

The Bulletin – The monthly publication of the Indiana Astronomical Society

September, 2008
Volume 75, Issue 9
www.iasindy.org



The Bulletin

**The September General Meeting, September 20, 2008 7:00 PM
Goethe Link Observatory**

**The Evolution of Galaxies
Kevin Croxall**

Elemental abundances measured from HII regions of galaxies at diverse redshifts provide evidence of the enrichment history, star formation history, and evolution of galaxies. Previous studies have found a strong empirical correlation between the mass or luminosity of a galaxy and its composition. This correlation has been found to exist in all types of galaxies and across a large range of both luminosity and metallicity. Despite the seemingly universal nature of the luminosity-metallicity relation, the underlying cause remains uncertain. For example, such a relation could arise due to differing evolution patterns for galaxies of different mass. Conversely, a similar relation could occur if galaxies are not closed systems but interact with the environment around them.

I will discuss the evolution of galaxies in the context of the luminosity-metallicity relation. I will highlight how we determine the properties used in such studies and current efforts to understand the relation.

Kevin Croxall earned his BS in Physics from Brigham Young University, where his work focused on statistical differences in populations of stars known to have planets and those where no planets are known to exist. Kevin subsequently earned a MA in Astronomy from Indiana University for work on abundances in open clusters. Currently, he is a PhD candidate at Indiana University. His current research is combines data from numerous wavelength regimes to study how galaxies have evolved. He is scheduled to graduate in the Spring of 2009.

Membership Coordinator

The Board has decided to create a position of Membership Coordinator to reduce the duties of the Treasurer. It will be an appointive position and the person will need to attend the monthly Board meeting. Basically the membership coordinator will maintain a live database of members and write letters to new members welcoming them into the Society. If you have interest in this position please contact Jeff Patterson (KB9SRB@hotmail.com) or any of the Board members.

IAS Calendar of Events for August

September 6 – NAG at McCloud

September 20 - General meeting and observing at the Link

September 25 Board Meeting

New Astronomers Group Meeting

The last meeting of the Indiana Astronomical Society's **New Astronomers Group** for 2008 will be held on Saturday, **September 6 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:

- Observing the Late September/Early October evening sky
 - Reading a Star Chart
 - The Autumn Pointer Stars
 - The Summer Triangle
 - The Great Square of Pegasus
 - Our Solar System
 - The Deep Sky
 - M15 - Globular Cluster in Pegasus
 - M31 - Andromeda Galaxy in Andromeda
 - Alpha Persei Cluster in Perseus
 - NGC 869 and NGC 884 – The Double Cluster in Perseus
 - NGC 457 – Owl Cluster in Cassiopeia
- The Size of Our World
- 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.

New Parking Policy for McCloud Events

The purpose of this document is to provide a parking policy for IAS members during Society sponsored events that are held at the McCloud Nature Park. Above all, the safety and security for all individuals, IAS and public are paramount in the formulation of this policy.

The Bulletin – The monthly publication of the Indiana Astronomical Society

1. All IAS members who do not bring telescopes to a McCloud event or members who are planning on setting up and using one of the McCloud telescopes are to park in the public parking areas.
2. “Telescope Row” is defined as the gravel drive that goes south from the main drive to just east of the Maintenance Building, the grassy area where the permanent cement pads are located, and the gravel drive that goes across the north side of the Maintenance Building.
 - a. “Telescope Row” will be the main public viewing area for all IAS members’ telescopes.
 - b. Vehicles allowed along “Telescope Row” are limited to those who bring telescopes for the event.
 - c. “Telescope Row” will be blocked off and made inaccessible to all vehicles that are not eligible to park there.
3. Parking along “Telescope Row” must meet the following criteria:
 - a. All vehicles are to be parked parallel to and immediately adjacent to the gravel drive.
 - i. Park as close to the gravel drive as possible.
 - b. The gravel drive is to be kept clear of parked vehicles at all times
 - c. No vehicles are to be parked south of the Maintenance Building, near the concrete telescope pads or on the raised earthen areas to the east and south of the viewing area.
 - d. Anyone who parks along “Telescope Row” must be in their final parking position prior to sunset.
 - e. All vehicular traffic along “Telescope Row” will cease at sunset.
 - f. Once parked, no vehicle may be started or moved until all public attendees have left the premises.
4. Members who bring a telescope and must leave while the public is in attendance, must park in the public parking areas.
 - a. The telescope may be transported to a viewing location along “Telescope Row” prior to sunset, but the owner’s vehicle must be removed to the public parking area.
 - b. If set up along “Telescope Row”, the owner has the responsibility to manually transport the telescope back to his/her vehicle.
 - c.

The bottom line is if you are going to leave a vehicle near your equipment, park just to the edge of the gravel drive on the grass and vehicles cannot be moved until the public has left. Do not park near the pads nor on the berms.

Cincinnati Scope Out Astronomy Fair



10th Annual ScopeOut Astronomy Fair



ScopeOut 2008 Telescope Festival at the Cincinnati Observatory September 13, 1pm-10 pm

The Cincinnati Observatory celebrates the telescope with an all-day (and all night) festival.

ScopeOut is an opportunity for people of all ages to look at the latest and greatest astronomical equipment offered by local and national vendors. Activities include, classes, educational materials for teachers, kid's space crafts, safe viewing of the Sun, tours of our historic buildings and more astronomical door prizes than you can imagine.

SCHEDULE OF EVENTS

1 pm to 5 pm for the displays, classes, and tours
6 pm to 8 pm for the dinner & Keynote Lecture by

Phil Plait, the "Bad Astronomer" (reservations recommended).

8 pm to 10 pm celestial viewing of the stars (weather permitting).

ADMISSION is \$5 for adults, \$3 for children
Keynote Speaker and Dinner Reservations, add \$15 per person

LOCATION: 3489 Observatory Place Cincinnati, OH 45208

For more information:
[Cincinnati Observatory Center](#)
(513) 321-5186
[Email the Observatory](#)

The Cincinnati Observatory supports "Leave No Child Inside"

[ScopeOut Astronomy Fair](#)

[Our Mission](#)

[Join](#)

Contact Info

513-321-5186

513-321-8771 fax

www.cincinnatiobservatory.org

Star Party Reports

Nebraska Star Party

The 15th annual Nebraska Star Party was held July 26th to Aug 3 at Merritt Reservoir's Snake Campground in the Sand Hills of north central Nebraska. Skies are some of the best I've witnessed being 7.5 visual magnitude on most evenings. This year Hurricane Dolly pushed clouds to us the first few evenings so we were only able to observe about half the night unimpeded. Days were sunny but windy which is good as temperatures easily reach mid-nineties – thermometer read 104 later in the week but with that brought better observing too. McFog, mosquitoes and dew - I'm used to here though never encountered them at NSP but it happens – woke up Monday morning to fog so thick I couldn't see more than about 100 feet. Attendance was down like many other events but saw friends again from the central US and met a few new as well. I wasn't able to park the camper in the preferred area of somewhat tall cottonwood trees – quite a few tents there so I made a bold decision – set up the camper, telescopes and binoculars well out onto the observing field on a moderate hilltop. Yes it was sunny but amazingly comfortable with the constant, sometimes strong breeze – used the A/C only while setting up on Sunday afternoon so I could rest comfortable before observing that evening. All in all a good trip but came back a day early so as to not miss dear friends at the Indiana Family Star Party. I feel pretty lucky - 2 star parties in a week! *John Molt*



ALCor News

ALCor Observations by Bill Conner

THE URBAN OBSERVING CLUB

The Urban Observing Club is the Astronomical League's answer to the city dweller's light pollution dilemma. The list of observations required for this award include bright objects that can be seen in spite of light polluted skies. The intent is to get "backyard" back into amateur astronomy and make it more convenient and fun for those of us who live in major metropolitan areas.

To qualify for the AL's Urban Observing Club Certificate you need only to be a member of the Astronomical League, a given if you are a member of the Indiana Astronomical Society, and observe 100 objects on the Urban Observing Club's Deep Sky Objects and Double & Variable Stars lists. This is a real twist, in that you have to do it from your city location. Dark sky observations cannot be included. This is a great opportunity to stay at home, invite friends over and enjoy observing together.

The rules and lists may be downloaded from the Astronomical League site. Also, there are some helpful hints on observing from light polluted skies. Log on to www.astroleague.org/ and select "Urban Observing Club" from the Observing Clubs list on the left side of the home screen.

The Bulletin – The monthly publication of the Indiana Astronomical Society

I will be happy to provide copies to those Society members who do not have computer access to the web. Please give me a call at: 812-828-0499. Leave your name, number, address and request on the recorder if I am away from the phone.

Send your completed list to me, Bill Conner, so that I may verify your observations and apply to the AL for your certificate and pin.

Observer's Corner

STARGAZER for August 23, 2008

Evening Sky Full of Planets

Now is a good time for evening stargazers to view four of the five naked-eye planets.

The easiest is Jupiter which dominates the southern sky in the early evening. Far outshining all stars, Jupiter is the third brightest night sky object behind only the Moon and Venus.

While Jupiter appears as a bright star to the naked eye, most binoculars can reveal its disc-like shape. And if the binoculars are held very steady, up to four of Jupiter's moons can be seen looking like tiny stars in alignment.

On any given night, however, all four may not be visible since, as they orbit Jupiter, one or more might be hiding behind or in front of the huge planet. These four largest of Jupiter's many moons--Io, Europa, Ganymede, and Callisto--are called the Galilean Moons in honor of Galileo who discovered them with his new telescope in 1610. They are only slightly larger than our moon, but 1,500 times further away.

Jupiter is now up when the skies darken and doesn't set until the wee hours of morning, so you can watch it all evening. Not so with the other three.

Mars, Venus and Mercury are low in the west at dusk and set before the sky gets completely dark, so don't linger. Start looking 30 minutes after sunset. If you have binoculars, use them, and since the planets are quite low, you'll need a clear view of the western horizon.

Of the three Venus is by far the brightest and easiest to spot. Once you've found Venus, look for fainter Mercury three moonwidths to the lower left. Again, binoculars will help, especially for those (like me) with aging eyes.

Fainter Mars is 10 degrees to their upper left. (Remember, the width of your fist held at arm's length is 10 degrees.)

After you've found them, keep watching them nightly as this is a show that changes each evening.

For the next week or so Venus and Mercury stay in about the same position relative to each other as they gradually approach Mars. The evening of Aug. 31, a thin crescent Moon visits the planetary trio. By Sep. 4, the planets form a nearly equilateral triangle with brilliant Venus to the right, Mercury to the lower left and Mars to the upper left.

In what might be the show's climax, Venus passes less than a moonwidth from Mars Sept. 11. After that, Mercury and Mars sink into the setting Sun and Venus begins asserting herself as the "evening star" where she will remain until well into 2009.

Maybe you've noticed there's been no mention of Saturn. The ringed planet, which has been gracing our evening sky all year, is now hidden in the glare of the Sun. Sep. 3 it reaches conjunction with the Sun--astronomers' way of saying it is exactly on the other side of (behind) the Sun. By October it will have moved into the morning sky.

Next Two Weeks. Avg. sunrise: 7:03 a.m.; avg. sunset: 7:55 p.m. (exact for Waco, TX)

* Tonight the Moon is at 3rd quarter.

* Thurs. morning the crescent Moon is three moonwidths above the Beehive cluster low in the east shortly before dawn.

* The Moon is new Aug. 30.

* The evening of Sep. 2, the crescent Moon is below the star Spica.

Star Party. The Central Texas Astronomical Society's free monthly star party is tonight at the Waco Wetlands beginning at 8 p.m., weather permitting. For directions see my Website.

=====

Stargazer appears every other week in the *Waco Tribune-Herald* and other Texas newspapers. Paul Derrick is an amateur astronomer who lives in Waco. Write him at 918 N. 30th St., Waco, TX 76707, call or fax at (254) 753-6920, or e-mail at paulderrickwaco@aol.com.

Copyright 2008 by Paul Derrick. Permission is granted for free electronic distribution as long as these paragraphs are included. Please obtain permission from the author for publication in any other form. To be added to (or removed from) the free e-mail distribution list, send your e-mail address (and name) to paulderrickwaco@aol.com.

IAS LIBRARY:

The IAS library is available at the Link Observatory. Tom Borlik has graciously donated bookcases and we have converted the bunkroom into a library. Our complete list can be found (<http://www.iasindy.org/memonly/iasfiles.php>, which is password protected).

Larry A. Marcus

IU Kirkwood Observatory

The Bulletin – The monthly publication of the Indiana Astronomical Society

Kirkwood Observatory on the IU campus is now open! The Observatory will be open every Wednesday night, weather permitting, until November, 2008. Please visit our schedule at 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.

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 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.

Easy Listening:

Weekly podcasts 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.

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

Black Forest Star Party PA September 5-7

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

Astrofest

Kankakee, IL September 5-7th, 2008

<http://www.chicagoastro.org/>

Prairie Skies Star Party – Kankakee IL – September 25-28, 2008

<http://www.prairieskies.org/>

Illinois Dark Skies Jim Edgar Panther Creek State Fish and Wildlife Area II.

September 25-28 <http://www.sas-sky.org/>

Twin Lakes Star Party Pennyville State Park, Western KY Sep 27 - Oct 5

<http://www.wkaa.net/>

Okie-Tex Star Party
<http://www.okie-tex.com/>

Camp Billy Joe, OK Sep 27 - Oct 5

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 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.

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

For Sale - I have a Orion Space Probe 130 mm focal length F/7.0 brand new about 5 months old used about 5 times. Comes with a protective case. 10mm 25mm with a 3x barlow, a solar filter for the sun, a moon filter 25% all filters are still in original boxes and a laser collimator. I have about 600.00 invested into it or more all bought from Orion company still under warranty. Asking 400.00 great for someone just starting out Chris Mendoza 317 731-4241 or my cell 317 654-9871

For Sale - Astronomy photographic prints for sale. The prints are displayed at <http://www.dougsastro.net>. 12" X 18" prints are \$25.00 and 8" X 12" are \$15.00. All of the images were taken by Doug Sanquetti. Most were taken locally near Cicero, IN but a few were taken at Star Parties. Any print on the web site may be ordered by contacting Doug at drsanqun@gmail.com

Onions and Orchids

Orchids to Tom Borlik and Pete Klein for finishing the baseboard and quarter round on the observing deck. The flooring project is now complete.

Thanks to David Williams for installing wheel barrow wheels on the 13.1” scope.

Thanks to Dan Obrien for opening the Link for people who want to observe.

The Pres

New Members

Seek out these new members and welcome them and see if there is anything they need.

Dave Adler
Brownsburg, IN

John Ankeny
Brownsburg, IN

Ron Bustle
Indianapolis, IN

James Fisk
Indianapolis, IN

Kevin Fisk
Indianapolis, IN

Jeff Licquia
Fishers, IN

Joe Marek
Indianapolis, IN

Reino Mattson
Indianapolis, IN

Mark Russell
Danville, IN

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

The Bulletin – The monthly publication of the Indiana Astronomical Society

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) 989-1875

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.

Being a member does **not** mean you are automatically entered into the “Members Only” section and the have the List Serve available. If you are a new member please go to the “Members Only” section and fill out an application. Also within the Members only section you will find aa application for the List serve. The webmaster will set you up and notify you that you can get into the system.

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.

Board Meeting – Board Meeting September 25, 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 main entrance to the building is to the right of Starbucks. 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 need further assistance, please contact Brian P. Murphy, IAS Vice-President on his cell phone 716-8124.

General Meeting Dates 2008

The Board has made a major decision for the Society. In years past there have been major conflicts with star parties and other events and the General meeting which is held the second Saturday of the month. The Board has decided to “float” the date of the general meeting each year based on the phase of the moon. Basically the general meeting will be held close to third quarter moon. The dates of the general meetings will be published at the beginning of each year. We think this change will provide the following benefits:

1. Allow us to schedule NAG (New Astronomer’s Group) meetings at McCloud on Saturday nights good for observing with the public.
2. Prevent conflicts with star parties that generally occur around the new moon which is early in the month in 2008.
3. Still provide observing opportunities at the Link during the Summer months.

The Bulletin – The monthly publication of the Indiana Astronomical Society

4. We will continue to float the Observer's meeting at the Link to provide the best observing possible.

January through March - will stay on the 2nd Saturday at Butler

September 20 at Link

October 18 at Link (Hog Roast)

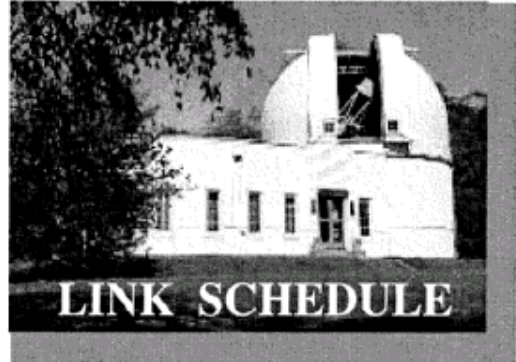
November 15 at Butler

December floats for the Christmas Party at Butler

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 September:

General Meeting September 20

McCloud Activities for September –

NAG September 6

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.

The Bulletin – The monthly publication of the Indiana Astronomical Society

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) 300-0449

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) 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)

Marion Hakes (2008)

John Molt (2008)

Public Event Coordinator

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

The Bulletin – The monthly publication of the Indiana Astronomical Society

Library Committee Coordinator

Larry Marcus marcus@mwmacoustics.com 317 842-6658

Astronomical League Coordinator

Bill Conner wmtconner@sbcglobal.net 1-812 828-0449

September Calendar, 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6 NAG at McCloud
7 ☾	8	9	10	11	12	13
14	15 ○	16	17	18	19	20 General Meeting at Link General Observing
21	22 ☾	23	24	25	26	27 General Observing At Link
28	29 ●	30				

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: _____

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.

The Bulletin – The monthly publication of the Indiana Astronomical Society

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: 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.