

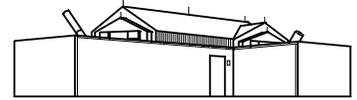
The Guide Star

Newsletter of the Amateur Astronomers Association of Pittsburgh Inc.

A Section of the Academy of Science & Art of Pittsburgh

March, 2003

Vol. 36, No. 12



Nicholas E. Wagman Observatory

March 8 Kicks Off 2003 Star Party Season

Join Your Earthly and Celestial Friends At Wagman Winterfest

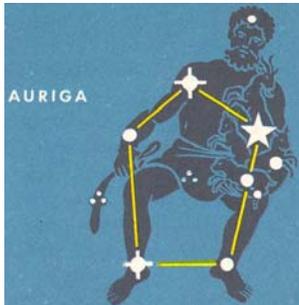
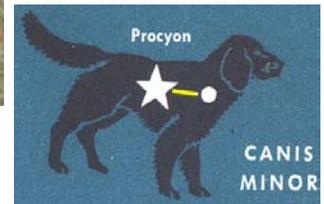


Photo by Larry McHenry. Constellations from "Golden Nature Guide – The Stars", a childhood inspiration to many AAAP members.



As we kick off another season of public star parties at Wagman Winterfest (**March 8**, starting at **4:00 pm**), keep in mind you will be getting together again with two sets of friends. These include your AAAP comrades, and your celestial friends such as Orion, the Gemini Twins, Canis Major and Minor, the "Seven Sisters" cluster (know their collective name?) and other constellations that brighten much of the sky this time of the year with numerous 1st and 2nd magnitude stars. Let's not disappoint our celestial companions with a poor showing, especially with the nice promotion that appeared in the March Sky & Telescope.

Winterfest is kinda like a small version of Laurel Highlands Star Cruise, with tents, food/refreshments, dealer tables, etc. Thus, we need lotsa help with set up, provisions, service and tear down. Here's where you can help:

- * Set up, tents and chairs/tables early on March 8, then tear it all down on March 9
- * Bring food and refreshments, arrange related tables, clean up afterwards
- * Staff the various tables (literature, food, souvenir sales, giveaway items, etc.)
- * Help park cars, direct crowds, etc.
- * And don't forget to bring your portable scopes to entertain folks outside the observatory.

If you want to help in any of these areas, please contact **Pete Zapadka** (412-487-9363, pzapadka@attbi.com) for all non-refreshment activities, and **Mari-Jo Meyers** (724-339-3447, wmeyers1@comcast.net) if you plan to provide any edibles.

New for WW: Guest Speakers In Their Own Tent

Carrying over an idea from LHSC, we will erect a 30-seat tent off the east side of the observatory to provide a suitable venue for our three Wagman Winterfest guest speakers (the observatory rooms themselves are just too small):

- * **Ted Nichols II**, who will describe NASA's planned mission to Pluto under the agency's "New Horizons" program.
- * **John Radzilowicz**, Director of the CSC's Henry Buhl Planetarium (and AAAP member), who will describe astronomy-related plans for the upcoming CSC expansion
- * Club member **Paula Meddings**, who serves as a "NASA Ambassador", will describe the agency's latest exploration plans and other interesting news.

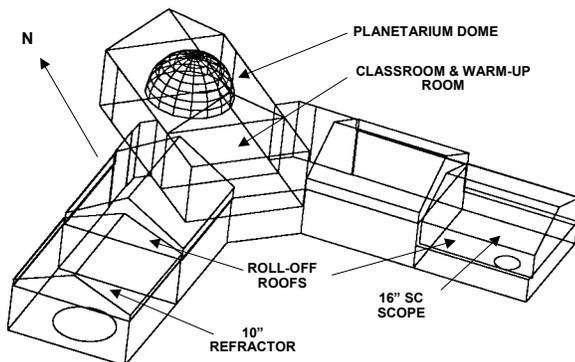
What About the Weather?

Actually, we have two potential threats to Wagman Winterfest: Excessive snow or excessive mud. If you have any doubts about the go/no-go status of the event, call the observatory (724-224-2510), contact any AAAP officer, or check the AAAP web site (www.3ap.org).

Guide Star Crunch Time

We're punching out the March Guide Star right on the heels of the Feb. issue. To give our editorial and production/ mailing staff a break, we're condensing the news into small bites (bytes?) and running only one feature article to keep printing to a minimum. We'll follow up many of these items in greater detail in the April issue.

- ☛ The South Hills/Mingo Observatory now has a definitive design (see drawing). The "Y" shaped structure will borrow many Wagman design concepts, especially with regard to the roll-under roofs. Current plans call for installation of a 10-inch refractor, a 16" S-C and a planetarium/dome. If all goes well, construction could start in mid-summer.



- ☛ On the Mingo paperwork front, we have received a draft of the lease from Washington County. After review and any required editing on our part, the signed document will be returned to the County. Our thanks to member Mike Meteney for processing the paperwork required by Nottingham Township.
- ☛ Dates for our first star parties in Mingo Park have now been set. All of these parties will take in Shelter #10, starting at sunset:

| | |
|--------------|-----------------|
| May 9 & 10 | August 1 & 2 |
| June 6 & 7 | September 5 & 6 |
| July 18 & 19 | October 3 & 4 |

- ☛ We are pleased as punch to report that **Jill Tarter**, perhaps the world's leading SETI expert, will be a guest lecturer at Astronomy Weekend, speaking on the evening of April 5.
- ☛ Planning for Laurel Highlands Star Cruise 2003 is gaining momentum. We have confirmed that the NASA "Aerobus" (traveling educational display) will be on site. Also, we are planning a much improved children's program for the event. If you wish to join the LHSC team, contact Vice President Terry Trees, sooner than later.
- ☛ On a related LHSC, Charlotte Tunney has put out a call for several important items to keep the event moving smoothly. These include old throw rugs to cover potential muddy spots at the entrances to tents, etc., and several citizens-band (family radio) walkie-talkies (5mW) for staff and security use. Contact Charlotte at 412-441-3958 or tunneyc@carnegieliibrary.org if you can provide such items.

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- ☛ At the February meeting, John Radzilowicz announced the formation of an "Advisory Committee" to help plan the large "Final Frontier" astronomy display areas of the expanded CSC. Two AAAP members have been invited to serve on this committee. Late note: We're pleased to report that **George Guzik** will be one of the club's two representatives on this committee. If you would like to serve on this committee, speak with Larry McHenry.
- ☛ One of the hair-raising findings John Radzilowicz reported at the Feb. meeting is that much of the general public has no basic conception of how the Earth orbits the Sun, thus the urgent need for top-notch astronomy section in the new CSC.
- ☛ Correction to Feb. Guide Star: In the front page article on the Columbia disaster, we incorrectly stated that no club members observed the shuttle on its fateful mission. In fact, Mary DeVaughn was able to observe the orbiter as it passed through breaks in the clouds. We'll have her complete recollection in the April Guide Star.
- ☛ If you wish to nominate any AAAP members for non-Wagman Volunteer Service Awards (covering the 2002 season), please contact Mari-Jo Meyers (724-339-3447, wmeyers1@comcast.net)
- ☛ The new 21" Zerodur mirror for the Manka Telescope is physically complete and now in our possession (at Flacc Stifel's house). The mirror was produced by Brashear L. P. as donation to the AAAP. To enable the company to also fabricate a holder for the mirror, we removed and delivered the existing holder to them to use as a guide for the new unit. Brashear L. P. is continuing work on the diagonal mirror; when both optical elements are ready, we will carry them out to Klausinger for final aluminizing. The Manka Telescope is back together now with a temporary replacement holder fashioned by **Wade Barbin**. Our thanks to Wade, **Flacc Stifel** and **Phil Breidenbach** for all their technical expertise and impressive hard keeping the mirror project moving so well.
- ☛ New Members: Welcome one and all to our "celestrious" organization (voted in at Feb. meeting): **Paul J. Galvanek, Thomas Geyer, Michael Hruby, Joanne Scheier, Kathy Tracy, Lee Wadsworth, Pat V. Wickersham** and **Samuel A. Wickersham**.

☞ Our Sympathies to Tom Reiland ☛

The entire AAAP extends its condolences to Tom Reiland upon the recent death of his father. Of course, Tom is one of the club's most distinguished and accomplished members, having served as president for many years and holding a Brashear Award (lifetime achievement). Tom is also the current Director of Wagman Observatory. He extends his appreciation to all those members and friends who have expressed their sympathies.

Urgent Tip of the Month

Make any payment for any AAAP purpose payable to AAAP. The Treasurer and others who receive checks made payable to them personally will start to deposit such checks into their own accounts.

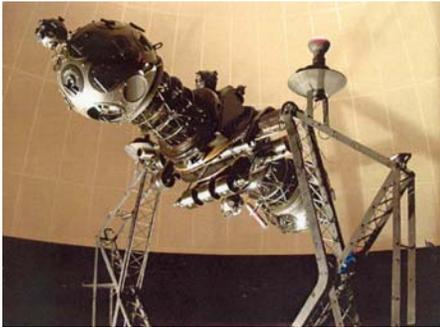
John Holtz - Treasurer

Zeiss II: The Final Frontier

(Its the end of the road, and a new beginning, for a famous planetarium projector)

by Ann Norman

Its 1939. Pittsburgh receives the Zeiss Mark II from Germany--the last of five to be shipped to the United States before World War II shuts down production for a decade. They piece together the multi-port-holed "star balls", the layered-cake array of planet projectors, the erector-set metal legs, to build a monstrous mechanical, ant-like creature whose remotely controlled 6,000 lb body stands 12 feet high and bends and twists in every direction. They secure the Zeiss to a platform so it can arise from its pit on cue to the blast of classical music. When the planetarium director turns dials on a giant console, light will shoot out through the pin-holed screens in each of the two star balls, covering the dome above in stars. The simulation will be realistic and accurate down to the colors of each star, thanks to individual filters.



Zeiss II projector makes its last stand prior to the move to the CSC.

Fast forward thirty years. It is 1969. The "fast forward" metaphor, has not yet appeared as we do not have videos. But we, the children of 1969 Pittsburgh, do not feel deprived. We have a great time in city parks filled with exciting playground equipment. We have a museum full of dinosaur bones and we have the Buhl Planetarium. Inside it, Pittsburghers are still transfixed by a clear night sky, and the drama of the scary-looking Zeiss II projector. The stars rise and set and the planets and moon trace the ecliptic. After the show visitors tour halls of exhibits devoted to astronomy.

Fast forward to 1999. The Buhl Planetarium has merged with, and moved to, the new Carnegie Science Center; the Zeiss has not. The new Buhl Planetarium at the Science Center is slightly smaller than the old planetarium. Its new projector, the Digistar, is pretty cool. The Digistar has the position of 9,000 stars in it, which can be viewed from any perspective--Earth, Mars, Betelgeuse - or time period - taking into account the proper motion of individual stars. One can view the radio sky at 30 MHz, or the sky in any other part of the electromagnetic spectrum; program in wire-line architectural drawings and have the audience "walk through"; add a three dimensional object--say a satellite--and have it float and turn in the sky. For fun, the programmer can have the audience zoom through a wormhole, watch fractal patterns evolve, or fly through a star field. The kids of 1999 are thrilled. The simulated motion is so convincing that some of the youngest viewers fear they have been blasted into space.

Still . . . those of us over twenty-five might feel a tiny twinge of disappointment. Didn't those simulated stars used to be crisper? Why are all the stars in Orion the same color--and why are they greenish-white? And where's the stupendous robot who used to be part of the show?

Some in our club were upset that, after 1994, the majestic Zeiss II languished in a shuttered up planetarium--that a superior representation of the sky had lost out to an inferior representation plus special effects--that a facility devoted exclusively to astronomy education ceased to exist. Perhaps I can relate. I was outraged when Frick Park's fire engine -a unique piece of playground equipment which two generations of Pittsburgh children had climbed on, pretended to drive, and loved to death--was declared unsafe and replaced by a DECORATIVE ROCK. I got over the loss of that antique fire engine. Some in Pittsburgh's astronomical community had a harder time with the demise of the old Buhl and its Zeiss II. As I have just learned, an ugly battle raged over their ultimate fate until very recently.

Fast forward to 2003. The battle to reopen the old planetarium is over. The building is being refurbished and will become an extension of the Children's Museum. The Zeiss is history. It is broken and too expensive to fix and maintain. But like the historical submarine docked outside the Science Center, it will be honored and exhibited as an historical and educational artifact.

It turns out that of the Big Five American planetariums--i.e., those that had secured Zeisses before the war -Buhl was the only one to hold on to its original projector. This makes it special. Over time, other Zeiss II's were replaced by newer optical/mechanical projectors, and then by digital projectors; the originals were lost. In Pittsburgh, however, the Zeiss II was continually repaired. Even after the Zeiss company stopped making replacement parts for the Mark II, Buhl's resourceful engineers fixed theirs with custom-made parts.

Pittsburgh's is not the oldest Zeiss. (A Zeiss Mark I is on display in Munich and an older Zeiss II in Tokyo.) Our Zeiss II does not represent the pinnacle of optical/mechanical projector technology. (Currently the Zeiss company is producing Zeiss IXs, which blow away Zeiss IIs, in terms of optical clarity.) Color Digistars are already out there. The next wave of laser projectors, due in 2004 or 2005, will surpass today's optical-mechanical projectors in every way. Pittsburgh's Zeiss II is worthy of attention, not because it is the very oldest or the very best, but because it represents an early marvel of engineering that could easily end up in the dustbin of history after the digital super-projectors sweep through every last planetarium.



Looking down into the "pit".

Thanks to the preservation efforts of Buhl Planetarium staff, that will not happen. The Science Center is leasing the projector from the city. They have "brought it home" in order to prepare it for display as part of Final Frontier--a planned \$3 million dollar permanent astronomy exhibit planned for Feb 2005.

It is not easy to disassemble and move a 6,000 lb, 64-year-old piece of machinery, especially when its yellowed operating manual is in German. Luckily, Buhl has a German translator on staff. Zeiss company agreed to be on call for help, but soon told the Buhl staff, "Evidently, you know more about Zeiss II than we do." Mechanical expert Jim Glass came out of retirement just to help with the disassembly. Rich Kwiatkowski was the electrical expert, the one who understands the tangled guts of the Zeiss. Together they removed the 500 lb star balls, leaving a 5,000 body. They built a special dolly, placed it under the structure and let the Zeiss sink into the floor one last time, onto the dolly. Each piece was placed on a pallet, shrink wrapped, and loaded onto trucks by forklift.



Technicians begin process of examining and packaging the Zeiss for shipment.

After all these years Zeiss is worn out. One of the star balls does not light. The structure had lost all its mobility. The Zeiss will be rehabbed to the extent that it will light up and some of its various movements can be demonstrated to the public.

As part of Final Frontier, the Zeiss II will share two floors of exhibit space with a walk-in replica of the International Space Station, a remote controlled Mars rover, and a contraption that lets a seated rider "be the Earth," spinning and going through its motions relative to the Sun and Moon. To improve flow through the planetarium, shows will be shorter, 1/2 hour rather than 1 hour long; there will be 6 shows a year rather than 2; and they will correspond with the special theme on the exhibit floor. In addition to basic astronomy, the shows will address exotic or "hot" topics, such as relativity and astrobiology.

Buhl Planetarium Director and AAAP member John Radzilowicz was exuberant describing these plans at the club's February 14th meeting held in the Buhl Planetarium. Then, like a handmade valentine, he fired up the Digistar and treated us to a wordless program of images special to amateur astronomers.

When the lights came up, the room was quiet. One person explained he had been stunned into silence. (From the snoring, I know another had been lulled into sleep) Tim Manka brought us back to Earth with a question about the Siderostat Telescope. Was it also recovered from the old Buhl Planetarium, is it here at the Science Center? And will it be used? The answers: yes, yes, and yes.

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Fixed Siderostat telescope tube points toward the steerable 10" mirror in this photo from atop the old Buhl Planetarium.



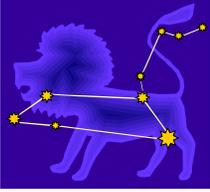
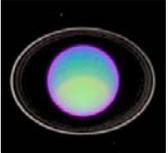
The observer's room of the 10" Siderostat telescope.

This 62-year old telescope has a unique design. It is a fixed horizontal 10-inch research-quality refractor pointed at a moveable mirror that adjusts to view the different stars. This telescope is great from a practical point of view. A wall separates the viewing-end of the telescope from the outdoors, so a viewer can observe in a heated room, moving the mirror from a control panel. The Siderostat was manufactured by Gaertner Scientific Company of Chicago and cost \$30,000 (in 1941 \$).

This old telescope will be reinstalled on the roof of the Science Center and once again made available to the public. However the current roof of the Science Center will not BE the roof of the Science Center much longer. A \$90 million building expansion is in the works. French architect Jean Nouvel is putting the finishing touches on his design, which will have a floor cantilevering out over the Ohio River. The Siderostat Telescope will be installed on whichever floor is the top in 2008-maybe the ninth.

Could it be that even more goodies are coming to Pittsburgh's amateur astronomers? In a separate interview I ask John Radzilowicz, whether we might be getting the next model of Digistar-the one whose images will far surpass our memories of the Zeiss II sky. John beams and looks about to burst, "No, . . . well, . . . I better not say anything."

MARCH 2003

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--|--|---|---|---|--|---|
|  | | | | |  | 1 |
| 2  | 3  | 4 Mardi Gras | 5 Ash Wednesday | 6 | 7 Birthdays: John Herschel, 1792 Henry Draper, 1837 | 8 Wagman Winterfest! 4 PM NEWO |
| 9 Birthday, David Fabricius Discovered first variable star (Mira) 1564 | 10 Rings of Uranus discovered, 1977 | 11  | 12 | 13 Birthday, Percival Lowell 1855 William Herschel discovers Uranus 1781 | 14 AAAP Meeting CSC 7:30 p.m. Albert Einstein born, 1879 | 15 |
| 16 Robert Goddard launches first liquid- fueled rocket 1926 | 17 St. Patrick's  Day | 18  | 19  | 20 Vernal Equinox 8 PM EST | 21 Free Public Lecture Dwarf Galaxies Allegheny Observatory 7:30 p.m. | 22 |
| 23 First photo (daguerreotype) of moon - 1840 | 24  | 25 | 26 | 27  | 28 Heinrich Olbers discovers Pallas 1802 | 29  |
| 30 | 31 | | | | | |

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| Looking ahead: Wagman Public Star Party: April 11, 12 | <u>AAAP Long-Range Meeting Schedule</u> Apr. 18 Oct. 10 Sep. 12 May 16 Nov. 7 Summer PICNIC Dec. 5 |
|--|---|

Send Your Classifieds to A Classy Person (Cathy Rivi)

Cathy Rivi has done a splendid job with the Guide Star "Fridge" Calendar. She has now volunteered to take care of all the newsletter's classified ads (a tedious job, to say the least). Thus, send your ads to crivi@mindspring.com or hook up with her at an upcoming meeting.

Classifieds

FOR SALE: Celestron C-10 Schmidt-Cassegrain, f/13.5 (focal length 3430mm). Fork mount with equatorial head, setting circles and slow motions. Clock drive w/ 115V AC and 12V DC inputs. 2-in., 6-position UNIHENX w/ 5 Plossl eyepieces; powers from 75 to 570. 8-inch diameter portable pier w/ equatorial mounting plate, removable feet. Collimation screws on rear plate. Blue and white optical tube w/ machined aluminum cover. Many extras. Very good condition, \$1050. Contact Rich Hansen at (412) 824-6792 or rhansen@bsn1.net.

FOR SALE: 8" Celestron Dobsonian, 4 years old, mint condition, lots of upgrades and accessories. Best offer. Contact George at (412) 281-2882 or pghskey@aol.com.

Amateur Astronomers Association of Pittsburgh, Inc.

A section of the Academy of Science and Art of Pittsburgh

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

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| | |
|--------------------------------------|-------------|
| AAAP Dues: | \$18.00 |
| Junior Member (under 18): | \$13.00 |
| <u>Sky & Telescope Magazine:</u> | Add \$30.00 |
| <u>Astronomy Magazine:</u> | Add \$29.00 |

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