NOVA NOTES

Halifax Centre

Jan-Feb 1987
Volume 18
Number 1

1987 Halifax Centre Executive

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Notice of Meetings

Date: Friday, March 20th, 1987 : **7:00** P.M.

Place: Nova Scotia Museum. Meeting to be held in the lower theatre. Access from the parking lot and side entrance.

Topic: Our **7:00** video presentation will be the **NOVA** episode which was broadcast on **PBS** in January about the Infrared Astronomical Satellite (IRAS). From what I have heard it is an excellent show.
At **8:00** our speaker will be **NOVA NOTES** editor **Patrick Kelly**, who will be giving a talk entitled **Recent Developments in Astronomy.**
In addition, we will be having an equinox party after the talk to celebrate the coming of spring.

Date: Friday, April 17th, 1987 : **7:00** P.M.

Place: Nova Scotia Museum. Meeting to be held in the lower theatre. Access from the parking lot and side entrance.

Topic: Our early presentation. has not been finalized yet.
The speaker for this meeting will be **Bill Appleby** who is a meteorologist and will be talking about weather's relation to observing conditions

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

About the cover: The cover this issue shows a nineteenth century French cartoon depicting the collision of a comet with the Earth.

Miscellaneous Notices

Messier Update

It has been over a year since our second member finished observing all of the items on Chrales Messier's famous list. That dry spell was broken in Decmber when **Glenn Roberts** our new Observing Chairman finished his list (and on his birthday, too). Congratulations Glenn! Glenn will be awarded our centre's Messier certificate at the upcoming banquet in May. I know that there are several other members who are all trying to be number four. It will be interesting to see who finishes next...

Halifax Centre Member Wins Medal

Our former librarian, **David Chapman** who is currently pursuing his research in England has been announced as the 1987 winner of the prestigious A. B. Wood Medal and Prize by the United Kingdom Institute for Acoustics for his work in shallow water acoustics. It should be noted that this is the first time that a Canadian has been awarded this prize. Although there was a article in the Chronicle-Herald regarding the award, it was first brought to my attention by Dr. Roy Bishop who sent a copy of the article to me. In his note about the article he states: "The Halifax Centre should be proud to have such an able professional scientist as an active member." Good work David (and come back soon).

Ex-Halifax Centre Member Discovers New Comet

Our former member **David Levy**, who you will recall was the co-discoverer of Comet Levy-Rudenko, has just discovered a comet of his very own! Comet Levy is the first new comet of 1987 and thus will carry the temporary designation 1987a. Dr. Roy Bishop passed along to me a copy of the IAU circular announcing the discovery. I have enclosed a photocopy of the relevant section. Good work, David. When can we expect Comet Levy 2 ?

Circular No. 4295

Central Bureau for Astronomical Telegrams
INTERNATIONAL ASTRONOMICAL UNION

Postal Address: Central Bureau for Astronomical Telegrams
Smithsonian Astrophysical Observatory, Cambridge, MA 02138, U.S.A.

TWX 710-320-6842 ASTROGRAM CAM Telephone 617-495-7244/7440/7444

COMET LEVY (1987a)

David Levy, Lunar and Planetary Laboratory, reports his discovery of a comet. Observations are available as follows:

1987 UT		α_{1950}	δ_{1950}	m_1	Observer
Jan.	5.5	$17^h17^m.5$	$+11^\circ20'$	10	Levy
	7.5	17 17.0	+ 9 50	11	"
	8.56	17 17.0	+ 9 02	11:	Morris

D. Levy (Tucson, AZ). 0.40-m reflector. Object diffuse with slight condensation, no tail. Poor seeing and twilight interference on Jan. 5.

C. S. Morris (Little Rock, CA). 0.26-m reflector. Twilight.

1987 Observer's Handbook Notice

A number of 1987 Observer's Handbooks were delayed in transit in December while on their way to Halifax. As a result, some members may have received their copy later than usual. We apologize for this delay. If you are a regular or youth member and still have not received your copy of the **1987 Observer's Handbook** please give Darrin Parker a call as soon as possible. You can reach him at 425-4974.

Planetarium Volunteers Required

The Halifax Planetarium is looking for volunteer operators to give shows in the evenings to groups such as Cub Scouts, Boy Scouts and Girl Guides. The planetarium is operated by the Nova Scotia Museum and they will provide training in both operating the projectors and in teaching techniques. The planetarium has recently undergone some major improvements, making shows even easier to present and more realistic and exciting. For a lot of children, a planetarium show is their first exposure to both the night sky and astronomy and can leave them with a lasting interest in this area. Shows are from 40 to 60 minutes long depending on the group.

Even a commitment of only one night per month would help greatly. If you are interested, please call Debby Burleson at the Nova Scotia Museum. The phone number is 429-4610.

Treasurer's Observations

David Tindall

The following notes are to accompany the 1986 Treasurer's Report which accompanies this article. Many of the figures have changed dramatically from the 1985 values and I should like to highlight why this is so.

1) Membership fees:

The large increase in the membership fees collected is not all a direct result of the increase in dues from $20 to $25 (for regular members) ! During 1986 we had eight members take out life membership: this brought in $2400 in income and also the same amount in outlay (under "Fees to National Office"). The remainder of the increase is mostly attributable to the fact that in spite of the dues increase, more members than usual renewed early and in addition we gathered some twenty-five new members between September and the end of the year. Of course the increase in the dues was also responsible for part of the increase in our fee revenue, but this is actually a relatively minor fraction of the item reported under "Fees".

2) Life Members Grant:

This item shows no change: National Office will start to pay us for our eight new life members soon (i.e. in 1987). This amount for the 1987 year will thus be $290 (i.e. twenty-nine life members @ $10 each), giving our centre a good deal of long term stability.

3) Donations:

This has been a much neglected source of revenue for the Halifax Centre, but a year in which dues have

just increased is not a good time for the treasurer to suggest that we pass the hat around! However, you may be interested to know that any amount paid to the centre (above membership dues) is deductible on your income tax form. A receipt will be provided.

4) Interest Income

This is down a little for two reasons: lower interest rates and our balance in the early part of the year had suffered depletion caused by the acquisition of the Celestron telescope in December 1985

5) Handbook Sales

The figures on this line are, as usual, true but almost meaningless. The increase in this amount is due to the new method by which National Office charges for handbooks. Now we do not have to pay for the 1987 handbooks until September 1987, whereas we used to have to pay on receipt of them. Thus from the point of view of seeing how sales are going, it is much better to look at Darrin Parker's figures in the November/December issue of **Nova Notes**.

6) General Assembly

Our net cost to send a representative to the General Assembly continues to be about $400 and this item is our largest expenditure.

7) Equipment and Supplies

Last year the Celestron, this year nothing.

8) Office Administration

I think that this item is to be compared with that reported as "Office Expenses" by Randall Brooks last year.

9) Miscellaneous

This category in both Revenue and Expenditures is almost soley to to the purchase and sale of R.A.S.C. pins and crests. Ω

Report of the Treasurer for 1986

David Tindall

Revenue	1985	1986
Membership Fees	$1808.04	$5155.43
Life Members Grant	168.00	168.00
Donations	0.00	5.00
Educational Activities	22.50	30.00
Interest & Dividends	126.40	83.46
Sales of Handbooks (net)	454.74	941.17
Advertising	0.00	25.00
General Assembly (including grant)	337.00	224.40
Other Grants	0.00	0.00
Miscellaneous	30.00	78.35
Total Revenue	2946.68	6670.81
Expenditures		
Fees to National Office	1126.50	4008.00
Library	146.95	78.90
Meetings & Newsletters	283.16	316.94
Annual Dinner (net)	-7.75	-12.78
General Assembly (including grant)	818.00	621.40
Equipment & Supplies	1207.47	0.00
Office Administration	0.00	105.38
General Expenses & Audit	0.00	0.00
Educational Activities	20.00	0.00
Insurance	0.00	0.00
Awards & Donations	91.88	168.92
Operating Expenses - Observartory	103.42	0.00
Miscellaneous	0.00	50.00
Total Expenditures	3789.63	5336.76
Surplus or (deficit) on operations	(842.95)	1334.05
Balance from previous year	1884.25	1041.30
Balance to following year	1041.30	2375.35
Other Assets	3000.00	3000.00

Gawker's Report

compiled by Pat Kelly

Time: Monday, November 24th, 1986
Place: Kidston Lake, Spryfield
Observers: D. Pitcairn, G. Roberts, J. Yurchesyn
Equipment: C8, B&L 4000, various binoculars
MVM: 6.2
Weather conditions: Clear
Seeing: not reported
Comments: An interesting site near the famous "Rockingstone". The north-east quadrant is lost to city glow, but the rest of the sky is quite good, considering how close it is to Halifax. Comet Sorrells is faint (about 12th mag.) and quite small, but its motion makes it easy to locate in a C8. NGC 1647 and 1746 are nice clusters in binoculars with the number of stars making up for their individual faintness. - D.P.

Objects Observed:

Planetary Nebulae: M76
Nebulae: M78
Globular Clusters: M79
Open Clusters: M34, M35, M36, M37, M38, IC 2157, NGC 1342, NGC 1647, NGC 1746, NGC 2129, NGC 2158
Galaxies: NGC 891, NGC 1270, NGC 1275, NGC 1964
Comets: Sorrells!

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Time: Saturday, December 6th, 1986
Place: Beaverbank Road Site
Observers: P. Duval, S. Geddes, S. Gillis, P. Kelly, Mr. McLeod, Mr. MacLellan, C. Morris, D. Pitcairn, G. Roberts, H. Thompson, M. Whitehorne, J. Yurchesyn
Equipment: 60mm refractors, B&L 4000, various binoculars
MVM: 4±2
Weather: Some clear patches before it clouded over completely.
Seeing: Good
Comments: Regularly scheduled observing session (of course, this is obvious from the weather conditions!). At least we managed to get a few objects in before the weather went completely sour.

Objects Observed:

Planets: Jupiter with Great Red Spot
Open Clusters: NGC 752, NGC 1545, NGC 1528

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Time: Wednesday, December 24th, 1986
Place: Zinck Avenue, Lower Sackville
Observers: M. Whitehorne
Equipment: 7x50 binoculars
MVM: 6.0
Weather: Clear and breezy
Seeing: Very good
Comments: Good observing conditions for suburbs.

Objects Observed:

Planets: Jupiter, Mars
Open Clusters: Pleiades, Hyades, M36, M37, M38, NGC

1528, NGC 1778, NGC 1893, NGC 1907
Nebulae: M42 (Orion Nebula)
Meteors: one slow short very bright one. Magnitude about -2 which was blue-green in color.

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Time: Saturday, December 27th, 1986
Place: Zinck Avenue, Lower Sackville
Observers: M. Whitehorne
Equipment: 7x50 binoculars
MVM: 6.0
Weather: Cool, very clear and calm
Seeing: Excellent
Comments: Superb viewing conditions! A rarity in Lower Sackville - to which I attribute my observing success (7 new Messier objects, bringing my total up to 51. Not bad for a novice).

Objects Observed:

Planets: Jupiter, Mars
Open Clusters: Pleiades, Hyades, M36, M37, M38, M41, M46, M47, M48, M50, M93, NGC 1893, NGC 1907
Galaxies: M81, M82
Nebulae: M42 (Orion Nebula)

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Time: Saturday, December 27th, 1986
Place: Spruce Lake site (12 km south west of Saint John, New Brunswick)
Observers: M. Brown, C. Clayton, D. Driscoll, L. Larkin, R. McFadden
Equipment: C8, 200 mm f/6 Newtonian, 110 mm f/8 Newtonian, 110 mm f/9 Newtonian

MVM: 5.5
Weather: Crisp with brisk north wind
Seeing: 2-3 on a scale of 5
Comments: After some perseverance, Chris Clayton glimpsed IC 434 (but not the Horsehead notch) in his C8.

Objects Observed:

Planets: Jupiter
Open Clusters: M35 (with NGC 2158 seen through it), M36, M37, M41, M44, M45 (Pleiades), M46, M47, M48, M50, M67, NGC 1981
Galaxies: M31, M110
Nebulae: M1 (Crab), M42 (Orion), M43, IC 434, NGC 2024
Stars: Betelgeuse, Bellatrix, Rigel, θ Ori, Sirius (in a 200 mm, OUCH!)

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Time: Sunday, December 28th, 1986
Site: Kidston Lake, Spryfield
Observers: R. Clayton, K. Gage, P. Kelly, G. Roberts, H. Thompson, M. Whitehorne, J. Yurchesyn
Equipment: C8, two 60 mm refractors, 150 mm reflector, various binoculars
MVM: 6.0 in the clear spots
Weather: Good except for some area of light haze
Seeing: Good

Objects Observed:

Planets: Jupiter with a "fifth" moon due to its passage by a star of the same brightness as its moons

Open Clusters: h & χ Persei (Double Cluster), M35 along with NGC 2129, NGC 2158 and IC 2157, M36, M37, M38
Globular Clusters: M79
Planetary Nebulae: M74
Galaxies: M77, NGC 1055
Nebulae: M1, M42, M43
Double Stars: γ Arietis

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Members are invited to submit their observations for inclusion in "Gawker's Report". In order to make the compilers job easier, please list all information in a format similar to that used for the column. Thanks and clear skies. Ω

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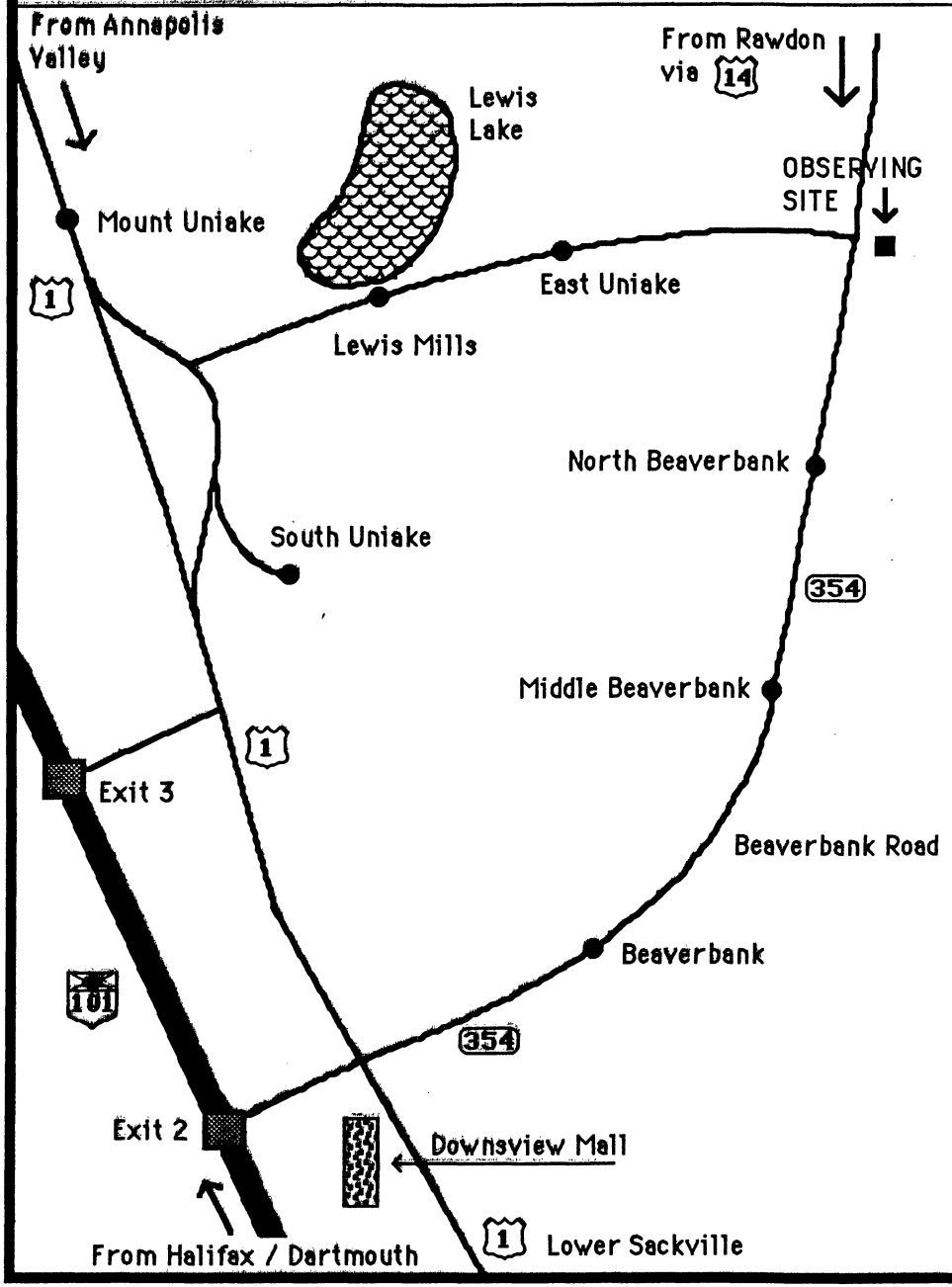
New members who are interested in attending our monthly observing sessions will find a map on the opposite page showing how to get to our Beaverbank Road observing site.

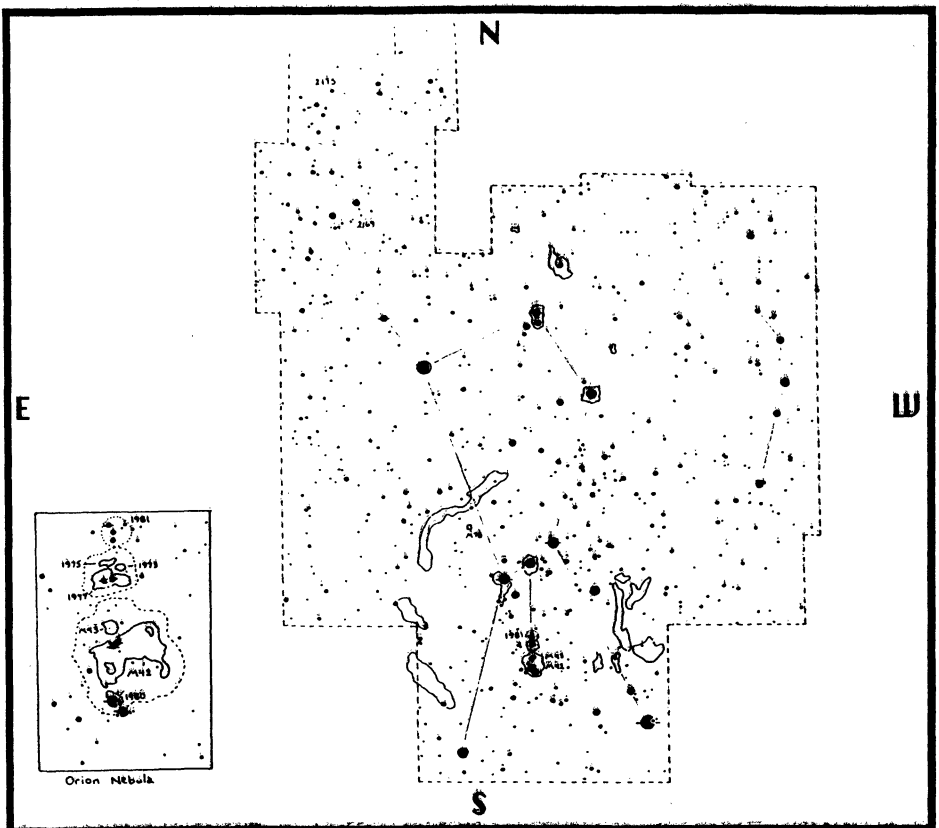
The dates of the regularly scheduled monthly observing sessions can be obtained from the "Calendar of Events" inside the back cover. If the weather does not permit an observing session on the scheduled date, an alternate is set by the Observing Chairman based on the weather. If you wish to be informed of the time of alternate observing sessions, contact the Observing Chairman to have your name added to the list (see the inside front cover).

Map to Beaverbank Road Observing Site

The site is about 15 km from Exit 2 along the Beaverbank Road (Hwy. 354). When coming from Halifax, the site is immediately adjecent to a road sign indicating that Mount Uniake, East Uniacke and Windsor are left at the next turn off.



Constellation of the Month - February

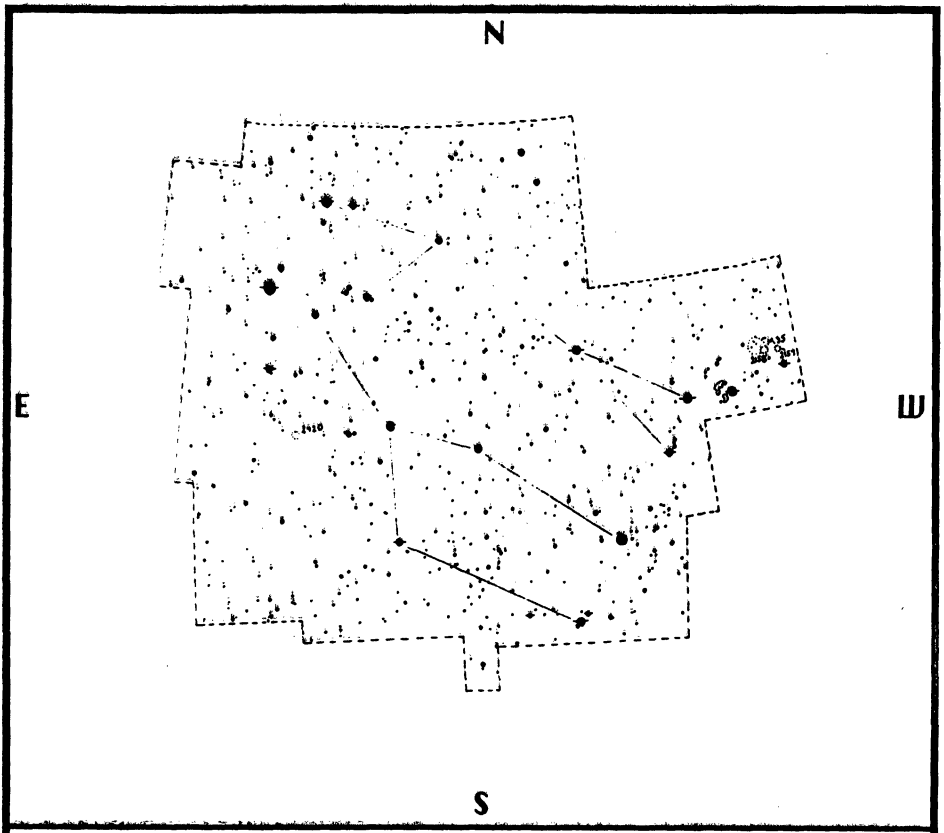


February 15th — **0h00 UT / 8:00 P.M. AST**

Orion - the Hunter (Giant, Warrior)

Object	Type	Mag	R.A. (2000)	Dec
M42	Nebula	3.0	5h 35m	-5° 23'
M43	Nebula	8.4	5h 36m	-5° 16'
M78	Nebula	9.0	5h 47m	+0° 03'
NGC 1981	Open Cl.	8.0	5h 35m	-4° 22'
NGC 2169	Open Cl.	7.0	6h 09m	+13° 57'
NGC 2175	Open Cl.	6.8	6h 10m	+20° 19'

Constellation of the Month - March



March 15th — 0h00 UT / 8:00 P.M. AST

Gemini - the Twins

Object	Type	Mag	R.A. (2000) Dec
M35	Open Cl.	5.1	6h 09m +24° 20'
IC 2157	Open Cl.	8.4	6h 05m +24° 00'
NGC 2158	Open Cl.	8.6	6h 08m +24° 06'
NGC 2420	Open Cl.	8.3	7h 39m +21° 34'

Hence From This Moment

Len Larkin

Can you remember it? A point in time where you perceived the night sky as something other than strange, spooky blackness. When you gazed with incredulous eye at the splendour of the night sky and began to feel its limitlessness; and it, in turn, perceiving (so it seemed) the curiosity welling up inside the individual, beckoned.

This scenario represents the extreme situation of a person developing their concept of the universe from an initial visual observation. But these moments can occur anywhere in a person's astronomical endeavors and certainly a rebirth of sorts happened to me well into my observing routine.

Since occasional views through a small refractor in previous years had taken the edge off my incredulity, I began observing in a plodding manner driven by a combination of curiosity and tenacity. But as my observing record built up over time, most sessions ended up being measured against the almost unattainable standards of those rare, perfect nights when superb skies made for exciting and fulfilling observing experiences. The typical observing session was then classified as average, when in fact, there was nothing average about seeing a galaxy with light that had been traveling for millions of years, or perhaps observing first-hand, on a nightly basis, the dynamics of another planet's cloud system!

But one night, well into my series of nocturnal skywatchings, a sight greeted me which is still etched in my mind. It was several years ago on a crisp May night, as I brought my eye to the ocular of the 200 mm Newtonian, and I

was preparing for the aesthetics of the object in view to be lost amidst the surrounding light pollution of the small town of Sussex, New Brunswick.

Instead, after racking the eyepiece to a sharp focus, my body froze and my eye refused to be separated from the view. What greeted me was a stunning stellar colection; magnificently designed and consummated by a universal architect. After an untold period of time I forced myself away from the eyepiece, stunned by the view, with the phrase "city of stars" on my lips (remaining to this day the description that I give to people concerning this object).

The object was, as you may have guessed, the globular star cluster known as the Great Cluster in Hercules - M13. It was and is a multi-faceted phenomena - at once beautiful and mysterious, an ancient among ancients, an indicator of sky conditions and a study in observing techniques. It showed me that observing is an integral part of the enjoyment of amateur astronomy. In fact, just knowing that M13 is available for observing at night is still enough motivation to send me out to some dark-sky site.

Recently because I became curious if other amateurs had similar astronomical awakenings. David Driscoll, an avid amateur astronomer and a regular observing partner of mine answered without hesitation. Yes, there was a moment that sparked his enthusiasm for the hobby. Dave remembers that the sight was a marvelous spectacle in his 50 mm refractor; for there was Jupiter dominating the field of view; flanked by its four Galilean satellites - worlds in their own right - but merely pinpoints of light beside the massive planet. And even this size of telescope was capable of showing two of Jupiter's

most interesting features, the North and South Equatorial belts. Another telescope, another night, a different view - but the feeling is the same. The exploration begun by Dave on that night continues.

Further afield, an article by Dennis di Cicco in the October issue of **Sky and Telecope** entitled "Excerpts from an Australian Journal" mentions a change in his basic perception of our galaxy - initiated by a view of the Milky Way from a dark observing site in Australia. He had personally discovered that our galaxy offers the most unfettered visual example of an edge-on spiral galaxy, at least for those observing it from the Southern Hemisphere. It is quite surprising to find an experienced amateur astronomer (with an extensive background in galactic observations) having a conceptual change of such a basic phenomenon.

So apparently no amount of observing and/or reading gives one immunity from these rejuvenations in perception. And that is as it should be. For each observer should be able to face an observing session with the idea that something exciting could happen during those precious minutes - whether it be a phenomenon of the sky or a revelation to the mind. Pleasant Observing! Ω

Simon Newcomb - The Man - The Award

Peter Steffin

At the beginning of every year the Halifax Centre of the R.A.S.C. invites members to submit articles for the Simon Newcomb Award. Initiated by the Halifax Centre, it is named after Simon Newcomb, the Nova Scotain born

astronomer and mathematician.

This remarkable man was born in Wallace, Nova Scotia on March 12th, 1835. His father was a country school teacher who had taught Simon to count by the age of four, make calculations in addition and multiplication when he was five, and to extract cube roots before he was seven. Despite these abilities, he had little or no formal education, being apprenticed at age sixteen to an herbal doctor of questionable character. After a few years he ran away to be with his widowed father who by this time had setled near Washington D.C. There Newcomb was able to satisfy his intellectual curiosity in the many libraries. He quickly came to the conclusion that his major talent lay in mathematics.

Newcomb was impressed by the **American Ephemeris and Nautical Almanac** which "seemed to embody the highest intellectual power to which man had ever attained". He applied for a position in the American Nautical Almanac Office and became a "computer" there in 1857. In 1858 he received a degree from Harvard University and in 1861 was made a professor of mathematics by the U. S. Navy. There he worked for ten years determining the positions of celestial objects and other astronomical phenomena. Newcomb was put in charge of the American Nautical Almanac Office in 1877 where he immediately started on the work that would keep him occupied for most of the rest of his life: calculating the motion of the bodies in the solar system.

He received honorary degrees from ten European and seven American universities. As a member of forty-five foreign societies he was also awarded a number of gold medals and held influential positions in the National Academy of Sciences. Although Newcomb retired in 1897, as an admiral, he became one of the founders of the American Astronomical Society and its first president from 1899 to 1905. He died on July 11th, 1909 in Washington D.C. and is buried in Arlington National Cemetery. His meticulous calculations in constants set the standard for all ephemerides produced thereafter. This was reconfirmed at an astronomical conference held in Paris in 1950. Surviving Newcomb are a number of books, some of which have been translated into as many as seven other languages and an autobiography, **Remeniscences of an Astronomer**, that was published in 1903.

This is the man and his life's work that we honor each year with the Simon Newcomb Award. The award was adopted by the council of the R.A.S.C. on May 21st, 1978 and has since been awarded to a number of members of the Halifax Centre. It will remain a lasting tribute to one of the greatest American astronomers of all time. Ω

Winter Meteors

Having received several separate reports on this winter's meteor showers along with a related letter that was passed on to me by David Tindall, I decided to include them all in one article.

Geminids1986

It was a cold -22° Celsius out, the right temperature for meteor observing. Everything was working fine except for one thing - a lack of good Geminids! There were some, but, "What happened?" I thought, standing on a pier jutting into Mill Lake with a strong wind blowing. The moon? In a way, yes, but I don't fear the moon, only clouds. Then I remembered the lack of them a few years back and decided that the density was low for the stream again; and after waiting two weeks for this shower too. Is "The Wedge" right? It has this shower dead after the year 2000, or with rates of only five per hour at that time. [Editor's Note: I must confess ignorence of "The Wedge". I trust the term may be more familiar to the reader than it is to me.] In any case, I saw it and recorded the following ZHR rates (all times UT):

$00^h00 - 01^h00$ -- 0
$01^h00 - 02^h00$ -- 5
$02^h00 - 03^h00$ --11
$03^h00 - 04^h00$ -- 6
$04^h00 - 05^h00$ -- 9
$05^h00 - 06^h00$ --12

The average magnitude was -0.5. The majority (85%) were white, the rest were blue. Below is a table showing the number of meteors of each magnitude:

M_V	Number
-3	1
-2	5
-1	8
0	4
1	8

Maybe 1987 will be a bit better for them.

-Michael Boschat

Quadrantids 1987

UT	ZHR	Remarks
23^h00 - 00^h00	5	In city, Limiting $M_V = 5.5$
03^h00 - 04^h00	7	Mill Lake Observatory Limiting $M_V = 6.2$

Average $M_V = -0.3$

M_V	Number
-1	2
0	0
1	1

There was a 55% cloud cover at the Mill Lake Observatory site, 65% in Halifax. As well, there was a cold north wind!

Because of a death in the family on January 3rd, only these two intervals are recorded. From 00^h00 - 02^h30 UT I was not observing. I hope other members had better luck.

-Michael Boschat

The following letter was received by David Tindall and has been edited slightly for readability:

The night of December 14th (when the Geminid meteors were forecast in the Handbook pg. 49) was cloudy in the valley. But on December 14th at approximately 02^h30 in the morning in the south-western sky and on December 15th at exactly 23^h30 in the north-eastern sky we saw two fireballs (much brighter than any star or planet). They came straight down, seemed to have a tail and came down very low as one disappeared behind the hanger. They were both a brilliant white and a couple of the guys with me thought the first one was a flare it was so bright. We were working midnights and a crew of us were outside towing an aircraft.

J. Cathcart Ω

Of a Mouse, To a Mouse, O Mouse!

Jeremy B. Tatum
reprinted from **Skynews Victoria**

I once saw the question in an astronomy text book: "How many constellations are recognized by professional astronomers?". The required answer was "88" though if truth be known, some professional astronomers hardly recognize any! Indeed, it was a well-known Victoria Centre amateur, the late Lucienne Bridgen, who taught me many interesting snippets about constellations that I never learned at university. For example, did you know that there are twenty-two constellations beginning with "C" and only one beginning with "B"?

Quick then, name any constellation! The Big Dipper, did you say? Wrong! The Big Dipper, popular name though it is, is not an Official Constellation Recognized By Astronomers. It is merely part of the large constellation Ursa Major, the Great Bear. Incidentally, whatever it may say in the books about "Charles's Wain" ,in England where my younger days were spent, the Big Dipper is invariably called the Plough. Indeed, when I first taught at the University of Victoria, I didn't know what a dipper was and my class kindly presented me with a big dipper which they had purchased at the ironmonger's (which they called a hardware store). This dipper is still to be seen in our undergraduate laboratories.

The Official Constellations all have imposing Latin names. There has been a lamentable decline in the study of classical languages in recent years, a decline to which I contributed by failing to reach double digits (out of 100) in my final high school examinations. I used to complain that Latin was of no use to me. If only my teacher had told me: "But you

need Latin for the constellations." instead of knowing how many cohorts were in Caesar's army or how many parts Gaul had been divided into, things might have been very different.

There is no way of getting away from it; if you want to talk about the constellations you have to know some Latin, and you have to be aware that Latin nouns do horrible things such as **declining**. That is to say they have different cases (called by long names such as Nominative, Accusative, Genitive, Vocative, etc.) according to what part they play in a sentence. Alice (of Wonderland fame) had some vague memories of this when she remembered "Muris, Muri, mus" meaning "Of a mouse, to a mouse, O Mouse", and she therefore politely addressed the mouse in the vocative case: "O Mouse". Julius Caesar, even while in his death throes after the fatal thrust of the knife took care to use the correct vocative case when he admonished: "Et tu, Brute?" - "You too, O Brutus?"

Now the constellation names as usually given are in teh nominative case. The brighter stars in a constellation are given either Greek letters (Alpha, Beta, etc.) or Flamsteed numbers, followed by the consteallation **in the genitive case** which means **of** Orion, **of** Hercules, **of** the Great Bear and so on.

Thus Vega is not Alpha Lyra (which is terribly bad Latin, but is Alpha **Lyrae**, Lyrae being the genitive case of Lyra. With only one exception (Vela, which is actually a plural noun meaning "the Sails"), all of the constellations ending in **-a** form their genitives in **-ae**. Thus we have Alpha Andromedae, Beta Librae, Gamma Aurigae, etc.

The ones ending in **-us** and **-um** are easy. With the exceptions (there are always exceptions) of

Apus, Grus and Lepus, the genitives all end in **-i**. Thus, Alpha Caprocorni, Beta Ophiuchi, Gamma Scuti. The exceptions become Apodis, Gruis and Leporis.

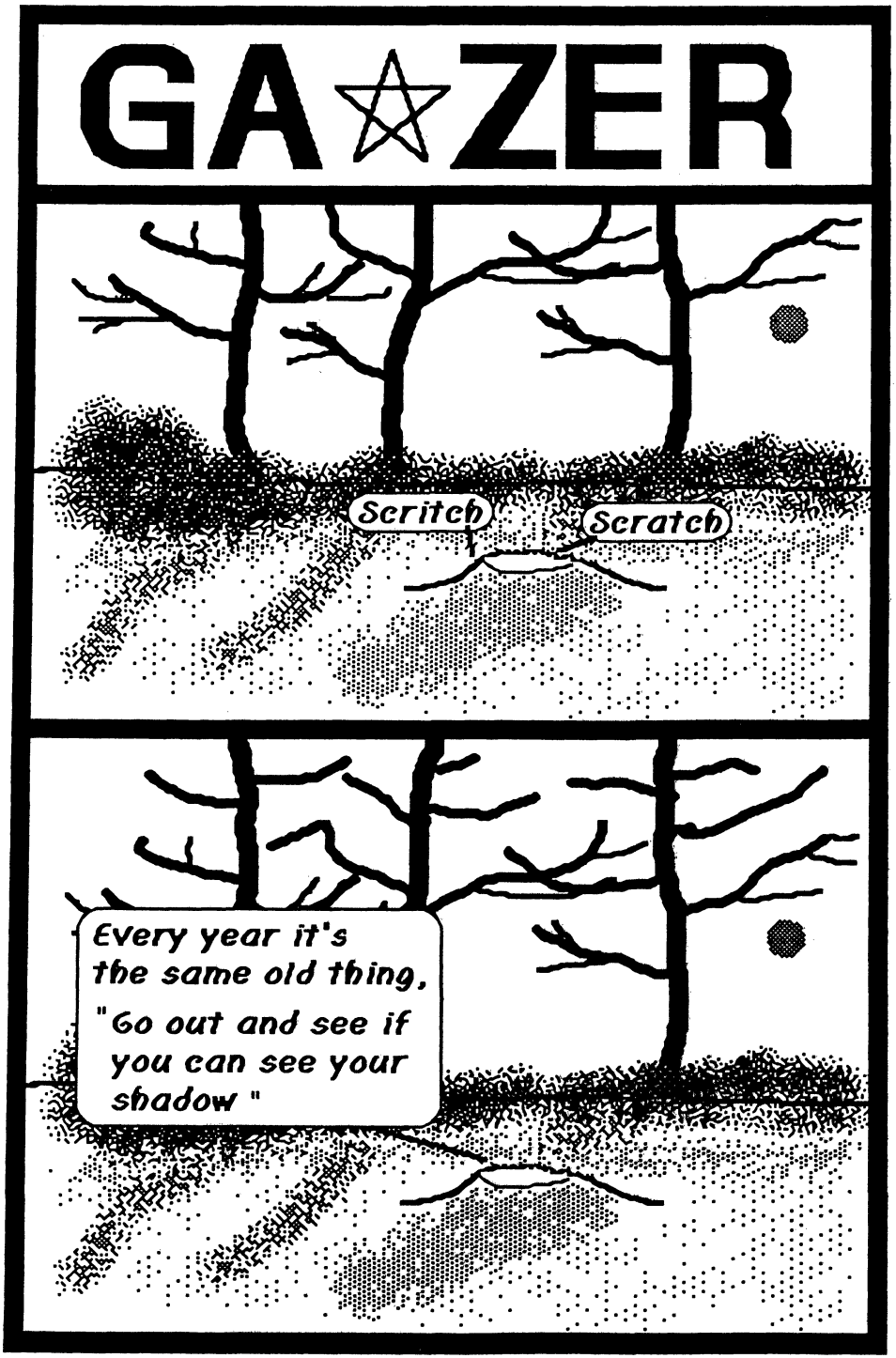
Some others are not so easy and they have to be learned individually. Here are a few examples whose **genitives** end in **-is**.

Aries	Arietis
Leo	Leonis
Orion	Orionis
Serpens	Serpentis
Virgo	Virginis

A few are really quite tricky. For example, Boötes and Hercules have Boötis and Herculis for their genitives. Arcturus is not Alpha Boötes, it is Alpha Boötis. Fishes and dogs cause special problems. In the southern hemisphere there is one fish - Piscis Austrinus - and its brightest star, Fomalhaut is Alpha Piscis Austrini. A single fish is Piscis in both nominative and genitive. Here in the True North, we have a pair of fish and the plural of Piscis in Latin is Pisces. Our constellation is therefore Pisces, and its genitive is Piscium.

As for dogs, we have two singular dogs, Canis Major and Canis Minor. Like Piscis, the genitive of Canis is the same as the nominitive. Thus Sirius is Alpha Canis Majoris and Procyon is Alpha Canis Minoris. We also have some plural dogs - Canes Venatici, the Hunting Dogs. Canes is the plural of Canis, just as Pisces is the plural of Piscis. This is what makes the study of Latin so disheartening. Canis has an **irregular** genitive plural - Canum - so that Cor Caroli is Alpha Canum Venaticorum.

There is really nothing for it but to learn the eighty-eight genitives by heart. You'll find them inside your **Norton's Star Atlas** or current issue of the **Observer's Handbook.** Ω


GA☆ZER
Scritch
Scratch
Every year it's the same old thing,
"Go out and see if you can see your shadow"

P. Kelly / D. Pitcairn

NOVA NOTES INDEX

January- February1987 Volume 18, Number 1

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HALIFAX CENTRE - R. A. S. C.
1987 CALENDAR OF EVENTS

March 1987

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
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29	30	31				

April 1987

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19	20	21	22	23	24	25
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May 1987

S	M	T	W	Th	F	S
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June 1987

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28	29	30				

Key to calendars:

Meetings: outlined

Special days: shadowed

Observing sessions:
bold and underlined

Special Days:

April 22 - Lyrid Meteors
April 25 - Venus occulted by moon
May 4 - Venus 0.6° south of Jupiter
May 5 - h Aquarid Meteors
May 8 - Annual Banquet - watch for details
May 15 to 18 - General Assembly in Toronto

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