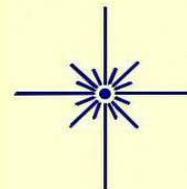




The Guide Star



Newsletter of the Amateur Astronomers Association of Pittsburgh Inc
Founded June 9, 1929 by Chester B. Roe and Leo J. Scanlon
Website: 3ap.org

November 2010

Volume 44, No. 11

AAAP General Meeting

Friday, November 12th 2010, 7:30 pm
Carnegie Science Center

2010 Kevin Brunelle Astrophotography Contest

Entries will be voted on at the November 12 meeting; the deadline for submissions is November 2.

Astrophotography combines the best of art and science, and the AAAP Photo Contest always produces a wonderful collection of images of astronomical objects and atmospheric phenomena. You don't have to be an expert to participate. We welcome photography at all levels, so show us your best work.

Due to the changes brought about by digital imaging, the contest committee decided to increase the focal length that defines two of the categories. We hope that this will encourage more people to take astronomical photos with just a camera and a tripod, without competing against those who take images through a telescope.

The atmospheric phenomena category is a great place to for anyone to enter! Capturing these images is often a matter of being in the right place at the right time, so keep that camera or cell phone handy.

How to Enter

Again this year, your coordinator of the contest is Mark Arelt. You can submit prints, digital images and slides. Look through your images from this past year and choose your best to compete for fame, honor and prizes. (See contest rules, below.)

As always, the contest will be held at the November AAAP meeting, which will be Friday, November 12 at the Carnegie Science Center. The deadline for entry submission is 10 days before the meeting, Tuesday, Nov. 2, 2010. Only images taken since the date of the previous contest deadline (November 4, 2009) are eligible.

Please submit your entries in one of the following ways:
Mail them to Mark Arelt at 2005 Pleasant St., Bethel Park, PA 15102

E-mail them to Mark Arelt at diapsida@earthlink.net

Please include your name, your telephone number, the category for each entry, and the titles of your images with your entries.

Digital images in standard formats (JPEG, GIF, TIFF) are easiest for us to work with.

If you have questions, call Mark Arelt, 412-835-6806,
diapsida@earthlink.net

Contest Rules

The contest is open to all active members of the AAAP.

The contest is held at the November meeting of the AAAP. Entries will be viewed and judged by all AAAP members present at this meeting.

All images entered must be originally captured by the contestant.
Entries are limited to images concerning areas of interest within the AAAP

Images may be submitted as 35mm transparencies or negatives, photographic prints, or as digital media (in formats accepted by the AAAP Photo Contest Committee).

Only images taken since the date of the previous contest deadline are eligible. Entries must be received by the contest coordinator no later than 10 days before the contest date.

No more than 5 entries per contestant per category are allowed for each contest.

Categories

- 1.) Astronomical images - taken with optics of focal length no greater than 300mm
- 2.) Astronomical images - taken with optics of focal length greater than 300mm
- 3.) Atmospheric Phenomena: This category is unchanged. This includes images of rainbows, sun dogs, glories, halos, aurora, solar pillars and arcs and such.

Judging

Entries will be judged for 1st, 2nd, and 3rd place in each category, with each voting member assigning points respectively (3, 2, and 1).

The entry with the highest total number of points in each category will be declared the winning entry, and will be eligible for prizes.

Entries that place 2nd and 3rd in total points in each category will be recognized by the AAAP.

- **Mark Arelt**

Upcoming in December

Friday, December 10th 2010, 7:30-ish at The Buffalo Inn in South Park

The AAAP Holiday Party

Save the date for the traditional highlight of the club's social calendar, which includes door prizes, service awards and the opportunity to meet other club members.

The Buffalo Inn (1472 Buffalo Drive) is located in South Park on Brownsville Road near the intersection with Corrigan Drive across the street from the Fairgrounds.

Adele Paslow has graciously offered to cater the meal, so we can hurry straight from work without having to worry about cooking. We still hope to have a pot luck spread of cookies and desserts (and if someone *insists* on bringing their favorite side dish, we sure won't turn it down!).

The evening's speaker will be Tom Reiland, past president of the AAAP and the director of Wagman Observatory. He's chosen the interesting topic, "How to Function Successfully at a Public or Private Star Party."

More information in December's Guide Star.

Comet 103P Hartley 2 & the Scare of 1910

For me, the appearance of a bright comet marks one of the high holidays of visual astronomy. From night to night, estimating its change in brightness, noting the shape and hue of its coma, the length of its tail, following its track against the stars is a joy because the opportunity is infrequent and mostly unpredictable. It's also a hands-on way to learn something about comet structure.

By now, Comet Hartley should be fading and darting south through Canis Minor and Monoceros on its way to a dim obscurity in Puppis in December. But before it's consigned to memory, what's the deal with one of its official names: Comet 103P Hartley 2.

The comet was named for Australian Malcolm Hartley who discovered it in 1986. Upon its return in 1991, it was recognized as a periodic comet, the 103rd, hence the 103P. Insofar as it was Hartley's second periodic comet discovery, it was qualified as Hartley 2.

Fascinating bedtime reading on comet designations can be found at:

<http://www.cfa.harvard.edu/iau/lists/CometResolution.html>

Consider yourself warned.

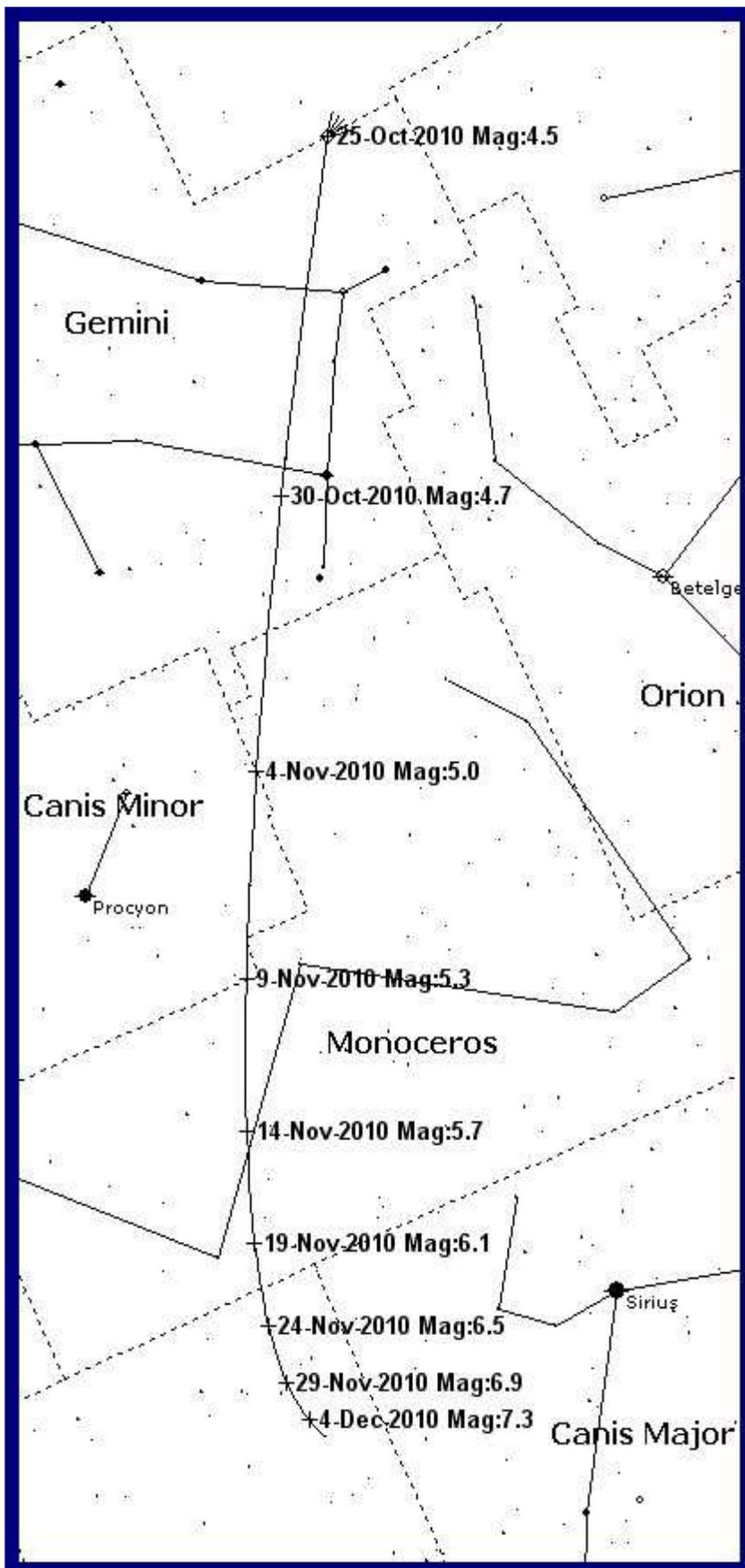
In early October, Comet Hartley 2 caught everyone's attention as it brightened to about magnitude 5 and tracked just south of the Double Cluster in Perseus.



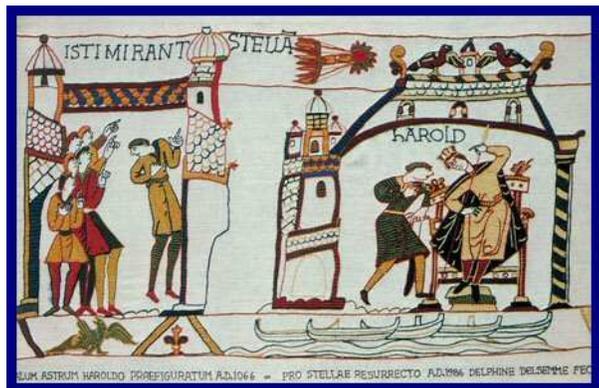
AAAP member John Pane caught Hartley 2 nearing the Double Cluster just after midnight on October 8th. He used a Canon 7D camera with a 200mm lens stopped down to f/4

Comet Hartley 2 also generated some online discussion because of its color. It is decidedly green. This was attributable to the presence of cyanogen, a gaseous compound related to cyanide found in a number of comets. And herein lies a bit of astronomical history.

Over the centuries, comets have left their imprint on our history, both high and low culture showing their effect. Carl Sagan thought that the use of the swastika as a religious and decorative motif in many cultures was an echo of a long forgotten comet with twisting multiple tails that was seen head-on by our ancestors



A famous section of the Bayeux Tapestry showing Comet Halley in 1066 illustrates the generally held belief in the malign significance of a comet appearance.



The Latin inscription says “They marvel at the Star” while King Harold is informed of the evil omen and the approaching Norman invasion fleet is seen below.

Kepler, standard bearer of the new planetary science that would shake the foundations of western cosmology, while considering astrology to be little more than superstition and stars to have no influence on daily life, made an exception for comets and novae. He observed they were historically linked to social and political turmoil and concluded they were God’s own heralds.

Even Isaac Newton, while showing that the course of comets could be calculated, “...did not strip away the religious, political and agricultural associations of comets”. (Sara Schechner)

The unexpected appearance of something majestic in the heavens may touch something deeply emotional within many observers, no matter how rationally grounded he or she may be.

Closer to our own time, the recovery of Comet Halley in 1910 was the occasion for some dismay. Its close approach - its tail would actually brush the Earth for about six hours - caused some alarm when Yerkes Observatory announced that cyanogen was detected in the spectrum of the comet. Camille Flammarion, the well known French astronomer and popular author made a dire prediction.

Here are excerpts from a New York Times article dated February 7, 1910:

“...Cyanogen is a very deadly poison, a grain of its potassium salt touched to the tongue being sufficient to cause instant death...”

“...The fact that cyanogen is present in the comet has been communicated to Camille Flammarion and many other astronomers and is causing much discussion as to the probable effect on the earth should it pass through the comet’s tail. Prof. Flammarion is of the opinion that the cyanogen gas would impregnate the atmosphere and possibly snuff out all life on the planet...”

“...Most astronomers do not agree with Flammarion...”

Ironically, one of the astronomers who kept a cool head was Percival Lowell of Martian canal infamy who argued that the near vacuum conditions present in a cometary tail meant that any danger was extremely unlikely.

As expected, fear turned a deaf ear to learned opinion. An Atlanta newspaper reported that safe rooms were built for protection from Halley. Keyholes were taped over and gas masks were sold. Most famously, a harmless mixture of quinine and sugar was passed off as comet pills. They apparently sold quite well. It’s possible that some of our grandparents used them.

Back to Comet Hartley 2....

Comet Hartley was diffused and its 4th to 5th magnitude translated to futility early on when trying to track it through Perseus in urban skies. There ought to be a pill for disappointed observers. Eventually Hartley brightened enough that it could be seen from the city with 10x70s when it was close to Almaz.

A readily available, informative and enjoyable introduction to comets is *Comet* by Carl Sagan and Anne Druyan.

Out of print, but really worth hunting down is Donald Yeomans almost encyclopedic *Comets: A Chronological History of Observation, Science, Myth and Folklore*

An appreciably deeper account of the impact that comets have had on society and science is *Comets, Popular Culture and the Birth of Modern Cosmology* by Sara Schechner. This book grew out of a doctoral thesis by the author who eventually became the curator of the extensive history of astronomy collection at Chicago’s Adler Planetarium.

- Guide Star Editor

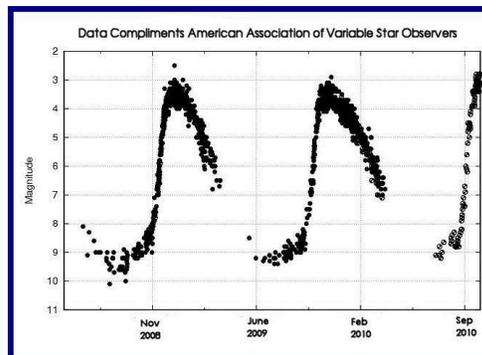
The Wonderful

Omicron Ceti or Mira, “the Wonderful” is usually acknowledged to be the first periodic variable star to be identified and is the prototype for the large class of M or Mira type variables which numbers about seven thousand and includes stars like the always entertaining chi Cygni and R Leonis, one of Leslie Peltier’s favorites.

Currently Mira is at the bright end of its 331 day cycle and at about 3rd magnitude. It often gets as bright as second magnitude and in 1779, it even reached first magnitude when it was said to actually resemble Aldebaran.

At its dimmest, it usually falls to about ninth but can go as low as tenth magnitude, still well within range of most optical aid.

If you’re familiar with Cetus, it’s obvious there’s a new star in the neighborhood.



Mira Light Curves. Two previous and its current cycle. Note a precipitous rise to maximum and a slow descent to minimum.

Mira’s variability was first noticed by David Fabricius, a friend of Tycho Brahe, as he attempted to fix the position of Mercury (or Jupiter) in reference to nearby stars in 1596. Its periodic variability over an eleven month cycle was discovered by his countryman Johann Holwarda in 1638, much too late to mention to Fabricius, a Lutheran minister, who was murdered by a peasant with a shovel in 1617 when from the apparent safety of the pulpit, Rev. Fabricius accused him of stealing a goose.



No, not another comet foretelling evil....

In summer 2007, NASA’s GALEX satellite caught Mira in the ultraviolet revealing a tail stretching 13 light years. Streaming from the star which moves at an especially high rate of speed, it’s thought to contain materials that form the building blocks for new stars and possibly planetary systems. It’s also known that Mira, a red giant, (now called Mira A) is accompanied by a companion, Mira B, a white dwarf - a reminder of what the larger star will eventually become.

- Guide Star Editor

Sun

Mon

Tue

Wed

Thu

Fri

Sat

	1	2	3	4	5	6
		Juno 0.7° S of our moon	Moon at perigee	Mercury at aphelion	S.Taurid Meteor Peak	
7 02:00 End Daylight Savings Time. Local Time now 5 hours earlier than UT. *			10 Mars 4° N of Antares	11	12 General Membership Meeting Carnegie Science Ctr. 19:30 — Brunelle Contest	13 
14	15 Mercury 2° N of Antares Moon at apogee	16 Jupiter 7° S of Moon Venus Stationary	17 Leonid Meteor Peak	18	19 Jupiter Stationary	20
21  Mercury 1.7° S of Mars Moon 1.3° S of Pleiades	22	23	24 Moon 0.8° S of M35	25	26	27
28 	29 Juno 0.5° S of our moon Moon at perigee	30	<p><i>All times given are local.</i> <i>Details for AAAP Events can be found at:</i> https://nightsky.jpl.nasa.gov/event-list.cfm? Club_ID=675&EventEra=Future</p> <p>* November 7 will see heightened levels of Jovian satellite events. See details on page 5.</p>			

Some Celestial Highlights This Month

November *Mercury* and *Mars* are low in the southwest in the early evening all month. *Venus* and *Saturn* are in Virgo and remain early morning objects throughout the month. *Jupiter*, *Uranus* and *Neptune* are well placed for prime-time observation.

Leonid Meteor Shower is active November 10 to 23. The International Meteor Organization predicts a diminished Zenith Hourly Rate of only 15 to 20 meteors per hour with maximum occurring on 17 November at 16:15 local time.

For those using programs to predict GRS transits, *Jupiter's System II* longitude is 154°.

Selenographic Colongitude is 189.94° at 0h UT at beginning of the month. Add 12.2° each day.

(All times below are local)

- | | |
|----|--|
| 6 | 18:24 <i>GRS</i> transits Central Meridian
23:53 <i>Ganymede</i> transit begins |
| 7 | 00:47 Europa transit begins
01:24 <i>Io</i> disappears into occultation
02:00 Daylight Savings Time Ends
01:52 Europa shadow transit begins |
| | <i>At this point, a shadow and two satellite transits are in progress</i> |
| | 01:55 Ganymede transit ends
02:31 Europa transit ends |
| 10 | Leonid Meteor activity begins. |
| 17 | 16:15 Leonid maximum (during local daylight)
17:46 <i>Europa</i> shadow transit begins
18:09 <i>Europa</i> transit ends
18:34 <i>Io</i> reappears from eclipse
19:15 <i>Ganymede</i> reappears from occultation
20:29 <i>Europa</i> shadow transit ends
21:06 <i>Ganymede</i> disappears into eclipse
21:28 <i>GRS</i> transits Central Meridian |
| 18 | 00:01 <i>Ganymede</i> reappears from eclipse |
| 24 | 17:00 <i>Io</i> disappears into occultation
17:51 <i>Europa</i> transit begins
19:56 <i>Ganymede</i> disappears into occultation
20:23 <i>Europa</i> shadow transit begins
20:29 <i>Io</i> reappears from eclipse
20:37 <i>Europa</i> transit ends
22:16 <i>GRS</i> transits Central Meridian
23:02 <i>Ganymede</i> reappears from occultation
23:05 <i>Europa</i> shadow transit Ends |
| 25 | 01:09 <i>Ganymede</i> disappears into eclipse |

November's Leonid Meteors

The shower will be active from November 10th to the 23rd with date of greatest activity November 17th. The International Meteor Organization has published two different predicted times on the 17th for expected maximums: 15:00 UT or 10:00 locally and 21h15m UT or 16:15 locally.

Obviously Pittsburgh is not favored as both maxima occur during our daylight hours and the Leonid radiant, located within Leo's sickle only clears the eastern horizon around local midnight.

Both the International Meteor Organization and the American Meteor Organization predict Zenith Hourly Rates (ZHR or the "average maximum number of shower meteors visible per hour if the radiant is located exactly overhead and the limiting magnitude equals 6.5") at only 15 to 20.

Bottom line, the best time for watching seems to be in the very early morning hours of the 17th. The 11 day-old gibbous moon will set at 03:06 when the radiant will have attained an altitude of about 42° in the east. Sunrise will be at 07:08.

- Guide Star Editor



A Welcome to Our New Members

Ann Campbell
Saul Franco
Russell Kowalik & Family

Guide Star Submissions

All AAAP members are encouraged to submit items to the club newsletter.

Articles, images, advertisements, observations, notices, book and software reviews...all are welcome.

Please remember, if a submission is time-sensitive and needs to be included in the coming issue, forward it as early as possible, but definitely before the 20th of the prior month.

Send submissions or questions to:

gseditor@3ap.org

Membership Renewals

It is time again to renew your memberships for 2011.

Attached is a renewal form that has two parts. The first part is your personal information that we need to make sure our database is up to date and accurate. The second part is the billing information. Please fill in both parts of the form completely.

The basic membership is still \$24.00. We also have a student membership for \$16.00. This is for any K-12 and full-time college student. We also have a family membership (\$40.00) that includes anyone living in the same household. The family membership need only include the basic primary members contact information and then list the remaining family members names. All correspondence, Guide Star, and mailings will be sent to the family members through the primary member's contact information. This will reduce printing and mailing costs and redundancy.

A reminder, the AAAP no longer processes Sky & Telescope subscriptions. If you want S&T magazine for the first time, use the enclosed form to get your club subscription rate. If you are a current subscriber, use your renewal notice you receive from S&T. It should have the \$32.95 club rate on the renewal notice. There have been some Sky and Telescope subscription renewal invoices that did not have the club rate on them. This is what happens when companies out-source services.

Send new and renewal subscriptions for S&T magazine directly to SKY PUBLISHING! Do not mail them to us.

Subscriptions to Astronomy magazine are still handled through the club. Please send these in ASAP so there is no lapse in your subscription. The lead-time on magazines is three months.

Current building key holders need to pay their key fees at this time. To get a building key for the first time, you must first be trained by an observatory director.

If you have any questions, you can contact Michael Meteney, treasurer, or Don Hoecker, membership secretary. Thank you.

AAAP Membership Renewal Form – 2011

Please fill in this single form for anyone in your household who wishes to be a member of the AAAP. We are now offering adult, student, and family memberships. All family members must share the same residence. Student memberships have now replaced junior memberships. To be a student member, you must be a K -12 or fulltime college student.

As in the past, you may receive a discounted subscription to *Astronomy Magazine* through the AAAP. The subscription must be included with your membership dues payment.

There is a separate form to receive a discount subscription to *Sky and Telescope Magazine*. This is to be sent directly to Sky Publishing. **Do not send any *Sky and Telescope* subscriptions to the AAAP!**

Completely fill in the following information on this form (please print):

Name _____

Address _____

City _____ State _____ Zip _____ - _____

Phone (home) _____ (Work) _____

E-mail _____

How do you want your "Guide Star" Delivered? Online (____) Snail Mail (____)

Optional: Do you have a telescope(s) or other special equipment you would like listed under your name in our membership directory? If so, please describe them below.

Additional Family Members:

Name _____ Relationship _____

(over)

AAAP Membership Renewal Form – 2011

ITEM	PRICE	ENCLOSED PAYMENT
AAAP Adult Membership (Jan. 1 to Dec. 31 2009)	\$24.00	
AAAP Student Membership (Covers all students K -12 and <u>fulltime</u> college students).	\$16.00	
Family Membership - This membership covers the adult membership and all family members that live with the adult member. Please list all family members to be included on the attached form.	\$40.00	
“Astronomy” Subscription (12 issues per year) Both new and renewals are processed through the AAAP. Do not renew your subscription directly with Astronomy Magazine. You won't get your discount.	US. \$34.00 Can \$40.25 Int. \$50.00	
Key Fee - Only current key holders! Check appropriate observatory: Mingo ___ Wagman ___	\$15.00 each	
Tax Deductible Donation	----	
TOTAL PAYMENT	----	

It is very important that all payments be received by **12/15/2010** so that magazine subscriptions can be processed in a timely manner.

Prices are subject to change without notice. Payments must accompany this application.

Make checks payable to: **AAAP, Inc.**

Send this form with payments to:

Michael Meteney – Treasurer, AAAP
1070 Sugar Run Road
Venetia, PA 15367

Membership questions?

E-mail: MembershipSecretary@3ap.org

Phone: 412-243-8298

Billing questions?

E-mail: Treasurer@3ap.org

Phone: 724-348-9087

Astronomy Club Subscription Form

Sky Publishing Corp. P.O. Box 171 Winterset, IA 50273

CLUB NUMBER: 270		
CLUB NAME Amateur Astronomers Association of Pittsburgh		Sky & Telescope (S&T)
TREASURER'S NAME Mike Meteney - Treasurer	Date	(1 year/12 issues) Club Rate
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Membership Sec: Don Hoecker
membershipsecreary@3ap.org
Guide Star Editor: John Cheng
gseditor@3ap.org

AAAP Member Dues: \$24.00

Student Membership
(K-12 & full time
college student): \$16.00

Family Membership \$40.00

Basic Procedure for Paying Dues:

1. Make check payable to "AAAP Inc."
2. Send check to:

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Attention: Membership Renewal Forms Enclosed

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