

Event Horizon

March 1999

Volume 6 Issue 5

Constellation of the Month: Canes Venatici - The Hunting Dogs

- Margaret Walton

These are the hunting dogs of Bootes, and lie to the west of that constellation, beneath the tail of Ursa Major. The two main stars are said to be the dogs that guided the daughter (Virgo) of Bootes (Icarus) to his dead body. This constellation is well worth spending an evening exploring, with several nice galaxies. Its midnight culmination is in April.

visible through binoculars and is one of the three brightest globulars in the north. Magnitude is 6.4. As per the NGC this is a (!) remarkable object.

M51 The Whirlpool Galaxy: This object is composed of two interacting spiral galaxies; NGC5194 and NGC5195. As per the NGC this is a (!!)

M63 (NGC5055) The Sunflower Galaxy: This is a bright, large,

elongated, spiral galaxy with a magnitude of 8.6.

M94 (NGC4736): Bright, elongated, spiral galaxy with a magnitude of 8.7. This is very bright and appears round. It is quite easy to locate.

M106 (NGC4258): Very bright, large, elongated galaxy of magnitude 8.3.

NGC4143: Bright, round galaxy of magnitude 10.7.

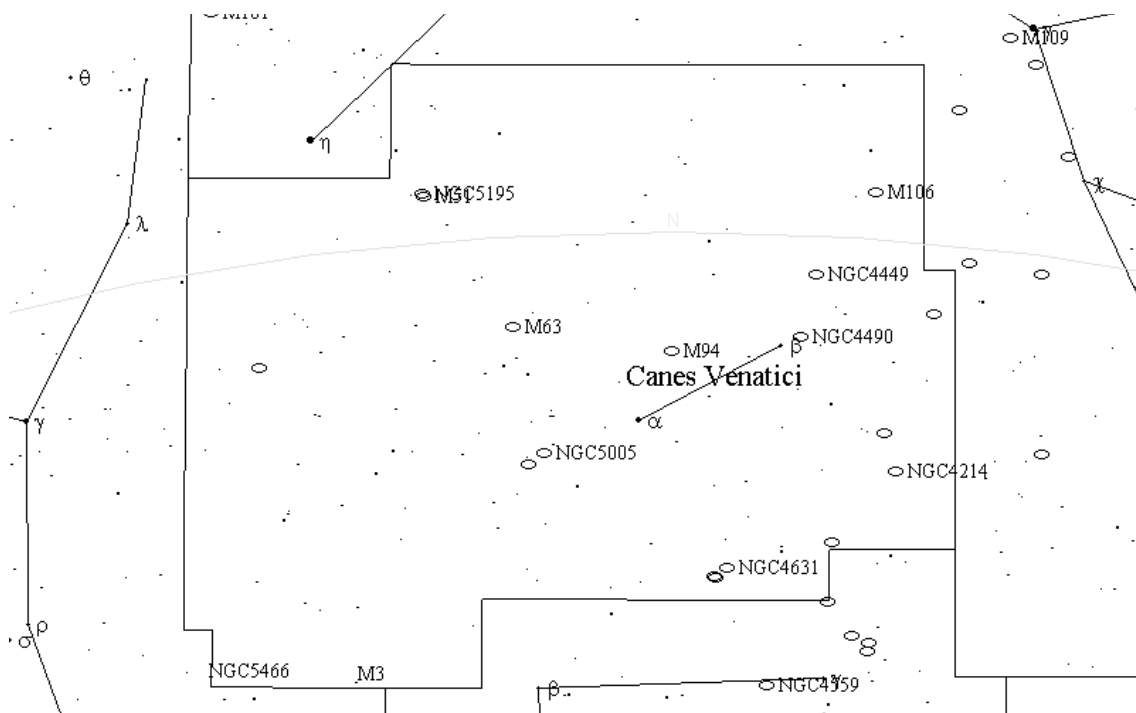
(Continued on page 3)

Stars

Cor Caroli: Halley named this star in honour of King Charles II of England. It also marks the position of Chara, one of Bootes hunting dogs. This is a good double star for small telescopes.

Objects

M3 (NGC5275): An extremely bright, large globular cluster containing thousands of stars. This cluster is



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Chair's Report

On March the 4th the Hamilton Centre of the RASC held their monthly meeting at Saltfleet High School. One of the evening's activities was a tour of the new observatory that I last mentioned in the January newsletter. After the meeting adjourned we were split into groups of eight and patiently waited for our turn to go into the observatory that is located on the roof of the school. Carmen Martino, Chair of the Science Department of Saltfleet High School, was operating the scope for us. The telescope, housed in their 12 ft Ash dome, is a Meade 16" LX200 equipped with a CCD camera. For those of you not familiar with the LX200 series of scopes it is a Schmidt-Cassegrain design and comes equipped with a computer to locate and track objects. As I mentioned previously, the HAA will have access to this observatory one day a week. (I have requested that we get the clear days.) I expect that we will be setting up activities for the HAA at the site sometime this spring.

As usual I have some web sites for you to check out this month. I'm sure most of you have seen examples of bad astronomy information being handed out to the public via radio, television, the web, et cetera. To quote the author of the website located at <http://www.badastronomy.com/>

[com/](http://www.badastronomy.com/), "The Bad Astronomy web pages are devoted to airing out myths and misconceptions in astronomy and related topics." The next two sites were chosen because I recently had someone ask if I knew where to get plans for a Barn Door mount. This is sometimes called a Haig or Scotch mount. A Barn Door mount is a device that you place between your camera and tripod to compensate for the Earth's rotation in long exposure astrophotos. The first site, at <http://www.u-net.com/ph/mas/projects/scotch/scotch.htm>, is titled *A Quartz Controlled Scotch Mount* and has some excellent information on building and using a simple motorized mount. The next site at <http://www.meteor.dotstar.net/haig.htm> is one of the ugliest I've seen. However, it does have some good plans for building a manual Barn Door mount.

I'm sure that this will be mentioned elsewhere in the newsletter but it is worth repeating; the April meeting will not be held on the second Friday but on the 16th instead due to a booking conflict at the Spectator building. Dr. Ralph Pudritz will be talking to us on "The Golden Age of Astronomy: Will Canada be in it?".

Stewart Attlesey
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Editor's Report

Note that the next general meeting is Friday, April 16th, 1999. Of course, this means that everyone has a bonus week in which to write articles for the April *Event Horizon*.

Thanks to everyone who submitted articles for this issue. If **you** want to

write something for the next issue, remember that all articles are welcomed.

Send articles to me via e-mail or mail them via regular mail.

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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 \$15 individual or \$20 family membership fee for the year. Event Horizon is published a minimum of 10 times a year.

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What Are Variable Stars?

Variable stars are stars that change in brightness. These brightness changes can range from a few hundredths to as much as twenty magnitudes over periods of a fraction of a second to years, depending on the type of variable star. Stars change in brightness when they are very young, or when they are very old or dying.

There are now over 28,000 stars known to be variable, and 14,000 more that are suspected to be changing in brightness in our galaxy, the Milky Way. Variable stars are classified as either intrinsic, wherein variability is caused by physical changes such as pulsation or eruption in the star or stellar system (pulsating variables and eruptive variables), or extrinsic, wherein variability is caused by

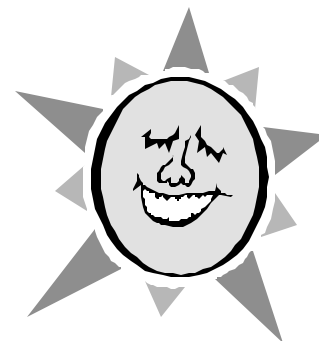
the eclipse of one star by another or by the effects of stellar rotation (eclipsing binaries and rotating variables).

Famous Variables

Some of the more famous variable stars include supernovae (such as the supernova in the Large Magellanic Cloud in 1987) and Cepheid variables (helpful in determining distances to far away galaxies and the age of the universe), the long period stars like Mira, and eclipsing binaries, such as Algol (the demon star) in Perseus.

Research on variable stars is important because it can provide much information about stellar properties, such as mass, radius, luminosity, temperature, internal and external structure, composition, and age. This information can then be used to understand other stars.

Professional astronomers have neither the available time nor the unlimited telescope access needed to gather data on the brightness changes of thousands of variable stars. But amateur astronomers utilizing visual, photographic, photoelectric, and now CCD techniques, are making a real and highly useful contribution to science by observing variable stars and submitting their observations to the AAVSO International Database.



From <http://www.aavso.org>

Constellation of the Month: Canes Venatici - The Hunting Dogs

(Continued from page 1)

NGC4214: Bright, large, elongated galaxy of magnitude 9.8.

NGC4244: Bright, large, elongated edge-on galaxy of magnitude 10.2.

NGC4449 The Box Galaxy: Bright, large, elongated irregular galaxy of magnitude 9.5. It is possible to see bright and dark areas surrounding the stellar nucleus.

NGC4490: Very bright, large,

elongated galaxy of magnitude 9.8. It forms an interacting pair with NGC4485. Both are bright and are easy to locate. This is a very nice object.

NGC4656: Bright, large, elongated galaxy of magnitude 10.4. A companion galaxy (NGC4657) is located at the NE end.

NGC5005: Very bright, large, elongated, spiral galaxy with an extremely bright nucleus and circular dust lanes. Magnitude is 9.8.

NGC5033: Bright, large, elongated galaxy with several filamentary arms. Magnitude is 10.1.

NGC5350, 5353, 5354, 5355, 5358. Hickson Galaxy Group 68: This is a group of 5 galaxies located SE of M51. Three of the five can be seen with an 8" scope, the rest require a 10-12".



An experience of a lifetime of experiences.

On Saturday March 27 at 2:00 p.m. I will be doing my last official public show at the William J McCallion Planetarium.

The show has three reasons for its existence. First it is a show for a small group of children. If you have children bring them along. Secondly it will be a training seminar for all those who would like to attend. Anyone that thinks that they might like to do shows in the future are strongly urged to attend. Finally, to anyone who has ever said, "Boy, I would really like to see how that Grant fellow gives his planetarium shows", this is your last chance.

Why would anyone want to give Planetarium shows? This is a very good question. The short answer is that over half of all of the club's revenue comes from these shows and therefore we are able to keep our dues down and still offer a great value to our members. However, this is not the reason that I do the shows. Firstly, whether my public is eight or eighty, I really like getting out, meeting people and passing on my love for astronomy to them. Public nights have become a sort of learning discipline; it gives me a direction in my astronomical studies, for in order to keep the shows lively not only must I keep current, I must also know my basics. I am not big on television; I would rather be active than passive. Finally, I must confess that I am a

bit of a ham.

Not that I am foreseeing a massive turnout, but if there is, this is how the show(s) shall be run. Children first, trainees next, followed by members and their families, and finally the general public will be seated. I will not leave anyone out even if I have to do a dozen shows!

What better way to cap off over 21 years of giving public shows than by giving another public show?

Grant Dixon

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WHO SAID IT?

There is no better opportunity of enjoying the starry sky in peace than on a the pitch-black foredeck of a ship sailing through southern waters. In the balmy night you can stretch out on your back on a tarpaulin, and if you have a flashlight and a star

map, you can quite leisurely fix the eternal figures of the constellations in your memory and identify them.....

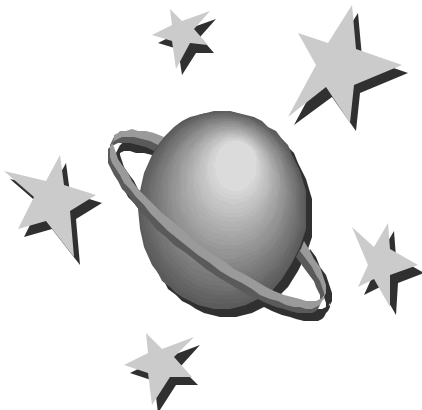
It has always irked me as improper that there are still so many people for whom the sky is no more than a mass of random points of light.... It is quite possible for a layman in the field of astronomy like myself to enjoy recognizing all those noble, striking figures, which become all the more real as you get to know them better.

Submitted by Rob Roy
See page 6 for the answer.

Did you know that...

if you increase the limiting magnitude of a photograph by 1 magnitude, the number of stars recorded will approximately triple.

Rob Roy



Letter to Terence Dickinson

January 1999

Dear Sir:

Although your review of the Meade ETX in the February issue Of Sky News was very fair as far as the ETX is concerned, I feel that it cast the 30 year old Questar in a somewhat shady light.

First of all, the ETX is a brand new off-the-shelf unit and the comparison instrument is 3 decades old. What is its past history? Did it fall down a flight of stairs? Were the optics clean or dirty? Was it a sell-off from a bankrupt university physics department? We know nothing of the history of this telescope. And yet it is held up as a fair comparison with a brand new unit. To be fairly done, it should have gone back to Questar for an inspection-overhaul and then the comparison would be more valid. What would be the results with a 30 year old ETX?

You state that very little difference could be seen below 110 diameters. I would argue that there would be very little difference between the optical performances of a garden-variety 60mm refractor and a larger



apochromat at powers below 70, given that the achromat is smaller than the Questar and the ETX. It is, as you indicate, that the performance between the 2 Maksutovs spreads farther apart as the power of magnification increases beyond the 'low' and the 'moderate'. I would also argue that the differences would become very much evident as the two were pushed beyond the 160 or 180 range. Some dimness of image would set in, in both cases, but the quality of the Questar image would remain long after the Meade's began to deteriorate. This deterioration would most likely be exponential or 'geometric' rather than simple linear fall-off.

How Meade produces the telescopes it does and has become, arguably, the largest optical company in the world in so short a time is very puzzling. They charge domestic prices for instrumentation that should cost as much, as a luxury automobile. And still them purport to have as high a quality as much more expensive equipment! How is this possible? There is no such thing as a 'free lunch', so clearly there has been a relaxation of standards somewhere. If optical elements are being 'sucked' into shape and then ground, the optical figure is going to show its shortcomings when 'the heat' is turned up and image deterioration becomes noticeable.

Another thing becomes apparent as you look at the two telescopes in the same picture. That is the

workmanship that is evident in the Questar. You mention the solidity of the feel of it which is just not there in the ETX. In my estimation, the mechanical details and the metal work, alone, in that telescope have to cost about Cdn. \$3000. How anyone can produce that quality-self-clutching stainless steel friction drives and the rest of the flawless lathe work for this number of present-day dollars, is amazing. Handling the two instruments would reveal a tremendous disparity in quality. A shaky mount is going to make high-power focussing all but impossible.

Finally, we come to the topic of Questar's inventor, Lawrence Braymer, a portrait painter, who wanted each instrument bearing his 'stamp' to be a work of art. This amateur natural historian worked very hard to maintain this tradition and 50 years later, his company still does. I believe that around 20% of Questars go to amateur users and the rest are built for industrial and military applications. The quality is definitely there.

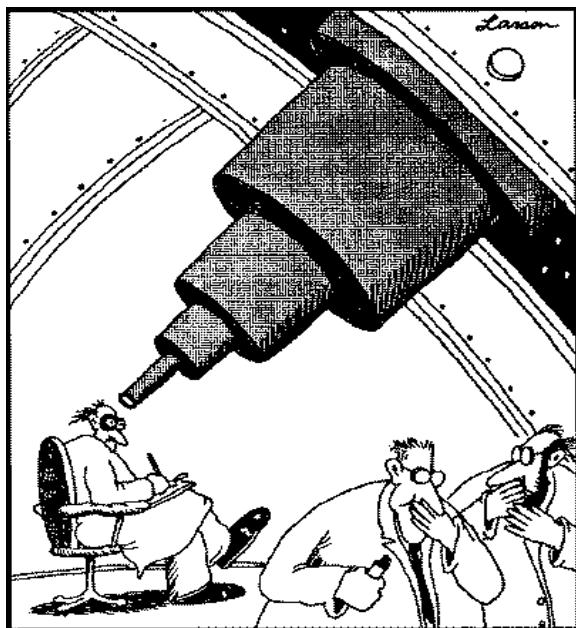
If the ETX and the Questar were free or were the same price, do we have to ask which one people would automatically take?

Yours very truly,
Michael Jefferson

WHO SAID IT?

M. C. Escher commenting on his October 1948 wood engraving entitled "Stars".

Submitted by Rob Roy



FOR SALE: Bushnell Binoculars / Explorer II
10 x 50 / 8° field / Insta Focus
Carry Case
Will include tripod mount free-
for easy steady viewing

Excellent Condition. Asking \$150.00 firm.

FOR SALE : 4 1/2" / f 6.5 Telescope
Approx. 760mm focal Length
Newtonian Reflector
Lightweight Dobsonian Mount
16mm Erfle Eyepiece - 45x
Ideal for any beginner or family.
Very light, portable and easy to use.

Excellent Condition. Asking \$250.00 firm

Please call Ev @ 319-8864 (home after 5:00 pm)
or email ev@bestnet.org

CALENDAR OF EVENTS

- March 12, 13, 19, 20, 8:00pm
- Tuesday, March 16, 7:00pm
- April 9, 10, 16, 17 8:00pm
- 4359.
- Friday, April 16, 7:30pm

BINBROOK OBSERVING NIGHTS - For confirmation or directions call Rob Roy at 692-3245 or Bret Culver 575-9492 or John McCloy 523-4359.

HAA MEETING - McMaster Burke Science Building, room B148.

For more information contact Rosa Assalone at 540-8793.

BINBROOK OBSERVING NIGHTS - For confirmation or directions call Rob Roy at 692-3245 or Bret Culver 575-9492 or John McCloy 523-

HAA GENERAL MEETING - At the Spectator Building auditorium. Speaker is Ralph Pudritz from McMaster University. Topic is "*The Golden Age of Astronomy: Will Canada be in it?*"