A S T R O N O M Y

Rochester Skies

Space Place ✶ Holiday Party ✶ Mars Info ✶ Astro-Fun

Rochester Astronomy Club Newsletter Issue #7 Q4 '07

2007 YEAR IN REVIEW

By Randy Hemann

As we enter into the Holiday Season, it's time again to look back at the year that just flew by. We had another good year of outreach events, club star parties, and many great presentations at our meetings. At times, cloudy nights took their usual shot at foiling our plans, but that only meant we'd be back to try it again another night. Why? Good question. So I ask: why should we keep this club active, moving forward? Why do we run out to the schools to have young children scurry about our expensive equipment? Why do we go through all this trouble planning, packing, unpacking, stumbling in the dark, craning our necks, packing again, driving in the dark, and losing sleep on days we're already too busy with other things? Why do we enjoy astronomy?

Some would answer that we are still little boys and girls who like to play with gadgets and machines. Others might point out that we are really a special subset of nerdy computer geeks. Still others would say we must be untreated insomniacs or just plain night owls. Although I couldn't disagree with a bit of truth in any of those remarks, I would suggest that the real reason we enjoy this endeavor is that deep down we feel…we know astronomy is important. Not that other hobbies and interest are less fulfilling to one's well being. But astronomy has proven itself to be the quintessential discipline – it can enrich our personal lives, be enjoyed at any age, and has a history of, well, making history.

Let me continue by reviewing that last point. It has been noted that the main agenda of earliest astronomers was to try to understand what was going on in the skies in order to predict the future. The ancient priests would look heavenward and observe the movements of the sun and the moon and the planets to try to predict the moods of their gods, or who would prevail in war, or when to plant the crops. Astronomy was important.

Ushered in by astronomer Copernicus and later bolstered by Brahe, Kepler and Galileo, the 16th and 17th century's Scientific Revolution changed forever the way human beings think! The power of observation, precise measurement, and the scientific method revolutionized logic and released the human mind to think in terms unthinkable. It took Homo sapiens 50,000 years to look at the skies and conclude we live at the center of the universe. It took the next 2000 years to determine that we're not. Once astronomers figured that out, it only took 300 years to transform the world of physics into relativity and quantum theories. Now merely 100 years later, we have global positioning units in our shirt pockets and gamma ray knives cutting out brain tumors. Our food, our medicine, our transportation, our entertainment, and our communications came to be because these "rebel" astronomers looked upward and thought, "I observe a pattern here…" Astronomy is important.

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At star parties we often hear the comment "looking out there really makes me feel insignificant." I propose the opposite is true. At twilight we stand aside our telescopes, commanding them to receive light from any of the countless distant worlds above us. The optics bend and twist incoming photons through our pupils, delivering them to our retinas. The chemical signals produced there are sent to our brain's occipital cortex. Then, somehow, the adjacent bowl of tapioca in our skull contemplates. It contemplates what's out there. Come on. How big is that? Astronomy is important.

As an amateur astronomy club, we still have a lot of work to do. When an adult looks through the eyepiece and then down the front of your scope to find the "hidden projector", when a teenager notes the Andromeda Galaxy and a star in the same field of view and asks which one is closer, when a rambunctious child takes his first look at Saturn, then freezes motionless while murmuring a 10 second long "whoooaaa", we know we have a lot of work to do. Astronomy is important!

Thanks to everyone who has contributed to workings of the RAC this year and let's go have a great 2008! RAC

Perhaps nothing stands in the way of enjoying astronomy more than light pollution, the bane of urban existence. Four out of five Americans live in urbanized areas, and an unnatural glow bathes nearly all those areas from dusk to dawn. It would be easy enough to throw hands to the heavens and limit viewing to those objects least impacted by light pollution: double stars, the planets and the Moon. Yet another option remains: chasing down those few deep-space objects that have enough concentrated brightness to battle through the lights and spray their photons on some glass in the hands of a capable astronomer. I am a stubborn man, stubborn by birth, heritage, and sometimes, by choice. Tell me what I can't do, and I'll set out to prove you wrong. So when I bought a small telescope, an Orion XT 4.5, with the intent to merely observe the planets and Moon, it wasn't long until I wanted to see more. Thankfully, I discovered that there is more - much more - to be seen than the nay-sayers would have you believe. The Astronomical League's Urban Club, a collection of 100 objects visible in the worst conditions with a modest 6-inch telescope, proved a capable tool.

In the spring of 2005, I began my quest to complete the Urban list. A handful of double stars round out a list of open clusters, nebulae, globular clusters, and even galaxies. My first deep space target was M13. Without a computer to guide the way, I sought my prey with tenacity and purpose, telling myself each and every time I failed that what I was doing was supposed to be hard, if not impossible, and success would come if I kept at it. On my third night's attempt, I discovered the wonders of the great Hercules globular for myself. I was hooked! In less than a year, I logged over half the objects using that modest 114mm of aperture. With the confidence of my success, I purchased an Orion 10" XTi and completed the list on September 9, 2007. Throughout the process, I learned a great many things about finding dim objects in an urban sky. It is my belief that anyone can complete this list if they are willing to try.

...anyone can complete this list if they are willing to try.

Perhaps the first lesson I learned is that good charts are a requirement for finding many of these objects. Being close often isn't good enough. The problem is that for many objects, they are so dim or indistinct that getting the object into the eyepiece isn't enough to make it pop out. Often, knowing exactly where to look makes the difference.

I found that printing out charts from computer software that went to magnitude 9-11, as well as imposing eyepiece field-of-view circles on those charts to know exactly what would fit within the eyepiece view, allowed me to find many objects that eluded me with paper charts that only went down to magnitude 7.5. These detailed, specialized charts truly made a huge difference. Even better for a beginner working with an altitude-azimuth mount, those charts could translate the skies' motion into up-down and left-right movements, which removed one aspect of mental gymnastics from the already difficult task.

Another lesson I learned is that some nights are much better than others. Checking the transparency forecast online can help, but it doesn't take into account certain factors like low-hanging dust that plague urban areas. I have light domes all around me, and seeing how far above the horizon they were visible provided an immediate measurement of how good a night was for chasing down the faintest fuzzies. If I could only detect the glow on the horizon, conditions would permit hunting difficult prey. On the worst nights, the skyglow would cloud even the zenith, and I could restrict my search to much easier targets, saving the difficult ones for a better night. Under dark skies, a night with poor transparency can be salvaged. Under city lights, that poor transparency reflects all those lights back down at the earth, making observing much poorer.

Speaking of the zenith, objects will look their best at the zenith, as light pollution is lowest at this point. Timing the observation of objects for their highest point often makes the difference between a ho-hum view and a spectacular one. Of note for the Dobsonian user is "Dobson's hole." This area, roughly within 10 degrees of the zenith, makes for tough sledding as turning the telescope requires maximum effort. The leverage afforded by the telescope tube disappears. Some have added a handle to their mount that sticks out so this area is easier to negotiate.

In my small telescope, the objects that proved most difficult were planetary nebulae. Most of these appear star-like at low power, and hunting at high powers can be a chore. With the addition of the 10", these objects became trivially easy to find as the increased light grasp proved potent enough to add color to these objects. With a narrowband filter, bright planetaries appear green while background stars remain white. With the proper object identified, increasing magnification posed no trouble. I am convinced that the 19 objects I logged using my 10" (I logged one with my binoculars, as no telescope could contain the nearly 5 degree object) were within reach of my 4.5" had I attempted them. Perhaps the hardest objects would have been M84 and M86 in Virgo. With ten inches of aperture, they took direct vision well.

If the urban list appears daunting because there are "only" 100 objects to capture, rest assured that many more objects can be found. The list merely gives a good starting point for objects that are bright enough and concentrated enough for viewing under horrible conditions. Many objects that have high magnitudes are rather difficult in urban areas because of their extended nature. While M33 is listed as a very bright galaxy, it is elusive because that brightness is spread over a large area. Choosing the right objects to chase becomes easier with experience, and completing the urban list is the perfect way to gain that experience.

In conclusion, I heartily recommend the urban list to anyone willing to try. These objects are showpieces of the sky and worth revisiting under dark skies, when time and opportunity allow. Using a telescope often, even under bad conditions, ranks far higher in my book than waiting only for perfect nights under perfect skies. There's plenty to see, and with a little patience and persistence, you could join the ranks of the urban astronomers who know there's plenty worth seeing while trapped under the lights.

RAC

The AWE

by Duane Deal

After a long day, when my body is urging me to relax, I find myself packing equipment into my car and preparing for a 40 mile drive to get away from city lights.

It's late and it's cold. Layers of clothing are making me look like the Michelin Man, but they'll help keep my bones warm and I'll be very happy I dressed accordingly. Time to double check that I've got what's needed for the long night. My equipment will undoubtedly confront dew and frost so I add a blow dryer to my pile.

What is it that drives me to deal with uncomfortable conditions in the middle of the night? Language isn't adequate, but since there is no other way to convey the wondrous answer...

Imagine if you can, heaven at night. Billions of atomic infernos maintaining intensities and luminosities we can't grasp here on Earth. Removed by distances so equally incomprehensible, all these conflagrations reaching across the galaxy diminish into tiny points of sparkling light. How obvious it becomes that we are wee little beings looking up from a fleck, watching these curiosities shimmer like crystals in a colossal cave with no walls.

Luminous dust gathers separating the dark cave in two. This devisor, sprayed with distant stars, creates a patchy lattice adorned with more brilliant foreground stars. Many of these are a white-blue but some are orange-red and at times they twinkle with a rainbow of flickering colors. Amongst them are intricately woven clouds softly aglow and overlaid with silhouettes of shadowy dust, billowing and mixing through the expanse like Van Gogh's Starry Night. In the minute span of time we call life, all these motions appear as frozen as Vincent's cracked paint.

Being a part of the night while the Milky Way slowly creeps overhead is so inspiring, it makes you want to stare until your eyes dry up. That is exactly how you catch one of my favorite spectacles. A fragment from space taking an unlikely plunge into the Earth's atmosphere, burning intensely, laying down a plasma trail and quickly dissolving to nothing. Even before the mind can process the splendor, it's a memory. Words are so inefficient that only the sound of awe is heard from those who saw it. When you hear that awe, you'll know you missed it.

Pages and pages could be filled trying to explain the unreachable, and I haven't even begun to explain traveling through space and time with mirrors and lenses. In the end, there is no description that can capture exploring the firmament. Don't listen to reason, don't hide from the sky in your comfy abode. Join me and experience the universe—it's out of this world. RAC

Thanks Mars

By Randy Hemann

As our planet passes by Mars again it's time to look up and thank our neighbor for its contributions to our meteorite population. It's estimated that on average a rock from Mars lands on the Earth every month. These rocks originate from debris produced from impacting asteroids on the red planet long ago. Scientists predict that such an asteroid would need to be at least the size of 1 ½ football fields to produce enough wallop to cast stones into space. Some of these ejecta drift their way towards the Earth's orbit and are swept up by our gravitational field. Of course not all of these are found, but so far there have been 26 meteorites identified as having Martian origin. How do we know they're from Mars? The strongest evidence is that they contain traces of gases that are identical to those found in Mar's atmosphere, which is much different than that of Earth.

Now coming this January 30th, an asteroid is predicted to have a 1 in 75 chance of striking Mars. This asteroid, known as 2007 WD5, was discovered in late November and is similar in size to an object that hit remote central Siberia in 1908, unleashing energy equivalent to a 15-megaton nuclear bomb, with more than enough power to send Mars parts our way. Astronomers have never witnessed an asteroid of this size impact a solid planet surface so observatories will be stationed on high alert to record the event. If it does occur, we may be due to have more pieces of Mars heading our way. So thank you Mars, for your past and future generous donations. RAC

Shooting Mars

By D. Deal

Mars has proven to be an elusive target during this opposition. When it's not hiding behind clouds, it's obstructed by bubbling and vigorous jet stream currents.

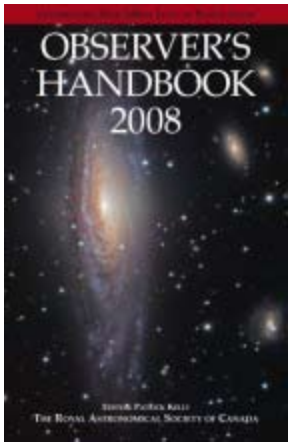
Over the last few years, I've found that the trick to getting a good image of Mars has less to do with equipment and skill than it does steady skies. If it's clear, I have to get out and try. Most attempts are foiled by skies that blur and garble all the photons reflected by Mars into my scope, but the hope is for that extremely clear shot.

None of my nights this year have been as good as I would like. Several of the nights I imaged produced shots I later deleted. A few of the ones I kept are shown here.

Up until the skies totally clouded over, Mars was getting clearer and easier to image as it crept closer and closer. The images shown were made with a DFK 21AF04.AS firewire camera through an 11" Celestron C11 Schmidt Cassagrain telescope.

I will be watching intently over the next month for more clear nights and pray I get better opportunities to capture our planetary neighbor.

If you are interested, color versions of these images are posted on the Rochester Skies Forum. Feel free to direct any questions you may have to the forum and I'd be happy to answer them.



The Royal Astronomical Society of Canada Observer's Handbook 2008

A treat for observers *By Duane Deal*

Find yourself looking for answers to questions like: What am I going to observe tonight? What globs are available in the winter? When is the next double shadow transit on Jupiter? Look no further then the The Royal Astronomical Society of Canada's Observer's Handbook 2008.

I don't know how they packed so much information in a space that's 8.5 x 5.5 and only half an inch thick, but it does fit easily into an accessory case. It's not really durable enough to be a field guide, and the text is too small for easy reading in the dark, but this little book is very helpful as a planning guide.

Data is thick from cover to cover. Not a book you'd pick it up and read from beginning to end but it does have enough topical writing to keep the average astronomer paging through for hours. Topics can be fairly in-depth despite their short length. The book utilizes symbols to help portray information without wasting space while keeping everything organized.

The handbook starts out with a tutorial on how to use the book, a list of observatories and a list of Internet resources. The first chapter is titled *Basic Data*, which covers facts about such things as solar system objects and the electromagnetic spectrum. There is a chapter devoted to time scales followed by a chapter on *Optics* and then *Observing*. From year to year the content up to this point remains, for the most part, unchanged. What follows are the chapters that keep astronomers coming back year after year.

The handbook winds down with a wealth of information in table format

From January to December, each month has lists of data and events such as planetary positions, magnitudes, double shadow transits of Jupiter, lunar information including libration, meteor showers, Galilean satellite positions, and so on. The following chapters are *Eclipses*, *The Moon* containing occultations, *The Sun*, *Planets* including Saturn's moon positions and ring inclination, *Asteroids* and a chapter called *Meteors, Comets and Dust*.

The handbook winds down with a wealth of information in table format. A chapter called *Stars* has constellation information with name, pronunciation, genitive name and pronunciation, abbreviation and meaning. This chapter also contains information and tables of the brightest stars, the nearest stars, double/multiple stars, variable stars, open clusters and globular clusters.

A final chapter titled *Nebulae and Galaxies* covers that and more. The tables here should be of much interest to observers as they contain lists of nebulae, messier objects in both numerical order and by season, finest NGC objects by season, David Levy's deep sky gems by season, deep sky challenge objects, southern-hemisphere splendors (wish I could put that to use), dark nebulae, the 40 optically brightest Shapley-Ames galaxies, the nearest galaxies, galaxies with proper names, and radio sources. There is something for everybody!

Before getting to the index, they included a bi-monthly set of all sky maps which are too small for anything except to see what constellations are available during a particular time of year.

For observers who are wondering what to look for and/or need reminders about monthly astronomical events, I don't believe there's a better resource than this compact little handbook.

RAC

You can find out more about the RASC Observer's Handbook by pointing your web browser to:

http://www.rasc.ca/publications/

A single copy with shipping and handling to the US is $31.95 and quantity discounts are available.

If you join the RASC for $59 you'll receive the 2008 and 2009 handbook along with other benefits.

NASA Space Place

Ultraviolet Surprise

by Patrick L. Barry and Tony Phillips

How would you like to visit a universe full of exotic stars and weird galaxies the likes of which astronomers on Earth have never seen before?

Now you can. Just point your web browser to galex.stsci.edu and start exploring.

That's the address of the Galaxy Evolution Explorer image archive, a survey of the whole sky at ultraviolet wavelengths that can't be seen from the ground. Earth's atmosphere blocks far-ultraviolet light, so the only way to see the ultraviolet sky is by using a space telescope such as NASA's Galaxy Evolution Explorer.

About 65% of the images from the all-sky survey haven't been closely examined by astronomers yet, so there are plenty of surprises waiting to be uncovered.

"The Galaxy Evolution Explorer produces so much data that, beyond basic quality control, we just don't have time to look at it all," says Mark Seibert, an astronomy postdoc at the Observatories of the Carnegie Institution of Washington in Pasadena, California.

This fresh view of the sky has already revealed striking and unexpected features of familiar celestial objects. Mira is a good example. Occasionally visible to the naked eye, Mira is a pulsating star monitored carefully by astronomers for more than 400 years. Yet until Galaxy Evolution Explorer recently examined Mira, no one would have guessed its secret: Mira possesses a comet-like tail 13 light-years long.

"Mira shows us that even well-observed stars can surprise us if we look at them in a different way and at different frequencies," Seibert says.

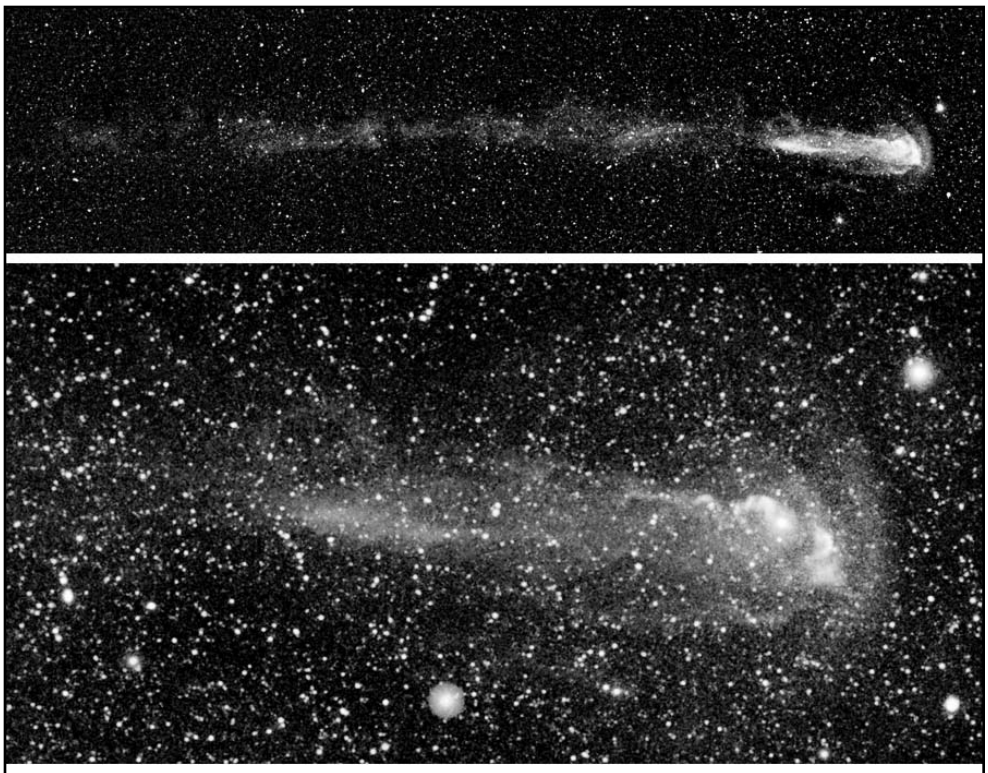
Another example: In April, scientists announced that galaxies such as NGC 1512 have giant ultraviolet spiral arms extending three times farther out into space than the arms that can be seen by visible-light telescopes. It would be like looking at your pet dog through an ultraviolet telescope and discovering his ears are really three times longer than you thought!

The images from the ultraviolet space telescope are ideal for hunting new phenomena. The telescope's small, 20-inch primary mirror (not much bigger than a typical backyard telescope) offers a wide field of view. Each image covers 1.2 degrees of sky—lots of territory for the unexpected.

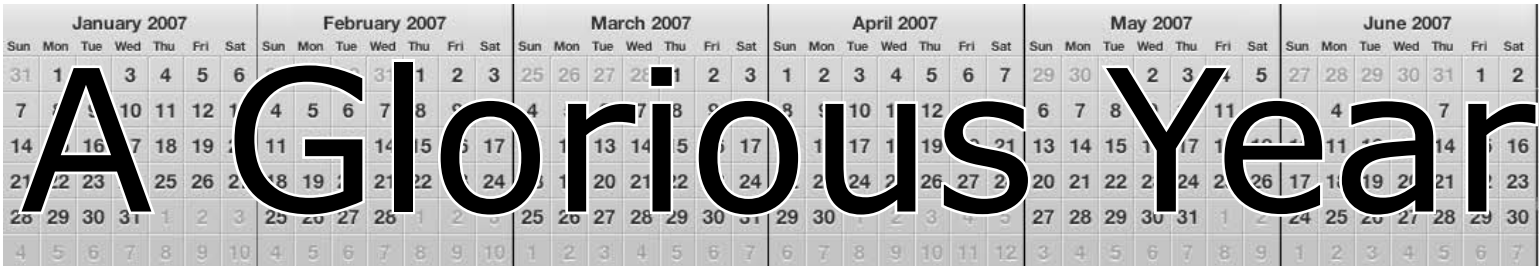
If someone combing the archives does find something of interest, Seibert advises that she or he should first search astronomy journals to see whether the phenomenon has been observed before. If it hasn't, email a member of the Galaxy Evolution Explorer science team and let them know, Seibert says.

So what are you waiting for? Fire up your web browser and let the discoveries begin!

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Astronomers looking at new ultraviolet images from the Galaxy Evolution Explorer spacecraft were surprised to discover a 13-light-year long tail on Mira, a star that has been extensively studied for 400 years.



I love my telescope time. Most years I get in about 150 to 160 hours, but in August of 2006 I suffered a serious groin injury working in the woods and was laid up for five and a half weeks and my total for my observing year came in at 147.

I was a little miffed at this and vowed to do better by crossing the 200-hour barrier for the first time. I knew if I could get in 20 hours a month, I'd make my goal and make good progress on the observing certificates I like to go after from the Astronomical League. What I didn't know was how spectacular my observing year of 2006/2007 was going to start and end.

My observing year starts on October 28th, the calendar date when I bought my Celestron G8 telescope. It has since been my primary observing instrument.

The first event of 2006/2007 was a rare transit of Mercury crossing the Sun on November 8th of 2006. In a lot of places clouds interfered with the event, but in Spring Grove it was warm, breezy, and for the majority of the afternoon, sunny. I made the transit an outreach event by showing it to the 4th, 5th and 6th graders at Spring Grove Public School. It was great fun to show the kids the movement of the solar system's innermost planet across the face of the Sun. That night, I got out and observed comet Swan, double stars Beta Pisces Austrinus, Iota Cassiopeia, the planet Uranus and finished with the Moon. That day and night gave me five hours. It was a great start.

On November 18th I made the first of the year's 13 trips to Eagle Bluff where Duane, Brandon and I fought the clouds and were rewarded with but 1 hour of observing. The next night Duane, Kirk and I had an awesome night with a beautiful sky and came away with nine and a half hour session.

Two more local outings in Spring Grove gave me a very good total of 22 hours for November.

December turned colder, but I still got out four times. I started my quest for the Herschel 400, having received the manual and target list at the RAC Christmas party. Weather and family commitments limited my observing and I finished the month with eleven hours.

January was colder yet and I got out only once for 3 and a half hours.

On November 18th I made the first of the years 13 trips to Eagle Bluff...

The big event was Comet McNaught but the best look I got at that brilliant comet was Scott Regener's excellent picture at the monthly RAC meeting.

February was bitterly cold. I will go out in single digit temps but most of February was below zero and even I'm not that crazy. I got not a single hour.

I knew that my monthly goal of 20 hours per month was badly behind schedule, but then came March with the gorgeous Lunar Eclipse of March 3rd as a totally eclipsed Moon rose in brilliantly cold clear sky. I felt like I was back on track and got through the month in fine fashion logging eight observing sessions and got started on my Lunar 100 and Binocular Messier observing programs. By the last time out in March, which was the RAC's Messier Marathon at Eagle Bluff, my year's total stood at 66 hours.

April was good to me. I got out five times with the last session being an outreach event for my son Matthew's 8th grade class. Another local astronomer, Scott Bingham and I teamed up for two hours of excited young people looking at Venus, Saturn, and lots of what I like to call "the obvious stuff" that we amateurs look at all the time, but people who are novices to astronomy rarely recognize. April got me to 87 hours year-to-date.

May saw me out under the stars five times. I teamed up with Phil Yehle from the LaCrosse Area Astronomical Society at a dark sky and I got to look through his fine 12.5-inch scope. A valuable lesson of amateur astronomy is that you should never pass up the chance of looking through other people's equipment. It keeps you wanting to spend more money getting new gear!

May also marked one of the most anticipated events of the year, the annual North Central Regional Astronomical League convention, this year held in Fargo, North Dakota. Duane and I got out for a spectacular night at Eagle Bluff before we went and it's a good thing we did, because

even though we hauled all our gear to "Nort Dakota" our best observing happened the night before we went. Which leads to another valuable lesson of amateur astronomy, don't pass up a good night! With the weather we enjoy here in good old Minnysoda, you never know when you're going to get the chance at a primo sky.

May's five outings pushed my total to 105 hours. I was halfway to my goal, but had used up seven months and only had five to go.

June saw me out under the stars six times. I finished my Binocular Messier search, pulled an all nighter on June 9/10, saw the ISS twice with Space Shuttle Atlantis separated from it but close by on the night of June 19, and had my battery go dead in my van when I was out on the night of my birthday June 29th. I had to walk the five miles back to town under a star filled sky. I did that in an hour and fifteen minutes. I closed the month at 133 hours.

July was a big month. The drought that had been going on deepened and brought us night after night of clear seeing. I also went on the road with the Oakes forestry guys I work with up in west central Minnesota and we stayed at campgrounds where there was nothing to do at night but go stargazing and listen to Twins games. This was when Comet Linear was cruising between Ursa Major and Bootes. I also was getting great tracking observations on Asteroid 4 Vesta.

I also did another outreach event at Eagle Bluff with Larry Mascotti under a brightly lit Moon. We showed several Earth Science teachers what we could and it got me out on a night when I normally would have not observed. July finished with my total at 164.5-hours. Three months to go. 200 plus seemed doable.

Then the drought ended and the rain poured in. I went from 11 observing sessions in July to a mere 4 in August. But late in the month, another memorable astronomical event occurred as I got up at 2 a.m. and took in the year's second Lunar Eclipse. I witnessed the Full Moon drop towards the western horizon and thin to a dark orange blob of dim light through a partly cloudy sky of high hazy clouds. It was the exact opposite of the March eclipse in every way, especially weatherwise. At the end of August, I had 180 hours in.

...you should never pass up the chance of looking through other people's equipment.

In September, we went back on the road to finish the "90 acre buckthorn job from Hell" up in west central Minnesota. I helped the crew cut its way through 1000 stems of buckthorn per acre by day and worked on my Herschel 400 objects, the Lunar 100 and started on my Binocular Deep Sky quest. I matched July's record of 11 observing sessions and crossed the 200-hour barrier at Lake Koronis campground on September 12th. I was indeed "one happy camper"!

But the best was yet to come, in spectacular fashion. By late October, I had 226 hours in and started hearing the buzz about Comet Holmes. On my last possible night to observe, October 28th, I pointed my telescope at the constellation of Perseus and saw the biggest, most unusual looking comet I had ever seen. It was incredible! I got in a good two-hour look before the three days past Full Moon came up and ended my observing year.

The final tally: one transit, two eclipses, three comets and three outreach events, sixty-four observing sessions (13 at Eagle Bluff, 30 to the Flatin Farm hayfield south of Spring Grove, the rest elsewhere), 84 Herschel objects, 52 Binocular Messier objects, 38 Lunar 100s, 29 Binocular Deep Sky objects, 1 dead battery and 228 hours of observing for an average of three and a half hours per outing. All recorded in 250 pages of journaling. I must also mention I got to help build Duane's observatory in his back yard.

I am blessed to belong to a wonderful astronomy club full of intelligent, interesting friends who contribute to my passion for astronomy. They know what it's like to stand under the starry cathedral of heaven and take in the peaceful, incredible beauty of the universe.

It was a glorious year for astronomy!

RAC

RAC Holiday Party '07

The RAC holiday party is my favorite meeting. Our gracious host, Rebecca Bomgaars provided a wonderful location topped with midwest hospitality. Along with the food and beverages provided by her and all the attendees, there was want of nothing.

Observations and club discussion followed by elections, rounded out the business part of the meeting.

Elected Officials

President ..... Randy Hemann

Vice-President ..... Kirk Severson

Secretary..... Nicole Edgar

Treasurer ..... Rebecca Bomgaars

Webmaster ..... Don Schlosnagle

Newsletter Editor..... Duane Deal

Astro League Rep..... Mark Callahan

Star Party Coordinator ..... Dean Johnson

Special attention was given regarding the club's origin and Jack Wiltsie who was integral in founding of the club a decade ago. Without his work, this event wouldn't be happening and you'd be reading something else.

Additional credit was due to Mark Callahan and Don Schlosnagle for their great efforts into public outreach. They perform community education classes in astronomy using the planetarium at Mayo High School. They are astronomy heros and shall not go unsung. In addition, thank you Larry Mascotti, for allowing it all to happen.

Before partaking in a meal fit for an astronomer royal, we proceeded to give away goodies. Door prizes were donated by several supporting companies and I'd like give them a special thanks for their contributions.

Winners, Prizes and Contributors:

Seeing in the Dark.....Dean Johnson
Book by Timothy Ferris
Donated by RAC

Seeing in the Dark ..... Jonathan Thoreson
Book by Timothy Ferris
Donated by RAC

Anti-Vibration Pads..... Rick Murray
Donated by Orion Telescopes

Astronomy Magazine.....Nicole Edgar
One year subscription
Donated by Kalmbach Publishing

Astronomy Magazine ..... Bill Davidson
One year subscription
Donated by Kalmbach Publishing

Orion Accessory Case ..... Bruce Gehring
Donated by Orion Telescopes

Laser Glow Green Laser..... Jeff Newland
5mW Laser Pointer
Donated by Laser Glow

Laser Glow Green Laser ..... David Hebrink
5mW Laser Pointer
Donated by Laser Glow

Wicked Laser Green Laser....Don Schlosnagle
35mW Laser Pointer
Donated by Wicked Lasers

Celestron Telescope..... Dan Strain
PowerSeeker 80EQ
Donated by Celestron

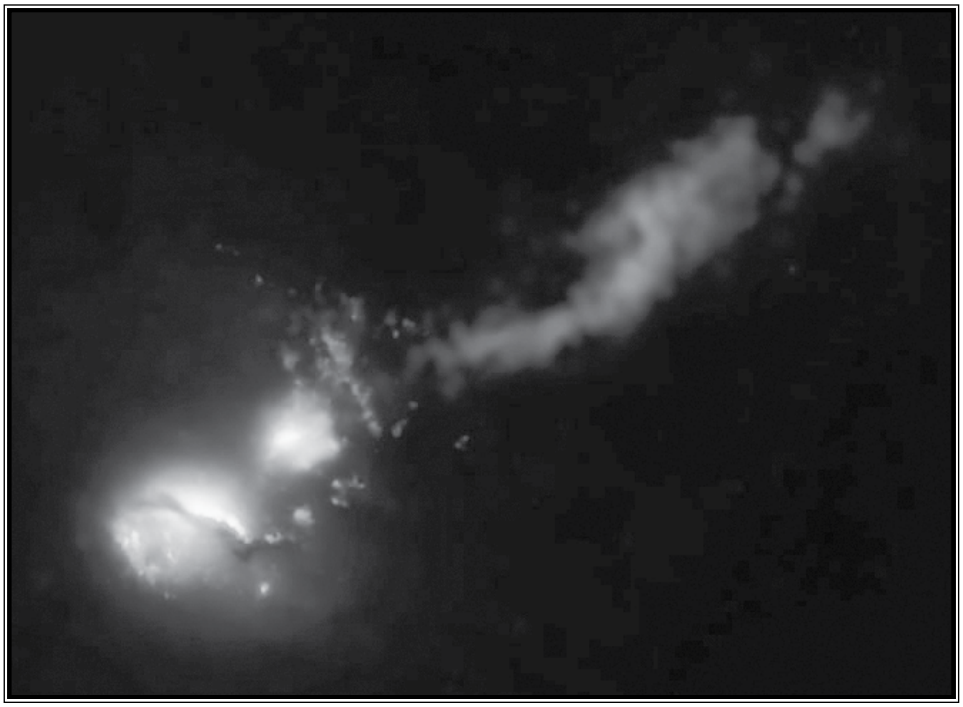
Celestron Caps.....Everybody
Donated by Celestron

Thanks to everybody who made this night happen and happen well. Now we look forward to our leadership bringing us into a successful 2008 for the RAC. I know all our readers out there will help them do it!

Astro-Fun

What in the Universe Is THAT?

Can you figure out what is happening in this image?



Post your answer at
http://rochesterskies.org/forums/
under the topic **Newsletter / Fun**

Align and Find

For those of you with equatorial mounts, after you polar align your telescope, find Gamma Andromeda, a fine famous double star with a nice color contrast. After you get a nice long look at this excellent binary, turn your declination knob so that your scope travels to the open star cluster of M34 in Perseus. If your scope is aligned properly, it should travel right to it. Now travel back to Gamma Andromeda and look carefully at about the halfway point. If you didn't spot it on your first trip, you will come across the edge on spiral galaxy of NGC 891, also known as Caroline Herschel's galaxy. It is a fairly large, noticeable object in a fine star field, one of her many discoveries as she assisted her more famous brother William Herschel, the discoverer of the planet Uranus in 1781.

It's a Little Known Fact

Water on the surface of Mars freezes and boils at the same temperature!

Johannes Kepler made the discovery that planets orbit in ellipses, not perfect circles, which became one of his three laws of planetary motion. Here's the interesting part. Kepler suffered impared vision because of a boyhood bout of smallpox. It is very unlikely he would have discovered the laws of planetary motion without using the exceptional observations made by Tyco Brahe. Kepler became an assistant to Tyco Brahe late in Tyco's career. Tyco, who because of a bad experience with another astronomer who stole information from him, bordered on paranoid regarding his data. Kepler, who had a brief association with the plagiarist, wasn't fully trusted by Tyco. Due to this distrust, Tyco would only let Johannes use his Mars data. This turned out to be fortuitous as had Kepler studied other planets orbits instead of closely scrutinizing Mars', he may never have discerned the amalgam of planetary orbits. This is because the orbit of Mars is much more elliptical than all the other "real" planets except Mercury which is extremely difficult to observe and study. Kepler called this period of his work his "Battle with Mars".

Because of Mars' elliptical orbit, Mars' closest point to Earth was actually on December 18th during this year's apparition, even though it didn't reach opposition until six days later on December 24th.

Rochester Skies

Newsletter of the Rochester Astronomy Club

Upcoming Events

Star Party at Eagle Bluff	**Jan**	**4***
Club Meeting *Tunguska Event—Sergei Venyaminov*	**Jan**	**8**
Star Party at Eagle Bluff	**Feb**	**8***
Club Meeting *Seven Sisters—Nicole Edgar*	**Feb**	**12**
Star Party at Eagle Bluff *Messier Marathon!*	**Mar**	**7***
Club Meeting	**Mar**	**11**
Don't forget Astronomy Week!	**May**	**5-11**

*Events subject to change due to weather. Please check up-to-date resources for details.

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