Orbit
celebrating 100 years
The official publication of the Hamilton Centre of the Royal Astronomical Society of Canada
September 5, 2002 Volume 35, Issue 7

This shot of M33 by Steve Barnes is an LRGB (Luminance Red-Green-Blue) composite. The Luminance frame (containing the fine detail) is a stack of 6 ten minute exposures with a Finger Lakes CCD camera on a TeleVue 101mm refractor at f/5.4. The RGB (colour portion) is a single 20 minute exposure on Fuji Provia 100F slide film through a Celestron 8" f/1.5 Schmidt Camera. Both shots were taken at the same time riding on a Losmandy GM8 mount autoguided with an SBIG STV using the efinder.

- Starfest: A Novice's First Experience..... Page 1
- Editorial..... Page 2
- From the Eyepiece..... Page 3
- What's in Orbit ..... Page 3
- Celestial Portrait - Derek Baker..... Page 5
- Geology and/or Astronomy - Part 4..... Page 7

Starfest: A Novice's First Experience

by: Ken Lemke

Some months ago Steve Barnes convinced me to go to Starfest. The prospects of experiencing dark skies and seeing those faint fuzzies overcame my concerns about camping (something I hadn't done for 25 years). I acquired a new set of camping gear (we had years ago given everything to our children) and, as the time for Starfest approached, I was actually getting excited.

I should point out that I have recently started the Messier List and really wanted to see some of the galaxies and globular clusters from a dark sky.

In addition to written notes, I enjoy making little sketches of my observations but some of my sketches such as the globular cluster M4 in Scorpius are nothing more than smudges in my sketch book, because that's all I could see from the city. On the first night of Starfest, as darkness approached, Tina and Grant told me of the wonders we soon would behold and I salivated at the prospects. About 9:30 PM, I was stunned

*See **Starfest** on page 4.*

Editorial

by: Scott Barrie

This morning when I got up for work I was greeted by the crescent moon suspended in a deep blue sky with Jupiter shining brightly, barely 3 degrees away. It was a gorgeous view and prompted me to step out onto the deck to fully take it in.

It was a beautiful morning with a mist lying on the hillside across the road and a ribbon of colour hugging the horizon as the darkness gave way to the coming sunrise. The moon was painted with earthshine and, up overhead, Saturn was still easily visible as were a number of bright stars. It would have been easy to lose track of time and forget about work altogether.

The point of all this is that last week it wasn't that dark when I got up for work. Last week the mist would have already have burned off. Last week the air wouldn't have been quite so crisp. Summer is winding down. The days are getting shorter, the mornings have the fresh smell of fall, the kids are back in school, and the club is gearing up for another season.

Photo of moonrise by Bob Botts

A new club years also means a new administration year and the annual general meeting takes place in October. It's at that time that the board is determined for the coming year and, if you're interested in contributing to the future of the Centre, I strongly urge you to consider getting involved. By being on the board you'll get an opportunity to work with some really fine people, you'll learn a lot about the inner workings of the club and you'll have some fun along the way.

One of the board positions that will be available this year is Orbit Editor. I've found being the editor to be a tremendously rewarding experience and have always received a fabulous amount of support from other members through their ongoing submissions of articles and images. But, after 2 years of doing it I will be stepping down due to other demands on my time. So, if it's something you think you'd like to try, speak to me or any other board member.

S.B.

Board of Directors Contact info.

President: Mark Kaye	mark.kaye@sympatico.ca
Past President: Harry Pulley	hpulley@home.com
Treasurer: Tina Coppolino	tinacoppolino@cogeco.ca
Secretary: Grant Maguire	maguires@lara.on.ca
Recorder: Roger Hill	hillr@SX.COM
1st Vice Pres.: Steve Barnes	sbarnes@skyoptics.net
Observing Director: Ev Rilett	erilett@cogeco.ca
Webmaster: John Grimmett	jgrimmett@team.look.ca
Obs. Projects: Bob Botts	bobbotts@cogeco.ca
Education: Robert Sears	Sea931@AOL.COM
Orbit Editor: Scott Barrie	scottbarrie@homeroom.ca

From the Eyepiece

by: Mark Kaye

What a hectic summer. It was also far too short. Before it seems to have begun, it is over and the girls are back in school. Where did the time go? July was a write off for me. Another observing session at The Observatory without any clear skies to speak of. That makes April, May, June and July without any clear skies. August made up for it. I was so out of practice for the first two nights in August that I spent the time getting re-acquainted with the night sky. I did not even bring the cameras upstairs. I had a great time. Photographically speaking, this summer was a bit of a bust. I did not really get anything to speak of the whole summer through, but I had a wonderful time observing.

The third annual Hamilton Centre BBQ was another success. We had lovely weather and lots of people showed up. The parking lot was lined with scopes. The observational high light of the night was a surprise occultation of SAO99317. Thankfully, Roger had neglected to inform us of this event, so it remained clear.

Now that fall is rapidly approaching, it is time to turn our attention to observatory upkeep. There is a lot of work to do. The most important issue will be the removal of the old Carr dome. If you have a trailer, consider donating some time to your club to help us get this beast off the site.

A motion has been put before council and a committee has been formed to study the idea and eventual installation of permanent piers at the site. These would be designed to accommodate a variety of scopes so that members could come out to the site, plunk down their scope on a pier, plug it into available power and start to observe from a steady position. If you are interested in this project, get in contact with the committee chair, Steve Barnes, to find out what you can do to make this undertaking a success.

Elections are upcoming at the next meeting. Board positions are available and we would be happy to have some new blood. Consider volunteering to help shape the future of your club.

Clear skies!

This photo of NGC 891 was taken by Michael Spicer using a .28m scope and an STV camera.

What's In Orbit

By: Ev Rilett

Welcome back all. Hope everyone had a safe and fun summer. The Star-B-Q was great and all had a good time there. Spencer Smith Park Sidewalk Astronomy enjoyed good evenings and numerous scopes. Many strollers gazed through the scopes. For anyone working on their Explore the Universe Certificate, it's time to buckle down. I've chosen some objects befitting of September's Fall sky now rolling around at a comfortable hour. Keep working on those summer objects though. The summer sky will be around for a little while yet.

Moon: Waxing Gibbous moon visible 3-4 days after first quarter.

Constellation: Cassiopeia – the big 'W' in the sky and the bright star Schedar

Deep Sky Object: Between

*See **What's in Orbit** on page 8.*

Starfest cont'd.

by the fact that Sagittarius and Scorpius which were both low in the southern sky were very prominent and could be seen with ease. Since these constellations contained objects I wanted to work on, I scanned them with my binoculars and was able to pick out a number of globular clusters, in fact M8 could be seen naked eye. This caused me to blurt, "this is like shooting fish in a barrel"! I would soon find out otherwise.

By about 10:00 PM, the sky was sufficiently dark that M4 was in its' full glory and stars were easily resolved in the cluster. Talk about excitement! After sketching M4, I proceeded to find (fairly easily) and sketch a few more clusters on my hunt list. By about 11:00 PM, the Milky Way had developed into a gorgeous display stretching like a great river from horizon to horizon across the middle of the evening sky. I just stood there in amazement having never consciously seen the Milky Way in all its splendor.

After recovering from the spectacle, it was back to my hunt for Messier objects but I was surprised to find that it wasn't quite as easy to find them. The sky had become an ocean of stars and it was harder to pick out some the Messiers due to all the competition from other starry objects in my finder. Fortunately, I had prepared star charts of the areas around the Messier objects and these now came to my rescue. But I constantly had to mentally remind myself that the images in the finder were inverted compared to the star charts. Finding the objects took more time but I did find them and was treated to some very nice images. There is quite a sense of accomplishment when you find an elusive object by star hopping and then it's topped off with a well resolved image.

To add to my observing problems, there was the constant chorus of oohs and aaahs every time a meteor would streak across the sky. So I stopped peering through my eyepiece to see what I was missing. We were being treated to some early Perseids as well as sporadics, and they were truly stunning - the brightest meteors I've ever seen, some of which left long "smoke" trails.

If these weren't enough distractions, there was a 12 inch SCT set up near to us - Joe from Ohio - and he would share some of the eye popping views.

Needless to say, not as many Messier objects were found as was planned, but my first evening at Starfest was filled with many firsts. It was an amazing experience. Friday night was virtually a repeat of Thursday. On Saturday, the transparency wasn't as good, so we spent most of the evening socializing (there were about 10 members of the Hamilton Centre at Starfest) and watching for meteors. Derek Baker provided comic relief with his interpretation of the night sky and the various constellations.

During the daylight hours, there were a number of presentations on a wide range of astronomical subjects, however I confined myself to those which were geared more to the novice. I particularly enjoyed those by Stephen O'Meara. His one presentation was about drawing what you see (a subject near and dear to my heart) and I was able to pick up some good ideas. I even got him to autograph my copy of his book on Messier objects.

There were also a number of vendors present to help pass the daylight hours, and this gave me the opportunity to drool over some of the goodies that I would like to add to my arsenal. (I gave in to the temptation and made a few purchases). Between all the daytime attractions, visiting with other members from the Hamilton Centre and meeting new friends, there was also time to catch a nap and recharge the batteries for the night's observing.

As stated earlier, not as much was accomplished as was planned, but I did find and sketch 17 Messier objects (bringing my total to 40 in about 2 months). Besides the globulars, good views of some galaxies, M81, M82, M31, M32, M33, and M101 were seen. The nebulae M8 and M20 were quite vivid under the dark sky conditions.

On reflection, I'm glad Steve convinced me to go, It was a great time and will always stand out as a very memorable experience. Even the camping part was great! The future? I'm hooked and will definitely go to Starfest next year and would highly recommend it to others. Let's hear it for Dark Skies

Ken Lemke

Celestial Portrait- Derek Baker

by: Tina Coppolino

Anyone who doesn't know Derek Baker should get to know him. His sense of humor and quick wit keeps him and everyone else in good spirits. But he does have a serious side and has a wealth of knowledge about the night sky and observing. I was given a challenge by Derek at Starfest - to find NGC objects 6946 (a faint galaxy) and 6939 (an open cluster) which lies just 0.6 degrees NW of it. Well, I tried for over an hour to find them to no avail. The next night I asked Derek if he could find them in my 4" telescope. A few minutes passed and he had them. The view wasn't what I expected, but at least I can say I have seen them and given the challenge I have been inspired to find more of these obscure objects. Here's looking at Derek...

Back Row: John Gauvreau, Sean Carey, Karen Bennett, Rich Petrone Clive Gibbons, Ian Stewart, Front Row: Derek Baker

Derek was already into the hobby by the age of 10, and already had his first 2"inch refractor (It is noted that he was already a refractor snob at this early age). He first joined the Hamilton Centre as a youth member in 1975 after visiting a RASC booth at the Hamilton Hobby Show held at the Wentworth Triple A Rinks.

He remained a member until the early 90's, then took a break for a few years, before recently rejoining.

Derek was one of a handful of members that helped to build the Observatory and Chilton Building. He helped clear tree stumps and dug the pits by hand. It was a group effort in those days that he fondly recalls which included Ian Stewart, John Gauvreau, Barry Sherman among others helping out.

The observatory is still one of his favorite observing locations. River Place Camp ground is also a favorite. One of the darkest locations he has observed from was at Algonquin Park on a Scout camping trip. The skies were so dark you couldn't even see your hands and the stars looked so close you felt you could touch them. He now understands why the ancient peoples created their stories and myths and placed them in

the sky to be close to them.

Derek would also like to see the southern sky someday from a dark location like Australia or Chile. It would be like starting the hobby all over again with the excitement of discovering new objects.

One of Derek's most exciting astronomical thrills was his first Solar Eclipse, in 1979, from Gimly, Manitoba. It was one of the first Toronto RASC expeditions organized by Mike Watson. Derek became so hooked by solar eclipses that he also went to Mexico in 1991 and Curacao in 1998. They were truly memorable and emotional experiences. Another thrill came with the observation of Comet West in 1976. He can still remember stepping out of his parents side door and seeing two distinct tails just hanging there.

The first comet he recalls ever seeing was Comet Bennett in 1970.

Derek's favorite constellation, Orion, is always a welcome friend in the fall and winter skies. The Messier objects are also interesting and they are all different and present their own challenges.

One of his favorite observing targets is Jupiter and its moons and he has spent hundreds of hours drawing them and sketching details.

Derek's love affair with Jupiter earned him a Fautley Award in 1986 for his observing program and the support he gave to many other club observing projects.

The hundreds of sketches he did of Jupiter paid off in another way too. One of them was used in Terence Dickinson's Backyard Astronomer's Guide. It's on page 152. Check it out!

Derek has also witnessed some rare events, such as the occultation of 28 Sagittarii by Saturn. It was awesome watching the star blink on and off as it passed through the gaps of the rings. Equally exciting was watching through Ian Stewart's Celestron C8-8 as Comet Shoemaker –Levy crashed into Jupiter.

Derek always kept a record of what he observed. It was all part of the learning process. And that's something he advises novices to do, as well. He has other advice for novices, too; get to know the sky and the major sign posts. Learn it naked eye first, then use binoculars. Make sure you are comfortable where you observe and check out other peoples' scopes before deciding which one you want to purchase. Join an astronomy club, make friends, have fun and enjoy giving help as well as getting it.

Experts keep learning from beginners because it reminds them of their roots. Two excellent books to read are The Backyard Astronomer's guide by Terence Dickinson and Starlight Nights by Leslie Pelletier- both inspiring reads. Participate in the club if you can. Derek wrote many articles for Orbit as well as editing and printing them in the old days using a Gestetner machine.

*See **Derek** on page 8.*

Geology and/or Astronomy - Part 4

by: Ev Rilett

In parts 2 & 3, we looked at Meteors, Comets, Tektites and Meteorites. In this final article, we'll wrap things up with a discussion on Craters and impacts.

CRATERS - When an impact from a massive meteorite occurs, the meteorite itself is destroyed. The lighter ground material is thrown and displaced into the atmosphere. Some will fall back in the form of spokes or "rays" radiating from the crater, which can be spread for several miles. The heavier ground material, also displaced, will fall much sooner in a more confined region forming a rim around the hole.

When the meteor explodes, it is as if a missile has been fired into the earth. The under layers of the Earth, which will form the rim, are thrown out in a mirror image effect. That is; the natural under layers being ie: lowest & oldest - schist, middle-sandstone, and top-young soil, being reversed after the impact, to the rim layers being lowest-young soil, middle-sandstone, and top & oldest-schist. If struck at certain angles, there will be a Central Peak, or "second splash", like a small mountain in the bottom of the crater, the throwback material from the centre of the crater forced to the surface.

A crater can be compared to a diver's dive - he makes an initial splash (momentary crater) and when he has completely entered the water a small "second splash" (momentary central peak) occurs where his feet make the last point of entry. (See Crater illustration below). An excellent example of this type of crater is the Barringer Crater of Arizona. Unfortunately, due to the erosion of the Earth, she covers her scars with time and she heals. This leaves no visible trace of the initial devastation inflicted upon her during her history (ie: Sudbury meteorite).

Make a CRATER DEMO

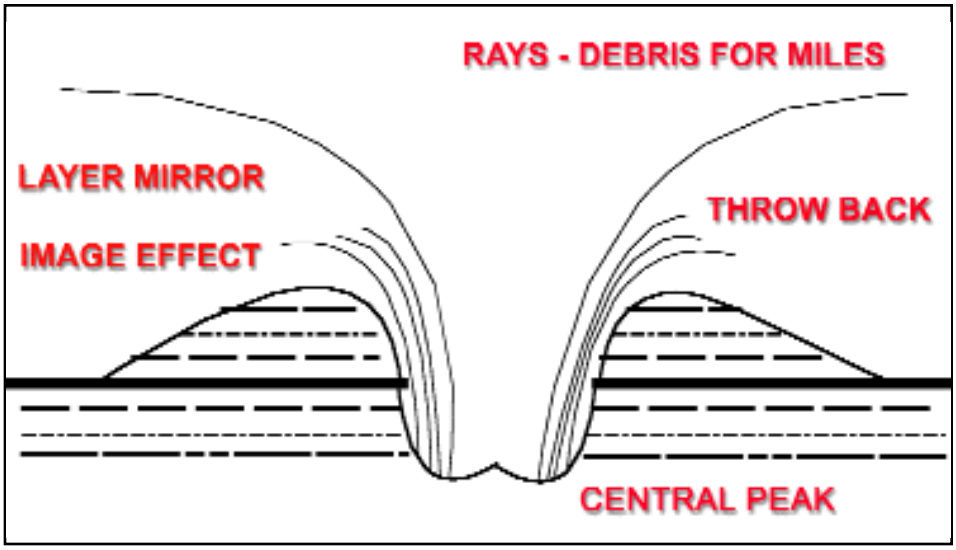
Requirements: newspaper / pie plate / flour / coffee or cocoa / elastic bands.

Fill the pie plate 3/4 full with flour, then cover with a thin layer of dark coffee. Shoot elastics at it from different angles. See the rays spread out (beyond the pie plate, hence the newspaper) as lighter material is forced up to the surface. Take note of your rays, how far did they travel, the colour of the rim around your impact and the central peak in the middle of your crater. Fire several shots and see craters destroy other craters.

As a Rock enthusiast, I encourage you to take the opportunity, should it arise, to visit one of the sites mentioned in this series of articles or any site you know of, and see if you can claim a small meteorite and tektite for your own collection. Failing that, buy one!

If, however, (the astronomer in me speaking) you'd like to see some excellent examples of craters with rays (which can be thrown hundreds of miles due to lack of atmosphere) and central peaks, take a long good look at your moon, along the terminator - the stark day / night edge, with a simple pair of binoculars. There is no atmospheric cover-up on the moon's surface and all her scars of bombardment by meteorites and comets are visible for you to examine. Nowhere, is there a finer testament and porthole to our Earth's history, than the "plain battered face" of our Celestial Moon.

Ev Rilett
erilett@cogeco.ca



Coming Events:

September 12, 2002 - Board Meeting at 8:00 at the observatory. Come on out and shape the future of the centre.

September 13, 2002 - Sidewalk Astronomy at Spencer Smith Park in Burlington. Come and see the moon and stars through members' telescopes.

October 3, 2002 - General Meeting at 8:00pm at the Steam Museum. Program TBA.

October 10, 2002 - Board Meeting at 8:00 at the observatory. Come on out and shape the future of the centre.

November 7, 2002 - General Meeting at 8:00pm at the Steam Museum. Program TBA.

November 14, 2002 - Board Meeting at 8:00 at the observatory. Come on out and shape the future of the centre.

Directions to Observatory:

From Hamilton or Guelph:
- Hwy 6 N of Hamilton,
- Take Concession 7 East eastbound, cross Centre Rd.
- Continue on 7E, past the rail tracks, proceed to near the end.
- Our gate is on the south side on the last lot (south west).

From Mississauga or Milton:
- Britannia Road past Hwy 25, Guelph Line, Cedar Springs to end
- South 1 block on Milborough Town Line to Concession 7 East.
- Right on 7th Concession, then first driveway on left.
- Our gate is on the south side on the last lot (south west)

From Burlington or Oakville:
- Dundas Street (HWY #5) to Cedar Springs Road
- Cedar Springs Road to Britannia Road
- Left (west on Britannia road to Milborough Town Line
- South 1 block on Milborough Town Line to Concession 7 East.
- Right on 7th Concession, then first driveway on left.
- Our gate is on the south side on the last lot (south west)

Hamilton Centre Observatory
43° 23, 26" N 79° 55, 22" W **Telephone 905-689-0266**

Club web site - http://www.rasc.ca/hamilton/

***Derek** cont'd.*

Along with his many presentations and workshops over the years he was also instrumental in organizing education and public nights regularly from 1979 to early 1990.

Derek has also met some interesting people along the way. He met Carl Sagan in the early 1980's and recalled an engaging conversation during a coffee session with him and others and how outspoken and very political he was. He also remembers what a great talk David Levy gave one year at Starfest.

Now-a-days you will find Derek the King Refractor Snob imaging and observing with his 5" Astro-Physics apochromatic refractor. Imaging galaxies has been especially rewarding.

Derek still loves and has the same wonderment of the cosmos as he did when he was a child lying on his back on a blanket in his backyard. Of all the mysteries of the universe yet unsolved, Derek is most puzzled by Grant Dixon's need to check behind all the curtains at astronomical conventions…

All kidding aside, there is one thing that worries him about the future of the hobby and it is the ever encroaching light pollution at our supposed dark sites. To lose the impact and intimacy of the dark night sky would be a tragedy. Wouldn't it be grand if we could all go back to those years when the Milky Way could be seen from your own backyard. But Derek still hasn't given up on the Observatory site and that's where you will still find the Irreverent One.

Tina Coppolino

***What's in Orbit** cont'd.*

Cassiopeia & Perseus – M103 – an open cluster

Planet: Venus (an evening star at this time)

Don't forget you can choose any objects you wish. Make a record of your observations. Most importantly, have fun. See you at the site, it's there for you to use and enjoy.

Clear Skies,

Ev Rilett
Observing Director

* NOMINATION FORM *

I,_____ , being a member in good standing of the Royal Astronomical Society of Canada, Hamilton Centre, do hereby nominate _____ for election to the Board of Directors of the Royal Astronomical Society of Canada, Hamilton Centre, above election to be carried out at the Annual Meeting.

_____.
signature of nominator.

I, _____ , being a member in good standing of the Royal Astronomical Society of Canada, Hamilton Centre and being at least 18 years of age, do hereby accept my nomination to the Board of Directors of the Royal Astronomical Society of Canada, Hamilton Centre.

_____.
signature of nominee.

Please indicate any special areas of interest._____
_____
_____
_____

Art. 5.04 of the Royal Astronomical Society, Hamilton Centre By-Laws. (Jan. 5th 1989.)

"Any member of the Centre may make nominations to the Board. Such nomination shall be submitted by the member to the secretary of the Centre in writing at least ten (10) days before the annual meeting, and shall contain the name of the nominator and the written consent to the nomination by the nominee ."