



The American Astronomer

THE QUARTERLY NEWSLETTER OF
THE AMERICAN ASSOCIATION OF AMATEUR ASTRONOMERS

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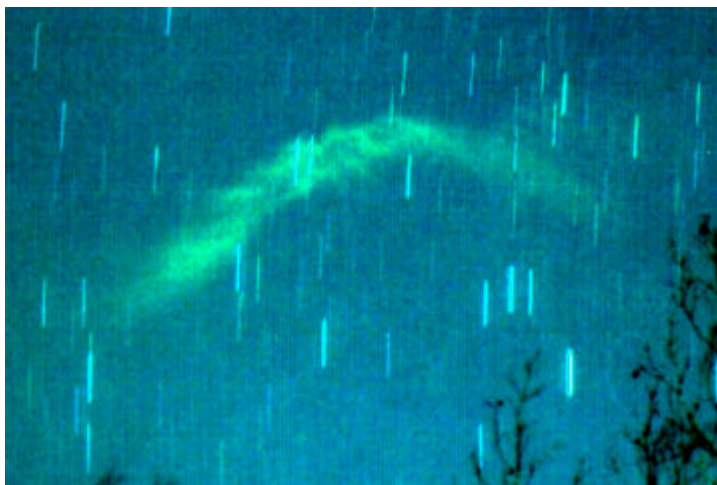


Photo #1 - Leonid Fireball Smoke Trail. Location: Richmond, RI. Date: November 18, 2000. Time: 3:05 am EST. Lens: 50mm. F/stop: 2.8. Film: Fujichrome Provia 1600. Exposure: 3 to 5 minutes. Photo by Ron Zincone



Photo #2 - Leonid Meteor in Northern Sky. Location: Richmond, RI. Date: November 18, 2000. Time: Estimated around 4 am. Lens: 50mm. F/Stop: 2.8. Film: Fujichrome Provia 1600. Exposure: 1 to 3 minutes. Photo by Ron Zincone.

The Leonid Meteor Shower

Below is my writeup for my Leonid 2000 observations I am sending for the December newsletter. AAAA is a wonderful astronomical club and astronomy is the best hobby anyone can experience. I'll be on the front lines once again next year for the much anticipated east coast meteor storm predicted to occur on the morning of the November 18th. You can count on me for observations and photo data in 2001 and 2002.

Leonid 2000 Observations

This year's meteor shower was the greatest meteor experience and one of the best astronomical events I have ever witnessed. On the morning of the 17th I was up in North Conway, NH. I observed under the 1st quarter moon sky from around 1:30 am to about 4:30 am EST under mostly clear skies. I visually counted about 42 bright Leonid Meteors, mostly greenish-white in color. The peak occurred around 2:50 to 3:00 am; which was as predicted.

On the morning of the 18th, I observed from my home in Richmond, RI, under totally clear skies with the 1st quarter moon. I visually counted from around 1:30am to about 4:50 am 217 bright Leonids! Most were greenish-white in color. I am sure I did-

n't catch any of the fainter ones since the 1st quarter moon washed them out and many others Leonids may have appeared in other areas of the sky I did not concentrate on.

My estimate of the average hourly rate was around 100, but the more true ZHR was probably closer to 200 to 300. A minor peak seemed to occur around 2:40 am and a much greater peak around 2:58 am, when I saw a fabulous Leonid fireball that had to be at least mag. -3 to mag. -4. It was in the Northwest sky and left a glowing worm-like trail for 5 minutes! At this peak time, the meteors came in pairs and some three in a row! Most of the meteors I visualized and caught on film were from the darker regions of the sky away from the moon, mainly the SW, West, NW and Northern sky areas.

Out of 108 shots on Provia 1600 film, I managed to capture a total of 7 Leonid meteors and one fireball smoke trail. The best Leonid of the 7 was captured in the Northern sky around 4 am. It was the greatest meteor shower and one of the best astronomical events I have ever seen. I can't imagine what 2001 and 2002 will bring.

*Ron Zincone, Richmond, RI
AAAA member; ASSNE member
rzincone@uri.edu*

Leopoldo Andriao Earns Southern Skies Binocular Club Certificate

Leopoldo Andriao from Araraquara, Brazil, observed over 50 southern skies objects using 10x50 binoculars to earn his Southern Skies Binocular Club Certificate. Nice job, Leopoldo. We are glad you are a member of the AAAA.

Roseann Johnston Receives Binocular Messier Club Certificate

Roseann Johnston from Vincent, Alabama, just got her Binocular Messier Club Certificate by observing over 50 Messier objects using 10x50 binoculars. Even though she is new to the hobby, Roseann has become a dedicated observer, and does a wonderful job on her observations. Way to go, Roseann. We are proud of you.

John Wagoner, AAAA President

AAAA Members: When you have completed your AL observing projects, submit your observations to AAAA President John Wagoner for certification. Be sure to send COPIES of your records ONLY. Do NOT send originals of your observing logs.



AAAA

The American Astronomer

THE NEWSLETTER OF
THE AMERICAN
ASSOCIATION OF
AMATEUR
ASTRONOMERS

AAAA
3131 Custer Road, Suite 175/175
Plano, TX 75075
E-mail: aaaa@corvus.com

Web Page <http://www.corvus.com>

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All members are encouraged to submit articles and photographs for publication. Send all materials for publication to the Editor at the address below.

The opinions expressed by contributors to the AMERICAN ASTRONOMER do not necessarily reflect the opinions of the AAAA or the Editor. Articles representing supporting or opposing views will be published promptly after receipt.

EDITOR & LAYOUT
Edward P. Flaspoepler, Jr.

ASSISTANT EDITOR
Brenda Culbertson
stargazr@holtonks.net

PRESIDENT/TREASURER
John Wagoner
1409 Sequoia
Plano, TX 75023
(972) 422-3301
astrowagon@home.com

VICE-PRESIDENT/SECRETARY
Edward P. Flaspoepler, Jr.
5027 W. Stanford
Dallas, TX 75209-3319
(214) 357-2744
eflaspo@aol.com



A Member
Society of
The
Astronomical
League

President's Letter

I guess I need to report about how jealous I am of some of our members. The first is Leopoldo Andriao Junior from Araraquara, Brazil. He just got his Southern Skies Binocular Club Certificate. The problem is, he got it from his own back yard. Imagine going outside and looking up and seeing those glorious southern skies each night every night. And I have to pay thousands of dollars to get to see them once. Oh well, it really is nice, though, to have AAAA members in places other than the United States so that we can share observing experiences with each other. I have been corresponding with Leo ever since he joined the AAAA and am looking forward to meeting him at this year's Texas Star Party.

The second is Roseann Johnston from Vincent, Alabama. Roseann just earned her Binocular Messier Club Certificate and to hear her tell it, she just won the Noble Prize for Physics. I have been e-mailing Roseann ever since she joined the AAAA, and I have to say that her enthusiasm is infectious. It reminds me of when I first started out in the hobby and that gives me a good feeling all over. It sure is nice having great members like Roseann and Leopoldo.

And you can tell that this is the season for giving. One of our members, Lisa Carle, is with the State Department and is currently stationed in Damascus, Syria. She sent the AAAA a donation along with her membership renewal. I am happy to say that we were able to use it to provide solar shades for the upcoming Christmas partial solar eclipse for an elementary school class back East. Thank you, Lisa, for thinking about us. Your generosity really helps. We also received a grant from the Texas Star Party to be used to help further astronomy education. This was part of the TSP's outreach program to help promote amateur astronomy. We are grateful to the folks at the Texas Star Party.

You just have to love this time of the year. Not only are the winter skies wonderful to look at, but the holiday season is great to participate in. So from Ed Flaspoepler and myself, have a Happy Holiday Season and a Wonderful New Year's.

*John Wagoner—President
American Association of Amateur Astronomers*

OBSERVING IS THE HEART OF AMATEUR ASTRONOMY

The American Association of Amateur Astronomers provides the AL's FREE Observe Programs on our website in Adobe Acrobat Portable Document File format at no charge as a service to members of the AAAA, the Astronomical League, and the astronomical community at large. The Observing Programs which require a published manual must still be obtained from Astronomical League Sales, PO Box 572, West Burlington, IA 52655. (You can now purchase AL manuals online at the AL Sales website, <http://www.astronomicalleague.com>.)

AAAA encourages you to download these PDF files for your own use, and to distribute them, in either electronic or printed form, to your friends and other interested observers, as an encouragement to further participation in amateur astronomy.

AAAA members are eligible to earn any of the AL's observing awards. We encourage you to participate in all of the programs which interest you.

AAAA Members who have completed AL observing projects should submit their observations to AAAA President John Wagoner for certification. Be sure to send COPIES of records ONLY. Do NOT send original photographs or observing logs.

www.corvus.com/aa01006.htm

Promoting Youth in Astronomy and Helping to Save a Hobby

Dear Ed:

As you and I know, decreasing light pollution and getting youth involved in the hobby/profession of astronomy will help ensure the future of astronomy as we know it. And I wanted to let you know about the Youth in Astronomy Committee that the Astronomical League is sponsoring to help in this area. I hope that the AAAA and its members can find ways to help us out

With the help of several people, I have just started the Y in Astronomy Committee and created a new YAC web site. The address of our site is at the end of this letter. AAAA members are invited to submit articles and photos to be published on this web site.

We already have many people writing articles for us. If you would like to look at the member list, it can be viewed on the YAC web site. One person who stands out is Kent Blackwell. Kent is a devoted amateur astronomer who writes about deep-sky objects. We also have a devoted sponsor in Brain Lula. Brian does our CCD work and the technical work on the YAC web site. Both these men do very remarkable work.

I have been meeting with a state representative in my area to hold the first "Youth in Astronomy day" at the Pennsylvania capitol. We have just started planning this event, which will be held in the spring of either 2001 or 2002.

Don Savage from NASA and I have been working on a partnership between YAC and NASA to make the hobby better for all by helping today's youth to become tomorrow's leaders in astronomy.

With the help of organizations like the se, the AAAA, and the International Dark-Sky Association, our site can become a very useful source of information for youth that are interested in the hobby of astronomy.

The Youth in Astronomy Committee will be dedicated to the memories of Eugene Shoemaker and Clyde Tombaugh, both very notable men in astronomy. Eugene Shoemaker was co-discoverer with David Levy of the famous Comet Shoemaker-Levy which impacted Jupiter in 1994. He and his wife Carolyn discovered many comets using one of the telescopes on Palomar Mountain in Southern California. He died in a car crash in 1998. Clyde Tombaugh was discoverer of the planet Pluto in 1930.

Clear Skies and a Bright Future,

Ryan M. Hannahoe
Youth Activities Chairman
for the Astronomical League
http://youth_in_astronomy.homestead.com/
HSTINST@aol.com



AAAA Member Ryan Hannahoe Honored by Astronomical League

The Astronomical League has awarded it's Horkheimer Award 2000 for Exceptional Service by young astronomers under the age of 19. This award is sponsored by Jack Horkheimer, PBS TV's nationally known Star Gazer.

AAAA member Ryan Hannahoe was named the 2nd place winner of this year's Jack Horkheimer Award. He received his award, presented by AL Vice President Bob Gent, at the annual Stellafane Convention in Vermont, July 29th, 2000.

Ryan Hannahoe, from Leesport, Pennsylvania, is a member of the Berks County Amateur Astronomical Society as well as the American Association of Amateur Astronomers. Ryan serves as his local club's program committee chair, and entered high school last fall.

Ryan has a passion for astronomy, and he is persistent. A few months ago, Ryan completed the construction of his 6-inch Newtonian telescope. Over the past several months, he served as a volunteer astronomer for public star parties, scout groups and schools. In addition, he's taught classes on astronomy, observing, and telescope making. Ryan has won awards from his local astronomy club, and he has competed in the science fair with his telescope making project. He has written a paper on telescope making techniques. Among many other activities, Ryan now serves as the webmaster for the Astronomical League's 2001 convention web site.

First place winner was Katie Moore, a member of the Flint River Astronomy Club in Griffin, Georgia.

The deadline for the next Horkheimer Award is March 31, 2001. Any Astronomical League member under the age of 19 on the date of the application deadline is eligible to apply. The award is based upon service to the League or to any League society. For additional information or applications, please contact Bob Gent, AL Vice President, 325 Cloudes Mill Drive, Alexandria, VA 22304-3080, or e-mail: BobGent@aol.com.

The American Association of Amateur Astronomers teams up with Bushnell Sports Optics and the David Chandler Company.

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At David Chandler Company, our printed products focus on the needs of the beginning observer. The Chandler philosophy is that the beginner will not be a beginner for long! We want to nourish the enthusiasm of the beginner with solid, helpful reference materials. All of our observing aids are clear, accurate, and reliable. They are designed to help the beginner become knowledgeable and proficient as quickly as possible.

We are excited that the American Association of Amateur Astronomers is able to make our products available to you through their AstroMax Online Store. We hope they will point you on your way as you begin to explore the universe.

David and Billie Chandler

PS: Be sure to take a look at the AstroMax Introductory Astronomy Kit, which includes our First Light Astronomy Kit, a pair of Bushnell Powerview 10x50 Binoculars, and full membership in the American Association of Amateur Astronomers. It's a great way to get started in astronomy for less than \$100! It makes a great gift, too.

WWW.ASTROMAX.COM

AAAA
3131 Custer Road
Suite 175 PMB 175
Plano, TX 75075

aaaa@corvus.com

Binocular Messier Club

I'm thinking of starting work on the "Binocular Messier Certificate". Has anybody on the list done this? If so, I'd welcome any tips or "lessons learned" before I start my work on this project.

Unfortunately, for me to get really dark skies I have to head up to the Sierra Nevada mountains (Lake Tahoe or Yosemite National Park) 3 - 4 hours away. There are some "medium dark" sky sites 45 minutes to an hour away. I guess I'll try one of these sites, since it has to be better than being in the middle of Silicon Valley!

I did notice on the AL Web page there were two categories of binocular objects. I didn't realize that so many were visible with binoculars. There are the obvious ones (M42, M31, M13, M8, M45), but I was surprised to see other Messier galaxies on the binocular list.

Joe Fragola
JFragola@hotmail.com

Hello Joe,

I live in Alabama, and way out in the country, so most of the time I have very good dark skies. We have a very big yard..front and back yard! I used 10 x 50 mm binoculars to observe with. On the Binocular Messier Club list of Messier objects..there are 2 lists (1 list is for smaller binoculars like 7 x 35 and 10 x 50 like I have, and another list for larger binoculars).

I used the first list. On this list, the Messiers listed were in categories of ...easy, tougher, and challenge. Here where I am, I was able to observe objects listed in each of the categories and some of the Messiers that weren't listed on the first list. And using 10 x 50 mm binoculars at that!

Where you are located, if you have lots of lights nearby, you may need fairly dark skies to do the observing. Maybe there's a park or somewhere not too far from ya'll, where you can go observe so the lights won't bother you. Just go out one evening where you live and give it a try! I'm sure you'll do good, and it sure is loads of fun, as I have thoroughly enjoyed it.

Roseann H. Johnson, Vincent, Alabama
n4zno@juno.com

Joe:

I have my Messier Binocular Cert. and it was fun, but still challenging. Definitely rewarding, though. When I finished it up I had a "perfect" night with all the conditions we astronomers pray for. I saw M51 in 8X40 binoculars and was ecstatic. Most of the objects (35 of them, I believe) I viewed with 7X35s. I think the hardest part is learning to identify the objects for what they are. Once you have done this list, you will have identi-

fying the things down to a fine art.

Brenda Culbertson, Topeka, KS
stargazr@holtonks.net

Asteroid Discoveries

I thought I would let you know that I got my first asteroid discovery numbered yesterday. In fact I got two numbered:

2000 RA8 = 18984

2000 SB = 19019

This means I am now entitled to suggest a name for them.

I have a total of 29 discoveries so far, and eight others are getting close to being numbered. I am not allowed to discuss the names I suggest until they have been confirmed which usually takes at least two months. I did not name these first two after people, however, reserving that special recognition for later ones.

Although this is no big deal really in minor planet circles, it is a big deal to me, being my first. Just thought you might want to know.

Larry Robinson
Sunflower Observatory 739, Olathe KS
lrobinsn@ix.netcom.com

Congratulations Larry, on your asteroids. I look forward to knowing what the names are. I am very impressed with your project, and wish I had both the stamina and time to carry out such an ambitious project. Keep up the good work.

Ed Flaspoebler, AAAA Vice President,
eflaspo@aol.com

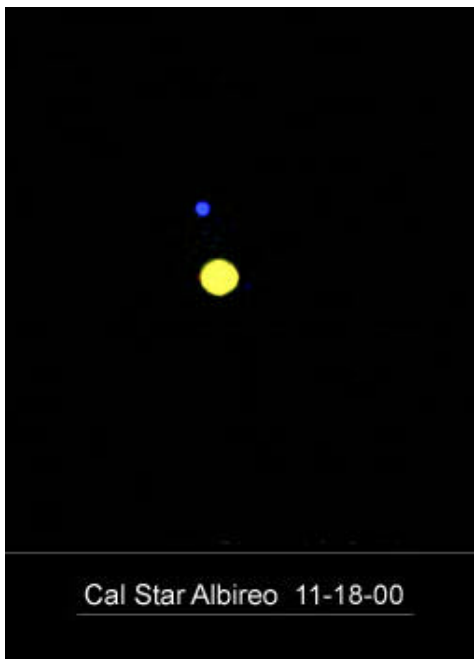
NEO Asteroid Search

I am interested in asteroids/comets and the world needs all the help it can get, in order to find the large number of undiscovered and potentially dangerous near-earth objects (NEO), out-there (100,000 or so and we have good data on only about 1,000 of them).

We want to do two things, with the help of AAAA. First, we want to form a network of amateurs involved in asteroid/comet hunting and to promote this activity to those not involved. Next, we want to set-up a hot-line that can be used by any amateur who spots a fast-moving object that could be an NEO. Most of these folks are probably not looking for NEO (and they are not likely to report it to anyone, unless we can make reporting easy).

The hot-line would notify one of the serious hunters (amateur and/or professional) who would check the sighting and make a proper report it to the Minor Planet Center, if it were an NEO.

To make this program work we need to find, if possible, an around-the-clock observatory which is willing to take the calls.



Cal Star Albireo 11-18-00

CalStar Albireo

The following text was sent to us by Paul Mortfield of Stanford—so, last Saturday I took photos of the Cal Star, Albireo from our backyard. But it was too late to give our team an oomph!

Isaac Kikawada
HeidiandIsaac@windandtree.com

BERKELEY: Wed. Nov. 15, 2000. The University of California at Berkeley will announce a new symbol during the Big Game against Stanford Saturday, hoping it will take a place alongside the Blue and Gold and Oski as symbols of school pride. But unlike the school colors, the unofficial mascot and other more traditional school symbols, the new one is a star system, the double star Albireo, located 385 light years from Earth in the Cygnus constellation.

The student senate at the university has decided to adopt the constellation, which consists of a blue and a gold star that circle endlessly, and name it the "Cal Star." The star, according to undergraduate and adoption bill author Lauren Bausch, will encourage students to "strive for the stars."

During the fall and early winter, the cross-shaped Cygnus constellation can be found in the West during the first hours of night. Albireo, or Beta Cygni, is the bottom star of the cross configuration. It is the hardest to find, according to Berkeley astronomy professor Alex Filippenko, although it can be discerned by the naked eye when the sky is not cloudy or burdened by light debris. The double star actually consists of three stars because the yellow-burning star is a binary, but telescopes on the ground have a hard time distinguishing its two components, which is what causes the "blue and gold" effect.

Member Activities

Otherwise, we will have to set-up a schedule of amateurs and use that schedule to get the checking done. This should not take a lot of people. We can use our e-mail address and phone, for openers, and then try to improve the system.

This matter is extremely important. An awful lot of the work is being done by volunteers and we are really anxious to tap the great reserve of amateurs and get them into the loop. Once we get going we can send letters to Sky and Tel., etc. and publicize it on the Web.

andy smith
astrosafe@yahoo.com

Hi Andy:

We here at the AAAA are always looking for partnerships with other groups in the astronomical community as a way to promote this great hobby of ours. One such partnership is the National Public Observatory in New Mexico. If you would like, go to our web page and see what we have done to promote the NPO on our site. The URL is: <http://www.corvus.com/npo.htm>

We can do the same for you. We can set up a page that promotes your ideas and concepts and gives you a place to direct amateurs who have a similar interest so that they might get in touch with you. This is how an organization starts small and grows. As you make more contacts, the more resources are brought to your attention.

Best wishes,

John Wagoner - President
American Association of Amateur
Astronomers
<http://www.corvus.com>

Astronomy Database

I am a member of the AAAA. I am a professional information systems designer. My specialty is in advanced intelligent database systems. I have been doing this work for over 15 years and have build sophisticated information engines for many corporations and government agencies. I host on my servers a number of applications.

I just set up an Intelligent Internet Search Engine for those interested in astronomy and astrophysics. The system is hosted by my company Mnemotrix Systems, Inc. The application is called Mnemotrix DBCCO (Database of Correlated Celestial Observations). I would invite you to test it out.

You will find that it is a powerful way of locating information from across the Internet relating to astronomy and astrophysics. The search engine can search on simple queries of one or two terms, descriptions of things, and even complex concepts. You can search just for the terms you have put in exactly, or

ask it to extrapolate your query into multiple concept sets and expand the scope dramatically. It is very powerful. Anyone can use it freely and we invite you to add it to your "links" list if you like. The URL is: <http://www.mnemotrix.com/astro> We also invite you to suggest new web sites for us to include in our listings for free and invite suggestions as to how we might improve our service to the community of users we hope to support. Looking forward to your kind response.

Regards,

Michael Pincus
gate@apk.ne

Filter Advice

Hello to the group.

I am a new member, and getting back into this enjoyable past time. I sold a 10-inch Meade Equatorial Starfinder before a move about 4 years ago, and recently purchased an ETX 90 EC with the Autostar feature. I love the portability, which has allowed me to set up for even brief sessions morning or evening, but the small aperture has limitations, particularly in an urban neighborhood.

I would like to purchase some filters, which would help with light pollution, and aid in viewing nebulae. With the inherent limitations of this aperture, what would be suggested? Also are there distinct differences in the quality of some over others? And are there any other filters, which may make significant improvements in viewing other objects (Planetary) with this scope?

Any input, or experience with this scope would be appreciated.

Charlie Warren
Astrofx@aol.com

Hi Charlie,

Lumicon O3, or the Orion Ultrablock (Meade has a similar filter) are still the filters for nebulae. For several reasons they often don't work as well as they should. For planetary observing, different color filters are used. The improvement with the color filters is often quite subtle. The "stronger" (less light transmitted) filters work best, but they cut out too much light for the smaller instruments.

The Lumicon Deepsky or the Orion Skyglow (Meade has a similar filter) will help some for viewing clusters from an urban setting. However the single most important (greater effect than any filters) thing you can do is to set up a shielded viewing area where absolutely no artificial lights can be seen even vaguely with peripheral vision. After being in such an area for half an hour, you might be amazed how much you can see when the air pollution clears out.

Doug Kniffen, Warrenton, MO
dk@usmo.com

My Kitty Cats, the Sky, and Me

by Roseann H. Johnston

*Crisp, clear dark skies
and quiet moonless nights
are what I consider
an astronomer's delight.*

*By early evening
I check out the sky
wondering which
Messier objects I'll spy.*

*Sometimes I'll have a list
of what I want to see,
but there's those times it's just
my kitty cats, the sky, and me.*

*Just to gaze back in time
filled with wonderment and awe.
And then to drift into dreams
of the splendid things I saw.*

*Across a blanket of black velvet
lies a stretch of diamond dust.
This view of the Milky Way Galaxy
is an observer's must.*

*With binoculars and a telescope
I can view distant clusters and such.
They appear to be so very close,
I can just reach out and touch.*

*To touch a billowy nebula
with the palm of my hand
or float amidst a sparkling star cluster,
both would be grand.*

*No matter how, when, or what I
observe,
it's always fun to be
at home on my front porch
with my kitty cats, the sky, and me.*

AAAA member Roseanne Johnson can often be found chatting on the Astronomy Clubs Around the World eGroup. <http://www.egroups.com/group/ACATW>. She can be reached by e-mail at n4zno@juno.com.

Magazine Subscriptions

A regular subscription to Sky & Telescope magazine is \$39 per year, but you can get it at the club discount through the AAAA for only \$30 per year. Astronomy magazine is also \$39 per year, but the club discount rate is only \$29. Subscribe to these magazines or extend your current subscription on the AAAA web page. Or send a check for the correct amount, made out to AAAA, to:

**AAAA, 3131 Custer Rd., Suite 175 PMB*
175, Plano, Tx. 75075
WWW.CORVUS.COM**

Winter Observing

by Brenda Culbertson
stargazr@holtonks.net

www.geocities.com/ksstargazer/

It wasn't but a few weeks ago when we had clear, warm skies in which to observe. Can you remember those nights? It is difficult to remember warmth while being in sub-zero temperatures and wind chills an order of magnitude below the actual temperature. It would appear that here in Kansas during the month of December, absolute zero would be reached—or so it feels. Cold is cold!

Although we here in the Northern Hemisphere are fighting the temperatures again, if you can find the determination to go out and do a short stint at the telescope, you will see some wonderful sights. Make sure to dress appropriately and never overdo your stay out in the cold. Frozen extremities are no fun for anyone and only you know when you are too cold.

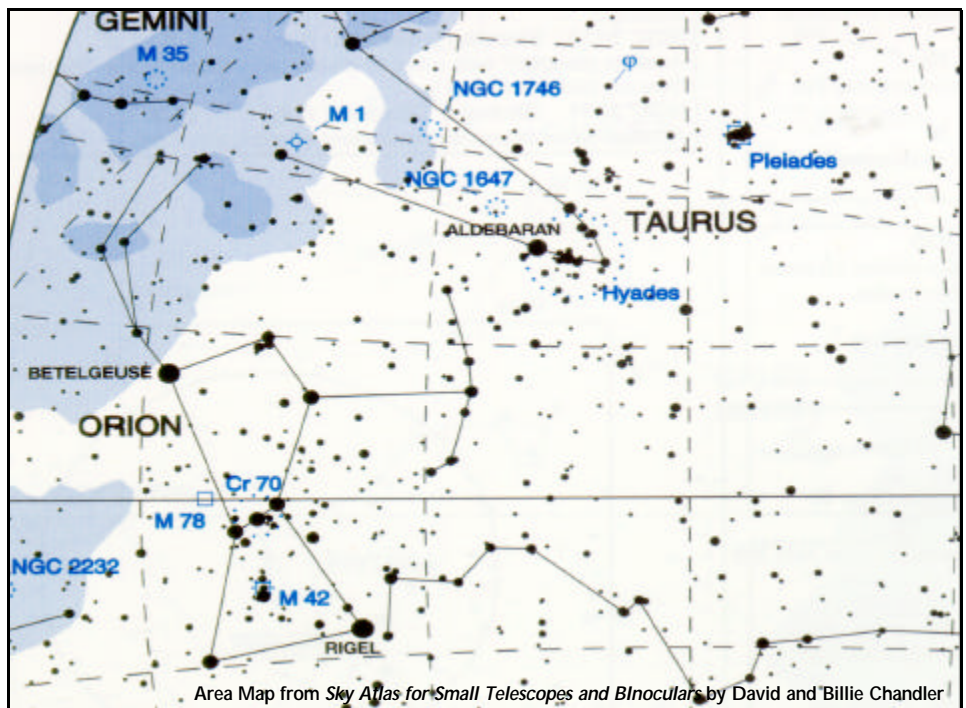
Here are some objects to observe this winter while you are out testing your new astronomical Christmas gifts.

The easiest object/event to see for viewers in North America is the last solar eclipse of the millennium on Christmas morning. This eclipse will begin at 15:36 UT, with mid-eclipse at 17:30 UT, and end at 19:43 UT. (17:30 UT is approximately 11:30 a.m. EST, 10:30 CST, 9:30 MST, and 8:30 PST.) This is a perfect opportunity to use that new telescope you got for Christmas, as long as you **make sure you have the NEW SOLAR FILTER in place for your viewing.**

Easy Objects

While everyone looks at the **Pleiades**, the **Hyades** in Taurus is an interesting group and deserves to be observed. It is the nearest star cluster to us and is visible unaided. Look for Aldebaran, which is the brightest star in Taurus, and follow the "V" shape it leads to. The stars in the "V" are members of the Hyades.

Another nice cluster for a small scope or binoculars on a dark night is **M-35** in Gemini. This object may even be seen without optical aid. Look about



Area Map from *Sky Atlas for Small Telescopes and Binoculars* by David and Billie Chandler

2 1/2 degrees northwest of Eta Geminorum and this cluster should jump out at you.

If you like double stars, check out **Gamma Andromedae** (Almach). Almach is a second magnitude star with a fifth magnitude companion. This double system is one of the many that contain stars of different colors. The brighter is a golden color and the fainter a greenish-blue.

Another easy star cluster is **M-44** (Praesepe or Beehive) in Cancer. Cancer is one of those constellations that is hard to point out by finding bright star members. It is easier to find the area of the sky the constellation is in, and then use binoculars to find the very easy star cluster. Praesepe is an object that can be easily seen unaided if the observer is in a dark site. To find Cancer, make a triangle with Pollux (Gemini), Sirius (Canis Major), and Regulus (Leo), then look inside the triangle for the cluster.

Moderate Objects:

As you look at M-35 in Gemini, scan the area about half a degree southwest. At about 11th magnitude is another cluster, **NGC 2158**. This cluster is very rich and is often overlooked by observers viewing its nearby neighboring cluster.

Sometimes I put objects that are considered "easy" by some astronomers in the "moderate" category. Why I do this is because, although the object may be easy to see, it is difficult to find, resolve, or determine for that sure you are looking at the right thing. One of

these objects is **NGC 752** in Andromeda. NGC 752 is a cluster of mostly 8th and 9th magnitude stars in a loose arrangement. It is located about 5 degrees south of Gamma Andromeda and just a bit west.

A beautiful object in big telescopes is somewhat less beautiful through smaller apertures. **M-51** (Whirlpool Galaxy) can be seen as a smudge in low power binoculars on a good night. Telescopes can pull out the detail of the bridge connecting the two elements of the object. Go to Alcaid (the end star in the handle of the Big Dipper) and look about 3 1/2 degrees southwest.

Difficult Objects:

Look for **IC 59** and **IC 63** which are near Gamma Cassiopeiae. They are associated with the star, which is itself something to watch over time. Gamma Cassiopeiae is a variable with an attitude.

If you like different colored stars, try the **Crimson Star** (R Leporis). It is a long period pulsating variable, but has a remarkable red color which is often described as "blood red."

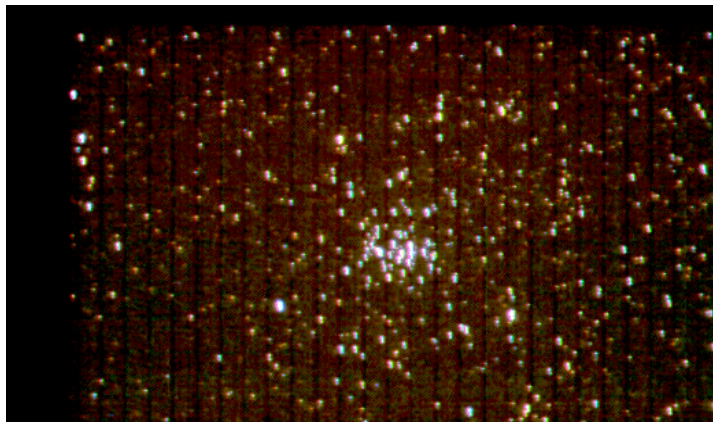
NGC 5694 is for the more southern observers. It is at the tip of Hydra's tail. This globular cluster is around 11th magnitude and is one of the farthest clusters from us.

Of course, a visual observation of the **Horsehead Nebula** in Orion is still one of my favorites in the "difficult" category.

M 44
NGC 2632

Praesepe or
Beehive
Cluster in
Cancer

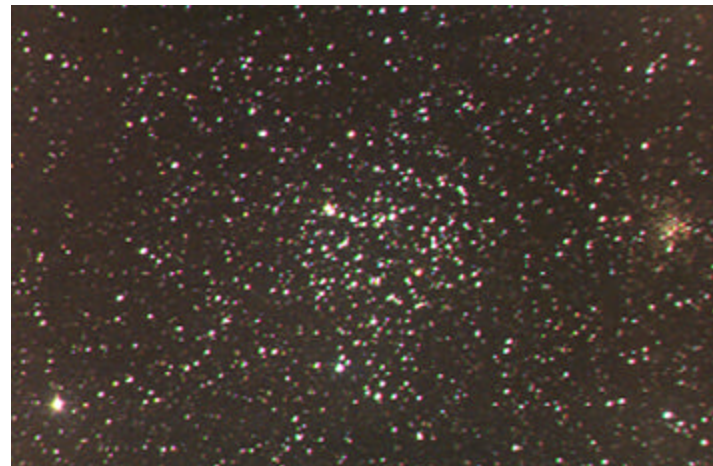
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M35
NGC 2168

Open Cluster
in Gemini with
Globular
Cluster NGC
2158

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IC434/B33

Horsehead
Nebula in
Orion

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M 42 and M 43

The Great
Nebula in
Orion

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Dates to Remember

Meteor Showers **for the Winter Season**

January

03-04 Quadrantids (First Quarter Moon)

April

21-23 Lyrids (New Moon)

Dates to Note

January

01 New Year's Day
09 Full Moon (total eclipse)
15 Martin Luther King, Jr. Day
24 New Moon

February

08 Full Moon
12 Abraham Lincoln's Birthday
14 St. Valentine's Day
21 Venus at its greatest brilliancy (-4.6 mag.)
22 George Washington's Birthday
23 New Moon

March

09 Full Moon
17 St. Patrick's Day
24 New Moon

April

07 Full Moon; Passover begins
13 Good Friday
15 Easter
23 New Moon

Planetary and Lunar Observing

Saturn, Jupiter, Venus and Mars are in good positions this season. Jupiter and Saturn can easily be spotted in Taurus, along with the Pleiades and the Hyades star clusters. Many people buy telescopes just to view the planets because they look so good. These are excellent objects to show off during star parties.

Lunar observers can see occultations of stars from time to time. These are kind of fun, but short. If you see a star near the lunar limb, keep an eye on it for a while and see if it gets closer or farther from the limb. If it gets closer, you may be in for a treat by seeing our Moon pass between us and that star. As you watch, the star will "blip" out of view.

Brenda Clubertson
stargazr@holtonks.net



AAAA Establishes Online Discussion Group

The American Association of Amateur Astronomers has started a new online discussion group, hosted by eGroups.

The purpose of the group is to create a forum in which AAAA members can share ideas, experiences and challenges, and just get to know each other. If you are an AAAA member, or have friends interested in amateur astronomy and the AAAA, we invite you, and them, to become a part of this eGroup. The Quad-a eGroup now has 68 members.

If you would like to join the AAAA discussion group, please send an e-mail request to: Quad-A-subscribe@eGroups.com or visit the web site at: <http://www.egroups.com/list/Quad-A/info.html>

www.egroups.com/group/Quad-A



The new Chabot Space & Science Center in Oakland, CA, opened in August 2000. This photo is a composite of images taken after the completion of the construction of the new center and the renovations of the 20-inch refracting telescope housed in the observatory. *Rachel*, the 20-inch telescope, was built in 1915 and installed in her new home in the observatory dome of the new facility. Images of Jupiter and Saturn taken with *Rachel* are along the bottom. A night view from the roof shows the Golden Gate bridge in the background. The new Chabot Space & Science Center houses a Ziess planetarium projector. The Chabot Space & Science Center is a teaching and learning center focusing on astronomy and the space sciences. Find out more about CSSC on their web page at <http://www.chabotspace.org>. Photo by Carter Roberts, cvroberts@earthlink.net

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