

# Bays Mountain Astronomy Club

☞ *Next Meeting: Feb. 1* ☞

## REFLECTIONS

BY WILLIAM TROXEL

Greetings Fellow Star Watchers,

Welcome to this month's installment. I hope you were one of the lucky members who came out for our annual dinner. The food was great and our keynote speaker was truly enlightening. We modified our meeting so our speaker was also the main feature. Our keynote speaker was Dr. Rico Ignace, from the ETSU Physics Department. His topic was "Hot Stars." He talked about his research and some of the current data and what it could teach us about these deep space objects. Dr. Ignace used easy to understand demonstrations to illustrate the rotation of hot stars. He took questions from members and guests. Everyone I spoke with said they enjoyed the presentation. I want to thank Dr. Ignace for his time to make our annual event very special. For those of you that were unable to attend, you really missed a good event.

"The Meadows," the location for this year's annual dinner, was part of what I hope will be an ongoing relationship between our club and The MeadowView Resort. The

Meadows staff was very willing to work with us to meet our requirements. Several of you expressed your feeling to me after the dinner. The overall impression so far has been very good. I hope more of you will share your thoughts as well, good and bad. This is the only way we can improve this annual event. The Meadows management expressed the hope that we would consider them in future plans for any events needing an off site location.

I wrote last month about some of my goals for the next 6 months. One of those goals was a short YouTube video. I have completed the outline but have not put anything together. At the next meeting, I will share the outline with you. My goal is to have a small group of members volunteer to work as a team to put this video together.

The next goal is developing an outreach program that we could take out to the public. This could be used for Astronomy Day programs, school presentations, other clubs or awareness events here at the park. During the February meeting, I want to share more of those details with you. During the Social at the dinner, a few comments were made about



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Mar. - Oct., weather permitting.

BMACers are always welcome to help.

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7 p.m.: Mar. 2 & 9

8 p.m.: Mar. 16, 23 & 30

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### BMAC Meetings

7 p.m., Discovery Theater

Feb. 1 Dr. Mark Giroux from ETSU will speak on "Unraveling the Mysteries of the Leo Ring." Const. Quest: Greg Love - Orion the Hunter.

Mar. 1 Observatory cleanup and observing. Const. Quest: Bob Smith - Leo the Lion.

Apr. 5 TBA

May 3 Dr. Joseph Pollock from the Appalachian State University Astronomy Department will speak on "Specifically Paired & Binary Asteroids." Const. Quest: Sally Hale - Ursa Minor the Small Bear

some ideas that might work well as part of this concept. I hope a few of you that have an interest in this will consider volunteering on this team.

These goals are not ones that I can nor want to do alone. I have said from the start of my term as your Chairman that this is about making the club better and helping us to grow. I really believe in Bays Mountain Astronomy Club. I know we have a good, solid program to share with the public. We can't sit back and wait for the community to find us. These ideas are just the start. You must be an equal part of this.

*(Continued on page 5)*

## STAR STUFF

BY TERRY ALFORD

For years, I have lusted for a TeleVue 24 mm Panoptic eyepiece. Why? It provides near the widest true field of view of any 1 1/4-in eyepiece. And the 68° apparent field of view (afov) is nice indeed according to almost any reviewer or user to be found. So why haven't I bought one. The \$275 "street" price is the main reason. Even when used, these prized eyepieces bring \$200 or more.

Then back in 2011, the Explore Scientific company brought out their line of 68° afov eyepieces that included a 24 mm version. Features included 6 fully multicoated lenses with blackened edges, soft fold down eyecup, 18 mm eye relief, O-ring sealed and argon-purged to make them waterproof. Waterproof? What good is that? That means that moisture and dirt cannot enter the eyepiece and this is a good thing. The price was somewhat attractive at a \$160 street price, a little over half that of the Panoptic. I decided to wait for some reviews.

In February of 2012, Bill Paolini wrote a pretty comprehensive review for Cloudy Nights comparing this eyepiece to 11 others in the 24-26 mm focal length range. The Explore Scientific, TeleVue Panoptic and Meade 5000 SWA (Super Wide Angle) were the only ones with a 68° afov. The rest of the tested eyepieces ranged from 41°-58° afov. The street

prices on this herd of eyepieces went from \$40 to \$600. I read the whole article a couple of times but paid particular attention to the SWAs. The ES 68 did very well indeed. I was impressed. Then user reports started being published in the Eyepiece Forum on [www.cloudynights.com](http://www.cloudynights.com). Almost without exception the ES 68 won high praises. The performance was so close to the 24 Pan and at such a lower price it was almost no contest.



It looked like my next SWA eyepiece would be this one. I decided to wait for a used one to pop up in the Cloudy Nights Classifieds.

Then a few months later, Explore Scientific ran all their SWA and UWA (82°) eyepieces on sale. The 24 mm version would only cost \$110. Not too bad. But Astronomics was offering a 5% discount to Cloudy Nights members and free shipping

on orders over \$100. I eagerly ordered the 24 mm for a net cost of \$104.49.

The eyepiece soon arrived. It was double boxed and had protective rubber (vinyl?) dust covers. The eyepiece had a very attractive appearance and a solid feel. I weighed it on a postal scale and it came in just a tad over 11 oz. Not too bad. About the only thing I noticed that was negative was that

the very bottom edge of the eyepiece barrel was a little sharp, almost enough to cut a finger if the user wasn't careful. I probably need to work that edge with some emery cloth someday.

So how did the ES 68 perform? The first scope I used it in was my 4-in f/4 refractor with a 100 mm binocular objective for a lens. The little scope is brutal on wide field eyepieces. The fov was clear and contrasty. Stars were sharp to about 85-90% to the edge before starting to soften. Even then the very edge was useable.

Typically, I do not try to see the edges in the fov of an EWA eyepiece so this was a non-issue. Next up was my 8-in f/4 Newtonian. This time the eyepiece would also have to contend with very noticeable coma.

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## HAPPY BOOK REVIEW - RETURN TO EARTH (BY BUZZ ALDRIN &amp; WAYNE WARGA) BY ROBIN BYRNE

At this last year's StarFest, I picked up a used copy of "Return to Earth," since it would fit in well with my collection of astronaut biographies and space program history books. Published in 1973, it is outdated in one sense. However, this book provides nice insights not only into the life of Buzz Aldrin up to that point, but also a look at the space program from Mercury to Apollo while the events were still very fresh.

The look at Buzz Aldrin's early life is much as would be expected. Although an average student at first, summers at a military camp instilled a tremendous sense of drive, both academically and physically, and this drive would define his life for decades to come. Buzz wanted to be the best. Couple this desire to achieve with a father for whom nothing was good enough, and it is easy to see why Buzz made the choices he did.

Despite his father's wishes for Buzz to attend Annapolis, Buzz chose West Point. His summers at military camp prepared him well for

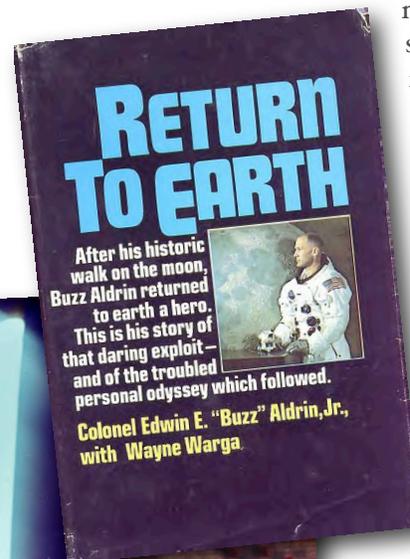
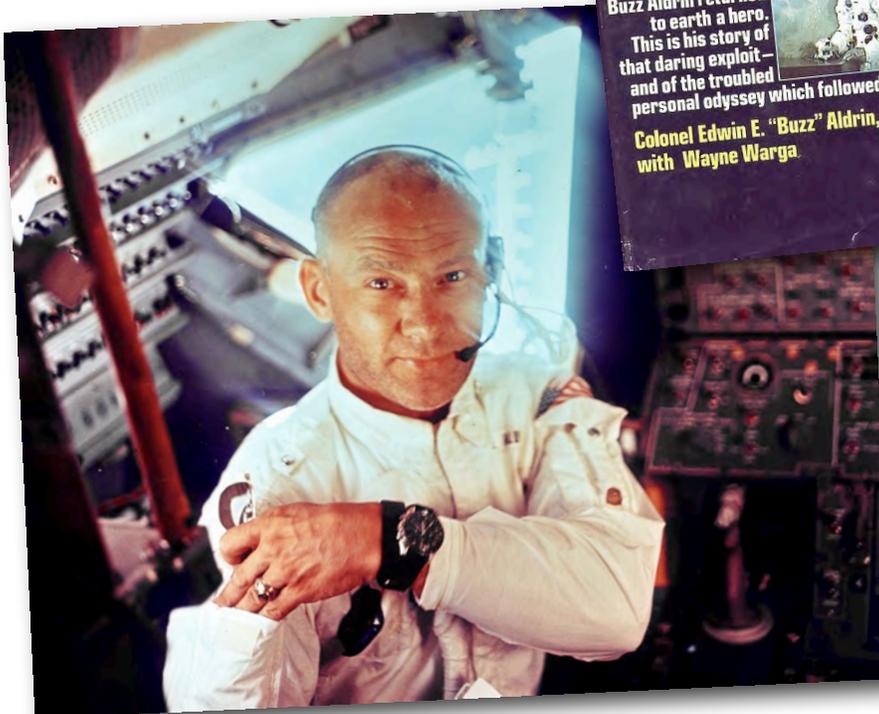
the discipline, and he thrived in that environment. Following graduation, he entered the Air Force and served in Korea. After returning from the war, he met Joan Archer, and a short time later, they married. As Buzz's military career proceeded, so did his family, with the birth of three children in short order. When

Originally planning only to get a Masters degree and then go to test pilot school, Buzz decided to stay and pursue a PhD as well. His thesis studied the procedures necessary for two spacecraft to rendezvous in orbit. It's not as straight forward as you might think. Suppose you want to catch up with a vehicle ahead of you in orbit. If you were to speed up, this would put you into a higher orbit, where you would move slower, and the vehicle would move farther away from you. Instead, you

need to slow down to move into a lower, faster orbit. Once caught up, you can speed up to raise your orbit back to where you were, and then perform small changes to finally dock up. Never one to be shy about extolling his own virtues, when Buzz worked at NASA, the combination of having a PhD and the topic of his thesis were

frequently mentioned, ultimately giving him the nickname "Dr. Rendezvous." Despite the sarcasm behind the title, it was appropriate.

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he and Joan realized how easily she could get pregnant, he made the decision to have a vasectomy. Quite an unusual move for men in that era.

As Buzz's career continued, he found himself torn between two choices: graduate school or test pilot school. He chose graduate school and was accepted to MIT - his father's alma mater. His area of study was the field of astronautics.

NASA SPACE PLACE

**The Art of Space Imagery**

**By Diane K. Fisher**

When you see spectacular space images taken in infrared light by the Spitzer Space Telescope and other non-visible-light telescopes, you may wonder where those



beautiful colors came from? After all, if the telescopes were recording infrared or ultraviolet light, we wouldn't see anything at all.

So are the images "colorized" or "false colored?"

No, not really. The colors are translated. Just as a foreign language can be translated into our native language, an image made with light that falls outside the range of our seeing can be "translated" into colors we can see. Scientists process these images so they cannot only see them, but they can also tease out all sorts of information the light can reveal.

For example, wisely done color translation can reveal relative temperatures of stars, dust, and gas in the images, and show fine

structural details of galaxies and nebulae.

Spitzer's Infrared Array Camera (IRAC), for example, is a four-channel camera, meaning that it has four different detector arrays, each measuring light at one particular wavelength.

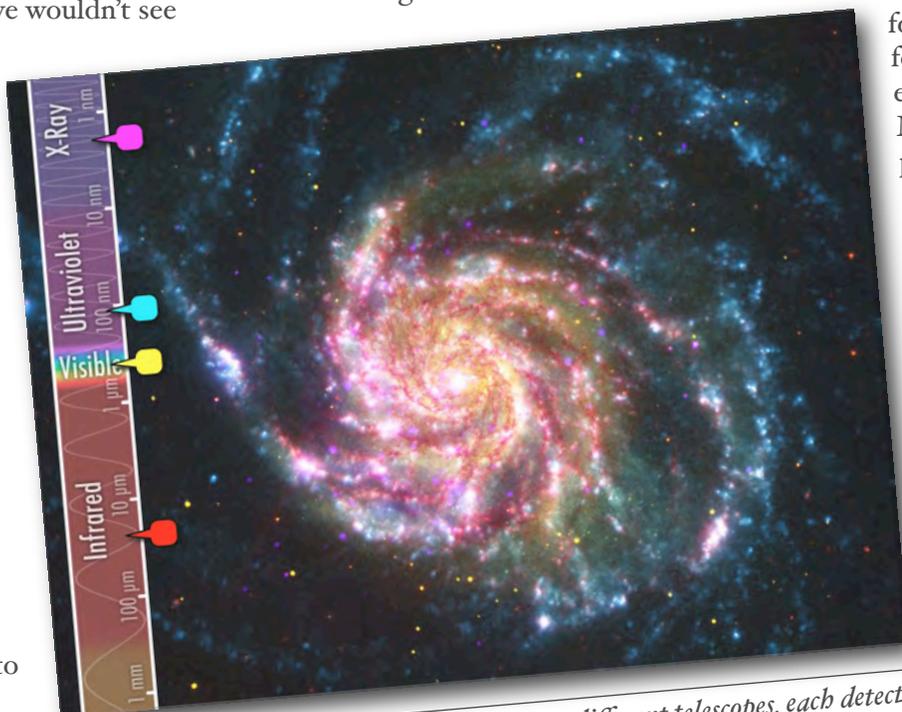
Each image from each detector array resembles a grayscale image, because the entire detector array is responding to only one wavelength of light. However, the relative brightness

what is the brightest thing and the darkest thing in the image. Software is used to pick out this dynamic range and to re-compute the value of each pixel. This process produces a grey-scale image. At the end of this process, for Spitzer, we will have four grayscale images, one for each of the four IRAC detectors.

Matter of different temperatures emit different wavelengths of light. A cool object emits longer wavelengths (lower energies) of light

than a warmer object. So, for each scene, we will see four grayscale images, each of them different.

Normally, the three primary colors are assigned to these grayscale images based on the order they appear in the spectrum, with blue assigned to the shortest wavelength, and red to the longest. In the case of Spitzer, with four wavelengths to represent, a secondary color is chosen, such as yellow. So images that combine all four of the IRAC's infrared detectors are remapped into red, yellow, green, and blue wavelengths in the visible part of the spectrum.



*This image of M101 combines images from four different telescopes, each detecting a different part of the spectrum. Red indicates infrared information from Spitzer's 24-micron detector, and shows the cool dust in the galaxy. Yellow shows the visible starlight from the Hubble telescope. Cyan is ultraviolet light from the Galaxy Evolution Explorer space telescope, which shows the hottest and youngest stars. And magenta is X-ray energy detected by the Chandra X-ray Observatory, indicating incredibly hot activity, like accretion around black holes.*

will vary across the array.

So, starting with one detector array, the first step is to determine

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## MISCELLANEOUS

**Reflections****by William Troxel***(continued from page 1)*

Last month, I also wrote about starting a habit of writing a "Thank You" note to those who visit our meetings and events. I said that I hoped to get a member to help with that each month. Many of you expressed your agreement, however most of you felt that it should be the person who is the face of the club, the Chairman, who sends the note. This would show our interest in the person and really thank them for their visit. I agree with your thoughts, therefore I will initiate that. I do not know of any club that does this. We could be one of the first clubs to do it, which would hopefully make a positive impression.

I want to also thank Bob Smith for his endless support of Bays Mountain Astronomy Club. Bob, I read your articles each month learning something new with each article. You are an inspiration to each member including myself. Thank you does not seem to be enough, but alas, that is all I have to offer.

In the February meeting, we will feature Dr. Mark Giroux from ETSU as our keynote speaker. Dr. Giroux's topic will be "Unraveling the mysteries of the Leo Ring". Our constellation quest will be lead by BMACer Greg Love discovering "Orion the Hunter," followed by our business meeting. The excitement starts at 7 p.m. on Friday, February 1st. I look forward to seeing each of you there.

Finally, I want to correct a mistake in the last article I wrote

that I needed a keynote speaker for February and constellation quest leader. I should have asked for April. So if you know anyone who has a program on any of the following topics, please let me know. The topics are: Comets; Galaxies (near); Milky Way; Astronomy 101; Gathering Astronomy Viewing Data; Jupiter; Black Holes; Space Telescopes; The Sun; Solar Scopes. I am also open to any topics you would like to see added to this list.

Until next time, clear skies...

**Star Stuff****by Terry Alford***(continued from page 2)*

Again, the ES 68 performed above my expectations and was nearly as sharp to the edge as my Reverse Pretoria 20 mm eyepiece that is designed to cancel out much coma. The fact that the ES 68 had a much wider afov than the 60° 20 mm eyepiece made this even more impressive. One night at a StarWatch, I slipped the ES 68 into the 12-in S/C in the roll off roof observatory. Perfect from edge to edge with high contrast and pinpoint stars everywhere.

In short, this eyepiece is an excellent performer and a tremendous value. It is such a value that finding one new today is difficult, most vendors are sold out temporarily.

BTW, Explore Scientific also makes eyepieces in the 82° and 100° afov range. They even have a 9 mm with a 120° afov! All are waterproof and typically priced 30% or more

**Regular Contributors****WILLIAM TROXEL**

William is the current chair of the club. He serves as activities coordinator for a local retirement living community.

**TERRY ALFORD**

Terry is also a founding member since 1980 and has been chair many times, as well. He has worked as an astronomy lab instructor at ETSU since 2001.

**ROBIN BYRNE**

Robin has been writing the science history column since 1992 and was chair in 1997. She is an Associate Professor of Astronomy & Physics at Northeast State Community College (NSCC).

**ADAM THANZ**

Adam has been the Editor for almost all of the years since 1992. He is the Planetarium Director at Bays Mountain Park as well as an astronomy adjunct for NSCC.

under that of those similar eyepieces with green lettering.

If you want to read the full review by Bill Paolini: [http://www.cloudynights.com/item.php?item\\_id=2729](http://www.cloudynights.com/item.php?item_id=2729)

## Happy Birthday by Robin Byrne

*(continued from page 3)*

Buzz's career at NASA was one of many accomplishments. Many of his rendezvous techniques became standard practice. His Gemini flight was noteworthy because he was the first to truly understand how to maintain stability while performing tasks during a spacewalk. If this, seemingly, simple achievement had not occurred, the missions to the Moon would have been delayed. And then, of course, the Moon landing itself. Of interest to me were the ideas about the Moon still not understood at the time of the writing. The moon rocks and data were still being processed, so the concept of the moon forming from a collision was still not being discussed. The unmanned missions to the outer planets were just beginning, and it was still thought that our moon was the largest satellite in the Solar System.

But, at the same time, the publication date had its advantages. Because this book was written only four years after the landing, the memories were very fresh. Details abound about the preparation, the flight itself, and, as the title emphasizes, the events after coming home. This was the part for which Buzz was not prepared. All his life, he had been goal oriented. Now, he

had achieved his goals, so what was left? For two years, his life was primarily devoted to public appearances, which he hated doing. The strain of feeling rudderless and being forced into situations that were uncomfortable took their toll. His marriage suffered. Infidelity made it worse. He and Joan even considered divorce. Underlying all of this was a case of severe depression. This downward spiral ultimately led to Buzz being hospitalized to treat the depression. With a tremendous amount of help from doctors and medication, Buzz slowly pulled his life back together.

For Buzz Aldrin, the desire to write his autobiography was partly due to his accomplishments with NASA, but it was also to go public about his struggle with depression. He wanted to help remove the stigma associated with mental illness by putting himself forward as an example that anyone can be a victim of mental illness - even heroes. And to also show that there is hope for those in the clutches of depression. Buzz Aldrin was a true pioneer in more than one way. He was a pioneer in space, but also a pioneer as a champion of mental health issues. "Return to Earth" gives a wonderful glimpse at both aspects of this very complicated man.

*Return to Earth by Colonel Edwin E. "Buzz" Aldrin, Jr., with Wayne Warga  
Random House 1973*

## NASA Space Place

*(continued from page 4)*

Download a new Spitzer poster of the center of the Milky Way. On the back is a more complete and

colorfully-illustrated explanation of the "art of space imagery." Go to [spaceplace.nasa.gov/posters/#milkyway](http://spaceplace.nasa.gov/posters/#milkyway).

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*



Our annual  
BMAC Dinner on  
January 12, 2013.

*Photos by BMACer Brandon Stroupe*

# The Bays Mountain Astronomy Club



Edited by Adam Thanz:  
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## Dues:

The Bays Mountain Astronomy Club requires annual dues for membership. It covers 12 months and is renewable at any time.

## Rates:

\$16 /person/year

\$6 /additional family member

If you are a Park Association member, a 50% reduction in fees is applied.

Find out more at our website:

<http://www.baysmountain.com/astronomy/astronomy-club/>

🍏 Made on a Mac!

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