

# the '95 Spectrum

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BUFFALO ASTRONOMICAL ASSOCIATION, Inc.

JANUARY - 1995 - FEBRUARY

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## IN CASE OF EMERGENCY

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

The deadline for the MARCH/APRIL issue of "The SPECTRUM" is FEBRUARY 10th.

How often does it happen that the NEW YEAR starts out with a NEW MOON? It does in 1995, but the questions, "How often?" Look it up and let the newsletter know!!!

## COLLEGE OF FELLOWS MEETING

The annual meeting of the College of Fellows is planned to held at the home of Rowland Rupp, 132 Burroughs Dr., Snyder, NY, at 7:30 PM, Thursday, January 19, 1995. The College will consider candidates for the College of Fellows Award for 1995 and other business as it comes up. Refreshments will follow. (Maybe they'll coincide.) If the time presents a problem let me know at 839-1842. I'll contact you individually before the meeting to confirm it.



Rowland A. Rupp

## \*\*\* MEETING NOTICE \*\*\*

January 13: "What's New With NASA" - a multimedia presentation on current research being done at NASA.

February 10: "Solar Eclipses 1994" - presentation dealing with the May 10, 1994 annular and the November 3, 1994 total eclipse as seen from South America.

Meetings: 2nd Fridays @ 7:30pm Jan-June & Sep-Dec.  
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.

The January meeting will feature Jayme Manning, an area resident who has a extensive background in CCD imaging and computer software development. Jayme has developed programs for the space shuttle, hubble telescope, and CCD imaging for Mt. Polamar which is his current project.

The February meeting will feature a short slide presentation by Bob Hughes on the annular eclipse at Beaver Meadows. The main speaker will be Reon Wadsworth, a local amateur who traveled to Peru to observe the total solar eclipse. Reo will share with us his experiences on this trip and the observing equipment used.

Bring a friend and your ideas!



## REMINDER!

Membership Dues  
for 1994-1995  
Are Now Due!



\*\*\* NEWSLETTER EDITOR NEEDED\*\*\*

Effective September 1995, Darwin Christy will be retiring from serving as newsletter editor. The board is currently soliciting names of any members who are interested in this position. If interested, please inform a club officer or board member as soon as possible. Darwin is willing to work with the new editor to ensure a smooth transition. Remember, that the Spectrum is a vital source of information for all club members and is a valuable club resource.

\*\*\* 1995 DINNER MEETING \*\*\*

This year's dinner meeting will be held on Friday, March 10, 1994 at Ilio Dipalo's Restaurant in Blasdell. Ticket price is \$15.00 per person and all tickets must be purchased by February 24, 1994 from Steve Kramer. There will also be a cash bar available. This will be a family style dinner featuring pork loin, roast beef, & chicken breast. If you are a vegetarian, please contact Terry Farrell by February 24, 1994 for an alternate menu selection. The service and food are excellent. Our guest speaker will be Dr. Jack Mack who will speak on the improvements made to the hubble space telescope.

\*\*\* MEMBERSHIP SURVEY COMMITTEE \*\*\*

Terry Farrell is looking for club members who would be interested in forming a survey committee to prepare, distribute and analyze results of conducting a membership survey. Terry has copies of a survey prepared by Bill Smith and one from Astronomy Magazine. If you are interested please contact Terry at a club function or by phone: 826-3738.

\*\*\* NATIONAL ASTRONOMY DAY CELEBRATION \*\*\*

The BAA is having a celebration of national astronomy day on Saturday, May 6, 1994 at Beaver Meadows. Bob Hughes is coordinating this event which is open to the public and is looking for assistance in making this event a success. If you are interested in helping please call Bob at 833-2407.

\*\*\* PRESIDENT'S MESSAGE \*\*\*

\*\*\* Astronomy for Winter Skies \*\*\*

Winter has arrived and along with it the winter constellations which are some of the biggest and brightest in the night sky. The constellations of Orion, Canis Major, Gemini, Taurus and others are ideally placed for observing. While, the winter night skies have a multitude of objects to observe, it seems that here in the WNY area we are forced to become armchair astronomers at this time of the year due to inclement weather, hibernation, and other reasons. Sure, it takes more consideration on planning a trip to Beaver Meadows or some other dark sky observing site but the advantages outweigh the disadvantages.

On the other hand, if you tend to become more of a armchair astronomer at this time of the year there are several things you can do to enjoy this hobby. You can read that book or other reference materials which were cast aside during the warm summer months when you were observing. Perhaps, you can take on the challenge of building a telescope or upgrading

and repairing presently owned equipment. Think ahead to the warmer months and make a plan of what you would like to observe. If you own a computer, you can purchase one of the many astronomical software packages available. You can attend a class dealing with an astronomical topic. Finally, you can learn the new method of astromicroscopy - which is taking slides of the night sky, viewing these slides under a microscope and analyzing your results. (for more information on astromicroscopy - please see or call Terry Farrell (826-3738) for a book on this method.)

In closing, please remember that the winter season in this area tends to be quite miserable and sort of puts a damper on observing. Therefore, if you find yourself becoming more of a armchair astronomer please use one of the above ways to enjoy yourself.



Terry Farrell

MEMBERSHIP CORNER

Just a brief reminder that the time to renew your membership in the BAA is NOW! If your name on this issue's mailing label is followed by a (94), your membership is about to expire. We would certainly hate to lose any of you since it's the members that make the BAA what it is. (I mean that as a compliment.) So please come see us at the next general meeting or mail your renewal to us at 125 Roycroft Blvd., Snyder, NY 14226. And if you have a gripe or an "I want" pertaining to the BAA, we're ready to listen to you. We'll try our best to take care of your problems, fulfill your requests, or answer your questions.

Next, we ask that you give a warm BAA welcome to a host of new members who have joined in the past couple of months: Norb Beiter of Cheektowaga, Brian & Crista Beyer of Hamburg, Wendy Davis-Stanley of Buffalo, Ken Hejza of Cheektowaga, Judy Heubel of Depew, Mark Mis of North Tonawanda, Jane Olson of Buffalo, Tom Olszewski of Buffalo, David Ott & Malai Suriyasataporn of Elma, and George Pullman of Tonawanda. It certainly looks like we are drawing members from all over Erie county. Once again, welcome, and please don't hesitate to call on us for help.

In closing we would both like to extend a "Happy Holidays" to everyone and a wish for clear skies in the coming New Year!



Joe and Bev Orzechowski

Beaver Meadow Observatory #457-3104

**Attention Observatory Users!!!!** The 12" maybe removed from the Observatory on December 15, 1994 with the intention of getting it back by the end of February. This maybe necessary to facilitate the remachining of the drives to make it easier to do CCD photography. Please contact Bob Titran (774-2742), or Dan Marcus (773-5015) if you intend to use the 12" before the end of February.

**Combination will be changed** sometime after the first of the year. If you have not received the new combination by January's meeting, please check your membership card! If it is up to date, and you are currently checked out on the scope, please contact Dan Marcus at 773-5015.

**CCD Camera:** The first CCD Camera course will be on Saturday January 21, 1995. It will start at 1pm, and will either be held

at Beaver Meadow Observatory, or at Dan Marcus's. You had best check with Dan (773-5015) or Bob Titran (774-2742) for the exact location. What will we be learning? Things like how to set up the camera, how to use the software, how to use the computer! This will be a hands on operation. We will start imaging using just a camera lens and mounting the whole setup on a tripod while imaging a stationary object. You will learn about binning, dark frames, and white frames, as well as all the rest of the CCD jargon. What's that? you think you need steel toed boots to "Boot up" a computer? We will be happy to clue you in on the mysteries of computer operation.

Messier Marathon? Saturday March 4 at Bill Smith's house in Jamestown starting a couple of hours before Sunset, and Saturday March 25 at Beaver Meadow Observatory starting a 5pm. These events will be held rain or shine, and are a bring a dish to pass dinners, and bring a snack to pass events. As one might expect we never starve at these events. When it is clear you can expect to see at least 100 M objects. Oh yes bring a scope, binoculars (it is great fun to check out what the different objects look like in various sized scopes, the rich field ones excel in "bagging" the most Objects), and a friend! This is a great night to learn how to find the most obscure objects of the M list. We may also try bagging them with our CCD Camera! so come and join the fun, bring a sleeping bag, lots of warm clothes, and all the hot chocolate and coffee you need to keep warm!

Star Parties: I'm starting to book star parties for the summer. If you wish to have one at your home, or at Beaver Meadow, come see Dan Marcus 773-5015. As usual, I recommend having them rain or shine, and require them NOT to be scheduled the same time as an Observatory event.



Daniel Marcus

#### SPY and TELL

William White has been a computer programmer with Barrister Information Systems in Buffalo, for 6½ years. Before coming to Buffalo, he worked in biochemistry research at Mount Sinai Medical Center and Sloan-Kettering Institute for Cancer Research, in New York City. Besides his enjoyment of astronomy, he includes geology among his many interests. He is also an avid reader.

Congratulations to former BAA member, Joan Eschner, a 5th grade teacher at West Seneca's East Elementary School, who has won a presidential award of \$7,500 for her teaching ability in math. She will share some of the award with her students, so they can use their math in designing and building a dollhouse.

Mark Kimball is a student at UB and is majoring in physics. He is doing undergraduate research for a professor, and is constructing a teaching apparatus. At present they are looking at momentum transfer of photons. Mark is busy working part time in the hardware department at Sears, in McKinley Mall.

Jack Empson and his daughters, Amber 18, Leslie 15, and Shauna 11, spent some time last summer visiting Virginia Beach and Washington. The girls saw the ocean for the first time. After 19 years of electronic servicing with Radio Shack, Jack is interested in a new job. Call him if you know of a job opening in his field.

Tristan and Debbie DiLapo are the proud parents of another baby boy. Jordan was born last September 14th, and weighed 8 lbs. 6 oz. at birth. He is a very good little baby. Jamie, who is now five, started in kindergarten in September at the Ellicott Elementary School in Orchard Park. He thinks school is great.

A letter from Tom Bemus, along with two other letters from contributors, appears in the January 1995 issue of Sky & Telescope, under Astronomy Clubs Forever.

The first class on CCDs was held November 24th at Buff State. Members in attendance were: Joe Drabek, Dan Marcus, Jack Mack, Joel Stuckey, and Carl Milazzo.

Former member, Conrad Stolarski, has a new job in Tucson, as a computer consultant. He also is enjoying his membership in an astronomy club in the area.

Bob and Laurie Titran were very impressed with the lecture by M.I.T.'s Heidi Hammel, who spoke at UB on November 15th and 16th, on the Jupiter impact and the Hubble telescope. Bob and Laurie are both engineers at the Dupont plant in Niagara Falls. On November 20th they celebrated their 2nd Wedding Anniversary. Congratulations and best wishes to a fine couple.

Mark Reville has been working for 2 years in the Technical Support Department at Ingram Micro in Williamsville. He and his wife have a daughter, Abbey, who is 1½ years old. A second bundle of joy was born in December. They have two dogs, a pure bred Dalmatian, and a cocker spaniel that recently adopted the family. The dogs get along beautifully in this happy home.

Tom and Mary Ellen Loncto are looking forward to February when they will become first time grandparents. They enjoyed the Thanksgiving holidays with relatives visiting from Las Vegas, and Norfolk, Virginia. Tom is employed at Millard Fillmore Hospital, Gates Circle, where he has been a registered nurse for 6 years. Previously, he worked for 13 years at the Veterans Hospital, 2 years at the Air Force Base in Dayton, Ohio, and 3 years at the Erie County Medical Center. He finds great satisfaction in his work.

May 1995 be a joyous year for all.



Edith L. Geiger

#### ASTRONOMICAL HAPPENINGS

##### JANUARY

- 1 - Conjunction - Mercury & Neptune  
NEW MOON
- 2 - Pallas stationary
- 3 - Conjunction - Mercury & Uranus  
Mars Stationary  
Quadrantid meteor shower \*\*\*\*\* (expected between 75 to 125 hourly in the short period of six hours.)
- 4 - Earth at perihelion (147 100 Mm)
- 5 - Conjunction - Saturn & moon
- 8 - First Quarter Moon
- 11 - Moon at apogee (405 204 Km)
- 13 - Venus at greatest elongation (47° west)  
Conjunction - Neptune & Sun  
B.A.A. MEETING (7:30 PM)
- 14 - Conjunction - Venus & Jupiter
- 15 - Conjunction - Venus & Antares
- 16 - FULL (WOLF) MOON  
Conjunction - Uranus & Sun  
Delta Cancri meteor shower (see below)
- 17 - Kappa Cygni meteor shower (fireballs) \*\*\*\*\*  
Coma Berenices meteor shower
- 19 - Mercury at greatest elongation (19° east)  
Conjunction - Mars & Moon
- 23 - Conjunction - Jupiter & Antares  
Spica will be occulted by the Moon, visible from North America, even here in our area.  
Last Quarter Moon
- 25 - Mercury stationary
- 26 - Conjunction - Jupiter & Moon
- 27 - Conjunction - Venus & Moon. Venus will be occulted by the Moon visible from Central & South America.  
Moon at perigee (365,886 Km)
- 28 - Conjunction - Mars & Regulus
- 29 - Conjunction - Neptune & Moon
- 30 - NEW MOON

##### FEBRUARY

- 2 - Conjunction - Saturn & Moon
- 3 - Mercury at inferior conjunction  
Ceres at opposition
- 7 - First Quarter Moon
- 8 - Moon at apogee (404,418 Km)
- 9 - Aurigid meteor shower \*\*\*\*\*
- 10 - B.A.A. MEETING (7:30 PM) "SPECTRUM" DEADLINE FOR THE MARCH/APRIL ISSUE !!!!!



- 11 - Mars closest approach  
Mars at opposition
- 15 - FULL (SNOW) MOON  
Conjunction - Mars & Moon  
Mercury stationary
- 19 - Conjunction - Spica & Moon
- 22 - Last Quarter Moon  
Moon at perigee (370,181 Km)  
Conjunction - Jupiter & Moon
- 25 - Conjunction - Neptune & Moon  
Conjunction - Venus & Moon
- 26 - Conjunction - Venus & Neptune  
Conjunction - Uranus & Moon  
Delta Leonid meteor shower
- 27 - Conjunction - Mercury & Moon

#### METEOR SHOWER

On January 16th, the Delta Cancri meteor shower can be seen from radiant 08h 24m Right Ascension, +20° Declination. The duration of this shower is about 8 days producing a mere 30 to 10 fourth magnitude, white to pinkish meteors of short duration. Not much is known of this shower and data would be appreciated by the American Meteor Society. This shower does conflict with the following day's showers, the Kappa Cignids and the Coma Bereniceids.



#### BAA ANNALS

5 YEARS AGO - Darwin Christy was our speaker in January 1990. His topic was the lunar eclipse of January 1981. We also saw a spectacular movie on aurorae filmed in Alaska. In February Jack Mack spoke on cosmology.

The construction project at the Museum of Science was in full swing at this time, so President Doris Koestler announced that all future meetings would be held at Buffalo State. Prior to then we met at State from September through December or January and at the Museum for the remainder of the year.

Ed Lindberg's brief, but interesting, autobiography was featured in the SPECTRUM. The SPECTRUM also had an article on the mythology and historical significance of the Pleiades. The first of a two part article by Ken Biggie on the planning and building of the original observatory at Beaver Meadow also appeared, and is well worth reading for anyone interested in the history of the club.

10 YEARS AGO - Buffalo State's Dr. Carl Seyfert spoke on meteor impacts in the distant past and how we obtain evidence of these events. For February we had three of our own members give brief talks. Dr. Fred Price led off with "Lunar Mysteries", Larry Carlino followed with "Purchasing of a Telescope" and Rowland Rupp finished with the "Hertzsprung-Russell Chart". It looks like everyone talked about his favorite topic.

SPECTRUM articles were submitted by Rowland Rupp - "Planetary Brightness", Carl Milazzo - "Apparent Magnitude" (sound a little similar don't they?) and Marie T. Cain of the Finger Lakes Astronomy Society - "William Brooks, Comet Seeker". Dan Marcus was giving us information about how to photograph Halley's Comet which was approaching then, and Ed Lindberg reported on the fall meeting of the NFCAA at Niagara Falls, Ontario, an organization that he was instrumental in founding.

15 YEARS AGO - In January 1980 we heard about "Deep Sky Wonders" from Tom Dessert. Tom was the BAA's enthusiastic astrophotographer in those days. February's speaker was UB's Dr. Lyle Borst whose topic was "Biological Astronomy". The Study Section under Ken Kimble was going strong in 1980. Upcoming topics were planetary nebulae and spectroscopy, the latter to be headed up by Dr. John Raymond.

Edith Geiger wrote a profile of Al Kolodziejczak. Al was elected BAA president later that year. Fred Price had an article in the SPECTRUM - "On the Accuracy of Lunar Maps

and Drawings." Carl Milazzo wrote on "Seeing Stars and Planets in the Daytime" and Tom Dessert told about highlights of his trip to various astronomy magazine publishers around the country. They included "Sky and Telescope", "Astronomy", "Deep Sky Monthly" and the "Astrograph". The result - Tom had articles on his astrophotography published in each magazine!

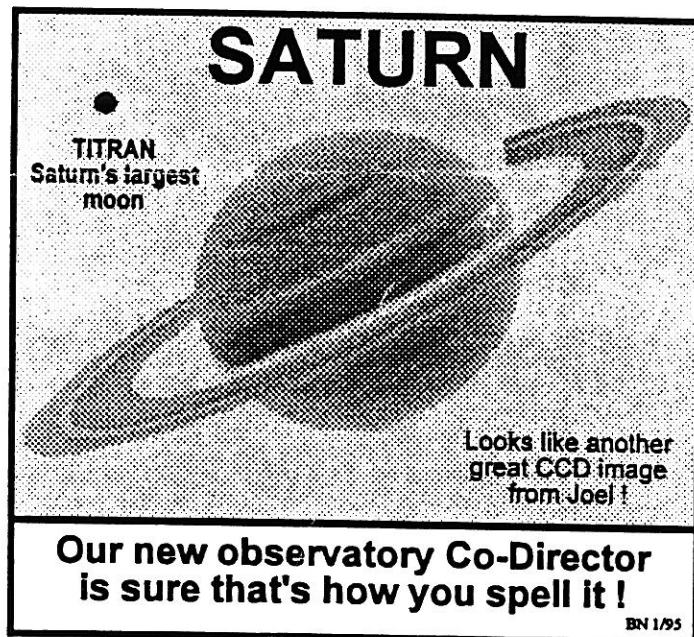
25 YEARS AGO - BAA member Dr. Seville Chapman, Chief Scientist at Cornell Aeronautical Laboratory, was to speak on "Orbital Mechanics" to start off the 1970s. It turned out that a snowstorm precipitated a one month delay.

The club had just opened its astrophotography exhibit at the Museum. Members contributing to the exhibit were: David Blake, Robert Burdick, Seville Chapman, Orrin Christy, Dale Hankin, Larry Hazel, John Riggs, Walter Semerau, Ian Slepian, Ernst Both and Walter Whyman. How's that for a roster from the past? Articles from Walt Whyman - "Comet Tago-Sako-Kosaka", Ernst Both - "A Note on the Zodiacal Light" and Dr. Fred West - "Recent Pulsar Studies" appeared in the monthly SPECTRUMs of that time.

40 YEARS AGO - In January 1955 Walt Semerau spoke on the coronagraph he was working on. In February, Milton Thornburn of American Optical gave a talk entitled "The Eye as an Optical Instrument". The Museum of Science held an open house in February and we participated by bringing in our telescopes for the public to use if clear, or just to see if cloudy.



Rowland A. Rupp



#### EXTRATERRESTRIAL INTELLIGENCE

I'm trying a new class for the Museum of Science. Here's the write-up from the Museum's Winter Programs listing:

"Are we alone or do we share the universe with other intelligent beings? What evidence do we have? How could we communicate with an alien society, or have we already done so? Here is a class where everyone is entitled to an opinion and is encouraged to express it."

The class is scheduled to meet on five Tuesday nights starting January 10th at 7:30 PM. It costs \$28 for non BSNS members, and \$23 for members.



Rowland A. Rupp

The following article appeared in **METEOR NEWS**.

#### OBSERVING METEORITES THROUGH A MICROSCOPE

Micrometeoroids - Micrometeors - Micrometeorites - or Meteorics. Have you ever seen such things? Those minuscule objects are rather impossible to observe without the aid of a microscope! (Figures attached)

Cosmic dusts which travel throughout outer space at speeds from 70 to 100 kilometers per second collide against the earth's atmosphere into incandescence. Meteors are the phenomena we commonly call shooting stars. These cosmic dusts are effectively decelerated in atmosphere strata of such a low density that the temperature necessary for intense vaporization is not attained, and the energy is dissipated through radiation. They are brought to rest with minimal ablation and in due time, they settle to the ground. When colliding with the atmosphere, they become molten, forming into small droplets or spheres. As they stall they solidify into spherical shapes, due to their own surface tension when in a liquid state. These finite spherical particles are known as "meteoric dusts".

These meteoric dusts begin to fall toward the earth, but at a very slow speed. Because they are microscopic and have very little mass, they can stay aloft for very long times, perhaps as long as one year. There are many ways they can be carried downward: their own weight can bring them toward ground; they can pick up moisture and drop down in raindrops; and they have even been found in hail stones.

Retrieving the dusts is problematic. As they are invisible to the human eye, distinct methods can be used to gather them. The microscope slide seems to be the best answer. I have tried to find more information on them, but have only discovered some vague accounts by Gerald Hawkins, Ernst Opik, D.W.R. McKinley and Lincoln and Jean LaPaz. According to their accounts, I read that J. D. Buddhue was the first to study them and that his accounts began in 1950.

In 1973, I first became involved in exploring them, curious about what micrometeorites could be. Owning an excellent medical microscope, I decided to pursue this new adventure in astronomy. I had to find out how to collect or "catch" them. After reading a limited number of accounts, I learned that I could make use of glass slides by setting them outside for a period of time. I proceeded to place a glass slide above the eaves of my house for a period of twenty-four hours. (You wouldn't

believe the amount of dirt and dust a slide can pick up over that period of time!) Upon carefully examining the exposed slide under the microscope, I began to distinguish the irregularly shaped dirt from the round spheres. I also had presumed that all the spherules were meteoric dusts, but discovered that they are not. After more careful studies, I learned to separate the pseudo-meteorics from the real meteoric dusts.

Later, I learned that there are other methods to gather meteoric dusts. They can be collected by simply brushing the dirt from window sills, gutters or eaves of buildings; sweeping up dirt from an area not frequented by pedestrians; or collecting them in a glass jar set out to catch rain, then filtering the water. Another way I proposed to obtain more varied samples was to write to the Astronomical League asking for anyone to send me dust from their area. This produced greater success than I ever anticipated.

When using a glass slide, a very thin film of glycerin can be applied to cause the dusts to adhere to it, however if the glycerin layer is too thick, it interferes with later examination of the dusts in the microscope. So a better method I discovered, through my knowledge of electricity, was to employ two aluminum plates, spaced with a sheet of fiber which is thicker than a glass slide. A square hole, 2 centimeters across, is cut into the center of the upper plate to act as an open window to expose the slide. A slot is cut in the fiber, to allow the glass slide to be placed between the two aluminum plates. The two plates are then connected to a battery, with the upper window plate attached to the negative charge, and the lower to the positive charge. This builds up a static charge on the glass slide, enabling the slide to act like a magnet, capturing the dusts for a sufficient amount of time to allow me to place the slide on the microscope stage for observing. Prior to removing the slide from the chamber, I use a felt tip pen to trace the two centimeter square, marking a uniform area within which to make my observations.

A good microscope, both optically and mechanically should be employed. Good optics allow clear observation of the subjects and the use of a mechanical stage ensures steady scanning of the slide. My microscope is equipped with three objective lenses and four different power oculars to afford various powers, as needed. The powers I use most often are 450X and 675X. In use with my microscope is a side light, which allows me to determine the dimension of my spherules. With the high sheen each meteoric dust provides, it is easy to see that they are truly round balls.

One other instrument that I had access to (for a few brief months) was the electron microscope. Although I personally did not use it, my neighbor took my slide with designated coordinates, and placed it under the scan and photographed it. While under examination, he produced a spectrum of the materials of which the objects were composed. This spectrum was produced by a "bounced X-ray" or "energy-dispersive X-ray" (EDX-ray). These instruments, though, are not for the amateur.

Keeping records is vital. Documentation must be made of the number observed and classified, as well as their sizes and colors. Most meteoric dusts are black, a few are a brownish-black color and very few are transparent or glassy in appearance. Basically, they are composed of iron, nickel, aluminum and silica.

In 1977, I read of a Japanese amateur, Shigeru Morikubo, in *Sky & Telescope*, who gave a paper, "To Catch a Falling Star" at the IUA convention in Dublin, Ireland. Upon contacting him, we began to communicate and exchange our findings with each other. Mr. Morikubo indicated that he began his observations in 1955. Some of our joint findings and observations are as follow:

- Meteoric dusts are perfectly spherical particles, having smooth surfaces. Their color is most often black, caused by heat generated from friction from entering earth's atmosphere. Some are dark brown in color, and even fewer are glassy in appearance.

- The size of a meteoric dust is usually less than 35 microns in diameter. Most are smaller than 15 microns. Very few have been found that exceed 50 microns in diameter.

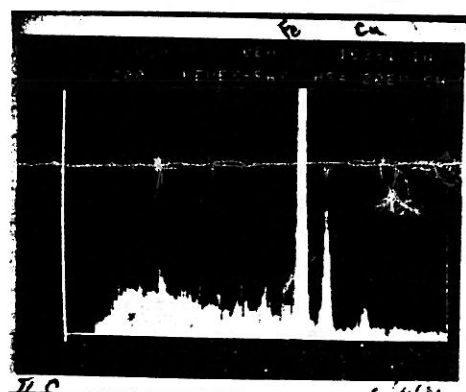
- Meteoric dusts cannot be correlated with meteor showers, as they are not recognized to be caused by increased meteoric conditions. They are such minute objects that they free-fall very slowly, becoming confined in the upper atmosphere for long periods of time. Some fall faster than others, thereby mixing with other meteors. Since they remain aloft for up to months or years, any direct correlation with meteor showers would be impossible to prove.

- These dust particles are probably produced from expelled dusts of asteroids, particles caused by the ablations from meteors, and the debris remaining from comets which made close encounters with the earth. In theory, those finite particles are caught in the earth's gravitation, blown this way by the solar winds.



FROM AN ELECTRON MICROSCOPE

Si Fe<sup>d</sup> Fe Cu



ED Xray



The arrows point out micrometeorites, all others are psuedo-meteorics.



- These meteoric dusts cause many phenomena. So many remain aloft at high altitudes, reflecting the sun's light and scattering it in the upper layers of our atmosphere, that we are able to observe the resulting Zodiacal Light. Another low surface light or haze is the Gegensheim, which is much fainter than the Zodiacal Light. This may only be observed on cloudless nights near a new moon, and only when the observer is a great distance away from artificial light sources on earth.

- There appears to be no concern for space flight. Our astronauts have made many ventures, yet incidents of punctures to their spacecraft have been either very minor or non-existent. Also, both micrometeoroids and micrometeorites have been captured on a piece of mylar film during space missions, and brought back for examination.

- It should be noted that the estimated amount of meteoric dust which enters our atmosphere daily, has been increased to 200 times the original estimate. Early estimates indicated that about 100 tons per day entered our atmosphere, considered plentiful in ancient times. The present day estimate is approximately 20,000 tons per day.

- A change that has been observed is that the number of meteoric dusts larger than 15 microns increases by approximately 25% during the period from mid-August through the first of October. No change has been noted in quantities of those smaller than 15 microns.

The boundless size of our universe offers unlimited opportunities for discovery and study. Yet, particles not visible to the human eye offer equally unlimited windows to explain many of the mysteries of our cosmos.

-Darwin P. Christy, Jr.



### CANES VENATICI

*Bootes hath unleash'd his fiery hounds.*

*from "Cigtemnestra", Owen Meredith*

*Canes Venatici, the Hunting Dogs, is really a more modern constellation which was discovered in about 1600 A.D. It was established where no other constellation occupied the area. Hevelius, a Dutch astronomer, his real name, Johannes Hewel, published it in his star catalogue in 1690. Canes Venatici is supposed to be representing two hunting dogs who are pursuing the bear in its circling the pole. In Hevelius' atlas, he names the northern dog, "Asterion" and the southern dog, "Chara". He probably was inspired to give it the name from the much older Arabian convention which named the region, "The Retreating of the Howling Dogs."*

*In other writings the two dogs, Asterion and Chara, are represented as being on a leash by Bootes, the Herdsman. Bootes, with the dogs, are chasing the great bear about the pole. Can Caroli is located in Chara, the southern of the two hounds, near the dog's heart.*



*Canes Venatici can be found within the boundaries of Bootes, Ursa Major and Coma Berenices.*

*In this constellation can be found the Whirl Pool Nebula and one of the most beautiful globular clusters, M-3.*

*As were mentioned in this constellation are two known ancient constelatlions which represent those two hunting dogs, Asterion & Chara, the northern and southern dogs respectively. They were coined by Hevelius in his 'Prodromus', Flamsteed followed and asserted them as being the 'Hounds' in his writings. Then Proctor, in his attempt to simplify nomenclature of the constellations called them 'Catuli', the Puppies.*



*Darwin Christy*

### JEAN PICARD

Jean Picard, born in La Flechè, France on July 21, 1620 and passed away in Paris on July 12, 1682. He was a French astronomer having taken orders and became prior of Rillè in Anjou. He assisted Gassendi in the observation of the solar eclipse of August 25th in 1645. In 1655, he succeeded to Gassendi's chair in the College de France. In 1666 he became one of the original members of the Academy of Sciences. He was the first to apply the telescope in measuring angles and improved instruments and methods of their operation.

Although William Gascoigne first used the newly developed micrometer to measure the distances of close stars, Picard was the first to introduce a systematic use of this instrument's sights on the telescope about 1667. This was afterward the common tool for the observational astronomer.

Picard founded the 'Connaissance des Temps', an astronomical annual and by his efforts secured an establishment of the University of Paris. Even with all this, his principal achievement was the first exact measurement of the degree of the meridian, made in 1669-71 between Amiens and Malvoisine. In 1671 he made a voyage to the island of Uranienburg in connection with the astronomical observations of Tycho Brahe.

On January 11, 1762, Oldenburg read before the Royal Society of London one letter from Paris describing Picard's method and the length of a degree as was determined by him. It is possible that it was Newton's knowledge of this measurement that led him to regard his original conjecture of gravitation as satisfactorily established.



Some of the works which he is responsible for and having been published separately are: 'Degre du Meridien, entre Paris et Ameins, etc' (Paris 1740); 'Mesuree de la Terre' (Paris 1740); 'Traite de Nivellement, etc.' (Paris 1780).

Many other of his writings have been published in 'Memoires del'Academie des Sciences, Institute de France.'



Darwin Christy

### FOR SALE

**Lumicon 2" 'deep sky' filter.** A "second", this filter transmits 10-15% less than Lumicon's premium filter. I leave one on a 40mm 2" eyepiece all the time. Gas nebula show up that do not without a filter. The 'deep sky' type is the least powerful filter of Lumicon's line - thus it shows the most stars and doesn't "color" the field as stronger light pollution filters do. This one is a spare. Less than half price of a new premium one - \$50. Call Bill Smith, 664-0841.

### BAA HISTORY

Copies of the BAA History can still be obtained from:

Rowland Rupp  
132 Burroughs Dr.  
Snyder, NY 14226

The cost is \$7.50; mailing is an additional \$1.50. If not mailed, the history will be brought to you at a meeting. Checks should be made out to the Buffalo Astronomical Association.

### - WANTED -

Volunteer(s) to help put together an naked-eye event calendar similar to the one distributed to the Audubon Society this past January but to feature events for 1995. This was also available at our regular meetings, at the observatory and through the mail. It acts as a public outreach piece and is a fun project all by itself. I'll provide what I did for 1994 as a guide. Contact Bill Smith, 664-0841.

Observing articles for the Spectrum. We've had some good viewing this year. Yes, you can write an article - it doesn't matter whether you used a big scope or small or no scope at all; viewed deep sky objects or sunset colors; from the city or desert; viewed at home or from a trip. Your impressions deserve to be in print. Don't delay - do it today!

**BUFFALO ASTRONOMICAL ASSOCIATION, INC.**

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### THE GREAT BEAR

Among all the constellation patterns of the heavens, there is none so well known as the seven-starred figure of the Great Bear. The Inoquois tribes of ancient North America had this story to tell:

"One day a long time ago the chief of the Inoquois sent three hunters to kill the great bear. They were told not to return until they did. So, the three hunters started out, the first hunter carried a bow and arrow to kill the bear, the second hunter carried the pot to cook the bear and the third hunter carried the firewood and flint.

The legend says that the three stars that we call the tail are actually those three indian hunters. They had chased that bear so far that they chased him right up into the sky. Since they haven't caught him, they're still chasing him today and someday they might be able to go home.

If we look very closely at those three stars, we can see that the middle star is really two stars. Maybe just maybe, that second one is the big cooking pot that the middle indian was supposed to be carrying.

Anonymous



**MANY THANKS FOR YOUR CONTRIBUTIONS!!!** The next issue will contain, "Fish that got away from MESSIER", "Three Leaps of the GAZELLE", "A Cruise Down the MILKYWAY", the ancient constellation "ANTARAH", a Profile and others. In future issues will appear an ancient constellation, "TUBUS HERSCHELII MAJOR & MINOR", an astronomer from the past, "Lord William PARSONS ROSSE", and other articles I have gotten from other newsletters.



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