

THE SPECTRUM

Newsletter of the Buffalo Astronomical Association Inc.

Published Bi-Monthly

Buffalo, New York

May - June 1997

MEETINGS NOTICE

FRIDAYS: MAY 9 JUNE 13

May 9th: "Members' Views of Hale-Bopp" - Hear ye, hear ye —

All members are invited to bring in photos, slides and eyeball impressions of comet Hale-Bopp. Yes it's open projector — open mike.

June 13th: "Annual Business Meeting and Pushin' Stars at Starfest" - Primary on the agenda is voting for Board members. Also

a representative from the North York club in Canada will talk about Starfest. If you haven't been to this convention — you are missing an experience. BAA member attendance has increased dramatically the last few years. Hear what it's all about.

Meetings: 2nd Fridays @ 7:30 PM Sep-June.

Location: New Science Building Auditorium at
Buffalo State College on Elmwood Ave.

We hope to see you at these meetings.
As usual refreshments will follow.

Bring a friend and see what's poppin!

Full court press!

As Hale-Bopp slips out the western sky, let's not leave those who "discovered" something astronomical slip by with it. Who's that? The great mass of public who now have two great comets under their belts and hopefully a new angle to their eyes — the angle that's looking up into the night sky.

Blowout public season expected

We cannot let the embers of interest fade. This public night season should be a big one. It is also a very important one as it will give us an unmatched opportunity to build the club's membership.

Overhyped Halley was a public viewing dud. Hyakutake and Hale-Bopp brought astronomy to life for a huge audience. People are curious and ready to experience more of what astronomy has to offer.

We need to redouble our efforts in creating a quality public night experience. We need to get the word out about these events as well.

Call for stars

Volunteers are needed to staff public night events. Program ideas, handout content, videos, slide shows, computer operation, observatory rehab and telescope operation are available for those with those abilities.

More important are members who can just be there and share their interest in astronomy with others. One on one contact is the best experience possible.

You can do a lot at home too just by sharing and showing astronomy with the neighbors and neighborhood kids. A small scope on the sidewalk with a quarter Moon in it is an instant hit.

The call for stars is now. To help with the public night season call President, Bob Hughes (833-2407) or observatory co-director Neil Dennis (322-7596). It will warm your heart.

Tom Bemus and 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.

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

MEMBERSHIP CORNER*Joe Orzechowski*

The 1997 BAA Membership Directory is now available for distribution. Members who attended the April meeting have already received their copy. Those who were not there will receive their copy of the Directory in the mail within the next week or two. As always, if you find an error in your listing, please bring it to my attention so that it can be corrected in next year's issue.

In what has become an annual feature of this column, I have once again compiled a set of BAA membership statistics. The figures for the past five years as well as the preliminary figures for the current year are listed below.

YEAR	JOINED	DROPPED
1992	14	13
1993	16	10
1994	22	18
1995	22	15
1996	19	23
1997(to date)	18	---

The YEAR is a membership year running from the previous September to August of that year, JOINED shows the number of members that joined that year, and DROPPED shows the number of members who did not renew beyond that year. You'll notice an ominous change in the numbers for 1996. Prior to that year the BAA always managed to gain an average of four or five members a year. But in 1996 we actually had a net loss of four members. On a positive note, we have had more members join the BAA so far this year than in either of the two previous years. Last year we had only 10 new members up to this point while in 1995 we only had 15 new members by May. Adding it all up, the BAA now has a total of 108 members which is actually four more than I reported last May. I suppose everyone is bound to have an off year once in a while. Let's hope that last year's membership figures were just a small pothole in our road to expanding membership and that in the coming years we'll return to our normal growth pattern.



If anyone has an explanation for why the BAA lost members last year or how the BAA can do a better job of attracting and/or retaining members, I'm certain the Spectrum's editorial staff would be happy to print any comments or suggestions submitted to them.

To show that the BAA is still a growing organization, I'd like to present a list of members who have joined in the last couple of months. On behalf of the rest of the BAA, I'd like to wish a warm welcome to the following people:

Gary Baldwin
885 Davis Road
East Aurora, NY 14052
652-9297

Karl Buennagel
742 Cleveland Drive
Cheektowaga, NY 14225
833-4376

Anthony Davoli
42 Meriden Street
Buffalo, NY 14220
826-1068

Joseph Wechter
3 Stephens Court
Lancaster, NY 14086
683-2887

**All members
are welcome to
attend our public
night events to
get better
acquainted with
the night sky.**

**They are held
the 1st & 3rd
Saturday nights,
April - Oct., at
Beaver Meadow
Observatory.**

James Wornick
234 Deumant Terr.
Kenmore, NY 14223
873-7532

Finally, in last year's column I discussed a trip some BAA members and I took to Las Vegas and I raised the issue of light pollution. Near the end of that article I wrote "It certainly made me wonder what casino gambling in Buffalo or Niagara Falls would do to our night skies." Well, now that we have a casino in Niagara Falls, have we started on that one-way path toward increased light pollution in the area? One casino is probably not enough to make a noticeable difference. But what about next year? Until then, let me wish everyone clear skies and dark skies!

**BAA ANNALS***Rowland A. Rupp*

5 YEARS AGO - The May dinner meeting for 1992 was held at the Lord Amherst restaurant. Bill Smith and Dan Marcus entertained us with a talk on their Museum of Science sponsored trip to Australia where they photographed Halley's comet in the winter (for us) of 1985 and 1986. Charlie Fassel, from the Niagara Falls Centre RASC, spoke on the activities of his club at the June meeting. Charlie was president of the Niagara Falls club at that time.

Ed Lindberg wrote a SPECTRUM article entitled "The Saga of the NFCAAA"—a description of how that organization started in 1968. Ed was probably its true founding father. He had help arranging the first meeting from BAA president Ron Clippinger and secretary Dick Zygmunt. The NFCAAA no longer meets formally, although it did so for about 25 years.

Rowland Rupp reported on his observation of the "green flash" as he watched a sunset from his vantage point in an airplane. Darwin Christy wrote two biographies of American father and son astronomers Charles Leander Doolittle and Eric Doolittle.

10 YEARS AGO - This time the dinner meeting was held at Moot Hall on Buffalo State's campus. Fred Price was mostly responsible for arranging it. James Orgren from the college's Department of Geophysical Sciences spoke on a topic relating to the history of astronomy. John Stull from the Physics Department of Alfred University was our speaker at the June business meeting, but the subject of his talk wasn't given.

A profile of Jim Dow, written by Edith Geiger, was a highlight of the SPECTRUM. While still in high school, Jim was instrumental in forming the Amateur Telescope Makers and Observers in 1946 after the club had disbanded because of the war. It evolved into the BAA. There were several observation reports: Fred Price on Jupiter, Carl Milazzo and Richard Jakiel on deep sky objects, and Adrienne Morris on a grazing lunar occultation.

15 YEARS AGO - Dr. Thomas Noonan from SUNY Brockport talked on black holes at the May 1982 meeting. Our speaker for June was George Keene from the Rochester club. His topic was "The Construction of a 20 Inch Telescope and Observatory". Ernst Both wrote an article on "The Sungrazing Comets". There was also a profile of Klaus Bearwaldt by Edith Geiger and Observation reports by Carl Milazzo, Steve Desmond and Darwin Christy. There was an observatory report by Director John Riggs, an Instrument Section report by Ed Lindberg and a Study Group report by Ken Kimble. Ken also wrote the BAA Annals back then.

25 YEARS AGO - For some reason there was both a May and June SPECTRUM in 1972, although the publication had been bi-monthly for some time before. Dr. David Meisel spoke in May on "Molecules in Space: Comets and Clouds". Dave was professor of astronomy at Geneseo then, as now. John Riggs wrote on deep sky observing, and Tom Dessert

(Continued on page 3)

Officers

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

Board members at large

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

Observatory Directors

Neil Dennis & >> open position <<

SPECTRUM STAFF

Bill Smith - Editor / Layout
Bev Orzechowski - Circulation

BAA Annals continued from page 2

reported on our observatory at Newstead. The 12.5-inch telescope now at Beaver Meadow Observatory formerly was located at the Newstead Observatory on grounds owned by Calspan.

The June meeting was devoted to club business with President Dick Zygmunt in charge. Ernst Both was editor of the SPECTRUM then, and often had to resort to NASA items to fill up the pages because of a paucity of articles from members. This June issue is an example of that problem. There was one item that caught my attention: Pioneer 10 was just passing the orbit of Mars on its way to its historic rendezvous with Jupiter. It has since left the solar system.

35 YEARS AGO - The May 1962 meeting featured a talk by Herb Elson on "Aberrations of Starlight" and a film "Voice to Mercury", a preparation for John Glenn's orbital flight. There were meeting notices for the Advanced Observing Group, the Advanced Study Group and the Elementary Study Group. I didn't find a June SPECTRUM, maybe there wasn't one.



SPY AND TELL

Edith L. Geiger

A ceremony on February 8th - New York State Highest Military Honors - was given at Memorial Hall Braunschadles Post 205, American Legion, legislative district, Town of Tonawanda, in which veterans from World War II through Desert Storm were awarded a Conspicuous Service Cross. Darwin Christy was one of the 36 recipients. He has 6 battle stars. A report on the ceremony was heard on Channel 4 on the 6:00 News that evening, and a write-up on the event appeared in the Sunday edition of the Buffalo News the following day. The Tonawanda News also carried an account.

On March 11th, Ernst Both gave a fine lecture at the museum on Mycorrhizal Relationships with Angiosperms. (mushrooms)

Dave Junkin, Director Naturalist at Beaver Meadow, gave a slide presentation on March 16th, on the "Nature of the Bruce Peninsula." Dave is co-teaching a Spring Bird Identification Course for those interested in birding. It is being given in various places in western New York on Saturday mornings from May 3-31, 8 to 11 o'clock. The course is limited to the first twenty who register.

Comet Hale-Bopp has been a much observed, studied, explained and photographed object by a number of our members, e.g.

- ③ Tom Bemus was seen on the 6 o'clock News on Channel 4, at the telescope at Martz Observatory in Frewsburg.
- ③ Carl Milazzo's photos were shown on Channel 2, March 17th, on the 5 o'clock News, showing the comet over Tristan DiLapo's home. Pictures taken in Lockport were on the six o'clock News. On April 9th, his then recent pictures were shown on Channel 2 on the 6 o'clock News with photos taken from Gold Hill Park and DiLapos.
- ③ On April 4th, Jack Mack answered call-in comet questions on Channel 4's Talk Back.
- ③ Gerry Rising wrote a very informative article on the comet

in his "Nature Watch" column in The Buffalo News, entitled, "Comet Hale-Bopp is readily visible in the evening sky and extraordinary."

- ③ A photo of the comet taken by Dan Marcus and new member, Frank Chalupka, appeared in the News.

On the Channel 4 noon News of March 24th, a picture of Bob Hughes was shown viewing and commenting on the lunar eclipse as he looked through binoculars, and Dan Marcus was seen at the Beaver Meadow telescope.

Carl Milazzo gave a talk on the constellations and the comet at Glendale Elementary School in Tonawanda, on March 20th, when the school held a Classroom Science Circus where parents and children visited various rooms to see science demonstrations and exhibits. Carl spoke for around 2 1/2 hours in one of the classrooms.

On April 19th, the NFCAA had its meeting at the Skylon and was attended by Bob Hughes and Carl Milazzo as well as Ivan Semeniuk, our excellent speaker at the March Dinner Meeting.

Tom Olszewski, who works as an accountant at Freed Maxick Sachs & Murphy, was extremely busy preparing tax returns for the April 15th deadline.

Darwin Christy, who has a collection of 300 old cigar boxes filled with everything from screws to fishing hooks, is in the process of recataloging the boxes in alphabetical order plus cataloging the boxes by number.

On June 11th, he will be speaking on the heavens to the Retired Men's Club at the Presbyterian Church in Tonawanda.



Library addition

Norb Beiter has contributed "Mr. Tompkins in Paperback" by George Gamow to the BAA library at Beaver Meadow Observatory. It is a compilation of two books Gamow wrote in the early 1940s in which Mr. Tompkins, a bank clerk who is afflicted with a physics professor for a father-in-law, finds out about relativity and quantum mechanics — sometimes in dreams. Although the material was updated in 1965, there are still some areas where subsequent research has outdated Mr. Tompkins' discoveries. Nonetheless, it makes for entertaining and informative reading, and is enhanced by nifty illustrations — some by Gamow himself. Thanks Norb!

- Rowland A. Rupp

Learn more about light pollution . . . via the web

Contact the International Dark-Sky Association, IDA, at
<http://www.darksky.org>

SPECTRUM DEADLINE

The deadline for the July-Aug issue is
Jun 13th.

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**TIME WELL SPENT IN ASTRONOMY****Moon**

New May 5	1st Qtr May 14	Full May 22	Last Qtr. May 29	New June 5	1st Qtr June 12	Full June 20	Last Qtr. June 27	New July 4
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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.

Thanks Bill!

The events listed to the right are by Bill Aquino and are part of the 1997 Celestial Delights which is a 9 page guide to naked-eye events throughout the year.

The guide is available at any meeting or at the observatory.

**Remembering
Clyde Tombaugh**

Clyde Tombaugh, Pluto's discover, passed away this January. I had the good fortune to hear Clyde lecture and to meet him personally after his talk in 1989 at Penn State in Erie. He was a man of enormous dedication and humor. He was a sincere and energetic promoter of using amateur astronomers as educators and researchers. I will miss his example of the contribution an amateur astronomer can make.

- Tom Bemus

Date	Event, elevation above noted horizon @ time listed [binos or small scope helpful]
May 9	MEETING OF THE BAA
May 10	Jupiter is 8° above cluster M30 and 6° below cluster M72, 20° above SE @ 4:45 AM
May 15	Look for Mars within 3° of the Moon, 50° above S @ 9:30 pm
May 17	PUBLIC NIGHT @ Beaver Meadow Observatory — stop out!
May 27	The Moon passes 4° north of Uranus, 24° above SSE @ 4 AM
May 28	The Moon passes 4° north of Jupiter, 24° above SE @ 4 AM
May 31	The Moon passes within 5° of Saturn, 24° above SSE @ 4:30 AM
June 1-2	Can you spot Mercury just before sunrise?, 7° above E @ 5:50 AM
June 3	The Moon passes within 2° of Mercury, 7° above E @ 5:55 AM
June 7	PUBLIC NIGHT @ Beaver Meadow Observatory — No Moon!
June 13	MEETING OF THE BAA Mars is within 8° of the Moon, 40° above SW @ 10 pm
June 21	PUBLIC NIGHT @ Beaver Meadow Observatory
June 22-30	Catch Venus setting in the west, 10° above WNW @ 9:45 pm
June 24	Jupiter is 3° below the Moon, 32° above S @ 4:45 AM
June 28	Saturn is 2° left of the Moon, 28° above ESE @ 4:45 AM

Hale-Bopp Observations?

The SPECTRUM received no observation reports on the comet (or any object for that matter). I know it was clear out. The changing views of the tails was most spectacular through large binos or other scopes yielding 3° field of view or more. The color contrast of the tails and the many stars that punctuated the tails gave a real 3-D appearance.

If you missed the jets off the nucleus that produced multiple dust hoods or arcs — you missed a rare sight. At their best they could be seen in tripod mounted 16x80 binos but a small scope gave a much better view. Large scopes gave a great view!

The dust tail showed occasional visual structure too. On the 2 best nights, naked-

eye viewing alone from a dark site was a mouth-dropping eyeful. Through a 10" scope some streaking along the tail as well as indications of the synchronic bands were seen (see June Sky & Tel p 32 for a photo of them).

Compared to all the glorious magazine and WWW photos I've seen, they still don't have the dynamic range and effect of seeing it live for yourself. Send those observation reports in!

- Bill Smith

BEAVER MEADOW OBSERVATORY 457-3104**Observatory open ... help needed!**

The observatory is open for Public Night on the first and third Saturdays of each month rain or shine from April through October. It takes many of us to run successful Observatory events. Also, the more the merrier! We still will need a lot of help with lectures, members to run the scopes, bring their own equipment (read toys) and of course answer questions. We would also appreciate any suggestions concerning the observatory and its operation.

We perform a unique function for the public in bringing an outlook to the world in which we live that may not be available anywhere else. Reading astronomy books gives us the knowledge we need, but an actual observing experience is what welds mind, eye and imagination together. You don't have to be a fountain of knowledge to join us out at Beaver Meadow. What actually fires the imagination of the public is your enthusiasm. That's what gets people excited. Even if you're just learning your way around a telescope and the sky, your trials, tribulations and

gnashing of teeth can inspire others as well as your successes.

Since we now have a VCR and TV at the observatory, if any member has any astronomical video tapes that we could play during public nights, between or with a lecture, or on cloudy nights please let Neil Dennis know. Copies can be made so that your original can be returned to you.

Are you new to the observatory?

The combination to the observatory changes yearly. Call Neil Dennis or President Bob Hughes for the new combination if you have been checked out on observatory procedures and are a dues paid member.

Assistant Director needed!

Someone is needed to help co-director Neil Dennis with public events and observatory needs. Neil is our equipment guy who often helps with public events but we need to fill our open observatory public event post. To get a briefing call Dan Marcus, 773-5015. Be a hero, be a volunteer!

Messier Marathon '97

This year's Messier Marathon had a lot stacked against it right from the start. Our host, Bill Smith, was called out of town (to France, how unfortunate!) on business just before the event and with no time to make alternative plans, Bill and his wife, Carol Lorenc, were kind enough to allow this event to go ahead, if weather permitted.

As usual, we got a healthy dose of really bad weather during the lead up to the event. Friday's weather report basically was showing the whole weekend to be a cloudout. But by Saturday morning a front had shifted just enough that there was some hope for partly cloudy skies. Alas, Saturday sunset arrived behind a heavy veil of clouds with rain sleet and snow mixing with fog!

At 12:50am I gave up and hit the hay with little hope of clearing. I set my alarm for 5:15am to see if there would be any breaks in the clouds that would allow me to glimpse comet Hale-Bopp. At 4:30am my eyes sprang open, something told me to go look out the window, sure enough, the skies had completely cleared.

I quickly dressed and called a couple of other local members on the late call list. Dave Hecei and I arrived at Bill's, hastily set up the 4" Genesis refractor and were observing by 5:10am. We immediately turned to the comet before we started hunting for Messiers — what a mistake! The view of the comet was simply stunning and included multiple jets, an extremely bright ion tail and a fascinating set of arcs of material pouring off one side of the nucleus. We were spellbound by the comet for 15 minutes, until we noticed the glow over the eastern sky. We quickly swung into action and over the next 30 minutes bagged 17 Messier objects despite having only a 4" scope. Thin clouds and rapidly brightening skies shut us down at 5:55am.

Not much of a marathon for this year, more like a sprint! We had made several critical mistakes which really cost us. We had arrived 15 minutes too late, spent way more than 5 minutes on the comet, poorly positioned the scope to view near the southern horizon and perhaps worst of all, forgot to get the bins out of the car until it was too late. I think we could have gotten at least 40 and possibly 45 objects if we had done things a little differently, but what can you expect for an unplanned, unprepared, half-asleep, panic fire-drill observing session. At least we didn't get completely skunked and there is always next year!

- Tom Bemus

Ten Issue Review

This is my 11th issue as editor. A newsletter should do more than inform of meeting dates and upcoming events. Membership news including how to get more out of your club membership is vital. Joe Orzechowski has done a great deal in getting the word out but it is up to the individual members to take advantage of what's there. Thanks, Joe!

A small band of regular columnists have kept a steady flow:

Rowland Rupp's BAA Annals is a review of past club events. Its purpose is not just to rehash history but to act as a catalyst in getting members to think about the topics (Radio astronomy of the Sun is a neat topic ... think I'll check that out in ...) and inspire them into action (a study group is a good idea; one's not active now but maybe I can ...) or (observations of globulars at Beaver Meadows ... humm, it's been too long since I've been there ...).

Edith Geiger's Spy and Tell and the occasional Profiles have been running probably longer than I've been breathing. News about other members not only tells you more about our fellow members but you may find someone with like astronomical interests, get advice from or even curiosities about other diversions.

Darwin Christy enjoys the back history of astronomy and his Ancient

Astronomers and Ancient Constellation series brings these to life; giving you enough of a taste to want to find out more on these subjects.

Thanks Rowland, Edith and Darwin! Also thanks to the many occasional submitters.

Other columns as the President's, Beaver Meadow Observatory and Board Meeting/business issues have had better regularity in the past. (Read as: you current office holders owe me articles!)

As good as these are, a newsletter should match the times and give what the membership needs. The above columns will continue to appear as the subjects are timeless. You will not find any club newsletter replacing Sky & Telescope or Astronomy magazine. It supplements those with local color with the sharing of members' information, observations and local issues that won't be found in a national magazine. At the same time a newsletter cannot replace the magazines in editorial content, how-to articles and the like.

In different issues I've tried to include small articles as "idea topics" that others could follow with more of the same style. They were on a variety of topics that anyone could submit. These usually had a comment attached to them like "You too can submit an article like this". The guiding premise of all these 'notes' is: If you found something you saw or read that was interesting then probably others would too -- so send them in to the SPECTRUM. Subjects included:

- ♦ "Ever Wonder Why?" - a 50 word explanation of some small observation gleaned from other sources.
- ♦ "Book reviews" - they don't have to be long; they existed in the past and I know people still read
- ♦ "Neat internet sites" - there are so many out there but so few good ones
- ♦ "Tele talk" - short 30-100 word discussion on using / buying / experience with telescopes and accessories
- ♦ "Public night hint" - short items that you found helpful & when shared will help others get over the rough spots
- ♦ "Observing tips" - advice to get the most out of your telescope and observing time; things you found helpful
- ♦ "Rogues and rascals" - short story of some of the more colorful, if not quirky, characters in astronomy
- ♦ "Learning the sky" - tips on orienting yourself with the sky using just your eyes (no instruments)

To date I have not received any submissions on these topics beyond my own. There is a wealth of experience that members have that could be shared. All it takes is a push to get that idea/story/short item/poem/quote/photo/whatever sent to Bev. While we encourage a computer disk, since so many members have computers; we gladly take hand written, typed or any other form. The hurdle of that first submission is a big one but once overcome, more follow much more easily.

Your name in print!

Submissions need not be limited to the above topics. Do your own. Even a list of suggested topics would make a good submission! Someone else might respond to them. Check March/April '96 SPECTRUM p 5 for more ideas in an article from Joe Orzechowski.

Observations is an area that is sorely needed. A scan of the past 10 newsletters shows very few submissions. I've tried to show what can be seen with small scopes and especially binoculars. They are more powerful than most imagine; it is mostly a matter of time in the eyepiece to really see what they can show. More members' observation experiences are needed. What problems are folks having? Member observing sessions, star parties, public nights and the newsletter are avenues for solution.

Also needed is a regular columnist to give tips and inspiration for new members and those new to astronomy. Even scanning the literature back several years and compiling a list of existing articles would be a good topic to write about. Items such as this also make a good handout at monthly meetings.

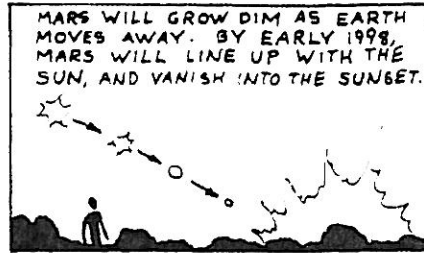
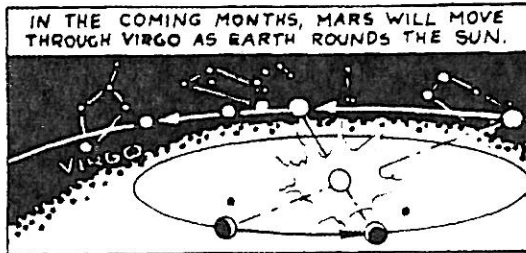
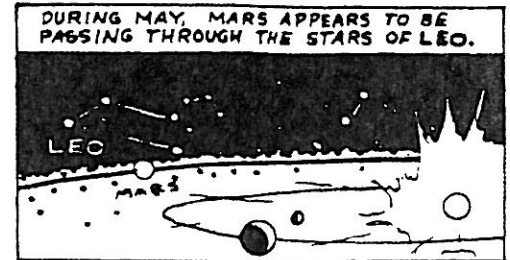
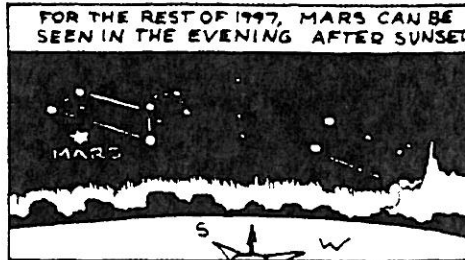
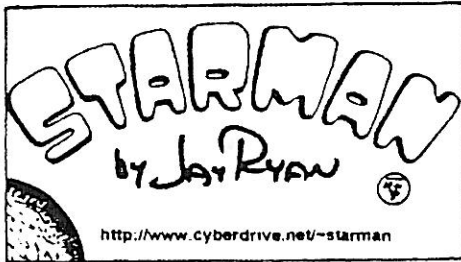
Your editor would like to return to being an editor instead of a writer and would welcome having to deal with the problem of how to fit in too many submissions. The pen is in your hand now! Thanks.

- Bill Smith, editor

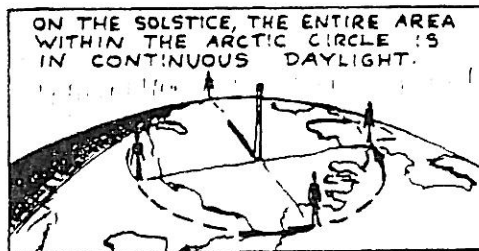
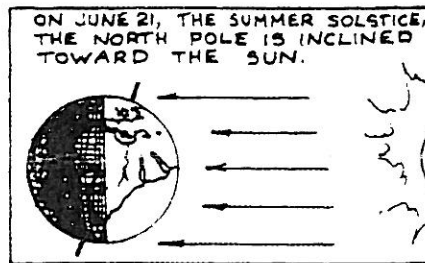
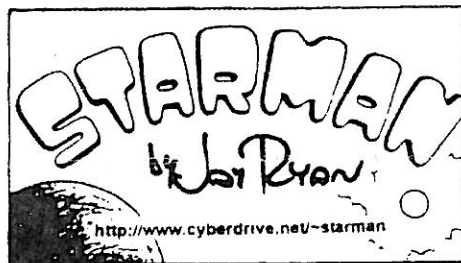
Remember that public events are for members too. If you'd like to get some advise on telescopes, equipment, object finding and sky orientation then this is the place. You can get checked out on the observatory equipment and get the combination too. A club benefit!

The following 'educomics' are supplied by Jay & Debbie Ryan, two amateur astronomers from Cleveland, Ohio.

For May



For June



POETRY CORNER:

I Will Sing You One-O

Still more unfettered,
They left the named
And spoke of the lettered,
That sigmas and taus
Of constellations

— Robert Frost

Is what we see all there is?

Light travels at a finite speed. We see objects as far out as the age of the universe in light-years. If the universe is 15 billion years old we can only see objects 15 billion light-years away or closer. Every day light from objects 1 light-day further away reaches us. Objects further away need more time for their light to reach us.

What we see is the observable universe, the boundary of which is time. What we can/could see increases with time. This boundary seems to be one of light signals not a physical edge.

The physical universe, in the inflationary cosmology model, is many times larger than what we see. Beyond the boundary, objects and space move faster than the speed of light. Einstein's law of special relativity governs things in space and not the expansion of space itself.

- Bill Smith

Is our editor confused? What factors do you think come into play here? Thoughts on inflationary cosmology, expansion of space, special relativity are welcome on this point. Send them in to the Spectrum.

ANCIENT CONSTELLATIONS**SAGITTA**

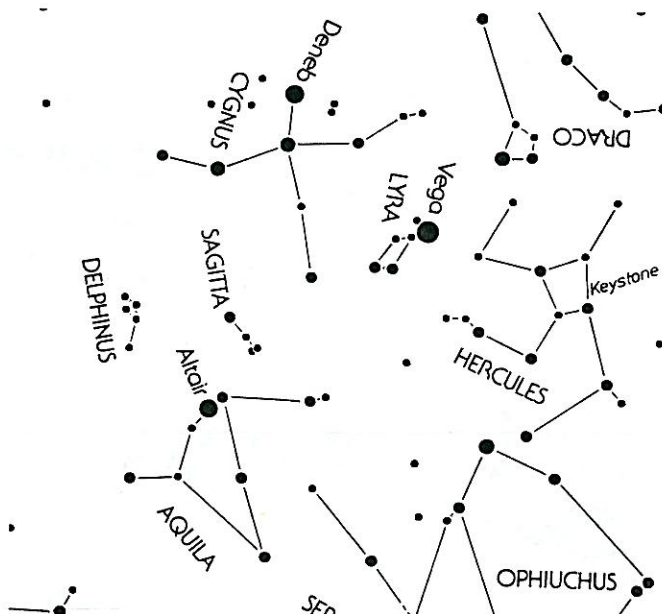
Sagitta, the Arrow or Fleche is one constellation which most represents its name and shape. As Brown asserted from Aratos:-

There is in front another Arrow cast
Without a bow; and by it flies the Bird
Nearer the north.

All ancient civilization referred to it as an arrow, Why not?? The rear two stars form the fleche while the tip is shown straight and pointed.

It has sometimes been drawn as the arrow held by the Eagle in its talon. Also, it has been common knowledge to be the Arrow of Cupid. Although much may have been written about the Arrow by the ancients, little in the way of objects can be found in this constellation.

Darwin P. Christy

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