

# THE SPECTRUM

Newsletter of the Buffalo Astronomical Association Inc.

Published Bi-Monthly

Buffalo, New York

Jan - Feb, 1996

## MEETINGS NOTICE

FRIDAYS: JAN 12, FEB 9

**January 12th: "Video Astronomy"** - BAA member Gene Witkowski has been using a variety of inexpensive video cameras for superb lunar and planetary photography. Gene will discuss the cameras, shooting techniques, image enhancement and problem solving. He says it's easy to do -- come and find out!

**February 9th: "Stump the Roundtable"** - Four or five members will take on all members' questions from absolute magnitude to the zodiac; theoretical to observational astronomy; and history to instrument building.

Meetings: 2nd Fridays @ 7:30 pm Sep-June.  
Location: New Science Building Auditorium at  
Buffalo State College on Elmwood Ave.

We hope to see you at these meetings.

As usual refreshments will follow.

Bring a friend and your ideas!

**March 8, 1996: ANNUAL DINNER MEETING** - Please mark your calendars for the evening of March 8, 1996. Our dinner meeting will be held on this date at Ilio DiPaolo's Restaurant in Blasdell, NY. Menu is family style chicken/beef/pasta/salads/veggies.

Same price as last year: \$15 per person.  
6:30 pm Open bar -- 7:30 pm Dinner

**Your paid reservation must be in by Feb 24th** to Steve Kramer, 80 Donna Lea Blvd, Williamsville, NY 14221. Rowland Rupp will be our dinner speaker. Map in March SPECTRUM. Questions or for special

## Sometimes We Forget ...

what it was like to be a novice just getting started in this hobby. I am very thankful to a good friend who is a recent member of the Martz club for reminding me of this recently. Those of us who have been amateur astronomers for a long time tend to lose sight of how intimidating and confusing the acronyms, mysterious space coordinate systems and the simply massive amounts of information actually are to a beginner who just wants to be able to find the Milky Way or Saturn. Things we think of as very simple, can be very confusing without an adequate explanation.

I now know I am often guilty of this in my writing and that much of

what goes into this newsletter on a regular basis also suffers this failing. I was indeed fortunate to have this person be honest enough to admit to being confused and to be brave enough to specifically search me out for clarification.

I was especially fortunate since Bill Smith and I are just starting to write a book on astronomy especially for beginners. I will be asking this person, who quite probably saved this book from being just another ho-hum astronomy text, to help edit this book and keep us on the right track. Our heads can certainly be in the stars, but our feet must still be on the ground.

continued page 9

## MEMBERSHIP INFORMATION PACKET

We are in the process of generating a reasonably complete member's packet. So far when you've joined you have received the newsletter, open use of the facilities, library, star parties and member's viewing nights to name the basics.

**We aim to improve!** The heart of the above article will become the backbone of the BAA's member's packet.

Our target date of availability is the March meeting. The new guide will include:

- Club benefits -- Membership directory -- Recommended Books -- Recommended dealers
- Amateur's glossary -- Getting started guide from Astronomy magazine -- Viewing tips -- Messier Objects guide
- How to buy binoculars and telescope -- Summary of Sky & Tel's 10 year Backyard Astronomy articles
- Guide to the planets -- Simple lunar map -- PC planetarium program SKYGLOBE or similar ... MORE!

To help in this effort or to send your ideas and comments: call Bill Smith, 664-0841 or send them to 184 Creek Rd., Jamestown, NY 14701.

### MEETINGS CANCELLATION POLICY

If, for any reason, (most likely snow or ice storms), there might be cause for cancellation of the meetings of the B.A.A., tune your radio to either WBEN (930) or WGR (550). Also if Buffalo State College has been closed due to inclement weather, so will the meeting of the B.A.A. be cancelled.

### BEAVER MEADOW TELEPHONE

The telephone at Beaver Meadow, 716-457-3104, is for emergency use only at no cost. Local calls may be placed for a small charge - see the collection box by the phone. This phone cannot make long distance calls.

### REPRODUCTION NOTICE

"The SPECTRUM" is the official newsletter of the Buffalo Astronomical Association, Inc. Permission is hereby granted to any non-profit astronomical society, to reprint, in whole or in part, any article in this, or any other issue of "The SPECTRUM", provided credit is due this newsletter, the Buffalo Astronomical Association, Inc., date of issue and author of said article.

TAXACOM computer bulletin board - 716-896-7581  
for more information call Jack Empson at 716-745-3138

## MEMBERSHIP CORNER

Joe Orzechowski

### HAVE YOU RENEWED?

The Christmas holidays have come and gone. They're now just a fond memory of family get-togethers, gifts both given and received, good food and good friends. Now there's another important date which is quickly approaching. That's the deadline for renewing your membership in the BAA. I'd like to thank those of you who have already renewed for the 1995/1996 membership year but if you have not yet done so, you can see me at the next general meeting or mail your renewal to me at 125 Roycroft Blvd., Amherst, NY 14226. The dues are still \$20 for Family, \$15 for Individual or Regular, and \$10 for Student or Senior Membership. How can you find out if you haven't renewed your membership yet? Well, we include your membership status on the address label on every issue of the SPECTRUM we mail. If your name is followed by a (95), your membership will expire shortly.

### BENEFITS

A fair question to ask, especially if you are a newer member, is "What do I get for my money?" Well, in addition to receiving the SPECTRUM six times a year you have access to all the equipment, the reference library, and the computer at our Beaver Meadow Observatory. Talk to Dan Marcus or Bob Titran about what's available and how you can get to use it. As a member of the BAA you're also entitled to reduced subscription rates for Astronomy and Sky & Telescope magazines and discounts on orders from Sky Publishing. If you are interested in any of these, contact our treasurer, Steve Kramer, who can fill you in on the details.

I'd also like to remind all our members that I try to do more than just collect your dues once a year and keep the SPECTRUM mailing list up to date. As the Membership Chairman I'm also here to make sure you get the most out of your membership in the BAA. If you're interested in helping out at the observatory, would like to host a star party, would like some help deciding on which piece of astronomical equipment to invest in next, or have any other question about astronomy or the BAA, please stop by the "membership table" at the back of our meeting room and see me or give me a call at 716-839-9109 (evenings). I'll try my best to answer your questions and if I can't, I'll direct you to the people who can.



## MEMBERSHIP SERVICES

To renew, join, or for address changes or questions call or write:

Joe Orzechowski, 125 Roycroft Blvd., Buffalo, NY 14226  
(716) 839-9109

## TREASURER'S NOTES

Steve Kramer

Just a reminder that our annual dinner meeting will be on March 8, 1996. It will be held at Ilio DiPaolo's Restaurant in Blasdell, NY. Menu is family style chicken/beef/pasta/salads/veggies/desserts & more!

Same price as last year: \$15 per person.  
6:30 pm Open bar -- 7:30 pm Dinner

Since there are no menu choices to be made, there is no coupon to send in -- just your check payable to the BAA or Buffalo Astronomical Assn. **Your paid reservation must be in by Feb. 24th.**

Send to Steve Kramer, 80 Donna Lea Blvd, Williamsville, NY 14221. Map in the March SPECTRUM. Questions or for special menu requirements -- please call Terry Farrell (716-826-3738).



## BAA ANNALS

Rowland A. Rupp

**5 YEARS AGO** - Dr. David Meisel from Geneseo State College was our speaker in January 1991. Unfortunately, the SPECTRUM doesn't tell what Dr. Meisel's topic was to be. For February, former member Tom Dessert spoke on astrophotography, a field in which he excelled a couple of decades ago.

Leslie Martin wrote an article for the SPECTRUM entitled "What Time Is It?", that explains the different definitions of a day and a year that confront astronomers. If that question intrigues you, this article is worth reading. Ed Lindberg's "Instrument Notes" dealt with the problems that then plagued the newly launched Hubble Telescope. Ed's disgust with the incompetence shown in testing its mirror is quite evident. Edith Geiger submitted a profile of David Bull, and reported in "Spy and Tell" about an observing trip to Arizona made by Conrad Stolarski. Conrad eventually moved there.

**10 YEARS AGO** - The January 1986 meeting was about telescope making. Club members, including Bob Mayer, Ed Lindberg, Miro Catipovic, Matt Kantar and Carl Milazzo, took the floor and told about their experiences with different kinds of telescopes and accessories. Maybe we're due for another meeting of this type. In February we heard about the sky as seen from New Zealand. Dr. Zoram Pazameta from the Astronomy Department of the University of Buffalo spoke with authority -- he grew up in Christchurch, New Zealand.

There were no major articles in the SPECTRUM, but there were observing reports by Michael Idem and Carl Milazzo, both dealing with the main topic of the time -- Comet Halley. Darwin Christy offered suggestions for observing meteors, and Fred Price submitted a book report, "COMET! The Story Behind Halley's Comet", by Greg Walz-Chojnacki. Also, a list of the navigational stars was included, just for reference.

**15 YEARS AGO** - According to the January-February 1981 SPECTRUM, the speaker for January was to be announced at the December meeting. Who was it? We were told that Ernst Both would speak on "Galaxies" for the February meeting. The January meeting was scheduled to be held at Buffalo State; the February meeting was to be held at the Museum of Science. We split our meeting sites in those days.

Featured in the SPECTRUM were "Journey to a Distant Pea", an article on the scale of the solar system, and Edith's profile of Carl Milazzo. President Al Kolodziejczak noted the accomplishments of the club in the past year, and his hopes for the future. He emphasized our two special sections within the club, sponsoring courses at UB and Beaver Meadow, and supporting the NFCAAA at their two annual meetings. We had about 150 members then. He hoped for an observing site nearer Buffalo (Grand Island?), a Dobsonian for Beaver Meadow (20-inch?) and a library (Beaver Meadow?). Not bad!

Some things never change though. Editor Darwin Christy lamented the poor response he had to his survey. Fifteen years later, Terry Farrell expresses the same lament. If you haven't filled out the latest survey, please do so and get it to Terry.

**25 YEARS AGO** - The January 1971 meeting was a reschedule of the December meeting which was snowed out. Ed and Olga Lindberg and Edith Geiger were to give their December presentations in January. A New Years party was scheduled to replace the Christmas party. For February, BAA member and Assistant Professor of Astronomy at Buffalo State, Dr. Fred West spoke on double stars.

The SPECTRUM included an imaginary interview of Erasthenes by Kurt Erland (also imaginary) in which the former explains how he measured the circumference of the Earth. Warren

*continued page 9*

### Officers

Terry Farrell - President  
Bob Hughes - Vice President  
Lynn Sigurdson - Secretary  
Steve Kramer - Treasurer

Dr. Jack Mack - Museum Representative

### Board members at large

Gene Witkowski - Joe Orzechowski  
- Bill Smith

Rowland Rupp - Fellow Representative  
Joe Orzechowski - Membership

### Observatory Directors

Dan Marcus & Bob Titran

### SPECTRUM STAFF

Bill Smith - Editor / Layout  
Bev Orzechowski - Circulation

## Astronomer from the Past

### AUGUST FERDINAND MOEBIUS

Moebius (Möbius) was born in Schulpforta, Germany (East Germany) on November 17, 1790. He died in Leipzig, Germany on September 16, 1868.

He was a mathematician and theoretical astronomer who is best known for his celebrated 'Möbius Strip', which is simply a one-sided surface obtained by giving a half-twist to one end of a band and then joining the ends. He was also known for his work in analytical geometry.

In 1815 he became professor of astronomy at the University of Leipzig, and later was chosen as director of the University's Observatory which was erected in 1818-21 under his supervision.

His reputation as a theoretical astronomer was established with the publication of "De Computandis Occultationibus Fixarum per Planetas" (Concerning the Calculation and Occultation of the Planets, 1815) and "Die Elemente der Mechanik der Himmels" (The Elements of Celestial Mechanics, 1843), which are among his purely astronomical publications.

His mathematical papers, appearing mostly in "Crelles" journal (1828-58), are chiefly geometrical; in many of those papers he developed and applied the methods laid down in his "Der Barycentrische Calcul" (The Calculus of Centres of Gravity, 1827). In this work he introduced homogeneous coordinates into analytical geometry and also dealt with geometrical transformations. He discussed the configuration known as the 'Möbius Net', which later played an essential part in the systematic development of projective geometry. In the "Lehrbuch der Statik" (Handbook on Statics, 1837), Moebius presented a geometrical treatment of statics (a branch of mechanics) leading to the null system of points and planes and to the study of systems of lines in space. His "Gesammelte Werke" (4 vol., - Collected Works) appeared in 1815-87.

Moebius was a pioneer in topology; in a posthumously discovered memoir addressed to the "Académie des Sciences", he discussed the properties of one-sided surfaces, including the Moebius Strip. Moebius called attention to the fact that a rectangular strip of paper becomes unilateral if the ends of the strip of paper are connected together after a twist of 180 degrees.

To demonstrate this principle, cut out an 8" x 1/2" strip of paper. Holding one end stationary, twist the other end 180 degrees; then, tape both ends of the strip together. This is a Moebius strip. Beginning anywhere on the paper, draw a continuous line lengthwise along the taped strip until the beginning of the drawn line is reached again. Untape the ends of the strip, untwist it, and inspect both sides of the paper. A pencil line will appear on both the 'upper' and 'under' sides of the paper.

TRY IT!

Darwin Christy

### EDITOR'S NOTE

Bill Smith

### Newsletter changes

More tweaking has taken place in this issue:

- 8.5 vs. 8 point font
- Larger headlines

We're always looking for your submissions of articles, photos, observing reports, tips, poetry, book reviews  
-- anything astronomical!

Next issue's deadline is absolute as the staff is on vacation for 8 days during prime preparation time! Please submit early.

### SPECTRUM DEADLINE

The deadline for the March-April issue is  
**February 9th.**

Send all submissions to Bev Orzechowski  
125 Roycroft Blvd., Buffalo, NY, 14226.

### SPY AND TELL

Edith L. Geiger

Larry Carlino sold the optics of his 22.5" scope to BAA member, Wayne Sunerland. Wayne is making a light weight portable mount.

On October 22, '95, Carl Milazzo attended the "Astrofest" convention in Binghamton, N.Y. at the Koppemik Observatory. About 100 people appeared even though it rained most of the day. Suddenly, around 8:30, it cleared and remained cloud free for the rest of the night. The first section of the observatory was built in 1973 through a \$100,000 contribution from the Polish Club. It is now a \$2,000,000 facility as a result of annual fund-raising and donations from local groups and businesses. The complex has 3 domes. The largest dome has a 20" Ritchey-Chretien telescope and a ST6 CCD. The second largest dome has a 12" Cassegrain. There are 12 other portable telescopes in the complex.

On October 24, Carl Milazzo photographed an Orion meteor: Trail-1 sec., 6" across sky, 0 magnitude, orange color, on border between Gemini and Canis Minor.

Clark Chapman was seen on TV, October 31, on Channel 17, in a Nova program, The Doomsday Asteroid. He along with other astronomers, including the Shoemakers, discussed the dangers of Earth crossing asteroids, and their threat to our planet and civilization. The late BAA member, Sev Chapman, would be very proud of his son's accomplishments as a highly esteemed astronomer.

Bob Titran is an engineer at DuPont, Buffalo Avenue, Niagara Falls. He spent the first week in November in Dayton, Ohio, learning all about chemical process pumps.

The Kramers are excited about their new white Saturn station wagon which they purchased in November. They had to do some rearranging in their garage to accommodate their new purchase.

Bob Hughes has had a Saturn coupe for 3 years and wears a Saturn shirt.

An interesting article entitled Pendleton Treasure appeared in The Buffalo News on Sunday, October 29, '95, which I'm sure you would enjoy reading if you can get a copy. It concerns the two Petite Castles in Pendleton which James DiLapo (Tristan's father) has purchased. These castles are made of stone, each four stories tall and 20' broad, with a dry moat surrounding both castles, one round, the other square. They are in a 16 acre private park with a walled, sunken garden, statues, fountains, a cascading waterfall and many architectural structures. Mr. DiLapo is planning to build a home on the banks of the pond near one of the castles. It will take about two years to restore the castles and build his new home. Tristan is contemplating building a home in this beautiful area reminiscent of yesterdays.

May the year ahead be especially happy for you.



### COLLEGE OF FELLOWS MEETING

The annual College of Fellows meeting will be held at 7:30 PM, Tuesday, January 23, 1996 at my home at 132 Burroughs Dr., Snyder. I'll try to contact each member of the College by telephone to confirm your attendance. My telephone number is 716-839-1842.

Rowland A. Rupp

Preferred format is typed or PC readable WordPerfect for DOS 5.1 or earlier, MS Word for DOS or ASCII.

-- scanning available --

Handwritten or other formats are fine too -- we really like submissions!



## ASTRONOMICAL HAPPENINGS

## TIME WELL SPENT IN ASTRONOMY

## Moon

Full Jan 5	Last Qtr Jan 13	New Jan 20	1st Qtr Jan 27	Full Feb 4	Last Qtr Feb 12	New Feb 18	1st Qtr Feb 26	Full Mar 5
---------------	--------------------	---------------	-------------------	---------------	--------------------	---------------	-------------------	---------------

*Excellent or very pretty events are italicized and bold.*

NOTE: After midnight events are listed for the proper day! Thus 1 am on the 10th means you must be prepared be up late on the evening of the 9th

Date	Time	Elevation	Direction	Evening events left aligned	Event description	Morning events right aligned
------	------	-----------	-----------	-----------------------------	-------------------	------------------------------

## Astronomical Events In January

1	5:15 pm	5°	SW	Look for bluish Neptune 1.6° above & right of Mars; BINOS req'd		
				Also bluish Uranus 1.0° above & right of Mercury; BINOS req'd		
8	5:15 pm	5°	SW	Look for bluish Uranus 0.6° above Mars; BINOS req'd		
12	7:30 pm			<b>MEETING of the BAA</b>		
12	5:25 pm	6°	WSW	Brighter Mercury is 2.5° above and right of Mars		
18	6:40 AM	9°	SE	M23 a loose cluster of stars is 0.5° above Moon, Jupiter 4° below - BINOS		
22	5:40 pm	25°	SW	<i>Venus 5° left of Moon; Saturn 10° above Venus</i>		
23	5:40 pm	35°	SW	<i>Saturn 3° left, Venus 10° below and circlet of Pisces 7° above Moon</i>		
29	6:20 pm	56°	SE	Moon at top edge of Hyades star cluster, Pleiades 10° higher up		
30-2/4	6:00 pm	26°	SW	<i>Watch Venus pass by Saturn, closest on the 1st (1°)</i>		

Fair evening appearance of Mercury. Don't miss Venus & Saturn at month's end - very pretty! Note their color contrasts.

The year's best conjunction between the Moon and Saturn is on the 23rd. The Moon is only a few days old, Saturn is well above the horizon and it can be seen in the evening!

## Astronomical Events In February

1/30-2/4	6:00 pm	26°	SW	<i>Watch Venus pass by Saturn, closest on the 1st (1°)</i>		
6-14	6:15 AM	11°	SE	Jupiter is close (0.5° on 10th) to globular cluster M22 in Sagittarius - BINOS		
9	7:30 pm			<b>MEETING of the BAA</b>		
15	6:10 AM	16°	SE	Star cluster M25 off right edge of Moon, Jupiter 4° below - BINOS		
17	6:40 AM	7°	ESE	Mercury 4.5° right of Moon; Uranus 0.25° below Mercury - BINOS		
20	6:15 pm	19°	WSW	<i>Saturn 5° below, Venus 14° above and circlet of Pisces 5° right of Moon</i>		
21	6:15 pm	31°	WSW	<i>Venus 3.5° above Moon (gap shrinks to 2° when they set @ 9:15 pm)</i>		
22	6:20 pm	41°	SW	Venus 8° below and right of Moon		
25	6:50 pm	62°	SSW	Quarter Moon near Hyades and Pleiades star clusters		

Venus well off the horizon at sunset this month. Don't miss Venus & Saturn in early Feb.

Saturn's rings disappear for the last time until 2009 on Feb 11. Note Saturn is only 15 deg. above the western horizon an hour after sunset!

## BEAVER MEADOW OBSERVATORY 457-3104

Happy New Year 1996! Observatory events schedule is as follows:

*Your help is appreciated for all events.*

## OBSERVATORY PUBLIC NIGHTS

Held RAIN OR SHINE on the 1st and 3rd Saturday of each month, April through October, dusk to 10 pm.

## SPECIAL EVENTS

The observatory will be open during Beaver Meadow Audubon Center events as noted. Solar viewing (weather permitting), help with telescopes, advice on buying telescopes, computer demonstrations, slide shows, and answers to astronomy questions. Call the observatory 457-3104 for a recorded message of schedule of activities.

## Saturday, May 4

ASTRONOMY DAY CELEBRATION: 10 am to 5 pm. Public night dusk to 10 pm.

## Saturday, August 10

Perseid Meteor Shower: If clear, the observatory will be the perfect place to see the meteor shower! The grounds will be open from 8:15 pm to 11:00 pm for public viewing. Meteors are best seen with the unaided eye, so bring your favorite lawn chair or blanket.

## Saturday, November 9 and Sunday November 10

BEAVER MEADOW'S HOLIDAY OPEN HOUSE: 1 pm to 5 pm both

days. Public Night Saturday only dusk to 10 pm.

## STAR PARTIES

I will again be booking the star parties for the year! As usual I will be recommending that they be scheduled rain or shine, since folks will show up whatever the weather.

## MESSIER MARATHON

Saturday March 16, 3 pm to sunrise at Bill Smith's farmette south of Jamestown. This is a rain or shine event. Call Bill at 664-0841 for conditions. If the weather is good on Friday the 15th we'll hold one that night as well! Pot luck dinner, accommodations and breakfast. More info in the next SPECTRUM.

**Looking for a volunteer to sponsor a Messier marathon on March 23 at Beaver Meadow or more northern location. Please call - they are a lot of fun!**

## CCD CAMERA CLASSES

These will be held on Saturday January 20 and February 10 at 7 pm at the Observatory. I will be giving introductory classes on how to use the club's CCD camera. If the weather is inclement please call me (773-5015) to see if the class will be held and where the new location will be.

Dan Marcus

## SUCKER HOLE OBSERVING

Dec 12 was one of those nights that had several "sucker holes". You know those things: the sky looks like it's clearing; you go in and gather some stuff; you get back outside and IT'S CLOUDED OVER! Well maybe it will clear again so you set up the scope anyway and go back in. You check periodically only to come out when it's cloudy or at

the tail end of a clear hole. This 'Bermuda Triangle of Observing' got beat that night which was also the Martz club's holiday party as a hole opened up as most guests were leaving. Quickly the 6" f/7 scope was brought out and we got some views of Saturn, the Orion nebula, nearby comet-like M78, the Pleiades and the Crab nebula. As if we caught it asleep the sucker hole closed up fast and it stayed cloudy all night!

Bill Smith

## BOOK REVIEW:

### How the Universe Was Born

by John A. Piret

On the none too accurate assumption that I know something about cosmogony, I have been asked to review a book, dated 1991, that was sent to the BAA by its author. The subtitle of Mr. Piret's book is "The Big Bang Concept Buried". It seems everyone is burying the Big Bang these days — recall my review of John Boslough's "Masters of Time" in the May-June 1995 SPECTRUM. This new one is a little tough to review, especially since one should not look too keenly into the mouths of gift-horses. I'll start by describing what I believe is the essence of Mr. Piret's theory of the origin of the universe.

He asserts that there is a spiritual world wherein resides a Creator and a source of "tremendously great energy". This cosmic energy is apparently obtained from, but somehow also includes, "the pure energy of the electron". This stream of energy, which we know as cosmic rays, enters our physical world, where: "The cosmic rays grow into all the atom particles, mainly protons, as they speed through space". He describes this energy as electromagnetic energy moving at the speed of light, which explains why stars move at such high speeds. I believe this reference to stars moving at enormous speeds is intended to explain why the universe is expanding, but seems confusing because of the use of "stars" where "galaxies" would be more appropriate. As you can see, this theory explains creation as a continuing, steady-state process, and the expansion of the universe as a consequence of it.

The hero of this narrative is the electron. It not only is the source, chosen by the Creator, for all this energy, but is also the main building block of all other matter. Rather than trying to paraphrase this building procedure, let me quote the author.

*"The proton has a mass about 1836 times greater than the electron. This would indicate that the cosmic radiation undergoes nuclear reactions where 1836 electrons are somehow compacted to form a proton. Now a proton and a neutron are similar in mass except the proton lacks one electron, thus having a positive charge. . . . when an electron starts to orbit around a proton, the proton becomes a hydrogen atom. But when somehow an electron enters the nucleus of a proton, the proton loses its positive charge and becomes a neutron."*

I never figured out what happened to all the negative charge of the 1836 electrons that congealed to form the positively charged proton;

apparently charge is not conserved in this new physics.

Physics, chemistry, even biology, is what this book is all about. The author is clearly widely read in scientific material. The twenty-six chapters, squeezed into 138 pages, cover evolution, chemistry, electricity, the atomic nucleus, biochemistry, computers, your car, heat, fire and lasers.

The problem is that all this material is treated in short paragraphs of a half dozen, or so, brief sentences that seem to be a compendium of the author's knowledge of each subject. Generally, he shows how the mighty electron is the prime mover of each particular aspect of science. Often the "science" sounds fuzzy; it appears to me that the author attempts to rationalize an imperfectly understood, complex concept by trying to write it down in simple terms. His explanation of the electron's role in gravity will serve as an example.

Piret tells us that "gravity is some form of electromagnetic wave" and goes on to say:

*"We are now able to hypothesize that it is the spinning particles inside the atom that generate the radiation forming the attractive source known as gravitation. The proton is the main source of gravity in our sun, with all its hydrogen. The neutron would be the main particle generating gravity in the high-density black hole. And the electron, the energy particle of all matter, would be spinning and contributing to universal gravitation."*

In the next paragraph we are told that "the spinning properties of the electrons in the atoms of some metals are the source and cause of what we known (sic) as magnetism". I'm not sure if all this "spinning" is at the quantum level or refers to the classical motions of the particles within the atom.

What is wrong here? Surely not everything. Yet it seems to be a muddle of facts and peculiar conclusions. Throughout this text the reader is told that this new theory of the supremacy of the electron is more "logical" than previous ideas about science, which it replaces. Having read other unusual treatises that appeal to "logic", I view the word as a warning flag that something illogical is afoot. As if to prove a point, one finds here that the electron is variously referred to as "God's medium" and as "God's angels". Since reading this, I have developed a deep sense of reverence whenever I flip a light switch.

Mr. Piret has specifically designated this copy of his book for the BAA library. I invite you to borrow it from our library at Beaver Meadow Observatory. It will surely give you an unexpected new slant on almost everything.

Rowland A. Rupp

## VOYAGER INTERSTELLAR RECORD

Nearly twenty years ago, Carl Sagan shared with the general public in his *Murmurs of Earth*, the story of the decision-making process that resulted in the messages sent by the peoples of the earth to the universe on Voyager. There is much in the Voyager Interstellar Record that celebrates human achievement — in music, in art, in science. The first chapter of *Murmurs* is introduced by a quotation from an ancient Assyrian king summarizing a basic human need: the desire to let others in distant places or in distant times know that we exist and make a difference, if only for a brief time:

*"I had monuments of bronze, lapis lazuli, alabaster...and white limestone...and inscriptions of baked clay...I deposited them in the foundations and left them for future times."*

- Esarhaddon, King of Assyria, 7th century B.C.

But as the team tasked with developing the Voyager Interstellar Record soon concluded, it is not our collective achievements that

make us unique, it is our curiosity.

In describing the team's attempt to select music representative of the diverse peoples of the earth, the authors of *Murmurs* refer to the old story about the Mughal emperor Akbar, who asked his famous court musician Tan Sen, "How much do you know of music?" Tan Sen replied, "My knowledge is like a drop in a vast ocean of promise.", (*Murmurs*, p. 197).

- From the holiday card of Veritay Corporation

### FOR SALE:

MEADE 10", f/4.5 Newtonian optical tube assembly on smooth, sturdy, home-built Dobsonian mount. 2" f1.25" R+P (rack and pinion) focuser, 8x50 finder, 25 mm eyepiece. Quite portable. Excellent condition and performance. \$425.00

Larry Carlino, 7118 Kinne Road, Lockport NY 14094-9356. Phone: 716-433-3432 (evenings).

**(G)ASTRONOMICAL RECIPES****LUCKY STARS**

Sift together and set aside	-	2 2/3 cups flour (sifted) 3 teaspoons baking powder
Cream	-	1/2 cup butter or oleo 1/2 cup sugar (cream well)
Blend in	-	2 teaspoons vanilla 2 teaspoons almond extract 1/4 teaspoon salt 2 unbeaten eggs

**Gradually add the dry ingredients and mix well!**

Roll out on floured surface to 1/8 inch thickness. Cut with a "Star-shaped" cutter. Place a teaspoon of filling (below) in the center of each star. Bring the five points upright, starting at the base; pinch sides together over the filling so the points stand up, allowing the filling to show some. Place on an ungreased cookie sheet and bake at 400° for 7 to 10 minutes.

**NUT FILLING**

Combine 1 1/4 cup walnuts (ground); 1/3 cup sugar; 1/16 tablespoon salt; 1/16 teaspoon maple flavoring. Mix well! Separately combine 1 tablespoon melted butter and 2 tablespoons water, mix well and add filling mixture.

Darwin Christy

**1996 CELESTIAL  
HIGHLIGHTS AVAILABLE**

This is an 8 page listing featuring the best naked-eye celestial delights that can be seen. This is tuned for our local area!

**PLANETARY GATHERINGS - YOUNG MOONS**

**LUNAR ECLIPSES - PUBLIC EVENTS LISTED**

**BINOCULAR VIEWING HIGHLIGHTS - OBSERVING HINTS**

The guide tells you what to see, when to look, in what direction and at what elevation off the horizon! Haven't seen Mercury ever, or Venus and Mars close together or Jupiter and a globular cluster in the same binocular (and telescopic) field -- well here's your chance.

Unlike ASTRONOMY and Sky & Telescope magazines, this guide does not show events that can't be seen locally or give a lot of filler events that interest only mathematicians.

If you want to observe and not miss interesting naked-eye events then pick up this guide at the January or later meetings for FREE or we'll mail you a copy for \$1.00. Moneys go to the BAA general fund.

To receive the guide by mail send \$1.00 (or more) to Bill Smith, 184 Creek Rd., Jamestown, NY 14701. As its author I can vouch for it!

**LEARNING THE SKY****The Winter Hexagon**

Asterisms are recognizable patterns of stars that do not make up constellations. They often cross constellation boundaries and are an aid to finding your way around the sky. Overhead at 9:30 pm at the end of January is the Winter Hexagon or Winter Circle, it is some 55° across (2½ times the spread of your outstretched pinkie and thumb). The circle is built up of the stars Rigel in Orion, Aldebaran in Taurus, Sirius in Canis Major, Procyon in Canis Minor, and Castor and Pollux in Gemini.

Starting from familiar Orion, Rigel is a bluish supergiant, the seventh brightest star in the sky and the brightest in Orion. The name Rigel comes from the Arabic "rijl", meaning foot. 55,000 times the Sun's luminosity, Extremely luminous, if Rigel were at the same distance as Sirius (8 vs. 910 light years), it would blaze away at a magnitude of -10! Rigel is a double star with a 6.7 magnitude companion visible in a small telescope.

Aldebaran ("the Follower of the Pleiades"), is the 13th brightest star in the sky. The star has from earliest days been called "The Eye of the Bull" (Taurus), which makes its distinctive reddish color more significant.

The star itself is about 140 times the luminosity of the Sun, and 34 times its diameter.

Taurus's head is clearly visible, charging at Orion. Aldebaran forms the top part of the V-shaped collection of stars called "The Hyades". Curiously, none of the Hyades' stars have names except for Aldebaran, the brightest of the bunch. To the eye about a dozen stars can be seen, but binoculars should reveal 130 brighter than 9th magnitude contained in a 5½° circle. The cluster is about 150 light years away with Aldebaran a foreground object.

Continuing clockwise is Sirius, the brightest star in the sky. The name comes from 'seirius', which means "searing" in Greek. Mythology has uncovered many powers and attributes. When first visible in the late part of summer, rising just before sunrise, it marked the hottest time of the year. Hence the name "Dog Days of Summer", since the ancients thought the brilliance of the star had a heating effect on the Earth. It's 23 times the luminosity, over twice the mass and nearly twice our Sun's diameter.

Next is Procyon, the eighth brightest star in the sky, whose Greek name means "before the dog". A rather bland section of sky considering how close Canis Major is to the Milky Way.

continued page 9

**CANDID CAMERA CAUGHT!**

Yes, our Edith had the tables (or should it be the camera) turned on her. The photographer who captured Edith during her December "Candid Camera" presentation will remain anonymous to prevent unjustified retribution!





## ARGO NAVIS

*So when the first bold vessel dar'd the seas,  
High on the stern the Thracian rais'd his strain  
While Argo saw her kindred trees  
Descend from Pelion to the main.  
Transported demi-gods stood round.*

Pope's "Ode on St. Cecilia's Day"

Argo Navis (the Ship Argo) is, perhaps, the largest of all modern constellations, yielding 829 naked eye stars as reported by Manilius who called it 'Nobilis Argo'. It is now broken into three smaller constellations: Carina (the Keel) consisting of 268 stars, Puppis (the Deck or Stern) containing 313 stars, and Vela (the Sails) having 248 stars within its boundary. Lying entirely in the southern skies, it filled an immensely large vacant area east of Canis Major, south of Monoceros and Hydra, and largely within the Milky Way.

Other astronomers of the past had broken up the constellation into even smaller groups — La Caille described the subordinate divisions into Mallus (the Mast) and Pyxis Nautica (the Nautical Box or Mariner's Compass). The latter is still recognized by astronomers as Pyxis. We also find from Bode's files, his Lochim Funis and his Logleine (which is our Log & Line), now fallen entirely into disuse.

Argo Navis was considered the ship of the Argonauts. This ship carried Jason and his fellow adventurers, seeking out the Golden Fleece. It is written in mythology that the ship was built by Glaucus, for Jason, who led the fifty Argonauts, whose number equaled the number of oars of the ship.

The ship appears on charts and maps to be prowless, or minus a bow, thus presenting the sectional appearance as do Equuleus, Pegasus and Taurus. Pallas Athene aided the Argonauts as she sat in the Prow made from the speaking oak of Dodona. The Argo was "thus endowed with the power of warning and guiding the chieftains who formed the crew." This constellation of a boat was placed in the sky by Athene, after having carried the famous expedition from Iolchis in Thessaly to Aea in Colchis.

Erathosthenes asserted another Greek tradition that the constellation represented the first ship to sail the ocean, long before Jason's time, carrying Danaos with his fifty daughters from Egypt to Rhodes and Argos, and Dante concluded:

*Startling Neptune with the aid of Argo.*

In reference to the ship being Prowless, or without a bow, Aratos wrote:

*Sternforward Argo by the Great Dog's tail  
Is drawn; for hers is not a usual course,  
But backward turned she becomes, as vessel do  
When sailors have transposed the crooked stern  
On entering harbour; all the ship reverse,  
And gliding backward on the beach it grounds,  
Sternforward thus is Jason's Argo drawn.*

The loss of the bow is said to have occurred:

*When Argo passed  
Through Bosphorus betwixt the jostling rocks —*

which are known to be the Symplegades, Cyanean or Planctae Rocks which are located at the mouth of the Euxine Sea. Arato may also have thought the ship complete as he wrote:

*All Argo stands aloft in sky,*

finishing with:

*Part moves dim and starless from the Prow  
Up to the mast, but all the rest is bright;*

The origin of this constellation could even be traced to the Bible. In the time of Noah and his Ark, Bayer referred to it as Archa Noae or Noah's Ark. Jacob Bryant, who was an English mythologist during the last century, formed another story about the Ark and Noah. Even back in the 17th century, the Ark seems to have been the popular title of this immense constellation.

[continued page 10](#)

## POETRY CORNER:

### Final Word

Remember me  
when next you stand beneath the vaulted sky  
stippled with a million suns  
from a million years gone by.

My love for you will always burn  
like a solitary star  
whose ancient light persists,  
though the star exists no more.

Anonymous

## Banner contest - Co-winners

**Bruce Newman and Don Knecht**

Receiving almost the same number of votes, Bruce's design (shown on this issue's cover) and Don's will alternate issue for issue.

Since Bruce's did receive a few more votes he officially won the contest and a membership extension for 1 year. Congratulations!

## BOOK REVIEW:

### The Lawnchair Astronomer

by Gerry Descoteaux

The intent of this book, I believe, is the for those who have an interest in Astronomy and want to see how far that interest goes. This very portable book is 6"x9", 144 pg. and \$10. The author tries to cover just about every topic from 'Why Astronomy?' to equipment; descriptions of the planets and the ecliptic; constellations as your guide to the sky; several deep-sky object highlights; the zodiacal constellations; and some ending notes. The author injects much humor in the book, working on the lawnchair theme -- too much for this reviewer, especially if you go through the book in a couple sittings.

For the intended audience the author strays from assuming his reader has no astronomical knowledge, often throwing out terms explained much later. No glossary and only a topic index doesn't help.

The majority of his topics are of 'teaser length' -- just long enough to get to interested and then off to something else! The author often adds 'A trip to the library will provide...' or 'See *Astronomy* or *Sky & Telescope* back issues for further details on ...'. Good advice but which books are recommended and which articles? One would have to be very interested in a topic to try to find it through back issues even with the aid of yearly indexes and The Guide to Periodical Literature. Might as well not say it at all.

Coverage of objects that can be seen in binoculars and small telescopes is poor. While talking of watching the phases of Venus in binoculars (good luck) or a small scope is certainly good, for Mars the author suggests one look for lightening of the edges

[continued page 9](#)

## SkyMap Version 2.2 (GSC)

Looking for great computer generated star charts that you can print from your home computer? Well, I looked for about 2-3 years. I finally found a program that rivals the charts from Uranometria.

The program is called SkyMap and runs under Windows 3.1. One of the great things about it aside from what it can produce, is its price. It only costs \$30, but more about that at the end of this article.

Prior to SkyMap, I used to use Sky Atlas 2000.0 Color Edition by Wil Tirion. It's a fine atlas and my copy is well worn. I drew the constellation lines in manually (I find it helps to orient me in the sky). The one thing that I found annoying (and most atlases suffer from this) is that a constellation many times is split between two different pages. Trying to find your bearings with this happening is almost impossible - at least for me! Another drawback - use it on a night with heavy dew and you've got some VERY wet pages. Spill a drink on it and it's all over. Use SkyMap, print your chart, mark it up with pen or pencil, find your object, let the chart get wet, then toss the chart out when you're done. That's just one of the benefits of home generated star charts.

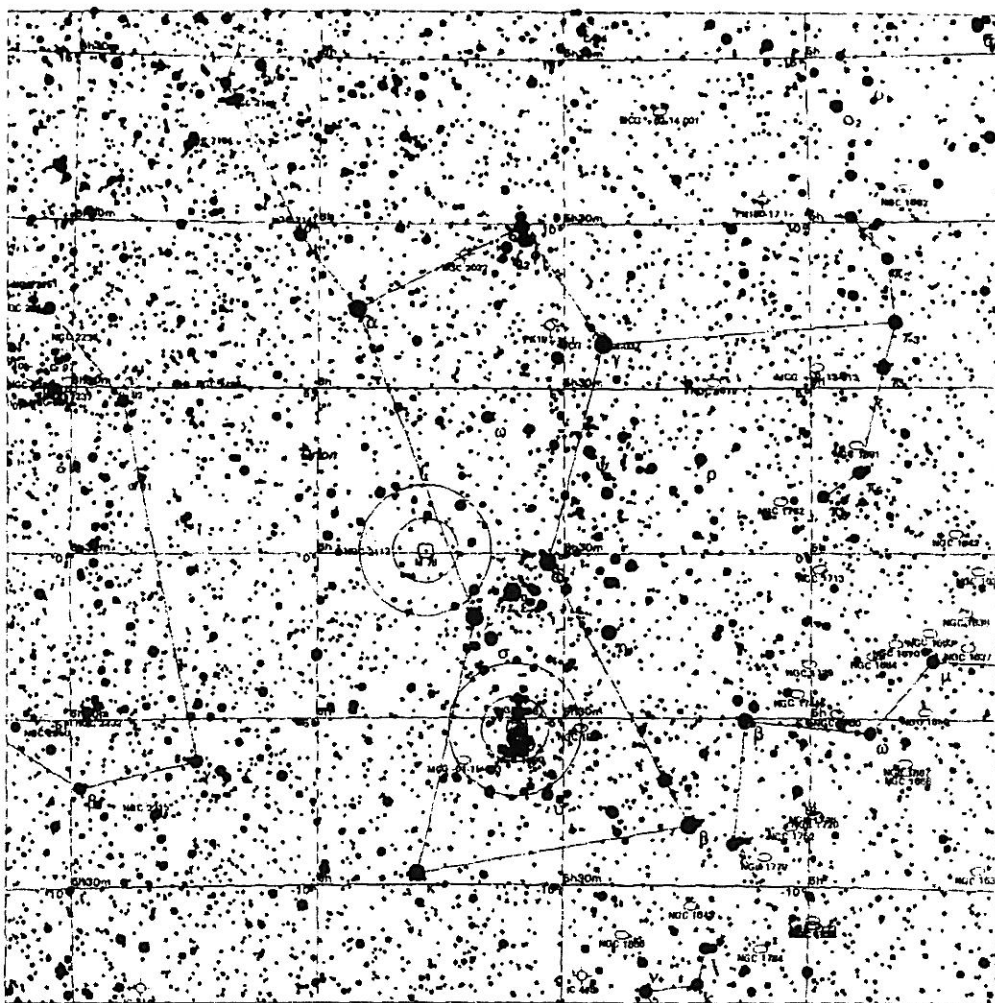
Some of SkyMap's features include, RA/DEC lines as well as ALT/AZ lines, constellation lines, the entire RNGC catalog, most of the Saguaro catalog, optional Telrad overlays on your map, your telescope/eyepiece view overlays. You can also map comet and asteroids including time dating (similar to Sky & Tel maps of comets/asteroids covering 1-2 months of movement), all planet rise/set, and transit times, data on stars such as magnitude, color, and distance. You can turn on or off all these features so you can customize your maps to your needs. If you want only Messier objects there is the ability to show only those. Want a chart showing only galaxies, that's possible too. Go from complete sky charts for a time and date right down to a chart of only a tenth of a degree - I think you get the idea. You can also control the size of the stars. The lower the magnitude the bigger the dot that's printed. Total control of what is printed is the bottom line.

There is a shareware version on the Taxacom bulletin board. It includes stars to magnitude 6. This is an older version and does not have some of the capabilities of Version 2.2. By registering your copy, you'll receive the latest version that includes 259,000 stars to mag 9. The GSC version that can be purchased can map the 19 million objects from the Hubble Guide Star Catalog (GSC) on CD ROM. The CD ROM is available from the Astronomical Society of the Pacific and runs around \$30. You can map Stephan's Quintet galaxy cluster on a background of 18th magnitude stars that includes the galaxy orientation that you'll see in your eyepiece (given sufficient aperture of telescope, of course).

If you have a lot of GIF images, you can tie these into SkyMap so that by pointing to a particular object, you can also see its image. SkyMap includes a program called Skylmage that ties your GIF images and SkyMap together.

You can order SkyMap Version 2.2 (for Windows 3.1) or Version 3.0 (for Windows 95) from JASC, Inc., PO Box 44997, Eden Prairie, MN 55343 or call 800-622-2793.

I can't say enough good things about this program. I made maps of each of the constellations with Telrad overlays on the Messier objects



STARS	SOLAR SYSTEM	Galaxy	NOTES
● <2	☿ Mercury	☼ Globular Cluster	
● 3	♀ Venus	○ Open Cluster	
● 4	♂ Mars	✳ Planetary Nebula	
● 5	♃ Jupiter	☐ Diffuse Nebula	
● 6	♄ Saturn	○ Other Object	
	♅ Uranus		
	♆ Neptune		
	♇ Pluto		
	☄ Comet		
	♁ Asteroid		

Local Time: 23:00:00 30-Dec-1994	UTC: 04:00:00 31-Dec-1994	Sidereal Time: 05:21:56
Location: 42° 52' 48" N 78° 52' RA: 5h37m42s Dec: +1° 27' Field: 30.0°		Julian Day: 2449717.6667

The above map looks very full but is 65% of a normal full page print. The image is very close to what the Uranometria atlas would show and the quality off your printer will be much better than it appears here. All sorts of objects are shown as well as 2 appearances of what a TELRAD would project. The best aspect of SkyMap are the wonderful maps that show the objects types and star magnitudes that YOU decide upon.

and put the whole set in a 3 ring binder. They show stars down to 10-12 magnitude - sufficient for even the club's 20 inch scope. Oh, about my copy of Sky Atlas 2000.0 - it probably will never get wet again. It's been retired to my bookshelf!

Bruce Newman



## Continuations ...

### Sometimes We Forget... continued from page 1

This is not to say that everything in the Spectrum or the Martz's Probe can be brought down to the beginner's level because it can't. A certain amount of complexity is necessary. But, in the future, we make more efforts to keep it simple, where possible. However, some things will remain "Greek" to all of the novices in the club. But that is OK. As you learn your way into the universe, even these "Greek" things will become evident.

Explanations of "common" definitions, often used acronyms and amateur astronomical phrases are too often assumed already known. These and many other basic types of information are being put together into a member's packet to be available soon.

The whole point of belonging to the club is to learn in an atmosphere of friendship, so don't be afraid to speak up when you don't "get" something. You are almost certain to not be alone! Just remember, we all needed help when we were just getting started!

Tom Bemus



### BAA Annals continued from page 2

Steinberg reported on the activities of the Instrument Section, and Darwin Christy reported on the sky conditions at his Honey-House Observatory in North Tonawanda. About half the nights afforded some viewing, but only eighteen were really good. That's about par for around here!

**40 YEARS AGO** - I don't know what happened in January 1954. I'm not sure we even met in January back then. But we did schedule a February meeting that was to feature a talk on optical glass and lenses by John Small of American Optical Company.



### Learning The Sky: Hexagon continued from page 6

Castor and Pollux are the two brightest stars in Gemini. The mythological sons of Zeus they appeared with Jason and the Argonauts in search of the Golden Fleece. Pollux, is the brighter at magnitude 1.1 and may look orangish; Castor is dimmer at mag 1.6 and is a complex multiple star with 6 known members not all visible in telescopes.

Overhead, you will find the bright constellation of Auriga, the charioteer. Capella, the "she-goat" star is the sixth brightest in the sky and is only 40 light years distant. Like Castor, Capella is a multiple star, two large stars rotating around each other in 104 days and two small ones. The two large ones are only 70 million miles apart, closer than the Earth is to the Sun. Fanciful sunsets for any planets in that system.

Fred Schaaf states in "Seeing the Sky" that if you start at Aldebaran, go counter-clockwise to Rigel and then go to Betelgeuse instead of back to Aldebaran you create the "Heavenly G" asterism. The Hexagon is bright enough to appear even through urban light pollution, so try to spot it this winter -- if it ever gets clear!



### TRIVIA

- The largest sunspot seen occurred in April 1947 and covered 6 billion square miles.
- The endurance record for a sunspot was in 1840 when one spot lasted 18 months.
- **TWINKLING:** Jupiter is the most untwinkling of the planets, since it has the largest apparent size as seen from Earth. However it can twinkle on very unsteady nights when the atmosphere is full of little heat waves caused when chunks of atmosphere (air cells) are mixing.

### Book Review: The Lawnchair Astronomer continued from page 7

of Mars in binoculars! Deep sky objects are limited to the constellations of Cassiopeia, Ursa Major (no map), Orion (no map), Andromeda, Hercules, Lyra, Cygnus, Ophiuchus (no map) and the zodiac. The author's map shows the tiny M56 yet skips the larger and brighter M27. He talks of looking for the central star in the Ring nebula, the Horsehead nebula, the Saturn nebula (no map!), Helix nebula, the dim galaxy M74, NGC 2158 near M35 in bins and the Virgo cluster Messiers (useless map). Does the author expect newcomers to find these? What is his intended audience? One sentence is spent on the big and easy to find globular M4 yet 1.5 pages on the Helix and Saturn nebulae (much theory however). Bright objects M16 and M17 are not mentioned in Sagittarius. The author does talk positively of scanning along the Milky Way in binoculars -- an area he should talk more on.

#### NOT RECOMMENDED

I cannot recommend this book to anyone starting out. A good amount of material is there but it needs to be resorted in a better order. The author does not seem to stress eyes only, binoculars or telescopes for getting started as he flips about all three -- leaving the reader suspended in chaos.

Of the book's star charts, only a general circumpolar constellation map is useful for constellation identification. What time of year it represents is missing. The rest are too crude. As a bonus the book comes with an 18"x40" seasonal star chart from Hansen Planetarium. No objects are listed on it and I don't feel it is as useful even for constellation finding as the charts in the two books listed at the end of this article.

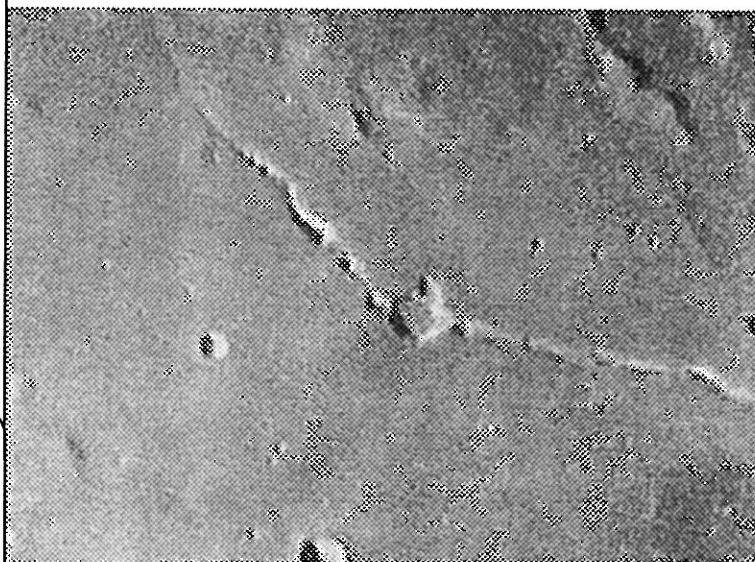
Totally missing is the benefit of astronomy clubs and local public events. Stellefane and major conventions are noted. Astronomy on a budget is not a characteristic of this book!

On the plus side the author is an amateur astronomer and does sprinkle many hints that an active observer should know. This saves the reader from learning by bad experiences if you can find those hints interleaved in all sorts of topics, sidebars and lawnchair humor.

Your \$10 is better spent with another \$15 for either Binocular Astronomy by Crossen and Tirion or Nightwatch by Dickenson. Both these cover the topics introduced by Descoteaux but in a much more organized and thorough manner.

Bill Smith

## GREAT PHOTO -- RIGHT?



Hyginus rille by Gene Witkowski

You can do this too! Find out at the January Meeting.

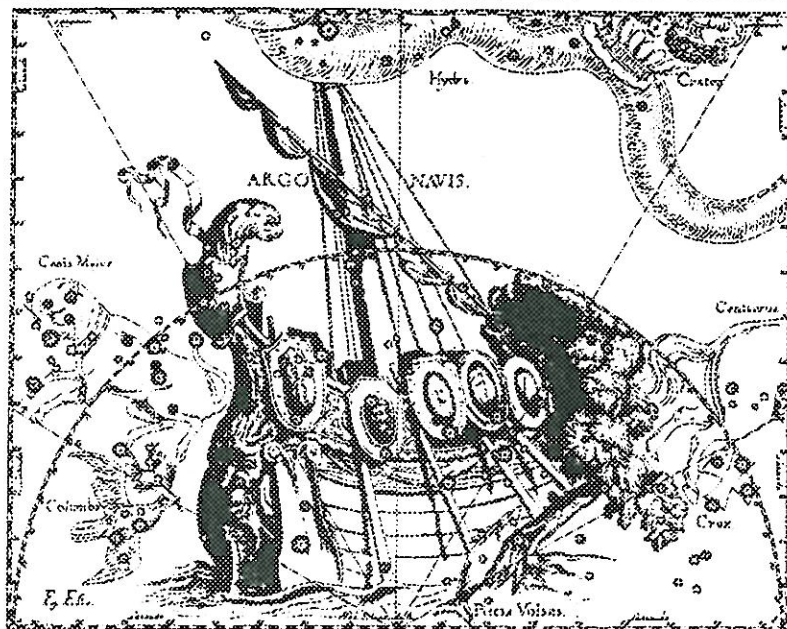
## Argo Navis continued from page 7

Some of the other constellations which the modern astronomers added were Antlia Pneumatica (the Air Pump); Pyxis (the Greek word for box), in which the compass was stored; Reticulum (the Net), with which the Argonauts would make their catch of fish; Pictor (the Painter), which had no significance near the Ship; Volans (the Flying Fish), which was snuggled alongside the Keel and beside the Swordfish, Dorado; and finally, Norma (a ruler or straightedge), which was one of the navigational instruments provided for the crew of the ship.

## REFERENCES:

1001 Questions about Astronomy	Astronomy Magazine
Encyclopedia Americana	Encyclopedia Britannica
The Bible	The Book of Knowledge
The Sky; Mystery, Magic and Myth	Sky & Telescope
Men, Monsters, and the Modern Universe	
Star Names, Their Lore and Meaning	
Various books on Greek Mythology and Egyptian Mythology	

Darwin Christy



## Inside:

- 1 Meeting notice  
Sometimes We Forget ...  
Member's Information Packet
- 2 Membership corner  
Treasurer's notes  
BAA Annals
- 3 Past Astronomer: August Moebius  
Spy and Tell

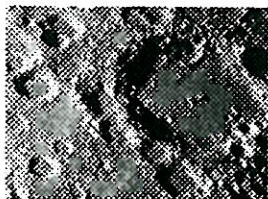
- Editor's note  
College of Fellows Meeting Notice
- 4 Astronomical Happenings  
Beaver Meadow Observatory  
Sucker Hole Observing
  - 5 Book Review: How the Universe Was Born  
Voyager Interstellar Record  
For Sale: Meade 10" f4.5 tube assembly
  - 6 (G)astronomical recipes  
1996 Celestial Highlights now available

- Learning the Sky: The Winter Hexagon  
Candid Camera Caught!
- 7 Argo Navis  
Poetry corner: Last Word  
Banner Contest Winners  
Book Review: The Lawnchair Astronomer
  - 8 SkyMap Ver. 2.2 PC sky chart generator
  - 9 Continuations  
Great Photo - Right?
  - 10 Argo Navis continued

The SPECTRUM

BUFFALO ASTRONOMICAL ASSOCIATION, INC.

Beverly Orzechowski, Circulation  
125 Roycroft Blvd.  
Buffalo, NY 14226



Magainus by Gene Witkowski

ROWLAND RUFF  
c/o ARCHIVES  
132 BURROUGHS DR  
SNYDER NY 14226

**FIRST CLASS**