NEWSLETTER OF THE BUFFALO ASTRONOMICAL ASSOCIATION INC.

The Spectrum

Table of Contents

Going For The Gold

*Peter Pezzolanella

An awesome year of Solar System exploration continues. In the wake of the successful ***Spirit/Opportunity Mars Rover*** missions, the ***Comet Wild 2 flyby,*** and the upcoming launch this summer of ***MESSENGER,*** the ***first dedicated Mercury orbiter.*** Cassini is now nearing its final destination, Saturn, after a 6.7 -year long journey, with arrival on July 1.

Cassini is the most expensive planetary mission ever flown with a cost of $3.2 billion, but the price will be worth it with ***the promise of great discoveries at Saturn with its rings and 31 moons***. Most important to the scientists and especially the public will be the deluge of great pictures. Cassini was launched on October 15, 1997 and took a long, but picturesque journey passing Venus on April 26, 1998 and June 24, 1999, Earth on August 19, 1999, and Jupiter on December 30, 2000. It has already proven its optics by returning ***dozens of razor sharp images of Jupiter*** with unprecedented detail in its clouds and in natural color.

The highlight of Cassini at Saturn may be its ***largest moon, Titan***. This is the second largest moon in the Solar System with a diameter of 3193 miles and one of the most interesting. It is the only moon with a substantial atmosphere that is 1.5 times as thick as Earth's in mass and surface pressure. The atmosphere was thought to be composed almost entirely of methane when it was first discovered in 1944, but is actually composed primarily of nitrogen with small amounts of methane and a complex mix of hydrocarbons. The interaction with the dim sunlight is still enough to create smog that completely envelopes Titan in an orange shroud and hides the surface from view. The surface remains a mystery and there is speculation of a vast global ocean of ethane where hydrocarbons may fall as snow onto the vast sea.

(continued on page 8)

*Telescopic Topics: Newsletter of the Mohawk Astronomical Society, Vol. .XVI, No. 5 (May, 2004), pp3-5 (with permission)

Common Problems, Common Solutions

Carl Milazzo

From conducting a recent survey of over fifty astronomy clubs, it was found that most clubs go through four to twenty year cycles during which they will have good, mediocre and bad levels of quality (as judged by their members). Unfortunately, these last two are by far the most common level of club quality and those that have reached truly great levels are almost unheard of . Some have achieved great levels by pure luck, others because they have set up a solid foundation which put them on the path to high quality and rapid progress. All clubs, even the best, have room for improvement.

There are many indications that there is much room for reform. For example, about 95% of amateur astronomers do not belong to an astronomy club, yet clubs are very important. In addition, most clubs have a high annual turnover (about 20%), which means that in five to six years it is possible for a club to consist of a totally new crop of people. The exception to the turnover rate tends to be executive members, who tend to stay on longer. Low meeting attendance (15 -20%) also plagues most clubs. Most amateurs who come to their first few meetings drop out before they even join and the majority of new members who actually join a club will drop out after the first year.

Astronomy Clubs: Clubs can greatly accelerate progress by actively developing the interest of beginners who, at first, need special attention, practical information, guidance and advice. From day one, an emphasis should be placed on getting to know them and their needs. Start by giving them a questioner, a detailed club

(continued on page 6)

BAA Officials

BAA OFFICERS
President – Peter Proulx 731-2808
Vice President – Ted Bistany 885-0003
Secretary – Joe Orzechowski 632-7091
Treasurer – Bev Orzechowski 632-7091

AT LARGE DIRECTORS
Janice Gardner
Tom Bakowski
Alan Friedman

COLLEGE OF FELLOWS
Rowland Rupp 839-1842

OBSERVATORY DIRECTORS
Bill Aquino 731-9366
Paul Tabor 434-7148

MEMBERSHIP DIRECTORS
Tristan Dilapo 941-5613
Alan Friedman 881-4310

ROBOTIC SCOPE PROJECT
Anthony Gardner

STAR PARTIES
Bill Smith

SPEAKERS
Dr. Jack Mack

SPECTRUM STAFF
Editor: Gus Cenkner Jr. 625-8343 jandgjr2@aol.com
Labels: Alan Friedman
Columns: Edith Geiger, Joe Orzechowski, Rowland Rupp, Paul Tabor
Articles: various authors

BAA Web Site

http://www.upstateastro.org/stars/baa.html

Location /Time Of Meetings

BAA meetings are held on the ***2nd Friday of the month*** from ***September to June*** in the ***New Science Building on Buffalo State College Campus***. Meetings start at ***7:30 PM.*** See above web site for a map of the location. Nonmembers are encouraged to attend.

Spectrum Deadline

Articles for the next Spectrum will be due by: ***August 16, 2004***

Managers Of BAA Computer Sites

BAA Web Site	E-Spectrum Web Site*	YAHOO E-Mail Group*
Timothy Finucane	Timothy Finucane	Dennis Hohman Mike O'Connor

* members only

President's Message

Joe Orzechowski

The month of June signals the start of the summer season here in Buffalo. For some of us this means the end of another school year and the start of summer vacation. For others it means that tolerable weather for outdoor activities has finally arrived. And for others it means later starts for evening observing sessions and an all to quick end to those all-nighters. On the other hand. the short summer nights actually proved to be a great benefit to us this year .The transit of Venus that occurred on June 7th ended at about 7:20 am EDT. Had this same transit occurred in December (ending at 6:20 am EST) we would not have been able to observe it from Buffalo.

June also means ***elections at the BAA and the end of my term as BAA president***. It's hard to believe that two years have passed since I was elected. I would like to take this opportunity to thank my fellow officers Dr. Jack Mack, vice president; Peter Proulx, secretary and Bev Orzechowski, treasurer for their two years of service to the BAA.

Lots of things have happened in the last two years but two really stand out in my mind today. The ***BAA's ongoing robotic scope project*** is a major undertaking that has involved work in such diverse areas as telescopes and optics, CCD cameras, computers and software, construction and much more. Two years ago there was a pier with cables going to it and a telescope that could be carried out to the pier. Today we have an enclosure housing a telescope and CCD camera that is permanently mounted on the pier and configured for CCD imaging. The telescope and camera can be controlled via computer from the comfort of the BMO observatory. Observations by remote control are a reality at BMO. The folks involved in the robotic telescope project have already provided us with progress reports at two regular meetings in the last two years and I, for one, am looking forward to the next report.

Another positive development in the past two years is the ***BAA's relationship with the Buffalo Museum of Science***. While the BAA has been an affiliate of the museum for many years and has always held various events at the museum, our relationship with the museum has changed dramatically in recent months. Thanks to renewed efforts by museum personnel and by a handful of dedicated BAA members, we have become a regular feature in the museum's annual program of activities. And thus far the activities have been quite successful. Thanks to some unusually cooperative weather, events such as last year's lunar eclipse and the recent Venus transit attracted good crowds of people to the museum. In recognition of our success, the museum has presented the BAA with its Affiliate of the Year award. The plaque will be on display at the Beaver MeadowObservatory. Check it out the next time you're there.

As reported elsewhere in this issue, the ***officers for the two years starting Sept l, 2004*** will be Peter Proulx (president), Ted Bistany (vice-president), Bev Orzechowski (treasurer) and Joe Orzechowski (secretary). As you can see, there won't be a whole lot of changes in personnel come September. Like you, I have been assaulted (insulted) countless times by the handiwork of political spin doctors and, I must confess, some of that stuff must be rubbing off on me because phrases like "minimal disruptions", "seamless transition", and "continuity of service" keep coming to mind. On the other hand, some of you may suspect a bit of cronyism. But the fact of the matter is that there are few members who are willing to run for one of the elected positions (either officer or board member). This is unfortunate but understandable; most of you didn't join the BAA just so you could be saddled with more work than you already have. But it would be nice to get some new folks involved in the process of keeping the BAA running smoothly and ensuring that the concerns and wishes of the membership are addressed. I'd like to encourage ***anyone who is interested in helping*** to consider ***running for an at-large position on the Board of Directors*** next June. I know it's a long way off but that will give you plenty of time to think about it. Talk to someone who is currently on the board or was on the board in the past to find out what it is all about. (It really isn't a major undertaking; we aren't talking about a position on the Board of Directors of General Motors here.) And don't wait to be asked. If you're interested in getting on the board, tell a board member or officer.

Hope everyone has a good summer and we'll see you at the September meeting. I won't be the guy at the front of the room.

Election Results

The biennial election of officers was held at the June 11 th regular meeting of the BAA. A total of 29 members were present which satisfied the required quorum of 27 members. There were 28 votes cast and the results are as follows: President Peter Proulx Vice President Ted Bistany Treasurer Bev Orzechowski Secretary Joe Orzechowski

Upcoming Meetings

No meetings for the months of July and August. Don't forget about the star parties. See you in September.

Meteor Showers For July-September

July 28: Delta Aquarids: Radiant--near Capricornus. 25 per hour, slow (24 kps) with yellow trails. Duration--40 days

July 30: Capricornids: Radiant--near Aquarius. Tough to tell thesc from Dclta Aquarids. 10 to 35 pcr hour with bolides.

Aug 10: Perseids: Radiant--near Double cluster. 50 to 100 per hour, yellow with trails and bolides. The best modern dependable showcr. Duration--5 days.

Aug 20: Kappa Cygnids: Radiant--near Deneb. 12 per hour with many fireballs. Duration--15 days.

Aug 31: Andromedids: Radiant-- near Cassiopcia. Occasionnlly spectacular, usually 20 per hour. Some red fireballs with trails. Biela's Comet parent.

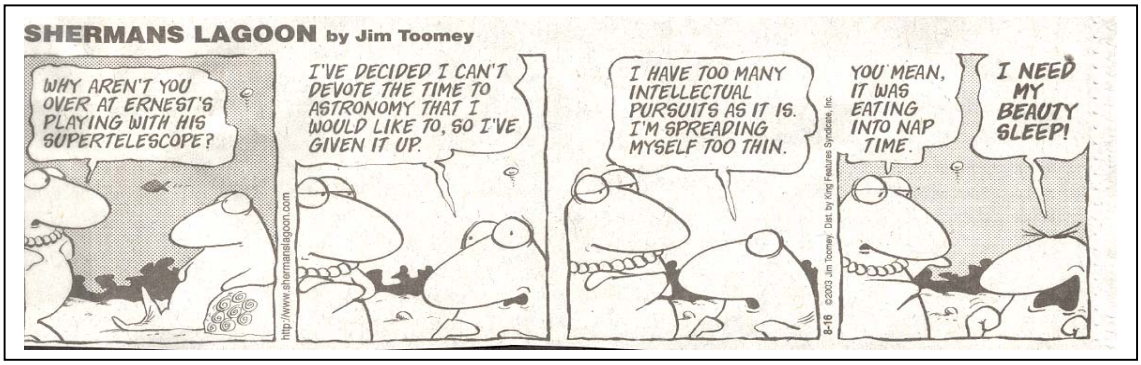
Sept 23: Alpha Aurigids: Radiant-- near Capella. 12 per hour, fast with trails.

Funny, Funny, Funny (??????)

It is not conclusive yet, but NASA believes the Mars Pathfinder has found proof of life on Mars. The cd player was stolen.

NASA just disclosed details of why the rover wouldn't accept any commands. They took a picture of the rover's built-in display which showed a windows screen and the text "press any key to continue".

What did the alien say to the gas pump ?
Don't you know its rude to stick your finger in your ear when I'm talking to you !



BAA Annals Rowland A. Rupp

5 YEARS AGO -There were no meetings *in* July and August 1999, but we did have star parties. Hosts were Neil and Carol Dennis, Jack and Jane Mack, Dennis and Colleen Hohman and Bill and Carol Smith. As usual, Rowland and Irene Rupp hosted their annual party at Lime Lake before the summer issue of *The Spectrum* was printed. Co-observatory Directors Neil Dennis and Dan Marcus announced there were three small telescopes at BMO that are available to members for one month loan. Neil and Dan made their anual plea for assistance at public nights. Carl Milazzo noted that Astronomy Day 1999, held at Tifft Farm Nature Center, was a big success. He thanked over thirty members who participated in the event. Tristan DiLapo and Alan Friedman took over as Membership Chairmen from Joe Orzechowski. Tim McIntyre announced he was resigning as *Spectrum* editor. Halina Biernacki wrote a provocative article, "Scientific Flexibility", in which she discussed progressive ideas in science. She noted the contrast between science and religion, describing them in terms of "motion" and "motionless" , respectively. She admonished the BAA to adhere to the former. The lone observation report was by Alan Friedman, who was interupted while observing Mars by a pair of brilliant fireballs.

(continued on next page)

(continued from previous page -- BAA Annals)

10 YEARS AGO -The Rupps, the Orzechowskis, the Smiths and Dan Marcus were hosts for star parties in 1994. Several others were held at BMO. No wonder -- the announcement of the completion of the addition to the observatory appeared in this *Spectrum.*

Edith Geiger wrote obituaries for two of the BAA's most prominent members, Walt Whyman and Ed Lindberg, another for former member, Sheridan Simon, and a fourth for Bill Smith's father, Gene. Not a very nice assignment; I'd rather write these "Annals". Both Walt and Ed were members of the College of Fellows, and both had contributed to the BAA's history that had just been published. They had served on the BAA's board; Ed was the board's first representative from the College of Fellows.Both were technically inclined, and each was involved in amateur radio and had many interests outside astronomy. Sheridan Simon was a youthful member in the 1960s who became a physics professor and technical author.

In a vastly lighter vein was a tongue-in-cheek article on the prospect of the fragments of Comet Shoemaker-Levy, the one that collided with Jupiter, colliding with us instead. As you might expect, it was authored by "Concerned" .

15 YEARS AGO -In 1989 we attended star parties at the Rupps', at Bill and Carolyn Halbert's home, the Smiths', Larry Carlino's and the Marcus's. Doris Koestler and Jack Empson held one at BMO, as did Conrad Stolarski later in the summer. There was a report on the spring meeting of the Niagara Frontier Council of Amateur Astronomical Associations held in Hamilton, Ontario, where Darwin Christy presented a paper entitled "Penumbral Lunar Eclipse"

Rowland Rupp wrote an article on the two moons of Neptune that were then known, Triton and Nereid, with the intention of contrasting current knowledge with what would be discovered when Voyager II encountered the planet, an event to occur shortly. President Doris Koestler commented on the success of the May dinner meeting where fifty members heard Larry Carlino speak and Fred Price received the College of Fellows award.

25 YEARS AGO -There were only three star parties in 1979. Darwin and Ruth Christy held one, Dave and Gil Brink held another, and Miro and Joanne Catipovik hosted the third. Larry Carlino announced he was retiring after serving for two years as *Spectrum* editor. Burnham's Celestial Handbook was reviewed by Rowland Rupp. He was enthusiastic about it, as have been thousands of other amateur astronomers ever since.

35 YEARS AGO -Here's the list of star parties for 1969: Walter Semerau's Solar Party, Mrs. Black's Camp Sprucelands -- twice, Darwin Christy's Honeyhouse Observatory, Les Stoklosa's POND "A" LOSA (you figure it out), and two at the old Newstead Observatory. That was the entire *Spectrum* for July-August 1969!

Matter and Antimatter

The Cambridge Encyclopedia of Astronomy (page 116) quotes Stephen Hawkings -- Matter-antimatter pairs or particles are continually being produced throughout space even in a perfect ‘vacuum”. This may be considered a consequence of a variant of the Uncertainty Principle: large amounts of energy are available for proportionally brief periods of time. This energy may be sufficient to create an electron-positron pair, say, which then annihlates almost immediately. The net effect is nothing produced from nothing. In the extreme gravitational environment close to the Schwarschild Radius of a black hole, one of the newly-created particles may be dragged within the black hole. This time the net effect is a free particle outside the hole. We cannot get something for nothing however, and the black hole decreases in mass by an amount proportional to the mass and energy of the free particle. In this way a black hole evaporates away its rest mass energy.

This theory requires that one of the particles, say the positron , is an antimass that would subtract from the mass of the black hole and result in an evaporation or decrease in the mass-energy of the. black hole. The first law of thermodynamics says that this is not possible .

In an expanding universe of constant total energy, as predicted by the first law of thermodynamics, the expansion of the universe relative to a mass, with the resulting decrease of potential energy, relative to that mass, say , equal to the energy of a high energy gamma ray, could result in the formation of an electron-positron pair of equal total kinetic energy, if the mas provides the necessary environment. This is necessary to conserve the total energy of the universe. Although the positron is a positive clarge and the electron is a negative charge, their total energy is positive and equal to the total energy of the high energy gamma ray that they replaced. No reduction of the total energy of the black hole could result from the acquisition of a positron.

Spy and Tell

Edith Geiger

John Wall is in the heating and cooling refrigeration business. He is also a musician, enjoying playing guitar and harmonica in a blues band in local clubs.

Wedding Bells rang out in the ***Chalupka family***. Christine, who is a doctor, was married to Arlondo Bio on May 29 in Arizona, in a traditional ceremony. They were married for a second time on June 12 in a Polish wedding (la Ku Am). The ceremony was performed at Sculpture Park. The Chalupkas have been extremely busy. They are remodeling their home. Frank is manager of Symplex, selling security systems. Kathleen is a home body, and is keeping the family together.

Joan Eshner belongs to the Association of American University Women. In their recent annual book sale, their goal was $50,000, but with their efforts the sale made $ 69,700. Joan and her husband go camping along Lake Cayuga. This is a yearly event. They have a sailboat, named Aquila, from which they enjoy fishing. Back home, Joan takes great pleasure in gardening.

Louis Borkowski is a toxicologist and was at the Erie County Medical Center for 25 years. He served in the Medical Examiner's Office. He investigated death, causes of death, and analyzed drugs. After he retired, he had more time for the kids, and for astronomy. He had an 11 x 80 Mead, and was a HAM radio operator .

The early risers watched the path of ***Venus across the sun's disc*** on June 8th. There were about 200 people on the rooftop of the Buffalo Museum of Science, and 50 BAA members were in attendance. Some of our members attending were: Joe Orzeckowski, Chris Mullen, Carl Milazzo, and Janice Gardner. Bob Mayer, using his telescope, projected a clear image on apiece of white paper. A good time was had by all.

Have a nice summer!

Editor's Corner

Tom Bemus and ***Bill Smith*** resigned as webmasters of the main BAA web site. On behalf of all the BAA members, thanks for all the hard work that you both did for the club.

Tim Finucane has volunteered to become webmaster on both the Main BAA and e-Spectrum web sites. He has decided to incorporate both features into an upgraded design for the combined site. Tim is an experienced web developer/programmer and he has a long history of running web sites.

Tim writes: " A little bit about my web development background. I currently work for Algonquin Studios as Senior Programmer/Analyst and I am also the acting webmaster for http://www.akronbugle.com (owned by my inlaws) . I designed and coded the content management system used to manage akronbugle.com and the site has won 2 media awards. Before working at Algonquin Studios I was the webmaster for Appraisal.com."

Astronomy Terms

Meteor: Brief streak of light seen in a clear night sky when a small particle of interplanetary dust, a meteoroid, bums itself out in Earth's upper atmosphere. As the meteoroid collides with atoms and molecules of air, a large quantity of heat energy is produced, which usually vaporizes the particle completely by a process of ABLATION. Vaporized atoms from the ablating meteoroid make further collisions, causing first excitation, then ionization as electrons are stripped from air atoms and molecules.

An ablating meteoroid thus leaves behind it a trail of highly excited atoms, which then de-excite to produce the streak of light seen as a meteor. Ionization produces a trail of ions and electrons which can scatter or reflect radio waves transmitted from ground-based equipment, causing a radio meteor. The trail of ionization is only a few meters wide, but may typically be 20-30 km (12-19 mi) long.

Most meteors appear at altitudes between 80-110 km (50-70 mi), where the air density becomes sufficiently high for ablation to occur. The altitude of this meteor layer varies slightly over the sunspot cycle, being greater at times of high solar activity. Atypical meteor reaches its maximum brightness at an altitude of 95 km (59 mi). Usually, a visual meteor will persist for between 0.1 and 0.8 seconds. Brighter meteors sometimes leave a faintly glowing TRAIN or wake after extinction, and may show bursts of brightening (flares) along their paths.

Meteoroids enter the atmosphere at velocities between 11 and 72 km/s (7-45 mils). At the lower end of this range, the velocity is simply that of a particle in free fall hitting the Earth. The greatest value is obtained by summing the maximum heliocentric velocity of the meteoroid at a distance from the Sun of 1 AU (42 km/s or 26 mils) with Earth's mean orbital velocity of 30 km/s (19 mils).

Atypical naked-eye meteor around magnitude + 2 is produced by ablation of a meteoroid 8 mm in diameter, and with amass around 0.1 g. Over the whole Earth, 100 million meteors in the visual range down to magnitude + 5 occur each day.

(continued from page 1 -- Common Problems, Commom Solutions)

club membership directory (listing other members' interest, equipment, etc.) and a booklet showing all the benefits of belonging to the club. For example, a beginner would need to know if the club has a loaner scope available, if a club observatory or library exists, who to get expert advice from, who can troubleshoot equipment, what other club activities there are (such as a newsletter and star parties) and other helpful advice. A beginner should be encouraged to hone their skills by participating in meetings, field trips and observing sessions. Each new member should be personally contacted by a current member and be invited to participate in an event. This one-on-one contact helps break down the shyness barrier and not only involves the new member in the functioning of the club, but keeps the seasoned amateur active as well. Without expert amateurs as members, a club is left with the blind leading the blind. A club needs to grow with its membership to keep up to date. It can help retain its active core of experts by drawing on their knowledge, wisdom, technical know-how and practicality. When a member demonstrates progress, they should be praised, rewarded and encouraged-the sooner, the better. However, if an officer or member is charged with a responsibility and does not follow through, steps should be taken immediately to rectify the problem. If this is not done, morale falls, membership drops off and the club suffers.

" Ten percent of the people end up doing ninety percent of the work "

Some reasons for lack of involvement by beginners is that they feel intimidated, or that they think it will take forever to leam as much as the more experienced amateurs. They need to be told that the average member gained their knowledge in three years. This bit of information could be in the detailed booklet given to them when they join. If a beginner finds it difficult to speak in front of the group at a meeting, they should be encouraged to write a newsletter article or a letter to the editor. Under no circumstances should they be discouraged from speaking or becoming involved. No matter how much of a beginner a person is, there is always some way in which they could contribute.

Leadership: There are times when club officers are not ware of the cause of the problem a member is experiencing. A method needs to be developed to make them aware--perhaps a suggestion box. Unresolved problems can cause members to become inactive or drop out completely. Executive members need to be sensitive to the needs of members; if not members will leave. Problems should be aired at meetings or it gives the appearance of covering them up.

Executive members, ideally, should be the most active amateurs, those who have the highest quality track record, who always encourage, have a wide current interest in astronomy and who are enthusiastic. They need to think of the long range ramifications of their decisions, have vision and specific goals with a timetable. To improve the quality of their decisions they need to communicate with all members, both asking and informing in detail. Their planning has to balance the needs of the beginner with the needs of the experienced members. The membership should be polled periodically to determine what is missing in their club: there should be brainstorming after an *event* to determine how it can be better or different next time. Members need to be informed beforehand of the agenda of their representatives. If they are kept informed, they can give input which may affect the decisions of the leaders. Contact should be established and maintained with other successful clubs to determine the key differences, compare past action and find out in what direction other clubs are moving. Giving members choices helps to increase participation in activities. People should run for election because they feel that they can do the best job, not just for power or prestige. The pros and cons of each issue to be voted on should be published in the newsletter for everyone to *vote* on. Absentee voting should be available for those who are unable to attend a meeting.

Shared Workload: Most clubs have difficulties with their system of workload distribution which results in burnout of its most active members. Ten percent of the people end up doing ninety percent of the work. This workload results in a club doing close to minimum work in order to survive instead of allowing time to do the best possible job. Volunteering is a nice bonus for a club, but an incentive system gets a lot more done. Setting a minimum work level per year for all members, with two exceptions, is an alternative to be considered. The exceptions would be for students, and, for the first six months, new members. Both could volunteer, but sharing the workload would not be required.

There are many types of jobs that could be done and many possible incentives offered in exchange. Every job a member performs would earn a work credit value that is accumulated over the years. The more work credits earned, the more seniority gained. The more one works for the benefit of the club, the more privileges one would earn.

The executive is made up of elected officers and five judges, who are the members who have earned the most credits. If a member declines to be a judge, then the person with the next highest number of credits is eligible. The judges set the minimum work level required, place a value on the skills used, donations raised by members, develop incentives, prepare a list of jobs to be done, resolve disagreements and keep a tally of members' credits. A majority vote by the judges on the issues minimizes the likelihood of laziness from settling in the club. Judges are also on the executive and have one vote each, just as the officers do. People who are willing to work hard for a club would welcome a system like this, while lazy members would, no doubt, be strongly against it.

The Observatory: Every club should set a goal for at least two observatory sites. The first one should be located not too far outside the city and be a short drive for most people. The site should have fair quality skies that can be used for identifying constellations, solar system objects, double stars, etc. This site does not require a large telescope, but does need a parking lot large enough to handle public nights and membership parking as well as a large clubhouse.

The building should contain one dome observatory to block wind and light pollution. This building could serve multiple purposes and eventually grow into an active complex. It may be used by members around the clock for workshops, meetings, classes, library purposes, public viewing of the Sun and stars and staging media events. The building can also have a darkroom, computers, a storage area for shop material and portable telescopes, kitchen, bath- room and a sleeping area for all-nighters. *(continued on page 8)*

Observatory News

Paul Tabor

Public nights thus far have not been the greatest weather wise.

May 1 was pretty clear early, then turned hazy later on, we were at least able to give members of Roland's Astro class that came out a showing of Jupiter and Saturn. BAA members that were there were, Bill Aquino, Ted Bistany, Tom Bakowski, and Paul Tabor.

May 15 Public night was very cloudy, was attended by Bill Aquino, Pat Lannon, and Paul Tabor.

The Clouds got to us once again on **June 5**. Bill Aquino, Tom Bakowski, Frank Chalupka, Tom Frank, Rick Pason, Paul Tabor, Judy Cenkner and Gus Cenkner were there that evening. Color slides of Jupiter, four of its' many moons, and its' ring – taken by Voyager 1 -- were presented by Gus Cenkner.

Someone donated an **Edmund Mirror Grinding Kit** to the club. The suggestion was made to present the matter before the Board so as to ascertain how best to make use of it. Jeff Gardner suggested we us it for a presentation at one of our monthly meetings. Or it could be put up for grabs to a club member who has a lot of time on his hands. In any case we will want to see what the board members have to say.

Bill Aquino reports the **robotic telescope is currently down for repairs**. 'We expelienced what we think was a circuit board failure in the LX-200 and we are still working on the repairs. The instrument will be placed back into service as soon as the repairs are completed".

We want to thank a lot of hard work by Anthony Davoli . With help from Rick Pason, a **broken 8" Goto telescope that was recently donated to the club** is now in working order and available for use out at BMO. The system consists of a Vixen equatorial GOTO mount with a Meade 8 inch SCT OT A. The club recently purchased a dew shield and a power supply for the new instrument. This telescope is a most welcome addition for busy public nights and should also make an excellent astrophotography platform for club members use.

The **remaining public nights** are as follows: There are still some open dates for speakers, if you are able to give a presentation on one of the open nights please contact Paul Tabor at either 716434 7148 or Dtat1957@vahoo.com

Public Night	Speaker
June 19	Alan Friedman
July 3	Joe Orzechowski
July 17	Bob Hughes
Aguust 7	Gus Cenkner – Voyager II Encounters Saturn
August 21	
September 4	
September 18	Roland Rupp
October 2	
October 16	

3 July 2004

Sunset 8:57 p.m.
End of Civil Twilight 9:52 p.m.
Moonrise 10:41 p.m.
Phase of the Moon on 3 July 2004: waning gibbous with 98% of the Moon's visible disk Illuminated

17 July 2004

Sunset 8:50 p.m.
End of civil twilight 9:24 p.m.
Moonset 9:33 p.m.
New Moon on 17 July 2004 at 7:24 a.m. EDT

7 August 2004

Sunset 8:28 p.m.
End of civil twilight 9:00 p.m.
Moonset 1 :57 p.m.
Moonrise 11 :59 p.m.
Last quar1er Moon on 7 August 2004 at 6:02 p.m. EDT

21 August 2004

Sunset 8:08 p.m.
End of civil twilight 8:38 p.m.
Moonset 10:48 p.m.
Phase of the Moon on 21 August 2004: waxing crescent with 31% of the Moon's visible disk illuminated

4 September 2004

Sunset 7:44 p.m.
End of civil twilight 8:13 p.m.
Moonset 12:48 p.m.
Moonrise 10:26 p.m.
Phase of the Moon on 6 September 2004: waning gibbous with 69% of the Moon's visible disk illuminated.

18 September 2004

Sunset 7:19 p.m.
End of civil twilight 7:47 p.m.
Moonrise 11 :31 a.m. Moonset 9.20 p.m.
Phase of the Moon on 18 September 2004: waxing crescent with 18% of the Moon's visible disk illuminated.

BAA Policy

MEETING 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, the B.A.A. meeting will also 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 collection box by the phone. This phone cannot make long distance calls.

REPRODUCTION NOTICE

(*continued from page 1* -- *Going for the Gold*)

The Hubble Space Telescope is capable of penetrating the thick haze in infrared. It revealed a moon with dark, smooth areas and patchy, bright regions. It is possible that the dark areas are seas and the bright areas are continents.

Titan contains the key ingredients for life, but it is too cold at -280 degrees F. A view at the surface would be eerie, with a gloomy, orange overcast and streaks of falling hydrocarbon snow or rain. The whole scenery would be illuminated by a dull solar glow, which would be only slightly brighter than an earthly landscape bathed by a Full Moon. The Rubble Space Telescope also detected convective cloud formations near the south pole as summer approached. Could these be actual storms, possibly thunderstorms? Cassini will make ***several flybys of Titan***, with some as close as 590 miles and will map the surface with radar, but the big event begins ***on Christmas Eve 2004*** when it ***releases the Ruygens probe towards Titan***. It will enter Titan's atmosphere on January 14, 2005. Measurements of the atmosphere's temperature, pressure, density, wind direction and speed will be taken during descent. The probe will try to detect lightning and determine the composition of the surface before landing or splashing down. If the probe survives the landing and ends up in an ocean, it will determine the density of the liquid and the depth of the ocean by using an acoustic sounder. It will also transmit images from the surface and could survive up to an hour.

While Titan may be the main attraction, there are other sights to behold. Before Cassini arrives at Saturn it will make a ***movie of its clouds***, ***rings, and moons***. Then it will fly within 1200 miles of Phoebe on June 11,2004. This is a dark moon only 135 miles across and poorly imaged by Voyager 2. It is suspected to be a captured asteroid because it is so dark. Once Cassini arrives at Saturn it will quickly go to work studying its new environment. After the historic T1tan landing, Cassini will ***fly within 733 miles of Enceladus*** on February 17, 2005 and 310 miles on March 9, 2005. This moon is only 310 miles across but has vast smooth areas and reflects almost 100% of the sunlight. Could there be active geysers laying down a fresh layer of frost?

Another round of ***close flybys of the moons*** begins in September 2005 with ***Tethys, Dione, Rhea, and Ryperion*** being the targets. Tethys, 657 miles in diameter, has a huge rift and softened craters. Dione, 694 miles in diameter, is streaked with wispy white marking in addition to softened craters, therefore both of these moons had to be warmer at one time. Rhea, 949 miles in diameter, is covered with craters upon craters, but only a few are covered with frost. Is there volcanic outgassing? Ryperion, with measurements of 248 by 155 by 124 miles, looks like a battered hockey puck that is heavily f1.actured and cratered. It may be the remains of a larger moon that was shattered in a violent collision. Cassini will have a lot of mysteries to solve and will surely create many new ones. After these flybys wrap up in November 2005, there will be 17 more Titan flybys before Cassini encounters ***the bizarre moon called Iapetus*** on September 10,2007. One side of this moon is as bright as snow while the other side is as dark as asphalt, but why? Did the dark material ooze out from its interior or was it deposited there from another source? Iapetus is 890 miles in diameter and low in density indicating that it is an icy moon possibly containing plenty of methane or ammonia. Cassini will try to answer this riddle.

The final months for Cassini will find it in ***polar orbit around Saturn*** giving the most inspiring views of Saturn with its wide open rings, the shadow of the planet on the rings and the shadow of the rings on the planet. It will be in perfect position to study the aurorae, polar hoods, magnetic fields, lightning, any deformities in the rings, and look for new moons that may be near or within the rings. It will continue to map Titan with its radar and explore Mimas, a moon that is only 243 miles in diameter but has a crater so huge that it appears like the "Death Star" from Star Wars. The primary mission ends on July 1,2008, but as with most planetary spacecraft, Cassini is expected to outlast its designed lifetime by many years. During its extended mission, it will probably follow up on new discoveries by flying closer to certain moons or perhaps skimming the outer atmosphere of Titan. Cassini is a mission that will stand out among the other missions of this unforgettable decade. It promises to continue adding to our wealth of knowledge and under- standing during ***this new Golden Age of Planetary Exploration***.

(continued from page 6 – Common Problems, Common Solutions)

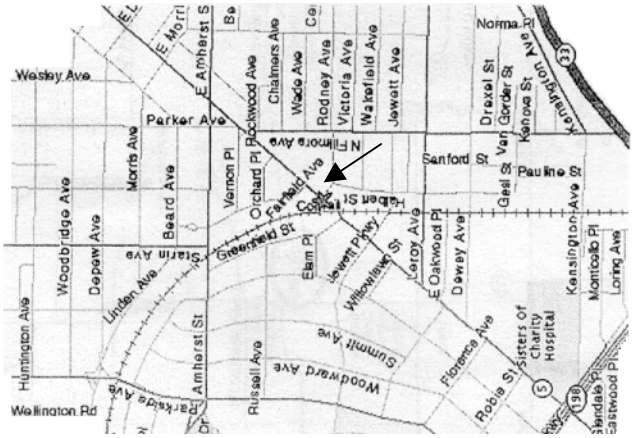
Part of this site can be leased to other members who are willing to spend their own money on their own equipment, pad/pier or observatory for their research speciality. This affords many advantages for both the club and the individual. Amateurs of all levels are observing nearby and can interact with each other. This observatory complex can be a stepping stone to the second observatory site, without having to abandon the first one, a mistake often made by clubs. Both sites have their advantages. The first site is conveniently close; the second site is at a point where light pollution from the city ceases to be a factor. This dark sky site is where the largest scopes should be and would be ideal for astrophotography and CCD imaging. If it is near the summit of a tall hill, dew and mosquitos would not be a problem. The southem horizon should be unobstructed and the road leading to it should preferably be a dead end. Given enough time, the second site can be developed with facilities as large and advanced as the first one. Both should never need to be abandoned, so that the time and money put into them will never be wasted.

City Lights Star Party -- July 24, 2004

8:30 to 11:30pm. Rain or shine.

Rooftop of the Tri-Main Center -2495 Main Street. -meet at suite 457; parking in Tri-Main reserved lot on Halbert St. (one street east of Main at Jewett). Alan will have food and drinks -you are welcome to bring a dish or snack to share. Come and enjoy the lst quarter moon against a backdrop of downtown

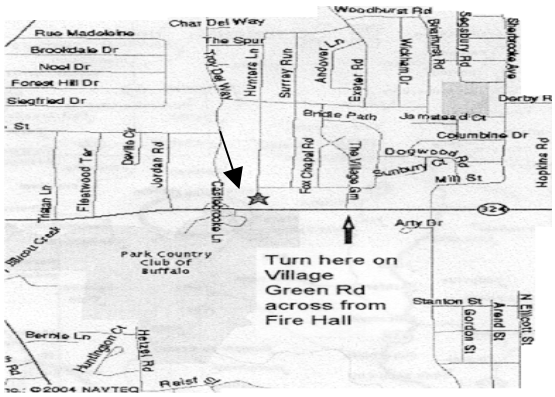
Any questions? contact: Alan Friedman 381-4310 (home) 836-0408 (work)



Williamsville Star Party -- July 31, 2004

7:30 to 11:30pm. Rain or shine.

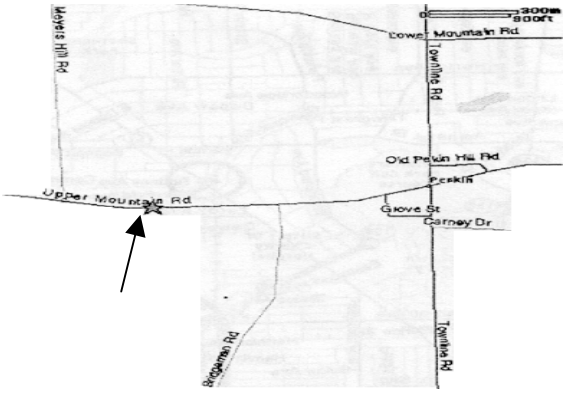
1 Hunters Lane, Williamsville (enter from The Village Green Rd- opposite from the Fire Hall). The Macks will have drinks -bring a munchies if convenient. Full Moon so limited viewing, but lots of astrophysical conversation. "Award winning backyard gardens", says Jack to Jayne. Any questions? contact: Jack Mack, 632-6210 (home)



Sanborn Star Party -- August 14, 2004

7:00 to 11:30+pm. Rain or shine.

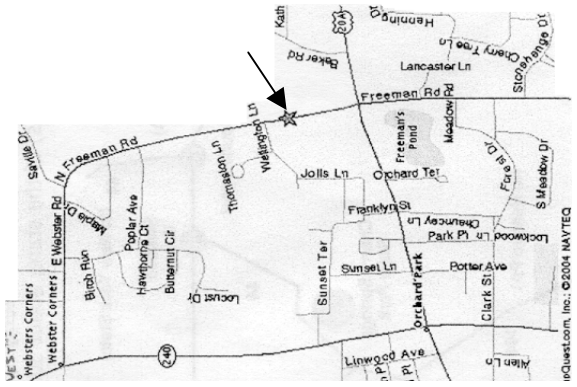
2730 Upper Mountain Rd, Sanborn (brown brick house, roll-off roof obs visible, on top of hill). Cookout! They will supply main dish & drinks -bring a dish or snack to share. <u>New Moon SO dark sk~.</u> Bring a scope! Great views from on top the escarpment.
Any questions? contact: Peter Proulx, 731-2808 (home)

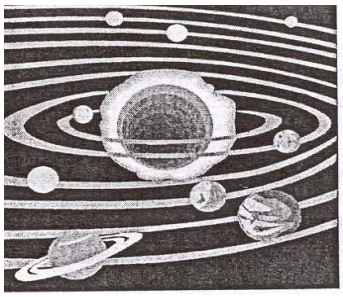


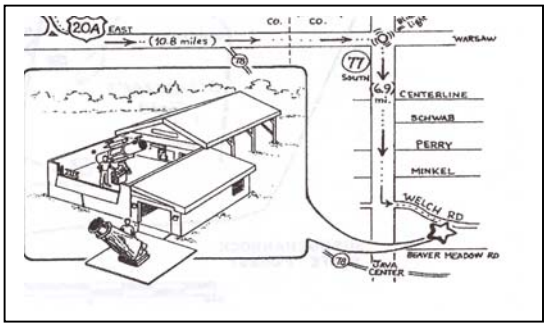
Orchard Park Star Party Aug 28,2004

7:00 to 11:30+ pm. Rain or shine.

"Home in the Dome". 4056 North Freeman Rd, Orchard Park (Red brick house, 6 houses north of 20A & Freeman Rd intersection). Cookout! Dennis will have main dish & drinks -bring a dish to pass. Full Moon but not a problem for the CCD camera. Interested in CCD imaging? Try your hand at this with the scope in the dome, remote operation & image processing. High tech stuff explained! Any questions? contact: Dennis Hohman, 662-2904 (home)







BAA OBSERVATORY

***OPEN FREE TO PUBLIC THE FIRST AND THIRD SATURDAY OF EACH MONTH** (April through October)*

Location: Beaver Meadow Audubon Center, North Java
Rt. 77, 18 miles south of Darien Lake Amusement Park entrance, on left side of road, near woods
(see BAA web site for detailed map)

Permanent telescopes: 20 and 12 inch Newtonian reflectors
10 and 8 inch Schmidt Cassegrains
6 inch equatorial refractor

Temporary telescopes: Various types. Private telescopes set up by members

Small auditorium: Used for astronomy talks on public night

Objects viewed and/or imaged : planets -- Venus, Mars, Jupiter, Saturn, Uranus, Neptune
stars -- individual, clusters, galaxies
sun -- sun spots, prominence
nebula -- bright and dark
comets -- heads and tails
moon -- craters, mountains, "seas", lava flows, astronaut landing sites
satellites – various man made satellites, including the international space station

Buffalo Astronomical Association Newsletter
August Cenkner Jr., Editor
6982 Creekview Drive
Pendleton, NY 14094