

Event Horizon

October 2006

Volume 13 Issue 11

AN EYEPIECE REVIEW

by Mark Gemmell, H.A.A.

I've been an avid astronomer for many years. Recently I replaced my 12" reflector with an 8" Dobsonian and I got to try out 3 two-inch wide-field eyepieces in the clear sky under a gibbous Moon on September 10th.

Eyepiece #1 was the Meade series 4000 32mm SWA. Eyepiece #2 was the Meade series 4000 (non rubber eyecup) 40mm SWA. Eyepiece #3 was the Rini 28.5MM Wide angle.

The eyepieces were all put into my Antares 8" Dobsonian f/6 reflecting telescope. Here is what I found:

The Meade series 4000 32mm SWA was taken out of plastic wrapping from the box and was brand new. It felt light compared to the 40mm SWA. The 32mm was very sharp on-axis but toward the outer 30-40% of the field of view it showed slight astigmatism. The Dumbell nebula, Double Cluster and Pleiades fit nicely into the field, making for a nice pleasing view. I've never looked through a more-expensive 35mm Panoptic so I couldn't compare the Meade 32mm to that EP, (I'll bet the 35mm Pan is much better in every regard though). The Meade 32mm did barlow very well without any real issues.

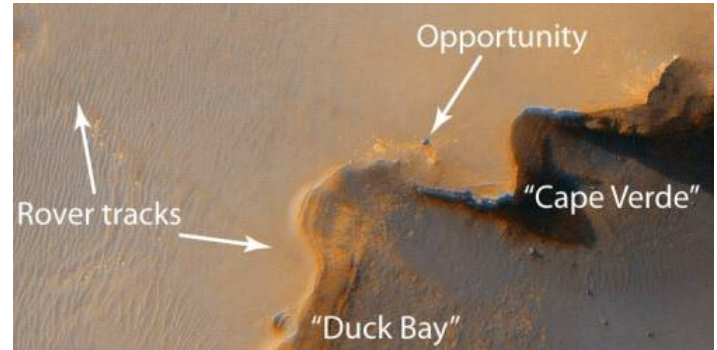
Next I used the Meade 40mm SWA - an older Japanese version without the rubber eyecup. This particular EP showed a huge exit pupil when I looked at the top lens after inserting it into the focuser. It looked like 9-10 mm to my eye. I was unable to measure it directly in the darkness. The 40mm was heavier than the 32mm; also I had a hard time putting it into the focuser, as the 2" brass barrel, was a very tight fit! I found the images to be sharper near the edge of the field compared to the 32mm SWA.

The eye relief on the 40mm one was really long. If your eye went too close to the lens, images blacked out, causing a "tunnel" effect. If it wasn't for the tight fit in the focuser, I would have bought this from my friend Mike in the astronomy club from whom I had borrowed it.

Last was the Rini 28.5mm wide angle EP. This EP

wouldn't come to focus in my reflector even with the focuser racked all the way in. It is too bad because this would have been a comfortable EP to use.

Mars



Check out the image from the "HiRise" instrument on the Mars Reconnaissance Orbiter - it actually shows one of the rovers! (Opportunity). hiroc.lpl.arizona.edu/images/TRA/TRA_000873_1780/Opportunity-color-close-up-annot.jpg www.nasa.gov/mission_pages/MRO/multimedia/mro-2061006-1.html

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Meeting space for the Hamilton Amateur
Astronomy club provided by
Teamsters Local 879 and
The Hamilton Spectator

Domain Name and Web hosting for the
Hamilton Amateur Astronomy club supplied
by
Axess Communications
Corporate and Residential DSL and Web
Hosting
<http://www.axess.com>
support@axess.com

Email Reminder notice

We send email reminders before each meeting which describes the location, time and topic of the general meeting.

If you're not on the list, make sure that you receive your reminder by sending a note to:

publicity@amateurastronomy.org

An Offer

Thinking of buying your first telescope but wondering what kind to get? Before you buy, consider this offer from Mike Spicer: a "loaner" 5 inch telescope with electronic alt-az controls. The scopes are lightweight, easy to set up and very easy to use. Mike is offering newer members of our club one of these telescopes to try out for a month or so. Interested? You can reach Mike by email at deBeneEsse2001@AOL.com or by phone at (905) 388-0602.

Articles submissions

The HAA welcomes your astronomy related writings for the Event Horizon newsletter. Please send your articles, big or small, to:

editor@amateurastronomy.org

The submission deadline is two days before each general meeting.

HAMILTON AMATEUR ASTRONOMERS

Event Horizon is a publication of the Hamilton Amateur Astronomers (HAA).

The HAA is an amateur astronomy club dedicated to the promotion and enjoyment of astronomy for people of all ages and experience levels.

The cost of the subscription is included in the \$25 individual or \$30 family membership fee for the year. Event Horizon is published a minimum of 10 times a year.

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PO Box 65578, Dundas, ON L9H 6Y6

Web:.....amateurastronomy.org

General Inquiries:

secretary@amateurastronomy.org (905) 575-5433

Membership Inquiries:

membership@amateurastronomy.org

Meeting Inquiries:

chair@amateurastronomy.org (905) 945-5050

Public Event Inquiries:

publicity@amateurastronomy.org (905) 945-5050

Binbrook Observing Inquiries:

observing@amateurastronomy.org (519) 647-0036
DeBeneEsse2001@aol.com

Newsletter Inquiries/Submissions:

editor@amateurastronomy.org

Submissions to the web site or newsletter are welcome, and may be edited for size & content.

Proposed 2007 HAA Council Slate

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Chair's Report

by Glenn Muller

While the main mandate of the HAA is that astronomy should be fun, at this time of year we need to attend to some business. Each September I request that people with an interest in joining the council should contact me, and I also poll the current council members on whether they wish to change their status. Now, going into October, I am able to propose the following changes:

First off, John Gauvreau, who often avails his time to public outreach events, sends regrets that his current schedule keeps him from attending most council meetings so has decided to step down as Councilor-at-large for the coming year. Thank you, John, for your contributions in that role.

Greg Emery, who also currently has other commitments would like to remain as a Councilor-at-large but will relinquish the title of Observing Director. So, a thank-you to Greg for all of the observing guides you have provided.

Mike Spicer, who most of you know as the HAA's most ardent observer and frequent contributor to the Club's Activities blog, has volunteered to take on the position of Observing Director. With his vigilance of the night sky I'm certain that Mike will present monthly highlights for both novice and veteran observers.

When Jackie Fulton, a newer member with abundant positive energy, showed an interest in council Gail and I instantly recognized her potential for the duties of Publicity Director. Jackie has already come up with

some good ideas so, with your approval next month, I'd like to thank Gail for all of her promotional efforts (Gail would stay on as a Councilor-at-large) and turn the keys of the HAA publicity machine over to Jackie.

Last, but certainly not least, Heather Neproszel has volunteered to be a Councilor-at-large. Generous with her time (and her scopes), Heather would like to encourage all members to become active participants by contributing to the newsletter or, even better, by giving a presentation at a meeting.

You'll find complete listings of both the current slate of councilors, and the proposed slate in this issue. At November's Annual General Meeting (AGM) a vote of acceptance will be taken, therefore I encourage anyone with concerns in this matter to contact me before then.

Of course, your participation is important in another way and the October Chair's report wouldn't be complete without a reminder that Stewart Attlesey and Cindy Bingham (Membership Director and Treasurer) are now accepting dues for the coming year. There are several levels of membership and they are all vital to the well-being of your Club.

Finally, and I've saved the best for last, the HAA may have found a permanent home for its meetings. At this time of writing, it has not been confirmed so I won't reveal where, just yet, but I will say that the new facility will knock your socks off! Stay tuned for updates.

Have a great month!

Glenn invites your comments on these topics or any aspect of the club. He can be reached via:

chair@amateurastronomy.org



Upcoming Events

The next HAA meeting is Nov 10, 2006 at the Hamilton Spectator Building which is located at 44 Frid St, near the junction of Highway 403 and Main St West in Hamilton. Admission is free. Everyone is welcome! If it is clear, there will be observing in the parking lot after the meeting.

Please check our website www.amateurastronomy.org for more up-to-date event listings.

Also, check our "Observing" link at www.amateurastronomy.org for dates and times that club members will be going observing with their telescopes.

Book reviews

A Star Atlas for Use at the Scope

A Review by Mike Spicer

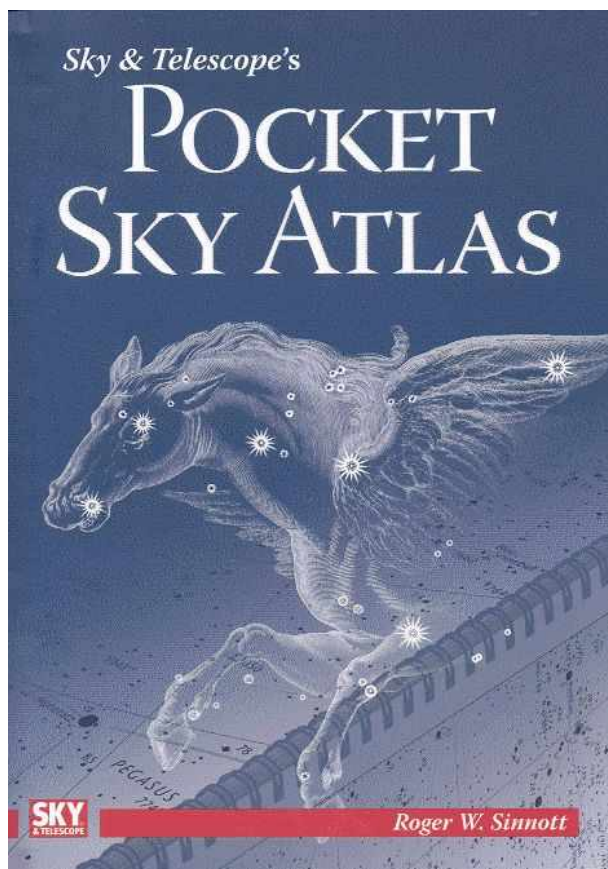


Image of the cover, *Pocket Sky Atlas* (Sinnott, 2006 Sky Publishing)

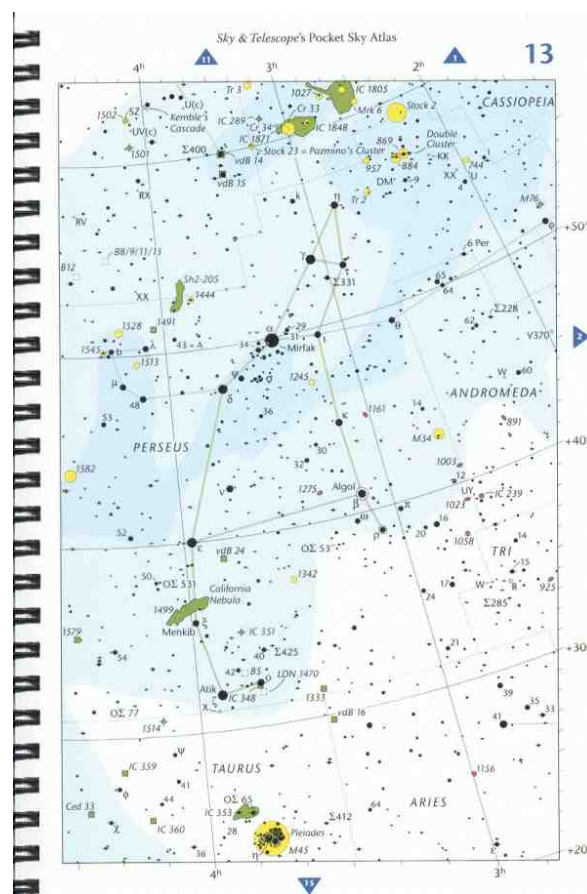
A new pocket-sized star atlas published by the people that bring you *Sky & Telescope* magazine may be just the thing you need for use at the telescope.

The *Pocket Star Atlas* (Sky Pub., 2006) has 80 spiral-bound charts 6" x 9" covering the entire sky at a scale of 4.6mm per degree. There are four close-up charts showing the Pleiades (7.4mm per degree), the Sword of Orion (3.8mm per degree), the entire Virgo galaxy cluster and the Large Magellanic Cloud (but at 1mm per degree, not very close-up). The chart paper is thick, the binding IS durable, the atlas opens up flat for table use and the cover is water-repellant.

The charts look so similar, I thought Sky had cut up the large-format charts from *Sky Atlas 2000.0* by Wil Tirion. This pocket version uses the same symbols and rich colours. It charts over 30,000 stars to below magnitude 7.5 – great for binocular and finder-scope use. Double and variable stars are marked, as

are globular clusters to magnitude 10.5 and galaxies to magnitude 11.5. Planetary nebulae to magnitude 11.5 are charted. Emission and dark nebulae are included; supernova remnants too.

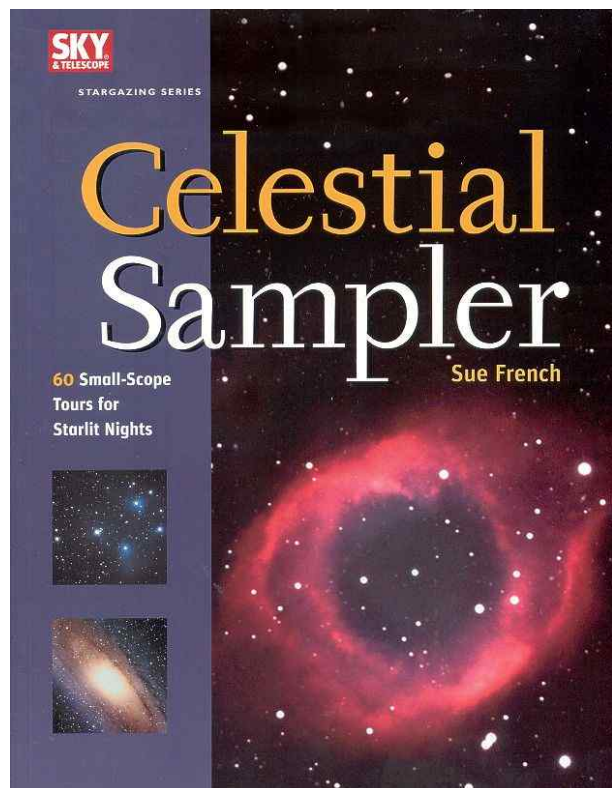
If you like following observing "lists", this atlas charts all of the Messier and Caldwell objects, most NGC objects and the entire Herschel 400 as well as 55 carbon stars with their ruddy hue. One thing that struck me about this atlas is that most constellations fit neatly on one 6 x 9" page for easy reference. Convenience of use is easier thanks to a General Index, a page listing the Caldwell objects and another listing the Messier Objects, cross-referenced with the chart page for each object. A key map of the sky on the inside back cover helps you find what chart to use.



I heartily recommend that you have a look at the *Pocket Sky Atlas*. I will bring mine to the next few HAA monthly meetings for you to see it. The atlas is available at Efston Science, Kendrick Astro Instruments and Khanscope in Toronto for \$30 plus tax and shipping. I have a few copies too - for \$25, no tax.

Tour the Night Sky? You'll Want this Sampler

A Review by Mike Spicer



Sue French has been writing “*Small Scope Sampler*” for *Sky & Telescope* for over six years now. Each two page article focuses on the objects in one constellation or asterism, touring the objects in that piece of sky. French identifies objects that are visible in binoculars or a telescope up to a 4” refractor. She uses finder charts, photographs and lists to highlight her excellent prose descriptions. Readers have greatly enjoyed her monthly contribution.

This 2005 soft cover book is a selection of sixty of her 8.5” x 11” magazine articles, reproduced on magazine paper with all of her colourful charts and photographs. Titles such as “*Stalking the Leo Triplet*”, “*Grabbing the Bear by the Tail*” and “*Night of the Trifid*” are self-explanatory for amateur astronomers. I really enjoy reading one or two of the articles whenever I have half an hour to consider all the gems this writer describes.

French has a short introduction to observational astronomy, advising on telescopes to use, how to select a good location and how she uses cloudy days to prepare her observing lists for clear night use. There is even a collection of monthly all-sky maps to help orient new observers. The book is 169 pages in all and well worth its \$30 price.

October

Messier Hunting with the Horse and the Water Boy

OBSERVING ALL the Messier objects is a goal pursued by many amateur astronomers and a fine way to hone your observing skills. A good 3-inch (75-millimeter) telescope under moderately dark skies is sufficient to bag them all. Here we'll ferret out the Messier objects of Pegasus and Aquarius. While two objects are easy targets for a small telescope, the other two may prove to be a challenge. Let's start with the constellation Pegasus, which contains the brightest and easiest to find of the four Messiers.

The 18th-century astronomer Jean-Dominique Maraldi's interest in de Chéseaux's Comet (which appeared in August 1746) led him to discover two of this month's globular clusters, M15 and M2. On September 7, 1746, he observed M15 as “a fairly bright, nebulous star which is composed of many stars,” a somewhat perplexing description.

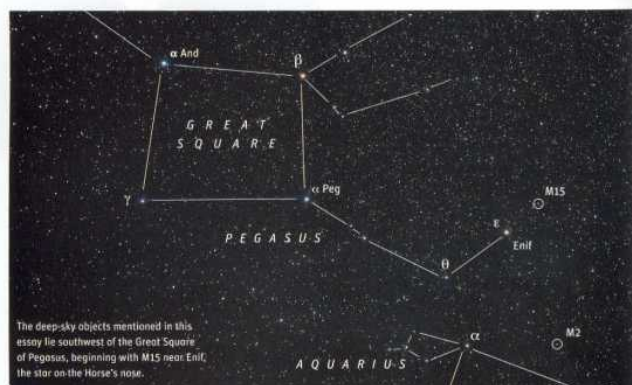
Look for **M15** (the Great Pegasus Cluster) just off the nose of Pegasus, the Flying Horse. This cluster may have the densest core of any globular in our galaxy. It is theorized that M15's stars fell toward its center within the first few million years of the group's 12-billion-year lifetime. Although no globular cluster is unam-



Look in Pegasus for M15 (left) and about a fist-width at arm's length below it for M2 (right) in Aquarius. These globulars rival each other in brightness, though M2 is a little dimmer and farther away from us.

biguously known to contain a central black hole, M15 is considered a good candidate, possibly containing one with 2,000 solar masses. Alternatively, the core density may simply be due to a population of stellar remnants such as neutron stars and white dwarfs.

M15 is also the first globular discovered to contain a planetary nebula — Pease 1. It has been observed in telescopes as small as 10 inches but is considered a



136 • Celestial Sampler

This is not a book to take outside with the telescope. It's not quite a coffee table book, either. Rather, it is an excellent resource, offering a lot of information appropriate to most amateur scope apertures. If you are a sky tourist, Sue French offers you manageable pieces of sky to explore on those all-too few clear nights.

surrounding a very small, bright nucleus. Through my 4.1-inch refractor at 47x, the halo of the cluster looks mottled. At around 200x the cluster appears slightly oval and some of the outer stars pop into view, but the center remains unresolved.

Our next globular cluster, **M2**, lies 13' south of M15 and makes a nearly right triangle with Alpha (α) and Beta (β) Aquarii. M2 is a near twin to M15 in size, brightness, and distance (38,000 light-years), but it is less condensed. At 200x a 2.8-inch scope shows a bright, round patch of light surrounding an elusive, starlike nucleus. In the 14x 70 binos, the bright nucleus is more obvious and nearly stellar. Magnified at 250x, the cluster appears distinctly oval and sparkles with many very faint stars.

Two dim Messier objects, M72 and M73, are located in southwestern Aquarii, and if you'd like to observe the entire Messier catalog, you'll need to tackle these more difficult targets.

M72 is located 3.3' south-southeast of 3.8-magnitude Epsilon (ε) Aquarii and is the faintest globular cluster on Messier's list at magnitude 9.3. An impressive 33,000 light-years away, the stars of M72 are very difficult to resolve in a small telescope. My 70-mm binoculars shows a very small and dim fuzzy patch. A 9.4-magnitude star lies 3' to the east-southeast. At 120x in my 4.1-inch refractor the cluster appears grainy, but there is no true resolution into stars.

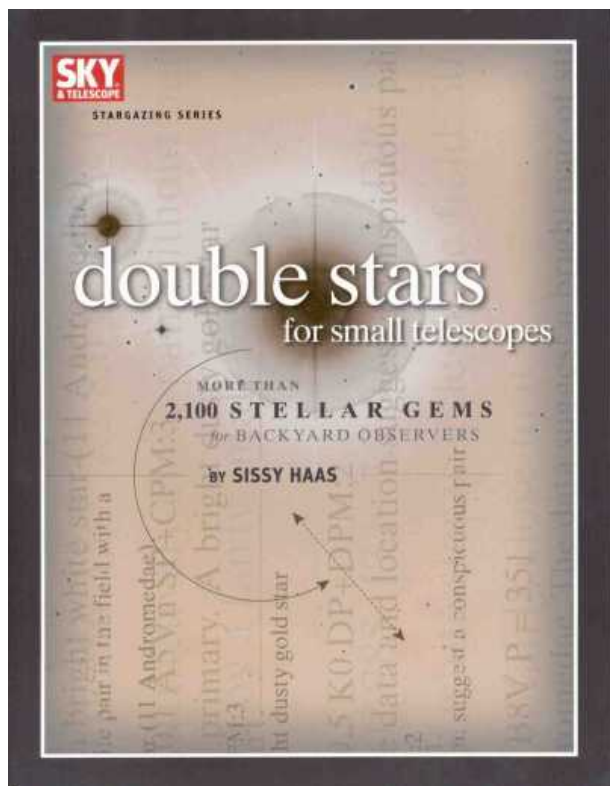
Attractions in Pegasus and Aquarius

Object	Type	Mag.	Dist. (l-y)	RA	Dec.
M15	Globular cluster	6.2	34,000	21 ^h 30.0 ^m	+52° 10'
M2	Globular cluster	8.5	38,000	21 ^h 33.5 ^m	-0° 49'
M72	Globular cluster	9.3	55,000	20 ^h 53.5 ^m	-12° 12'
M73	Asterism	9.0	—	23 ^h 09.0 ^m	-12° 38'
NGC 7009	Planetary nebula	8.3	3,000	23 ^h 04.0 ^m	-11° 22'



A Few Pictures Couldn't Hurt

A Review by Mike Spicer



Sky Publishing is getting into the amateur astronomy business in a big way with books for small telescope users. Following up on 2005's *Celestial Sampler*, Sky Publishing has produced *Double Stars for Small Telescopes* by Sissy Haas. Double stars take Sissy's breath away with their colourful beauty...but she has not breathed much into this book. Nor has she put any colour into her book, except a small photo of her somewhat frizzy red hair on the back cover.

This 8.5" x 11" softcover book is 10 pages of introduction followed by a 157 page long list of 2,101 double stars. The list is organized by constellation, devoid of any photograph or drawing. The print is small with plenty of columns: Right Ascension, Declination, Name, Year observed, Position Angle, Separation, Magnitude of Primary, Magnitude of Secondary, Spectral Class, Status (identifying binary stars) and Comments. You'd think the Comment column would have Sissy's description of each star, but most of the time she just quotes another book, such as Webb's 1962 soft cover, *Celestial Objects for Common Telescopes*, which only cost me \$4.50 – Sissy's book is over \$35.

An amateur astronomer today has access to data on over 100,000 double stars via the internet. Most planetarium programs and many star atlases provide excel-

lent resource information on double stars, although my favourite computer program, Starry Night Pro, is not very helpful in that area. I have a pocket-sized Observer's Sky Atlas half the size of Haas' book and it has room for small diagrams of dozens of double stars (and many other objects, too).

Ursa Major (continued)

RA	Dec.	Name	Year	P.A.	Sep.	m ₁	m ₂	Spec.	Status	Comments
12 ^h 08.1 ^m	+55 ^o 28'	Σ1603	2002	83	22.3"	7.8	8.3	F8V F9V	optical	60-min: A haunting sight — a pair of white stars in a pitch-black field, like a pair of eyes in a dark forest. They look close at 25x.
12 ^h 56.3 ^m	+54 ^o 06'	Σ1695	2003	285°	3.8"	6.0	7.8	A5	p. binary	125-min, 50x: Grand sight! It's a bright star almost touching a modest star in the beautiful combination of Sun yellow and pure violet. Webb: "White, ash."
13 ^h 00.7 ^m	+56 ^o 22'	78 UMa	2004	89°	1.2"	5.0	7.9	F2V	p=106 yr	275-min: Striking contrast for the separation! A dazzling gold-white star with a little ember of bluish turquoise sitting on its edge, and both stars look bold and sharp.

Not all of Sky Publishing's books are great. I'll bring Sissy's *Double Stars for Small Telescopes* to the next few HAA monthly meetings so you can have a look at it. Perhaps you'll want to buy my copy, because this is not a book I'd want to use again and again.

Web Watch

The Beamsville Weather Station www.beamsvillewx.ca, is an excellent weather-related website maintained by Ann-Marie Keenan, who also sponsors the Beamsville Clear Sky Clock. While this independent forecasting site is centered on the area east of Hamilton (Stoney Creek to St. Catharines), the forecasting maps encompass all of Southern Ontario so can be used by most HAA members. The layout is exceptionally clean and functional, and loads much faster than most other weather forecasting sites. *Link submitted by Glenn Muller*

The Muller Observatory
home.interlynx.net/~mullers/observatory/

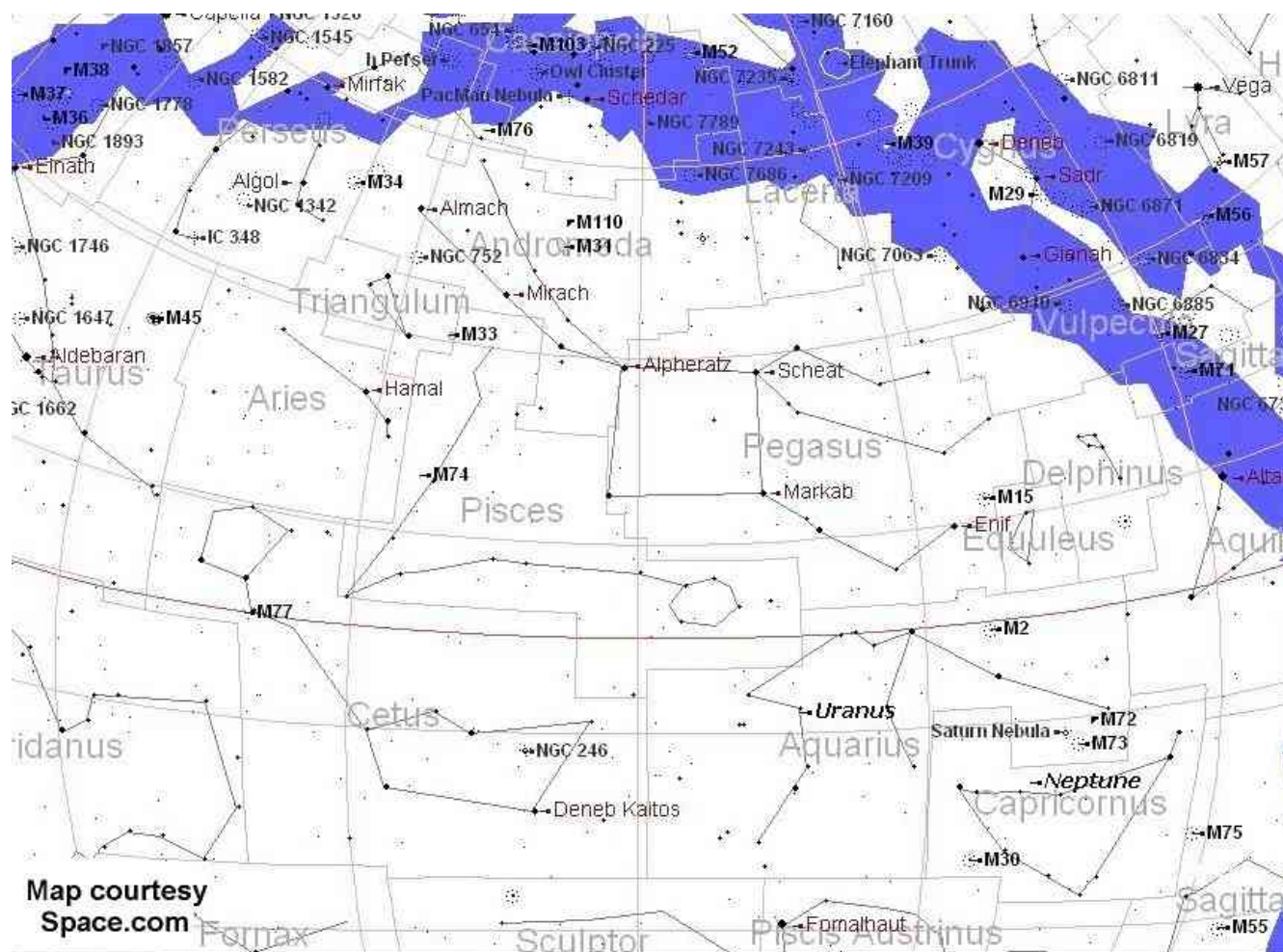
Virtual Moon Atlas link submitted by Glenn Muller
www.astrosurf.com/av1/UK_index.html

Lunar Atlas link submitted by Greg Emery
www.lpi.usra.edu/resources/cla/maps/part_i/

Mike Spicer's Moon talk from last month
www.amateurastronomy.org/Picts/mikespicer/mikemoon/MikeMoon.html

The Moon libration from last months talk.
en.wikipedia.org/wiki/Libration

www.slackerastronomy.org/shows/060914-sg.mp3
 MP3 Featuring Doug Welch with notes here: www.slackerastronomy.org/slackerpedia/index.php/Show_Notes:_SG_1.0



Fall brings colder, clearer air, great for observing. The **Summer Triangle** has fallen toward the western horizon – your last chance this year to look at planetary nebulas like M57 the Ring and M27 the Dumbbell and all of the globular clusters that populated the summer sky to the south, starting with M71, my favourite.

The Autumn sky is dominated by the **Great Square of Pegasus** high in the south. Use the four stars of the Square as pointers to many of the beautiful objects visible in October: south of the Square, Uranus and Neptune are the only planets well-placed for evening viewing this month. Just north-west of Neptune one can find M72, M73 and the beautiful Saturn Nebula. The constellations south of Pegasus have rather faint stars and it's hard to trace the outlines of Pisces, Capricornus, Aquarius and Cetus. West of the Square is the brilliant globular cluster M15; moving south from M15 one can find other globulars such as M2 and M30. East of the Great Square the observer can find the beautiful galaxies M33 and M74.

If you are out after midnight, the Pleiades (M45) are visible in the eastern sky, and Orion with M42 the Great Starbirth Nebula, in the southeast. Just before sunrise you can

observe Saturn, in the constellation Leo. Make plans for the **Transit of Mercury** on November 8th. You'll need fairly high magnification because the planet will be 5 arc-seconds in diameter (one-tenth the diameter of Venus during its 2004 transit). Watch for more info to be posted on the web site.

Summary of the Sky until H.A.A. meeting Nov 10th:

Moon: Imaging time from now till the end of this month !

Oct 17: Waning Crescent Moon ½ degree from Regulus, 1 a.m.

Oct 25: Waxing Crescent Moon near Antares at dusk

Oct 29: First Quarter, Full Moon Nov 5th

Planets:

Venus, Mars, Jupiter are too close to the sun this month
Uranus and Neptune are favourably located in the South
Pluto is no longer a planet, you can stop trying to find it

Oct 17: Mercury is at E elongation, near Jupiter at dusk

Oct 19: Iapetus transits Saturn at dawn

Nov 8: **Transit of Mercury!** Late afternoon until sunset

Asteroids: I'll post appulses on the activities page for you.

Meteor Showers:

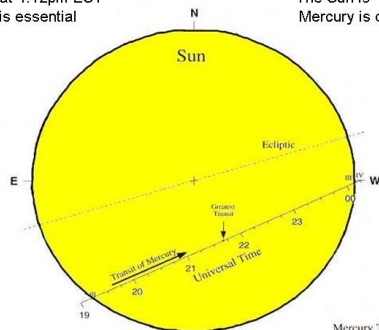
Orionids peak on Sat Oct 21st; 0% Moon; ZRH = 20; 65 km/s

Leonids peak on Fri Nov 17th; 9% Moon; ZRH = 15; 75 km/s

TRANSIT OF MERCURY, 2006 NOVEMBER 8

Transit starts at 4:12pm EST
Solar filtering is essential

The Sun is 1800" in diameter
Mercury is only 5" in diameter



Event I = Mercury's first contact
Event II = Mercury's disk is wholly visible
Events III and IV (the exit) occur after sunset

Mercury Transit Contacts
(Geocentric Coordinates)
I = 19:12:04 UT
II = 19:13:57 UT

of movement that I haven't yet felt the need to tinker with. A large tension knob adjusts the altitude action, and the handhold in the mount's upright board is convenient for either swiveling the scope or carrying it.

The Starblast comes with two of Orion's Explorer II Kellner eyepieces; a 17mm and a 6mm. Both are well-matched to the scope and of adequate quality for "included" ep's although the 6mm is somewhat less adequate than the 17mm. The insertion of better quality eyepieces really help this scope to reach its full potential.

The finderscope is a red dot EZ Finder II, another adequate accessory that has the disadvantage of dimming stars in the area that you are aiming. For those considering buying this scope, I would recommend removing the EZ Finder and installing a Rigel (bull's eye) Quikfinder for stress-free star-hopping.

The Orion Starblast *a review by Glenn Muller*

If Orion is promoting the Starblast as the perfect scope for kids why, then, are all the reviews by adults who generally state that they bought it for their daughter / grandson / nephew yet ended up keeping it for themselves? Most likely because it's a well-engineered, over-achieving, little scope that is both extremely portable and retails for about \$225 + tax.

That short summary, however, hardly does it justice so read on while I flesh out the details a bit.

The portability of this tabletop unit is realized as soon as you open the large shipping carton. Apart from having to attach the finderscope, and insert an eyepiece, the Starblast comes fully assembled and is ready to go right out of the box. With a total weight of 13lbs, and an optical tube that is only 18" long, the scope is easily moved around and we just strap ours into a car seat when traveling.

The Newtonian configuration consists of a 113mm ($4\frac{1}{2}$ ") parabolic primary mirror and a 34.3mm ($1\frac{1}{3}$ ") secondary. With a focal length of 450mm and a focal ratio of f4, the Starblast is a fairly fast, wide or rich field, scope which could be one of the reasons it appeals to adults who already own larger, more powerful, optics with narrower fields of view.

To appeal to the kids, Orion painted the rolled steel tube a metallic aqua-marine and put a somewhat garish *Starblast* sticker on the black mount but neither of those marketing choices make the scope unattractive. You can tell, though, that choices like the mostly plastic $1\frac{1}{4}$ " focuser were intended to keep costs down.

On the other hand, the one-armed, dobsonian-based, alt-azimuth mount has a quality feel with a smoothness



Although using the Starblast is pretty intuitive it does come with clear instructions covering all of the necessities from eyepiece selection to collimation. The 12

page user's manual is also accompanied with a basic version of Starry Night sky-charting software and a DVD on exploring the Universe – both nice added-value items for the novice.

Of course, a tabletop scope does need a table or something similar to mount it on. I found the best solution was a small folding wooden table. Though fairly sturdy, this kind of table is prone to some lateral movement. I found that suspending 20lbs of weight from the centre of the table not only counters the tendency to sway but also dampens vibrations quite nicely. Seated on a short stool the average adult can comfortably use the finderscope and maintain contact with the eyepiece from horizon to zenith.

So how are the views? In a word, “pleasing”. The mirrors are well-configured and handle magnification nicely, more so when premium eyepieces are used. Rather than describing individual objects, though, let me just say that enough Messier and NGC objects fall within the capability of this scope to keep the owner occupied for a long time and that the views of the Moon and planets are on par with other scopes of this aperture.

Novices will appreciate the ease with which the Starblast allows observers to locate objects. After using the bull's eye (or even the red-dot) finder to get into the right neighbourhood, a low power eyepiece offers a nice, wide (3°), field of view which grabs a lot of sky. Once an object is found, higher power can then be applied for a more detailed view.

While sets of eyepieces displayed in a case can be very appealing, it is my opinion that a couple of good quality ep's and a premium barlow offer the best value. More information on selecting eyepieces can be found in the article *Focus on Magnification* from the September 2003 Event Horizon. For the Starblast, however, the following chart will give you an idea of appropriate magnifications with eyepiece examples.

Eyepiece	Focal Length	Magnification	Apparent FOV	True FOV
<u>Low power</u>				
Televue Panoptic	27mm	17 x	68°	4.08°
Pentax XL SMC	21mm	21 x	65°	3.03°
Meade Super Plossl	26mm	17 x	52°	3.00°
<u>High Power</u>				
Meade Plossl	9mm	47x	50°	1.06°
Pentax XL SMC	7mm	64x	65°	1.01°
Televue Nagler	5mm	90x	82°	0.91°

- adding a 2x barlow will result in double the magnification and half the true FOV.

While there is no doubt that a Questar or Takahashi of similar aperture would outperform this little Orion,

those scopes would be hard pressed to match its bang for the buck.

HAA SkyWatch for October 2006

compiled by Jackie Fulton

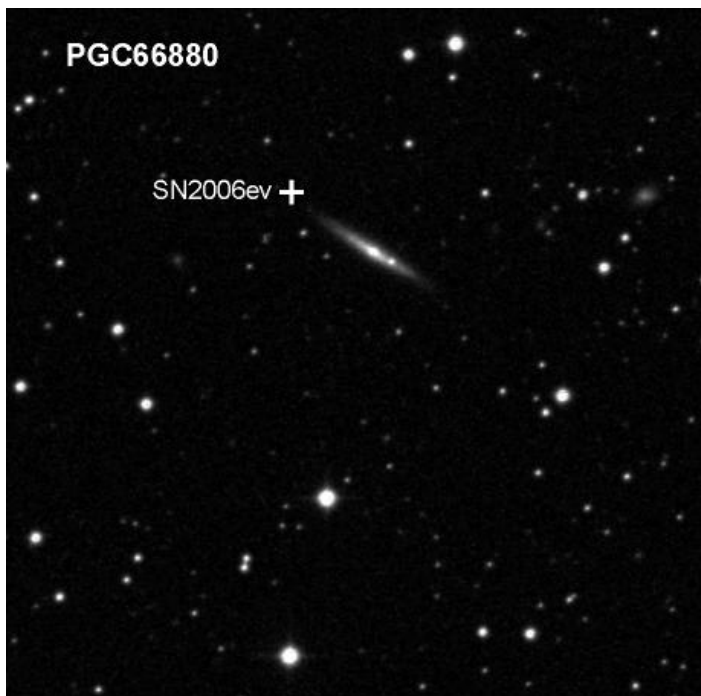
A BEVY OF SUPERNOVAE

by Mike Spicer

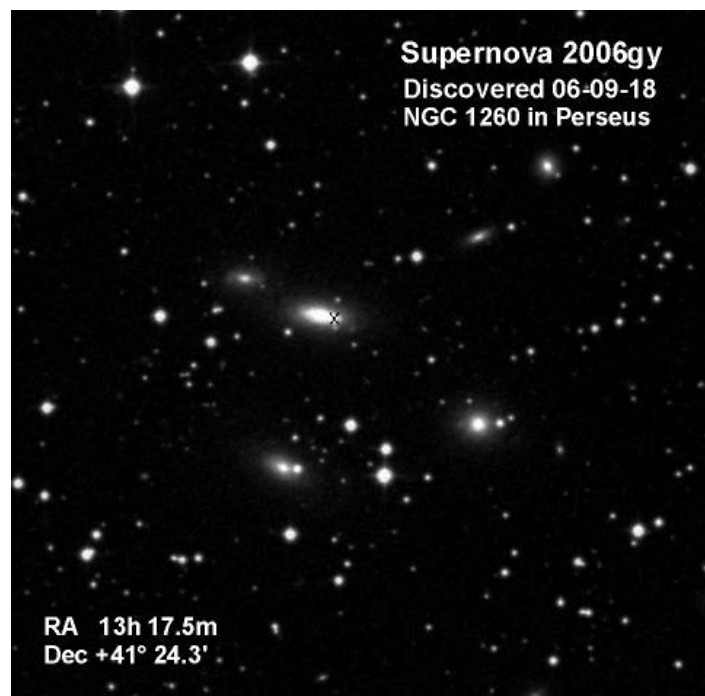
Many observers look at or image M15 but overlook some of the fascinating objects nearby. If you have imaging equipment, try to catch Supernova 2006ev discovered just 3 days ago at magnitude 16 (but brightening rapidly!) in the faint needle-like galaxy PGC66880 just 2 degrees directly north of M15. Here's a chart:



The supernova's location is marked on this photo:

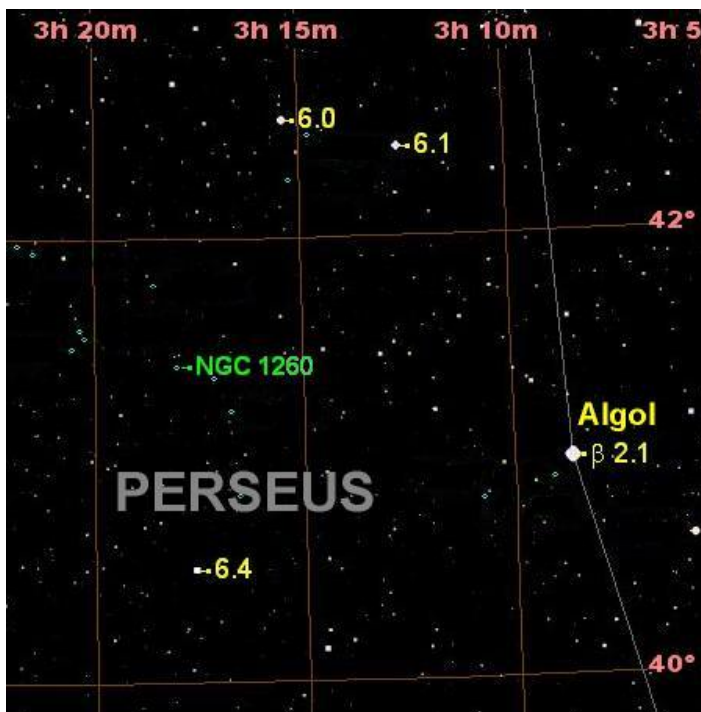


two 10th magnitude stars NE of 1260 that show faintly on the chart above. The S-N's position is marked with a small X and is located just 2" W of centre of NGC 1260:



Algol is easily located in the constellation Perseus, and just last week Supernova 2006gy was discovered in galaxy NGC1260 just a few degrees E of Algol. Already magnitude 15 and visible in my Nexstar, this Type II S-N may yet brighten to visibility in even a 6" telescope.

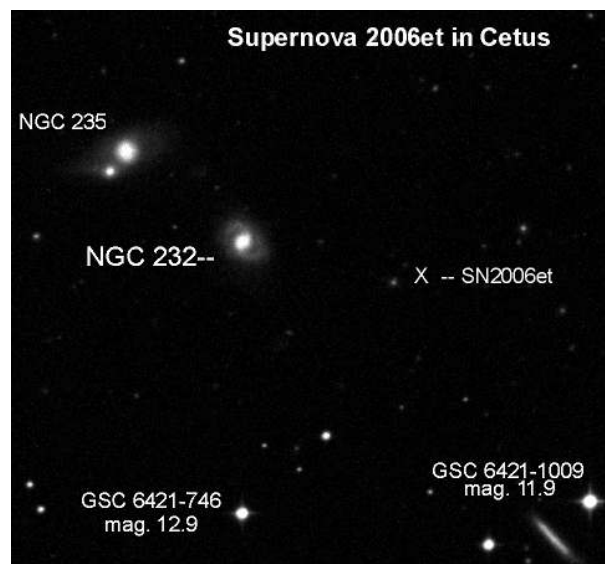
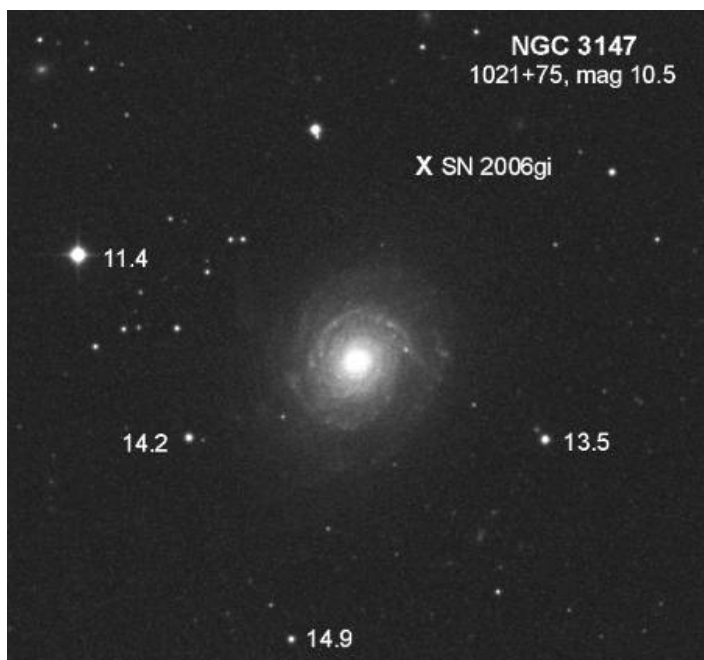
On this chart of the area, use Algol as a starting point:



NGC1260 is the largest and brightest spiral in a large group of galaxies just E of Algol. The photo has

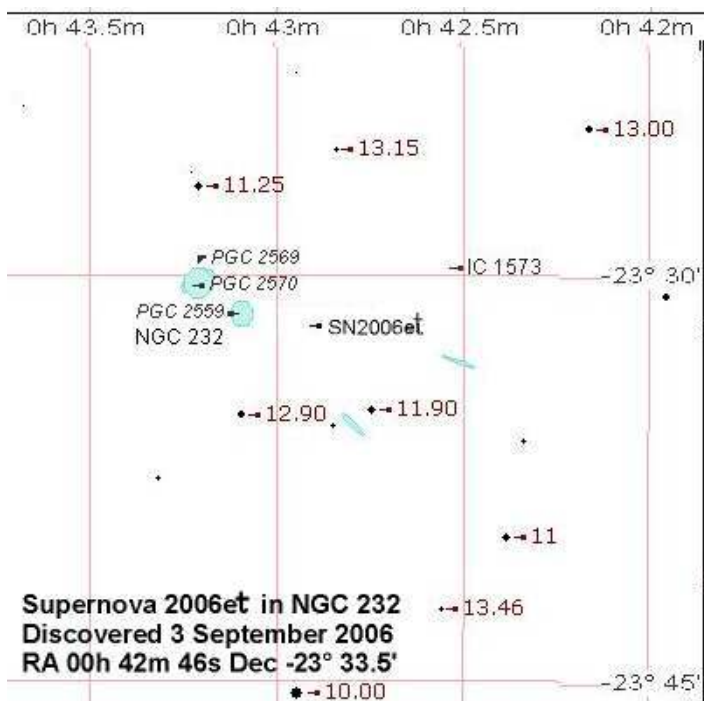
Already magnitude 15 and brightening

On 18 September, Supernova 2006gi was discovered at magnitude 16, lying on an outlying arm of NGC 3147. These stars often become as bright as the galaxy they explode in - so perhaps 2006gi may brighten to magnitude 10, too! At +75 degrees declination, the star is circumpolar. Here is a photo with the star's approximate position marked:



The constellation Cetus is visible in the SE after sunset. Within Cetus is the little galaxy NGC 232 within a triangle of 11th-12th magnitude stars. Just to the W of the galaxy a bright supernova has been discovered (Sept 3rd it was 16th magnitude).

Here is a chart of one degree around NGC 232:

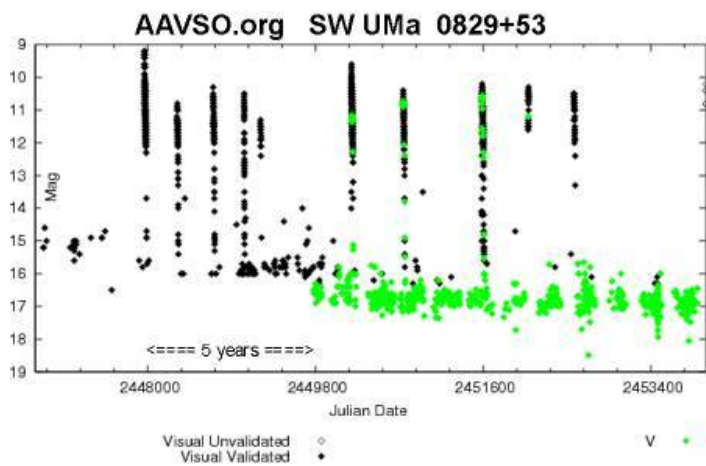


Supernova 2006et was 16th magnitude on September 3rd

Here is a photo of the area:

RARE OUTBURST OF SW Uma *by Steve Kinsella*

The AAVSO has reported that SW UMa (R.A. 08:36:42.74 Decl. +53:28:38.1 (2000)) has recently outburst to 10th magnitude from a normal minimum visual magnitude of 16.8. The last time an outburst for this star was reported was in October 2002 when it was brighter than magnitude 13.5 for 17 days. Previous eruptions took place at shorter intervals... Here is a chart of eruptions over the past 20 years:



AAVSO charts for this cataclysmic variable star can be found at this link:

www.aavso.org/cgi-bin/searchcharts3.pl?name=sw\%20uma

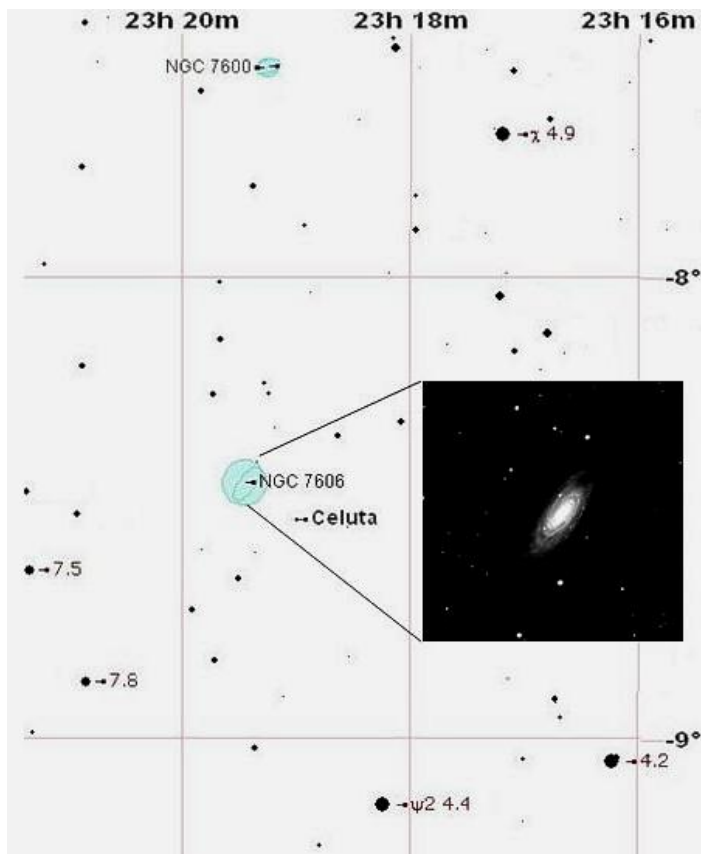
The original AAVSO special notice can be found at this link:

<http://www.aavso.org/publications/specialnotice/18.shtml>

ON OCTOBER 20th, ASTEROID CELUTA MEETS NGC7606

by Mike Spicer

The evening of October 20th, if you have clear skies and an open Western horizon, a small telescope will show you magnitude 10 Asteroid Celuta passing within 6' of the 10th magnitude galaxy NGC7606. These objects lie at RA 23h 20m Dec -8.4 degrees in the constellation Aquarius just 6 degrees due east of Uranus. The galaxy is easy to find, very close to several 4th magnitude stars, as shown in one degree wide chart (and image) below:



HAA Observing Reports - September 2006 compiled by Jackie Fulton

2006-09-20 NOW YOU SEE IT, NOW YOU DON'T

What a beautiful clear sky this evening! As it usually turns out when the skies clear near new moon, I had a previous obligation and didn't get home until almost 10:30. Before heading into the backyard for some much-anticipated observing, I checked the Clear Sky Clock. It showed clouds from about 11:00 pm on. Weird. I put

my coat on, grabbed the key for the observatory and headed out back about 10:45.

As I was opening the observatory door, I noticed clouds in the west. I decided that I shouldn't be in too big of a hurry to open the roof. I tidied up for a little while, (we have discovered that mice really like our Sky Shed - "Sky Mice"?) then, peeked out the door again. Sure enough, clouds obscured the western sky and the zenith.

I checked my watch: 10:55pm. I figure the Clear Sky Clock must be set up to forecast right over our house! I locked up the door and went back inside. It would appear that unlocking the door to an observatory has the same effect on the sky as does setting up a telescope: the sky clouds over. Incredibly, the Clear Sky Clock predicted exactly when it would happen, too!

by Ann (Sucker Hole Victim) Tekatch

2006-09-19 WHAT TO DO ON THOSE RAINY, RAINY DAYS?

Rainy days are profitably spent on needed indoor work. Your HAA Council met Monday evening for a little planning. Marg and Bruce made us all comfortable as Glenn skillfully took us through the agenda in less than an hour. New people with experience with other clubs, remarked how relaxed and informal the HAA Council meetings are.

The Council set speakers for the next few monthly meetings and settled on next year's slate for Council positions, with some enthusiastic new faces to be presented. We looked at some of the new astro-publications from Sky Publishing, to be reviewed in the October Event Horizon. After the business, cake and lots of laughing!

by Mike Spicer

2006-09-18 IT'S WHAT'S BETWEEN THE CLOUDS THAT COUNTS

There were grand plans to take advantage of the predicted clear skies of last night, but alas the predictions proved false once again. But this is not necessarily an observation killer: I arrived at the alternate site at about 9:45 to find Jackie's telescope set up. So I set up my reflector and got to swinging that optical tube on its alt azimuth mount and after maybe a half hour or so the clouds parted in the south to reveal most of Capricornus, and the area defined by the summer triangle.

The Hercules keystone was visible, so I caught M13 and M92.. The two Hercules clusters looked good, and

we were able to detect individual stars. I figured I was on a roll and so decided to scope out Capricornus and see if I could locate some deep sky objects new to me, and with some difficulty because of the less than ideal conditions, was able to find M73, described by Dickinson in "Nightwatch" as a small, remote globular. Small and remote indeed! I thought I would never locate it using a 20mm ocular (60X), and didn't. But I switched to a 17mm eyepiece and finally found the elusive fuzz ball. It was quite faint, and disappeared with higher magnification. I might have been mistaken it for a wisp of cloud, but Jackie felt it was definitely a DSO and not a wisp. Nearby was M73, or "Messier's Mistake." Again, it was pretty small, but we could definitely make out the four stars of this asterism. We decided that the mistake was more interesting than the globular, unless we were mistaken.

The third member of this little cluster of deep sky objects with M72 and M73 was NGC7009, the Saturn Nebula. I was surprised at how bright it looked for a planetary nebula. It did remind me of Saturn, and was definitely the same size as the gas giant, as Dickinsen told us it would be.

We managed to glance at M27 the Dumbbell Nebula, and by now knew that we had not been dumbbells for having decided to stay. All in all it was a rewarding time of observing. At 11:25 a meteor streaked towards the south over Capricornus, as if to leave us with a small reward for persevering. But we saw that the clouds were returning with a vengeance and decided to pack up.

It's amazing what you can accomplish with a good telescope and a little perseverance, even with unwanted cloud cover.

By Ben Hartford

2006-09-16 OBSERVING SATURDAY NIGHT

The high-pressure area that had promised clear skies for the weekend stalled and faded, leaving Friday night overcast and Saturday night filled with haze, fog and light clouds. It was a night for binoculars and small telescopes. They would show good wide field images despite the poor seeing. It was a night for patio observing, talking with a friend during the frequent "cloudy" periods.

For an hour after dusk it was actually clear and I set up an LXD-75 go-to mount with a Nexstar 80 refractor to polar align. Nearby I set the 8" S-N, hoping to switch to a big telescope once it had cooled a bit. The little OTA showed me Sagitta's M71 and Pegasus' M15 easily, a small fuzzy ball in a very expansive field

of view. Overhead the binoculars showed a lot of stars in Lyra, and in Cygnus the red firebrand Chi Cygni was magnitude 5.3.

By the time Heather arrived to observe with me the sky was too cloudy to use a big scope, so I switched to a Stellarvue AT1010 and 30mm Ultima eyepiece. Heather and I would talk for 15 minutes, then observe for 15 when some of the sky looked clear. By 2 a.m. the sky was dominated by the Great Square of Pegasus high in the south. M31 looked glorious overhead in the little scope's sharp optics. We worked our way through Perseus and Andromeda until 3 a.m., quitting before the waning Moon showed itself.

Not a good night for taking images or even looking through a big scope. But worth sitting out back admiring the sky.

by Mike Spicer

AND IN GRIMSBY,

... it was pretty much the same thing - clear but with so much moisture in the air that my laser pointer had the beam of a mile long light sword!

It was, however, a good opportunity for Gail to get more familiar with her new 4 1/2" f4 reflector. That morning, I'd replaced the stock red-dot finder with my Rigel Quickfinder and Gail found the "bull's-eye" sight a better tool for locating the Messier objects on her star charts. In fairly quick succession she found M57, M13, M92, M27, M103, M31, and CR399, which is Brocchi's cluster aka "The Coathanger".

Before we packed up I had a quick peek through our 6" reflector - the first time since it had been blown over at Starfest. For some reason the view appeared dimmer than shown in the little Starblast so I did a quick star test and only got half a star! Looks like I have another opportunity to use my new Cheshire collimator :)

By Glenn Muller

2006-09-10 FIRST LIGHT FOR HEATHER'S SCOPE (#6)

Saturday night there were gaps in the clouds after a rainstorm and the transparency looked fine, despite a waning gibbous Moon high in the south. It seemed like a good opportunity for "first light" on Heather's new telescope.

It has been a hard year for Heather's scopes. She started off in January with a Stellarvue refractor on a GT-80 mount - a great little scope and go-to mount. But her car was stolen/damaged in February and all the

scope equipment disappeared! She promptly replaced it with a sharp 5" Maksutov on a Meade LXD go-to mount - brighter images than the Stellarvue but a rather restricted field of view.

Then, in May Heather decided to buy a 6" Schmidt-Newtonian OTA to put on her go-to mount. It was love at first sight, with bright images sharp right across a very wide field of view. She loved the ease of polar alignment in the S-N and the scope was great for imaging the planets and lunar occultation.

Unfortunately her car was broken into last month and her new equipment was taken. I thought she'd move to an indoor hobby, but she is not one to give up. Heather always wanted a big scope with a lightweight OTA like Tim Harpur's 8" or Darrell Maude's 9.25" SCT. This time she bought an 8" Schmidt-Cassegrain on another LXD go-to mount.

First light under rather poor seeing conditions, Heather spent an hour observing the gibbous Moon and remarking at the sharpness of the view in the SCT. The SCT has great optics and very high magnification with its 2000mm focal length. Turning the scope to Auriga, she wandered from one open star cluster to another using a 32mm eyepiece before observing Orion's M42, counting the stars in the Trapesium, which was barely above the horizon.



This is Heather's 6th telescope (she started in 2001 with a 6" Dob but soon moved to a Nexstar GT80 go-to scope for convenience). The 8" SCT is her dream scope. I hope she will continue to use it for many years to come.

by Mike Spicer

2006-09-03 REFLECTIONS OF ORION

Dickey Lake is a small body of water about an hour and a half northeast of Peterborough where my wife and I rented a cottage. One night the conditions were average, and the seeing was so-so, but the darkness more than compensated. I observed 6 new Messier objects and become more familiar with some of the dimmer autumn constellations that I had never really seen clearly before, such as Aquarius and Cetus. As the night progressed, the winter constellations Auriga, Gemini, Taurus, and my favourite, Orion slowly rose above the lake where their bright stars reflected in its calm, serene waters. I had toyed with the idea of pulling an all-nighter, but the dew finally got the better of me, and my equipment by around 3 o'clock.

As I packed up my scope, an interesting thing happened: Instead of seeing the sky like a treasure map hiding celestial treats to hunt out and log in my book, I was able instead to just gaze up and appreciate the incomparable beauty of the night sky. I will never forget the sight, with the shimmering stars on the calm lake, the dampness of the night air, the smell of the water, and the soft sounds of nature around me (the splashing of fish in the lake, the hooting of an owl, a rustling in the brush). Isn't it interesting how the vastness of nature as embodied in the starry splendour of the night sky can make a man feel so small, and yet somehow affirm his place in the grand scheme of things? I look forward to the upcoming months, as my friend Orion makes his grand march across the sky until he once again bows out next spring. I wonder what secrets I will discover by then?

By Ben Hartford

SEPTEMBER MEETING: EASING INTO A NEW YEAR

by Mike Spicer

The Spectator auditorium was almost filled-to-capacity as over 50 members and newcomers came out for the September meeting of the Hamilton Amateur Astronomers on Friday evening, 8th of September. It was great to meet people who had been away for the summer - everyone looked healthy and tanned, though one member limped noticeably (a story for another time).

We got underway at 7:30 pm with an intro by Glenn Muller noting the passing of John Kidner of Perceptor. The demise of planet Pluto was commented on and Professor Doug Welch took a straw poll to see if the IAU had our members' support (it did not). A short announcement by Mike Jefferson preceded Glenn's talk:

“The Building of the GEM & I D’Observatory”, describing in photographs the construction of the newest and most robust home for his 6” dob, complete with his uniquely hinged “fold down walls”.

While computers were being switched, Miss Alex Tekatch drew winning tickets for our door prizes: a giant poster of the Milky Way Galaxy and two treasured HAA lapel pins. Her mom advised non-winners they could console themselves with a club pin by buying one for \$6. The HAA second annual Telescope Contest was announced. Members had a chance to look at and through the Meade electronic scope, a worthy prize (Get your entry in!).

The evening’s program was designed to reach people new to astronomy. Club Observing Director Greg Emery gave a presentation on “The Sky this Month” while attempting to sell off his laptop computer, which had suffered a recent odiferous setback. Remarkably, Greg, a faint fuzzy man, swore off NGC objects this month. His colourful display of constellations and deep sky objects included a LOT of information on the Moon.

The longest presentation of the evening was entitled “Observing the Moon” by Mike Spicer - an avowed lunar eschewer. Starting off at an elementary level, he built up a picture of the sky using triangles, squares, imaginary coloured lines and half a horse... then filled it with a pulsating Moon video that demonstrated libration, rotation, ellipsification and phase shift simultaneously. It was downhill from there with maria up-welling over all... some members asked for a CD of the talk just to catch up.

The highlight of the evening for me was a presentation by Heather Neproszel.

In “The Lunar Occultation of the Pleiades, 20 July 2006” she used smoke and mirrors (a 6” S-N, whereabouts now unknown) combined with actual digital movie footage of the Moon covering up stars. Her shots were taken with a To-U cam CCD camera just before sunrise on 20 July from Hamilton with wispy clouds covering Moon and stars. Members commented on the professional quality of her work and her dedication to astronomy.

Members had a chance to chat after the meeting, to peruse books, charts and photos on display, to exchange information, or to pay their HAA membership fees - we have several new members! Some bought and sold equipment after the meeting, because a club is the best place to exchange goods. Under the bright rising plenilune, we were off to East Side Mario’s in Dundas for discussion, good food, good service and camaraderie until midnight. What a great club the H.A.A. is!

Win this telescope from the Hamilton Amateur Astronomers!



The HAA is pleased to present its Second Annual Scope Contest. The prize is a Meade 70mm refractor on an alt-az tripod with an electronic drive, battery pack, and hand paddle control. It also comes with a 6x30 finder, 2 quality eyepieces and a 90° diagonal.

To be eligible, entrants must submit an astronomy-related article for the Club’s Event Horizon newsletter. The article must be 300-600 words long and e-mailed along with your name, address, and phone number to chair@amateurastronomy.org no later than midnight of October 31, 2006.

There is no age limit but contestants must live within 75 kilometers of Hamilton, Ontario, as calculated by Mapquest (www.mapquest.com), and be able to pick up the prize at the December 8, 2006 club meeting. HAA Council members (the judges) are not eligible. Once entries are judged they may be edited before publication.

The winner will be announced on the HAA website (www.amateurastronomy.org) on, or before, December 1, 2006. Inquiries may be e-mailed to chair@amateurastronomy.org

Good luck!



Staggering Distance

By Dr. Tony Phillips

Tonight, when the sun sets and the twilight fades to black, go outside and look southwest. There's mighty Jupiter, gleaming brightly. It looks so nearby, yet Jupiter is 830 million km away. Light from the sun takes 43 minutes to reach the giant planet, and for Earth's fastest spaceship, New Horizons, it's a trip of 13 months.

That's nothing.

Not far to the left of Jupiter is Pluto. Oh, you won't be able to see it. Tiny Pluto is almost 5 billion km away. Sunlight takes more than 4 hours to get there, and New Horizons 9 years. From Pluto, the sun is merely the brightest star in a cold, jet-black sky.

That's nothing.

A smidgen to the right of Pluto, among the stars of the constellation Ophiuchus, is Voyager 1. Launched from Florida 29 years ago, the spacecraft is a staggering 15 billion km away. It has traveled beyond all the known planets, beyond the warmth of the sun, almost beyond the edge of the solar system itself.

Now that's something.

"On August 15, 2006, Voyager 1 reached the 100 AU mark—in other words, it is 100 times farther from the Sun than Earth," says Ed Stone, Voyager project scientist and the former director of NASA's Jet Propulsion Laboratory. "This is an important milestone in our exploration of the Solar System. No other spacecraft has gone so far."

At 100 AU (astronomical units), Voyager 1 is in a strange realm called "the heliosheath."

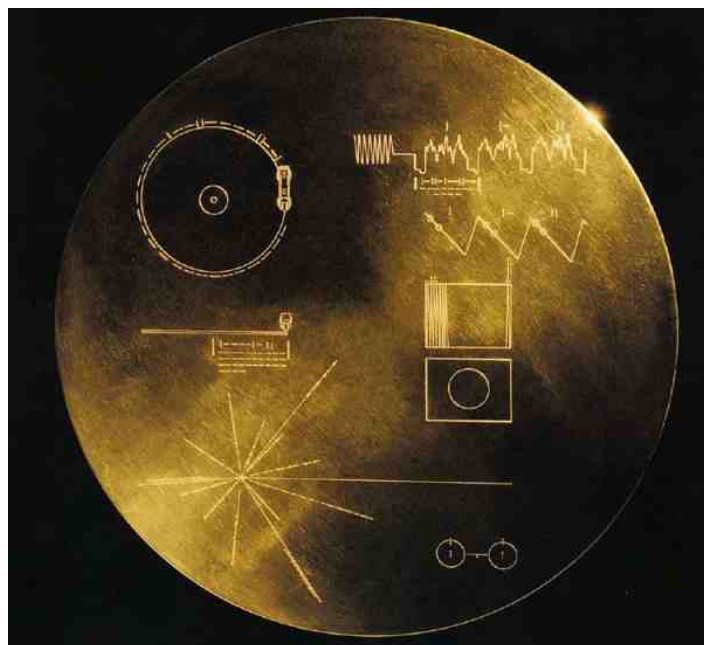
As Stone explains, our entire solar system—planets and all—sits inside a giant bubble of gas called the heliosphere. The sun is responsible; it blows the bubble by means of the solar wind. Voyager 1 has traveled all the way from the bubble's heart to its outer edge, a gassy membrane dividing the solar system from interstellar space. This "membrane" is the heliosheath.

Before Voyager 1 reached its present location, researchers had calculated what the heliosheath might be like. "Many of our predictions were wrong," says Stone. In situ, Voyager 1 has encountered unexpected magnetic anomalies and a surprising increase in low-energy cosmic rays, among other

things. It's all very strange—"and we're not even out of the Solar System yet."

To report new developments, Voyager radios Earth almost every day. At the speed of light, the messages take 14 hours to arrive. Says Stone, "it's worth the wait."

Keep up with the Voyager mission at voyager.jpl.nasa.gov. To learn the language of Voyager's messages, kids (of all ages) can check out spaceplace.nasa.gov/en/kids/vgr_fact1.shtml.



In case it is ever found by intelligent beings elsewhere in the galaxy, Voyager carries a recording of images and sounds of Earth and its inhabitants. The diagrams on the cover of the recording symbolize Earth's location in the galaxy and how to play the record.

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

Council meetings

All club members are welcome to attend the council meetings. Contact info@amateurastronomy.org for details.