The Spectrum

The News Letter of the Buffalo Astronomical Association

Volume 12 Issue 3

May /June 2010

A Big Plan for a Bright Future



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| The July / August Spectrum | | | |
| Article Deadline will be June | | | |
| 15th. Please send all | | | |

submissions to

mvbenz@mvbenz.com.

By now you've heard the news. Early in April our BAA Board of Directors voted unanimous support for a major project that has been percolating through the club for many months if not years. The old telescope under the roll-off roof of our beloved observatory

at Beaver Meadow is to be retired and replaced with modern instruments and a go-to mount that will better serve our member interests and public programs today and into the future.

I am really excited about this. Many of you have been members long enough to recall an intrepid group of BAA members who became the first amateurs in the world to record the visible afterglow of a gamma ray burst. They did it with a 50 year old Newtonian telescope and a homemade CCD camera affixed to the focuser with duct tape. A wonderful story of dedication and perseverance... but one can only imagine what BAA members might accomplish with a modern mount and efficient large aperture telescope at their disposal. How many of us would come out to learn astrophotography and use the equipment at BMO if it worked predictably and tracked accurately? It's time to find out.

We are mounting a capital campaign. The goal is \$25,000 - a big number for a club that takes in \$3500 a year in dues. With the help of generous members who contribute above and beyond their dues we've built a nice rainy day balance in our bank account. This will help us get started, but it's not enough to fund the campaign. We will have to look deeper into our pockets to make this happen. We will have to ask out friends to reach into their pockets too.

Can we do this? You bet we can. Money is awfully tight right now... many of us have felt the sobering pinch of economic recession. To raise \$15,000 ourselves we will have to average \$100 from each member unit.

A Big Plan continued...

This year's BAA traditional star parties

Carl Milazzo

That's a big number when you compare it to the 25 dollar cost for a year of membership. But compare it to a month of cable TV, a dinner out or just about any eyepiece in your equipment case and it might not seem unreasonable. Some of us will be able to consider more and help offset those that can't do as much.

If we can raise \$15,000 ourselves and do it with 100% membership participation, it will give us a great start and a strong case as we ask for outside support from corporations and foundations.

Our June meeting will feature a special presentation on the BMO upgrade project. Come and hear the details and see what we are planning to build (pizza will be served!) In the meantime think about how you can help. Money is a funny thing. We worry about it and find it difficult to talk about it openly. Mostly it passes through our fingers and goes to buy stuff that we might not if we had the choice. How often do we get to put our money towards building something we really care about?

Clear skies and best wishes, 🌽

Alan



They are a club member activity, involving the summer skies as a group of members observing together. This has been a tradition of our club for 60 years and is still popular to this day. I have been organizing them for our club , on and off for the past ten years, since the late 1970s. I have seen the technology for amateurs and professionals improve tremendously , along with the world wide space program since the 70s. If you plan on coming, please contact the star party host. Bring a lawn chair, binoculars are handy, bring a telescope but that's not necessary. On a crystal clear night it can get cold over the course of the evening, so bring a warm coat and even gloves. Other suggestions – consider bringing sunscreen, bug spray, and a red illuminated flashlight.

With star parties there is an emphasis on practical amateur astronomy, along with having fun. These are perfect for beginners and for long-term amateurs alike. One of the best things is that there is almost unlimited time to explore topics and experiences, unlike meetings. If clear, we will observe, try out all kinds of astronomical equipment that members have brought with them. You'll have an opportunity to use telescopes of different designs, different types of eyepieces, different mounts, different filters, etc. Get to know the constellations better. Marvel at bright meteors. Scan the majestic Milky Way. Show favorite deep-sky objects, and search for new ones. Show some of our favorite objects such as lunar craters, planetary features and details, etc. We will learn simply ways of finding our way around the sky, tricks for getting a better focus and view, watch the Space Station pass overhead, observe Iridium Flares, and even see fireflies flickering! While we're doing this we'll be able to enjoy recorded astro-music and even occasionally enjoy a live band, and in the background we might even hear frogs and crickets and maybe even a Great Horned owl. This is a perfect time for members with decades of experience to serve as mentors to the newer members, accelerating their learning curve from first-hand experiences.

Continued on page 4



| | 1 | Across | | |
|--|---------------------------|--|--|--|
| Astronomy Crossword | 2 | 5. The proper English name for Earth's | | |
| | | natural satellite is | | |
| 3 | 4 | 8. The is the part of the | | |
| | | atmosphere that is ionized by solar | | |
| 5 6 | 7 | radiation. | | |
| 8 | | 10 light is a slight glow in | | |
| 9 | | the sky that is near the horizon and has a | | |
| | | roughly triangular shape. It is caused by | | |
| | | light from the Sun that is reflected by tiny | | |
| 12 | | dust particles located in space (this dust is | | |
| | | part of our Solar System and is orbiting the | | |
| 13 | | Sun). | | |
| |] | 12. The Kirkwood gaps are radial gaps in the belt. | | |
| 16 | 17 | 13. When photons are being continually | | |
| 18 19 | | emitted and absorbed is | | |
| 20 | | equilibrium. | | |
| | | 14. Kepler's Law of Planetary | | |
| | | Motion states that a line from a planet to the | | |
| | | sun will sweep out equal areas in equal | | |
| | | times. The planet moves more slowly when | | |
| | | it is farther from the sun and faster when it | | |
| | | is near it. (This is equivalent to the | | |
| | | conservation of angular momentum.) | | |
| 19. Aldebaran is the brightest star in the constellation 20. An disk is a flat disk of gas and dust in space that surrounds a newborn star, black hole, or other enormous object that is growing by attracting matter to it with its gravitational field. | | | | |
| Down | | | | |
| 1 is one of Jupiter's 16 mo | ons, and the second-cl | osest to Jupiter. | | |
| 2. The first civilisation known to possess a | a functional theory of th | ne planets were the | | |
| 3. An (also called a "parallel of altitude") is a circle on the celestial sphere that is parallel | | | | |
| to the horizon. | | | | |
| 4. Dark consists of the | physical and chemical | changes in your eyes that allow them to see | | |
| well in the dark. | | | | |
| 6. A is the amount of work done by a force of one newton acting through one meter. | | | | |
| 7. Dr was the first African-American woman in space. | | | | |
| 9 are bright patches on the sun that are associated with sun spots or any region which is | | | | |
| brighter than the surrounding area on a planet or a moon. | | | | |
| 11 astronomy is also called visible light astronomy. | | | | |
| 15. Despina is a tiny moon of | | | | |
| 16. He proposed what became known as the Big Bang theory of the origin of the Universe (last name only). | | | | |
| 17. The atmosphere has a mass of about five (5 $	imes$ 10^18th) | | | | |
| 18. University of Chicago's Observatory is an astronomical observatory located at Williams Bay, | | | | |
| Wisconsin, USA. | | | | |
| | | | | |
| Page 3 | | | | |
| | | | | |

Star Party continued... talking about club short-term and longterm goals, talking about your wishes and Warning – this is not a typo: Some local concerns, and more. amateurs that you will encounter this You can pick the brains of long-time Summer have skies in their backyards that amateurs, explore programs on your laptop are pitch black with near-zero-degree and other members' computers, or just sit horizons, with observatories housing 25", around the "campfire" telling stories and 28", and 29" scopes. Also, a 14" Schmidtsimply enjoying those lively discussions. Cassegrain, image intensifier, 6" rich-field You can set up carpools to fieldtrips and refractors, big binoculars, hillside elevation upcoming outdoor astronomy conventions up to 2100'. Second warning - you're not such as Black Forest at Cherry Springs, PA. dreaming, this is a local reality. You can watch a videotape or DVD, pull up If it's cloudy, there are plenty of things to old slides or new photographs. You can do related to active amateur astronomy. talk about programming ideas for upcoming You can sell or buy used astronomical meetings. We could help you with equipment. Feedback from you is always welcome, so cleaning your optics, collimating your feel free to give me a call: Carl Milazzo, telescope, aligning the mount and finder 931-3895. I will make an honest effort to make your wishes come true, and I will do scope, balancing the telescope – ask any question, even "dumb" questions are my best to answer any of your questions. welcome. We can have a lively round-table Star parties have already been scheduled discussion, talking about your experiences, throughout the Summer, and there are still brainstorming sessions, doing openings left for late in the season and into some

Here is a list of parties already scheduled for June and part of July:

PhotoShopping images, surfing the Net, |

Saturday, June 12 – Wilson Star Search, Wilson, NY Krueger Park on Route 18, 900' East off Route 425 starting at 4:00PM hosted by Steve Smith 870-3115. Bring a dish to pass if you wish.

the Fall. All star parties are rain-or-shine.

Friday, June 18 – Hosted by Roger Whitfield 741-4198, 7100 Goodrich Road, Clarence Center, NY 14032 starting at 7:30PM. Bring a snack if you wish. Equipment highlights include a 14" Meade LX200 and a 4" Takahashi refractor, and large binoculars.

Saturday June 19 – Beaver Meadow Observatory Welch Road, North Java, NY 8:00PM.

Saturday June 26 – Hosted by Frank Pirrone 837-2843, 61 Burke Drive, Buffalo NY 14215 starting at 4:00PM with a "pool opportunity." Equipment available is an 8" Schmidt-Cassegrain with a solar filter. Bring a dish to pass. A live "astro band" will be on hand. A high-speed broadband WiFi connection will be available along with shortwave and Amateur Radio equipment.

Friday July 2 – Hosted by Jack Mack, retired SUCB science professor, 632-6210, 1 Hunter Lane, Williamsville NY 14221 starting at 7:00PM. Bring a snack if you wish.

Friday and Saturday July 9 & 10 camp-out – Hosted by Ted Zendarski 676-5158, 4522 Bryant Hill Road, Franklinville 14737 starting at your arrival on Friday. Equipment available includes a 25" Dobsonian. Ted has been an amateur for 30 years. You'll see Ted's 3 horses, pond with paddleboat, trampoline, pitch-black skies, and near-zero-degree horizon with never any ground fog! You will be able to observe, for example, Sagittarius above the horizon for up to 4 hours!



The Moon Hoax

"The Moon Hoax" is extracted from the second installment of a two-part article, "Of Moon Cities and Selenites" written for The Spectrum by Ernst Both in April 1975. Where brackets {} appear, material has been added for clarification because the original refers to information presented in the first installment in the February - March 1975 issue.

On August 25, 1835, the New York Sun, a fighting fledgling newspaper for its existence, launched a series of articles under the heading "Great Astronomical Discoveries by Sir John Herschel . . . at the Cape of Good Hope." The story started innocently enough by telling how Sir John (1792-1871) had gone to the Cape in 1833 to extend the sky survey begun by his father, Sir William Herschel (1738-1822), into the southern hemisphere. It mentioned a gigantic telescope of an entirely new design with enormous powers which Sir John had constructed. The second installment described the lunar world as revealed by the magic telescope in minute detail: the forests, fields, basalt cliffs, and the strange animals! "Herds of brown quadrupeds having all the external characteristics of the bison, but more By the third installment diminutive." people were fighting to obtain copies of the paper, and its circulation multiplied until it sold over 19,000 copies, two thousand more than the London Times.

In due time the avid readers were introduced to the selenites observed by Sir John - winged creatures like bats, with humanoid features, behaving much like earthlings. The paper vividly described their splendid temples, roofed with "yellow metal." The public could now buy (for 25 cents) "a most splendid and beautiful print of the lunar animals and other objects lately discovered . . ." and when the installments came to an end they were quickly reprinted in pamphlet form, as late as 1859.

The entire affair was soon exposed by the New York Herald as "the moon hoax", one of the greatest scientific frauds ever perpetrated, but not before a great many people, including astronomers, had been "taken in." The hoax was due to the Sun's reporter Richard Adams Locke, who was familiar with {the writings of astronomers such as Franz Paula Gruithuisen (1774-1852), who earlier saw suggestive formations in the lunar topography}. On page 12 of The Moon Hoax (reprint of 1859) we read: "The formation which Professor Fraunhofer uncharitably conjectured to be a lunar fortification, Sir John Herschel ascertained to be a tabular buttress of а remarkably pyramidical lines which had mountain; been whimsically pronounced roads and canals, he found to be keen ridges of singularly regular rows of hills." The substitution of Fraunhofer (Joseph von Fraunhofer, 1787-1826, the famed physicist-optician) for Gruithuisen was a subtle touch to lend further credibility to Locke's tale. Ascribing the supposed discoveries to Herschel was a natural choice. His name was very famous and highly respected, and he was too far removed geographically to unmask the hoax prematurely.

Translations of the Sun articles quickly spread over Europe and eventually reached Gruithuisen who at first considered the story a vicious attack on his work. When he learned that it originated in New York he resigned himself with the words "well, it was not really unexpected, because after all it came from a New York paper!" Sir John was amused by the whole affair, remarking that "since there will always be foolish people who believe in all adventurous tales, we can dismiss them as being completely harmless." 🌽

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Space Exploration News and Commentary for April 2010. by Bob Hughes

In this month's Space News and Commentary we will cover two main topics: The first light of the Solar Dynamics Observatory and the cancellation of Project Constellation.

The Solar Dynamics Observatory (SDO) became operational in April and its first light images and data were released to the public in a NASA press conference on April 21st. In the batch of images shown at the press conference were SDO images of a solar flare and coronal mass ejection(CME) that occured on April 12th. These images showed high resolution details of the solar shock waves (Moreton waves) that cause a CME. A solar scientist at the press conference said he revising his theories of solar dynamics based on the new data and images from the SDO! Some of the SDO images appeared network nightly on included newscasts and in as were download I-phone images on Apple applications.

The next big space news item was the Obama administration decision to cancel Project Constellation. This was to be Nasa'a next human space flight capsules and launch vehicles that would have the ability to land astronauts on the moon or to Mars as well. Project Constellation was to be the next Nasa astronaut launch system that would replace the space shuttles that are planned for retirement in the fall of 2010. This project would consist of a 6 person Crew Exploration Vehicle (CEV), the Ares 1 rocket, the Ares 4 rocket, and a Luner Service Access Module (LSAM)for landing men on the moon. It was targeted to be ready to launch crews to the International Space Station (ISS) using the CEV launched by a Ares 1 launch vehicle by

2015. This would mean that Nasa astronauts would be launched to the ISS by Russian Soyuz space capsules for the next 5 years. The Russians were going to charge Nasa \$50 million dollars per astronaut ride to the ISS for this 5 year period but now that Project Constellation is being canceled the Russians are considering charging \$100 million per astronaut ride!

Also being canceled would be the Ares 4 heavy lift launch vehicle. This massive multi-stage rocket will have the capability to lift 290 kilograms to low Earth orbit (LEO) and 117 kg to escape velocity (otherwise refered to as trans lunar injection-TLI). This rocket has 20% more lift capacity than the Saturn 5 rocket which made the Apollo lunar missions possible 40 years ago. Even if no lunar or Mars missions planed in the near future there is an important reason to build this rocket design.

In over 15 years it has been in existance, the Near Earth Asteroid Research (NEAR) has discovered around 120,000 asteroids and 2000 comets. It is fortunate for mankind that none of these asteroids or comets could impact the Earth and destroy or disrupt civilization but the possiblity exists. The B612 Foundation is a group of concerned scientists who's purpose is to establish the capability to alter the orbit of an asteroid. This group proposed that asteroids and even a comet could have there orbits altered by means of a gravity tractor satellite. A gravity tractor satellite powered by ion engines could be quite heavy, 100s of kilograms and could only be launched to a TLI velocity by the Ares 4 rocket. The proposed cancelation of the Ares 4 rocket and the CEV have members of Congress, people employed by space contractors and the general public who support the human exploration of space up in arms. There is no plan or direction to

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Space News continued...

Nasa how to continue a human space flight program after the space shuttles are retired. The Project Constellation should not be canceled unless a better plan is proposed. The United States and Nasa needs to have a coordinated space program that gives Nasa and it's contractors a vision and a plan for the human exploration of space.

I will wrap up this column by noting that April 24th will the 20th anniversary of the launch the Hubble Space Telescope on STS-31. The last repair mission of STS-125 has now is now been made into an IMAX documentary. Hopefully there will be local IMAX sceening.



COLLEGE OF FELLOWS REPORT Rowland A. Rupp

Mike Anzalone was the 2010 recipient of the College of Fellows Award "For his dedication in bringing astronomy to a diverse audience across Western New York." The award was presented at Banchetti's Banquet Hall on March 13th, where Don Paul, WIVB's (Channel 4) Chief Meteorologist, gave an informed, balanced report on global warming. He answered in depth a variety of questions from his audience.

No new members were inducted into the College this year. The current members are: Bill Aquino, Marilou Bebak, Larry Carlino, Darwin Christy, Alan Friedman, Bob Hughes, Steve Kramer, Jack Mack, Dan Marcus, Beverly Orzechowski, Joe Orzechowski, Rowland Rupp, Bill Smith and Bob Titran.

Whaz up?

Mike Benz

May 5, 6 - Eta Aquarids Meteor Shower. The Eta Aquarids are a light shower, usually producing about 10 meteors per hour at their peak. The shower's peak usually occurs on May 5 & 6, however viewing should be good on any morning from May 4 - 7. The radiant point for this shower will be in the constellation Aquarius. Best viewing is usually to the east after midnight.

May 14 - New Moon

May 19 - International Sidewalk Astronomy Night. Join amateur astronomers al over the world as they set up their telescopes in public places to share the night sky with everyone. Check their Web site for details.



May 27 -Full Moon

June 12 -New Moon

June 21 - The Summer Solstice occurs in the northern hemisphere at 11:28 UT. The Sun is at its highest point in the sky and it will be the longest day of the year. This is also the first day of summer.

June 26 - Full Moon

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June 26 - Partial Lunar Eclipse. The eclipse will be visible throughout most of eastern Asia, Australia, the Pacific Ocean, and the western Americas.



BAA ANNALS

Rowland A. Rupp

5 YEARS AGO - Tom Frank was our May 2005 speaker; his anecdotal topic was why it took so long from the first use of eyeglasses to invent the telescope. In June, Gus Cenkner gave a talk on photographs by Ron Dantowitz of the Russian space station in orbit. Bill Aquino announced a new program whereby a member who achieved three gualifying steps, "accomplish, publish, lecture," would receive a BAA "Certificate of Recognition." The idea was to encourage accomplishing some kind of astronomical project, then publishing the result in a paper or article, and finally giving a talk on the subject at one of our general meetings. The program lasted only one year. The first star party of the year was announced for late June at the Rupps' cottage at Lime Lake.Rowland Rupp followed up on his earlier quest in the January/February Spectrum to find out why it took so long to invent the telescope. (It was the stimulus for Tom Frank's coming talk.) Several members provided explanations, some insightful, some comical. Bill Halbert wrote about how he disassembled a sixty year old terrestrial scope to obtain parts, including optics, to build a finder scope.

10 YEARS AGO - For our May meeting, Steve Barnes from the Hamilton Astronomy Club spoke on astrophotography. For June, Fred Gordon gave a planetarium show at Buff State. We were planning to sell a 2001 astronomical calendar highlighting astrophotography by our members as a fund raiser; Bill Aquino, Alan Friedman and Dan Marcus organized the project. (The photos turned out to be outstanding.) Bob Hughes was to coordinate Astronomy Day at Tifft Farms. The first star party of the year would be hosted by Anthony Davoli. We had a flyer attached to The Spectrum

encouraging our members to contribute to the Audubon Society expansion program. Carl Klingenschmitt and Rowland Rupp presented their second and final installment about difficulties inherent the in extraterrestrial communication. (I can't resist pointing out we haven't heard anything in the decade since the article was Carl Milazzo wrote about "The written!) Joys of Naked Eye Astronomy." Joe Orzechowski outlined his project to observe our "nearest neighbors" in space. He planned to observe 55 stars within 16 light years of Earth with his 4 inch refractor. Bill Aquino reported his hectic, snowy drive through the countryside to view the January total lunar eclipse.

15 YEARS AGO - "Four Giant Steps of George Hale" was the topic of May 1995. The speaker, Rick Albrecht from Rochester, was to talk about Mt. Palomar, Mt. Wilson and Yerkes observatories. Dean Oberg was to speak in May on amateur rocketry. We had thirty-four people attend the March dinner meeting at Ilio DiPalo's Restaurant where Jack Mack spoke on the Hubble Telescope. Space Rowland Rupp's "Astronomy 1879", was a summary of a book, "Recreations in Astronomy", written in 1879 by Henry White Warren, D.D. The book contained a quaint combination of nineteenth century astronomy and theology. Rowland also had a slightly more modern book review, "Masters of Time" by in which the author John Boslough, asserted that the Big Bang theory was destined for the astronomical scrap heap. Still waiting! Bill Smith reviewed five books on planetary nebulae. Bill diplomatically concluded that each author had something unique to offer, although he found shortcomings here and Edith there. Geiger's "Profile" was on BAA President Terry Farrell.

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25 YEARS AGO - Our first dinner meeting was held in May 1985 at the Wilcox mansion, where Teddy Roosevelt was sworn in as President in 1901. Ernst Both spoke on "Astronomical Foibles", and Debbie and Tristan Dilapo hosted the buffet dinner at a cost of \$8.00. At the June business meeting Darwin Christy spoke on light pollution. Buffalo State College was the site of the Spring Meeting of the Niagara Frontier Council of Amateur Astronomical Associations according the to BAA's coordinator Ed Lindberg. New Observatory Director Carl Milazzo changed public night at BMO to Sunday year around. Carl announced the club's 12 inch mirror had re-aluminized member Miro been by Catipovik, and suggested that more than one telescope should be installed at the observatory. Ken Biggie completed his two part article on the spectral peculiarities of the mysterious object SS-433. Fred Price wrote a "Profile" of the famous nineteenth century author of "Celestial Objects for Common Telescopes", Thomas William Rowland Rupp gave away his Webb. opinion of a book he reviewed with his title "A Book You Won't Like." The book that received this opprobrium was Ken Fulton's "The Light-Hearted Astronomer" which Rowland thought was light-hearted to a fault. Carl Milazzo and Michael Idem wrote separate reports on general observations each had made.

35 YEARS AGO - Buffalo State's Dr. Fred West spoke on "Our Solar Neighborhood" at our May meeting. The topic for June was Fred wrote an article on the not given. Bode-Titius Law pertaining to the orbital separation of the planets. In it he also particularly asteroids, covered the resonances that cause the Kirkwood gaps in their orbits. He addressed the L4 and L5 Lagrangian stable asteroidal points leading and trailing Jupiter in its orbit by sixty degrees as well. Ed Lindberg planned to demonstrate silvering a mirror at the coming Instrument Section meeting.

Aurora

If you are standing in Alaska, Canada, or the Northern United States on a clear dark night and looking up into the sky, you may see a bright greenish-white band of light that stretches across the sky from the East to the West. You are seeing the Northern Lights, also known as the Aurora Borealis. These types of lights also occur near the South Pole, where they are known as the Southern Lights and Aurora Australis.

On a lucky night, you may watch this auroral band continue to brighten as it moves toward the South. Then, within minutes, you may see the band of light break into many bands of light some of which will move back overhead and to the North, dancing rapidly and turning red, purple, and white. If you've been lucky to see this sequence of events, you have witnessed the beginning phases of an auroral substorm.

When we see these dancing auroral lights evolve suddenly from a slowly moving auroral arc across the sky, we know that there are two distinct processes occurring in Earth's magnetosphere. But which one triggered the abrupt change from a calm aurora to a dancing aurora?

Themis, the goddess of justice, wisdom and good counsel, the guardian of oaths in Greek mythology, represents the THEMIS mission. She will confirm without prejudice, as implied by her fame, one of the two competing theories for auroral eruptions. THEMIS, with her sword (representing instruments) and scales (representing science discoveries), has both power and impartiality.

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Astronomy Day Images from the Roof

This is a quick note as time is ticking away for publication of the Spectrum but below are some images from the roof top of the BMoS on April 24th (yesterday). The BAA turned out in force to support Astronomy Day with activities for the kids in Hamlin Hall and solar observing from the roof top. Even though the clouds did not fully cooperate we were able to please the crowd with hazy views of the Sun in white light and H-Alpha. We will work on a full report for the next Spectrum but a big THANK YOU goes out to all who helped!











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BAA Officers and General Information

President: Alan Friedman alan@greatarrow.com

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Location/Time of Meetings:

BAA meetings are held on the 2nd Friday of the month from September to June starting at 7:30 P.M. Due to construction, our normal meeting room in the Science Building at Buffalo State College will not be available during the fall semester. Beginning September 2009, our meetings will be held in Classroom Building #35 in room C122 located just to the north of the Science Building. Follow directions on the Buffalo State College map to the pink highlighted building below.

