

The Bulletin – The monthly publication of the Indiana Astronomical Society

August, 2009  
Volume 76, Issue 8  
www.iasindy.org



# The Bulletin

## *2009 International Year of Astronomy*

### **The August General Meeting, August 8 7:00 PM The Goethe Link Observatory**

#### **“John and Thad Show”**

We are having one of our annual clinic nights geared for newcomers to the hobby. In the past these have been really a lot of fun and helps us with our basic observing skills. Thad Hatchet will present how you can find objects in the sky using star hopping techniques. John Switzer will present how you plan for an observing session. Bring your questions and problems. We will try to answer them. Bring your scope and set up out back and we will work through issues that you might have.

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#### **IAS Calendar of Events for August**

August 8 - General Meeting at Link Observatory observing after words weather permitting

August 8 – General Meeting

August 11 – Board Meeting

August 14-16 – Campout at Link

August 20-22 – State Fair Exhibit

August 22 – NAG at McCloud

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#### **New Astronomers Group Meeting McCloud Nature Park**

The next meeting of the Indiana Astronomical Society’s New Astronomers Group for 2009 will be held on **Saturday, August 22 at McCloud Nature Park starting at 7:30 pm.** Weather permitting there will be an observing session using IAS member’s telescopes and binoculars following the meeting.

**THE NAG MEETING WILL BE HELD - RAIN OR SHINE.**

Topics for this month:

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- Observing the Late August/Early September evening sky
  - o Reading a Star Chart
  - o The Summer Pointer Stars
  - o The Summer Triangle
  - o The Great Square of Pegasus
  - o Our Solar System
  - o The Deep Sky
    - \_ Our Own Milky Way
    - \_ CR399 – Asterism (The Coathanger)
    - \_ M2 – Globular Cluster in Aquarius
    - \_ M39 – Open Cluster in Cygnus
    - \_ NGC7662 – The Blue Snowball Nebula
- Autumn’s Finest Double Stars
- 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.

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### Indiana Family Star Party

The Indiana Family Star Party was a great success even with the rain on Friday night. When I arrived on Saturday things had dried out and sleeping bags and tents were all drying in the breeze. Saturday night was really great. Thanks to all the IAS members who attended and especially thanks to those of you who volunteered at the registration booth. Everything went very well. This has become a very good party and is geared to having fun. The speakers were excellent.



Dawn and her rig after the rain.

## Nebraska Star Party

Members John Molt, Danny Mitchell, and Jeff Patterson sojourned the 900+ miles out to the Nebraska Star Party held at Merritt Reservoir southwest of Valentine, Nebraska for a week of observing under the summer skies of Sagittarius. This is a premier party with about the darkest skies I have experienced. It is a week long observing session with primitive camping and generally hot weather. This year it was rather cool and we had excellent skies. The mosquitoes were about the size of B-52s however. This is an unusual party in that there is an observing area of several hundred acres and you can pick your own hill to observe from. It is a little hard to find a tree for shade however.



Snake Creek Campground Observing Site

It is not completely roughing it as you can see with Danny Mitchell and a couple of his friends Dave and Terry from Missouri.



The Bulletin – The monthly publication of the Indiana Astronomical Society

You should try this once just to see the Milky Way go from horizon to horizon. Tuesday night we even had the treat of a good northern lights show. The Omaha Society puts the party on and does an excellent job. There are meals served if you want to partake and several door prize giveaways. I got lucky this year and won a Williams Optics 66mm APO. That made the trip worth it. You can go rafting on the river or fishing in the lake if you have the time.

If you wonder why they call it Snake Creek:



One of our friends, Dan Johnson, kept catching bull snakes in the camping area and releasing them in a area away from our tents. This one was crawling through the spokes of my wheel. Population density of bull snakes increased substantially in the little grassy patch next to us. His daughter loves to catch them as well.

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### **IAS Goes to the Indiana State Fair**

The IAS has been asked by the IU Astronomy Department to host a booth August 20-22 at the state fair in Indianapolis. We are still in the planning stages but need volunteers to help. Contact me at [KB9SRB@Comcast.net](mailto:KB9SRB@Comcast.net) or 317 506-0325 if you want to help. The booth will be inside and I have plans to provide an H alpha scope to look for sunspots and flares. Basically we will just be there to promote the Society, astronomy in general and help IU. I will have more information this week about getting in etc.

The Pres

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## Upcoming Star Parties

**Link Campout** August 14-16 observing session at the Link Observatory

**Black Forest Star Party** PA September 18-20, 2009

<http://www.bfsp.org/starparty/>

**Okie-Tex Star Party – September 12-20.** This is reported as one of the darkest sites in the US. It is a great deep sky event.

**Prairie Skies Star Party** – September 19-20 Kankakee, IL

**Astrofest** - Astrofest 2009 will be held September 25-26, 2009 at Vana's near Kankakee, Illinois. Join us for a weekend of solar observation, lectures, and workshops during the day and night observing through a variety of telescopes and binoculars. Vana's is a 20 acre field with plenty of camping space; there is no extra charge for parking or camping. To register click on [www.chicagoastro.org/node/33](http://www.chicagoastro.org/node/33). Note that you may register by mail, with check or money order, or by telephone with a credit/debit card. Currently, we do not have PayPal set up on our website; we hope to have that option available shortly.

If you have any questions, please contact Jim Cuca at [jamescuca@comcast.net](mailto:jamescuca@comcast.net).

**Heart of America Star Party MO** October 15-18, 2009 <http://www.hoasp.org/>

**Twin Lakes Star Party** – October 10-18, 2009

This is an excellent star party located in western Kentucky. One not to miss

**Nova Sedis Chiefland Fall Star Party** – November 9-15, 2009

This is a new star party located in Chiefland Astronomy Village, Florida. Nice time in the year to be in Florida.

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

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## ALCor Observations by Bill Conner

### THE BEST EYEPIECE FOR HIGH DEFINITION OBSERVING

I recently read an article by Michael Covington on the Astromart site that brought up a notable point on eyepieces that is well worth reviewing. Michael is a well known amateur astronomer, author and astrophotographer. The title of the article is: "If you had just one eyepiece, what should it be?"

The human eye is sharpest with a pupil size of around 2mm. When the pupil is larger, problems with astigmatism and with imperfections at the edge of the lens of the eye are more likely. We get more light into the eye with a large pupil of 4 to 7mm, which is desirable for locating faint objects, but we frequently want to see these objects up close where we can see more detail. If the exit pupil is small, say 1mm or smaller, opaque

particles inside the eye begin to be visible as spots. As we grow older there are more spots and floaters that drift around in the ole eyeball that can be distracting. Contrast is the reason that a 2mm exit pupil works so well. Yes, a deep sky image is darker, but so is the sky background and the extra magnification makes these faint objects more visible.

For high definition we thus need to look at eyepieces that, when attached to our telescope, provide an exit pupil of around 1.5 to 2mm. The exit pupil for an eyepiece can be calculated by dividing the aperture of the telescope in millimeters by the magnification or power created by the eyepiece. For example, a telescope of 200mm (8 inch) aperture coupled with an eyepiece that generates 100 power will have an exit pupil of 2mm. To calculate what it takes to create 100 power, we know that we divide the telescope's focal length by the focal length of the eyepiece. Combining the above equations and solving for the eyepiece focal length, simplifies down to multiplying the size of the exit pupil we desire (2mm) times the focal ratio of the telescope. For example, 2 times a focal ratio of 6 yields a 12mm eyepiece.

Let's look at several typical telescope & eyepiece combinations generating 2mm and 1.5mm exit pupils:

A 200mm (8 inch) f/6 reflector with a 12mm EP provides 100x and a 9mm EP provides 133x

A 155mm (6 inch) f/7 refractor with a 14mm EP provides 77x and a 10mm EP provides 108x

A 102mm (4 inch) f/9 refractor with an 18mm EP provides 51x and a 14mm EP provides 65x

A 381mm (15 inch) f4.5 reflector with a 9mm EP provides 190x and a 7mm EP provides 245x

The resolving power of the human eye is around 60 arc-seconds. Do the magnifications above match the telescope's resolving power with that of our eye to create that high definition image?

The resolving power of an optical telescope in arc-seconds is  $115.57$  divided by the aperture (D) in millimeters ( $115.57/D$ ). We want a magnification that makes use of the telescope's true resolving power to generate an image that matches our eye's 60 arc-second resolving power. To generate 60 arc-seconds we need: Magnification (M) times ( $115.57/D$ ). Rearranging this equation to solve for  $M = 60/(115.57/D)$ . Reducing this equation we get:  $M = .52D$ . So, for that 200mm (8 inch) reflector we need a magnification of 104x. This magnification is very close to what we obtain with a 12mm eyepiece as shown above.

In summary, two times your telescope's focal ratio calculates the eyepiece that is ideal for high definition observing of faint fuzzys. For small bright objects like planets, we can get away with higher magnifications and attendant exit pupils as small as 1mm but beware the black spots.

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### **Campout at Link**

There will be a weekend campout and observing session at the Link August 14-16 as a weekend campout at the Link. Gates will open at 5 pm and you can stay the weekend. The observatory and facilities will be open all weekend. Enjoy. Plans are to have forums and help sessions for anyone who needs help with their equipment or observing skills.

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### **Link Activities for August:**

General Meeting August 8

Observing Weekend August 14-16

### **McCloud Activities for August–**

NAG August 22

### **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 McCloud to observe, please call the park naturalist, Haley Samuelson-Couchman, at the park office 765 676 5437 before 4PM on the day you want to go out. As an alternative you can e-mail Haley at [McCloudNP@HCParks.net](mailto:McCloudNP@HCParks.net) . She will give you permission to be there at night and cut off the lights.

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

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### **Membership Status**

The following changes in membership took place in July:

Current Membership Total: 152

Renewals: 10

New student members: 0

Friend of the Society:

John E Herp – New Palestine

This designation was granted unanimously by the board on July 14, 2009

July New Members:

Christopher Bentlage

Harold Turner, Bloomington

Chris Greene, Mooresville

Derek Baker, Plainfield

Inactive status:

Holland, William

Mendoza, Chris

Reese, Luke

Sharknas, David

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### IAS Name Tags

When I was researching prices for a sign for one of IAS's telescopes, I noticed that the sign store had some rather attractive name plates, so I had two done using our logo - there are two sizes available - same price for each - the only variable is the method of attachment. It's \$5 for a pin-type badge or \$6 for a magnetized one. If I get at least ten orders, I'll proceed. Just send a check payable to TOM BORLIK. Sorry, this does NOT include mail order, but I could do that for \$2 additional if enough people complain! These badges are neat for star parties or other public events like presentations given at schools. And, no, they don't glow in the dark.

If interested, let me know by email, but I'll hold off ordering until I get ten orders. I would deliver them during our General Meetings - next month, starting at Goethe Link Observatory.

Tom Borlik

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### IAS LIBRARY:

The complete list can be found (<http://www.iasindy.org/memonly/iasfiles.php>, which is password protected). We have a new addition for the library. There is now a link on our website page for our new Multi-Media Library. Greg has built this library of a multitude of videos that are on the web. The only problem is that you will have to have high speed internet to observe these video streams. We think it will be a great addition to our library for both novices and experienced observers. Greg has many more sources to go through so the library will continue to grow. If you have comments or questions about the library please contact Greg McCauley at 317 663-3289 or [greg@ultrasoundconsulting.net](mailto:greg@ultrasoundconsulting.net).

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### IU Kirkwood Observatory

The Observatory has reopened for the summer. Please visit our schedule at [http://www.astro.indiana.edu/kirk\\_sch.shtml](http://www.astro.indiana.edu/kirk_sch.shtml), for a list of dates and times. For updated weather conditions and closings, please call the Kirkwood Observatory Hotline at (812) 855-7736.

### SUMMER FILM SERIES CONTINUES IN JULY

Join us each Wednesday evening this summer for a special astronomy film series in celebration of the International Year of Astronomy. The series will run from 7:30-9:30 PM each Wednesday evening, rain or shine, prior to the weekly Kirkwood Observatory Open Night. We are offering an alternating program of classic feature films and recent, fun documentaries covering a wide range of astronomy and space themes. The schedule of films is available on the I-Universe website at [iya.astro.indiana.edu/film.html](http://iya.astro.indiana.edu/film.html). No charge for admission, and free popcorn will be provided!

Films will be screened in Rm 119 of Swain Hall West on the IU Bloomington campus ([727 E. 3rd St](#)). Each film will start at 7:30 PM and end no later than 9:30 PM. Running times vary from approximately 1 to 2 hours. Consult the schedule to see the approximate running times for each feature.

Kirkwood Observatory will open at 10 PM following the film, weather permitting.

The Bulletin – The monthly publication of the Indiana Astronomical Society

The IU Astronomy Department has an 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](mailto: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](mailto:catyp@astro.indiana.edu).

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### Easy Listening:

Weekly pod casts are available at <http://www.astronomycast.com/> for those who love astronomy and want to learn, yet have no time (or desire) to do extra reading. They cover a variety of topics, and feature a different topic each week, so you can choose your flavor. The cast includes Fraser Cain, the publisher of Universe Today (<http://www.universetoday.com/>), and Dr. Pamela Gay, an assistant professor of physics at Southern Illinois University Edwardsville. You do not need an iPod or portable device to enjoy these.

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### 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](mailto:KB9SRB@hotmail.com) or Thad Hatchett at [astronomynut@comcast.net](mailto:astronomynut@comcast.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.

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### Do you have a question or need?

We are establishing a list of members who would be willing to receive calls for help on specific objects. If you have a specific skill and would be willing to help others please contact Jeff Patterson [KB9SRB@hotmail.com](mailto:KB9SRB@hotmail.com).

Based upon the responses we received to your intro question recently, perhaps we should add a section to the bulletin naming those members who would be willing to receive calls for help on specific subjects.

William Conner ([wmtconner@att.net](mailto:wmtconner@att.net)) - for CCD imaging and film photography.

Jeff Patterson ([KB9SRB@Hotmail.com](mailto:KB9SRB@Hotmail.com)) – Observatories design and construction

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### Public Outreach Programs

Gerald Venne is our Public Events Coordinator. 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.

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.

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### 75<sup>th</sup> Anniversary Lapel Pins

If you did not receive your Anniversary pin last year, please contact Vicki Switzer. If you want another, you can buy one from Vicki for \$5. If you want a pin mailed to you, contact Vicki and send her a check for \$7 made out to the Indiana Astronomical Society.

The Bulletin – The monthly publication of the Indiana Astronomical Society

If you were a member last year and still want your original pin please send Vickie a check made out to the IAS for \$2.00

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## 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) 300-0449  
E-Mail: [KB9SRB@Hotmail.com](mailto:KB9SRB@Hotmail.com)

**For Sale Astronomy trailer-** 6x12 KZ Cargo box trailer, I have used this trailer for about 4 years hauling my gear but needed a bigger one. It is in excellent shape and clean inside. \$2500 Jeff Patterson 317 506-0449 or [KB9SRB@Comcast.net](mailto:KB9SRB@Comcast.net)

**For Sale** Gibraltar Ash Tripod with Tele Pod Head and Eyepiece Caddy. Tripod is like new, you have to look hard to find a scratch on the wood  
All the items listed for \$400 OBO.

Dan Mitchell  
309 531 8510

**For Sale – Takahashi FS-128** F/8.1 apochromatic refractor, Serial No: 01065. Excellent condition! I am the original owner, purchased 3/20/2002. The OTA has an upgraded Takahashi 10-to-1 Micro Edge Focuser and comes with a custom Scopeguard case (silver). \$3200.

If interested, I also have the following FS-128 accessories (not included with the OTA);

TAK Tube Holder  
Takahashi 7x50 Finder Bracket  
BT-Tak Quick Release  
Takahashi 1.25" Diagonal  
Kendricks (P-6010-A, Baader) Solar Filter (photographic)  
Kendricks (6010, Baader) Solar Filter (visual)  
Takahashi 2" Compression Ring Adapter  
Takahashi 2" Threaded extension

Daniel Cervantes [muddy@bluemarble.net](mailto:muddy@bluemarble.net) or (812) 361-7746,

**For Sale** – Sony 21" Model G520 Graphics CRT. Excellent condition, manual, all cables, for \$15. Contact Fritz Kleinhans, [Starman@iupui.edu](mailto:Starman@iupui.edu) or 317-290-1689 (cell).

The Bulletin – The monthly publication of the Indiana Astronomical Society

Free astrophotography film to good home (or bad). I have dozens of rolls of Kodacolor Royal Gold 400 (red sensitive version) and LE 400 (red sensitive) color negative film. This film has been in the freezer since about 2001 and has expiration dates of about 2002-2003. Contact Fritz Kleinhans, Starman@iupui.edu or 317-290-1689 (cell).

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### **Onions and Orchids**

A special thanks to Gerald Venne for his leadership with the registration booth at the IFSP. It went smooth as hot butter. Thanks Gerald. Thanks to all the IAS members that helped man the booth at IFSP. It went smoothly due to your efforts.

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### **The Equipment Loan Program**

The Loan 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 could 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](mailto:1stargazer@indy.rr.com)) or (317) 989-1875

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

This service is our main communication tool. The list server is accessible only by IAS members. Being a member does **not** mean you are automatically entered into the "Members Only" section. If you are a new member, please go to the "Members Only" section and fill out an application. The Webmaster will set you up and notify you that you can get into the system. Make sure we have your correct e-mail and you will have access for late updates to events and functions. Unless you opt out for the List server, you will automatically have access to it when you are approved for the "members only" section.

Note: The list server is for use of Society business. It can only be used according to the rules as outlined previously. Basically it is used to communicate astronomical information to the general Society that would be unique. Please do not send out information from websites that we all generally subscribe to. Also please note: Do not add the list server address to your general address lists. Our problems have generally come from this when a member sends out mail to all their addressees. Members abusing the service will be eliminated from the service.

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### **Board Meeting – Board Meeting August 11, 2008**

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 entrance to the building is to the left of Starbucks around on the side. We meet in the basement. Ride the elevator (around the corner to your left) 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

The Bulletin – The monthly publication of the Indiana Astronomical Society

need further assistance, please contact Brian P. Murphy on his cell phone 716-8124 or Jeff Patterson 317 506-0325.

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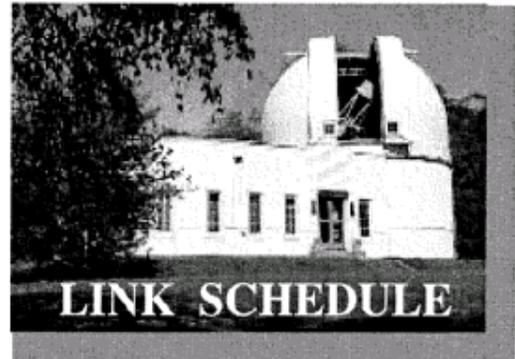
## General Meeting Dates 2009

	<b>NAG</b>	<b>General</b>	<b>Board</b>
January		17-Jan	19-Jan
February		14-Feb	17-Feb
March		14-Mar	17-Mar
April		18-Apr	21-Apr
May	2-May 30- May	16-May	19-May
June	27-Jun	13-Jun	16-Jun
July	18-Jul	11-Jul	14-Jul
August	22-Aug	8-Aug	11-Aug
September	26-Sep	12-Sep	15-Sep
October		10-Oct	13-Oct
November		7-Nov	10-Nov
December		19-Dec	

## 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.*

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## Bulletin Stats

### Accessing the Bulletin

The current bulletin can be found on the website [www.iasindy.org](http://www.iasindy.org)

**Bulletin - Bulletin deadline on the 20th of every month**

The Bulletin – The monthly publication of the Indiana Astronomical Society

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) 300-0449

[KB9SRB@hotmail.com](mailto:KB9SRB@hotmail.com)

*Membership information*

Contact any IAS officer or the Treasurer John Shepherd (317) 862-3442 or Vicki Switzer

[vswitzer42@verizon.net](mailto:vswitzer42@verizon.net) 1 812-835-2251

*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) 300-0449

Vice-President and Program Director: Doug Brown (317) 872-4050

Secretary: Betsy Brown 1-317-872-4050

Treasurer: John Shepherd (317) 862-3442

### **Board of Directors**

Gary Schoppenhorst (2009)

Gerald Venne (2009)

Tom Borlik (2010)

John Switzer (2010)

Ron Burgess (2010)

Greg McCauley (2011)

John Molt (2011)

### **Public Event Coordinator**

Gerald Venne [gvenne@iquest.net](mailto:gvenne@iquest.net) 1 317 826-2680

### **Library Committee Coordinator**

Greg McCauley [greg@ultrasoundconsulting.net](mailto:greg@ultrasoundconsulting.net)

### **Astronomical League Coordinator**

Bill Conner [wmtconner@att.net](mailto:wmtconner@att.net) 1-812 828-0449

### **Membership Coordinator**

Vicki Switzer [vswitzer42@verizon.net](mailto:vswitzer42@verizon.net) 1 812-835-2251

### August Calendar, 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5 Full Moon ○	6	7	8 General Meeting at Link
9	10	11 Board Meeting	12	13 3rd QTR ☾	14 Link Campout	15 Link Campout
16	17	18	19	20 State Fair New Moon ●	21 State Fair	22 State Fair NAG at McCloud
23 IFSP	24	25	26	27 1 <sup>st</sup> QTR ☽	28	29
30	31					

## 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
- Membership in the Astronomical League
- 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: \_\_\_\_\_

For the “membership only” section you need to provide a user name and a password:

User name: \_\_\_\_\_ Password \_\_\_\_\_

List Server - This service is our main communication tool. The list server is accessible only by IAS members and only for IAS related business. It is controlled very carefully to prevent spam. Unless you opt out for the List server, you will automatically have access to it when you are approved for the “members only” section.

I do **not** want to receive IAS communications via the List Server

The Bulletin – The monthly publication of the Indiana Astronomical Society

How do you want to receive the IAS monthly newsletter?

Downloadable from Website  Hard Copy\*

\* 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 (\$30.00)	
Annual Student Membership (\$10.00)	
Astronomy Magazine Renewal (\$34.00)	
Sky and Telescope Magazine (\$33.00) (New Subscription)	
Total Enclosed	

Make checks payable to: The Indiana Astronomical Society, Inc

Please complete Member Profile and include with the application

Mail Application to:

Vicki Switzer Membership Coordinator  
2115 N. Private Rd 50 E  
Centerpoint, IN 47840

### Member Profile

Spouse's Name: \_\_\_\_\_

Children's names and ages: \_\_\_\_\_

\_\_\_\_\_  
Note: Profile information is not a requirement for membership to the Society.