mosquitoes and a much longer night for observation.

Late that Saturday afternoon I left Rochester on highway 52 South; in a less populated landscape the wide highway became a narrow country road. I arrived after dark and setting up my tent was out of the question, not to speak of the missed social and gourmet part of the afternoon.

I quickly assembled my small Meade Newtonian go-to telescope and I also looked at the sky with my 10x50 Carl Zeiss Jena binocular. The sky was beautiful. There were only a few distant lights on the

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pictured: Kirk Severson (left), Dean Johnson, Chris Gawarecki, Josef Chlachula, Joe Gawarecki, Julie Gawarecki and (behind the camera) Randy Hemann

*Star B-Q 2014 from previous page*

otherwise perfect horizon of the cultivated prairie with no hills or buildings, almost like being on the sea. I remember such a dark sky and almost no light pollution from my early childhood.

Later I walked to the largest telescope in the field. Randy Hemann owns a 30-inch go-to Dobson with a focus length about 12 feet, a product of Optical Mechanics Inc. I had an opportunity to look at [M33](#) and saw its spiral structure. The Dumbbell Nebula [M27](#) was just huge and with the help of the nebula filter I could see the normal dark areas.

We looked at a few carbon stars. Next time I would like to see [V Aql](#) with such a large aperture. I believe



it's really red, even though I did not find it in the list of the observer program "[Carbon Star Observing Club](#)."

In the autumn morning the conditions were good for seeing the zodiacal light, which of course I have never seen before. Experienced observers assured that the observing conditions are so good that we would see the [zodiacal light](#) in the morning.

Before midnight, I decided to sleep and get up at four in the morning. In dropping temperatures I stretched out my sleeping bag next to the car and I fell asleep looking at an almost

winter sky with the constellation Orion. Once in a while departing cars awakened me with tired observers. When I woke up at 4am, I was one of the three alert observers: Randy and Dean were smart to take a nap too.

At that time it was too soon for the Zodiacal light, but around five I began to suspect that I was seeing something and then a cone of pale glowing light from the horizon to the constellation Leo was increasingly apparent. I saw the zodiacal light!

Before 6am, I noticed what appeared to be a moving red light on the horizon. Maybe a car on the road, or a low-flying airplane. After a while, I suspected that it could be a star. I pointed my Nexus 4 smartphone in that direction with the Google

*picture: Dave Gross*

Sky App and it really was Arcturus rising. At the same time I was looking at the map and noticed that just below the horizon was Mercury, so we could look forward to its rising.

After a short time Mercury was rising above the horizon. I asked Randy to view Mercury in his 30-inch Dobson but the Dobson could not go so low above the horizon. So instead we looked at bright Jupiter with an apparent diameter of 36", with many details in its bands and with all four Galilean moons. Even at dawn, slowly getting brighter, we

looked at the Orion nebula with embedded [Trapezium](#). It's hard to explain the sight that we saw, all those details of the nebula in the brightening sky. The [Trapezium](#) itself, in addition to the obligatory stars A, B, C and D, we were able to see E and F.

Dean had an idea to look at [Sirius B](#). At first I didn't understand what Dean was talking about, why should we look at bright Sirius. I realized later that he meant Sirius B, a weak companion of the brightest star in the sky, which only a few people had the opportunity to see. Randy entered Sirius into the Dobson and it turned from Jupiter to Sirius; we brought the ladder close to the eyepiece and after a while Randy reported that inside of one of the diffraction rays of Sirius A, Sirius B was faintly visible. Really? After a while I climbed on the ladder to the eyepiece at a magnification of 300 and I saw, in one of the diffraction beams next to bright Sirius of magnitude -1.4, a faint star of the eighth magnitude: Sirius B. Approximately 10,000 times fainter than Sirius A.

Meanwhile, Dean tried to find Sirius on an increasingly bright sky in his 11" Celestron Schmidt-Cassegrain telescope on the Orion SkyView Pro equatorial mount and he soon reported that he saw Sirius B as well. I looked into his telescope for a long time, but saw nothing, until I suddenly saw a faint star, quite far from the well formed bright dot of Sirius A. The moment felt the same as searching for Venus or Jupiter on a bright twilight sky and then suddenly seeing the planet. It was like a dream. I've often read in literature how an observation of Sirius B is challenging, and now I've seen Sirius B twice in two different telescopes. The distance between the

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*Star B-Q 2014 from page 2*

two Sirius components is about 10-arc seconds. Sirius B in 1994 was at pericenter, its angular distance is growing since and in 2019 [Sirius B](#) will in at apocenter, 11.4" from Sirius A.

Contrast reduction was the trick.

Meanwhile, Mercury was rising higher above the horizon, so it was possible to observe it with the big Dobson. Comfortably without stairs, we saw two images in the eyepiece.

The first was a rainbow image caused by chromatic aberration and next to it was a nice image of a jagged crescent Mercury in phase 0.29 and with an apparent size of 8.2".

Going back to Jupiter, there was a surprise: against the bright sky it was suddenly obvious that the Galilean moons are no longer just bright spots but they were tiny discs: Ganymede 1.3", Europa 0.8", Callisto 1.2" and Io 0.9".

When I was climbing up the steps to admire the moons of Jupiter I saw the sunrise on the horizon. There would be an opportunity to see a green or even a blue flash. Well, maybe next time.

The miraculous night had ended. It was a night with excellent observing conditions, especially the visual conditions, but also with relatively low humidity of about 25%. I wondered all night through the low alfalfa in sneakers and I did not have any reason to put on my high boots. However, the morning temperature dropped significantly and I saw a layer of frost on the roof of my car.

We were ready to enjoy breakfast and also enjoy the Sun with its giant sunspot groups AR2192 in the [H-alpha telescopes](#) the Coronado (Randy Hemann) and Lunt (Kirk Severson).

On the way home the clouds appeared on the horizon, but they could not harm the experience of such a rare night.



*pictured: Dean (left) and Josef*

*President's Corner from page 1*

for the club.

Speaking of new horizons is [New Horizons!](#) This is the name of NASA's spacecraft that should complete its flyby of Pluto near mid July of this year. Hopefully all goes well as the spacecraft continues its "wakeup" protocols while approaching this demoted solar system interloper. It's an event like this that can be leveraged to spark interest in our club's meetings and outreach activities. So thanks Bill, for brightening our skies (generally not a good thing, but in this case it is) with your work to bolster our media presence. Clear skies to Rochester Astronomy Club members in all of 2015!



# Space History

One of the Vanguard satellites is checked out at Cape Canaveral, Florida, in 1958. [Vanguard 1](#), the world's first solar-powered satellite, launched on St. Patrick's Day (March 17) 1958. It was designed to test the launch capabilities of a three-stage launch vehicle and the effects of the environment on a satellite and its systems in Earth orbit. Vanguard 1 was the second U.S. satellite in orbit, following Explorer 1, and remains the oldest artificial object orbiting Earth to this day. Vanguard began as a program at the Naval Research Laboratory in Washington and transferred over to NASA (along with many of its

personnel) after the National Aeronautics and Space Act of 1958 founded the agency.

It was 100 years ago, on March 3, 1915, when Congress created the National Advisory Committee for Aeronautics (NACA), the organization from which NASA was created in 1958.



*Editor from page 1*

Members of the [RAC](#) are welcome to submit articles, personal notes, pictures or other material that relates to the club and astronomy. Please submit these to

[rochesterskies@outlook.com](mailto:rochesterskies@outlook.com)



by Dean Johnson (*in his own words*)

**The 32<sup>nd</sup> Annual Okie-Tex Star Party is September 12 – 20, 2015.**

Go to <http://www.okie-tex.com/> for more information.

Last September five of us from the Rochester Astronomy Club traveled to the Okie-Tex Star Party, one of the biggest in the nation and we did it in style. Club President Randy Hemann lined up a very nice RV that his neighbor generously donated for a small fee and Vice President "Capt. Kirk" Severson, Jerome Taubel, Barbara "Ellenvega" Hanning and myself loaded up the RV and Randy's telescope trailer and hit the road from Randy and Lynne's house on the north side of Rochester.

The RV made Randy's trailer look small, but that was a good thing because we needed nearly every inch of space for our camping and astronomy gear. After a wild start that included sheltering under an overpass somewhere near Austin, MN, in a thunderstorm's downpour, we headed out again between two thunderstorm systems highlighted by a fast disappearing sunset. Switching drivers we traveled all night long and got to Boise (pronounced "Boy's") City, Oklahoma, and Randy



guided us to Camp Billy Joe where the Okie-Tex Star Party is held every year. ('Guided' is a very good word to describe how the RV traveled down the road. Capt. Kirk said, "You don't drive the RV, you merely guide it.")



*pictured: Kirk Severson, Jerome Taubel, Randy Hemann, Dean Johnson, and Barbara Hanning*

Randy pulled over and we all got off the bus, doing the tourist thing and snapping pictures. The Capulain volcano off in the distant New Mexico rose faint from the western horizon. Pulling into Camp Billy Joe, we chose a spot on the flat near the north boundary and pulled into an unoccupied triangle of the site next to a very nice older gentleman named Jim Phillips. He watched us pull in and after we dropped Randy's trailer in our viewing area and saw the rest of our neighbors *strongly*

*suggest* we park the RV by the barbed wire fence on the edge of the site. After that, Jim watched us as we threw out and set up tent after tent, scope after scope and binoculars galore. He said it reminded him of watching the clowns at the circus pile out of the Volkswagen car with all their stuff. But in an incredibly short time, we were all set up. He told us admiringly "All of you work very well together." It was an unspoken theme at first, but proved it time and again as the week went on.

Luck, also, played its part. Camp Billy Joe is a box canyon with its open end to the north where we sat up. It was the area farthest from the chow-hall and the tents where

the talks and dining areas were, but it gave us the most sky, which was of course why we were there. To the northwest, north and northeast we had far horizons to the east and west, not bad, but to the southeast, south and southwest, the canyon blocked that last tantalizing bit of southern horizon that we had speculated on for much of the way down. I would estimate that it blocked the last ten degrees of sky that we cannot see from Minnesota.

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*Okie-Tex 2014 from previous page*

We sat on the edge of acres consisting of amateur astronomers. There were more campers, scopes, binoculars and observers than I had EVER seen before! We had wondered if Randy's 30" scope would be the biggest. His EVO was the fifth one present. They were all nothing compared to Dave Tostefson's 32" scope. Dave is a member of the Minnesota Astronomical Society who made up the biggest contingent from our state, consisting of ten members. Then there were us five from the RAC and a couple of free agents from around Mankato.

I made the first of many solar observations that afternoon thru my little Vixen 95mm scope and Capt. Kirk's 80mm Lundt. I saw and drew a 'hedgerow' solar prominence for the first time. Then we registered, had our first meal from Jody's catering, and looked at the vendors' wares. After that we settled in for



our first evenings session. Sunday night and Monday were both to be only 'half nights', Sunday lasting until 1 a.m. and Monday's starting at dusk and lasting until 1 a.m. You could tell by the energy on the field that most people did Sunday night, but on Monday's session, the RAC was one of the few getting in some really good telescope time. We had set up in a semi-circle around Randy's big scope and traded

information, questions and targets all night long. This was to be our M.O. for every single night, earning Jim's increasing admiration. We did indeed work well together. Highlights for the first two nights included crepuscular rays at sunset on Sunday night, carbon stars and Randy drawing in the Eagle nebula. Mars and Saturn were, also, highlights in the Scorpio Sagittarius area.



*For a 30 minute YouTube video on Okie-Tex 2014: <https://www.youtube.com/watch?v=YTqFIB4Xi4c> .*

**RAC Astronomical League Observing Program Awards**

by Bill Davidson

A number of Rochester Astronomy Club members have received awards from the Astronomical League for their completion of specific observing programs. RAC's latest recipient is Barbara Hanning for completing the Messier Program requirements. She received the Messier Program Award during the Holiday Meeting in January.

Barbara officially started recording her observations during the Messier Marathon on 2012-3-24 at the Eagle Bluff observing site outside Lanesboro, MN. The RAC observed 82 Messier objects that night without the aid of go-to technology. Dean and Barbara stayed out close to 5am to capture these objects. She completed the remaining Messier objects 'officially' at the Flatin Farm hayfield outside of Spring Grove, MN, on 2012-6-21, and at the Eagle Bluff site on July 14<sup>th</sup> and August 17<sup>th</sup>, 2012.

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Name	Program	Level	A#	Date
Jay McLaren	Messier		1999	2002-11-25
Jay McLaren	Messier	honorary	1999	2003-05-13
Jay McLaren	Caldwell	silver	54	2004-01-08
Erica Broberg	Messier		2209	2005-04-25
Dean Johnson	Messier		2263	2005-11-23
Dean Johnson	Messier	honorary	2263	2005-11-23
Dean Johnson	Double Star		340	2006-10-14
Dean Johnson	Binoc Messier		768	2007-08-09
Dean Johnson	Lunar		610	2008-07-14
Dean Johnson	Deep Sky Binoc		263	2008-08-20
Scott Regener	Messier		2428	2008-08-24
Scott Regener	Urban Observ'g		116	2008-10-10
Scott Regener	Binoc Messier		827	2008-10-30
Scott Regener	Lunar		652	2009-02-12
Jay McLaren	Herschel 400		420	2009-09-28
Luka Bajzer	Messier	honorary	2472	2009-09-30
Rick Murray	Messier	honorary	2503	2010-05-10
Luka Bajzer	Binoc Messier		903	2010-11-26
Luka Bajzer	Deep Sky Binoc		308	2010-11-27
Dean Johnson	Solar System		64	2011-03-21
Scott Regener	Messier	honorary	2428	2011-03-30
Dean Johnson	Lunar II		51	2013-04-20
Dean Johnson	Herschel 400		511	2014-03-16
Barbara Hanning	Messier	honorary	2684	2014-11-10

*Awards from previous page*

“It's important to note that I'd observed many of these objects at previous observing sessions (but these are just the dates I officially recorded for my records! Notice it took me two years to actually copy my notes to hand-in to Dean to submit.”

Her observations were done on an Orion 8-inch XT Dobsonian using Sky and Telescope's Pocket Sky Atlas.

“The challenge sharpened my

observing skills, definitely taught me how to star-hop, and most certainly helped me to be more patient! The Virgo Galaxy cluster especially is the most difficult region to get through. I also have come to realize there is a lot more to be seen with the objects on the list. I feel like when you are doing a challenge there is the tendency to 'check things off' and go on to the next. Spending more scope time on some of the objects will be a priority in the future.”



**Congratulations, Barbara!**



*Observing programs from the Astronomical League may be found at:*

[Astroleague Observing Clubs](#)



**North Central  
Regional  
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[www.astroleague.org](http://www.astroleague.org)

*ALCor Dean Johnson*



**ALCON 2015** will be held **July 6-11** in Las Cruces, New Mexico. The Astronomical Society of Las Cruces, and **ALPO**, the Association of Lunar and Planetary Observers are hosting. For further information check with the [Astronomical League](#) website.

Speakers were not available at the time of publication but tours include the VLA Radio Telescope, New Mexico Museum of Space History, Sunspot and Apache Point Observatories, and White Sands Missile Range. *Editorial:* All are excellent tours to take, your editor has experienced them. Oh, dark skies for their Star-B-Q.

**ALCON 2016** will be held in Fairfax, Virginia, hosted by the Northern Virginia Astronomy Club.

The **2015 NCRAL Annual Meeting** on **June 5-6** in Fargo, ND, sponsored by the Fargo-Moorhead Astronomical Society, has been **CANCELED** due to circumstances beyond their control. Location of the annual meeting was not available at the time of publication. Check for updates on RAC's web page, Facebook, or twitter.

The Minnesota Astronomical Society would like to invite you to attend the **Astronomical League's Astronomy Day, April 25**, at the Eagle Lake Observatory in Baylor Regional Park. Speakers are scheduled throughout the day and will give talks on astronomy and what there is to see. Door and raffle prize drawings will be held Saturday evening and include MAS merchandise, astronomy books and telescopes. Weather permitting, the evening will conclude with tours of the night sky and stargazing.

Daytime Activities beginning at 1:00 pm Solar observation, daytime viewing of Venus, the Moon, Mercury, Jupiter and Mars. For more information see the [Minnesota Astronomical Society](#) webpage.

***Next Quarter's Sky Events***

**April 21-22:** [Lyrids Meteor Shower](#). The Lyrids are an average shower, usually producing about 20 meteors per hour at their peak. These meteors can produce bright dust trails that last for several seconds. The shower usually peaks on April 21 & 22, although some meteors can be visible from April 16 - 25. Look for meteors radiating from the constellation of Lyra after midnight.

**May 5-6:** [Eta Aquarids Meteor Shower](#). The Eta Aquarids are a light shower, usually producing about 10 meteors per hour at their peak. The shower's peak usually occurs on May 5 & 6, however viewing should be good on any morning from May 4 - 7. The radiant point for this shower will be in the constellation Aquarius. Best viewing is usually to the east after midnight.

**May 23:** [Saturn at Opposition](#). The ringed planet will be at its closest approach to Earth. This is the best time to view and photograph Saturn and its moons.

## Upcoming Events

**April 04:** Total Lunar Eclipse. Totality begins at 6:58 am CDT.

**April 09:** [Community Education Course](#) @ Planetarium.

**April 14:** **RAC Meeting at Randy's house (7pm).**

**April 17:** Dark Sky Weekend observing (check forum)<sup>w</sup>.

**April 18:** Dark Sky Weekend backup (check forum)<sup>w</sup>.

**April 23:** [Community Education Course](#) @ Planetarium.

**April 24:** [Community Education Course](#) @ Planetarium.

**April 26:** Spring Astronomy Day (check forum)<sup>w</sup>.

**May 12:** **RAC Meeting at RCTC, room EA121 (7pm).**

**May 15:** Dark Sky Weekend observing (check forum)<sup>w</sup>.

**May 16:** Dark Sky Weekend backup (check forum)<sup>w</sup>.

**June 09:** **RAC Meeting at RCTC, room EA121 (7pm).**

**June 12:** Dark Sky Weekend observing (check forum)<sup>w</sup>.

**June 13:** Dark Sky Weekend backup (check forum)<sup>w</sup>.

**June 14:** Earliest sunrise.

**June 17:** Earliest morning twilight.

**June 19:** Dark Sky Weekend observing (check forum)<sup>w</sup>.

**June 20:** Dark Sky Weekend backup (check forum)<sup>w</sup>.

**June 21:** Solstice, 11:39am CDT

**June 24:** Latest twilight.

**June 27:** Latest sunset.

<sup>w</sup>Check [www.rochesterskies.org](http://www.rochesterskies.org) for more information.



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Rochester Astronomy Club  
P.O. Box 513  
Rochester, MN 55903-0513

<http://www.rochesterskies.org>



## RAC Presentations of 2015

**January:** **The Holiday Party** with Josef Chlachula presenting his *Personal Reflections on Star-BQ 2014*.

**February:** Bill Davidson gave a talk on *The 2014 Summer Visit to the Very Large Array (VLA)* near Socorro, New Mexico.

**March:** Larry Mascotti presented *Making Mountains out of Molehills: Scale Models of the Universe*.



### Officers

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## Hubble's View

by Bill Davidson

DECLASSIFIED: FIRST  
DETECTED PROBLEM, APRIL 1990

