

The Spectrum

The News Letter of the Buffalo Astronomical Association

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From the Editors Desk...

I would like to thank everyone for their kind words about my first edition of the Spectrum. I have received both praise and suggestions. All suggestions are welcome and what I have received has been great. What I would need to implement them is time. Something we all need more of. I would like to extend an invitation to our readers to consider writing a column or two or maybe even a re-occurring column. I sit at the BAA meetings and listen to people get up and give

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PRESIDENT'S CORNER ALAN FRIEDMAN

Notes from the Board Room

Ever wonder what goes on at BAA Board of Directors meetings? The answer is a lot! I thought I would devote this space to telling you a bit about what we've been up to these past several months.

The Board is made up of our four officers (president, VP, secretary and treasurer) three at-large members, a member appointed by the College of Fellows, our observatory director(s) and our Spectrum editor. We meet at least bi-monthly - usually on the first Thursday of the even numbered months. Our meetings are open to all club members. If you'd like to attend one, just email any board member for the time and location.

Our Secretary, Mike O'Connor, is also the club webmaster. He recently completed a major overhaul of the club's website. The site went live in April and is now hosted courtesy of club member Peter Proulx and his business, Premcom Corp. The URL remains the same - www.buffaloastronomy.com - be sure to bookmark the site and check in often to keep up with all of our events and meetings. Mike also works with Dennis

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Membership Corner

A hearty hello to new members who have joined the BAA since the last issue:

Tom Kicior
Robert and Barbara Whitney
Brian Mills
Stephen Jungels

We look forward to seeing you out at Beaver Meadow this summer!

I will have name badge cards for all our newest members at the June meeting and party.

If anyone else needs a reprint please let me know with an email to:

alan@greatarrow.com.

**Clear skies,
Alan**



When I Heard the Learn'd Astronomer

by Walt Whitman

When I heard the learn'd astronomer,
When the proofs, the figures, were
ranged in columns before

me,
When I was shown the charts and diagrams,
to add, divide, and measure them,
When I sitting heard the astronomer where
he lectured with much applause in the
lecture-room,
How soon unaccountable I became tired and sick,
Till rising and gliding out
I wander'd off by myself,
In the mystical moist night-air,
and from time to time,
Look'd
up in perfect silence at the stars.

Does SETI (Search for Extraterrestrial Intelligence) have it all wrong?

Derek G. Bill

In their exhaustive search for transmissions from deep space, does SETI have the wrong idea? From what I understand, the primary thing that SETI is looking for is radio transmissions, or other rhythmic pulse oriented signals. If you take the Earth as an example, we began transmitting radio waves of any real strength less than a century ago. As technology advances and we become more evolved, radio and radio based transmissions are becoming less and less a part of how we communicate. Already our television transmissions are received over cable or transmission lines. Even satellite transmissions are aimed directly at the surface of the planet in either narrow band or microwave transmission. Soon all multidirectional radial broadcasting by radio and television will cease as we become more dependant on more reliable technology.

Satellite signals will become more directed and more focused. I think in the near future, earth will have a very small radio footprint, not because we are not communicating but because we have moved past that technology. Is it not safe to say then that when SETI searches for radio transmissions it is actually looking for not only a small signal, but a very small segment of time in the history of the civilization that is in question. So once civilizations move past broadcasting they will become increasingly difficult to spot in that manner, if at all.

I am certain that we are not alone in the universe, to think otherwise would be vane and ridiculous. But perhaps this method of searching for them may have a fatal flaw.

Just a thought...

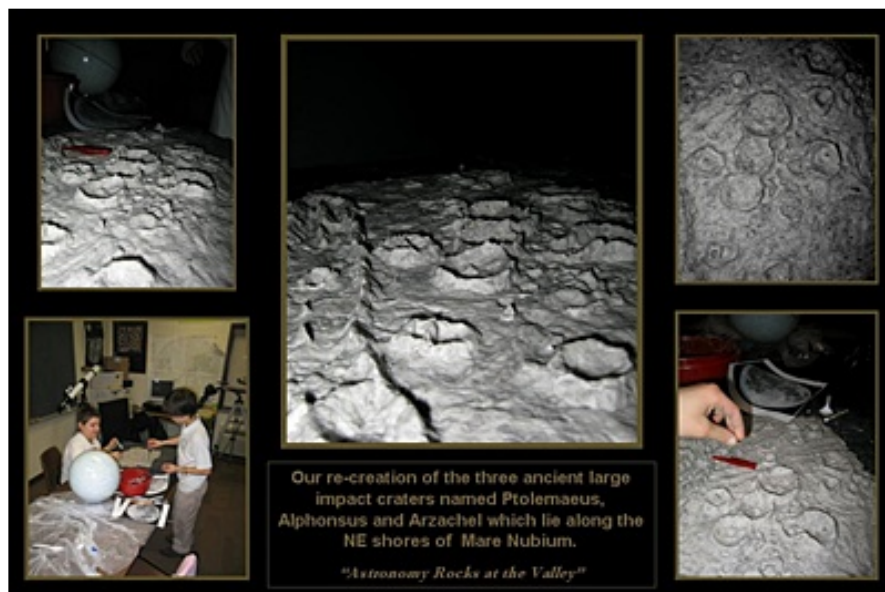


It's Only a Paper Moon

Mike Anzalone

If You Were an Imaginative Renaissance Astronomer

Leslie Martin



What would you know if you were a mid-Renaissance astronomer? In an earlier article the conclusion was drawn that not much more was known in the Renaissance than Greek astronomers knew from the time of Aristotle and Ptolemy, centuries before. Theirs was an Earth-centered cosmology complete with crystalline spheres on which the planets meandered on their deferments and epicycles. The Earth was immovable at the center of everything, a satisfying conclusion that was supported by Scripture, and by professors and mentors who were, as often as not, clergyman. Tables of planetary positions were devised during the Middle Ages, but they were revealed to be inaccurate over extended periods of time, necessitating frequent revision until a new set of tables was developed that soon encountered the same fate. Better instruments that enhanced observation were becoming available, but they only served to refine the predictions based on the faulty cosmological models of the time.

Astronomy Rocks at the Valley Community Center
Buffalo NY

Malena Villarreal and Mike Anzalone continue with their urban astronomy outreach program by meeting with their kids 2-4 times per month depending on the weather. Their most recent project was a paper mache moonscape and much to the surprise of all the following image appeared on LPOD (Lunar Photo of the Day: <http://lpod.wikispaces.com>) on January 26, 2009.

As members of the Buffalo Astronomical Association, they wanted to bring some hands on astronomy to kids of the city of Buffalo. They collaborated with "Science Firsthand -- Partners in Discovery" which is an NSF sponsored science mentoring program for middle school youth that provides urban community centers with adult volunteer mentors who then become a child's "Partner in Discovery" for a once a week afterschool science-based meeting for a whole year. The mission is to build positive relationships between mentors and mentees as well as to encourage and promote the process of scientific inquiry as a stimulus for learning while having fun. They chose astronomy as their focus of investigation. They meet every Wednesday night for 2 hours at the Valley Community Center in Buffalo, NY. Many classes begin with a quick look at LPOD, APOD, or #-D images of the Sun or Mars which the kids enjoy. Unfortunately, winters in Buffalo do not provide them many opportunities to take the telescopes outside, so indoor

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Presidents Corner Continued...

Hohman to administrate our very popular club Yahoo discussion forum.

Treasurer Mike Israel manages the club bank accounts. He noted at our last meeting that the ambitious 2009 Dinner Banquet saw virtually no expense over revenue, (we kept ticket prices at cost to make the evening as affordable as possible) thanks to an incredible job of coordination by Vice President Janice Gardner, member donations and the very generous support of the Buffalo Museum of Science. Mike proposed that we contribute to two very worthy causes by renewing our membership in the International Dark Sky Association and by underwriting the Clear Sky Clock for Beaver Meadow Observatory... both of these proposals were approved unanimously by the board.

Observatory Directors Pat Lannon and Derek Bill (they share one vote on the board) just completed an ambitious cleanup at BMO with the help of many club members. BMO, neat and organized and with a new roof from Fall 2008 is ready for the start of a new public night season. They ask that members please refrain from accepting donations of telescope equipment - instead, forward these offers to the board for review and coordination. There is precious little space for safe storage of equipment at BMO. They also look forward to meeting members at public nights and to help you get up to speed on the protocol and operation of the observatory.

Our at-large members Scott Smith, Mike Anzalone and Jack Mack continue working on a packed agenda of meetings and public events in celebration of the International Year of Astronomy. These will culminate on May 2 at International Astronomy Day. Mike is the coordinator for this event (which will likely be in the record books by the time you read this.) The summer will see star parties and a return to city

sidewalk astronomy - with a special joint program in the works with the Erie County Public Libraries... keep an eye to the egroup and club website for the latest news on this.

Rowland Rupp is our link to the College of Fellows and to club history, serving as the BAA archivist. He has recently acquired a collection of slides that were taken by long-time member Edith Geiger. Edith's 12.5" Newtonian - once among the largest amateur telescopes in WNY - has been the centerpiece of the Museum's Astronomy exhibits during the last several months. Rowland is often chosen to solicit officer and board nominations a hat he wears this year when we elect our directors. A slate of candidates will be proposed at the May meeting and presented for our vote in June. Why not join us and share in direction of your club.

Our Spectrum is in fine hands with editor Mike Benz who is tackling this big responsibility with energy and new ideas. And since he has just reminded me that I am past deadline, I close with a thank you to all who contribute and work so hard for our club. I'm looking forward to summer and to taking a welcome break for some observing!

Editors Desk Continued

fantastic updates on different topics. It would be nice to put it in written form and send it in for publication. You can include pictures and length is not an issue.

Some suggestions would be:

The NASA Report - Happenings at our favorite space agency.

Diamonds in the Night Sky - What up that month.

BAA on Tour - What are we doing as a club in the community.

If you are bashful we can also publish it under a pen name or even anonymous.

Papermoon Continued...

projects tend to prevail. This lunar project was inspired by the multitude of the images on LPOD, as well as an image taken by BAA president Alan Friedman of this region of Ptolemaeus, Alphonsus and Arzachel which appeared on APOD on February 9, 2007.

The kids enjoyed seeing how the angle of light hitting their "paper moon" affected the detail in the surface of the lunar model much like our own Moon behaves as we have observed it through our telescopes.

Please feel free to join them on Wednesdays; 6-8PM. Topics and projects vary greatly throughout the year. Currently they are constructing space probes for missions to distant stars with exoplanets. Also they would like to have a "Valley Community Star Party" at the Center this summer. Unfortunately due to our cloudy skies they haven't had the telescopes outside in a long time. Hopefully as spring approaches they'll have more opportunities to get the telescopes outside again.

Do you have any astronomy project ideas or want to help? Want to be a "Guest Astronomer"? Do you have any astronomy "junk" lying around collecting dust that you would like to donate to the program? They would love to have it at "Mission Control" in the Valley.

Contact:

Mike Anzalone:

backcare@roadrunner.com

Malena Villarreal: malevmtz@gmail.com



BAA ANNALS

Rowland A. Rupp

5 YEARS AGO - Jack Mack was our speaker for May 2004. His topic was entitled "The Oort Cloud, Sedna, and All That." For June, Tom Bakowski, Ted Bistany, Anthony Davoli and Gary Flagg joined forces to give a multi-media presentation about their experiences under the dark skies of the southwest. President Joe Orzechowski asked for volunteers to assist Observatory Directors Bill Aquino and Paul Tabor at BMO on public nights. He also looked for members to hold star parties, and reminded us about viewing the transit of Venus on June 8th from the roof of the museum. Marilou Bebak received the College of Fellows award for her community education program and her contribution to the Mars exploration program. Joe Orzechowski was nominated as a new member of the College. Gus Cenker replaced Jamie Seibert as Spectrum editor.

Gus led off with his own article "A Theory to Explain Dark Energy." Gus also suggested that BAA members could form a group to search for extra solar planets. He asked for those interested to let him know, but I've heard no more about it. An article by Rowland Rupp highlighted the several "catastrophe" theories currently in vogue to explain planetary anomalies.

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Renaissance Astronomer Continued

However, starting around the fifteenth century a few thinkers were making modest advances in astronomy, predating the revolution inaugurated early in the sixteenth century by Copernicus. One of these was Nicholas of Cusa.

Born Nicholas Krebs to a fairly well-to-do German family, in the city of Kues on the Moselle River in 1401, his name was Latinized to Nicholas of Cusa, as was customary for noteworthy persons in those days. Often he is referred to as Cusanus, but here he will be Nicholas. There was no Germany in the fifteenth century; Kues was part of the Holy Roman Empire. A brilliant scholar, Nicholas became a Roman Catholic priest, and received a doctorate in canon law at the University of Padua in 1423. Later he received an honorary doctorate in civil law at Bologna, and also became a physician. His studies took him further afield to the Netherlands, to Heidelberg, and to Rome. He was appointed a cardinal of the Church in 1446, or a bit later, and became Bishop of Bressanone (Brixen) in 1450. He served as papal legate under three popes, a position that gave him authority to rule on ecclesiastical issues. Often his missions were as much political as spiritual.

Although he was best known for his works on legal matters, philosophy, theology and cartography (Central Europe, where he traveled extensively), he also delved into mathematics and science. He held views on astronomy that might be said to anticipate the upheaval that was to come a century later. Apparently his reflections on astronomy were mingled with his treatises on other subjects and had to be extracted from them.

A basis for his astronomical assertions is his philosophical point that, when taken to infinity all things, even opposites, become the same. An example is a circle and a straight line. When the radius of the circle

is small, a segment on its circumference is strongly curved - quite the opposite from a straight line. As the radius is increased, the segment becomes less curved, until at an infinite radius the segment becomes a straight line - an illustration of "the coincidence of opposites." Some proponents of Nicholas argue that this reasoning is a precursor to Leibnitz's formulation of the calculus. Not all are so generous.

The difference between astronomical bodies is only one of degree according to Nicholas, hence the Earth is similar to all other heavenly bodies. Thus, in an infinite universe, Earth can have no special place. It is another star! Like all the other stars it must be in motion, since motion can only be measured relative to a fixed object, and since no object has any special location, all of them must be in motion, Earth included. His concept of an infinite universe led him to the currently accepted cosmological conclusion that the universe can have no center and no circumference or edge.

So what is this motion attributed to the Earth? Some biographers conclude that Nicholas believed the Earth is in motion around the sun, and that other stars are suns that may have earths going around them - perhaps other inhabited earths. Another Nicholas commentator concludes quite the opposite: the sun still goes around the Earth even though the Earth itself is in motion. Moreover, only the Earth is inhabited. Experts appear to disagree!

Some other ideas about astronomy emerge from Nicholas's copious writings. He asserted that nothing can be a perfect circle, and nothing can have perfect circular motion. This certainly departs from the Aristotelean concept of perfection in the heavens. Again, Nicholas's champions contend he was ahead of Copernicus, who stuck to circular motion

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BAA ANNALS Continued

10 YEARS AGO - The famous meteor from Mars, ALH84001, alleged to show signs of minute fossil life, was the topic presented in May 1999 by Dr. John L. Berkley of SUNY Fredonia. For June, John Nimy talked on "Star Gazing Around North America." Astronomy Day was scheduled for May 22nd at Tiffit Farm. Carl Milazzo, Mark Reville and Bob Hughes were in charge of the event. The BAA held three meetings during the year to assist newcomers to astronomy in choosing a telescope and getting started in the hobby. The first star parties of the summer were announced; Don Knecht was our 1999 star party organizer. The Rupps were to host one at their summer cottage at Lime Lake; Anthony Davoli would host another at BMO. A conflict was reported between the BAA President and the Board of Directors. Details of this controversy may be read in the May/June 1999 Spectrum.

Carl Milazzo wrote an article extolling the advantages of rich-field telescopes that combine a relatively small size with a wide field of view. Carl also reported on a fireball he saw and, from triangulation with Dennis Hohman and Tim McIntyre, concluded the meteor ended up over Alden. Bill Smith contributed to observation lore by suggesting some tactics to improve one's success that included just looking longer at the object. He noted that good seeing helps a lot too.

15 YEARS AGO - At our May 1994 meeting, Rochester's Tom Dey spoke on the physiology of the eye and observing. For June, Carl Milazzo commented on highlights of the many amateur astronomy conventions he attended over the last twenty years. The availability of "The History of the Buffalo Astronomical Association, Inc. 1947-1993" was announced. Four members contributed written material to it: Ed Lindberg, Bob Mayer, Rowland Rupp and Walt Whyman;

Jim Dow was a consultant. Dan Marcus asked for help at BMO for the annual Astronomy Day, and also sought hosts for summer star parties. An annular eclipse of the sun was to occur on May 10th. Where one was determined whether one saw it or not. Buffalo's clouds decided that!

Leslie Martin completed a three-part series on different ideas about how the solar system formed, finishing with "Back to the Nebula." Bill Smith reported on the 1994 results of his annual Messier Marathon. Over the course of two nights he spotted 95 of them. Moonlight and dawn impeded his seeing the rest.

25 YEARS AGO - A panel of experts was the feature of our May 1984 meeting. The experts, all members of the BAA, were Ernst Both, Jack Mack, Michael Idem, Fred Price, Carl Milazzo and John Riggs. They fielded questions from the audience. "Galaxy Clusters" was the topic given by Jeff Pignatoro in June. Jeff was a member of the Lockport Astronomy Association. The BAA's show held at Eastern Hills Mall in April was declared a "great success." Al Kolodziejczak and Doris Koestler thanked the many members who contributed to that success, but there are far too many to name here. There was an interesting note, however; they commented that 34 members contributed, which represented 44% of the club's total membership. A bit of math shows that BAA membership must have been 72 or 73 back then, surprisingly far less than we have today. Observatory Director John Riggs announced that the observatory would be open May 30th for the partial solar eclipse. Larry Carlino gave guidance on techniques on how to view Mars, which was coming into opposition in May. The Red Planet was to reach a maximum diameter of 17.6 arc seconds. A repeat of Kurt Erland's 1969 article, "The Trouble With Mascons," appeared in this Spectrum. Edith Geiger's

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BAA ANNALS Continued

profile featured Tristan and Deborah DiLapo. A mirror ground by Norm Nighter 28 years earlier when he took the Museum Telescope Making class was brought to the Instrument Section meeting for re-testing. I'm sure Ed Lindberg conducted that long-ago class. There were observation reports by Michael Idem and Darwin Christy

35 YEARS AGO - Dr. Martin Green, a physicist from Westinghouse in Elmira, spoke in May on "Astrophysics and the Amateur Astronomer." He emphasized the kinds of astrophysical observations amateurs can make. There was no featured speaker in June; it was strictly business. The Board decided that the Newstead Observatory would be maintained along with the yet-to-be-built BMO. Nonetheless, Newstead ceased to be used about the time BMO came into operation. Its 12 ½ inch telescope was transferred to the new facility, where it remains in use.

There was a single article in The Spectrum. Fred Price's topic was "Why Are Some Lunar Features Observed More Than Others." Darwin Christy reminded us of meteor showers coming in May and June.

Renaissance Astronomer Continued

in his heliocentric theory, and he also foresaw Kepler who arrived at elliptical planetary motion only after years of struggle. Kepler wrote that he regarded Nicholas as being "divinely inspired."

Nicholas worked with a commission for calendar reform a century before the reform was implemented by Pope Gregory XIII. The dates of Christian celebrations were falling out of sync with the seasons, and a remedy was needed. It has been said that the details of Nicholas's proposed

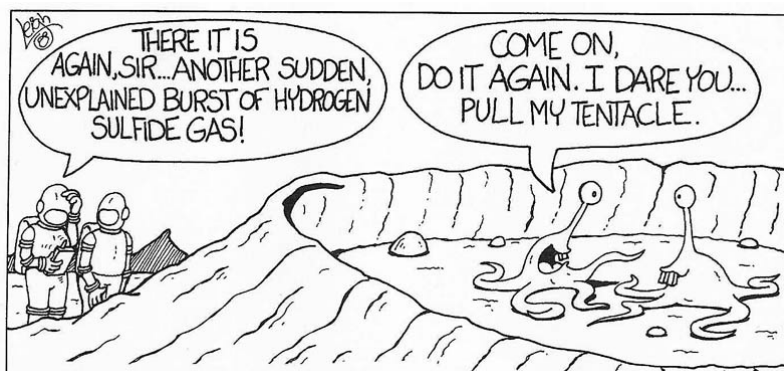
reform were nearly the same as the one later adopted, but apparently this earlier initiative died aborning.

Other ideas are unacceptable today. For instance, he contended that astronomical calculations must lack precision because it is presupposed "that the motion of all the other planets can be measured by reference to the sun" which, itself being in motion, makes all measurements relative. "Since no two places agree precisely in time and setting . . . judgements about the stars are . . . far from precise." He further contended that one motion cannot be the measure of another since the thing measured and the measure itself differ. Since he believed that nothing is exact, straight or spherical, mathematics cannot be applied to nature. Another provocative thesis he proposed was that within the bright envelope of the sun there might be watery vapor, pure air, and a central earth. That may sound far fetched, but more than three centuries later the eminent William Herschel held much the same view. Many of his conclusions about science and astronomy were arrived at using numerology and metaphysics. Although Nicholas's scientific findings were based on speculation with an absence of experimentation, it is reported that in 1444 he purchased, along with more than a dozen books on astronomy, "very fine astronomical instruments" that included both a wooden and a copper celestial globe, and an astrolabe. These instruments survive to this day. He also bought a torquetum - an elaborate mechanical analog computer developed earlier in Islamic countries that converted right ascension and declination coordinates to ecliptic longitude and latitude. Whether he used these devices or not is uncertain, but no astronomical observations are attributed to him. It appears the only practical scientific achievement accredited to him is that he

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Renaissance Astronomer Continued

was the first to use a concave lens to correct myopia. Apparently there are two divergent schools of thought about Nicholas of Cusa's scientific accomplishments. Those who are enthused about him see him as a before-his-time sage, who foresaw the infinite, center-less universe generally accepted today, who imagined the Earth to be in motion, perhaps around the sun, who anticipated elliptical orbits or at least non-circular ones, and who even set a foundation for the calculus with his concept of the "coincidence of opposites" at infinity. On the other hand, doubters contend that he made lucky guesses without meaningful evidence to back them up. But in any case, if you were a progressive thinker, this is what you might have known or imagined if you were a mid-Renaissance astronomer.



HELP WANTED

May 2, 2009

Astronomy Day 2009
Daytime Events
Rooftop Solar Observing,
Poster Presentations,
Astronomy
Demonstrations, Hands on
Kids Activities
Buffalo Museum of Science
10-5PM

Astronomy Day @ the BMO

Dark Sky Events
-Telescope Observing,
Presentations, Night Sky
Tour, Astronomy Movie,
and More-
Beaver Meadow
Observatory, North Java, NY
7-10PM

For more Information and
to Volunteer:

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Location/Time of Meetings:

BAA meetings are held on the 2nd Friday of the month from September to June in the Science Building on Buffalo State College Campus (Except the March Dinner Mtg). Meetings start at 7:30 P.M., in the first floor auditorium near the entrance.