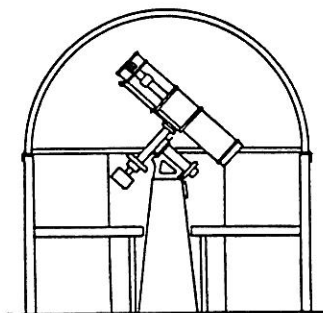


# The Spectrum



Buffalo Astronomical Association, Inc.

NOVEMBER - DECEMBER 1992



Bill Smith - President  
Bruce Newman - Vice President  
Luann Szucs - Secretary  
Steve Kramer - Treasurer

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"SPECTRUM" Editor - Darwin Christy

The telephone, (716) 457 3104, at Beaver Meadow is

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#### "SPECTRUM" DEADLINE

The **deadline** for the **January-February** issue of the "SPECTRUM" is no later than **December 11th**. Due to the Holiday, it is imperative I have all material in by the date established. **Articles are needed!!!**

#### >> MEETING NOTICES <<

The **NOVEMBER 13th** and **DECEMBER 11th** meetings, 2nd Fridays @ 7:30pm, will be held in the Auditorium of the New Science Building at Buffalo State College on Elmwood Ave. We hope to see you all there at these meetings. As usual refreshments will follow!

Our guest speaker at the November meeting will be our own Ken Kimble who will speak on "MEASURING ASTRONOMICAL DISTANCES". Ken is a past club officer and board member. He is interested in cosmology and runs our "Astral Coffeehouse" discussion group. Let's give a warm welcome to Ken!

The December meeting is traditionally a light meeting with short presentations: "DECEMBER SKIES", "LAID BACK METEOR OBSERVING" and Edith Geiger's "CANDID CAMERA" slide show will be given. We would like it to expand it to be a more "Show and Share" night where anyone is welcome to give a short 5 minute presentation on what interests them. These topics will be followed by our annual Christmas Wine & Cheese party. Anyone who wishes to donate a few Christmas cookies or other goodies for the party may do so -- they will certainly be appreciated and enjoyed!



#### NFCAAA --- Fall Meeting

The regular fall meeting of the Niagara Frontier Council of Amateur Astronomical Associations will be held in our club meeting area at Buffalo State on Saturday, November 7th 1992.

Invitations with registration forms will be passed out at our September and October meetings. For more information about the NFCAAA, call **Dave Fliss** at 824 6457 or **Ed Lindberg** at 633 6725. Help is needed to make it a success.



#### PRESIDENT'S CORNER

##### NEW MEMBERS and our ACTIVITIES SHEET

A club is more than a group that meets once a month. This formal meeting is one thing but the time between the formal meetings is also important. This is the time when the members do things in small groups and by one's self.

A new member often may feel apart from the group because they do not know anyone or might want to join a committee or somehow participate and contribute but haven't been asked. It is nice to be asked but, unfortunately, many times the asking is in a generic way. Often the general meeting is the only time longtime members see other longtime members. Although they talk and meet with their old friends that doesn't mean they aren't friendly and don't welcome newcomers into the fold!

New members are needed in all levels of a club: general membership, committees and active groups. New members are not just a statistic. Everyone wants to grow, feel welcome and involved.

The "Activities for Members" sheet enclosed in this issue of the Spectrum is a list of many things the club has to offer. Contact people are listed. They welcome calls and are very willing to help members, new and old, to get more out of Astronomy. We have growing interest groups and projects that are looking for volunteers so save this "Activities for Members" list and take advantage of what our club has to offer. Time is always a problem with all the other commitments in life. If you can, take a step, get involved and let us know how we can help - you'll be glad you did.

#### MEMBER SURVEY

Progress has been slow in getting the survey together and it looks like it may be the December meeting before it is ready. The idea behind it is to find out what makes us tick and to help the board shape next year's meeting agendas and special events calendar. Call me (664-0841) if you'd like to help.

#### DECEMBER MEETING: "SHOW and SHARE"

This is a light meeting with short presentations and Edith Geiger's "tongue-in-cheek look at ourselves" slide show. We would like it to expand it to be a more "Show and Share" night where anyone is welcome to give a short 5 minute presentation on what interests them. A project you worked on, observations, anecdotes from a trip, book or whatever are subjects. Go ahead, give it a try!

Bill Smith

### ☆ MEMBERSHIP CORNER ☆

It is once again time to renew your BAA membership. The annual dues for each of the membership categories are still at the same low rate as last year: \$20 for Family, \$15 for Individual or Regular, and \$10 for Student or Senior Membership. If you have not yet renewed for the 1992/1993 membership year you may do so at the next General Meeting or by mail.

You will notice from this article's byline that the start of the new membership year also means a new Membership Chairperson (actually Co-chairpersons). We are taking over the membership duties from the capable hands of Mr. Bruce Newman. With Bruce's assistance, we hope to make the transition a smooth one but, if an oversight does occur, we ask for your patience and understanding. For those of you renewing by mail our address is: 125 Roycroft Blvd., Snyder, NY 14226.

Joe and Bev Orzechowski

#### OCTOBER PICNIC!

Here is a chance to see both the club observatory and the Beaver Meadows Audubon Center and trails. Hopefully it will be clear so we can see objects through the scope that night. Even if it is cloudy it is a good opportunity for those club members who haven't seen the observatory to do so. Come join in this event and meet some of your fellow club members!

**DATE: SATURDAY OCTOBER 24, 4 PM COOKOUT**

Come earlier if you want to take in the nature trails.

**PLACE: BEAVER MEADOWS AUDUBON CENTER:**

Center phone is 457-3228.

The shelter there has 4 tables under cover. Although they cannot be reserved the Audubon center highly doubts anyone will be there at that time in late October. We'll bring an emergency table in case.

We will bring:

- Gas grill
- Drinks: Soft, cocoa, tea, coffee
- Napkins
- Garden salad, rolls, breads
- SOME extra utensils and plates
- Extra telescope, eyepieces, binoculars and maps!
- Grilling utensils
- Hot and cold cups
- Ketchup, mustard, etc
- Popcorn & popper

Those who come should bring:

- The whole family
- Whatever you want to grill
- Cool and rainy weather clothing!
- Something to pass
- Your own place settings

REMEMBER THE OBSERVATORY HAS A MICROWAVE FOR REHEATING THINGS.

CALL Dan Marcus 773-5015 or Bill Smith 664-0841 if you think you can attend and what you might bring.

Bill Smith

#### SPY and TELL

In May, Art Gielow received his Master of Science degree in education. His project was, "How to use the STARLAB portable planetarium."

Bob Hughes worked on the ham-radio communications at the Genesee Air Show on August 22-23, which featured the Air Force Thunderbirds and WWII bombers and planes.

Melissa Marcus and the president of the Cinderella Garden Club (entering as a club), won second place in the table class, "Tasting the Committee," at the Erie County Fair in August.

Melissa attended the fall conference of Federated Garden Clubs of New York State at Saratoga Springs in late September. She is a section chairman from District 8. She has enrolled in a garden study course at the Lackawanna Library with hands-on experience at the Buffalo and Erie County Botanical Gardens in South Park.

By December, Gene Witkowski will have given his 14th gallon of blood to the Red Cross this year. He gives blood every two weeks at the maximum allowed of 24 times per year. The platelets are removed and the blood is used for chemotherapy patients.

Darwin Christy attended the reunion of the 70th Fighter Squadron (White Knights) of WWII, which was held in Nashville from September 24-27. They meet every two years to hash over old war days. While there they went to the Grand Ole Opry. Reservations for seats are made almost two years in advance. The group had a section close to the stage with Darwin right in the front row. With his photographic skill he took pictures with his faithful Agfa camera of the reunion group at the banquet dinner, and is distributing them to those who wish to have them as a remembrance of a great reunion.

Ruth Christy is quite the angler, and a September catch was a nice 38" muskie caught on the Niagara River above the Falls. Darwin netted it after a nearly ten minute battle. As a result, Darwin threw his back out and had visited the chiropractor five times as of the first part of October.

Doris and Bill Koestler left on October 3rd to spend a terrific week in Las Vegas.

We all know of the L5 Society, but did you know that there is another L5 Society of which Steve Kramer is a member? He has had a painful back for several months with the 5th vertebra in the lumbar section, referred to as L5. Steve's pain is also astronomical.

Marty Junkin went on a once in a lifetime trip. Going to Antarctica is something very few ever have the opportunity of doing. She went on a Victor Emmanuel Nature Tour for three weeks in October. The tour group flew to Santiago, Chile, and boarded a ship at the Falkland Islands and headed toward the Antarctic Peninsula where there were albatross, whales, seals, and seven kinds of penguins. To combat the extreme cold, the expedition included a special parka (red) A tremendous adventure!

Edith L. Geiger

Well we had another successful Public Weekend at the Observatory. The Public really loved the Star Charts of their birthdays. The Sun was out, and the setting circle crew was having fun finding Venus. They tried for Mercury, but met with no success. Public night on the 19 of September was well attended by public and club members alike. Dave Fliss out did himself in entertaining the public. Members and public alike were enthralled with his tour of the Heavens! Thanks Dave F, and thanks to Jack E, Luann, Dave S, Lynn & Wade who showed up with their computers so the public could use them. Then there was Bill H, Joe D, Joe S, Bruce, Len Werner, Tom N, John Lazarus, Rowland R, along with several newer members who brought their scopes along to join in the public night fun.

**Observatory Planning Meeting:** There were 6 Members who showed up to confer on what to do with the Observatory. Rowland Rupp and Ken Kimble made some sketches of an addition on the east side of the Observatory to house the new scope, and an extra room for storage of our computers, CCD equipment, and growing book population (thanks to the generosity of Carl Kalweit). There were also provisions for a "runway" to roll the scope out on for viewing. Next project is to get funding for the job. **ANY GREAT IDEAS OUT THERE!!** I had thought of making Solar filters for the '94 annular eclipse, but the insurance liabilities killed that idea. The ShareWare is selling nicely thank you, so keep pushing it.

**Computer:** The PCjr is now out at the observatory, I need a couple of computer hackers to get the programs going on it. As you know we need a monitor and card for the 286 we have, and are currently waiting on the report for the grant from Buffalo Foundation before we make any further progress. We could use a old B&W card and monitor for the interim.

**Public Weekend November 14 & 15:** As usual we need help, bring a computer, scope, photos, CCD imaging equipment, and bring a friend! We will be there 1 to 5 pm on both days, and will hold a public night on the 14. Good time to start on Mars. Oh yes we need help even if cloudy!! we had over 10 people show up for Oct 3 public night in spite of the clouds.

**Lunar Eclipse:** Does any one wish to open the observatory for the December 9 Lunar Eclipse? I'll need several Volunteers to run the Observatory. Let me know even if you can only help out with traffic control!!! The Buffalo Museum Of Science will also be looking for volunteers. So please get in touch with me for both events. PS this can be a good fund raiser.

**Attention Observatory Users:** The Combination to the Observatory will be changed November 15. The new combination will only be given out to members who are current with their dues!



Daniel R. Marcus

### INSTRUMENT NOTES

Setting circles are a valuable addition to our telescope. They lend a scientific air to our equipment. And they can be very useful. Many of us have been impressed by a view of the planet Jupiter or a bright star against a bright blue daylight sky. The circles are easy to use and add to the pleasure of using the telescope. But many people do not understand them. And if they need to add the circles to a commercial or home made telescope they are often puzzled as to how to proceed.

The setting circles are a set of two dials, one being marked **Declination** and the other **Right Ascension**. The Declination dial is pretty straight forward. It might have been easier to understand the term Declination if it had been called Altitude but this might lead to confusion with the alt-azimuth system where the star position is measured with reference to the horizon. Declination is the star's position in angular degrees above or below North or South of the equator of the sky. The dial is fitted to the declination axis and provided with a mounting collar to allow the dial to be slipped for the initial calibration setting. The telescope is pointed to a star of known declination at or near the equator and the dial slipped to that value. Remember that in most tables north of the equator is shown by a plus sign and south by a minus sign. The dial will now read the declination of any spot to which the telescope is pointed.

The Right Ascension dial is a little harder to understand and difficult to install. Part of the difficulty is "Dictionary Fog". The meanings of the terms are obscure.

Once the terminology is clarified there is not much of a problem. When the fog lifts all is clear. The terms have been around since before Tycho Brahe in the 16th century so it behooves us not to make changes. But there should be no objection to explanation.

For a compound term like Right Ascension it is helpful to define the words separately. **ASCENSION** merely means **RISING** and refers to the rising of celestial objects at the eastern horizon. For the meaning **RIGHT** we have to delve into Solid Geometry and Spherical Trigonometry. If you have not studied these subjects have no fear. We shall only scratch the surface of these noble disciplines. When we think of angles we are used to the definition "the amount of opening between two straight lines of plane." To see how Spherical Trigonometry works look at a terrestrial globe. Here we see lines of longitude crossing the equator forming right angles although both lines are curved. It is the tangent to the two curves that intersect forming a right angle.

The curving lines of Right Ascension on the celestial sphere are analogous to the lines of longitude on a terrestrial globe. Terrestrial longitude is measured in degrees east or west of Greenwich Observatory at the edge of London England. Longitude lines are spaced 15 degrees apart on the globe or map. The earth rotates from one of these lines to the next in one hour of time. So the longitude could be measured in hours instead of in degrees. But the map makers prefer degrees. The 75th longitude line passes right through the City of Philadelphia. So- the Right Ascension people would say that Philadelphia is 5 hours west of London, England.

On the celestial sphere we use as the zero point of R.A. (corresponding to zero longitude) the point in the sky where the ecliptic intersects the equator. Since this spot is hard to locate we use instead a convenient star of known R.A. and slip the R.A. to this value. As the telescope is turned toward the east the R.A. reading increases indicating the position of stars of later and later rising times.

The Right Ascension dial is mounted directly on the polar axis being arranged near enough to the drive gear so that the indicating pointer can be mounted on that gear. The telescope is then turned to a conveniently located star of known position. The R.A. scale is then slipped to that star's R.A. As the telescope is advanced by the clock drive the pointer moves also to preserve the R.A. reference setting. When the telescope is turned manually the slew clutch in the drive train allows the dial to show the R.A. of the next desired star without erasing the reference setting. The dial may be engraved with the reading going in either direction depending on whether the reading is made above or below the dial. It is important to remember that the dial must indicate increasing R.A. (also called hour angle) as the telescope is turned toward the east. As the scope shows increasing Right Ascension it is indicating the later and later rising of the stars being observed. It takes only a little thought and study to visualize the operation.



Ed Lindberg

### Observation Report

**Thin Moon,** Did you see the almost new Moon on Thursday September 24? Well did you manage to catch it on Friday Sep. 25? The extremely thin crescent moon was just visible coming over the Skyway at 6:26 AM. It took a while to catch a glimpse of the Moon at 25 hours and 43 minutes before new in the morning twilight, but it was definitely easily visible just off the horizon. This is one of the thinnest moons I've seen from Buffalo.



Daniel R Marcus

### SEEN A SUNSET LATELY?

We have seen some tremendously colorful sunsets over the past year. Late September and early October has been clear so having a full week of sunsets has been nothing short of spectacular. Everyone has seen them but have you *really* watched the complete cycle of the sun heading toward the horizon, sky colors forming, evolving and fading



into a starry sky? Have you watched the full 1.5-2 hour cycle of this unfolding drama? It is time well spent. The sky is probably Nature's most freely available attraction. You can watch the sky from anywhere. Sunsets do need a good western horizon to give you the full effect.

### CAUTION

Whenever the sun's disk is visible extreme caution is necessary. Simply put -- don't look or stare at the disk, no matter how dimmed. Even when it is extremely reddened I just glance. If the sun is the least bit dazzling - don't look!

### OCT 4

I recently watched the full cycle (and lived to write about it). I was mowing the lawn near sunset and was watching the sun approaching the horizon and getting very red. I found I spent more time glancing at the sunset than watching where I was mowing. That's probably not a good idea when running a mower and definitely not a good idea when the mower is a 3000 lb tractor with a front loader! So I stopped, grabbed a camera, tripod, kitchen timer, our orange cat Karat, and up the horse pasture we went in the jeep. From there the horizon is 2 degrees from a true ocean horizon - just grand! I wanted to take photos every 5 minutes until the sky became fully dark.

Without the timer I probably would have just gawked at the spectacle. The interplay of colors on the blue sky, clouds reflecting the atmosphere filtered solar hues and the range of light from the horizon upward was truly awesome. One can only wonder what atmospheric conditions exist to bring about the changing sunsets. How does humidity, sky blueness, dust etc. affect the view.

Between exposures I could just sit back, relax and enjoy the sky. A couple times I had to shoo the curious horses away from the tripod and camera. Karat was content to sit in the jeep and watch from atop the headrest. I kept shooting every 5 minutes until the horizon edge had just a hint of purple to it and the sky above was ablaze with stars. The first quarter Moon was shining brightly and lit the pasture quite well.

I'll show the slides at the November meeting although they are no substitute for the real thing. Perhaps someone with a video camera will take a time lapse sunset video as a "show and share" project. There are several excellent exercises anyone can perform on sunsets in the book Seeing the Sky by Fred Schaaf. Also good is Sky Observer's Guidebook by Charles Roth. These can give you a nudge to help you view the commonplace from a fresh perspective. Goof off - grab the family and a picnic dinner and watch the changing sunset/twilight/night sky extravaganza! Henry David Thoreau would approve.



Bill Smith

### BAA ANNALS

5 YEARS AGO - Quarks was the subject of Larry Josbeno's talk in November 1987. Larry hails from the Elmira/Corning club, an NFCAA member. In December Carl Milazzo spoke on "Big Telescopes" and Edith Geiger exposed us all with "Candid Camera".

Several of our members, including Marylou Bebak, Adrienne Morris, Ed Lindberg and Carl Milazzo, submitted observation reports to the SPECTRUM, but we had to go to Canada to get articles. One article, on Egyptian observing, came from Karyn Bennett of Hamilton. We got two from the London Centre, "Small Aperture Observing" by Alister Ling and "Refractors vs. Reflectors" by Dale Armstrong. Edith had a profile on George Scheck.

10 YEARS AGO - In November 1982 Steve Kramer spoke on the Rittenhouse orrery, an American astronomical instrument built in 1770. In December Edith's "Candid Camera" followed a joint presentation by Bob Mayer and Steve Kramer on the Antikythera model they had developed.

Shaun Hardy wrote an article on local observations of the Great Comet of 1862 and Edith Geiger profiled John Yerger. We also had an observatory report from director John Riggs, "BAA Annals" by Ken Kimble, and "Spy and Tell" by Edith Geiger.

15 YEARS AGO - Our speaker for November 1977 was Ralph Dakin whose topic was "Telescopes and Observatories". Edith was on hand as always for December. Several other members gave short topics too, but the SPECTRUM doesn't tell who they were.

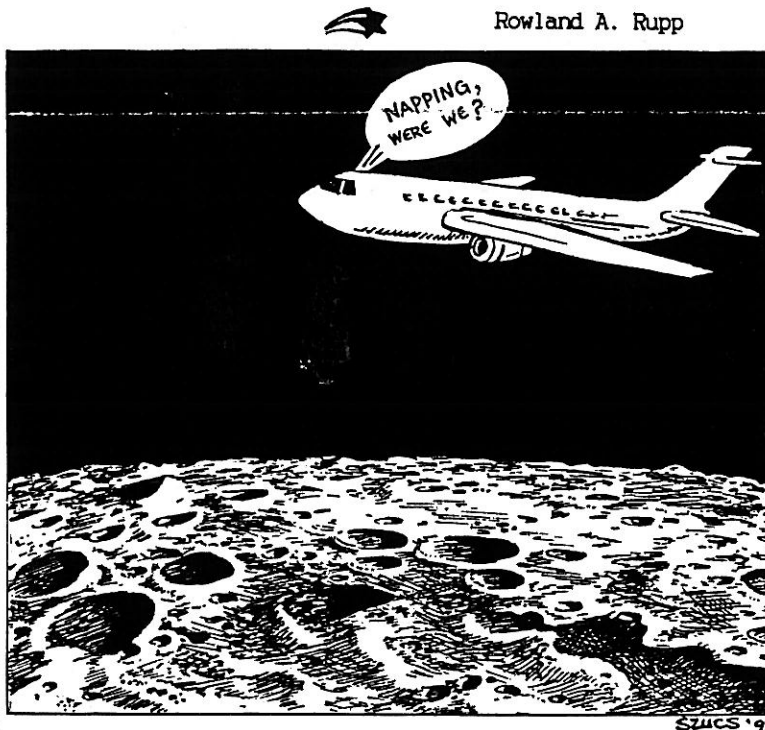
Orrin Christy reported on an "Automated Mirror Surfacing" machine he designed and built. Darwin submitted "Meteor Notes" for November and December. Since the same showers occur each year this article is still timely, as are all the "Meteor Notes" Darwin has written over the years. Edith Geiger's profile subject was Fred Price, our President at that time. Our Observatory Director then was Tom Dessert and the SPECTRUM editor was Larry Carlino.

25 YEARS AGO - Instead of meeting at the Museum, as we always did in 1967, we had a planetarium show at Buffalo State. Dr. James Oregren was our host. Olga Lindberg spoke on Maria Mitchell at our December meeting. Guess how we finished up our 1967 Christmas meeting.

The SPECTRUM was published monthly then. It doesn't say who was editor, but I think Ernst Both had taken over the job. Articles by Fred Price, "My Early Telescopic Observation of the Moon" and by Ron Clippinger, "The Cost of Lunar Observing" were in the November issue. Dues were due in 1967 just as they are now. There was a difference: \$3.00 for an individual, \$5.00 for a family.

There were several articles in December. Ed Lindberg-"Thoughts on Astronomical Magnitudes", Kurt Erland-"The Many Talents of Edith" highlighting "musician, composer, lunar observer, painter, teacher, organist, as well as first rate cook--". Ron Clippinger-"The Sunspot Cycle" tracing observations as far back as 188 A.D., Ernst Both-"Objectives by Pauly."

Rowland A. Rupp



### What Dark Skies Can Do For You: The Evolution of a 4.25 inch Reflector

Many of you may recall that a couple of years ago I brought in a 4.25 inch F/4 Newtonian reflector to a BAA meeting that I built for use as a finder scope. Its purpose was to sit on a 13 inch reflector on a Dobsonian mount. I purchased the primary and elliptical from Edmund, the focuser from University Optics, and made the tube from Sonotube that a friend of mine "donated". Miscellaneous paint and hardware that I had around the house did the rest. The total bill for this scope was around \$125, give or take \$10 either way.

## BUFFALO ASTRONOMICAL ASSOCIATION ACTIVITIES FOR MEMBERS

Paid membership includes full access to the observatory, equipment, library, magazine discounts and subscription to our bimonthly BAA newsletter. Meet others that share your interests!

GENERAL MEETINGS Second Friday of each month from September through June (except the May dinner meeting) at 7:30 PM in room NS213 of the NEW SCIENCE BUILDING at Buffalo State College Campus. Program follows the business portion of the meeting. Visitors are welcome at any of our meetings. BRUCE NEWMAN 675-2906 or BILL SMITH 664-0841.

EXECUTIVE COMMITTEE MEETINGS Held every other month at a compatible time to conduct the business and long range planning of the society. Members welcome. BILL SMITH 664-0841 or BRUCE NEWMAN 675-2906.

OBSERVATORY Located at the Buffalo Audubon Society site at Beaver Meadows Environmental Center near Java Center, New York. Lock combination to the observatory is available to members upon training and checkout. Members may observe from the property at any time. Electric power available. For special events, reserve with Dan to avoid public observing conflicts. DAN MARCUS 773-5015.

SUMMER STAR PARTIES Held at sporadic times during the summer instead of general meetings. Hosted by club members at their homes. April Messier marathon. Off-summer events welcome! DAN MARCUS 773-5015.

LIBRARY Located at the observatory. Charts and atlases are reserved for observatory use. All other books and magazines may be signed out by any member.

MAGAZINE SUBSCRIPTIONS Member discounts are available for ASTRONOMY and SKY and TELESCOPE. ASTRONOMY available yearly in October for \$16 (normal rate is \$24). SKY and TELESCOPE is available anytime for \$20 yearly (normal rate is \$27/yr). You must subscribe through our treasurer, STEVE KRAMER 634-7694.

BOOK DISCOUNTS 10% off on Sky Publishing Company atlases and books if you subscribe to Sky and Telescope through the club - 49 Bay State Road, Cambridge MA 02138. Write for catalog. Astronomical League members get astronomy books at 10% discount from the A. L. Book Service, 102 Supreme Ct, East Peoria, IL 61611.

PUBLIC OBSERVING Held on first and third Saturdays, April through October from dusk till 10 PM, rain or shine. We also arrange special tours for interested groups. DAN MARCUS 773-5015.

LOAN TELESCOPE Two scopes, an 8" f/7 and a 4.25" f/6, are available for 60 day loan by any member upon written application to the Executive Committee. BRUCE NEWMAN 675-2906 or BILL SMITH 664-0841.

**OBSERVING and MORE:** The contact people listed below are particularly interested in their topic and invite members to call them to get a head start in these areas.

DEEP SKY OBSERVING If you would like to get deeper in observing, try different equipment or for a hand in where, what and how then give us a call. Certificates and book are available from the Astronomical League to observe 107 Messier Objects, 400 or 2500 Herschel Objects. BRUCE NEWMAN 675-2906 or BILL SMITH 664-0841.

EQUIPMENT COUNSEL Not sure about a piece of gear or thinking about a purchase then call us. If it was made we either tried it, own it or know someone who has. In many cases you can handle, see and try it out. Straight talk. LARRY CARLINO 433-3432, TOM NIGRELLI 695-7193 or BILL SMITH 664-0841.

SOLAR OBSERVING Members especially interested in the Sun are invited to call us for more information. DAN MARCUS 773-5015 or BOB HUGHES 833-2407.

PLANETARY OBSERVING Members particularly interested in planetary work are encouraged to call us for more information. FRED PRICE 882-1306 or DAVE FLISS 824-6457.

LUNAR OBSERVING Members drawn to lunar work are invited to call Fred for details. FRED PRICE 882-1306.

PERSONAL COMPUTERS IN ASTRONOMY To get the most out of your computer or for an introduction to computers call us. DAVE SEPULVEDA 694-5361 or WADE SIGURDSON 875-2161.

RADIO ASTRONOMY Members interested in radio astronomy are invited to call Dave for more information. DAVE SEPULVEDA 694-5361.

VARIABLE STAR OBSERVING Observe changes in star brightness visually, photographically or in conjunction with satellite observations. National group is the American Association of Variable Star Observers (AAVSO 617-354-0484).

**SPECIAL INTEREST GROUPS:** These folks share a particular interest and are especially active in their field. All members are welcome to call the contact person, join in, and get deeper into these areas.

**OBSERVING GROUP** Meets informally at the club observatory or specified location. Training, cooperative observing projects and individual observing. DAN MARCUS 773-5015.

**INSTRUMENT SECTION** Held periodically, depending on interest. Build instruments, test mirrors, tune up scopes. Informal nuts and bolts pointers on gear and engaging talk of the cosmic kind. ED LINDBERG 633-6725.

**ASTRAL COFFEEHOUSE** Held periodically. Discuss astronomical topics of any nature in a relaxing salon style. One person's ideas inspires another's; each contributes his or her piece to something larger. It's fun and nourishing. KEN KIMBLE 694-4129.

**LARGE TELESCOPE GROUP** The object is to procure and fund a 20" class telescope for the club. TOM NIGRELLI 695-7193.

**CCD GROUP** Those interested in working on CCD applications and/or getting the club involved in this area call us. TRISTAN DILAPO 941-5613 or JOEL STUCKEY 896-6835.

**OBSERVATORY RENOVATION GROUP** Their goal is to update the observatory to better fit the long range needs of our members and additional equipment. BOB HUGHES 833-2407.

**DARKROOM** Although the club does not have a darkroom, several members are proficient. For more information call DAN MARCUS 773-5015 or EUGENE WITKOWSKI 876-4301.

**OCCULTATION GROUP** Observes grazing and total occultations by the moon. National group is the International Occultation Timing Association (IOTA 913-232-3693).

**COURSES:** Members interested in taking or helping out with a course are invited to call the contact person.

**BASIC ASTRONOMY COURSE** Offered yearly through the Museum of Science. An introductory course for members and the public. Fee includes textbook, sky charts and materials. ROWLAND RUPP 839-1842 or AL KOLODZIEJCZAK 634-5443.

**OBSERVING COURSE** Held depending on interest. Covers naked eye observing, finding your way amongst the constellations, star maps, binocular use, observing pointers & techniques and telescope viewing using a hands-on guided range of objects to train your eye. Good basic course to the sky and use of your telescope. Includes use of observatory equipment. LARRY CARLINO 433-3432, DAVE FLISS 824-6457 or BILL SMITH 664-0841.

**ASTROPHOTOGRAPHY COURSE** Held sporadically. Covers the range of topics from tripod mounted cameras, driven cameras, guided prime focus and planetary photography. Basic black and white film developing, printing and darkroom work. Includes use of observatory equipment. DAN MARCUS 773-5015.

**PUBLIC NIGHT COURSE** Held when needed. This course will aid you in public night activities. This includes elementary cosmology, basic constellations, star lore and finding bright objects for the public. BRUCE NEWMAN 675-2906.

**PHONE NUMBERS:** Members numbers are listed in the members directory. Others of interest:

**OBSERVATORY** 716-457-3104 Current sky events, sky watching info and club activities on an answering machine.

**BUFFALO MUSEUM OF SCIENCE** 716-896-5200, Kellogg Observatory open Friday evenings weather permitting until 9:30. Summer sun shows Monday through Friday around 2:30, June through August.

- TAXACOM bulletin board (300-2400 baud): 716-896-7581 Astronomy and space related topics; message board and forum discussions. JACK EMPSON 731-5083 for TAXACOM info.

**SKYLINE** 617-497-4168 From Sky and Telescope covering newly discovered objects and astronomy news.

Many special interest phone numbers and computer bulletin boards are listed in Sky and Telescope, September 1992.

If you are interested in being a contact person, to start an additional group or course,  
or for changes call BILL SMITH 664-0841 to keep this list updated.



What a difference a good finder scope can make! The field of view using a 32mm Plossl amounted to almost two degrees. What used to take what seemed like hours to find, now just took minutes to locate. Most of the Messier objects could be seen as "faint fuzzies" in the finder. Move over to the main scope - and there they were! Some small open clusters looked like globulars in the finder, but for me finding them at all was a triumph.

Some nights when I didn't feel like hauling out my main scope, I'd take this finder off the main scope and walk around the back yard holding the tube. If you've ever tried to hold binoculars steady, you should try a telescope at 50 power! Saturn looked like Comet Levy, the moon moved across the field of view like a meteor, and just trying to aim it at any specific object was a real challenge. My next door neighbor probably thought I just bought a mortar from the military outlet store. I can't say I've ever heard of anyone "walking" around with a telescope. True mobility I guess.

Thanks to the expert carpentry of fellow member Tom Nigrelli, the "walking" telescope has found a new/additional home. Tom put together a small Dodsonian mount that stands about 4 feet high, weighs about 20 pounds, and to say the least is highly portable. Some of you may have seen it out a Beaver Meadow this past summer. The kids as well as adults really seem to enjoy a scope that size. It is pretty indestructible, easy to maneuver, and gives some pretty good views!

Well, to get to the point of all this, just what can you see in a scope that small? The key to any deep sky viewing when you don't have aperture is plain and simple - dark skies, darker skies, darkest skies! Light pollution where I live in the suburbs of Buffalo isn't quite to the point that only 1st magnitude stars are visible, but then neither would I find a 10th magnitude object. As many of you can relate to your "home viewing" location - it isn't getting any better as more and more businesses are lighting their parking lots on the order of a New York Yankees night game. Beaver Meadow to the rescue!

Dave Fliss and I one night this past August viewed the following at Beaver Meadow through this former finder, walker, now mounted scope:

- 1) Andromeda galaxy (M31) and both its companions (M32 and NGC 205) were visible in the eyepiece all at once. One of the dust lanes was clearly visible on M31, and both companion galaxies were clearly there (no averted vision necessary).
- 2) Saturn. I didn't think it possible, but clearly there was the Cassini division. I don't ever remember seeing it on my main scope from West Seneca.
- 3) M22 globular cluster. We tried an interesting experiment on this one to try and see if we could resolve any stars. Ever try putting two Barlows back to back? Well success! It worked! The stars were a little on the fuzzy side but we were able to say that they could be resolved. Messier eat your heart out!
- 4) M76. The "Little Dumbell" nebula in Perseus. Even with a listed magnitude of between 11 and 12, we were able to locate it. It could be seen both with and without a filter. It was small, but it was there!

5) The Lagoon (M8) and Trifid (M20) nebulas both in the eyepiece at once. The Trifid was on the faint side, but what it lacked in brightness was made up by the Lagoon Nebula. You could see the dark areas of the nebula very clearly without any filters. We used the 32mm and a Televue 2.5 Barlow to get the best views.

6) If you've never pointed a rich field telescope into the brightest parts of the Milky Way in dark skies, you're in for an experience. Using my lowest power eyepiece (32mm), and just slowly panning across the sky, you get a slight feeling of vertigo. You would be hard pressed to attempt a star count!

The moral of the story? There are actually three morals. Dark skies DO make a tremendous difference in what you can see with ANY scope. Moral number two: never discount the power of a small scope. Today's optics are worlds apart from what Messier had to work with in his time. Moral number three: a 4.25 inch scope can truly give you some magnificent views - as long as the scope is not a "walker"!



Bruce Newman

## ASTRONOMICAL HAPPENINGS NOVEMBER

- 2 - FIRST QUARTER MOON  
Conjunction - Saturn & Moon  
SOUTHERN TAURID meteors
- 3 - Moon at apogee (404,538 km)  
Venus at Aphelion  
Conjunction - Mars & Pollux
- 9 - CEPHEID meteors
- 10 - FULL (BEAVER) MOON  
NORTHERN TAURID meteors
- 11 - Mercury stationary  
\* Indian Summer begins \*  
MU PEGASID meteors
- 12 - ARIETID meteors
- 14 - Pluto in conjunction with the Sun  
BIELID meteors  
\* Ideas never work unless you do \*
- 17 - Juno stationary  
LEONID meteors  
LAST QUARTER MOON
- 18 - Moon at Perigee (369,741 km)
- 20 - Conjunction - Jupiter & Moon  
\* Indian Summer ends \*
- 21 - Mercury at inferior conjunction
- 24 - NEW MOON  
Mercury at Perihelion
- 26 - Conjunction - Venus & Uranus
- 27 - Conjunction - Venus & Neptune  
Conjunction - Uranus & Moon  
Conjunction - Neptune & Moon  
Conjunction - Venus & Moon
- 28 - ANDROMEDES meteors
- 29 - Mars stationary  
Conjunction - Saturn & Moon

## DECEMBER

- 1 - Mercury stationary  
Moon at Apogee (404,411 km)
- 2 - FIRST QUARTER MOON
- 4 - Vesta in conjunction with the Sun
- 5 - PHOENICID meteors
- 9 - Mercury at greatest elongation (W. 21°)  
FULL (HUNTING) MOON  
The Full Moon will present a total eclipse. The umbral phase will begin at 3:55 PM EST. Totality will start at 6:07 and end at 7:21 PM EST. The final wrap-up will be at 9:33 PM EST. We should have a good evening of the eclipse in North America.
- 10 - MONOCEROTID meteors  
NORTHERN CHI ORIONID meteors

- 11 - RHO HYDRID meteors  
SOUTHERN CHI ORIONID meteors  
DELTA ARIETID meteors
- 12 - Conjunction - Mars & Moon
- 13 - Moon at Perigee (367,971 km)  
GEMINID meteors
- 16 - LAST QUARTER MOON
- 18 - Conjunction - Jupiter & Moon
- 21 - WINTER SOLSTICE

Once again we are experiencing the longest night for observing, but from this point on, the night skies will start to become shorter. Take advantage of the long dark night sky to do your observing.

- Conjunction - Venus & Saturn
- 22 - Conjunction - Mercury & Moon  
URSID meteors
- Conjunction - Mars & Pollux
- 23 - NEW MOON

Should you wish to travel to the Aleution Islands, you might observe the partial eclipse of the SUN.

- 25 - MERRY CHRISTMAS
- 27 - Conjunction - Saturn & Moon
- 28 - Juno at Opposition
- 29 - Moon at Apogee (405,070 km)
- 31 - FIRST QUARTER MOON



### MEMBER TALKS

We would like to include in next year's meeting agenda a couple of programs by members. If you would like to give a presentation then call me or any board member. Also, we are always looking for people to give 5-15 minute short talks.

The 5 minute "What's up tonight?" presentations are also looking for speakers. Acetate clears of the whole sky and a more detailed overhead view will be provided of the sky 2 hours after sunset! If interested call Bill Smith 664-0841 or any board member.

\* The "SPECTRUM" \*

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**\*\*\* FIRST CLASS MAIL \*\*\***

# AstroGrams

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Astronomy anagrams. Use letters in phrase to spell astronomy term. Hidden term will be one or two words. Answers will be found in the next issue of the *SPECTRUM*.

## 1) MADE RADON

Spiral with two companions. Can you see it?

## 2) GEE LET US BE

Red giant on a winter night. Near the archer!

## 3) ON A SILENT COLT

Connect the stars and this is what you get.

## 4) LAW LIMITS HIM

The new President, but NOT of the U.S.

## 5) HER PAL SUSAN

Nearest globe exhibits this.

Nov-Dec '92

### ARTICLES TO COME

"TESTUDO" an Ancient Constellation  
"DAVE FLISS" a profile  
"An Observatory Wish List"  
"A Preview of Whats to Come"  
and many others

6



Rowland & Irene Rupp  
132 Burroughs Dr.  
Snyder, NY 14226