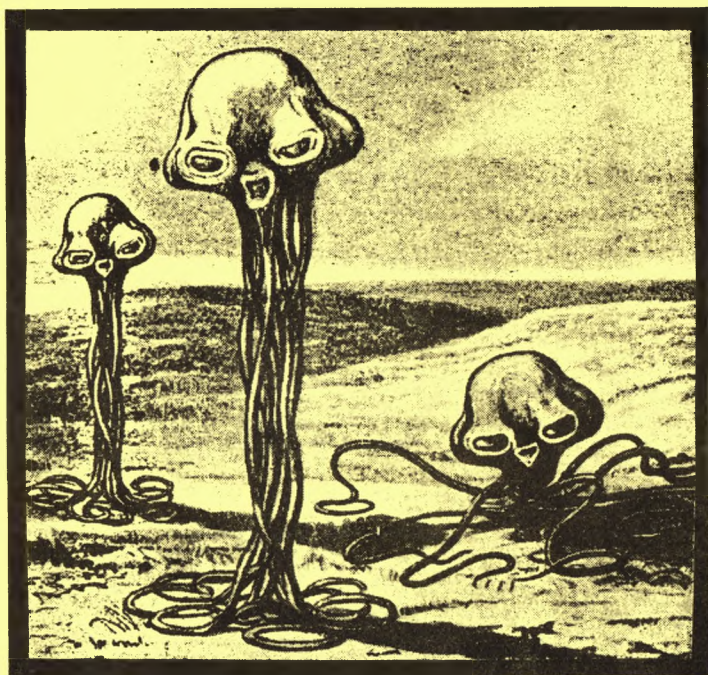


NOVA NOTES



Halifax Centre



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1989 Halifax Centre Executive

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Notice of Meetings

Date: Monday, March 6th, 1989: 7:00 P.M.
Place: Maple Grove Education Center, Hebron, Yarmouth County.
Topic: There will be a public talk by **Harry Taylor**, a retired N.A.S.A. scientist who lives in the area. His area of study is planetary atmospheres. His talk will be on his work at N.A.S.A. with special emphasis on Venus as one of his experiments is aboard a spacecraft which is currently studying Venus.

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Date: Friday, March 17th, 1989: 7:00 P.M. early presentation
8:00 P.M. regular meeting
Place: Nova Scotia Museum. Access from the parking lot and side entrance. Meeting to be held in the lower theatre.
Topic: The early presentation has not been finalized. Our speaker for the regular meeting will be **Dr. Cameron Reed** of the Physics Department at Saint Mary's University. He will be giving us an update on a talk that he gave a year ago on globular clusters.

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Date: Friday, April 21st, 1989: 7:00 P.M. early presentation
8:00 P.M. regular meeting
Place: Nova Scotia Museum. Access from the parking lot and side entrance. Meeting to be held in the lower theatre.
Topic: The early presentation has not been finalized. Our speaker for the regular meeting will be **Peter Edwards** who will be talking on the subject of telescope mirror making.

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Halifax Planetarium Public Shows:

February 23rd - Nebulae: Cradles and Graves of the Stars
March 9th - The March Skies
March 23rd - Topic to be announced

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Note: The above list is tentative and subject to change.

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About the cover: The cover this issue shows a depiction of Martians based on their description in H.G. Wells's classic novel *The War of the Worlds*. Members may note that their depiction differs considerably from that used in the new television series of the same name.

Editor's Report

Patrick Kelly

Hello once again! Because of the limited space in the last issue, there were a some items that I couldn't get in. Because of a mix-up in communications, I didn't get a list of **new** members who joined at the October meeting. As a result, there are probably some of you who did not get a copy of the Sept-Oct issue and possibly the Nov-Dec issue as well. If so, let me know and I'll see that you get one (or at least a photocopy).

Members may have noticed a difference in their Nov-Dec issue. The printer at the Government Print Shop had left and as they had not found a replacement, they were not printing anything. Unfortunately, they forgot to tell the museum who only found out when they called to find out where NOVA NOTES was when it didn't come back after the usual two weeks. As a result, the executive decided to have that issue printed by a private firm. The lowest price we were able to find was \$100 (including tax) for 200 copies. Because we found that we needed a few more copies than that, we had to photocopy that issue for some of the newer members. The museum now has a new printer and we should be O.K. for the near future.

We have also run out of handbooks. New ones are on the way and all members should have theirs by the middle of February if things go well. The problem arose partly because we hang on to the copies for members in the metro area to pick up at meetings in order to save postage. Any local member who hasn't picked theirs up by the January meeting then gets it sent out in the mail. (Calgary won't mail them until after their February meeting!) At the same time, we had a large increase in the number of sales to non-members and did not realize that when it came time to mail out the handbooks to members, we didn't have enough to go around. Hopefully next year we won't have this problem.

How many of you caught the glaring error in the last issue's Calendar of Events? Doug informed me that along with the note about the the moon being occulted by Regulus on Jan. 24th I should also have mentioned that all life on Earth ends! Hopefully no one took it too seriously! I guess that is bound to happen when you can type faster than your brain can think. I also noticed that the time given in the handbook of 4h00 UT differs from that given in the January issue of Sky & Telescope which places it more at 2h00 UT. Since I am writing this in the first week of January, I am going to go out on a limb and say that it doesn't matter since it will be cloudy that night.

There are several articles of note in this issue. We have **two** president's reports (one from the outgoing president **Darrin Parker** and one from our new president **Joe Yurchesyn**). In addition, **Mary Lou Whitehorne** has also dotted down a few thoughts. Readers will note that all three of these articles reflect a common theme of inviting members to participate more actively in the running of the centre. As the centre continues to expand and get involved in new projects, it is imperative that we find enough people to share the work (and the fun). I'll get down out of the pulpit for now, but keep that thought in mind.

We have started (or restarted) several projects which I feel that most members have either not been made aware of or have only a vague idea of what they involve. Let take a look at some of them. You have probably heard that there are plans to build a Discovery Center in Halifax. This would be a place where children will learn about science through a hands-on approach. Because of the increasing importance of space sciences and the lack of an adequate planetarium for a city the size of Halifax, we have formed a Planetarium Committee to attempt to have a new planetarium included as part of the Discovery Center. This will require quite a bit of background work to find out how other planetariums across Canada are funded, operated, etc. The first meeting of this committee is planned for February 1st. Any members who want to be involved in this project should contact **Randall Brooks** or **Doug Pitcairn**.

Another project which is currently underway is the reintroduction of a series of slide sets for use by school teachers. This project was originally started quite a few years ago and sort of "ran out of steam". There are eight different sets, ranging in topics from Mars to galaxies. New slides are being added to the sets and the text is being updated to take into account recent discoveries related to the topics that the sets cover. The first drafts of four of the sets have been finished with the other four almost done. We hope to have everything ready for this fall and have a notice about them in the science teachers newsletter. The cost to the centre should be minimal as we will only be paying for the postage to send the sets out.

Yet another project is the reintroduction of a second monthly meeting (see Joe's president's report). This will involve finding out what format this type of meeting should take, the best location to hold the meetings, co-ordination of the talks, etc. etc. As you can see, there is lots of work to be done!

Well that is about all that I have room this time. I hope that you have been taking advantage of the mild weather to get some observing done. Clear skies until next issue!Ω

President's Report 1988

Darrin Parker

Although it is December 1988 by my time; by the time you read this, the wondrous workings of curved space-time will have done their magic and it will be March 1989! But let's talk about 1988 for a while.

Membership was up slightly from 144 in 1987 to 146 in 1988; YES, we are the 5th largest centre in Canada! One life member deceased in 1988; Miss Mary King, a long time active member of our centre. Miss King left us her Questar 3 which is being refurbished by Randall Brooks.

As you will have read in the treasurer's report, 1988 was a boom year for the Halifax Centre, ending up with a \$823.00 surplus; \$570.00 over 1987! This was due to the Book & Junk sales, T-shirt & Cap sales, Observer's Handbook sales (Paul Smith) and the diligent, sometimes thankless work done by Joe Yurchesyn.

One unique aspect of the R.A.S.C. is the diversity of its members. The fact that professionals, students, amateurs and novices can all find common ground in the study of what we call astronomy, is something to be cherished. It can also pose a problem when arranging monthly talks. As I came into office, the Halifax Centre had one of the largest number of novices that it has ever had. Unfortunately many budding astronomers had been turned off of astronomy by the "technical" talks and were asking for some basic "how to" talks. Our centre's constitution provides the objective: **To stimulate interest in and to promote and increase knowledge in astronomy and related fields.** The 1988 executive concentrated on the part which reads: **To stimulate interest in and to promote...** Judging by the positive response by most of our membership, I feel that 1988 was a very successful year as far as encouraging people to look up!

As for taking astronomy to the people, two events deserve special mention. First, **Nova East '88**. Thanks to Mary Lou and Fundy Park, we were able to introduce hundreds of people from all over the Maritimes to the joys of star gazing! Second, thanks to the members who bravely ventured out on a wet Saturday to Bayers Road Mall for our first ever **Astronomy Day Mall Display**; we were able to bring astronomy to the people once more. The interest at Bayers Road was obviously high as one Saturday shopper offered to buy Doug Pitcairn's 10" Dob!

I would like to remind all members, new and old, to take part in the several contests offered by the R.A.S.C. The **Burke-**

Gaffney Award, (congratulations to the '88 winner: Dan Falk); the **Simon Newcombe Award** and the **Messier Certificate Program** to name a few. Check your *Annual Report* or ask one of your executive members for more information.

As for out of town members, I realize how difficult it can be to actively take part in a club which is an hour and a half or more away. Unfortunately there is no practical solution to geographic displacement as it were, but if you do live outside of the Halifax area, please make use of the centre library, slide collection, and other programs which do not require you to be physically present! Ever given thought to getting together with your local museum, and using the help of the Halifax Centre, setting up a public star-gazing night? That's how I got started as an out of town member!

I will end my report here before I drag on, but not before I send my most **sincerest thanks** to my fellow executive (past & present), cookie people and all the other members who have given me so much kind support and advice over my five years on the executive.

Thank you for the experience and privilege of serving you as president. Your club is what you make it. Keep things in perspective. Keep looking up! Ω

Astro Ads

FOR SALE: Deep-Sky Eyepiece Combo

- 32 mm ($1\frac{1}{4}$ inch) Plössl eyepiece (Bausch & Lomb) **\$40**
- 16.3 mm ($1\frac{1}{2}$ inch) Erfle eyepiece (Bausch & Lomb) **\$40**
- or both for \$70**

Call Dave Griffith - 677-2145 (Liverpool)

FOR SALE: Camera Lens

- 135 mm f/2.8 Pentax Camera Lens **\$70**

Call Doug Pitcairn - 463-7196

President's Page(s)

Joe Yurchesyn

Well, 1989 is almost 1/12 gone as I hurriedly prepare this article to meet the deadline for this issue of NOVA NOTES. I would like to begin by welcoming all new members to the centre and hope that they will get satisfactory enjoyment and entertainment from their membership. To all of our renewing members, welcome back and thank you for your continued support.

Welcome also, to the reorganized executive, to the two new members on council, Dave Lane and Nat Cohen, and to the return of Randall Brooks who was the sole backbone of the centre not so many years ago. It would be very much more difficult to carry out the office of president without their help.

I have been a member for 4 1/2 years and have noticed a drought of editorials from past presidents so I felt that a change was needed. During the time that I have been a member, I have seen the centre's membership grow as well as an improvement in club activities. I would like to see this trend continue.

After I accepted the nomination for president, I began thinking about how the centre could be further improved, given the R.A.S.C.'s guidelines of advancement and stimulation of interest in astronomy and allied sciences; and what goals I could realistically set for myself. What I would like to do is stimulate the direct involvement of more members (both inside and outside metro) in centre activities. This is not to say that I expect each and every member to express the enthusiasm shown by the executive members (both past and present); but if even 10% of the uninvolved membership were to more openly participate in some small way, the effect would be very noticeable.

I think the first step is a more open format with the "behind the scenes" activities the centre is involved with. Hopefully, this will demonstrate that the executive members are not special compared to other less active members, except for their degree of enthusiasm and participation. The 7:00 "presentation" at the February meeting will be an open executive where all members arriving between 7:00 and 8:00 will be able to observe (and participate in) the inner working of the centre.

Increased participation of members who are outside of the metro area will be a real challenge! Any ideas? Since the primary contact that outside members have with the centre is through NOVA NOTES, I think that the newsletter is the key. Why not try writing an article for NOVA NOTES? a topic you say...? How about observing experiences, telescope building, a book review, a great

tip, the joys of living and observing under dark skies? How about a product review; perhaps an item you just purchased and afterwards thought that you should have had years ago, or perhaps shouldn't have bought in the first place? Just ask Doug what he thinks about his Odyssey. You'll be sorrrrry! You won't be able to cork up his praise. He has got me beginning to think it is even better than Hugh's home-built "superscope"! And I'm quite sure that Pat will greatly appreciate a backlog of publication material. Besides, its an easy way to get your name in print and to join the elite group of members so distinguished.

Of course, there are a lot of other activities besides the newsletter. How about a photo or cartoon contest, observing projects? Don't forget our ongoing Messier certificate program! How about a mail-out trivia contest? Can such a thing be possible? How about a membership lottery? How about an information exchange with the Saint John, Summerside or Cape Breton astronomy clubs? Does someone want to run with any of these ideas or perhaps with one of your own?

As an engineer by profession, I was taught early on that the first step in the design process is preliminary ideas, any ideas, no matter how ridiculous. Perhaps that idea of yours, when collectively discussed at an executive meeting could lead to a not-so-ridiculous plan of action! After all, we are trying to design and build a better centre.

The heart of the Centre's activity centers around the monthly Friday night meeting. During the past year there has been an increase in the number of people who had something to present at a meeting that had not already been scheduled. The result was rather lengthy meetings and many members complained about this. Although I do not in any way wish to inhibit this enthusiasm, I would appreciate anyone wanting to present a short talk to co-ordinate it through me as early as possible. This small courtesy (of which I too am guilty of violating) will help in the planning of future meetings.

This recent increase in participation indicates enough interest to support a request by Randall that we reinstate a second monthly meeting, to be called the "Observer's Meeting". Although the format for these meetings is still undecided, the extra material being provided at some of the regular monthly meetings should probably prove ideal for this meeting or for a workshop at a future NOVA EAST. So, if you have something to share with the membership, by all means let someone on the executive know. Oh, and by the way, we need people to help organize these meetings on a rotating basis! Any volunteers?

A "bright ideas box" has been announced at the regular meetings for anyone who wishes to offer an anonymous suggestion. Members outside the metro area should feel free to mail in any suggestion they may have, anonymous or otherwise.

I would also like to comment on some of the activities which the Halifax Centre executive will be organizing or otherwise involved with this year:

NOVA EAST '89

Astronomy Day mall display

APICS (Science Teachers) Conference at Mount St. Vincent

Educational Slide Set Loan Program

Lobby Group for a new Halifax planetarium

Public planetarium talks

Public Talks and Observing Sessions

Halifax Centre Observatory Committee

Monthly meeting organization

NOVA NOTES

Anyone having been previously involved will understand the amount of work that this entails. All of it is presently being done by the centre executive and a few other volunteers. Speaking of volunteers, I forgot to acknowledge Jim MacGuigan and Jason Adams, councillors on this year's executive, as well as the planetarium lecturers and the two members who are newspaper columnists, who indirectly support our centre publicly.

If you are interested in becoming more involved but lack the confidence to make a firm commitment, why not start by attending an executive meeting as an observer. The growing familiarity of the other executive members and the informal meeting format will soon raise your confidence and enthusiasm to participate. I share Darrin's vision of hosting the 1992 G.A., but it will require a lot of work to lobby for and to organize if we our bid is successful. We would need to start very soon.

In closing, I would like to say that I want my responsibilities as president to include serving the wishes of the the membership at large, as well as performing the rudimentary duties of the office and pursuing the policies and goals of the R.A.S.C. So please, communicate with the executive. Don't keep us in the dark about ways to improve the centre. Shock us with so much participation that next year's executive will have to be decided through an election! What a challenging goal to strive for: to end my term as "Joe Remembered" instead of "Joe Who?"

Clear skies always. Ω

Hey, You Guys!!

Mary Lou Whitehorne

Your executive council has been thrilled to receive a number of comments and suggestions regarding NOVA EAST '88. We must be doing something right (or wrong) or we never would have generated such intense interest in you, our members. We have taken your comments to heart and are incorporating some of your ideas into the organization of NOVA EAST '89. We hope that you will like the changes and we expect to have lots of positive feedback next fall.

Now, how about regular meetings and other activities? this is your centre and we need your ideas regarding meeting format, duration and content. Are there any subjects that you would like to see presented or any particular speakers that you would like to hear or regular features that you would like to see as a part of every meeting? Would you like to step forward and take a more active role as a member? Write down your comments, ideas, suggestions or questions and mail them to me, present them in person at an executive meeting or drop them in the "bright idea box" at a regular meeting.

For those of you who don't live in the Halifax-Dartmouth area and find it difficult to attend regular meetings: What can we do to serve you better? You are valued members and we need your suggestions to help us help you.

We are continuing to try to please all of the people all of the time, but without your input, we are groping about in the dark! Ω

CREATION OF THE UNIVERSE - THE 'BIG BANG' THEORY



Confessions of a First-Time Solar Observer

David Griffith

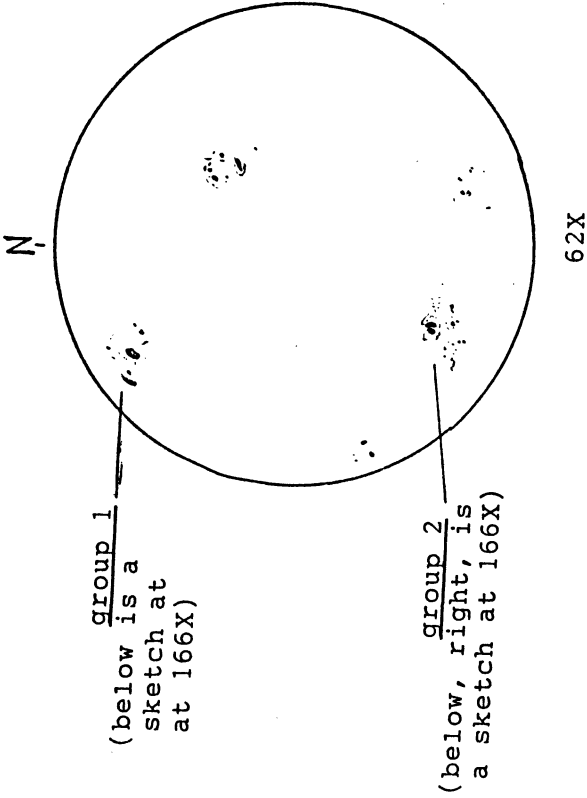
I was delighted this past Christmas morning to discover that Santa Claus has a Solar Filter Department as part of his workshop complex. Having apparently fulfilled the requirement of being a "good little boy", there I stood, beholding what looked much like my wife's vanity mirror. Two days later, once the turkey and other holiday edibles had worn off, I ventured out under the noonday sun for my first crack at solar observing. I was not to be disappointed.

My expectations were in fact, quite low. I fully expected to see something, perhaps a few blotches and there, but the detail awaiting me in the 32 mm ocular was simply overwhelming. I was working with a Meade 8" SCT, equipped with a Thousand Oaks Optical inconel-type filter. The 32 mm Konig ocular displayed the entire solar disk with room to spare. The image was an orange-yellow color, unlike the bluish image that Mylar filters yield. Given the sun's low position in the sky, the seeing was so-so with a distinct boiling effect around the solar limb. Still, the sunspot detail was quite spectacular.

At 62x I could easily discern five large sunspot groups, three of which contained some large spots. It was the complexity of the sunspot groups that startled me. The black umbra and grayish penumbral regions were very distinct in the larger spots, but what really caught my attention were the myriad groups, clusters and chains of tiny spots associated with some of the groups. One group had far too many of these tiny specks to record properly with pencil and paper. At higher power, the larger spots really came to life, with their dark umbral and multi-shaped penumbral areas.

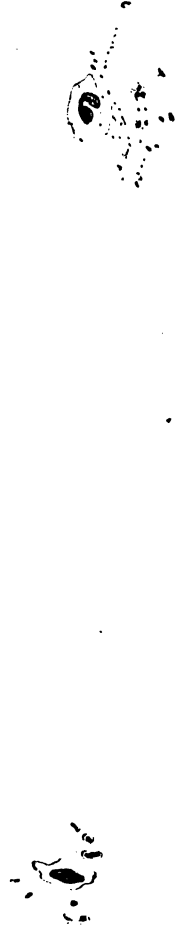
The sun is indeed a busy place these days! If you have never tried direct vision solar observing with a suitable filter before, I highly recommend it. A final note: The sun is an easy object - it's big! I decided to try my hand at sketching for the first time. After all, what could be easier than drawing a few "spots" on a disk? Well, given the detail visible when I gazed into the eyepiece, I have concluded that I should now be able to sketch anything! Ω

I am unable to locate two books of mine: **Nightwatch** by Terence Dickinson and **The Cambridge Deep Sky Album** by Jack Newton & Philip Teece. They may be mislaid or I may have loaned them before going to England 2 years ago. Anyone knowing where they are, could they please call David Chapman at 463-9103. Thks



group 1
(below is a
sketch at
at 166X)

group 2
(below, right, is
a sketch at 166X)



Thoughts on "Some Thoughts"

Jim MacGuigan

After reading Doug Pitcairn's *Thoughts* (Jan-Feb 1989 NOVA NOTES) I felt a need to put things in perspective.

It is too bad that the "skilled fellow" finds his equatorial mount is a "piece of junk". When he tires of limiting himself to "deep sky" objects and wants to expand his interests in the planets, the Sun, the Moon, multiple stars and photography he will find his mount is a treasure.

CAT is registered by Meade and means Computer Assisted Telescope and is not an abbreviation for a Schmidt-Cassegrain. Instead, one should use "cat".

A 150 mm long focus Newtonian is the minimum for all types of astronomy from "deep sky" to photography. It will do for a life time as many will attest. (Sky & Tel April '77 p. 314 and June '77 p. 488)

Eyeieces: Kellners work well on long focus scopes; orthoscopics are very good with all scopes; Erfles and Konigs are the best wide angle eyepieces; Plössls are the industry standard and they are slightly superior to the orthoscopics. One can pay different prices for Plössls (available locally for \$110). Those at twice the price as some brands **are not twice as good**.

There is no such thing as a good pair of \$50 binoculars. There are good ones for under \$100 (NOVA NOTES Nov-Dec '87).

The Astroscan is a poor first scope as its coma is outrageous and its short focal length limits its power. Many novices as well as experienced observers like the Moon and planets etc. Its price is \$550 not \$450 as stated. The Comet Catcher has better optics but again, it is limited in power and sells for \$1200 not \$450. It is not a first scope. A good refractor sells for \$669 and a good novice reflector for \$340 (both available locally).

A Dobsonian is a light bucket and that is all it is. It is difficult to use at powers above 150x because it requires two motions to track, not one like an equatorial. Its short focus and large diagonal combined with a Barlow lens and planetary mask keeps the image quality below that of a longer focus scope. Note that John Dobson and the San Francisco Sidewalk Astronomers use an f/8 system.

Many experienced observers have two different types of scopes - a refractor and a Newtonian as this combination covers most types of astronomy. For serious astrophotography an 230 mm scope on a photographic mount can be purchased locally for under \$1900, one does not have to pay \$3000 as stated.

I am no apologist for the Tasco 110 mm reflector, but it is a good beginner's scope if one buys decent eyepieces for it. God knows how many I have upgraded in the last few years. By the way, Tasco does make good scopes. I sold one over Christmas - the Tasco 8V - to one of our members. The 8V comes with a substantial stand and orthoscopic eyepieces. Ω

[Editor's note: Since this article was received, I was able to obtain the following reply from Doug Pitcairn in time for publication.]

The problems with that particular equatorial mount stemmed from poor construction with no thought to ergonomics. The axis locks are awkward with too much backlash. I feel this is a reasonable definition for the term "piece of junk".

I would suggest that the natural evolution of an observer is from lunar and solar, to planetary and multiple stars, then to deep sky. (From easy to find objects to more difficult ones.) Most deep sky observers have grown tired of the limits that small aperture scopes place on your viewing targets. Half of the deep sky objects I examine are not visible in Hugh's excellent 6 inch scope. (I have recorded notes on over three hundred NGC objects, that leaves me over 3000 to go before I have to look at the same object twice, should I choose to!)

Erfles and Konigs may be a bargain, but are definitely not the best wide field eyepieces available. They have significantly more edge coma and field curvature than the newer Widefields and Naglars.

I have viewed through both Jim's binoculars and Consumer's \$50 ones. Jim's are lighter but the views are identical.

The coma in an Astroscan is not bad, the design gives a steady view and is available for \$259 US, (about \$450 CDN., delivered to your door) The Comet Catcher is available for \$389 US (about \$700 CDN., also including delivery)

I use my 10" f/4.5 at over 300x It is far steadier than Jim's equatorial mount, and I feel easier to use. Using an aperture stop the telescope becomes an f/15 and delivers excellent planetary views. Tracking in both axes quickly becomes instinctive .

The \$3000 tag I referred to was assuming the purchase of a fully equipped 8" Schmidt-Cassegrain. These are usually considered as the best choice for astrophotography.

Although I haven't looked through it, the Tasco 8V does come with a ridiculously undersized finderscope.

If these two articles seem in a bit of disagreement, it is no wonder, Jim is a salesman with a product to sell and a profit to make. I, on the other hand, have nothing to gain except to help other observers get the most for their dollar. Clear skies! Ω

How to Make Money in Astronomy

Donald Trump

reprinted from *Orbit* - Hamilton Centre

Chances are, some of you feel the same way about amateur astronomy as I do. It's a great hobby and a ton of fun, but wouldn't it be good if we could make a few dollars on the side? We're not talking millions here; just enough perhaps to make life a little smoother.

Everyone says there's no money in astronomy. Even the professionals, after spending years at school, have no guarantee of landing a job in the science. That can be a lot of time and effort wasted on a piece of paper to put on the wall next to the moose antlers. Fortunately, we live in a capitalist country that rewards ingenuity and entrepreneurship. After a few minutes of thought, I've come with some ideas which, given the right amount of effort, should pay dividends to the ambitious astronomer. These proven wealth-building formulas require very little* money, scant* previous experience and no* brains what-so-ever!

* (relative term)

1. Write about Astronomy: Did you ever wonder who writes the books and magazines about astronomy? People, that's who. People are paid big money to write the words you read. People like you! All that is required is a pen, some paper and ideas. Those first two are easy to find, but the ideas might give you some trouble. Don't worry if you can't think of any, just borrow somebody else's (but don't forget to rearrange the words).

Fire off and article to Popular Pseudo-Science or some other periodical. Don't hesitate to use the shotgun approach i.e. send the same article to half a dozen magazines. Chances are, given enough time and stamps, someone somewhere will print it. Once your foot is in the door of astronomical publishing, there's no telling how far you'll go! How do you think Carl Sagan started out?

2. Teach an Astronomy Course: If you can successfully write about astronomy, teaching a course could further enhance your profitability. Community colleges are constantly searching for highly motivated individuals to teach non-credit subjects of little practical value to people willing to learn at a price. By employing the "win-win" principle, both you and the college can capitalize on peoples' curiosity.

Unlike writers who can go unwashed for weeks and live in a cave, astronomy instructors must be well groomed and speak

coherently. They must also organize a logical curriculum. Don't worry about the content being boring. As long as the course title reads something like "Alien Mating Rituals", you will be fully booked with students paying big bucks to hear you lecture.

3. Open an Astronomy Shop: A retail store specializing in astronomical paraphernalia can unlock untold riches for its owner. Astronomy is an increasingly popular hobby in today's space age, science oriented society. By opening a store catering to the needs of amateur astronomers, you can quickly enter the fast paced world of small business and before you know it, discover the secrets of Chapter 11 bankruptcy.

Many prospective entrepreneurs think that a lot of money is required to start up such an operation. While extensive capital is required, the store owner should always use the O.P.M. option. Yes, by using Other People's Money, you don't need to be wealthy to operate an astronomy shoppe. And when the bills arrive you'll learn to savour that deliciously warm feeling that comes with being overstocked and heavily in debt.

4. Market an Astronomical Product: How many times have you tackled a problem and envisioned a unique little gizmo to solve it? Chances are other people have encountered the same problem and would be willing to pay for the solution! There's no such thing as the perfectly equipped telescope for everyone's tastes. You can use this proven fact to help you towards financial independence by devising and marketing a suitably gimmicky accessory or observing aid.

Keep an eye open for upcoming special events, no matter how obscure they might seem. There's money to be made selling belt buckles, caps and T-shirts celebrating the 100th anniversary of Albert Einstein's bar mitzvah. Comet Halley taught astronomy marketers an important lesson: given enough promotion, anything will sell.

5. Sell Real Estate ...In Outer Space: Professional investors know that real estate is a proven profitmaker. But why limit yourself to Earthly properties? There is a whole universe out there ready to be exploited for your financial benefit. By selling non-legal deeds to stars and planets, you'll provide an attention getting curio for your clients and a low cost, high profit margin gold mine for yourself. Offer condominium plots on Mars, mining rights to the Asteroid Belt, or lease the entire solar system with an option to buy. Only your imagination can limit the contents of these novelty documents! Greater success can be achieved by gaining endorsement from a local observatory or astronomical organization. You might have to cut them in for a share of the profits, but greater sales will surely be realized.

6. Build Observatories for the Wealthy: Today's upscale executive professionals certainly have a lot of disposable income, with more and more choosing to live in palatial country estates. Swimming pools, hot tubs, tennis courts and such are standard accessories to indulge in, but they can become a trifle boring to the inquiring mind of today's high powered Y-person.

You can service this need by building personal observatories for the nouveau rich. Just think of the profitability that's possible by catering to this growing status conscious segment of the marketplace. By devising a completely equipped, low maintenance observatory with optional video system, computer console and well-stocked bar, you'll be creating the perfect ending to a summer garden party and will give the Joneses something else to keep up with!

7. Organize Astronomy Related Holidays: Travel agents have long recognized the increasingly active "specialty" tourist business. That is, vacations packages that cater to special interest groups. Amateur astronomers are no exception to this growing trend. They are the people looking for remote unpolluted destinations with pitch black skies to observe under. Fortunately, such favorable conditions routinely occur in the world's deserts. These barren areas hold no attraction to conventional fun-loving holiday goers but their very inexpensive accommodation rates can mean large profits for the holiday tour organizer! Don't forget to take advantage of off-season summer rates. It may be 40° in the shade, but avid amateur astronomers will pay a hefty premium to observe that glorious summer Milky Way.

8. Miscellaneous Ideas: As you have seen by now, there is virtually no end to the number of money making schemes capable of milking a buck out of astronomy. If you're looking to make a fast dollar and don't mind frequent relocation, consider selling meteorites to collectors. Where do you find meteorites to sell? A prime location is the slag heap next to any steel-making industry! Get it?! How about offering genuine supernova remnants for only \$5 an ounce? just remember that all the heavy elements found on earth were formed in the cores of supergiant stars. You'll give buyers a whole different perspective on scrap metal! Advertise plans for a make-your-own solar neutrino telescope. For \$10 you can describe how to dig a 100 metre shaft underground, fill a huge tank with dry cleaning fluid and count the photons as they come out.

We could go on and on, but now is the time for action! Don't hesitate to transform these ideas into reality to furnish you with a more affluent lifestyle. Astronomy can be your ticket to champagne wishes and caviar dreams! Ω

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HALIFAX CENTRE - R. A. S. C.
1989 CALENDAR OF EVENTS

March 1989

S	M	T	W	T	F	S
			<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	<u>30</u>	<u>31</u>	

April 1989

S	M	T	W	T	F	S
						<u>1</u>
<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>
<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>
16	17	18	19	20	21	22
23	24	25	26	27	<u>28</u>	<u>29</u>
<u>30</u>						

May 1989

S	M	T	W	T	F	S
			<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>
18	19	20	21	22	23	24
25	26	27	28	29	30	31

June 1989

S	M	T	W	T	F	S
					<u>1</u>	<u>2</u>
					<u>3</u>	
<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>
18	19	20	21	22	23	24
25	<u>26</u>	<u>27</u>	<u>28</u>	<u>29</u>	<u>30</u>	

Key to calendar:

Regular Meetings: **shadowed and outlined**

Special days: **bold**

Possible observing sessions: **underlined**

Special Days:

March 2 - Saturn 0.2° S of Neptune

March 12 - Mars 2° North of Jupiter

April 22 - Lyrid Meteors

May 3 - Eta Aquarid Meteors

May 22 - Venus 0.8° N of Jupiter

June 24 - Saturn 0.3° S of Neptune

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