



Mingo Creek Park
Observatory

The Guide Star

Newsletter of the Amateur Astronomers Association of Pittsburgh, Inc.

Founded June 9, 1929 by Chester B. Roe and Leo J. Scanlon

Website: 3ap.org



Nicholas E. Wagman
Observatory

November 2009

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IRIS NEBULA

By Nathan.Brandt

I visited my dark site Sunday (October 18) night and had a wonderfully productive imaging session. The sky was particularly clear early on with very chilly temps setting in earlier than I expected. I was testing a new scope and new pier; everything went surprisingly well! I began imaging NGC 7023 (The Iris Nebula) which is already near culmination in the early evening. Most likely this will be my last chance on this object for the rest of the year.

http://www.astrophotogallery.org/data/500/NGC-7023-LRGB_small3.jpg

9 x 10min Lum

3 x 10min R,G,B

I spent a lot of time trying to tease out the surrounding dust and may have taken it too far.



NOVEMBER'S GENERAL MEETING

NOVEMBER 6, 2009

By Craig Lang

This month we take a break from speakers by holding the Brunnell Astrophotography Contest. Come to the meeting on Friday November 6th at the Carnegie Science Center and you will be treated to a wonderful presentation of astronomy and atmospheric photos taken by fellow members.

TREASURER'S REPORT

By Michael Meteney

The following is a report of our current account balances and a summary of our income and expenses through 9/30/2009.

Account Balances:

USX account	121,117.52*
Cash	50.00
PNC Checking	2,357.33
General Savings	609.22
Valley View Savings	12,752.16*
Total	136,886.23

*\$10,000 of the USX account is Valley View Savings. This brings the actual amounts to \$111,117.52 and \$22,752.16 respectively. This has been done to gain a higher interest yield on our savings.

Year to date income and expenses for general categories rounded off to the nearest dollar.

Income:

50/50	310.00
Donations	6600.00
Interest	5014.00
Memberships	5700.00
Sales	2400.00
Total Income:	20024.00

Expenses:

Bank Charges	18.00
Mingo Construction	2023.00
Mingo Equipment	4180.00
50/50 winners	155.00
Guide Star printing	2468.00
Insurance	3636.00
Mail	236.00
Honorarium	600.00
Memorial	100.00
Merchandise	78.00
Officers, Membership	256.00
Officers, Treasurer	260.00
Planetarium service	600.00
Brochures	100.00
Software*	1636.00
International Dark Sky	250.00
Stamps	79.00
Star Finders	799.00
Utilities, Wagman	2440.00
Utilities, Mingo	1235.00
Accounting	3000.00
Total Expense:	24150.00

Our membership dues are starting to come in for next year. As they continue to come in, along with routine annual donations, our budget should be close to being balanced by the end of the year.

PORTABOWL Project

By Jay Scheuerle



Taken from Astronomy Technology Today September/October Issue

We all remember our first telescope. Unfortunately, many of our memories are tarnished by the reality that most inexpensive scopes, usually 60mm refractors, are toys with views that lack detail, depict colored edges, and dance all over the sky in the slightest breeze. I gave my nephew a scope like this for Christmas, and it may have contributed to his waning interest in the skies... I've been kicking myself ever since. ATMING is great fun and a wonderful way to discover how telescopes work. As with any new venture, mistakes are part of the process. In the end, we've probably spent far more time and money than we planned to, and resorted to some unconventional building techniques to get everything to work together. Rewarding instruments can be created this way, but they're not always easy to reproduce. With a few scopes under my belt, I decided to see what I could do to put a decent reflector, mount, and eyepiece into a nonskilled person's hands – for under \$100.

Nothing could be made from leftover ATM or surplus store parts; it was essential that anybody could build it. I organized a sub-\$100 contest at an astronomy website, and great ideas, along with great scopes, flew in. Unfortunately, construction diagrams did not. Writing a clear build manual is not only hard work, but compared to tinkering in the shop, it's not much fun, either! First, we learned that approximately half of our money goes toward the optics and an inexpensive EP. In my case, I used a 4.5-inch f/8 spherical primary for my effort(s). That's right– plural. It takes at least one try to learn how to spread out that remaining \$50 and still end up with a worthy instrument. We must also devise a focuser, finder, spider, mirror cell, and collimation controls, not to mention places to attach them, and a mount on which it all sits. Virgin Teflon and Ebony Star Laminate? Forget about it! My first attempt was a standard alt/az "beam" scope. It looked pretty cool, but its usage left me cold. The horizontal focuser made

for impossible viewing angles. The secondary alignment mechanism was clunky. The homemade finder was too delicate and awkward to use. And of course, the mount wasn't buttery smooth.



Every penny was wisely spent, or so I thought, and I stared at my scope and wondered how I could remove \$5 from here and add it to there. What if I needed \$10? How could I make it easier to build and still fix all of these problems? Doubts crept in. Was there another direction? I'd always believed that a beam-scope was the simplest of solutions...The answer was literally right in front of me. Over the past two years, I've built and continually refined a 6-inch f/5 ball-scope called the Eero2 (yes, there was a learning curve there as well!). I knew that the mount for a ball-scope was as cheap and simple as they get, so BOOM – \$20 more to play with right there! Of course, these types of scopes bring their own expenditures, namely the ball itself, and the counterweight, which all ballscopes need because of their low center of gravity.

The key to making a great-looking scope when you have neither the tools nor the skills to create your masterpiece can be summed up with one term – prefab. The big-box hardware and department stores are great, but my ace-in-the-hole is IKEA, where I found my bowl – an 11-inch wide, stainless steel serving bowl. So, I was technically diving into a "bowl" scope instead of a ball, which offered a few new restrictions, but I knew right away that something good would come from this new direction.

Because this is my first bowl-scope, there's one thing you can count on – it took me at least two tries. The first version proved the concept, but formulating the second version allowed me to consider simpler ways to do things. You can't ask a 13-year old to pull out a router or an arc-welder. KISS (keep it simple, stupid!) is the rule. Also, by getting the first version out of the way – kinks, mis-cuts, and all – you have the opportunity to tightly plan your final version and document it. Pictures are important, as they help clarify your words. Some directions, like how to tie a shoe, would be nearly impossible without pictures. It's no different here!

You'll find as you scroll through the materials list that this is an easy build. You may need to gather some stuff from around the house. The base I mentioned before? Free! It's a rock-filled coffee can with a half-inch of the plastic lid left to act as a bearing. The big question is, of course, how does it work? This is where the grin creeps in. I love using this scope! I take it out more than my 12-inch Lightbridge or the 6-inch ball-scope. One hand on the main pole, the other on the base, and I'm out the door. Collimation is a snap, and it holds between usages. Light management is more than sufficient. The focuser is smooth, and the slower focal ratio is very forgiving. The 4.5-inch primary gives good detail on the moon and planets, while remaining free of extraneous colors.



The best part? The mount is rock solid! Even in strong wind, its narrow profile allows the wind to fly by. Its motion, sticktion-wise, was 7/10 until I sprayed a little Sailkote (a dry lubricant) on the bowl. Now I give it a solid 9/10! I'm betting that simple car wax works just as well. You might even find that the original motion is perfectly acceptable.

Lest you think my enthusiasm has warped my senses, the PortaBowl is not my best scope. When off to darker skies or on a road trip, I'll take my 12-inch every time. Give me 90 minutes in front of the house, and the Eero2 will rule. But if I want to sneak in 20 good minutes of Saturn, Jupiter or the Moon, split some nice double-stars, or entice some neighbors, the PortaBowl is the perfect weapon. No worries when the kids are using it because it's not only solid and difficult to break, but it's also cheaper than many of my EPs. On top of that, I print out four or five copies of the build manual for those who show interest.

I didn't build the PortaBowl for me. It's for kids and hobbyists, ATMers, schools, clubs, etc. It's belatedly for my nephew. The project is only successful if it's actively circulating in the public domain, so please, pass the link below on to anybody and everybody you know. And if you build one, by all means, send me pictures! A link to the PDF of detailed step by step instructions on building the PortaBowl including a complete materials list can be accessed at www.astronomytechnologytoday.com

PARTIAL MATERIALS LIST

1 - 11" IKEA BLANDA BLANK stainless steel serving bowl (www.ikea.com).....	\$7
1 - 10 lb. Walmart barbell weight	\$8
1 - 3' x 7/8" oak dowel	\$3.75
1 - 4' x 3/8" dowel (any kind)	\$2.50
1 - 3/4" ID PVC coupler	\$.75
2 - #4 x 1/2" round slotted screws for brace bottoms	
2 - #4 x 3/4" round slotted screws for brace tops	
1 - #8 x 1" flat-head screw for attaching oak dowel	
epoxy	
flat black spray paint	
Tools: drill, small length of pipe, hammer, punch, screwdrivers, sandpaper, saw	

VP COLUMN

By Craig Lang
AAAP Vice President

How many members out there have completed one or more of the AAAP's Observing Certificates? How recently have you completed it? Which certificates have you completed?

These certificates are a great way to enjoy your hobby by viewing objects on a list and ticking them off. You could cheat and use your 'go-to', but the fun is in finding these objects by yourself. If you do not already know about our observing certificates, please let me know.

By the time you read this, Halloween will have passed by. Some members do their version of outreach by setting up their scopes and treating the trick-or-treaters to an astronomical view along with their candy. If you have any interesting anecdotes about your Halloween telescope sessions, we would love to hear them.

Now get out there and start wondering...

OBSERVATIONS

Tom Reiland: From Yahoo Groups October 21, 2009 . I arrived at Wagman Observatory just after 9 PM to find a fox on the hill. It was club member Erick Fox. He setup his scope just before I got there. He stayed until 11:15 PM. The conditions were about average for Western Pennsylvania. Jim Johnston showed up twenty minutes after Erick left. We both observed until 2:35 AM when the clouds started to wipe out much of the sky. Three or four people walked up after parking across from the gate, but

they didn't stay long. I think they were looking for Orionid meteors. I observed one nude-eye and a couple in the scope. Transparency was a 3.5 on a scale of 1 to 5 and the seeing varied from 2 to 1 as the night went on. It was not a good night for planetary observations after midnight. I don't know if it was wishful thinking or the fact that this was my first night of dedicated observing in more than three weeks, but the Red Spot appeared to be more distinct than it has in sometime, even with the seeing at a 2. I would like to see it intensify to its days of a deep red oval that stood out from all the other features on Jupiter. Haven't seen it like that since 1975. I went through some of my usual galaxies searching for supernova, enjoyed the Orion Nebula and located 17 new objects for my log and confirmed several others from my previous observations in September. Two are double stars and 15 are galaxies and five of them are Herschel Objects. It was good to finally get a night of observing in that wasn't a star party, class or casual viewing.

Speaking of classes, Jim suggested that we have a session on cleaning, collimating and maintaining telescopes and optics. We'll have to see if any of our skilled opticians might be interested in holding some at both of the observatories. I could do one at Wagman, but there are members who are more knowledgeable than I am on the subject who could conduct a good session. Just something to think about.

P.S. I spotted a geosat while searching for some faint fuzzies in Eridanus.

Tom Reiland: From Yahoo Groups October 24, 2009. I arrived at the gate of Wagman Observatory to find two or three cars parked across the street waiting to see if there was going to be a star party. I opened the gate and let the scouts and their parents onto the field. I opened the building and checked for messages on the voicemail, but it was empty.

We did have at least half a dozen calls about the conditions while I was there. I showed them around the building and more people came in from under the cloudy skies and a light drizzle. There were 12 to 15 visitors before Bill Hayeslip arrived, followed by Mary DeVaughn, Flac and new member, Ron Kirkwood. Our final total was 20 scouts, parents and students.

There was a brief sucker hole clearing around 7:30 PM and I was able to set up the Manka scope and show them the Moon and Jupiter was observed by a handful of scouts before the clouds covered the sky again. Bill set up a scope and Mary had her binoculars there as well. I closed the building at 7:55 PM.

Bill Hayeslip was still there with one parent and his two kids helping them with their scope. It started to rain again a few minutes after Flac and I left the hilltop. I hope Bill's scope didn't get wet. Thanks to Bill, Mary, Flac and Ron for helping out tonight.

Seventeen weeks until Winterfest!

Bill Hayeslip: Posted to Yahoo Groups October 24, 2009. After I got my scope set up I only had enough time to show Jupiter to about six or eight kids before the clouds closed in again. Hardly worth the effort, and yes, my scope got wet! I quickly threw most of it into the car in an effort to keep it dry but everything got wet anyway. When I got home I set everything out to dry for a while. I had also left a telescope part on the field and had to come back to Wagman about 10:45. I found it bent and driven into the ground. I thought I drove over it somehow but Tom might have done that when he stopped back. The casting was OK thank goodness and a bent bolt can be replaced easily enough. I'm starting to feel star party withdrawal and the cure won't come until Winterfest!

PHOTOS FROM BLACK FOREST STAR PARTY

By Fred Klein

These are the last pictures from the Black Forest Star Party in September. I have found the happy (sad?) conclusion that my images are now limited by the seeing, not by my equipment or technique. The first two are limited by the seeing while the third had very good seeing.

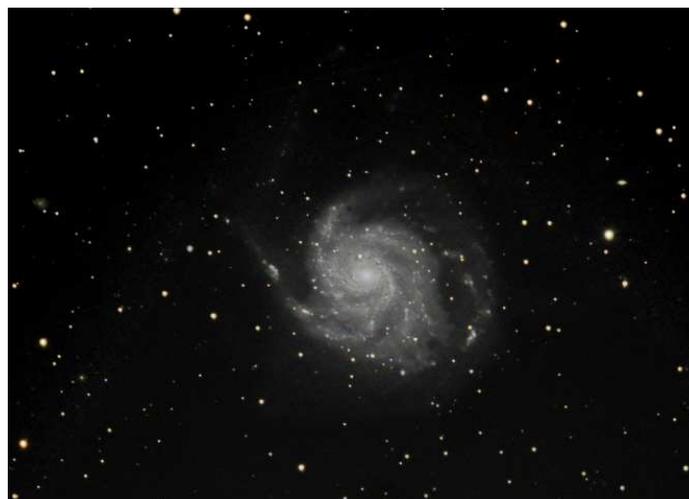
NGC 891

http://fredkleinastro.com/images/NGC891_Crop.jpg



The Pinwheel Galaxy M101

<http://fredkleinastro.com/images/M101-Crop.jpg>



This one is a wonderful object, suggested by my neighboring imager at BFSP. The reflection nebula, the Iris nebula, NGC 7023. Note the dark area around the nebula which is dust obstruction of the background stars and the wonderful hole just to the lower right of center.

http://fredkleinastro.com/images/Iris_NGC7023_9-20-09.jpg



TOUGH LITTLE GALAXY GUYS

<http://aavswritersbureau.blogspot.com/2009/10/tough-little-galaxy-guys.html>

by C. C. Petersen, [The Spacewriter's Ramblings](http://thespacewriter.com/wp/)

(<http://thespacewriter.com/wp/>)

Barnard's Galaxy as seen by ESO



Barnard's Galaxy glows beneath a sea of foreground stars in the direction of the constellation of Sagittarius (the Archer) (Click to embiggen.) Courtesy ESO.

What do you get when you point a powerful telescope at a tiny, irregular dwarf galaxy that just so happens to be a neighbor of the Milky Way Galaxy? The folks at the [European Southern Observatory](http://www.eso.org/public/) (<http://www.eso.org/public/>) did just that and created an amazing image of a tough little galactic neighbor brimming with star formation regions, interesting bubble-shaped nebulae, and scads of hot, blue stars. Now, you may look at this image and think to yourself, "It doesn't look like a galaxy — don't all galaxies have spiral arms?"

Well, not always. There are many in the universe that look like this — oddly misshapen, dwarf-sized collections of stars. Yet, even though Barnard's Galaxy doesn't have that spiral-armed grace and large central bulge that the Milky Way and Andromeda have, it plays an important role in stellar and galaxy evolution. In addition, its reddish nebulae are the same kinds of active star-formation regions that we see in larger galaxies. These regions glow because their hot young stars are heating the surrounding gas clouds. Also prominent in the upper left of this new image is a striking bubble-shaped nebula.

At its heart (if you zoom in closely), you can make out a collection of massive, superhot stars that are sending waves of

matter smashing into the material in nearby regions. The interaction has created what looks like a glowing ring around the central region. Look closely enough and you'll see other regions where hot young stars are heating up their neighborhoods.

This tough, tiny little galaxy comes in at about a tenth of the size of the Milky Way and has about 10 million stars. Yet, as part of the Local Group, it's in the majority of galaxy types because the Local Group dwarfs outnumber the "normal" spirals. This kind of begs the questions, "What's the norm?" And "How do these galaxies fit in the hierarchy of other galaxies?"

Irregular dwarf galaxies are blobby and not very well-defined. They get these amorphous shapes from close encounters of the galactic kind that go on for millions of years. How does that work? Like everything else in the universe, galaxies are in motion, and this means that at some point, a given galaxy will encounter at least one other one during its lifetime. They often make close passes or even go through one another. The density of stars in galaxies is quite low, meaning that few stars physically collide. But, the gravitational effect that each galaxy has on the other will warp and twist their shapes. When this happens, huge collections of stars are pushed or pulled in new directions, or even flung out away from the galaxy where they formerly "lived." After the encounters, the resulting galaxies look a lot like Barnard's Galaxy — irregular, with regions of star formation and star death studded among their other stars. They have to be tough to survive the close encounters of the galactic kind!

WELCOME NEW MEMBERS

THOM JONES
ALEXANDRA SOWERS

FOR SALE

Quantum Mechanics: The Physics of the Microscopic World, Course No. 1240 (24 lectures, 30 minutes/lecture) taught by Benjamin Schumacher Ph.D., Kenyon College, The University of Texas at Austin. Available exclusively on DVD: 24 lectures - 30 minutes each. Four DVDs in 2 boxes. 127-page course book also included.

The DVD features more than 600 visual elements to enhance your learning experience, including 3-D animations, diagrams, graphs, images, and on-screen text.

Teaching Company price, new: \$254.95 + \$30 shipping and handling = \$284.95.

For details and lecture titles: www.teach12.com Search for course title. Condition: Like new.

Asking \$80 (plus any mailing costs if you want it mailed). Contact: Dan Peden. Please reply off list to: betelgeuse@pobox.com



Maureen and I visited Linda Wagner in Monroeville who is selling her deceased husband's Celestron 8-inch telescope. It seems he was into astrophotography and has a good amount of information and what looks like a good cooled CCD camera. The unit has not been used for three years. It is complete including a tripod. It appears to have been purchased new in 1999. It is in very good condition with all the manuals. Perhaps one of you may want to call her and make an offer. Her husband's name was Dennis. Linda said she thought he was a past member of AAAP. Her phone number is 412-825-0125.



IMPORTANT DATES

November 1—Venus 4° north of Spica
Daylight Saving Time
Mingo Work Party
November 2—Full Moon 7:15 p.m.
November 3—Election Day
Kevin J. Brunelle contest deadline
November 4—Neptune appears stationary
November 5—Mercury in superior conjunction
Taurid Meteor Shower
November 6—AAAP Carnegie Science Center Meeting
7:30 Taurid Meteor Shower
November 7—Moon at perigee
November 9—Last quarter Moon 3:56 p.m.
November 12—Saturn 8° north of Moon
November 16—New Moon 7:14 p.m.
November 20—Mingo Boy Scout Star Party
November 21—Mingo Boy Scout Star Party
November 22—Moon at apogee
November 23—Jupiter 4° south of Moon
November 24—First quarter Moon 9:39 p.m.
November 26—Thanksgiving Day
Uranus 6° south of Moon

December 2—Full Moon 2:30 a.m.
Uranus appears stationary
December 4—Moon at perigee
December 6—Mars 6° north of Moon
December 8—Last quarter Moon 12:13 a.m.
December 10—Saturn 8° north of Moon
December 11—7:30 p.m. AAAP Christmas Party
December 13—Geminid Meteor Shower
December 14—Geminid Meteor Shower
December 16—New Moon 12:02 p.m.
December 18—Mercury 1.4° south of Moon
Mercury at greatest elongation 20° east
December 20—Jupiter 0.6° south of Neptune
Moon at apogee
December 21—Winter Solstice
Jupiter and Neptune 4° South of Moon
Ursid Meteor Shower
December 22—Ursid Meteor Shower
December 23—Uranus 6° south of Moon
December 24—Christmas Eve
First quarter Moon 5:36 p.m.
December 25—Christmas Day
December 26—Mercury appears stationary
December 31—Full Moon 7:13 p.m.
New Year's Eve



Amateur Astronomers Association of Pittsburgh, Inc.

Founded June 9, 1929 by

Chester B. Roe and Leo J. Scanlon

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Student Membership (K-12 & full time college student):	\$16.00
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1. Make check payable to "AAAP Inc."
2. Send check to Michael Meteney, Treasurer, 1070 Sugar Run Road; Venetia, PA 15367-1514



Please submit any articles for the Guide Star to the Guide Star Editors at gseditor@3ap.org by the 20th of each month.

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