

THE

SPECTRUM

MAY - JUNE 1998



NEWSLETTER OF THE BUFFALO ASTRONOMICAL ASSOCIATION, INC.

MEETINGS NOTICE

FRIDAYS: MAY 8, JUNE 12

May 8th: "Mars: The Living Planet" - Renowned author Barry E. DiGregorio discusses this new book. (see Rowland Rupp's **Book Review** in the previous SPECTRUM issue)

June 12th: "Artificial Earth Satellites" - Well-known local astronomer Carl Klingenschmitt of Akron NY will talk about artificial Earth satellites. Also election of officers and the annual business meeting.

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.

EDITORIAL: Public events and real world learning for kids

Public night season started in April. One of the tenets of our club is to help in public education/outreach. Two recent articles in The Amicus Journal, a publication of the Natural Resources Defense Council, were on 'How nature shapes childhood' and 'Letting nature shape childhood'.

No matter where they are in the outdoors, children can create their own worlds away from an indoor world with its rules and insulation from direct experience; the 'electronic' childhood seems to be rapidly replacing real-life encounters. Public events help by offering direct experiences. Hands-on encounters are real to kids; it's harder to relate to subjects you can't touch; for example loss of rainforests or the ozone hole.

HANDS-ON EXPERIENCES

The articles talk about "Hands-on experience at the critical time, not systematic knowledge, is what counts in making a naturalist." As good as the Discovery Channel is, it is not the same as direct experience even if on a much less grand scale than shown on TV (such as chasing after butterflies in the park). The critical time seems to be middle childhood, 6 to 12 years old, when they are the most curious of their surroundings; devouring facts and information. The articles state, "The bond children feel with nature develops through distinct phases. At four, they begin exploring. By seventeen, the 'gasoline period' begins." My own public experience concurs - it is the rare non-nature and non-astronomically interested high school student who discovers new things in nature as their "earth period" has waned as vocation and urban values take focus. This does not mean those experiences are gone - just temporarily submerged as many adult visitors talk

of astronomical experiences in the past and how they have been recently revived by a show, news item or public night visit.

One quoted author laments, "The percentage of children who have frequent exposure to wildlands and to other, undomesticated species is smaller than ever before in human history." The same can be said about their exposure to astronomy with light pollution requiring an extra effort *of the family* to get a child involved; it seems much easier to get it, if at all and how well, from science programming, reading and the internet. That is all well and good but the hands-on learning is what many studies say as "You make a bond with the moment" and "The experience becomes part of you and ties you for life." More and more this 'hands-on' approach is disappearing or as the article states: "... the extinction of experience."

Also the articles pose questions as: "What will become of children who haven't played in the woods?" and "Does nature play an important role in the emotional growth of children?"

HELPING OUT / HELPING YOURSELF

Helping kids to discover a whole world above their head (a heads-up experience!); helping adults to rediscover their childhood (or fill in a lacking one) and discovering for yourself are part and parcel of our public nights. It doesn't matter whether you're there as a guide or 'visitor', it's a fun and enriching adventure. Call our observatory director, Bill Aquino, at 731-9366, for more on our public nights.

Anyone wishing a reprint of these articles - just give me a call (962-3412) and I'll mail you a copy.

— Bill Smith

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.

BAA web site via Mark Reville: www.webt.com/mreville/indexbaa.html
TAXACOM computer bulletin board - 716-896-7581

MEMBERSHIP CORNER

Joe Orzechowski

The 1998 BAA Membership Directory is now available for distribution. Members who attended the April meeting have already received their copy. Those who were not at the meeting will receive their copy of the Directory in the mail within the next two or three weeks. Please take a moment to review your entry in the Directory and, if you find an error or omission, please bring it to my attention so that it can be corrected for next year's issue. Just leave a message at 839-9109 (home) or 632-7091 (work).

As I have done in the past, I have again compiled annual statistics on BAA membership. The figures for the past five years as well as the preliminary figures for the current year are listed below.

<u>YEAR</u>	<u>JOINED</u>	<u>DROPPED</u>
1993	16	10
1994	22	18
1995	22	15
1996	19	24
1997	20	14
1998(to date)	16	—

The YEAR is a membership year running from the previous September to August of that year, JOINED shows the number of members (individual, family, senior or student) that joined in that year, and DROPPED shows the number of members who did not renew beyond that year. As you can see the BAA is once again in a growth mode, netting a gain of six members in 1997. This gain more than cancels the 1996 net loss, which was the only loss in membership we've suffered in the past six years. With the new members who have joined thus far in 1998, the BAA membership now stands at 111.

Our average growth rate for the last five years has been small (about 3 members per year) but steady. Let's face it, these days there are plenty of things which vie for our time: our job, our family, the house and yard, as well as other hobbies and interests. However, it is encouraging to know that we are constantly gaining new members who are willing to make a commitment to the BAA and to astronomy. Some of our members are actually fortunate enough to be able to take some time out from their busy schedules to come to a meeting, to do some observing, or to help others appreciate and enjoy astronomy. But all of us make at least one commitment to the BAA; we pay our membership dues each year. The fact that there are a growing number of members who at least make that commitment year after year is a tribute to the type of organization and the type of members that we have.

I'd like to present a list of the members who have joined the BAA since January. Because the Membership Directory has just been released, I'll only list their names here; addresses and phone numbers can be found in the Directory. On behalf of the rest of the BAA, I'd like to wish a warm welcome to the following new members:

Donald Botteron
Robert Chapman
Carl & Sue Fay Klingenschmitt
Doreen Panzarella
Mark Swiderski

Finally, if you're looking for something to do on Saturday May 2nd, consider coming down to the Beaver Meadow Observatory to help us celebrate Astronomy Day. If that night is clear, I'm sure Neil and Bill will appreciate any help you can provide in handling visitors to the observatory. (No experience necessary.) See articles elsewhere in this issue for more details on Astronomy Day activities.

**BAA ANNALS**

Rowland A. Rupp

5 YEARS AGO - In 1993 our May dinner meeting was actually held in May. Dr. David Toot from Alfred University spoke at the Coachman's Inn (now closed) on solar research being conducted at Alfred. We had a show in June, "LEGENDS: Greek Mythology Brought to Life" at Buffalo State's Ferguson Planetarium.

Edith Geiger's BAA Profile was on Bill Smith, our President at the time. Bill contributed a summary on globular cluster observation in that same SPECTRUM issue. Ed Lindberg's Instrument Notes dealt with the history of the search to reduce spherical and chromatic aberration in refractor telescopes. There were no observation reports, but Luann Szucs contributed a Galileo probe to Jupiter cartoon. Plans for the addition to Beaver Meadow Observatory were being made final, and ground breaking was imminent.

10 YEARS AGO - Buffalo State's Moot Hall was the site of the 1988 May dinner meeting. Rochester's Trudie Brown spoke on "The Stars for Great Grand-Dad". The price for a ticket was \$8.00—sounds like we had prices from great grand-dad's day too. Ron Mauer from the Elmira-Corning Astronomy Club talked on Mars at our June meeting.

The SPECTRUM had several articles giving advice to amateur astronomers. Carl Milazzo wrote a brief article describing an amateur astronomer as one who isn't afraid of the dark, hates bright lights, but values red flashlights. The advantages and satisfaction of taking observing notes were extolled by Paul Warmis, and Al Kolodziejczak gave "More Advice to a New Member".

Fred Price submitted an article on "The Lunar Ring Formation Catharina", while Leslie Martin wrote on "Planetary Temperatures". Carl Milazzo had an observation report, and Steve Kramer related a joint observation report made by John Lukens Esq., a Mr. Prior and David Rittenhouse in 1784. The object that grasped their attention was a comet in Pisces. The object of Edith's Profile was Dave Sepulveda.

15 YEARS AGO - "Asteroids" was the subject of Dr. David Meisel's talk in May 1983. Dave was Associate Professor of Physics and Astronomy at Geneseo, Director of the American Meteor Society and Research Associate at the Buffalo Museum of Science at the time. Al Kolodziejczak talked on "Quasars" in June.

Larry Carlino wrote an article on "Observing with Nebula Filters", a relatively new tool made available to amateur observers around then. Claudia Bielinski, who combined astrology with astronomy and was knowledgeable about both, was the subject of Edith Geiger's biography. Observations were submitted by Michael Idem and by Carl Milazzo. The BAA was planning to hold a "Space Fair" at the Museum of Science in which we would exhibit telescopes, astro-photos, drawings, paintings and mirror grinding and polishing techniques.

25 YEARS AGO - Ed Banaszak, an illustrator from Bell Aerospace, spoke on rocketry at our May 1973 meeting. In June we heard a report from the BAA's Instrument Section headed by Ed Lindberg. Art Young's article was on "The Alignment and Calibration of Small Equatorial Telescopes". His advice is still timely. John Riggs wrote on deep sky observing for the coming months, a regular SPECTRUM feature. Another regular feature, even then, was Edith Geiger's "Spy and Tell". This one mentioned that Treasurer Bob Kartyas had purchased an 8-inch telescope kit. Unfortunately, Bob did not long survive his construction project, but his instrument now resides at BMO as the Bob Kartyas Memorial Telescope.

35 YEARS AGO - We journeyed to the Niagara Falls Planetarium to
(Continued on page 3)

Officers

Bob Hughes - President (833-2407)
Gene Witkowski - Vice President (876-4301)
Lynn Sigurdson - Secretary
Bev Orzechowski - Treasurer (839-9109)
Dr. Jack Mack - Museum Representative

Board members at large

Joe Orzechowski - Bill Smith (664-0841)
- Bob Titran (774-2742)
Rowland Rupp - Fellow Representative
Joe Orzechowski - Membership
(839-9109)

Observatory Directors

Neil Dennis (322-7596) & Bill Aquino (731-9366)

SPECTRUM STAFF

Bill Smith - Editor / Layout
Bev Orzechowski - Circulation

BAA Annals continued from page 2

see a program entitled "Color in the Sky" for our May 1963 meeting. Arthur Young presented the program using the Spitz Model B projector. We formed a motorcade to get to the location on Walnut Street. (What has happened to this planetarium—does it still exist?) In June, the BAA's Thad Toporczyk, a member of the then active Study Section, spoke on the sun. Each SPECTRUM contained some telescope tips. Observing while from a rocking chair (!) was recommended in the May issue. The advice in the June issue was a little more conventional—mount your telescope on a pier instead of a tripod.



SPY AND TELL

Edith L. Geiger

On Jan. 7th, **Dan and Melissa Marcus** went to the Amateur Canadian National Championship Figure Skating event at Copps Colosseum in Hamilton. On Friday morning, Melissa on waking, claimed she smelled smoke, to which Dan chimed in with, "We forgot to request a non-smoking room!" Melissa's sense of smell was right on target, for the adjacent building was on fire. As a result three streets were blocked off, and Dan and Melissa observed the spectacle from across the street.

Bill Smith's photographs were on display at the Jamestown Public Library in January. Among other highlights for '97, Bill was awarded "Expert" status at Valeo Engine Cooling. He went to France 4 times for 20 days. Trips to the Royal Winter Fair (indoor county fair) in Toronto, and Mohonk Mountain House in the Shawangunks in the eastern Catskills, provided additional enjoyment for both Bill and Carol.

Carl Milazzo has a photo on one of the date squares on the calendar in the March issue of Sky & Telescope, pg. 93.

Rowland Rupp and **Bill Aquino** were speakers in January at the North Collins Rotary Club meeting at which Ernst Both was in attendance. Rowland spoke on the history of the BAA, and also on man's search for an extraterrestrial solar planet. Bill gave a five minute talk on our observatory and the summer program. Bill says that the dinner was great and he did all the eating while Rowland did all the talking.

Congratulations to Jackie Mack, son of **Jack and Jayne Mack**, who at a high school freshman assembly in January, was presented with 4 awards: science, chorus, drama, and debate.

Alice Mack is back from the Czechoslovakia Republic, where she was a student last semester at the University of Prague. While abroad, she visited Edinburgh, Budapest, Berlin, Vienna, and Bratislava, the capitol of Slovakia.

On St. Patrick's Day, Jack and Jayne celebrated the 28th anniversary of their first date, to the day, "the day," Jack says, "it will be half of my life."

On Jan. 28th, **Mark Reville**, **Tristan DiLapo**, and **Carl Milazzo** gave a talk on astronomy to about 30 teenagers at the Full Gospel Tabernacle on Southwestern Blvd., after which they set up a telescope in the parking lot to view the heavens.

Bob Hughes, **Rowland Rupp**, and **Bill Aquino** attended the kickoff fund drive on Jan. 25th at Joseph's Country Manor in Depew, for the Buffalo Audubon Society expansion project at Beaver Meadow. The architect showed plans for the addition, and there were talks by the fund raising group. Bob introduced himself and said the BAA would support their fund effort, and with Audubon's stature it would help our public nights and the availability of the classroom at our observatory.

On the Saturday evening weather report of Channel 4, Feb. 7th, Mike Cejka showed **Carl Milazzo's** slide of the line-up of the planets.

Gary Baldwin went to Ft. Lauderdale on February 25th to visit relatives. He had the good fortune to catch a great meteor streak in one of the sky

photos he took while he was there.

Kat and Tom Bemus are planning on building a home at Bemus Point this summer with Tom doing about all but the shell.

Anthony Davoli is in the process of making a 17.5" telescope with a split ring. Anthony is a science teacher at Clarence High School, and entered his class in the Science Fair at Buff State. He is also an active skier, and enjoyed skiing in Vermont this past winter.

On March 19th, **Carl Milazzo** gave an astronomy talk to a 2nd grade class at Newfane Elementary School, and was very pleased with the children's response.

Several of our members came down to Earth, visiting the annual Gem-Mineral Fossil Show at the Erie County Fairgrounds in Hamburg, on the weekend of March 20-21. Those present were: **Gene Witkowski**, **Art Gielow**, **Jim Lemen**, **Bill Smith**, **Kat & Tom Bemus**, **Carl Milazzo**, the **Mark Reville** family, and **Joe & Bev Orzechowski**.

A photo of **Jordon DiLapo**, 3 year old son of **Tristan and Debbie DiLapo**, appeared on the cover of the March 21st issue of The Southtowns Citizen, showing him picking a favorite video from a shelf in the Orchard Park Public Library. He likes many subjects including railroads, and road construction. He also enjoys the library story hour.

Congratulations to **Gene Witkowski** whose exceptional work in astro imaging is published in the April-May issue of Astrograph, an 8 page magazine (circulation of 300) devoted to amateur astrophotography. Gene has 18 lunar images in this issue along with a photo of himself, his telescope and equipment. Anyone on the Internet may wish to access the World Wide Web site <http://www.erols.com/astrograph/>.



FOR SALE

Celestron SPC-80, 80 mm achromatic refractor

910 mm FL, F11.4 on Super Polaris German equatorial mount with slow motion controls on both axes.

Wood Tripod — 6x30 finder scope — Accessory Tray
20 mm Eyepiece — Polar Alignment scope — Solar filter
Padded case for scope — Piggy-back Camera mount
asking \$475 Call Dennis Hohman @ 662-2904

ERRATA

In the Mar/Apr 98 issue of the SPECTRUM, the superscripts in the two equations appearing in Allen C. Goodrich's article "The Universe - Gravity - A Unified Theory" -- for some obscure reason -- were not printed as superscripts. The equations should read:

$$T^2 = L^3 / K (M - m)$$

and

$$m L^2 / T^2 + K (M - m) m / L = \text{a constant } M$$

WEB SITES

For an animation of the motions of stars at the center of the galaxy:

www.mpe-garching.mpg.de/www_ir/GC/gc.html

Next Generation Space Telescope: Hubble's successor
ngst.gsfc.nasa.gov

SPECTRUM DEADLINE

The deadline for the July-Aug issue is
June 12th.

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

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**VIA BILL AQUINO****TIME WELL SPENT IN ASTRONOMY****Moon**

1st Qtr May 3	Full May 11	Last Qtr May 19	New May 25	1st Qtr June 1	Full June 10	Last Qtr June 17	New June 24	1st Qtr July 1
------------------	----------------	--------------------	---------------	-------------------	-----------------	---------------------	----------------	-------------------

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

OBSERVATORY ACTIVITIES

CCD System

The CCD camera and associated equipment is still out for upgrades and modifications. With any luck it should be ready soon

Loaner Scope ready to go

Thanks to the efforts of Tim Leary the 2" Meade refractor has been repaired, cleaned, and is ready to be loaned out. This scope comes with a complete set of eyepieces, a barlow, and a moon filter. It provides excellent lunar views and was even able to resolve the Trapezium in Orion. It would be a shame for this telescope to sit at the observatory and collect dust instead of being in someone's backyard collecting starlight.

CD Recorder

The CD Recorder is now installed in the computer at the observatory. Thanks Dennis. Also, blank CD's are available from Dan Marcus at a very reasonable cost. First come first served.

Video Camera Imaging

Gene Witkowski has generously loaned the observatory one of his video cameras to experiment with for the next several months. A "C to T" adapter ring has been purchased to interface the camera to the 12" Newtonian. We plan to string-up a temporary video cable and add an extra display screen for monitoring. We should have the experimental system up and running by the time you read this article. If you are interested in experimenting with this technology now is your golden opportunity, don't miss this chance. See Neil or Bill for instructions on operating the system.

Public Night Volunteers

We are still looking for volunteers for most of the remaining public nights. On each public night we will need; a **Lecturer** to provide a 20 to 30 minute astronomical talk (repeat the talk if it's a busy night), a **Telescope Operator** to run the 20" Dobsonian, a **Greeter** to direct traffic and encourage the public to sign-in and make a donation. If your interested in volunteering for one of these positions on any of the remaining public nights please contact Bill Aquino at 731-9366.

And as always the entire membership is welcomed and encouraged to attend our public night activities. Observatories and telescopes are great, but the public really comes out to meet and interact with amateur astronomers.

Date Event elevation above noted horizon @ time listed [binos or small scope helpful]

May 2	Astronomy Day at the Beaver Meadow Observatory Call 457-3104 for recorded events schedule. See related article on this page.		
May 4	Try to catch Mercury rising; 4° above E @ 5:30 AM		
May 5	Eta Aquarid meteor shower - waxing gibbous moon - fair conditions		
May 8	General Meeting of the BAA @ Buffalo State		
May 12	Mercury passes 0.8° south of Saturn; 4° above E @ 5:25 AM		
May 16	Observing Group Meeting 3:30 to 4:30 PM Astrophotography Group Meeting 4:30 to 5:30 PM Telescope Group Meeting 6:30 to 8:30 PM Public Night @ Beaver Meadow Observatory		
May 18	Uranus 3° south of the Moon; 25° above SSE @ 4:30 AM (binos)		
May 21	Jupiter north of the Moon; 15° above ESE @ 5 AM		
May 22	Venus 1.7° north of the Moon; 10° above E @ 5 AM		
May 23	Saturn 1.7° north of the Moon; 5° above E @ 5 AM		
May 24	The Moon passes 3° south of Mercury; 5° above E @ 5:30 AM (difficult view)		
May 28	Venus and Saturn are very close; 10° above E @ 4:45 AM — DON'T MISS		
May 30	Members night @ BMO 8pm on, (Obs staff present)		
May 31	The Moon is within 1° of the bright star Regulus; 45° above SW @ 9:30 PM		
June 6	Telescope Group Meeting 6:30 to 8:30 PM Public Night @ Beaver Meadow Observatory		
June 12	General Meeting of the BAA @ Buffalo State		
June 14	Uranus 3° south of the Moon; 31° above S @ 4:30 AM (binos)		
June 17	Jupiter very close to the Moon; 36° above SE @ 4:45 AM		
June 19	Saturn 2° north of the Moon; 28° above ESE @ 4:50 AM		
June 20	Observing Group Meeting 3:30 to 4:30 PM Astrophotography Group Meeting 4:30 to 5:30 PM Telescope Group Meeting 6:30 to 8:30 PM Public Night @ Beaver Meadow Observatory		
June 21	Venus 3° north of the Moon; 9° above E @ 4:30 AM		
June 25	Moon passes 5° south of Mercury; 6° above WNW @ 9:30 PM		
June 27	Mercury passes 5° south of the bright star Pollux; 6° above WNW @ 9:30 PM		
July 4	NO EVENTS — Observatory CLOSED for the Holiday		

BEAVER MEADOW OBSERVATORY**457-3104**

Astronomy Day on May 2nd

The Buffalo Astronomical Association is having it's annual Astronomy Day observance on May 2nd 1998 from 12:00 noon until 10:30 PM at the Beaver Meadow Observatory. Our main speakers will include; Roland Rupp at 1:00 PM "A Trip to the Moon", Joe Orzechowski at 2:00 PM "Scale of the Universe", Mark Reville at 3:00 PM "Astronomy on the Internet", Tom Bemus at 4:00 PM "Astronomy from A to Z", and Jack Mack will be presenting "A Walking Tour of the Solar System" at various times throughout the day. Solar observations will be made with the weather permitting and our normal Public Night activities will begin at sunset.

Astronomy Day is an event that every member of the family will enjoy and all of the Associations membership should make an effort to attend. In addition, the Beaver Meadow Nature Center will also be having an Open House "May Celebration".

All are welcome.

Observed: Supernova 1998S

Date of Observation: 03/29/98

Time of Observation: 7:30 to 9:30 PM (EST)

Location: Beaver Meadow Observatory

Observing Conditions: Marginal. High thin clouds with a few breaks

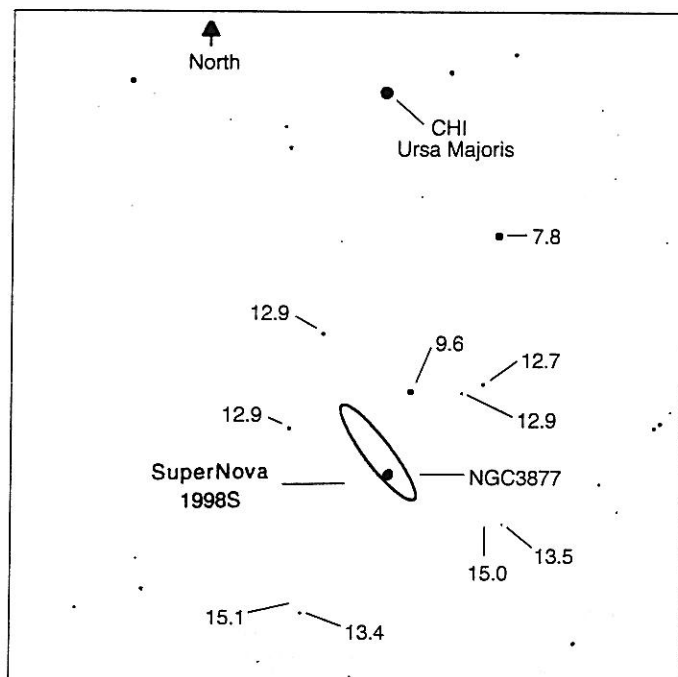
Instrument: 20" Dobsonian and 12mm Tele-Vue eyepiece with Tele-Vue 1.8x barlow.

Supernova 1998S was discovered on March 2nd 1998 and is listed as an unusual Type II supernova. It is located about 0.3 degrees due south of the star Chi Ursae Majoris in the 11th magnitude galaxy NGC-3877. The supernova appeared as a star-like point of light at the edge of the galaxy, just south of the galaxy's center. We estimated its brightness at about 12th magnitude and found that the supernova was much easier to observe than the galaxy. Light from the supernova is condensed to a single point, instead of being spread-out, as in the case of the galaxy. Although NGC-3877 is faint at 11th magnitude, and lacks a bright central region, the galaxy was detectable despite the marginal observing conditions.

This is an edge-on spiral galaxy with the central region and spiral arms of nearly equal prominence. It appeared as a faint 4 arc-minute streak at a position angle (tilt) of about 45 degrees. The finder chart shown below was printed with the planetarium program "DeepSpace" and the magnitude information is from the Hubble guide-star catalog. The image was downloaded from the Sky & Telescope website then labeled for clarity.

— Dan Marcus, Tim McIntyre, Mike Ried,
Don Knecht, Tim Leary, Bill Aquino

While nice, you don't need a large scope as this supernova was also viewed on a moonless night from a dark site near Jamestown by Bill Smith and Tom Bemus in a 4 inch refractor at 40x. A 10" scope was needed with the 1st quarter moon in the sky. - Editor



SuperNova
1998S

NGC3877

1998 TOTAL SOLAR ECLIPSE

The moon made first contact with the western limb of the sun at 12:39:20 Atlantic Standard Time on February 26, 1998. Our location was approximately 12°31.6'N by 69°15.5'W, between the Dutch Antilles islands of Aruba and Curacao, about seventy miles off the coast of Venezuela. This placed our cruise ship, Norwegian Sea, right on the centerline of the solar eclipse. As the ship's eclipse narrator commented, at least the astronomers were right--the eclipse was really going to happen when and where it was supposed to.

We were lucky at that. After several days of beautiful Caribbean weather, signs of clouds began to appear the night before the eclipse, and by the next morning we were heavily overcast. We set out west from Curacao to find a break in the cloud cover. After a couple of hours we were still in the overcast, although it was getting brighter. The ship added an engine for more speed, and we were told the expectation was we would miss first contact, but would be in clear skies for totality. We suspect they were just playing safe with that dire prediction.

The decks were littered with small telescopes, camera tripods and crowds of people. Some observers were taking pictures with hand held cameras. Even the ship's photographer got into the act, although a couple of astronomers had to suggest exposure settings to him. A good many people just lounged on deck chairs, occasionally viewing the sun through the solar filters that could be bought at the ship's store for \$2.50. Can you imagine that--an eclipse cruise where you had to buy your solar filter?!

Expectations of what viewers would see varied. It was said one passenger commented that he would remain below in the casino, as he didn't think he'd see anything worthwhile during the eclipse. It was later reported that he did appear on deck during totality after all. A mother was overheard telling her daughter that she had to stay seated during totality because it would be much too dark for her to see her way around on deck. And judging from all the discussion afterwards, most people, even those who were somewhat knowledgeable about eclipses, hadn't expected to be so awed by the spectacle. More than one person stated that the event was one of the most memorable of his lifetime.

Anyone who has seen a total eclipse knows it is nearly impossible to describe it to someone who has never seen one. Just before second contact the quality of sunlight changed dramatically. It was a subtle combination of diminished brightness and eerie shading. As the last vestige of the solar limb disappeared, the corona literally burst on the scene amid the gasps and shouts of the transfixed viewers.

At totality the sky became like no sky seen at any other time. It became very dark grey with, perhaps, a faint bluish hue. The corona, surrounding the black hole that was the moon, looked like a painting. That may seem like a far-fetched description, but how else does one describe something never seen before. It really has the pearly coloration described in texts. Streamers marking the sun's magnetic field appeared: shorter near the poles, approximately the width of the moon's diameter at the equator. Venus was seen well before totality, and Jupiter and Mercury popped out next to the corona as the sun disappeared.

We never saw the shadow bands, the approaching shadow of the eclipse or the stars that might have been visible during the three minutes and fifty-one seconds of totality. If you wonder how so much of importance can be missed, try it yourself. We did get to see prominences, signs of Bailey's beads and even managed to photograph the diamond ring. With the return of the sun, one almost sensed a sigh of relief among the observers, accompanied by enthusiastic and sustained applause.

Worth commenting on--the cooperation and generosity of the astronomers, amateur and professional. They gladly gave advice, contributed their expertise and even shared equipment. And, crowded as it was, the casual observers were considerate of those with telescopes and cameras.

The next big show is in Europe and Asia on August 11, 1999. This shorter duration eclipse will cross the Atlantic and the Black Sea, and I'm sure there'll be cruise ships in its path. I'm not sure the Norwegian Sea will be among them. I don't think the crew was quite comfortable with at least half the passengers more interested in astronomy than in the activities more typical of a cruise. Well before fourth contact one of the activities people

(Continued on page 7)

1995 Solar Eclipse continued from page 6

announced we should clear our telescopes and cameras from the deck because it was time to play make-believe Olympics. She was not only ignored, she was booed (politely). Both the bar trade and the casino suffered considerably. Maybe they made up the difference by selling viewing filters at \$2.50 at shot.

— Rowland and Irene Rupp



Solar Eclipse Cruise

On February 26th, Bob and Laurie Titran, along with Dan and Melissa Marcus and 1600 others aboard Holland America's MS Ryndam, watched a total solar eclipse under clear Caribbean skies. Words are really inadequate to describe what we saw, and, quite frankly, the photos and videos fail to capture the splendor of an eclipse, to an extent that's hard to imagine until you've seen the real thing.

The excitement started early in the day as people staked out their observing spots several hours before first contact. The captain had detoured the ship about 120 miles to the southwest in order to avoid clouds threatening Guadeloupe and Montserrat, and there wasn't a cloud in the sky as the eclipse got underway. Many of us ignored tour leader Rick Feinberg's advice to avoid heat stress by staying in the shade and viewing the partial phases intermittently — we soaked up every minute of the eclipse, caught up in the tension and excitement as the Big Event approached.

It grew noticeably cooler as totality approached (granted, it was still darn warm). Venus was brilliant high in the western sky. The shadows took on an odd silvery "double-image" appearance and we had fun projecting little crescents between our crossed fingers onto the deck. The sun was still dazzling despite only the thinnest sliver being exposed, and it was hard to keep from peeking to see if we were "there yet."

Suddenly, cries of "Diamond Ring!" rang out, and there it was — a black hole in the sky with a blazing jewel set in the corner. Before my jaw had finished dropping the diamond faded to be replaced by the delicate streamers of the corona. The corona reached 2-3 solar diameters from the sun, and the gossamer, silvery petal-like structure was a sight to behold, unlike any of the photos I had seen. Small bright pink prominences surrounded the eclipsed sun. Mercury and Jupiter shone brightly near the sun during totality. While Mars was apparently nearby as well, I didn't look for it so never saw it.

Amazingly, the next 3 minutes, 26 seconds passed in an instant, and all too soon a second diamond ring appeared, heralding the end of totality. Cheers went up, and there was much applause as well as few tears shed as the corona vanished. As the sun reappeared, "Shadow bands on the bulkhead!" was called out, and I saw the ripples of sunlight across the ship much as you see on the bottom of a swimming pool on a sunny day. Completely satisfied, yet somewhat sadly, I packed up, leaving the diehards on deck to photograph the rest of the partial phases. The eclipse marked the end of a four-year dream, starting back at the hailstorm which interrupted the 1994 annular eclipse. While I couldn't ask for much more, I can ask to do it again. Europe in '99? Africa in 2001? Maybe we'll see you there!

Part Two — What Else Did We See?

Imagine if you will a 10-day astronomy convention. However, only 5 days will be filled with top-notch astronomical lectures. On the other 5 days you'll have to make due with exotic tropical islands, complete with white sands, warm, clear waters, and complimentary rum punch. Each night would feature stargazing from a dark, low latitude location. All the coffee and light snacks (or pina colodas and spectacular buffets, for that matter) you could wish for are just down the hall. Yes, a cruise ship is a fine way to see the stars.

Rick Feinberg and the folks from Sky and Telescope, Holland America, and Scientific Expeditions put on a wonderful program. Lecturers included S&T's Dennis di Cicco, former director of the Harvard-Smithsonian Center for Astrophysics George Field, PBS's Star Gazer (formerly Star Hustler) Jack Horkheimer, and Tufts University astronomer

and author Kenneth Lang. Al Nagler of Tele Vue had his telescopes and solar filters set up near the pool throughout the cruise, and astrophotographer Don Parker was among the 1200 passengers along for the ride.

Laurie and I had several opportunities to look for the green flash. Our first good chance came on the 24th, when we watched from the ship's dining room. The couple in front of us saw it, as did many of the other diners as evidenced by the applause. Unfortunately, we didn't see a thing. On the 28th we watched from the deck just before dinner. Again, we didn't see a thing, nor did the many others on the deck with us. However, many people in the dining room saw it. We never did catch a green flash, so seeing this elusive phenomenon is something we'll have to keep working on.

On the first night of stargazing, once I figured out the bright star ahead of me was Canopus, not Sirius, I realized I'd have to learn some new constellations. I eventually learned to locate or trace out parts of Puppis, Carina, Vela, Centaurus, Crux and Dorado. Much of the viewing was done with the naked eye. Familiar objects such as the Coma Cluster, Beehive and Double Cluster were easily seen overhead. I also saw new objects, such as Alpha and Beta Centauri, the globular cluster Omega Centauri, and the Southern Cross. On the night of February 24, I saw 8 meteors in various parts of the sky, including one that broke apart. The night also featured what many people thought was a barium rocket sent up as part of some type of atmospheric test, which left a long, twisted, glowing trail in the night sky. The night was particularly clear, with stars visible to the naked eye less than 5 degrees above the horizon, and Omega Centauri easily seen 10 only degrees high.

I used binoculars to pick out deep sky objects I'd never see from Buffalo. The Large Magellanic Cloud was (barely) seen just above the horizon. NGC 2516, IC 2391 and IC 2395, bright open clusters in Carina and Vela, were easy finds. Globular cluster NGC 2808, open clusters NGC 2546, 2477, and 2451 required a little more hunting — the latter two, a bright, loose cluster paired with a smaller, dimmer cluster being well worth the additional effort. NGC 2546, a dim cluster (magnitude 6.3, same as NGC 2808, but much more spread out) was nowhere to be seen.

Finally, some hearty soul who'd brought a small telescope along offered parting views of comet Hale-Bopp. Much diminished from its peak last year, the comet was a small puff of fuzz, barely visible in a borrowed

In Praise Of The Rich-Field

NAKED EYE

This is the ultimate in rich-field viewing, the unaided human eye at can view huge chunks of night sky at one time. Without straining your eyes you should be able to carefully examine a piece of sky about 120 wide by about 45 tall all at once, no telescope or binocular can do that. Don't overlook the things you can see best with your naked eye: meteor showers, manmade satellites, the constellations, the phases of the Moon, the Milky Way, auroras, conjunctions and many deep sky objects and planets can be observed. Take time some night to sit down in a comfortable chair and REALLY look at the night sky with just your own eyes, it is a glorious experience.

BINOCULARS

Too often amateur astronomers overlook one of the simplest and best optical aides they can use. I am, of course, referring to binoculars. Almost everyone is hung up on the idea of high magnification.... "How much power does that telescope have?" is one of the most frequently asked question by new astronomers.

There are situations where you need a higher level of magnification to perform a desired observation. For most lunar and planetary nebulae, many galaxies and globular star clusters and most planetary observing it helps to have at least 50-60x magnification. But many astronomers are shocked to know that there are dozens of targets that are easily seen in binoculars.

(Continued on page 9)

Across clues

4. The first galaxy to show spiral structure is this Canes Venetici showpiece; often a public night object.
10. Prominent constellation up in the east after sunset
11. Find this constellation by the saying: "Follow the arc (of the handle of the Big Dipper) to Arcturus, speed on to Spica and keep curving to _____."
12. The central star in the handle of the Big Dipper is actually a _____ star, Mizar and Alcor; you won't find an easier pair.
14. More galaxies can be seen when the Milky Way is near the _____.
15. May is the best month for evening spotting of the _____ galaxy (M104), and two other far southern Messiers: M68 & M83.
18. Physically bright stars can appear dim to us because they are so _____ away.
19. These seven sisters are still visible
21. This summer star is already appearing, after sunset, very low in the northeast in late April.
22. Three general forms of galaxies are: Spiral, Irregular and _____.
25. The bright star _____ Coroli is a beautiful double star for any scope. It is easy to find by swiveling the Big Dipper handle 90 degrees about the handle end away from Polaris (ie the line would go through M51). This star is key to finding the galaxy M94.
28. Member stars of open clusters disperse by _____ effects of near approaches to other stars as the cluster orbits within our galaxy.
35. Objects associated with our galaxy, such as _____ clusters are few and far between since the Milky Way lies along the horizon on Spring evenings.
36. Just 'left' or northwest of the sickle of Leo is where the Leonid meteors seem to emanate from. This spot is called the _____ of the meteor shower.
37. One constellation bordering Leo is Coma _____. This is the only constellation named after a true person rather than a mythological figure. Many fine galaxies are harbored here.
38. Coming back into the morning sky after Venus, this planet has the shortest day.

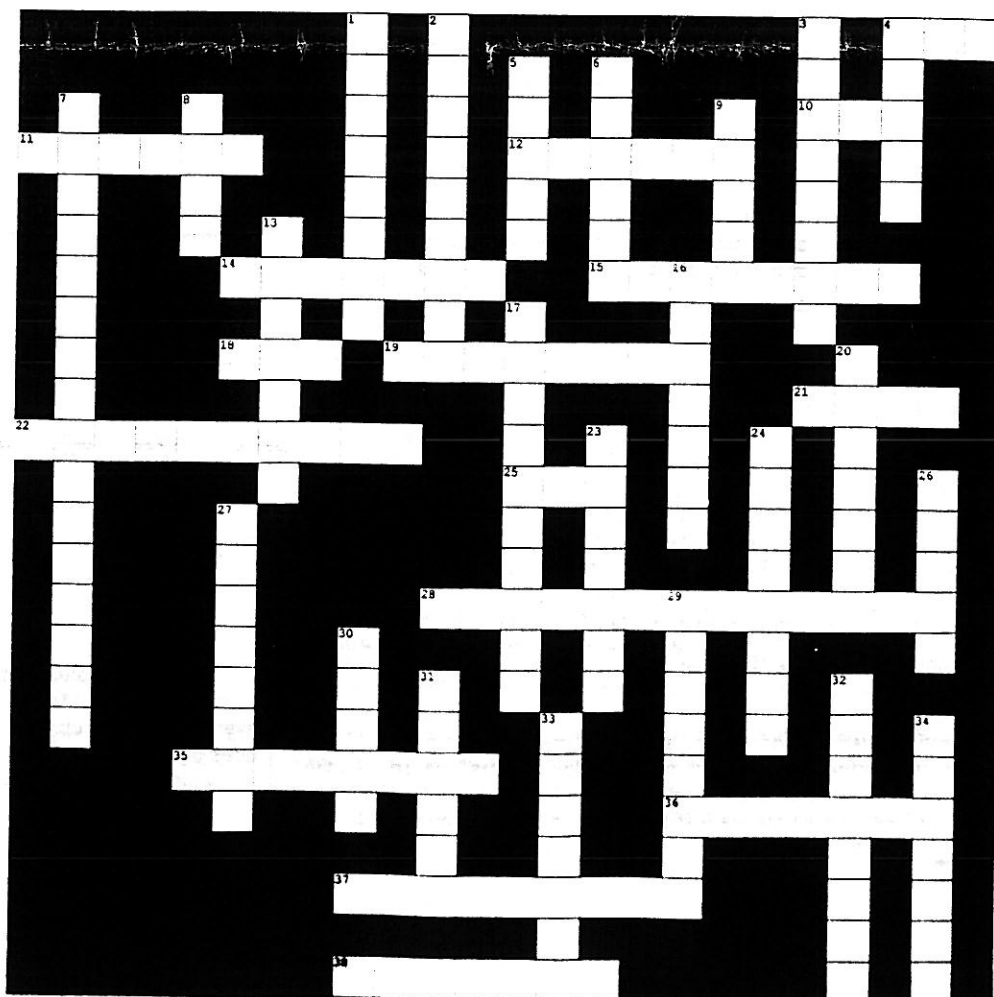
Down clues

1. Coma Berenices is the part of the sky furthest from the Milky Way. Thus it also locates the north _____ pole.
2. The wonderful face-on galaxy off the tip of the Big Dipper's handle.
3. M81 & M82 are two huge _____ in same eyepiece field in Ursa Major.
4. Spring is the best time to see thin crescent _____ in the west.
5. April is the month when this, the longest, constellation can be seen in its entirety at 9 PM.
6. The sun converts 657 million tons of hydrogen into 653 million tons of helium every second. The remaining 4 million tons of mass was converted into energy thrown off into space. The earth intercepts one two-billionths of this or 4 _____ every second.
7. The pointer stars of the Big Dipper have been described to form the hand of a clock with Polaris, the North star, as the center. This clock turns _____.
8. M82 in a large scope shows a lumpy texture and numerous _____ clouds.
9. This name means 'tail' and appears in the names of several stars including the lion's tail (—bola); the tail of Capricorn the goat; the tail of Cetus the Whale and the tail of Cygnus the Swan.
13. Our north star is also a double star that can be a challenge in a 3" scope.

16. The best deep-sky objects are known as _____ objects.
17. The recommended beginner's instrument is a pair of _____.
20. Many of the best winter objects are still available, above the _____ horizon; such as the Auriga and Puppis open clusters.
23. Name of the new Motorola communication satellites that can appear as bright as mag MINUS 8!
24. Objects can often be difficult to find. Practice on large bright objects first. Look for ones that are along a _____ line between two bright stars. This is where the 'zero-power' finders such as the TELRAD shine. Two examples are the globular M3, a bit less than halfway from Arcturus to Cor Coroli and the galaxy pair M65 & M66 located halfway between Chort and Iota Leonis.
26. The '_____ of the galaxies' is a large area of galaxies in Virgo
27. One of the nicest _____ stars is the RR Lyrae star VZ Cancri, near M67. Its light goes from mag 7.2 to almost mag 8 and back to 7.2 in 4 hours. Use nearby 37 Cancri, mag 7.4, as a brightness guide.
29. A very bright orangish star found by following the arc of the handle of the Big Dipper.
30. Brightest morning planet now through August 1998.
31. Virgo contains objects from among the nearest (star Ross 128) to among the farthest, _____ 3C273. Both are readily visible in the club's telescopes.
32. M67 is a very old open cluster and even has red giants in it. To get this old and still look like a cluster it must be unusually far from the _____ plane. (This is the 2nd time this word appears in this puzzle.)
33. A large, barely naked eye open cluster between Leo and Gemini.
34. The sky seems to have _____ faster at sunset in the Spring since a given star sets 4 minutes earlier each night AND since sunset occurs a couple minutes later each night.

Have fun (answers on pg 10)!

Bill Smith



In Praise of the Rich Field continued from page 7

Many large deep sky objects even look better in binoculars than in a telescope thanks to the binos rich-field (more than 2.5 degrees)

So if you've got binoculars your not using for astronomy, get them out and try them, you'll like what you see. 10x50's work the best, but any size binocular is better than the naked eye. Few people know that lifting a pair of 10x50's to your eyes pushes your visual capability half way to that of a large observatory telescope. A reclining chair with arm rests or binocular mount like the Virgo mount from T&T Astronomics will help you get the most performance out of your binos by allowing you to hold them more steadily and hence allow you to see much dimmer and smaller objects.

If you should decide that binoculars are a good place for you to start, any old pair will do, if you've already got some. If however, you've now become hooked on the rich-field, you might want to spring for some really high quality binos. The great thing about these is that they are useful for so many things: wildlife watching, sports....etc., etc., etc. Pentax, Minolta, Celestron, B&L, Orion, Nikon, Zeiss and others have fine binoculars. 10x50's with BaK-4 prisms and fully multicoated optics are the best for astronomy. A pair like this will cost from \$130-200 and although this may seem a little pricey, remember that with normal care your great-grandchildren will be using them 50 years from now.

RICH-FIELD TELESCOPES

If you are buying a telescope, rich-field viewing is not out of the question either. The obvious advantage to a rich-field telescope is its ability to take in fields of view almost as large as a pair of binoculars (which makes finding things VERY easy) and with the switch of an eyepiece give close-up views of smaller deep sky objects, as well as the moon and planets. In general, most rich-field telescope's maximum useful magnification is under 80x, but this is plenty of power to do serious observing. With their larger apertures, these telescopes also have more light grasp than a pair of standard size binoculars and so will show many dimmer deep sky objects.

The venerable Edmund Astroscan is a perfect example of the rich-field reflector telescope. For only \$350 including shipping you get a complete 4.125" telescope outfit that includes star charts and a planisphere. The stock 16x eyepiece give a 3 field of view that is stunning for objects like the Pleiades, the Andromeda Galaxy, the Beehive Star Cluster and many other targets. With the addition of an optional 7mm class eyepiece you'll get close-up views at 64x. While certainly not high power, 64x is plenty to see some cloud band details on Jupiter, the rings of Saturn, small craters, ridges and rilles on the moon, the phases of Venus and Mercury and even some of the larger surface markings on Mars, when it is near opposition. The other main advantages of the Astroscan are its smooth tracking and stability (thanks to its unique ball and socket mount), light weight (only 10#), its extreme portability (18" tall x 10" in diameter) and its durability. The body of the telescope is made of high impact ABS plastic and the optics are sealed and permanently aligned, easy, NO HASSLES. This telescope is also a natural for far-flung travel since it can be carried on airliner....Hawaii here I come!

There are other models that are commonly available too. The Celestron 80eq/wa is an 80mm refractor on a conventional German equatorial mount is less portable than the Astroscan, but costs only \$300 and can be used for basic photography. If portability is not of high importance, this is one to consider. Of similar size, but in a quality class by themselves come two refractors from TeleVue, a 70mm called the Pronto and a new 85mm model. These are apochromatic instruments of truly superb optical and mechanical quality, but they are also quite pricey at \$1500-2500 with a mount included.

OBSERVE!

Rich-field viewing is a good place for new astronomers to start. It is also an easy way for the more experienced observer to get in some observing time without the demands of getting out a big telescope, particularly nice after a long, hard day at work. And finally, there is no better way to take astronomy along on your next vacation. So as the Star Hustler would say, "Out under the stars with you" to take in the really big celestial picture.

- Tom Bemus



***Watch this column:
special events, items to note,
volunteer opportunities!***

SUMMER STAR PARTIES

WOW!!

**Now is the time to host and book
your summer star party!**

A great club get-together. Hold one at your home, Beaver Meadow Observatory or even a friend's home in a dark location who will be going away that weekend (tell them later). Usually held on a Saturday night for observing, but that's not a rule.

The only rules are:

1. Do not hold them on public event nights
(1st & 3rd Saturdays)
2. Have a great time and share your toys.

Starting & ending times, cookout / dish to pass or not, ...
— you're the host so you set the plan!

To arrange one, reserve a date with Bill Aquino, 731-9366.

WANTED: SPEAKERS

The BAA's Speakers Committee is looking for lecturers, orators and just plain speakers to help fill our 1998-1999 schedule. If you have an area of interest that you would like to share with other club members please consider giving a talk at one of our monthly meetings. Your topic does not have to be on the cutting edge of astronomical research and it doesn't have to be long. A short presentation (10 to 15 minutes) about one or more observations you've made, an observing technique you've found to be useful, or a project you've completed or are currently working on would all make great talks. We are also willing to help out if you need presentation materials, e.g., slides or handouts. If you can help us out this year or if you have any questions, please call Bob Hughes at 833-2407, Carl Milazzo at 688-4869, Bev or Joe Orzechowski at 839-9109, or Bob Titran at 774-2742.

ASTRONOMY DAY 1998

The BAA's celebration of Astronomy Day 1997 will be held at the Beaver Meadow Observatory on May 2nd. Daytime activities and nighttime observing for members and the public are planned. See article on pg 4.

Activities will include slide shows, demonstrations and discussions of binocular and telescope observing, CCD observing, astrophotography, Jack Mack's dynamite Walk of the Planets and more!

If you would like to give a talk, assist the public in observing, or volunteer to help out on Astronomy Day, please give Astronomy Day Chairman Gene Witkowski a call at 716-876-4301.

NOW IN PAPERBACK!!!!

THE PLANET OBSERVER'S HANDBOOK

Dr. Fred W. Price
Cambridge University Press 1989

Cambridge University Press recently announced that "The Planet Observer's Handbook"; authored by our own **Fred Price**, is now available in paperback. Publication date was March 5th, 1998 - by an odd coincidence, the day after Fred's Birthday!

The cost in U.S. funds is approximately \$24.00. However Fred can order copies at the authors' discount of 35% off the U.K. price which brings the price down to about \$16.00. BAA members wishing to buy a copy at this lower price should see Fred.

From some recent reviews of THE PLANET OBSERVER'S HANDBOOK:

'...(contains) a tremendous amount of useful information and helpful advice...a definite success...valuable both to the beginner and to the serious planetary observer. I strongly recommend it'

Patrick Moore. New Scientist.

'...(contains) many pearls of useful information...presented concisely with excellent illustrations...a synopsis of historical observations provides excellent foundations for planning observational programs...'

Donald Parker. Sky and Telescope.

(G)ASTRONOMICAL RECIPES

DEEP FRY PISCES BATTER

1		egg	1/4	tsp	pepper
1	tbsp	mayonnaise	1/3	cup	beer
1/4	tsp	salt	1/2	cup	flour

Mix batter. Dredge fishes pieces in flour and dip in batter. Deep fry in 450 degree oil about 3-5 minutes.

Darwin Christy

New Editor!

Tim McIntyre

Yes, Tim has stepped forward and will take over the SPECTRUM starting with the Sept-Oct issue. He IS going to need a constant supply of submissions and...

- ♦ Is looking for someone to do scanning of articles / graphics
- ♦ Also he has a Celestron CG-11 for sale with all the goodies, 1.5 years old, asking \$3000. Call 668-8322 for details!

For SALE

Congratulations, Tim! (on the SPECTRUM)

Inside:

- 1 Editorial: Public Events
- 2 Membership Corner
BAA Annals
- 3 Spy and Tell
For Sale: Celestron 80mm
Errata

- Web Sites
- 4 Astronomical Happenings
Beaver Meadow Observatory
Observatory Activities
 - 5 Small Scope Observing from Germany
Lunar Formation Rutherford
Observatory Donations
 - 6 Supernova 1988S

- Total Solar Eclipse
- 7 Solar Eclipse Cruise
In Praise of the Rich-Field
 - 8 Spring Crossword
 - 9 Summer Star Parties SIGN-UP NOW
Speakers wanted
 - 10 Planet Observer's Handbook
New Editor / Celestron CG-11 For Sale

The SPECTRUM

BUFFALO ASTRONOMICAL ASSOCIATION, INC.

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

ACROSS

- 4 - M51
- 10 - Leo
- 11 - Corvus
- 12 - Double
- 14 - Horizon
- 15 - Sombrero
- 18 - Far
- 19 - Pleiades
- 21 - Vega
- 22 - Elliptical
- 25 - Cor
- 28 - Gravitational
- 35 - Globular
- 36 - Radiant
- 37 - Berenices
- 38 - Jupiter

DOWN

- 1 - Galactic
- 2 - Whirlpool
- 3 - Galaxies
- 4 - Moons
- 5 - Hydra
- 6 - Pounds
- 7 - Counterclockwise
- 8 - Dust
- 9 - Deneb
- 13 - Polars
- 16 - Messier
- 17 - Binoculars
- 20 - Western
- 23 - Indium
- 24 - Straight
- 26 - Realm
- 27 - Variable
- 29 - Arcturus
- 30 - Venus
- 31 - Quasar
- 32 - Galactic
- 33 - Beehive
- 34 - Rotated

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

