

FROM

HALIFAX CENTRE R.A.S.C.
1747 SUMMER ST.
HALIFAX, N.S.

TO

ROYAL ASTRONOMICAL SOCIETY,
352 COLLEGE ST.,
TORONTO, ONTARIO.

Feb 73



NOVA NOTES



44° 38' N
63° 35' W

HALIFAX
CENTRE

NOTICE OF MEETING



Date: February 16, 1973
Place: Lecture Theatre 'B'
Sir Charles Tupper Medical Building
Dalhousie University
Halifax, N.S.
Time: 8:00 P.M. Sharp
Topic: Big Bang Cosmology
Speaker: Prof. P.J.E. Peebles
Princeton University

(Also, Prof. Peebles will present a talk
in room 101 Sir James Dunn Bldg. at 4:00 P.M.
on Feb. 16.)

All members and guests are most welcome at both lectures.

Halifax Centre

R.A.S.C.

The Nova Notes are printed, thanks to the
goodwill of the Nova Scotia Museum.

Editor's Page

Stop the presses!!! It keeps ringing in my ears!
But it's this way, because we want to present the best to you,
at each and every meeting. Nova Notes is intended to be
descriptive, yet interesting to the most amature, as well as our
professional members. But it's what you make **them**.

The idea is, that ALL astronomers, weither professional
or beginner, come together, to form a common pool of knowledge,
for the benefit and enjoyment of all hands.

Therefore let me once more register this plea to anyone
interested, to contribute just ONE of your many astronomical
experiences, for all to enjoy and/or learn from.

And now the "did you know" line...

Did you know, that if EVERY member gave just ONE artical
ONCE a YEAR, I could run TWO of them each month? Now do you
understand why I ask, " Is there ANYONE with one contribution?"?
So how about giving it an 'E' for effort and getting that
comet into print, huh?

Peter Edwards
The Editor

Place in the sun from UN 500 years after birth

Polish astronomer sees Copernicus as founder

Nicolaus Copernicus was trained in medicine, economics and religion. But he is remembered as the father of modern astronomy.

To Wilhelmina Iwanowska, director of the university observatory in Poland which bears Copernicus' name, the medieval astronomer was even more than that.

"I see in him the founder of modern science, not only astronomy. Without him, there would not have been Kepler and Newton. Science is developed in a chain reaction. He made that first very important and most difficult step."

That step—made nearly 500 years ago—was to place the sun, rather than the earth, at the centre of the solar system. This possibility had occurred to the ancient Greeks; but Copernicus was the first to back up the idea with scientific observations.

"Between the idea and the scientific theory is a long way," said Dr. Iwanowska. "Ideas are good, but you must confront them with observations. That was what Copernicus did."

Johannes Kepler was a convert to the Copernican model of the solar system. Using it as a starting point, he worked out important laws describing the movement of planets.

The British scientist Isaac Newton later built on this foundation to formulate basic laws of motion, mechanics and gravity, which are among the most significant scientific findings ever made.

Newton's laws were eventually modified by Einstein's theory of relativity. Where the chain reaction will end, no one knows.

The United Nations has declared 1973 Copernicus year. Next month is the 500th anniversary of the Polish astronomer's birth. To mark the event, Dr. Iwanowska is touring Canada as a guest of the National Research Council and the Royal Astronomical Society.

She was in Toronto to deliver two lectures, one to the Polish community Friday night and one in English at the University of Toronto convocation hall Saturday

Dr. Iwanowska is director of astrophysics at the university in Torun, Poland, where Copernicus was born. She is grandmotherly in appearance, soft-spoken and dignified. But she is first a scientist. When talk turns to astronomical theories, her eyes light up, her voice quickens and she sits forward in her chair. Her hands begin to move, orchestrating the conversation, describing the motions of planets and stars.

She is one of those people who knew when she was quite young exactly what she wanted to do with her life. "One day it was quite clear to me that I would go into mathematics."

Astronomy was the hobby, the sideline that ultimately came to occupy 45 years of her life.

Soon after she finished university, she was asked to join the observatory at which she is now director.

But in her free time, the

work in astronomy continued. "I had my observational materials from former years. I worked on them."

Dr. Iwanowska said being a woman did not hinder her in pursuing her career, but she admitted that in the beginning "my plans were quite modest. I would be a teacher of mathematics in secondary school, and in my free time, learn astronomy. I did not think I'd be a professional astronomer. There were not many positions in science at that time."

Her career spanned some of the most significant and dramatic advances in astronomy — the big telescopes, the advent of space travel and astronomical satellites.

In many ways, those things got their start in science with Copernicus 500 years ago.

The Polish scientist outlined his model of the solar system in a book called On the Revolutions of the Celestial Spheres published in 1543. Much of the detail was wrong,

but the general picture of the solar system was much closer to reality than the theories prevailing at the time.

Thirty years of observation apparently convinced Copernicus that these earlier theories were wrong, Dr. Iwanowska said.

It is said Copernicus never lived to see the final version of his book. He was an old man when it was written and was on his deathbed when the book was finally published. He probably never knew that an unauthorized preface, attributed to him, appeared in the first edition of the book.

This preface was written by one Oslander, a Lutheran preacher, who anticipated trouble with the church. It stated that Copernicus' model was merely a convenient mathematical system for calculating the positions of the planets and was not meant to be taken as a description of reality. But Copernicus was "quite aware of what he was

doing," Dr. Iwanowska said, and did believe his model represented the real situation.

"Oslander maybe had quite good will. He just wanted to diminish the opposition from the church."

Copernicus' friends saw to it that the preface disappeared in the second edition.

As it turned out, the church's opposition to the Copernican theory did not surface until about 70 years later, when the Italian astronomer Galileo Galilei was forced to recant his belief in the Copernican system.

Dr. Iwanowska said that in Copernicus' time "the Church accepted the theory with great interest. Copernicus, in fact, dedicated the book to Pope Paul III." She said it was only during the 17th century, when religious reformation and rebellion were brewing, that the church anxious to prevent anything from diminishing its authority, took issue with Copernicus' views.

Report of lectures given by Dr. Wilhelmina Iwanowska in Toronto. Taken from the Globe and Mail.

Contributed by Howard Freeland



From The Mail Star, Halifax January 7 1973

Your president of Halifax Centre of The R.A.S.C. seems to making a joke with Dr. W. Iwanowska of The Nicholas Copernicus University, Torun, Poland. Next to her is Mrs. William Bridgeo, wife of the dean of Science, Saint Mary's University. And of course on the far right is our beloved Rev M. W. Burke-Gaffney.

* * * * *

A letter has been received from the Ottawa Centre announcing the 1973 General Assembly. Members of the Halifax Centre are invited to attend. Note the following:

- a) The 1973 General Assembly will not be held on the usual holiday weekend; it will be held on May 25 - 27.
- b) Student members are encouraged to attend; the usual "package deal" will be available.
- c) Limited accomodation for students in private homes might be available; students interested must apply through the Halifax Centre executive, well before the date of the Assembly.

The February issue of the Journal will contain a tear-out section for you to mail for more information.

Observing at the Burke-Gaffney Observatory

Several members of the Halifax Centre have already made use of the 16-inch reflector at the Burke-Gaffney Observatory on Saturday evenings. We wish to encourage you to use the telescope, and we are suggesting the following plan to help insure that if you come over to observe, the Observatory will be open and available for you to use.

The Observatory hosts a public tour each Saturday evening, beginning at 7 pm during the winter months. By 8:30, most visitors have left. If you would like to observe, we suggest you call St. Mary's to reserve some telescope time. Otherwise, after visitors have left, we will settle down to begin our evening's work. Therefore, if no one has called to reserve some time, we will begin our regular observing program as soon as visitors leave (depending on the quality of the night). Once some projects have begun (e.g. photoelectric photometry), one must continue for three or four hours in order to obtain any useful results, and you will have lost your chance!

You may wish to consider several types of projects. We have adaptors to accept your single-lens reflex 35 mm camera, for shots of the moon, or planets, or the Orion nebula, etc. Within the next month or so, we hope our camera and x-y guider will be ready to install, and you will be able to obtain 4 x 5 negatives, to search for variable stars, etc. Or you are welcome to just come and have a look!

David L. DuPuy

Burke-Gaffney Observatory

Chart Available

By Peter Edwards

The Graphic Time Table of the Heavens, which appears on the oppsite page, was taken from the Sky and Telescope, January issue's centre-fold. While this is only half the size of what appears in the journal, it makes, to some degree, an appatizer for you when next, in the library.

Wall charts are also availible by writing to the Maryland Academy of Sciences.

HOW TO USE...

Listed down the sides are the months and weeks, (date by date). Across the top and bottom are $\frac{1}{2}$ hours (ie. one square equals one week (down) by $\frac{1}{2}$ hour (across). From here you should have no trouble, with the aid of a strong magnifier, to roughly estamate the daily events in the sky.

WARNING: Reader, of said chart, is subject to intense frustration!

REMEDY: Said reader may obtain said chart in wall size, of about

3'X4' .

MARYLAND ACADEMY OF SCIENCES YEAR 1973

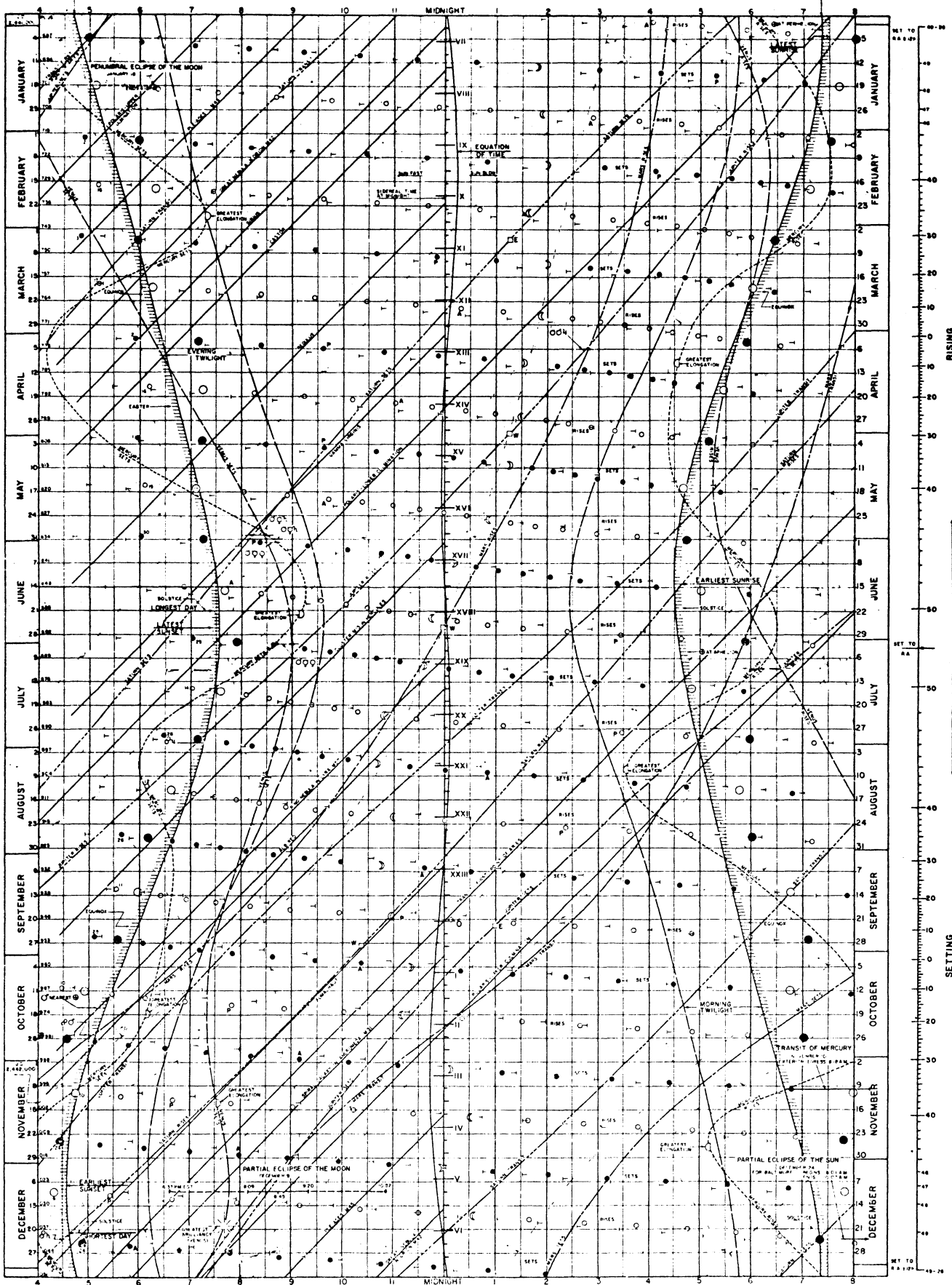
LOCAL TIME

SUNSET

PM

AM

SUNRISE



LOCAL TIME

PM

AM

CALCULATION AND MASTER DRAWING PAUL S. WATSON

DRAFTSMAN JOSEPH W. RUITER, JR.

ORIGINATOR CARROLL F. HERRMAN, 1937

TIME SCALE
DIVISION 15 MINUTES

SYMBOLS:

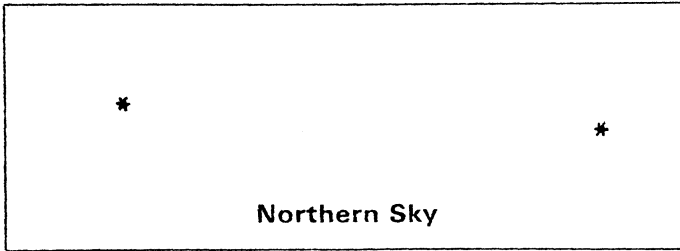
- | | | | | | |
|---|---------------------|---|-----------------------------|---|---------|
| ☉ | NEW MOON | ☽ | GREATEST BRILLIANCE (VENUS) | ♁ | JUPITER |
| ☾ | GREATEST ELONGATION | ☾ | FIRST QUARTER | ♃ | MERCURY |
| ☽ | QUADRATURE | ☾ | FULL MOON | ♄ | MARS |
| ☽ | OPPOSITION | ☾ | LAST QUARTER | ♅ | SATURN |
| ☽ | | ☾ | CONJUNCTION | ♁ | EARTH |

THE MARYLAND ACADEMY OF SCIENCES

The following article was found in 'PUNCH', Dec. 20th 1972 and was entitled:- "The Night Sky in London". I'm sure that most Canadians will be unfamiliar with the London sky line, but the problems that city Astronomers have are universal and so I hope you enjoy this little farce, The Night Sky in London - by Miles Kington

Well, for the London astronomer December is never one of the most exciting months. The thrills of November, with its clusters of rocket flares and raging fires about the 5th, have gone for another year; the winking red and white lights of the private aircraft off to sunnier climes for the winter have mostly all departed by now. Yet for the enthusiastic astronomer who knows where to look, there's still plenty to keep him fascinated, and who knows ? you may even be lucky enough to spot the far-off glow of a jet airliner blazing in some distant suburb.

Basically, the northern sky will look like this.



The celestial light in the upper left of the chart is the familiar beacon atop the Post Office Tower, now easily visible in the winter months again. Not perhaps the most sensational of heavenly bodies, it is readily distinguishable from other flashier galaxies which invariably disappear at about midnight. The secondary object to the right is the comparatively new phenomenon, the light at the apex of the new Stock Exchange. Scientists are still not quite sure how vast masses like the new Stock Exchange come into being; the current theory is that, as the result of enormous pressures building up, the usual so-called "Planning Regulations" are broken open, allowing the spontaneous growth of tremendous volumes of concrete. Both these heavenly bodies will be visible everywhere, except in parts of Essex where they will be in eclipse.

There is one seasonal feature you should look out for, by the way, which appears only in December.

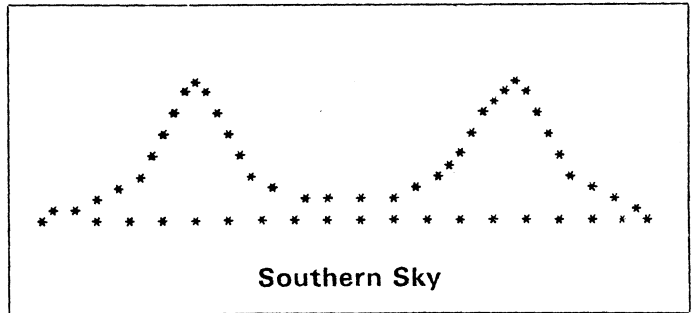
Curiously, it is made up of red, green and white lights, it is seen only over empty areas cleared for building and it looks generally like this:



The scientific term for this process is Public Relativity,

and the objects produced by it always disappear without trace in a week or two.

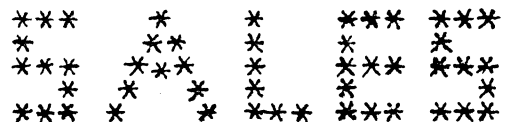
Now, a look at the southern sky, and this month I'm going to draw your attention to a feature which is not noticed perhaps as often as it should be. To me, it's one of the most attractive constellations in this part of the hemisphere.



I expect most of the experienced ones among you will have recognised the so-called "Albert Bridge" complex. Observation over many years has given us a pretty clear idea of what the Albert Bridge must be like. About ninety feet away from Earth, it's a cold, bleak, windswept place with no vegetation at all; it's doubtful if humans could survive for longer than a few minutes in the awful conditions reigning up there. It is most easily visible from Chelsea. In fact, when the inhabitants of Chelsea are returning from their travels and they first spot the "Albert Bridge" with the naked eye, it is generally a sign for them that they are about to return to civilisation.

Before I finish, I would like to thank all those of you who have written in claiming to have sighted so-called "stars." These, of course, are the legendary faint lights which are supposed to lie beyond the normally visible heavens in furthest space. No scientific theory has ever been put forward to support their existence, I'm afraid, and every "authentic" sighting of a star has always turned out upon examination to be explainable simply as an aircraft light, a new advertisement, a film premiere or similar. Sorry, but there you are—if a London astronomer goes looking for "stars", he's wasting his time.

Next month: January and the return of



Contributed by Howard Freeland