

# \* Event Horizon \*

Volume 2 Issue 10

September 1995

## Editorial

**A**s with most things in life, change comes quick. When I wrote my previous editorial, I had no idea that today I would be writing my last one for a while. Have no fear. Stewart Attlessey has been ready to take over the reigns for some time now. Your astronomical bones shall continue to be stimulated for another glorious year.

I hope everyone had a great summer of observing. Did you add anymore items to your growing Messier list? Or maybe you had a chance to compile your new Herschel list of objects.

I have a picture of North America at night, showing all the light pollution. Our area in southern Ontario is particularly washed out. During the summer I was fortunate enough to break free from the star-hungry skies around here and head north to where this picture showed pure blackness. Manitoulin Island is an astronomer's paradise. I visited an island just to the north of Manitoulin called Birch Island. I tried picking the stars out of the sky with my fingers because they seemed so close. The Andromeda Galaxy was so easy to see naked eye - I had no problem pointing it out to others, without the use of binoculars or scopes. Good memories, great summer!!

Now, let's give Stewart a good start off next month and bombard him with newsworthy articles and notes. Thanks to everyone for the vast amount of support and help over the year.

Patricia Marsh

## Chair's Report

**A**h, my favourite time of the year ... the nights are getting longer, the weather is becoming cooler (but not cool enough to adversely affect observing), and the HAA is starting another season. Autumn is coming -- days as intoxicating as wine, deep gold sunlight slanting through burnished leaves in a multitude of colours, nights crisp and frosty, skeins of geese flying south, the warmth of hearth and home, apple pies hot from the oven. Sigh.

In Autumn, everyone scurries back to school or jobs or hobbies, leaving very little time for the garden and leisurely summer pursuits. That sense of impending responsibility has served to remind me that I have unfinished business. First of all, I have to apologize for lying to you in last month's report. Alas, I didn't see any of you at Starfest '95, because I didn't go. If the road to Hell is paved with good intentions, I've just added a few cobblestones. Nature

and the elements conspired against me, and I understand that I missed a wonderful gathering. Staying home *did* give me the opportunity to ponder a profound question, however: why do they have star parties in the Summer, when there's hardly any night? It's a bit like having a sun-worshipping orgy in the Winter. As an avid camper, I would love to set up my tent in a northern field in mid-January, when I could count on about 16 hours of darkness. It would certainly beat the 3-hour night (give or take a bit) that I would get in the Summer! And no bugs!

As if that apology wasn't enough, I have to make a second one! I promised that **Peter Ceravolo** would be the guest speaker this month. Well, he's not. That's the bad news. The good news is that he *will* be the guest speaker in December. When Peter told me that family commitments would make it difficult for him to give the talk in September, I was not calm. In fact, I panicked. I had only two days in which to get a replacement speaker, as I was headed out on a canoe trip (and my wife

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would have gone ballistic if she'd had to stay in frantic Southern Ontario any longer). The light went on -- I had the answer! We have oodles and oodles of great speakers in our club, so I sent out the word -- HELP! -- and was promptly inundated with offers. I chose **Michael Jefferson, Ann Tekatch, and Doug Welch** as the September speakers, who I know will enlighten and entertain with their diverse styles and specialties. (Dare I mention that the October speaker will be **Phil Stooke** from the Department of Geology, University of Western Ontario?)

The main topic I wish to cover in this month's report is the upcoming election of officers. Democracy works best in a small group, and HAA most definitely qualifies as such. Every individual's point of view is important and necessary to have a club that represents its members. Therefore, it is ideal that every member participates in the day-to-day business, as well as the vision, of the club. By becoming involved in administration, a member is able to gain new insight and perspective into how the HAA works. No position is particularly onerous, but every position is important. A Board member commits him/herself to only 12 meetings a year; the meetings are short but very productive. Working together for something you all believe in is profoundly satisfying and creates strong bonds with your fellow Board members. Finally, serving on the Board is a win-win situation -- your club benefits by your efforts, and you belong to an organization that is "us" rather than "them".

Now that I've said my spiel, it's up to you to get involved!

In parting, let me revert to some Summer thoughts. For several years now, I have escaped to the wilderness in late July or early August in my "time machine" (my beloved canoe) with my wife and my dogs. By the time we head north, Doreen has reached the stage where she refuses to stop for one more red light, preferring to scream through the intersection hurling invectives. She doesn't want to see another computer, or hear another telephone or siren, ever,

EVER again. The dogs are weary of concrete and leashes. And we all just long to drink pure water, breathe pure air, and seek serenity of soul in the stillness and solitude of Temagami. This year, the weather was incredibly gorgeous, the water was the warmest I ever remember it, and we finally saw the Old Growth Forest (it is a cathedral). It was a **wonderful** trip, and the feeling of tranquility lingers yet. If you're not a "nature nut", and think that I must have a screw loose to want to vacation in a canoe, picture this -- I could see Cappella clearly reflected in the water when it was just one degree above the horizon, and by turning my head slightly, I could see both M31 and M32 with my naked eye. Now, do you understand? (I thought you might!)

I hope your Summer was wonderful, too!

Grant Dixon  
Chair  
e-mail:

"dixon@dogwood.physics.mcmaster.ca"

## The Meteor, the Aurora, and the Neon Snake

**E**ach year the North York Astronomical Association (NYAA) holds a star party near Mount Forest, Ontario called Starfest. Each year it is a bigger success. I finally got an opportunity to stay the weekend and I was not disappointed!

Things got off to quite a start. Those of us who arrived on Thursday were treated to a spectacular display of northern lights. About 3am, Stewart apologetically awakened the less hardy souls (like me) to tell them that the sky was on fire. Sure enough, a very bright horizontal arc and curtains were

illuminating the sky. Just to add that extra je ne sais quoi, a fantastically bright meteor also appeared. Rumours abounded the next day that it had actually hit a trailer park in Windsor (as if they didn't already have enough problems with tornadoes!) These later turned out to be false. Most large newspapers in the country ran a photo of the aurora the next day claiming that it was the vapour trail left by the meteor!

The sky on Friday was brilliantly clear and a cold front ensured that conditions were great Friday evening. I had my first opportunity to look directly at the "Comet of the Millenium" (a.k.a. Hale-Bopp) which will be casting shadows come the spring of 1997 according to some reports. At present it is a 10th magnitude fuzzy in Sagittarius and was impressive in its unimpressiveness.

One of the great pleasures of a star party is the chance to walk around and sample the sky through different telescopes. Many folks didn't get too much further than Stewart's 20-inch Obsession, now equipped with a UHC (Ultra High Contrast) filter. The Veil Nebula looks positively three-dimensional with this instrument!! (It does indeed look like a neon snake as they claim in the ad). There were several reported cases of neon snakebite that evening which are known to be fatal --- to the bank account, anyway. It was remarked more than once that the company made a 36-inch. Stay away from Stewart's scope unless you a person of great courage and restraint!

A new feature of this year's event was the grinding of a mirror and assembly of the telescope during the meeting! Everyone who put in time doing two "wets" (grinding sessions lasting about 10 minutes) got a chance to win the instrument. I was pleased to get a chance to grind a mirror once again. Sadly, some less deserving soul won the scope!

The final night, Saturday, was cloudy despite Andreas Gada's best efforts. However, no one left the event disappointed. Many will remember the



spectacular "Charge of the Light Brigade" and the vicious photon battles between the encampments of the HAA and the London Centre of the RASC.

It really was great fun to spend the weekend with kindred spirits and just get away from it all. The NYAA are to be congratulated once again for hosting such a successful event - the turnout was estimated to be 800 this year. Next year, mark August 9-12 on your calendar - which corresponds to the peak of the Perseids, to boot.

Doug Welch  
welch@physics.mcmaster.ca

## Book Review: Turn Left at Orion

**T**-by Colin A. Haig, M.Sc.

Turn Left at Orion

A hundred night sky objects to see in a small telescope - and how to find them

By Guy Consolmagno and Dan M. Davis  
(Cambridge University Press, 1989, 1995  
Hardcover: ISBN 0 521 48211 9  
Available from Perceptor, Coles, or your  
local bookseller)

This is a GREAT BOOK! Turn Left at Orion is aimed at beginning amateur astronomers, is easy to use, and is a lot of fun. The authors have definitely met their goal of providing a guidebook for anyone who has a small telescope, and a yearning for the stars. The descriptions and diagrams are non-technical, and are suitable to observers of all ages and backgrounds. This is a wonderful book that should be included with anyone's first telescope.

The book has a section on observing the moon, and the planets, and even has a section on "how to run a telescope". It is then organized by season, showing deep-sky objects in the constellations that are visible at each time of the year for the Northern Hemisphere. But this book is unique, with easy, clear directions on how to find these celestial objects, the best conditions, and what you will see. Consolmagno and Davis do a terrific job, with a simple legend at the top of each entry, telling you the object and the constellation it is in, and they give a rating on the object too. This is as much fun as movie reviews, with The Pleiades rating FOUR Telescopes, the Orion Nebula FIVE Telescopes, and Beta Scorpii only TWO. The necessary sky conditions and eyepiece power is also shown. The best part is the illustrations. Turn Left at Orion presents a view of the sky, and tells you Where to Look, with simple directions. The next step, is a Finderscope view, showing you what to expect, taking into account the image inversion. Once you have the image in the finderscope, then the next diagram is the telescope view. The authors follow up with some comments, and tell you what you are looking at in clear, concise language. Anyone from 10 years old and up can handle this book, with perhaps a little guidance from an adult.

So how does Turn Left at Orion stand up to a real test? Well, we in Hamilton have been blessed with a few perfect, clear, steady nights in the last month or two, and so I decided to take the book and my small telescope out. I was NOT disappointed. Quickly, I was able to find double stars I had never seen before, and find some Messier objects that had eluded me on other nights. I found great satisfaction in being able to hunt down objects I had never found without star charts or setting circles. It is the simplicity of this book that I really enjoy.

On another occasion, I had the opportunity to show a few people how to use a telescope, and to give them their first views of the wonders of the cosmos.

The Telescope Rating system made selecting interesting objects easy, and helping them find these objects was straightforward. This process can be very rewarding, when you can open someones eyes to a new experience, and see the joy on their faces. This guidebook is a wonderful tool, and I strongly feel every beginner should either purchase it, or have it included with their first telescope. This book definitely rates FIVE Telescopes on the 5 point scale!

Colin A. Haig, M.Sc.  
<http://www.radgrp.com>

## Dark Sky Camping Weekend, Anyone?

**O**ur friends at the York Soaring Association suggested that we might want to return for another weekend of observing at their glider field in September.

If there's enough interest, we can organize a camping weekend for September 23-24, 1995. The cost is \$2.00 per night per tent/trailer/car/cardboard box (whatever). The glider field is east of the village of Arthur, about 1 1/2 hours drive north of Hamilton on highway #6.

Call me if you'd like to be put on the list. Obviously, if the weather's lousy, we won't be going.

Flush toilets and hot showers are available at the glider field. You can also go for a ride in a glider if you're feeling adventurous! For \$35, the York Soaring Association will take you on an introductory flight.

Ann Tekatch,  
Star Party Animal 575-5433



## Sweatshirts, Anyone?

Now that we've sold our last HAA T-shirt, we thought it would be kinda neat to have sweatshirts, too! These 50% cotton/50% polyester sweatshirts will feature the same yellow-gold logo plus the phrase ".....resistance is futile" beneath it. They are available in black, white, red, grey, or dark blue. Sizes: Adult S, M, L or XL (XXL available at \$3 extra). If we get orders for 25 sweatshirts, the cost will be \$23. each including taxes. If you're interested, fill out the order form below and hand it to me at the next general meeting (October ) or mail it to me at my address below. Once we have an indication that enough people are interested, we can place our order and collect payment.

## HAA SWEATSHIRT ORDER FORM

NAME:

ADDRESS:

PHONE: (DAYS)

(EVENINGS)

SIZE:

COLOUR:

Ann Tekatch  
19 Pheasant Place  
Hamilton, Ontario L9A 4Y4  
(905) 575-5433

# Astronomy Magazine Discount Subscription Offer

Hamilton Amateur Astronomer members can subscribe to Astronomy magazine at \$30. (U.S. funds).

If you want to take advantage of this offer, give me your mailing address and a cheque or money order in U.S. funds for \$30. If you already subscribe to Astronomy magazine, you can renew through the club at the reduced rate.

Astronomy magazine sends renewal notices to club members at regular subscription rates. Disregard these. To get the discount price, you have to renew through the club.

Ann Tekatch  
575-5433

## What's Your I.O.

**H**i! I'm back. I had a wonderful summer. I spent some of it here on Earth soaking up your delightful temperatures. It's a nice place to live here, and I can visit home every now and then. Which by the way, I did. I got to see several eruptions, something you don't see too often here. I do kind

of miss them. Anyway, down to business. Are you ready for this years endless supply of taunting?

- 1) T/F More than a thousand globular clusters are known in our Galaxy?
- 2) Which is (a) the largest of the nine planets, (b) the smallest of the nine planets, (c) the planet bypassed by *Voyager 2* in January 1986, (d) the planet with the strongest magnetic field, (e) the planet discovered by William Herschel in 1781?
- 3) What are the objects once referred to as Red Flames?
- 4) What insects were

deliberately removed by a stonemason from the columns at the entrance to the Yerkes Observatory before the official opening of the Observatory - and why?

- 5) What is the saros?
- 6) What the Fraunhofer lines, and why are they so called?

There you go. Get out the led. I'll be *observing* you!

Io, Keeper of the Flame  
Jupiter Co-ordinator



## Notice of Annual Meeting and Election of 1995-1996 Council

**S**eptember 8, 1995

At the October 13th. general meeting, council members for the upcoming membership year will be appointed or elected. All qualified members are invited and encouraged to join the council which consists of the following positions:

Chair  
Second Chair  
Secretary  
Treasurer  
Recorder  
Observing Director  
Public Education Director  
Editor  
Membership Director  
Councillors (to a maximum of 5)

If you are interested in joining the council, please contact Ann Tekatch at (905) 575-5433 or Grant Dixon at (905) 627-3683 on or before October 6, 1995.

## Postcard from Paradise Northern Ontario



*Hello Everyone!*

*From reading the newsletters I can tell you're all busy as usual. I hope you've had clear skies so far this summer. It's been sunny, hot, and clear here for most of June. This has been great for observing - the heat kills off many of the mosquitos and other pests!*

*Unfortunately, the heat and dry weather has been causing a lot of fires in the area. Our area has been declared an emergency area, although the fires aren't endangering the community yet. With the heat, I've been spending a lot of time at the lake. This is also great for observing since our cabin is fairly secluded!*

*Happy observing! See you soon, Raechel*

## Cosmology Corner

**J**ohn Lawson is a member with a keen interest in cosmology, and has faithfully attended our Cosmology Discussion Group meetings. He has compiled a large volume of material on his

thoughts and theories. To date little of his work has been read or understood by others. One of his controversial ideas is that sub-atomic particles could be understood as a two dimensional resonance structure. The shape is a hexagon composed of six equilateral triangles. But, as John Feild (another member and cosmology groupie) pointed out, a two dimensional structure will not work in three dimensional space. So back to the

drawing board.

I think John Lawson may be on to something. After thinking about the 3D problem for several months I concluded it just might work. Off to the craft store I went to deplete their stock of polystyrene-foam-balls. AAmazing! It works! Several different combinations of 13 balls can be used to form a sphere. Unlike the 2D structure the 3D sphere displays asymmetry in some configurations. Asymmetry is



interesting because it can represent different properties being expressed. I hope that John will give us a simplified summary of these new developments and his revised theory at a future Cosmology Group meeting.

That reminds me, see you at the next Cosmology Discussion Group meeting Saturday September 9, 1995 at 8PM in the room next to the planetarium. We will finish "Spin" and start our new topic "Where are we?". Be there or be symmetrical.

Bill Tekatch 575-5433

## The Sky is Falling!

**J**ust when you thought it was safe to go outside at night ... The sky has suddenly decided to rain down bright comets on us (if you can call two a rain!)

The first of these was Comet C/1995 O1 (Hale-Bopp) - discovered by two amateur astronomers (one a former and unsuccessful comet hunter) who were checking out M70. The faint smudge nearby looks like in may develop into the spectacular bright comet we have been waiting for for the past 20 years. It is already 10th mag and it isn't even inside the orbit of Jupiter yet. Perihelion is in April 1997 and the comet will be well-placed in March for northern observers. It should be sixth magnitude for most of the next year! Estimates of the brightest magnitude are currently in the range of 0 to -2!! Below is an ephemeris from IAU Circular 6202 for the coming month:

1995 TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1
Aug 31	18 21.92	-30 44.4	6.302	6.824	117.3	7.6	10.3
Sep 10	18 18.77	-30 16.9	6.373	6.738	107.1	8.2	10.3
20	18 16.86	-29 48.8	6.453	6.651	97.0	8.6	10.3
30	18 16.17	-29 20.6	6.537	6.564	87.1	8.8	10.2

(TT is the very close to UT for our purposes). In the same Circular, the following preliminary ephemeris for 1997 is provided:

1997 TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1
Feb. 1	19 40.35	+15 18.8	2.012	1.373	37.8	26.1	0.9
11	20 07.44	+20 38.3	1.815	1.256	41.3	31.2	0.3
21	20 42.87	+27 08.3	1.627	1.148	44.2	36.9	-0.3
Mar. 3	21 32.05	+34 34.1	1.467	1.053	45.9	42.5	-0.9
13	22 42.51	+41 40.2	1.356	0.978	46.1	47.0	-1.4
23	0 16.14	+45 41.3	1.317	0.929	44.7	49.0	-1.7
Apr. 2	1 53.97	+44 21.1	1.358	0.913	42.3	47.4	-1.7
12	3 11.52	+38 54.5	1.465	0.932	39.0	42.6	-1.5
22	4 05.54	+32 08.6	1.615	0.983	35.2	36.2	-1.0
May 2	4 43.56	+25 38.4	1.782	1.059	31.3	29.6	-0.5
12	5 12.07	+19 51.2	1.953	1.155	27.5	23.8	0.1
22	5 34.94	+14 46.0	2.116	1.264	24.3	19.3	0.6
June 1	5 54.33	+10 13.7	2.266	1.381	22.2	16.1	1.2

What can you say? (Wow!) Even if the comet is several magnitudes fainter than predicted, it will still be spectacular. For those of you with the ability to compute ephemerides, the orbital elements from IAU Circular 6198 are:

Epoch = 1997 Mar. 13.0 TT

T = 1997 Apr. 1.6416 TT      Peri. = 130.6678  
e = 0.994441      Node = 282.4729 2000.0  
q = 0.913023 AU      Incl. = 89.4142

Note too long after our adrenalin got going over Hale-Bopp, the following announcement appeared in IAU Circular 6206:

### COMET 1995 Q1

A new comet--his seventeenth--has been discovered by William A. Bradfield, Dernancourt, near Adelaide. Available observations:

1995 UT	R.A. (2000)	Decl.	m1	Observer
Aug. 17.410	11 00.6	-14 08	6	Bradfield
17.99	11 01.5	-13 27	5.5	Bouchet
18.28	11 03.5	-13 12	5	Drummond



This, however, looks like one for the southern observers. It is strategically placed so that we don't have the slightest hope of seeing it until it is quite a bit fainter. The elements from IAU Circular 6208 are:

T = 1995 Aug. 31.356 TT  
 Peri. = 331.068  
 Node = 178.165 2000.0  
 q = 0.43873 AU  
 Incl. = 147.283

These elements are preliminary, but are good enough to let us know that we shouldn't even bother until October - and even then it will be a pre-sunrise object ... sigghh!

Anyway, we can't complain. We have plenty of time to organize for Hale-Bopp.

And who knows, someone might discover a REALLY bright comet!

Doug Welch  
 welch@physics.mcmaster.ca

## Roman Around

**A**s with Greek In The Round articles, ROMAN AROUND is not written by my hand. I have used many sources of material, *The Greek Myths*, Burnham's *Celestial Handbooks*, *Larousse Encyc. of Mythology*, *Classical Mythology*, *The Glorious Constellations* and other odds and ends I've picked up here and there.

The term Roman Mythology requires some explanation, even justification. The religious system whose centre is placed for convenience in Rome was not in fact purely Roman; the elements which composed it were numerous and varied. It was a mosaic

were, were new protectors who joined those who already stood guard over the Roman family and city. Rome, capital of the Empire, accepted within its walls gods who were formerly enemies but henceforth formed part of the Roman political organization.

The nine planets in our solar system, as well as major asteroids, are named for Roman Gods. Although the Greek counterpart representations of the mythological gods are far more fitting of the believed powers, we somehow ended up with the bland practical necessities of the Roman civilization. Some of the planets were given names which in Greek are shrouded in majesty and divine beauty, love, war and power. Of the Romans, they simply were borrowed names with no lore attached and not revered in any way. Consequently, I'll concentrate on the more important Roman gods, not necessarily all our planets namesakes.

The first article in this series will focus on Jupiter, (Greek - Zeus): He was the god of the sky, of daylight, weather (which he produced), and particularly of thunder and lightning. In Rome he ruled on the Capitol, which was consecrated to him. Virgil tells how at one time this area was covered with oak trees (oaks were sacred to Jupiter). On the Roman Capitol there were several cults of Jupiter in his different aspects, the best known being that of Jupiter Optimus Maximus. This cult was transferred comparatively late from the Quirinal to the Capitol at the same time as those of the other two divinities of the Triad, Juno and Minerva (look for future articles on these two deities). Romulus was said to have built a temple to Jupiter Stator: during the battle between Romulus and the Sabines, the Sabines gained the advantage and drove the Romans back across the Forum. Then Romulus promised Jupiter that he would build a temple dedicated to him on that spot, if he stopped the enemy. The Sabines were driven off and Romulus kept his promise; the temple Jupiter Stator (Jupiter who stays or halts) was situated at the bottom of the Palatine. It

was also said that M. Atilius Regulus made a vow similar to that of Romulus when he was fighting the Samnites in 294 BC.

Jupiter's place in Roman religion became increasingly important. He as seen as the supreme power, the 'president' of the council of gods, the source of all authority. This predominance of Jupiter was shown by the importance of the position given to his priest, the *flamen Dialis*, whose wife was *flaminica* of Juno. The marriage of the flamen and his wife operated as a symbol of the union of the divine couple. Under the Republic, Jupiter was the god to whom the consul first offered his prayers on entering office. The victors carried their triumphal crown and consecrated their ritual sacrifices to him. Jupiter guaranteed that treaties would be honoured; he oversaw international relations through the mediation of the college of priests.

During the Empire the emperors placed themselves under the protection of Jupiter. Augustus, the first emperor, claimed to have dreams sent directly by the god, and he related how he had been saved from a flash of lightning during a war in Spain: the slave who was walking in front of his litter was killed whereas he, inside the litter, was spared. In gratitude Augustus had a temple to Jupiter the Thunderer built on the Capitol. Later, Caligula arrogated to himself the two epithets of the Capitoline Jupiter, Optimus Maximus (Best and Greatest). He had his palace joined to the god's temple by a special passage. Every provincial city had a Capitol similar to the one in Rome; the Triad would be installed with Jupiter enthroned in the centre. Thus the god represented the political bond between Rome, the mother city, and the daughter cities which were each a small copy of her.

Ev Butterworth



## A Nova in Cassiopaea

**I**f bright comets aren't your bag, you might want to check out the nova in Cassiopaea. Reported in IAU Circular 6213, its equinox J2000.0 position is 01:05:05.37 +54:00:40.5. It was discovered by K. Hirosawa on August 24 at mag 9.2 and as of August 27.8, was reported in IAU Circular 6214 to be at mag 8.9. The constellation is well-positioned for this object to be followed for months. Check out the HAA Home Page for a finder chart when it becomes available.

Doug Welch  
welch@physics.mcmaster.ca

The AAVSO Home Page

The American Association of Variable Star Observers now has a beautiful "home page" on the World Wide Web. The Uniform Resource Locator (URL) is:

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

For a full appreciation of how nice a creation this is, you should use Netscape 1.1. Alert notices are available, as are sample lightcurves and finder charts. (It is even possible to pay your dues by secure e-mail using information provided on their page!)

Doug Welch  
welch@physics.mcmaster.ca



## Upward Skybound

**W**elcome again to the new season. Did you have a safe and fun summer. I trust all enjoyed Starfest? Are you now ready to settle down to the kids back to school and some cooler nights of observing?

FQ: Sept. 2 / FM: Sept. 9 / LQ: Sept. 16 / NM: Sept. 24  
Fall Equinox: Sept. 23 at 12:13 UT.

**Jupiter:** in Scorpio is in the southwest at sunset, and sets about 3 hours later. Catch the entertaining antics of the Jovian Satellites before its too late.

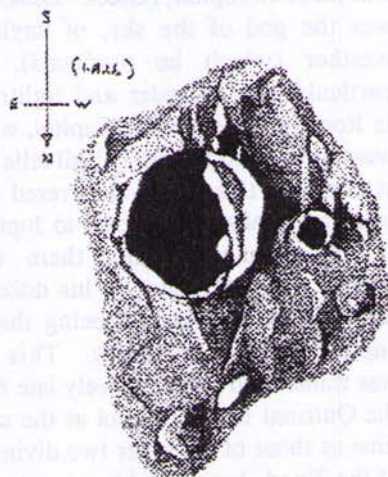
**Saturn:** in Aquarius, rises near sunset, and is visible for most of the night. It reaches opposition on the 14th. With the rings edge on, this is a prime opportunity to watch the satellites of Saturn. They are much more difficult to see than Jupiter's moons, but are easily visible right now. The mutual events (satellites occulting and eclipsing each other) are also visible. For details consult Astronomy Magazine pg. 73.

### Observing Nights:

Sat. Sept. 16/95 at the Binbrook Cons. Area

Sat. Oct. 14/95 at the Binbrook Cons. Area.

Clear Skies,  
Ev Butterworth, Observing Director,  
632-0163



1994 February 21st 8" Schmidt - Cass x 270  
22:10 - 22:50 UT

Seeing: II

Transp: V.Good

Suns Col: 43.47 - 43.81 deg

### Notes:

The region was noted for study particularly for the dome to the west of Kepler. Although features related to Kepler itself are worthy of note. The inner west wall shows marked terracing, with, on this particular evening a bright outcrop to the N/W edge. The Northern "tip" of the crater shows evidence of deformation, possibly associated with the "faults" running

northwards.

The Dome to the north of the smaller crater Kepler 'F' was quite small and gave the impression it had a rather flattened summit.

The structure to the north of Kepler is not shown as a dome on the same atlas as the one to the west, although it did give the appearance of a dome structure (possibly a rounded hill). A very strong suggestion of a summit craterlet was given during moments of good seeing. The eastern edge of the structure was markedly brighter than the rest. Darker areas were noted on the western slope.

Nigel Longshaw

Manchester Astronomical Society

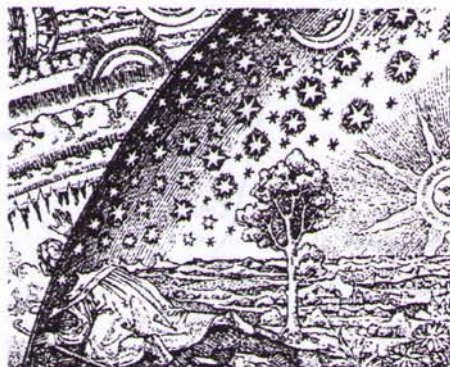


# For Sale

Single-axis Drive  
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(variable frequency oscillator for  
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12V DC to 120V AC inverter  
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Doug Welch  
welch@physics.mcmaster.ca  
(905) 525-9140 x23186 (days)  
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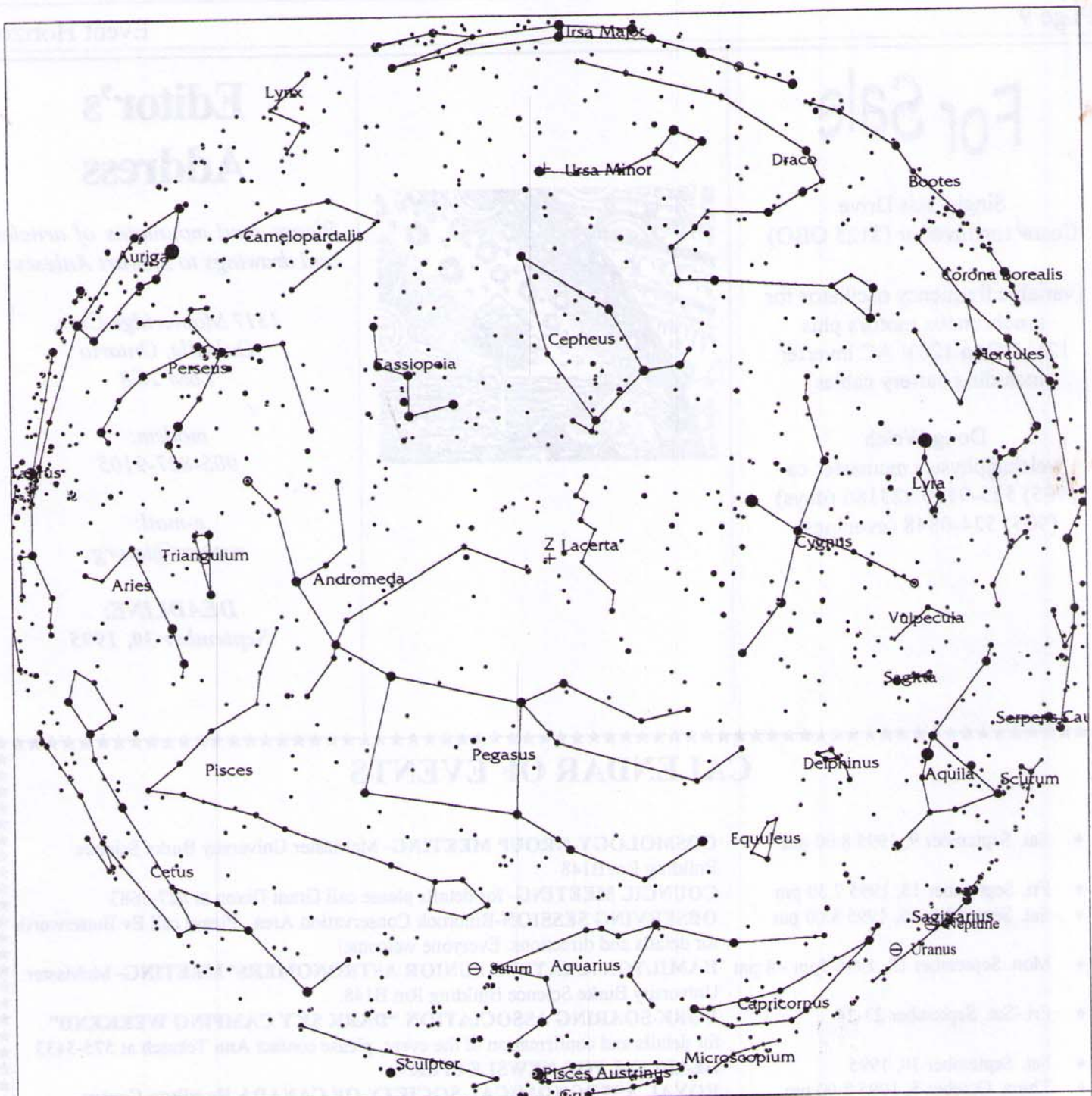
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stewart@io.org

**DEADLINE:**  
**September 30, 1995**

## CALENDAR OF EVENTS

- ♦ Sat. September 9, 1995 8:00 pm **COSMOLOGY GROUP MEETING-** McMaster University Burke Science Building Rm B148
- ♦ Fri. September 15, 1995 7:30 pm **COUNCIL MEETING-** for details please call Grant Dixon at 627-3683
- ♦ Sat. September 16, 1995 8:00 pm **OBSERVING SESSION-** Binbrook Conservation Area. Please call Ev Butterworth for details and directions. Everyone welcome!
- ♦ Mon. September 18, 1995 7pm - 8 pm **HAMILTON AMATEUR JUNIOR ASTRONOMERS' MEETING-** McMaster University Burke Science Building Rm B148.
- ♦ Fri.-Sat. September 23-24 **YORK SOARING ASSOCIATION "DARK SKY CAMPING WEEKEND"** for details and confirmation of the event, please contact Ann Tekatch at 575-5433
- ♦ Sat. September 30, 1995 **DEADLINE FOR NEWSLETTER -**
- ♦ Thurs. October 5, 1995 8:00 pm **ROYAL ASTRONOMICAL SOCIETY OF CANADA Hamilton Centre-** General Meeting McMaster University Medical Building Room 1A6.
- ♦ Fri. October 13, 1995 7:30 pm **H.A.A. ANNUAL MEETING-** Spectator Auditorium - Election of Officers Guest Speaker: Phil Stooke
- ♦ Sat. October 14, 1995 8:00 pm **OBSERVING SESSION-** Binbrook Conservation Area. Please call Ev Butterworth for details. Bring your friends
- ♦ Fri. October 20, 1995 7:30 pm **COUNCIL MEETING-** stay tuned for more details...
- ♦ Thurs. November 2, 1995 8:00 pm **ROYAL ASTRONOMICAL SOCIETY OF CANADA Hamilton Centre-** General Meeting - McMaster University Medical Building Room 1A6 Everyone Welcome!!
- ♦ Fri. November 10, 1995 7:30 pm **H.A.A. GENERAL MEETING-** Spectator Auditorium - Bring your friends!!





# ECU V2.0 (Star Atlas Mode) - October Evening Skies Created by Earth Centred Universe

UTC: 1995/10/16 at 02:30  
LMT: 1995/10/15 at 09:30pm

RA=22h49.2m Dec=+43°41'  
Field=180.0° Azim=341°03' Alt=+90°00'

Mr. Charles W Baetsen  
#308-1928 Main St., W.  
Hamilton, Ontario  
Canada, L8S-1J4  
September 1995