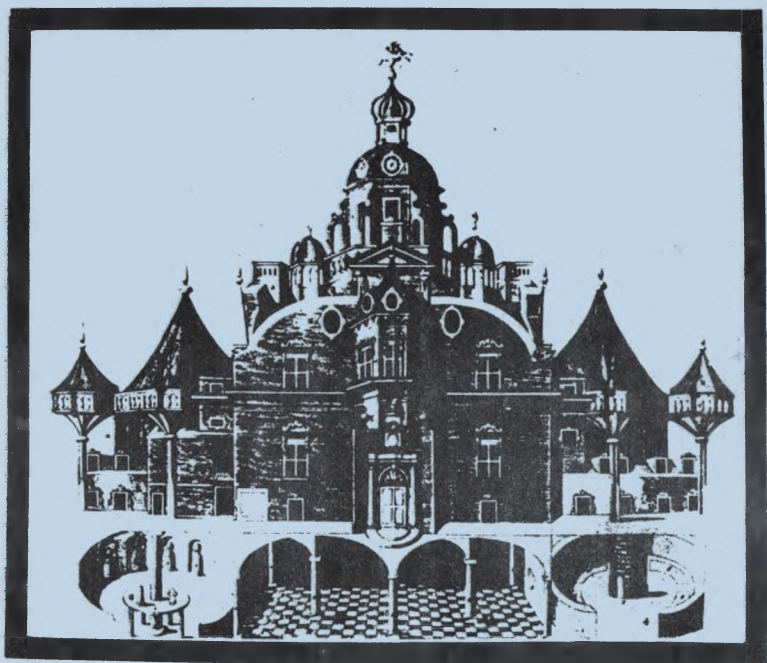


NOVA NOTES



Halifax Centre



July-Aug 1985
Volume 16
Number 4

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NOTICE OF MEETINGS

Date: Friday, September 20th : 8:00 P.M.

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

Speaker: Tina Harriott will be giving a talk on the subject of cosmology

Date: Friday, October 18th : 8:00 P.M.

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

* * * * *
* NOVA SCOTIA ASTRONOMY DAY *
* * * * *

Watch for further details in
the September - October issue
of NOVA NOTES

About the cover: The cover this issue shows an artist's rendition of Tycho Brahe's great observatory "Uraniborg" (the castle of the Heavens), which was located on the island of Hven. Today, only a few pieces of the foundation remain.

ASTRONOMY FOR EVERYONE

EDITOR'S NOTE: The following is a condensed version of the talk that Dr. Cunningham gave at this year's annual banquet at which he was welcomed as our new honorary president.

In December 1949, the Halifax Astronomical Society wrote to the Chicago Tribune, of all places, asking for the use of a piece of land at Geiser's Hill. The Chicago Tribune allowed the local society to use it and it was used as an observing site for several years. In the January - February 1956 newsletter a record of the presidents of the Halifax astronomical group was given. The first official meeting was held in the Board of Trade Building in October 1951. It was then known as the Halifax Astronomical Society having assumed the name Nova Scotia Astronomical Society at a subsequent meeting. Presidents of the Nova Scotia Astronomical Society were: M.H. Goodwin 1951-1952; A.H. MacMillan, 1952-1953; and B.J. Edwards, 1953-1954. Presidents since we became the Halifax Centre of the R.A.S.C. were: B.J. Edwards., 1954-1955, and James Paul, 1955-1956. Father W.M. Burke-Gaffney was elected honorary president at the first official meeting in 1951.

Don Croudin was a senior person in the Nova Scotia Museum at this time. I am not sure what his training was but he certainly looked after the obtaining and installation of the planetarium. He put me in touch with the Nova Scotia Archives for the minutes of the old scientific societies in Nova Scotia. These make for most interesting reading. For several years the secretary was Joseph Howe, and the records are all in his handwriting. The details of any of the talks on astronomy, however, are completely lacking. It just says that someone gave a talk on astronomy but not what they said. There is a mine of further information to be obtained from the Archives if anyone would like to dig it out.

In September 1955, the newsletter was known as the Star Gazer. A letter which was dated from the summer of that year from Dr. R.M. Petrie to Mr. B.J. Edwards announced that at a recent meeting of the general council it was learned that a centre of the Royal Astronomical Society had been organized in Halifax, and this would now be known as the Halifax Centre of the Royal Astronomical Society. The next issue of the Star Gazer was December 1955 and now there was a new executive. The president was James Paul, first vice president Major C.A. Anderson, second vice president B.J. Pottier, treasurer M.H. Goodwin, secretary Basil Nowe, librarian Dr. W.A. Bridgeo and the council members were Henry Shae, B.J. Edwards, G.W.G. Allen, R.L. Baglole and W.F. Dawson.

Also in September, a four man delegation from the Halifax Centre visited the Wolfville Observatory. This was on a ridge up behind Acadia University. It contained a six inch refractor that was manually driven. The observatory had not been used for approximately 25 years but could easily be put back into commission. The original observatory there had been instituted 80 years ago but all that remained of it was the telescope, the original building having been destroyed by fire. The person that gave the tour was Dr. Noble of Acadia University while Mr. G. Briers, James Paul and Milton Goodwin were the others on the tour.

On December 7th, 1955 there was a preview showing of the new Spitz planetarium in the Nova Scotia Museum of Science. Don Crowdis was very influential in getting this planetarium, the first in Canada. Father Burke-Gaffney gave a talk on interstellar matter at the March 1956 meeting. The next meeting, in April, was the first regular meeting to be held in the Nova Scotia Museum with the main part of the evening devoted to a second demonstration of the planetarium. Much of the business was conducted by Don Crowdis, who pointed out the advantages of moving into the museum as a regular feature so that the museum could help the society and

vice versa. It appeared about this time that dues were not being collected all that readily.

Volume II, No. 3 of the Star Gazer gives a review of the meetings held in May and June , the autumn session which was open to all, and finally a plea from Mr. M.H. Goodwin for everyone to dig in and help the society. It seemed to be a low ebb, as this was the last issue of the Star Gazer.

I think that I am the only one remaining from the original R.A.S.C. group here, but I think that the following shows where it was held and how it ran. The meetings were held in the center of the planetarium. after the address and the business at hand, the projector was wheeled out to the center of the floor and Mr. John Hault ran the planetarium show. Now this is what divides the real astronomers from the rest of us.

He ran the show with a slow dimming of lights and the birds chirping and you could see the outline of St. Mary's Basilica, St. Matthew's Church and between them, the old Capitol Theatre and then up Spring Garden Road to the few building that were visible then. The whole Halifax skyline was apparent as the sun set and the stars came out. John Hault could talk up a really inspiring show. Let me recommend to all of you to go to the planetarium sometimes and see if you could run it. I assure you that I could not. I did it three times and stumbled over my words. I couldn't distinguish between Aldebaran and Arcturus and I made a mistake of calling galaxies constellations, and other such things, trying to make the whole thing lively and amusing, but really bungling the whole show. Now a real astronomer, like the late Frank Hogg, the husband of Dr. Helen Hogg, had a real gift for showing the big telescope in Richmond Hill on Saturday nights. He could ramble on until we were in stitches. I remember him pointing out to us all in those days that this big telescope had a mirror 74 inches across and was the third largest in the world or something like that, and that it had only a dime's worth

of silver on its surface, but for an introduction for an observing night, this was just the thing to get us all in the mood.

Our observing sessions in the early astronomical society consisted mostly of going out to the neighbourhood of Lt. Commander Mary King's residence in Ferguson's Cove. This was a desolate slum in those days, except for Mary King's splendid little house. For the most part, it was on a par with Africville - little shacks perched on the rocks and the water supply being a tiny stream that ran down the hill to the sea - but it was dark and we would go there after sunset, and walk up a little trail to York Redoubt. We didn't know it was York Redoubt in those days. It was just a little summit with a wall and there was one remaining cannon still in place on the wall, which was very rusty, but when it got cool and we wanted to warm up, we could move the cannon from side to side and up and down, though it certainly couldn't have been fired.

I can't recall us having any astronomical instruments. Although the big brass 3.5 inch telescope was available to us, we never took it on any expeditions. There were some with binoculars, though I think that they were mostly young people. The skies were magnificently dark. There were no satellites in those days and mark this, there was only one blemish in the whole skyscape and that was the flame at the top of the tower at the Imperial Oil refinery way across the harbour. That was so bright that you had to shield your eyes from it. After our observing sessions, we usually rambled down the hill, over the rocks, and down to Mary King's house where we would drink cocoa and have some cookies.

Dr. R.L. Akin was my senior in the R.A.S.C. in those days. I think he was either president or secretary at one time or another and I think he gave us a talk but I have forgotten the subject matter. Certainly Mary King was quite active in those days as she had been making many observations of occultations and became so well known for it that Halifax became one of

the standard viewing stations. She also gave a splendid talk on Easter Island and it was while on this expedition that she obtained a Questar, which in those days was a remarkably good instrument. The last time I talked to her on any astronomical matter was after she had watched comet Kohoutek in the early pre-dawn sky and described to me how spectacular it was. Certainly her house would have had a magnificent dawn view.

What leads to the decline and fall of such a splendid organization as an astronomical society? I had only arrived in Halifax in 1961. Barry Matthews and John Holt were active in the society as well as Dr. Bob Akin. I think Mary King came frequently I can't recall the names of any of the lecturers. Towards 1966, the only thing that happened was a demonstration of the planetarium by John Hault and then the society folded. What our relationship was with Royal Astronomical Society, I don't know but somehow we owed them \$250 and I have no explanation of where that went. There were four intervening years during which the Burke-Gaffney Observatory and the Saint Mary's astronomy department became well established and on September 18th 1970, the newly revived Halifax Centre of the Royal Astronomical Society of Canada reconvened.

The organizer, Barry Matthews was elected chairman while Peter MacGuigan was secretary-treasurer. At the second meeting, Dr. Roy Bishop spoke on telescope optics and everything was off to a good start. On November 20th, we had a visitor from Dalhousie, Dr. Robert MacCorkell, who spoke on the origin of the planets. On October 23rd, 1987 the headline in the newspaper read "Will name proposed observatory for Jesuit, Governors agree unanimously". And so, Father Michael Burke-Gaffney Observatory will be built on top of the high-rise residence when it is finished.

From there on the newsletter became NOVA NOTES which it has remained till this day. The person that succeeded Barry Matthews was John Shaw. The vice president and co-ordinator was

Walter Zukaskas. A most notable meeting at that time in December of 1970 was a talk by David Levy on comet hunting. David was a distinguished member of the early second Halifax Centre and was a student of English at Acadia University. Roy Bishop must have been one of his science professors. Along with Sherman Williams, an elementary school teacher in the valley, these people became the valley spearheads for the new Halifax Centre. Certainly, David Levy gave some notable addresses including "Astronomy with Children". Although David started out as an English major, he is now a very respected astronomer. He spoke well on comet searches and he has searched patiently for years and finally found one late last year, Comet Levy-Rudenko.

The first general assembly of the R.A.S.C. was held in Halifax in 1975. I believe that I exhibited my stamp collection of Copernicus stamps then. The collection is now in the stairway leading up to the Burke-Gaffney observatory. We had the general assembly again very soon thereafter in 1980. This was the first joint meeting of the R.A.S.C. with the C.A.S.C.A. That general assembly, I think, was the most notable success as it was so much larger than any of the previous ones. This was a time when amateurs and professionals could talk together. The model of the Canada-France-Hawaii telescope was a great hit and I think that my model of Stonehenge was well appreciated. Bob Levy was there with his car license CYG 433, which of course, is this monstrous phenomenon in the sky which we really haven't explained yet. Helen Hogg was marvelous at this assembly.

Despite a faltering start, it is clear that the Halifax Centre is well on its way in its goal of providing astronomy for everyone!

Dr. Murray Cunningham

JUPITER'S MOONS PLAY TAG

Now that Jupiter is well in position for observing all night long, it's worth noting that from now until next April, the Earth and the Sun will both lie very near the orbital planes of Jupiter's four largest satellites. As a result, observers from Earth will be able to see these moons eclipse and occult each other many times over the following months. What follows is a guide of these occurrences which are visible from the Maritimes for the period from September 1st to early next year, when Jupiter gets too close to the sun.

The first three columns give the Universal date and time for first and last contact for each event. These times can be converted to Atlantic Standard Time by subtracting 4 hours (3 hours during Daylight Savings Time). As an example, the event listed for Nov. 22 at 1:11 would occur at 9:11 P.M. on the night of Nov. 21. The events column describes the event with the moons numbered in order of their distance from Jupiter; 1=Io, 2=Europa, 3=Ganymede and 4=Callisto. Abbreviations are also used for the type of event: o=occults, e=eclipses, p=partially, t=totally, a=annularly. Thus 3o1p would be read as: Ganymede occults Io partially. The change in magnitude is give for a single moon if one is to be eclipsed, or for the combined light of both moons for an occultation. Magnitudes with a * next to them indicate events where the change in magnitude is more than 0.5. The distance column gives the moons' apparent distance in Jovian radii from the planets center at the time of mid-event. If this value is not enough to distinguish the moon(s) you are looking for, check the month by month section of your Observer's Handbook.

Note that this list was condensed from a larger list of events which was in the February issue of Sky and Telescope. The Sky and Telescope list itself did not include events that either occurred within 1.7 Jovian radii of the Jupiter or grazing events in which the

total drop in magnitude was less than 0.02 . So the next time you look at Jupiter and can't see all four moons, why not wait another 5 or 10 minutes and look again. You be able to catch an event that is not on this list!

Date	UT Start	UT End	Event	Change in Mag.	Dist.
9 4	2:21	2:37	3e2p	0.06	8.9
9 5	2:47	3:54	3o2P	0.10	5.3
9 6	5:40	6:07	1o4p	0.04	5.7
9 7	0:21	0:38	1e2p	0.97 *	6.6
9 11	2:40	2:56	3o2p	0.13	9.3
9 11	23:42	0:31	3o2t	0.48	1.7
9 14	3:15	3:29	1e2p	1.40 *	6.8
9 14	23:33	23:42	1o3p	0.06	5.9
9 19	2:12	2:18	3e1p	0.52 *	2.1
9 21	3:44	3:51	1o2p	0.03	5.8
9 22	3:12	3:27	1o3p	0.08	5.8
9 23	3:12	3:27	2e4p	0.30	3.3
9 23	3:54	4:01	1e3p	0.07	7.2
9 25	4:59	5:18	3e4a	1.40 *	16.2
9 26	4:56	5:03	3e1p	1.00 *	2.9
9 30	23:20	23:37	4e3a	0.80 *	13.3
10 9	0:15	0:24	1e2p	2.10 *	7.0
10 10	23:35	23:43	1e4p	0.37	8.2
10 16	2:41	2:49	1e2p	1.30 *	7.0
10 20	23:16	23:20	2e1p	0.40	2.7
10 26	2:43	2:58	3e4p	0.31	7.5
10 28	1:29	1:34	2e1p	0.59 *	3.0
11 7	22:20	22:30	3e1p	0.45	5.8
11 9	22:58	23:03	1e2p	0.20	6.5
11 15	1:44	1:55	3e1p	0.33	5.9
11 15	23:42	0:01	3e1p	>4.00 **	5.8
11 17	1:18	1:22	1e2p	0.04	6.3
11 22	1:11	1:18	3o1p	0.10	5.6
11 28	23:32	23:38	2e1a	0.67	3.9
12 18	22:05	22:09	1o2p	0.39	4.3
1 2	23:55	0:02	2o4p	0.03.	8.5
1 6	22:52	22:55	2o1p	0.08	4.0
1 6	23:57	0:01	2e1p	0.04	4.7
1 11	22:35	22:40	3o1p	0.48	2.3

MISCELLANEOUS NOTICES

MESSIER MARATHON UPDATE

One of the pleasures of being editor is that from time to time, one gets the privilege to announce an accomplishment which was performed by one of our members. In this instance, the feat performed was the first completion of our Messier Marathon, which was started a while back, both to generate some enthusiasm for observing sessions, and also to help develop observing skills. Congratulations go to Bill Thurlow, who in the remarkably short period of time from January to May of this year, was able to observe all of the Messier objects. Bill did this with the use of a pair of binoculars as well as his Celestron C8, and was able to make all of his observations from the balcony of his home in Digby.

Those of you who either haven't finished or (heaven forbid) haven't started yet, don't give up now. Remember that although it is nice to be first, the challenge is to be able to do it.

ALIGNMENT OF JUPITER'S MOONS

Once again, Belgian astronomer Jean Meeus has come up with some interesting events which can be observed with modest telescopes. At 10:56 P.M. Atlantic Daylight Time on August 29th and again at 1:35 A.M. on September 6th, three of Jupiter's moons will form a very small triangle in the sky. On the first date the triangle will be only 4" across and with a low power the three moons will appear as a single object. Because of their close proximity and the human eyes ability to measure the relative positions of objects very well, the movement of the moons will be noticeable over a period of several minutes. On the later date the moons will form a triangle which is 8" across.

Halifax Centre

RETROGRADE MOTION SIMULATION

I have written a small BASIC program for my Commodore 64 to simulate the retrograde motion of Vesta. The data for Vesta's positions were obtained from the 1985 Observer's Handbook (see "Ephemerides for the Brightest Asteroids 1985" by Brian Marsden pp 121-123). The illustration on page 121 shows the retrograde loop of Vesta in 1985.

Running the program will show Vesta's position over a period of six months in just seconds. Removing the delay in line 60 or lowering the stopping value for the loop (in this case 1000) will allow the motion to be speeded up. Increasing the stopping value will slow the motion. The program consists of five routines.

STAR PRINT plots five of Virgo's stars for reference.

DATE PRINT reads the month and day from the DATA statements and displays the date on the screen.

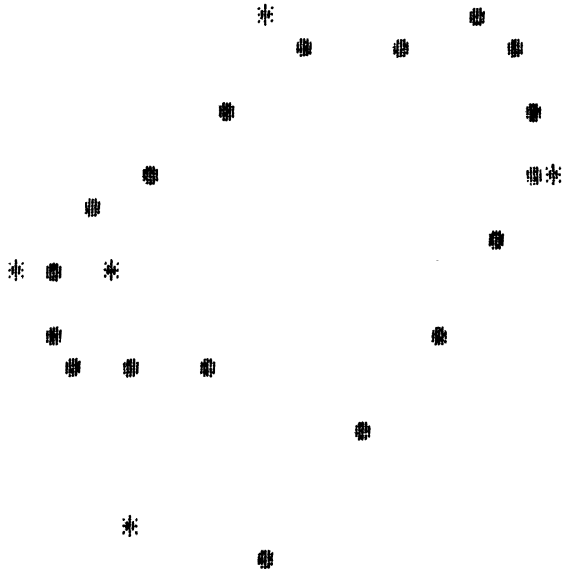
R.A. CALC converts the right ascension data to a number from 0 to 39. This will be Vesta's horizontal position. Similarly, DEC. CALC converts the declination data to a value from 0 to 24 for the vertical position. The scale that results from this is one row or column equals 0.5 degrees.

Finally, ASTEROID PRINT places a circle on the screen to represent Vesta. The resulting loop looks distorted vertically, because each character is higher than it is wide.

While the program was written for the Commodore 64, suitable modifications should allow this program to be run on other computers. Also, the motions of other asteroids can be simulated by changing the DATA statements. However, the declination and right ascension calculations should be modified to assure that the asteroid gets printed on the screen.

Below is a screen print after all positions have been plotted, followed by a listing of the program.

JULY 24



Program Listing:

```
10 REM --- VESTA ---
15 REM REF: OBS HANDBOOK 1985 PP.121,122
20 POKE 53280,0: POKE 53281,0
25 PRINT "☐"
30 GOSUB 100: REM "STAR PRINT"
35 FOR D=1 TO 18
40 GOSUB 200: REM "DATE PRINT"
45 GOSUB 300: REM "R.A. CALC."
50 GOSUB 400: REM "DEC. CALC."
55 GOSUB 500: REM "ASTEROID PRINT"
60 FOR I=1 TO 1000: NEXT I
65 NEXT D
70 STOP
100 REM --- STAR PRINT ---
110 FOR D=1 TO 5: READ S
120 POKE S,42: NEXT D
```

```

130 RETURN
140 DATA 1378,1163,1475,1470,1796
200 REM --- DATE PRINT ---
210 READ MTH$: READ DAY
215 PRINT" "
220 PRINT"MTH$;"MTH$;" ";DAY
230 RETURN
300 REM --- R.A. CALC. ---
310 READ HOUR: READ HMIN
320 RA=(HOUR+HMIN/60)*15-200)*2
330 RA=INT(40-RA+.5)
340 RETURN
400 REM --- DEC. CALC. ---
410 READ DEG: READ DMIN
420 DEC=(DEG+DMIN/60+9)*2
430 DEC=INT(25-DEC+.5)
440 RETURN
500 REM --- ASTEROID PRINT ---
520 POKE 1024+RA+40*DEC,81
540 RETURN
800 DATA "FEB", 4, 14, 7.7, -3, -33
810 DATA "FEB", 14, 14, 15.7, -3, -34
820 DATA "FEB", 24, 14, 21.4, -3, -19
830 DATA "MAR", 6, 14, 24.3, -2, -50
840 DATA "MAR", 16, 14, 24.2, -2, -7
850 DATA "MAR", 26, 14, 20.9, -1, -14
860 DATA "APR", 5, 14, 14.8, 0, -16
870 DATA "APR", 15, 14, 6.5, 0, 38
880 DATA "APR", 25, 13, 57.1, 1, 21
890 DATA "MAY", 5, 13, 48.1, 1, 45
900 DATA "MAY", 15, 13, 40.6, 1, 47
910 DATA "MAY", 25, 13, 35.5, 1, 25
920 DATA "JUNE", 4, 13, 33.3, 0, 41
930 DATA "JUNE", 14, 13, 34.1, 0, -21
940 DATA "JUNE", 24, 13, 37.7, -1, -38
950 DATA "JULY", 4, 13, 43.8, -3, -6
960 DATA "JULY", 14, 13, 52.2, -4, -42
970 DATA "JULY", 24, 14, 2.5, -6, -24

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Sidney Robertson

1985 Camping Observing Weekend

This year's COW was held at Kedjinkujik National Park on August 9, 10, and 11. On the Friday, we had a spot in the group campground there, but we had to move Saturday since the Boy Scouts had the area reserved for the remainder of the weekend. Although the regular campground was full, the Parks Canada people arranged for us to use a special spot in the park normally reserved for staff. This area was actually superior to the group campground for observing, since the horizon was better (lower trees).

On Friday, we had twenty-three participants, including members, families and guests. There were representatives from the Halifax/Dartmouth area, Bridgewater, Digby, and the Valley. We spent the evening setting up camp, re-acquainting ourselves with each other, and talking telescopes. The weather was uncooperative, being partly cloudy, but we did catch a few glimpses of Jupiter, the Milky Way, and a few deep-sky objects.

The next day, we lost a couple of guests, but were pleased to welcome one of our more distant members from St. John, N.B. and his wife, who took the ferry over to join us. The day was spent hiking, swimming, canoeing, eating, or just being lazy (that's me).

On Saturday evening, we had agreed to do a public star-gazing session for the Park, so we transported our telescopes to the beach at Jim Charles point and set up there at 21:00. We had nine telescopes in all, including three small refractors, a C-90, a Meade 6" Newtonian f/8 reflector, a couple of C-8's, a home-assembled 8" Newtonian f/5 reflector, and a home-assembled Dobson-type 10" f/5 reflector. This impressive array of optical gear was used to view Jupiter and Saturn, some of the brighter deep-sky objects and some double stars. We handed out star charts (courtesy of the St. Mary's Department of Astronomy), pointed out some of the major constellations and stars, explained the nature of the Milky Way, pointed out the planets, and talked about the Perseid meteor shower (1 day before the maximum). After the initial oral presentation, the group of over 100 persons split up and visited the various telescopes, in a jumble of questions, answers, and delighted exclamations at the views offered. Many thanks to all the members of the Centre who pitched in and helped out that night.

After the public session, we returned to our camp at about 23:00. We did a little observing in a spectacularly dark sky, but some clouds rolled in. Some die-hards stayed up, yakking and hoping for improvement, which finally came. The sky gradually cleared, but remained a little hazy. We saw a lot of Perseid meteors, looked at Jupiter's clouds and Red Spot, saw some incredible views of the Ring Nebula, the Great Cluster in Hercules, and the Dumbell Nebula, and split the double-double of Epsilon Lyra. We also found the periodic comet Giacobini-Zinner in Perseus (magnitude 9.5 but clearly visible with a fan-shaped tail). The Moon, past Last Quarter, rose about 1:30, but this did not dampen our enthusiasm (that is, the three that were still up).

I had a personal frustrating experience trying to find the last unobserved Messier object on my list, M75, a small globular cluster in Sagittarius. It was setting in the southwest in a hazy and Moon-polluted sky, and I just couldn't find the darned thing. Next time, I guess.

All in all, the general reaction was that we had a fine weekend, and everyone is looking forward to the next occasion. We were even talking of having more than one per year. Of course, we have our regular monthly observing sessions at Uniacke House, and I expect a good turnout next time, based on the interest shown during the COW.

- Dave Chapman

Calgary Centre Planning Halley Tour

The Calgary Centre has organized a trip to the southern hemisphere for next year's appearance of Halley's Comet. The trip has been planned to include not only a great view of Halley's Comet, but also some other items of astronomical interest as well as regular sightseeing. The tour will run from April 5th to April 26th.

It will include meeting with both amateur and professional astronomers in Australia, a visit to the Siding Spring Observatory, and extensive sightseeing including the Great Barrier Reef. Arrangements have also been made to transport several large, fully equipped telescopes to Australia as well as the use of darkroom facilities at the observing site.

The cost, based on double occupancy, is \$4305. Anyone interested in obtaining a detailed itinerary etc. should contact the editor as soon as possible.

BOOKWATCH

This issue of BOOKWATCH is a little extra special as the book reviewed is the handiwork of two fellow R.A.S.C. members. The book, "The Cambridge Deep-Sky Album", is a joint effort between Jack Newton and Philip Teece, both of the Victoria Centre. Most of you are probably familiar with the astrophotography of Jack Newton. His photographs appear regularly in "Sky and Telescope" and "Astronomy" magazines. Philip Teece writes a weekly astronomy column for a Victoria area paper and has also published articles on deep-sky observing. The two of them have joined efforts to produce a book that is both a visual as well as informational treasure trove.

The book contains a collection of 126 full color plates, most of which were taken with Jack Newton's homebuilt 40 cm telescope using a cold camera which was made by another Victoria Centre member. The objects chosen to be displayed form a veritable "Who's Who" of the night sky. Approximately 60 of the objects are from the Messier catalog, while the rest are NGC objects. To aid in finding a particular object there are two indices. One is in tabular form and lists all of the objects either by NGC number or Messier number. The second consists of two maps of the sky found on the inside of the covers, which show the sky locations of all of the objects as well as the page number on which their photograph can be found.

The greatest feature of this book is that all of the photographs are reproduced at the same scale, allowing for a most interesting comparison of objects of either the same or of different types. This approach not only allows a person looking for an object which they have never seen before to get a fairly good idea of what to expect, but it also allows them to compare its size with that of other objects with which they are more familiar. Most of the photos are accompanied by a sketch showing the object in question centered in a set of right ascension and declination "crosshairs".

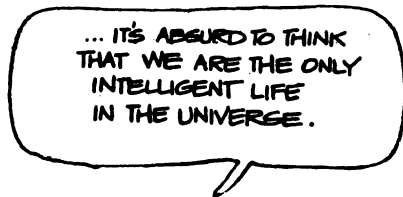
Each photograph is captioned with a large colored block (pink for galaxies, yellow for clusters and blue for nebulae) in which large type gives basic information on the object. This information includes such things as Messier or NGC number, any common name the object may have (i.e. The Ring Nebula), the nature of the object, its co-ordinates, and its magnitude. Additional text follows the photographs and contains more detailed information which varies from object to object. This text may include notes on the objects history, astronomical significance, appearance, etc. The text is well written and I found it to be as interesting to read as the photographs were to look at.

The book also has as a preface, some notes on the telescope and the cold camera used which would be of interest to anyone who either has or plans to build a home-made telescope. My one regret about this book, was that I had hoped to find all of the Messier objects in it. Perhaps in the future, Newton and Teece might endeavour in this direction as I am sure that such a volume would be well received. In the meantime, for anyone who has ever looked at deep-sky objects or photographed them, I would readily recommend reading this book to see an excellent example of how science and art can be brought together.

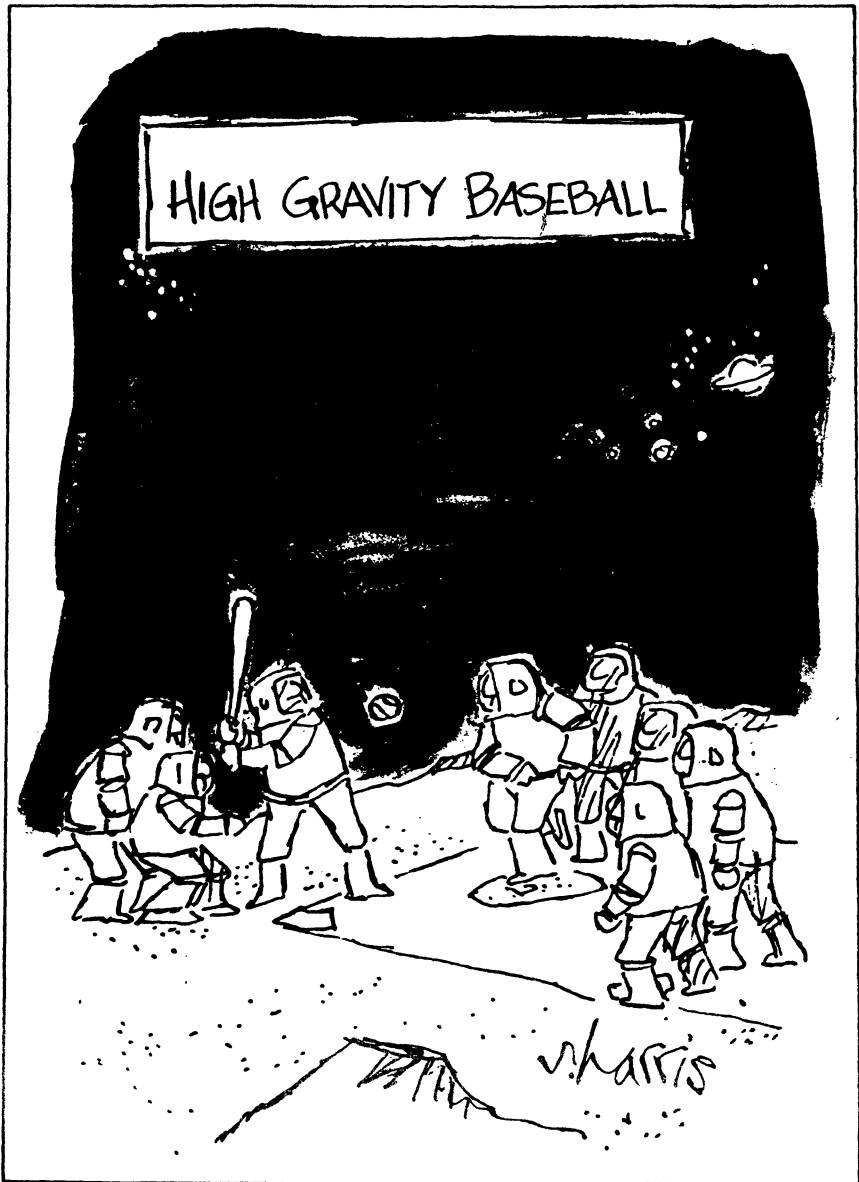
"The Cambridge Deep-Sky Album" is published by:

The Press Syndicate of the
University of Cambridge
32 East 57th Street
New York, New York 10022
ISBN 0 521 25668 2

Pat Kelly



reprinted from
"B.C. Frucking on Down"



reprinted from the April issue of
Science 85

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NOVA NOTES is published bi-monthly by the Halifax Centre of the Royal Astronomical Society of Canada in January, March, May, July, September and November. Articles for the next issue should reach the editor by SEPTEMBER 21st 1985. Articles on any aspect of astronomy will be considered for publication. The editor is:

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477-8720

NOVA NOTES is printed courtesy of the
Nova Scotia Museum

R. A. S. C. - HALIFAX CENTRE 1985 CALENDAR OF EVENTS

February 1985

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

March 1985

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17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

April 1985

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14	15	16	17	18	19	20
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28	29	30				

May 1985

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26	27	28	29	30	31	

June 1985

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July 1985

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14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Key to calendars:

Meetings: outlined

Special days: shadowed

Observing sessions:

bold and underlined

Observing session alternates:

italics and underlined

August 1985

S	M	T	W	Th	F	S
					1	2
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24	25	26	27	28	29	30
31						

September 1985

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28	29	30				

October 1985

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November 1985

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30						

December 1985

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21	22	23	24	25	26	27
28	29	30	31			

Observing sessions:

- February 16 observing is in Bridgewater
- March 16 observing of galaxies
- April 14 is an occultation at 10:10 p.m. AST
- May 18 observing is in Bridgewater
- August 9, 10, 11 camping observing weekend
- Perseid meteor shower (24-day old moon)
- November 16 is the Leonids (5-day old moon)
- December 14 is the Geminals (2-day old moon)

Meetings:

The 3rd Friday of each month at the N.S. Museum.

Social events:

- March 6 Shapley lecture in Astronomy at St. Mary's University.
- April 27 is International Astronomy Day.
- May 18 in Bridgewater - a display of meteor flies and a speaker.
- June 28 - July 1 is the General Assembly. Banquet will be on a Friday in May - yet to be announced - watch for it!
- October 1 - 1986 Memberships due.
- October 18 is Nova Scotia Astronomy Day - meeting and observing at the museum.

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