

The Guide Star

Newsletter of the Amateur Astronomers Association of Pittsburgh Inc.

A Section of the Academy of Science & Art of Pittsburgh

August, 2002

Vol. 36, No. 5



Nicholas E. Wagman Observatory

Calling All South Hills Members

Come To Our “Enclave of Astronomy”: South Park Wave Pool, August 10

Anyone who has ever flown in or out of Pittsburgh at night knows that, from high altitude on a clear evening, Allegheny County looks a vast cluster of stars or a dense region of the Milky Way. Here and there among the thousands of street and structure lights are little patches of dark, which is where you find community parks and other rare places where there are little or no outdoor lights. One of those places is a corner of South Park where we hold our monthly public star parties for the folks from the South Hills: Come to our little “Enclave of Astronomy”, the *South Park Wave Pool* parking lot on **August 10**, starting at **Sunset**, for this month’s event. The site is remarkably dark given its location in such a densely populated area, and there are only a few distant sources of direct light pollution. Who knows? If the night is exceptionally clear, you might even be able to show some of the dark patches amidst the river of stars that make up Summer Milky Way.



Season’s Last Border’s Lecture

August 10 marks this year’s last (already!) installment of the AAAP’s lecture series at *Border’s Books & Music* (Bethel Park store). No word on this month’s guest speaker as of *Guide Star* press time. Thus far, the lectures have been well attended (almost no S.R.O.), and well received. If you want to get a good seat, make sure to arrive well before the **7:30 PM** start time. See page 4 for stories on the June and July *Border’s* lectures.

Four Dates: August 2, 3, 16, 17

August Star Party Forecast: “Dark” and “Partly Dark”



The “dark of night” means different things to different people. To John Q. Public, darkness usually relates to when car headlamps and street lights turn on. To John Q. Astronomer, “dark” means you can barely see your hand in front of your face, dimly lit by the collective light of millions of stars overhead. While we can’t promise that kind of darkness at the Wagman “Dark Sky Special” star parties on **August 2 and 3**, the Moon will be absent for most of the evening, thus giving emphasis to the fine array of deep sky objects this time of year. Also, everybody’s dark adaptation will be better because no one will be blinded looking at an unfiltered view of the Moon or seeing one of its brighter phases naked-eye. For high drama, some people may await Moonrise in the wee hours, hopefully ascending a sharp Eastern horizon.

For guests who still want to roam the craters, mountains and valleys of the Moon, we will invite them back to the **August 16 and 17** Wagman star parties, when the Moon will be just past First Quarter. And for those visitors who ask the eternal question “Can you see the U.S. flag on the Moon?”, just give them Dave Smith’s stock answer: “No, because you would be looking straight down on the flag pole.” :-).

Put Your Best Eye Forward

Wagman public star parties are not self-propelled. As always, we need people watching scopes, people watching the building, people watching cars, and people watching people. Any practical help you can provide is appreciated and will be recognized.

New Members Reception Before Aug. 17 Star Party

by Bill Roemer

- What: A reception for new members.
- For whom: Any AAAP member who has joined in the past year or any AAAP member who considers herself/himself new.
- Where: Wagman Observatory.
- When: Saturday, August 17, 2002 just prior to the Public Star Party.



(continued on page 2, column 1)

Upcoming Astronomy Course

by John Holtz

Plans for the next "Beginning Astronomy" course at the **Wagman Observatory**, Deer Lakes Park, are set. The 5-week class will be held on Tuesday evenings, **Aug 20, 27, Sep 3, 10, and 17**. The classes will begin at 7:30 PM and last until approximately 9:30 PM. Weather permitting, observing will be held until 11 PM. Designed for the beginner, the classes cover a range of topics including naked eye observing, binocular observing, types of telescopes and their use, telescopic observing, and simple astrophotography.

The cost for the class is \$15 per person and is opened to any AAAP or Kiski Astronomers member. (The cost covers 70+ pages of handouts. Any excess is a tax-deductible donation to the AAAP). Pre-registration is required. Class size is limited, so it's "first sign up- first taught" basis. Contact the instructor, John Holtz, at 724-352-7596 or JWHoltz@aol.com to register.

"Getting To Know You" (New AAAP Members) At NEWO

(continued from front page)

☛ Time: 7:45 PM

Why should new members attend this reception? It will give you a chance to find your way to Wagman Observatory in the daylight, if you have not yet been there. It will give you an opportunity to meet others in the daylight. It will show you just how much we appreciate your being a part of AAAP. Join us at 7:45 PM at Wagman Observatory on August 17!

Here are the members of the club's "New Members" Committee:

Brett Day	Brent Hudock	Pete Zapadka
Mary DeVaughn	Bill Roemer (Chair)	

Get "A Round Tuit": GSOL

You know that famous spherical object that you often need to get things done: "A Round Tuit". Perhaps you have been meaning to un-subscribe to the paper Guide Star and get your newsletter much faster via the Internet, but you just haven't got A Round Tuit. Now's the time to buy, beg, borrow or steal A Round Tuit and subscribe to the Guide Star On Line(GSOL). As we've said before, GSOL subscribers get their newsletter as much as a week before snail-mailers, see everything in color, can access it from any Internet-linked computer, can print multiple copies, instantly access back issues, etc. And don't forget preserving on our Corresponding Secretary, Alison Conte, who wears out several sets of fingernails each month folding all those paper copies.

To join the all-electronic news era, write "I Want My GSOL" with your name and address, and e-mail it to Alison at alisonconte@hotmail.com. During the first week of each month, when the new issue of the GSOL is posted on the AAAP web site, online users will receive an email reminder with a link to the site. If you don't like it, you can re-subscribe to the paper version at any time. So let's "Get Tuit"!



Get Your "Northern Exposure" At ORAS' Astroblast Convention

by Tim Spuck and John O'Hara



Astroblast is a regional gathering of amateur astronomers in NW Pennsylvania near Franklin, PA. Lectures, information and educational sessions, and dark-sky observing are all a part of our annual Star Party. The event is open to registered participants only. On-site registration will be available during the event. Newcomers are welcome to attend. Participants are invited to bring their own telescopes or binoculars. Here's the Astroblast 2002 Agenda:

Friday, August 2:

- 3:00 PM: Registration Opens
- 4:30 - 7:00 PM: Food tent open
- 6:30 PM: Welcome to Astroblast
- 7:00 PM: An Introduction to Astronomical Software (Dr. Terry Trees)
- 9:00 PM - ????: Dark Sky Observing
- 10:00 PM: CCD Astronomy Dan Holler and Jim Garasich
- 12:00 AM: Gate closes (All non-campers must leave or move vehicles outside gate.)

Saturday, August 3:

- 10 - 11 AM: Pancake Breakfast (\$5 per adult or \$3 child under 12)
- 11 AM - 1 PM: Swap Meet
- 12 - 2 PM: Food Tent Open
- 1:30 PM: Capturing the Color of the Universe (Ted Wolfe)
- 2:30 PM: Measuring the Expansion Rate of the Universe (Tim Spuck and OCHS Astronomy Club Students)
- 3:30 PM: Safe-Guarding Dark Skies (John O'Hara)
- 4:30 PM - 6:00 PM: Open Topic Talks*

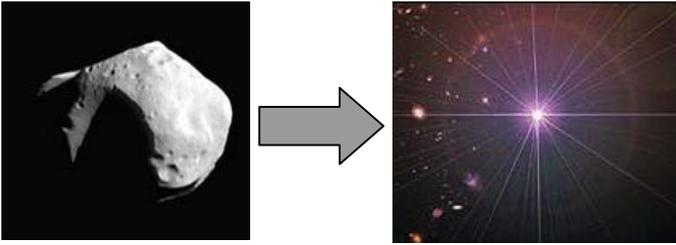
*Bring your topic whether it be an observing/imaging technique, useful equipment, something you want to sell, etc. and sign up for a 15 min time slot. Topics will be announced over the PA.

- 5 - 6:30: Food Tent Open
- 6:30 PM: Pizza Party (\$5/adult \$3/under 12)
- 7:30 PM: Cassini/Huygens en route to Saturn (Dr. David Hurd)
- 9 - ????: Dark Sky Observing
- 10:00 PM: CCD Astronomy (Dan Holler and Jim Garasich)
- 11:00 PM: Messier Marathon (pick up form at reg. booth)
- 12:00 AM: Gate closes (all non-campers must leave or move vehicles outside gate.)

(continued on page 3, column 1)

Two Nice Occultations This Month

by John Holtz



An occultation occurs when one object, such as the Moon or asteroid, passes in front of a smaller apparent object, such as a star. The occulted object winks out instantly. Total lunar occultations, where the star passes directly behind the Moon, are common.

Asteroidal occultations are more rare. First, the path of the occultation is about as wide as the asteroid, so they are typically only 100 miles across. Second, the precise path is difficult to predict due to inaccuracies in the known position of the asteroid (and to some extent the star). Thus, seeing an asteroid occultation is a bit like winning a AAAP 50/50 raffle. But thanks to the CCD revolution, updates are available for many events a few days in advance. With these updates, observers can travel to the predicted path with more confidence of actually seeing an event. Thanks to such updates, I have observed two asteroidal occultations so far this year!

Here are the details for two favorable asteroidal occultations. Favorable indicates that the predicted path is not too far from our area, the magnitude drop of the combined star and asteroid will be easy to see, the star is well placed, and so on. My homepage (<http://members.aol.com/jwholtz/>) will provide finder charts and links to other pages with prediction updates as the date approaches.

Date:	Aug 8	Aug 15
Time (EDT):	3:21 am	9:41 PM
Asteroid:	Valentine:	Eucharis
Star Magnitude:	10.9	11.4
Magnitude Drop:	3.1	2.2
Duration (sec):	40!	8
R. Asc (h m s):	0 58 18.78	19 33 34.21
Declin (deg m s):	-0 20 58.9	-11 41 5.7
Altitude:	42	33
Azimuth:	142 (SE)	152 (SSE)

The Complete Scoop On "Astroblast"

(continued from page 2)

Sunday, August 4:

- 10 - 11 AM: Pancake Breakfast (O) (\$5/adult - \$3/under 12)
- 10:00 AM: Messier Marathon Winner Announced
- 11:00 AM: Model Rocket Launch (bring your own if you'd like to join the fun.)
- 9:00 PM: Dark Sky Observing

Sunday, Monday, Tuesday (August 4 - 6): The Observatory site will be open for viewing. Drinks and snacks will be made available. A \$3.00 per person overnight fee will be charged per night. For more information on "Astroblast" dial up astroblast@oras.org.

Good Public Turnout for "Summer Solstice Weekend" at CSC

by George Guzik

Ed Moss, Kyle McHenry, and myself had a good time June 22 doing solar observing as part of the "Summer Solstice Weekend" at the Carnegie Science Center. I would guess we probably had close to 100 people look through our telescopes during the time Kyle and I were there (10:30 am till about 3:00 PM). Ed stayed later than we did, and was also there on Friday.

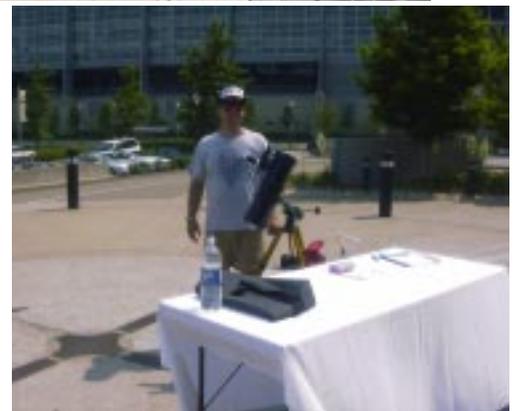
Dan Peden and I also participated in this event on Sunday and we had over 70 visitors. The seeing was actually quite good despite the haze and we observed a number of sunspot groups through filtered telescopes. One group was large enough to view through a #14 welder's filter.

As an extra treat, the air show at Pittsburgh International Airport provided some interesting flyovers. We observed a sizeable group of C-130s passing over in single file, a KC-135 on approach for landing, and a nice, fast pass by an F-117.

Thanks to Jean Philpott, David Williams, and Jenny Pon for organizing and assisting with the Solstice Weekend event!



Above (L-R):
Larry McHenry
Kyle McHenry
Ed Moss



Right:
Dan Peden

Tip of the Month

Members who get Sky & Telescope or Astronomy Magazines: When renewing your AAAP membership, please send the magazine subscription notice you received in the mail to the Treasurer along with your dues. Do not send anything directly to the magazines themselves.

Big Crowd, Big Scopes At This Year's Picnic

AAAP Picnic 2002 turned out to be a kind of "Mini-LHSC" with one of the best turn-outs (75-80) in recent years, plus a comparable turn-out of large and diverse telescopes at the Wagman site that evening. Food and drink flowed well and we staged our famous synchronized softball/frisbee toss event: both events at the same time and place, without any collisions!

At the Wagman site members could choose among four of the club's largest (?*) scopes for their celestial viewing: Bernie Kreiger's 30", the 20" Manka Telescope, the Brashear 11" Refractor and Nick Martch's new 10" refractor. The only monster instrument not present was Bob Kepple's 22 inch reflector.

(*Editor's note: If any members own scopes with apertures in the top five listed here, please let him know: emfischer@switch.com.) Thanks to all involved for making this year's picnic a jolly-good event.



Photo by Rich Bailey

Persistence Pays Off for "Horizons" Star Party Crew

by Bob Mickey (from AAAP Listserver)

The Penn Trafford "Horizons" and Franklin "Discovery" summer programs crossed paths on June 20. Due to successive rain outs for Horizons on Monday, and Discovery on Tuesday, Bob Florida, Erik Bauer, and I decided to combine the two groups at Bushy Run Battlefield on that Thursday. We would like to thank George Guzik, Don Hoecker, and Maryanne Mickey for helping out with additional telescopes for the evening. Also, I need to thank my kids, John and Annamarie for their assistance directing the families and keeping the locals out of the Park. We had

around 24 families attend. Although conditions were not the best, we were able to show a very interested crowd some of the wonders of the sky. It was quite a pleasant evening with one of the more inquisitive crowds I have seen in the last few years. Again, thanks to Bob, George, Erik, and Maryanne for their fine expertise.



June and July Border's Talks Well Given and Received

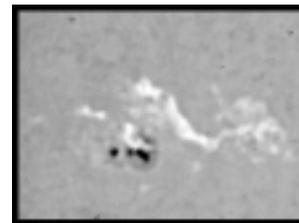
by Wayne Gondella (from AAAP Listserver)

On June 15, Erik Bauer gave a very good presentation at Borders Book Store on the topic of getting started in Astronomy and choosing a telescope. He drove all the way out from Greensburg to do this, and we are grateful to him for his time and efforts. Unfortunately, it rained most of the evening so there was no chance for any stargazing. However this allowed us time to have a very good meeting with lots of good people. Aside from the public, the following members were also in attendance:

- | | | |
|----------------|-----------------|--------------------|
| Sue Coholic | Kathy Bursley | Lana Zalakar |
| Wayne Gondella | Becky Nichols | Dan Peden |
| Dan Spano | Dave Teierle | Mike Ferrer |
| Mark Arelt | Ken Sacks | Shawn van Mastrigt |
| Jim Bursley | Becky Valentine | Jan Greenberg |

Thanks to an unusually heavy turnout by members and public alike, it was "standing room only" on July 13 at Borders Books for Larry McHenry's very interesting and informative talk on applying video technology to telescope imaging. We had people filing in before I even arrived, which was 40 minutes before the start of the program. I think even some passer-bys in the store gravitated (it was a very "heavy" speech ;-) into Larry's talk!

Larry gave a well-orchestrated digital presentation combined with an array of personal hardware he brought from home, including several home-built cameras, commercial cameras, monitors, and other support hardware. Larry went over the various processing software and methods by which one can generate final images which exceed in detail even that which can be seen visually in the eyepiece, as well as guidelines on how to choose or make cameras, match equipment, and other related things. Each step of the way, he showed images demonstrating the equipment in use and even before and after images showing the results of his various techniques. Topics included Solar (white light and Hydrogen-Alpha), Lunar, Planetary, Stellar and even Deep Sky Imaging! Kudos to Larry for making such an all-out effort! Luckily, he had as assistant, his son Kyle to aide in getting all of this stuff brought safely in and out of the store.



My thanks again to Larry for his presentation, to Jack and Janet Greenberg for making all of this possible through their arrangements and getting the word out to the public, and to the rest of the members who attended, including:

- | | | |
|----------------|----------------|----------------|
| David Spano | Kyle McHenry | Mark Arelt |
| Dan Spano | Rich Yanke | Nick Martch |
| Larry McHenry | Susie Yanke | Colleen Martch |
| Wayne Gondella | David Burton | David Burkhard |
| Jonathan Neu | Jan Greenberg | James Bursley |
| Mike Meteney | Jack Greenberg | Kathy Bursley |
| Becky Nichols | Mike Ferrar | |

South Hills Observatory Site Update Reports

by Wayne Gondella (from AAAP Listserver)

Report #1 - The ongoing efforts to secure a site for a South Hills Observatory for the club are centering around a particular site in Mingo Creek Park. The location is the highest point in the park with an ideal horizon nearly all around except to the north, where a little is obscured, but that is towards Pittsburgh anyway. One can see as far as 10 miles or more in some spots. The site offers excellent parking and a nice field for telescope users, along with other amenities. It is accessible only through locked gates. We have a key to gain access now and will be going there at night for several "night evaluations".

The photo below is a panorama looking in the southerly direction, with the gibbous Moon high overhead from the spot the observatory would be built. I have tentatively planned for a 16 inch equatorial Goto Cassegrain telescope to be installed, pending approval, and maybe a quality Apochromat. Shortly after our night visits begin, we will begin serious dialog face-to-face with the Park and Washington County authorities, who are very much enamored by the prospect of this public observatory as well.

Report #2 - My Thanks to Larry McHenry, Dave Smith, John Holtz, Ed Moss, Dave Teierle, Dan McKeel, Mike Meteney, Dan Spano, Becky Nichols, Shawn van Mastrigt, Jim Platania and Dick Haddad for attending our debut meeting July 12 at the proposed Observatory site. We were unanimous as to the viability of the Mingo Park location as well as the quality of the skies. We will now be moving to investigate possible instruments and other paraphernalia for the location and soon meet with the Authorities. (If I missed anybody or misspelled your name, my apologies.)

We got a lot of feedback on different ways to handle various issues with the location. It will be interesting to see how these things prove resolved in the coming months!

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

2001-2002 Officers:

President:	Larry McHenry	412-884-4924
Vice President:	Terry Trees	724-337-3231
Treasurer:	John Holtz	724-352-7596
Corresponding Sec:	Alison Conte	412-741-3216
Recording Sec:	Dennis Derda	724-224-4688
Membership Sec:	Brent Hudock	724-437-5990
Guide Star Editors:	Eric Fischer (news)	412-487-7011

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Bob Kepple (724-295-4128)	Dave Smith (412-390-0870)
Ed Moss (412-734-0255)	Flacus Stifel** (412-486-8067)
Bob Novack (724-538-4242)	Bill Yorkshire (412-793-9552)
John Radzilowicz (412-388-1562)	

*Wagman Observatory Director, **Associate Directors

Group Scheduling Coordinator:

Paula Meddings (724-745-2447)

AAAP Homepage: 3ap.org

AAAP Webmaster: Kenn Lippert (lippert@nauticom.net)

Guide Star Associate Editors

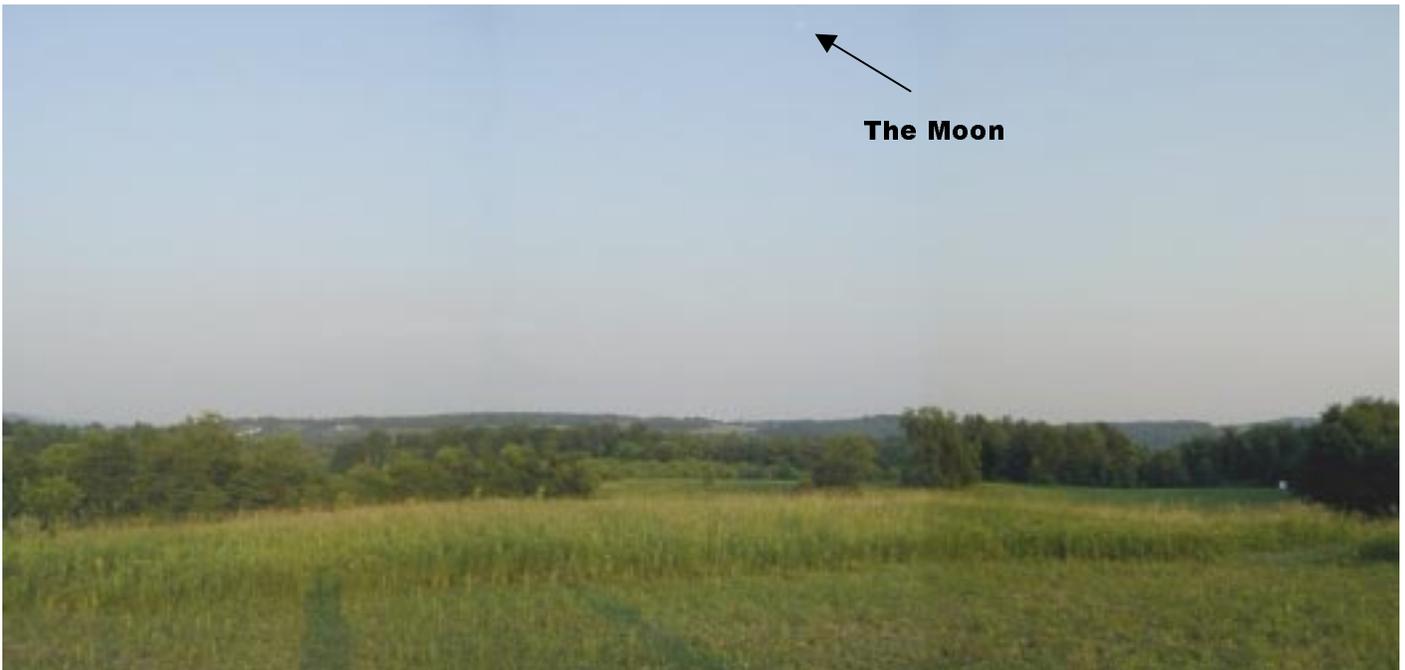
Ann Norman (412-242-6806) Cathy Rivi (412-782-4605)

AAAP Member Dues***:

AAAP Dues:	\$18.00
Junior Member (under 18):	\$13.00
Sky & Telescope Magazine:	Add \$30.00
Astronomy Magazine:	Add \$29.00

***Basic Procedure for Paying Dues:

1. Make check payable to "AAAP Inc."
2. Send check to John Holtz, Treasurer, 176 Hidden Hill Rd, Sarver, PA 16055-8907



The News Never Sleeps....

- Star Party Help Request – by Terry Trees (from AAAP Listserv): We've been requested to host another Star Party at Keystone State Park, in the beach area, on Saturday, **August 10**. If you are available, please contact me so I can tell them that we will be there.
 - Star Party Thanks – by Tom Reiland (from AAAP Listserv): Thanks go out to Bill Roemer and Flaccus Stifel for helping Rick Maue and myself with the group of 25 children and four chaperones from the Frick Nature Center at Wagman Observatory on July 18. Unfortunately, the clouds prevented any viewing, but at least it wasn't storming. There was one bit of sad news according to one of the young girls in the group; we only have ten years left until we destroy the Earth with all of our pollution. There go my plans for the solar eclipse in 2017.
 - "Best wishes" go out to the too many AAAP members who have been recovering from medical complications in recent months. For example, Jack Greenberg is now recuperating from surgery on June 13, Roy Lahet is well on his way to a full recovery from traffic accident injuries sustained while driving back from LHSC, and Bill Yorkshire is slowly regaining full leg strength after knee surgery. We need all hands on deck for a busy fall schedule of meetings and star parties.
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- Check out page 59 of the September Sky & Telescope magazine, where you will see member Phil Breidenbach helping explain modern optical production equipment to members of the Antique Telescope Society.
 - Another publication to check out is the latest greater Pittsburgh edition of the Rand-McNally Road Atlas. Finally, the localized map pages for northeastern Allegheny County show a little red square marked "WAGMAN OBSERVATORY" in Deer Lakes Park. As far as we know, this is the first time the observatory has been marked on an official road map.
 - We have a inquiry from Pat Hutchison (who works for Marshall Township) requesting help with an evening of casual star gazing this Fall. The event would presumably be staged in the township's community park. Interested AAAP members in that neck of the woods should call Ms. Hutchison at 724-935-3090. Let us know if you attend.
 - An astronomically-oriented teacher training program is being offered by the University of Pittsburgh the week of **August 12**. The program is being conducted by Yvette Blair and Dr. David Turnshek. It will be held at Allegheny Observatory and will focus on Starry Night software as a teaching tool, CLEA software (available on the web through Gettysburg College), and telescopes and CCD cameras to take real data. AAAP members interested in attending or helping should contact Ms. Blair at yvb1+@pitt.edu.
 - Late item: ThePA Dept. of Environmental resources (DEP) has initially denied approval for the commercial development of the Deer Creek south of the Wagman site, pending changes to the developer's plans. The development threatens to create more light pollution in the that area.

Semi-Annual Fiscal Report

by John Holtz, Treasurer

Below is a brief report of our fiscal status for the first half of 2002. This does not include material donations (such as photocopies and equipment). A detailed report for 2002 is scheduled for the February 2003 Guide Star, but if you have any questions now, please contact me.

INFLOWS

50/50 Raffles.....	\$142.50
Donations.....	\$2,265.10
Interest.....	\$464.81
Wagman keyfee.....	\$380.00
Membership.....	\$8,102.95
Overpayment.....	\$498.00
Sales.....	\$824.00
Star Cruise.....	\$12,449.75
Stock Dividends.....	\$232.18
Wagman Fund.....	\$500.00
TOTAL INFLOWS.....	\$25,859.29

OUTFLOWS

Astro kids.....	\$35.00
Awards.....	\$220.27
Banking Fees.....	\$32.60
Guide Star.....	\$1,508.53
Mail.....	\$322.50
Meetings.....	\$458.17
Membership IDA.....	\$200.00
Merchandise.....	\$1,798.12
Wagman Observatory.....	\$413.98
Officer Expenses.....	\$176.70
Promotion.....	\$143.49
Refunds.....	\$498.00
Stamps.....	\$133.95
Star Party: NEWO.....	\$802.38
Star Party: StarCruise.....	\$10,217.85
Subscriptions.....	\$3,714.39
Tax.....	\$350.00
Trailer.....	\$3,039.47
Utility.....	\$911.58
TOTAL OUTFLOWS.....	\$24,976.98

OVERALL GAIN.....\$882.31

Members for Five Solar Revolutions

Congratulations is extended to these members for reaching their 5-year membership anniversaries in the AAAP:

Rosemary A. Barringer	Andrew Potter
Frank Pastin	Alan P. Skwarla

Late Note On Perseids

In case anyone asks, we do not have a special public star party scheduled for the Perseid Meteor shower (Aug. 11-12) at the Wagman site. However, members and their guests are welcome to park themselves there for the shower. Reminder: The last member leaving MUST ask any remaining visitors to park across the road; then he/she MUST lock the gate.



AUGUST, 2002

Fridge Calendar

by Cathy Rivt

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
This month's Full Moon: "Making Fat Moon" (Dakota Indian)				1 	2 "Dark Sky" Star Party at Wagman --- ORAS "Astroblast"	3 "Dark Sky" Star Party at Wagman --- ORAS "Astroblast"
4 --- ORAS "Astroblast"	5 --- ORAS "Astroblast"	6 --- ORAS "Astroblast"	7	8 	9	10 Star Parties: Keystone State Park & AAAP Border's Lecture/South Park
11	12	13	14 	15 	16 Wagman Star Party	17 Wagman Star Party --- New Members Reception (Wagman)
18	19 	20 J. Holtz Astronomy Class (Wagman)	21	22 	23	24
25	26	27 J. Holtz Astronomy Class (Wagman)	28	29	30 	31

Looking ahead: Sept. 14 Wagman Star Party Sept. 27, 28 (Moonrise Specials) "To persons standing alone on a hill during a clear midnight such as this, the roll of a world eastward is almost a palpable movement." Far From the Madding Crowd, Thomas Harding, 1840 - 1928	<p style="text-align: center;"><u>AAAP Long-Range Meeting Schedule</u></p> Sept. 20, 2002 Oct. 18, 2002 Nov. 15, 2002 Dec. 13, 2002
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Opinions Collide over Asteroid 2002MN's Swing Past Earth

(adapted from a discussion on the AAAP (stserver))

On June 14th an asteroid 50 to 120 meters wide flew past the Earth unnoticed. It missed our planet by just 75,000 miles (that's closer than the moon) and was only discovered three days *after* the fly-by.

TERRY TREES: Fear not. I know from a reputable Hollywood source that all we have to do is find a half-dozen oil well drillers, toss them into the Shuttle and an hour or so later, voila, the Earth is saved.

PAULA MEDDINGS: Contrary to everyone's belief, there IS a plan in the works. I know - I have the inside advantage.

TERRY TREES: A few odds and ends regarding asteroid/comet impacts.:

1. There are no records of humans ever being killed by meteorite falls, but animals have been killed by them. The closest to us being a horse near Weirton, West Virginia, 100 years ago or so.
2. The odds of your being killed by an asteroid/comet impact are GREATER than the odds of your being killed in an airplane crash.
3. If the Tunguska object [which demolished unpopulated forest in Siberia in 1908] had been on its exact same course, but arrived approximately 2 hours later, the city of St. Petersburg would have been flattened.
4. Why express the passing of Near Earth Objects (NEOs) in meaningless units such as miles? While an object's being only 1/3 the distance to the moon is close in comparison to an A. U. (astronomical unit), it is certainly a distance we do not routinely reach with manned missions. I think the approach of these objects should be examined in terms of time, as in #3. We missed getting hit by 3 hours, etc. Of course, that object, on that trajectory, might never have gotten closer, regardless of when it or the Earth reached given points on their orbits.
5. Finally, I personally think cosmology produces interesting, but useless, information. For the next few years we ought to divert all money being spent on cosmology to the discovery and tracking of NEOs (until we truly have a handle on this issue). If it wasn't for LINEAR, we'd really be in the dark.

VERN COX: These are among some of the best suggestions that I have heard on the subject. We can learn how to make a universe later :)

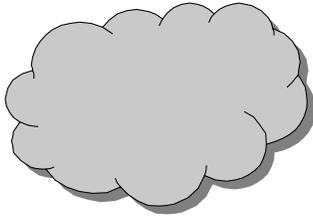
ROBERT PRESTON: Actually the collision of two objects in solar orbit is a four dimensional problem. Thinking of the phenomenon in terms of only one time dimension or one spatial dimension is convenient, but it's slightly misleading.

Regarding the potential flattening of St. Petersburg, a two-hour difference in the time of arrival of the Tunguska object requires that its orbit be slightly different. When I made the calculations with the new orbital parameters, I found that they put the Tunguska object smack-dab on the North Equatorial Belt of Jupiter, and at a time 2 billion years in the past. Jupiter has always looked out for its less massive brethren so I wasn't surprised by these results. (Alternatively, changing the orbit of Earth 2 hours to arrange a Tunguska-St. Petersburg collision perturbed the asteroid's orbit on its close approach to Earth 1.2 billion years ago and gravity-boosted it out of the solar system.)

Cosmology is a frontier that can't help but lead to new knowledge, while NEO stuff is basically pork-barrel technology that keeps quite a few engineers and a handful of misguided astronomers off welfare and mollifies an uninformed public. The research may have some useful spin-offs, so I guess it's good to throw a few dollars at it. And they might even hit the lottery and find that one-in-a-billion really dangerous NEO, too. So hey, let's let 'em have a few tickets.

VERN COX: Have those who think this is not something to worry about considered that, if we do get hit, millions could die? That our entire civilization could be destroyed? Seems like awful high stakes to gamble with. When someone says its not a matter of if, but when, I want to act now! If the Tunguska object had exploded over the eastern United States we would not be having this discussion. Either we would not exist, as our ancestors would have been obliterated, or protecting the planet would seem like common sense after the tremendous loss of life.

Chance favors the prepared.



Weatherman Bloopers: What's Wrong with This Picture?

(Items from the AAAP listserv)

- ☛ A women telecasting from Idlewild Park encouraged everyone to get out and see the "full new moon" later in the evening!
- ☛ Several years ago a local "news reader" announced, "It's the week of the full moon; we will have a full moon every night this week."
- ☛ The sharing of funny weather-report bloopers was sparked by this particularly shocking example: a local weatherperson explained that lightning is caused by negative electrons coming down while positive electrons are going up. Wouldn't this qualify as a matter/anti-matter reaction?

Classifieds

FOR SALE: 4-inch F-10 Celestron refractor with many extras; full aperture solar filter, extension pier, 9X50 finder, clock drive, 2 eyepieces, mirror star diagonal, erect image star diagonal. Over \$1000 invested. \$625.00. Contact Robert Yajko: 724-842-8202, yaj@mymailstation.com

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