

The Bulletin – The monthly publication of the Indiana Astronomical Society

June, 2007
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The Bulletin



**The June General Meeting, June 9, 2007 7:00 PM Link Observatory
Auditorium**

**Test of Newton's Second Law for Small Accelerations
Brian Woodahl**

Abstract: We have tested the proportionality of force and acceleration in Newton's second law, $F=ma$, in the limit of small forces and accelerations. Our tests reach well below the acceleration scales relevant to understanding several current astrophysical puzzles such as the flatness of galactic rotation curves, the Pioneer anomaly, and the Hubble acceleration.

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CURRENT RESEARCH AREAS

Laboratory tests of violations of Newton's second law for masses undergoing small accelerations. Modified Newtonian Mechanics (MOND) applied to laboratory systems. Closed-timelike-curves, and causality violations of Einstein's field equations. Computational mathematics using Mathematica.

PREVIOUS RESEARCH

Quantum field theory: higher-order self-energy of neutron star arising from neutrino exchange, Fermi's golden rule for decay processes near threshold, neutrino masses, many-body theory, time-dependent perturbation theory, finite temperature field theory for chiral interactions, non-perturbative vacuum energy of weak field, higher-order Feynman diagrams, vacuum polarization of weak field, neutrino-exchange forces. Condensed matter physics: energy of neutrino condensate, chiral potentials and neutrino trapping.

Major Professor Clayton Crowe.
EDUCATION Doctor of Philosophy in Theoretical Physics, May 1999, Purdue University, West Lafayette, Indiana.
Master of Science in Mechanical Engineering, August 1993, Washington

State University, Pullman, Washington.
Bachelor of Science in Electrical Engineering, May 1987, Washington State
University, Pullman, Washington.

The Texas Star Party – Almost a Washout

Carolyn and Terry Steadham and I left for the party on the 9th of May. Carolyn and I are still on the road and are scheduled to return to Indy May 16. We met up with friends in Texarkana where Terry was to drive to the party with a friend. After a beautiful two days we arrived at Ft. Davis and checked into the park. The night was gorgeous and a few people had scopes up. Some people actually stay at the state park which is about 3 miles from the Prude Ranch where the party is held. I did not set up knowing that we generally get a great set of nights at the ranch. Boy! That was a mistake. Any way we checked in on Sunday and got all set up. Met up with old friends and met some new ones. Sunday night was one of those fantastic Prude ranch nights. Had my usual brisket burrito with salsa and guacamole about 1 a.m. and continued to observe and click off my lists. Chris Dietz was there doing imaging and Rick Rashman was there with the new 30” obsession. If you want to see fantastic objects look at the Virgo and Coma clusters with a big scope. Then all heck broke loose. Monday we had a little observing. Tuesday we had rain and mist. Wednesday we had fog and clouds. Thursday we had clouds. Many people began to pack up and go home. Friday was clear and we got in a good night. I went to bed at 5am. Saturday night was extremely wet and soggy as we had a thunderstorm and hail in the afternoon. You have to watch those west Texas storms as they have a lot of hard stuff in them. Scope is ok though.

Carolyn got into bird watching and the wild flowers and took several hikes. We did have great talks and Dave Kriege demonstrated his new 18” lightweight Obsession. The whole thing will fit in your front seat except for the truss tubes and weighs about 60 pounds including the mirror. I think it is going to be a real winner. Gary Meyers is already figuring a way to put a Servo Cat on it. Uncle Al (Nagler) had his new 100 degree field 13mm eyepiece. It looked really cool. The Australian’s had some great programs on the night sky there. All in all it was a good week. We met a lot of people, had plenty of time to talk, and had great food. Just did not get in all the observing that I usually get. I whole-heartedly recommend this party. Facilities and food are great. Party next year is June 1st. I hope to see you there.

IU Astro e- Bulletin

The IU Astronomy Department has started a new electronic bulletin to let people know about local astronomy activities and events. If you would like to subscribe, send an email to astdept@indiana.edu and we'll put you on the distribution list. Information about activities and events to be included in the e-bulletin should be sent to catyp@astro.indiana.edu.

Should we join the Astronomical League?

The Board of Directors of the Indiana Astronomical Society desires your opinion as to whether the IAS will become a Member of the Astronomical League. Please read carefully and provide an answer, as implementation of Membership will involve a \$5.00 or \$7.50 dues increase.

The Astronomical League is a Federation of Astronomical Societies. It's purpose is to:

- * To promote the science of astronomy;
- * By fostering astronomical education;

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- * By providing incentives for astronomical observation and research
- * By assisting communication among amateur astronomical societies.

OK, so what does this do for me?

The AL provides the following material to each member of Member Societies.

- A three ring BINDER filled with astronomically related reference material (more later)
- A Guide to the Messier Objects
- Subscription to *The Reflector*, a quarterly magazine
- Awards of Observing Certificates and Recognition Pins
- Voting Privileges
- National and Regional Conventions
- 10% discount on Astronomy related books.

THE BINDER contains the following material

- * Astro Notes
 - Astronomical League Services and Benefits for members
 - Field Instructions of a technical nature such as:
 - Polar Alignment, Use of Setting Circles, Purchasing a Telescope
 - Reporting a Discovery, Basic Astro Data, Astrophotography, and more
 - Forms for recording your observing
 - Pronunciation Guides
 - Club related organizational material
- * Observing Programs - you receive certificates and pins for completion of the following observation lists:
 - Messier Objects, Binocular Messier, Caldwell Objects, Herschel 400,
 - Deep Sky & Deep Sky Binocular, Comet & Meteor, Lunar & Sun Spotter
 - Planetary Observer, and others.

This is a lot of material, support and award opportunities for each member of the Society for \$5.00 per year.

WHAT DO YOU SAY?

Please respond with a YES or NO and WHY you are for or against.

The Board needs your input. Send your input to Jeff Patterson at KB9SRB@Hotmail.com or Bill Conner at wmconner@sbcglobal.net

If you join as an individual it costs \$30 per year but as a club we are assessed according to our membership. Until recently the charge was \$5.00 per member. They have changed that rule recently and partial memberships (95%) can be used and we are assessed \$7.50 per member. In the past we have not joined due to the large number of members. Our budget has no slack and if we decide to do this then it will mean an increase in our annual dues for the amount to cover the AL assessment. So far we have canvassed the membership and the count is (for 66 responses) 64 yes to join, 1 no and 1 abstain.

I think this is something we should do. Virtually every Society in Indiana is a member and I feel we should be as well.

The Pres

The Kirkwood Observatory

IU's Kirkwood Observatory Open for 2007

IU's historic Kirkwood Observatory has reopened for the 2007 season. The Observatory houses a 12" refractor built by Warner & Swasey in 1901. The f/15 doublet objective lens, designed for work on visual binaries, was made by John Brashear and produces excellent images when the seeing is good. The Observatory was renovated in 2001 and restored to its original condition, including a massive wooden dome. William Kopp, a machinist in the IU Astronomy Department, refurbished the telescope itself. More information about the Observatory is available on the Web at http://www.astro.indiana.edu/kirk_sch.shtml.

The Observatory is open each clear Wednesday night from now through mid-November. The hours are posted on the Web at http://www.astro.indiana.edu/kirk_sch.shtml, and a new "hotline" is available with current information about weather conditions. Call 812 855-7736 to find out if the Observatory will be open before driving to Bloomington.

The Observatory is located in Dunn's Woods, near the southwest corner of the IU campus in Bloomington. A campus map is available on the web at <http://www.iub.edu/~iubmap/>. Parking is available after 5 PM in the IU lot at the southwest corner of Indiana Ave. and 4th Street.

New Moon Observing and Public Event at McCloud June 15

Our next New Moon event is at McCloud on June 15. This is also a public event so we need to have scopes available for them to look through. Careful about parking. There is limited parking due to the construction. Since the ground may still be saturated I suggest bringing small portable equipment and string out along the road to the maintenance building. Come out and enjoy the Indiana night skies.

The Pres

Space Exhibit at the State Museum June 23 – Summer Solstice Event

The next event is going to be Summer Solstice and we will be doing solar observing as well as chatting with the public. Later in the year we will have a star party. We will need many volunteers.

Gerald Venne gvenne@iquest.net is looking for people who can volunteer an hour to help us with our next event in June. Send an e-mail to Gerald if you can help.

NAG June 23 7:30 PM at Link

The next monthly meeting of the Indiana Astronomical Society's New Astronomers Group for 2007 will be held on June 23 at Goethe Link Observatory starting at 7:30 pm. Weather permitting there will be an observing session using IAS member's telescopes and binoculars following the meeting. *Note that we have changed the night to the Saturday closest to the 1st Quarter Moon and the start time is still 7:30.*

THE NAG MEETING WILL BE HELD - RAIN OR SHINE.

Discussion topics for this month:

- Observing the Late May/Early June Evening Sky
 - The Spring Pointer Stars
 - Dabbling in the Dippers
 - Our Solar System
 - The May/June Deep Sky
 - M3 – A Globular Cluster
 - M53 – A Globular Cluster
 - M64 – The Black Eye Galaxy
 - The Coma Berenices Star Cluster – Open Cluster
 - M51 – The Whirlpool Galaxy
- Planning an Observing Session
- A Beginners Introduction to the Telescope
- Question and answer session

The purpose and intent of the NAG is to introduce new astronomers to observing the night sky. All types of observing will be discussed including naked eye, binocular and telescope.

If the weather cooperates, following the meeting, IAS members will have telescopes set up and attendees will have an opportunity to view some of the night sky objects discussed during the meeting.

The night sky can be an intimidating place. With a little help everyone can enjoy the celestial beauty that we have all taken for granted our whole lives. From the constellations to the deep sky; with the naked eye or with a telescope, there is something for everyone to enjoy. There have been some changes at McCloud in that the hanger has been torn down and there really is no place to have the New Astronomers Group meetings. So, we have decided to move the meeting to Link each month with observing afterwards if the weather permits. We will continue to have New Moon Friday events at McCloud with public observing in the early evening. John and Vicki Switzer will be leading the events again this year. However we need members help providing scopes after the program for observing. Come on out and help open the door to someone to learn to love this hobby.

The dates for the NAG events are as follows:

June 23
July 21
August 18
Sept 22

Gadgets and Gizmos

This is a new section to discuss new equipment. If you see something or have a new gadget let me know and we will get an article about it.

For those of you who have large dobs sometimes you find that you have to lean over the scope a long way to see your telrad. Scope Stuff makes an extension that elevates your Telrad by putting a spacer between the base and the Telrad. It can be lifted up to 4 inches. I tried one on a 30" Dob the other day and had to have one on my 25. I think it could be used for other things as well.

Meet Our New Members

We have no new members to the Society this month.

Seek out new members out and see if you can help them out.

The Society wants to welcome each of you and if you have any questions do not hesitate to ask.

The Pres

Mentor Program

We are reinstating the mentor program which will provide the new member with lots of information and help them assimilate into the Society. Thad Hatchett has volunteered to lead this program. We need your help. If you are interested in becoming a mentor please contact me at Jeff Patterson KB9SRB@hotmail.com or Thad Hatchett at astronomynut@sbcglobal.net. We will put your name on the list and assign a new person to you. Our goal is to retain people and make this hobby a lot more fun.

Upcoming Star Parties and Registrations

Heart of America is coming up. This is a premier site and not that far away. Get your registrations in.

Heart of America Star Party MO June 12 – 17, 2007

<http://www.askconline.org/index.htm>

Wolford/Mitchell Star Party - July 13-14 Dates --- We are planning on the new moon weekend in July. That would be Friday, and Saturday nights, July 13th and 14th. I have had one couple ask if adding Thursday night would be possible. Send me an e-mail if you are interested. Perhaps we can extend the rent of one of the campgrounds a night earlier if there is enough interest. Even if we don't get enough interest to warrant renting the entire campground for an extra night, keep in mind that it is a state park and individual campers are welcome! (Sandy and I may go on over on Thursday --- don't know yet.)

The site --- Jim Edgar Panther Creek is where the Illinois Dark Skies star party is held. Several of us were there last year and the sky appeared pretty good --- in between the tornadoes that were passing through!

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The campgrounds --- we have rented two entire campgrounds in order to better control the possibility any stray light. There is PLENTY of space for everybody! The campground host will not allow any wheeled vehicles to be parked in the grass. Cars and RV's will have to remain on the parking areas.

Cost --- Hey, Danny and I are going (along with Debbie and Sandy, of course), if you want to come and join us --- come on!!! We "might" pass the hat in case you've got an extra buck or two to toss in. We don't want to make any money folks we just LOVE to share the dark skies!!!

Agenda --- none! I REALLY just want to go out and have a great weekend with a bunch of friends. Just pack a bit of common sense, a dab of star party etiquette, and a huge desire to have a great time, and come on over!!!

Address any questions or comments to me at: mike@mikewolford.com

Apollo Rendezvous – June 15-16 Dayton, Ohio –There is observing at their site in John Bryant State Park on Saturday night. www.MVAS.org

Nebraska Star Party - July 15-20, 2007 North Central Nebraska - 950 miles 18 hour drive. This is a premier dark site and has fantastic observing. However, the weather is brutal. Temperatures this last year reached 108 degrees. However you can cool off in the shade of the tree or set up a chair in the lake. There have been some changes this year and all observing activities will be at the Snake Creek Campground this year. (I wonder why they call it Snake Creek). No activities will be at the resort this year. The classes and the exhibitors are in Valentine. The speakers are on Wednesday this year in Valentine. <http://www.nebraskastarparty.org/>

EPOCH 2007 The 21st Century Midwest Star Party July 8-15, 2007
Beaver City, Indiana This is a new star party put on by 20-20 Telescopes.
<http://www.2020telescopes.com/EPOCH2007.html>

Indiana Family Star Party Camp Cullum, Frankfort, IN Aug 10-12
<http://jmmahony.home.insightbb.com/pgo/starparty/>

Black Forest Star Party PA Sep 14-16
<http://www.bfsp.org/starparty/>

Astrofest Vana Farms, Kankakee, IL. September 6-9
<http://www.chicagoastro.org/>

Prairie Skies Star Party – Kankakee IL – September 13-16, 2007
<http://www.prairieskies.org/>

Illinois Dark Skies Jim Edgar Panther Creek State Park, Il. September 13-16
<http://www.sas-sky.org/>

Twin Lakes Star Party Pennyville State Park, Western KY Oct 6-13, 2007
<http://www.wkaa.net/>

Okie-Tex Star Party Camp Billy Joe, OK Oct 6-14
This is supposed to be one of the darkest sites in the US. <http://www.okie-tex.com/>

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Eldorado Star Party – Eldorado , Tx (South Central) -October 10-13, 2007

If you know of events coming up let me know and I will get them in the Bulletin

Public Outreach Programs

Gerald Venne is our Public Program Chairman. He will be responsible for coordinating Public Events for the IAS. He needs your help. Let Gerald know if you would like to show the public our sky.

The season is coming upon us. We need people to help at Link and elsewhere. It is actually a lot of fun.

To schedule a public event contact Gerald Venne 1 317 826-2680 or Jeff Patterson at 1-317 882-8055.

Astro Ads

Are you changing or upgrading your equipment? Do you have or are you looking for astronomical materials and equipment? The Indiana Astronomical Society as a service to its members, will publish non-commercial ads at no charge. The ad will stay in the Bulletin for 4 months and may be renewed at the owner's request.

To place an ad contact:

Bulletin Editor

Jeff Patterson
1780 S. Morgantown Rd.

Greenwood, IN 46143
(317) 882-8055

E-Mail: KB9SRB@Hotmail.com

For Sale – Orion 120mm F5 acromat. Comes with rings. This would be a good scope to start out with. Excellent shape \$250.00. kb9srb@hotmail.com

For Sale – Celestron 4" F5 acromat. Excellent shape \$200.00. I bought the scope new as a finder scope but just don't use it. kb9srb@hotmail.com

For Sale – I have the following stuff for sale:

- 1) Stellarvue AT1010 80mm Achromat refractor with aluminum case, rings and 2-speed focuser. In excellent condition \$200.00
- 2) Takahashi 2" eyepiece adapter (setscrew version) for 2.7" focusers in new condition \$50.00
- 3) Apogee Inc. Adjustable white metal observing chair. In excellent condition \$25.00
- 4) Eyepiece projection adapter for Canon G2/G3 cameras \$15.00
- 5) Tele Vue 2" to 1 1/4" eyepiece adapter. Set screw version. Excellent condition \$12.00
- 6) Constellation Guidebook by Rukl. Excellent condition \$8.00

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- 7) The Perfect Machine - Building the Palomar Telescope (old library book in good condition) \$10.00
- 8) Centauri Dreams - Imagining and Planning Interstellar Exploration by Paul Gilster in excellent condition \$10.00
- 9) The Planets by Dava Sobel (old library book in excellent condition) \$10.00
- 10) 1 pair of Stellarvue hinged rings for 4" scopes. excellent condition \$75.00

Contact Doug Sanquetti drsanqun@gmail.com

For Sale – Astro-Physics 400 German Equatorial Mount

Near new condition. Used less than a dozen times.

9 lb. Stainless Steel Counterweight
6 lb. Stainless Steel Counterweight
Wooden AP case
Encoders
NGC-MAX DSC Computer

\$2200

Contact: Jim Rinehart 317-881-3475 or jrine33@comcast.net

The Loaner Program

The Loaner Program has been helpful to those new to the hobby and others in need of observing equipment. We consider offers of equipment you may not have need for any longer.

Did you know you can borrow a scope or piece of astronomy equipment from the Society and take it for a test drive? The Society has a program where members who are trying to determine what kind of equipment to buy can borrow one of the Society's scopes for a month or two and see how they like it. John Molt is the chairman of the program and can arrange for your pickup and training on the use of the particular instrument. This is a great way to see what telescope you want to purchase. We have several scopes, eyepieces and binoculars to loan.

John Molt (1stargazer@indy.rr.com) or 317-844-1799)

List Server Online - Don't be left in the cold - Sign up!

This service is our main communication tool. The list server is in the "Members Only" section of the site and is accessible only by IAS members. Make sure we have your correct e-mail and you will have access for late updates to events and functions.

Note: The list server is for use of Society business. It can only be used according to the rules as outlined previously. Members abusing the service will be eliminated from the service.

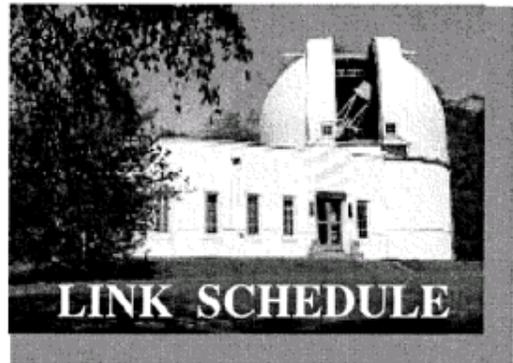
Board Meeting – June 14, 2007 - 7:00 PM

The IAS Board Meeting is being held at 430 Massachusetts Avenue in downtown Indianapolis. The building is at the point of convergence of Mass. Ave., Vermont and Alabama Streets. There is a Starbucks located in the frontage of the building. The coffee shop stays open late into the evening. Try to park as close to Starbucks as possible, preferably in a metered space. On-street parking is free after 5pm. Handicapped parking is directly in front of Starbucks entrance. The main entrance to the building is to the right of Starbucks, but it will be locked. To get into the building, walk around the building to the left as you are facing Starbucks. You will cross Starbucks outdoor patio seating area and you will come to the double door entry into the building (this is the south building façade). These doors will be unlocked. Enter the lobby and ride the elevator (to your right) to the basement. Turn right as you exit the elevator and go through the first door on your right. This is the conference/meeting room. If you need further assistance, please contact Brian P. Murphy, IAS Vice-President on his cell phone 716-8124.

Goethe Link Observatory Observatory Address

**Goethe Link Observatory
8403 N. Observatory Lane
Martinsville, IN 46151**

**Observatory 's Phone:
(317) 831-0668**



This schedule is being published to assure proper access to the Link Observatory for programs that are designed as observational, general education, astronomy conferences or amateur research projects. Training programs are tentatively scheduled for Saturday evenings only. Although other requests can over-ride these sessions. It is the purpose of this listing to prevent activity conflicts.

If you need to acquire use of the 36-inch telescope: remember two important IAS guidelines: 1) *There has to be two or more IAS members present.....* 2) *contact the Observatory Manager: Gary Schoppenhorst (317)297-1405. DON'T WAIT UNTIL THE LAST MINUTE TO MAKE YOUR REQUEST OR YOU MAY NOT GET ACCESS.*

Link Activities for June:

- June 9 General Meeting
- June 16 New Moon at Link
- June 23 Observer's meeting and NAG – 7:30PM

McCloud Activities for June:

- June 15 New Moon and public observing event

Observing Activities

We are able to go to the Link, Prairie Grass Observatories and McCloud Nature Park at non scheduled times if they do not conflict with reserved activities:

For those interested in going to The Link Observatories for observing call Gary Schoppenhorst 1 317 297-1405.

For those interested in going to Prairie Grass Observatories for observing call Hoppe at 1-765-296-2753.

For those interested in going to McCloud to observe, please call the park caretaker, Jim Holtsclaw, at the park office 765 676 5490 before 4PM on the day you want to go out. He will give you permission to be there at night and cut off the lights.

Bulletin Stats

Accessing the Bulletin

The current bulletin can be found on the website www.iasindy.org

Bulletin - Bulletin deadline on the 20th of every month

The monthly newsletter welcomes articles of local astronomical interest information and want ads:

Please submit to

The Indiana Astronomical Society, Inc

Jeff Patterson, editor

1780 S. Morgantown Rd

Greenwood, IN 46143

Phone: (317) 882-8055

KB9SRB@hotmail.com

Membership information

Contact any IAS officer or the Treasurer

John Shepherd (317) 862-3442

Link Observatory

Latitude: 39 degrees, 33 minutes North

Longitude: 86 degrees, 24 minutes West

Phone: (317) 831-0668

IAS Internet address

<http://www.iasindy.org>

Executive Officers

President: Jeff Patterson (317) 882-8055

Vice-President and Program Director: Brian Murphy (317) 841-8511

Secretary: Betsy Brown 1-317-872-4050

Treasurer: John Shepherd (317) 862-3442

Board of Directors

Gary Schoppenhorst (2009)

Gerald Venne (2009)

Thad Hatchett (2007)

Doug Brown (2007)

Bill Conner (2007)

Marion Hakes (2008)

John Molt (2008)

Public Event Chairman

Gerald Venne gvenne@iquest.net 1 317 826-2680

Library Committee Chairman

Larry Marcus

June Calendar, 2007

| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|--------|--------|---------|-----------|------------------------------------|-----------------------------------|------------------------------------|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 Last QTR Moon | 9 General Meeting at Link |
| 10 | 11 | 12 | 13 | 14 Board Meeting New Moon | 15 New Moon at McCloud | 16 New Moon at Link |
| 17 | 18 | 19 | 20 | 21 | 22 1 st QTR Moon | 23 Observer's Meeting NAG |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 Full Moon |

Membership Application to the IAS

Benefits:

- Use of the Goethe Link Observatory
- Formal monthly programs with guest speakers
- Local and regional astronomical functions
- Discounted Astronomy publications
- New Moon observing activities
- Access to IAS member experts and problem solving
- The Bulletin monthly newsletter
- Free admission to the Holcomb planetarium
- Star party events and observing sessions

Please mark whether this is a new or renewal application

New

Renewal

Note: Magazine subscription renewals forms and payment must be submitted to the Treasurer in order to maintain publisher's club discount.

Name: _____

Address: _____

City: _____ State: _____ ZIP: _____

Telephone: () _____

E-Mail Address: _____

How do you want to receive the IAS monthly newsletter?

Downloadable from Website Hard Copy*

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* Please note that hard copy costs the Society about \$1.50 per issue. Please consider this when selecting mode of receiving the newsletter.

| | |
|--------------------------------------|--|
| Annual Regular Membership (\$25.00) | |
| Annual Student Membership (\$10.00) | |
| Astronomy Magazine Renewal (\$34.00) | |
| Sky and Telescope Magazine (\$33.00) | |
| Total Enclosed | |

Make checks payable to: The Indiana Astronomical Society, Inc

Please complete Member Profile and include with the application

Mail Application to: John Shepherd, Treasurer
4609 Callahan St.
Indianapolis, IN 46239

Member Profile

Spouses Name: _____

Children's names and ages: _____

Education: _____

Occupation: _____

How many years associated with Astronomy? _____

Special astronomical interests or projects: _____

-

Equipment: _____

What can the Society do for you? _____

What can you do for the Society? _____

Note: Profile information is not a requirement for membership to the Society. This information is entered into the IAS database and is not given nor sold for solicitation purposes. It does provide for a brief welcoming article for new members and may be used by the society to match people with similar interests.