

# The IAS News & Views



Volume 79, Issue 12

[www.iasindy.org](http://www.iasindy.org)

## **IAS General Meeting December 15, 2012**

**7:00 PM**

**Holcomb Observatory  
Butler University**

### **Annual Christmas Party and General Election Night**

Our annual Christmas party will be held at Butler's Holcomb Observatory beginning at 7:00pm. Come One! Come All!! The Society will provide the meat – Paula Magar will be bringing a spiral ham and roast turkey breasts. She will also bring her homemade macaroni and cheese. Condiments and rolls will be supplied. The Society will furnish bottled water and coffee, as well as plates and eating utensils.

Members whose last name begins with A-M -- please bring either an appetizer, vegetable dish, salad, or fruit platter. Members whose last name begins with N-Z -- please bring a dessert.

The party is open to IAS members, their families, and invited guests. There will be a short business meeting at the beginning of the evening to elect next year's officers. We will then break to enjoy good food and conversation with friends. We're looking forward to seeing you there!

The Society will furnish drinks, coffee, and plates and eating utensils. The party is open to IAS members, their families and invited guests.

There will be a short business meeting to get the election out of the way but then it is time to have some good food and chat with our friends.

## ***IAS NEWS***

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### **Election Night December 15, 2011**

According to the By-Laws of the IAS, the IAS elections will take place during the Annual Meeting to be held December 17, 2011 at the Holcomb Observatory on the Butler campus. The meeting begins at 7:00PM. All members in good standing and their spouses are eligible to vote.

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If you cannot attend, you may mail a signed absentee ballot to the Secretary. Absentee ballots must be received prior to the election. Additional nominations may be made from the floor by any member at the time of the election. All nominees must agree to serve prior to the election.

Offices shall be filled by election by majority vote of the membership at large at the annual meeting. Votes by absentee ballot shall be recognized provided the signed absentee ballot is received by the Secretary before or during the annual meeting. Votes by proxy will not be recognized.

### **The Report of the Committee on Nominations**

The following slate of candidates have been received and candidates have agreed to run.

President -  
William Conner

Vice President and Program Chairman -  
Doug Brown

Treasurer:  
John Shepherd

Secretary:  
Betsy Brown

Board of Directors (Two to be elected)  
Mike Newberg  
Gerald Venne

Report presented by Jeff Patterson  
Nominating Committee

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If you cannot attend the meeting on Election Night, please vote absentee. We need your participation.

Absentee Ballot

President: \_\_\_\_\_

Vice President: \_\_\_\_\_

Treasurer: \_\_\_\_\_

Secretary: \_\_\_\_\_

Board of Directors (vote for **Two**)

\_\_\_\_\_

\_\_\_\_\_

Signed: \_\_\_\_\_

Mail ballot to  
Betsy Brown, Secretary  
1546 Trace Lane  
Indianapolis, IN 46260  
Absentee ballots must be received prior to the election

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## **By Laws**

It is time to change the By Laws of the Society to better describe our operations. The Board has approved the attached By Laws and asks that the members at large ratify the changes.

### **INDIANA ASTRONOMICAL SOCIETY, INCORPORATED**

#### **BYLAWS**

##### **PREAMBLE**

The Indiana Astronomical Society, incorporated under the laws of the State of Indiana as a not-for-profit/tax exempt corporation, has for its purpose, the advancement of amateur astronomy.

The bylaws, herein set forth, are to serve the purpose of regulating and coordinating the functions of the Indiana Astronomical Society, Incorporated, as defined by its Articles of Incorporation.

##### **ARTICLE I**

##### **MEMBERSHIP**

(1) Membership shall be open to persons interested in promoting the purposes set forth in the preamble to these bylaws. The Board of Directors shall have the right to refuse membership to any applicant for due cause, provided that such refusal shall be by a majority vote of the Board of Directors at any regular board meeting at which there is a quorum.

(2) No person shall be refused membership by reason of race, religion, sex or ethnic origin.

(3) Membership shall be classified as follows:

- (a) Regular
- (b) Student
- (c) Member Emeritus
- (d) Friend of the Society

(4) Regular Membership: A Regular Membership shall be defined as any individual, inclusive of their spouse and immediate family, who pays the annual membership fee as determined by the Board of Directors per Article IV, paragraph 1. This entitles the member to receive the monthly newsletter, use of the IAS Yahoo site,” and one vote each to the individual and their spouse in conducting Society business. The member and their spouse are eligible to run for Society offices.

(5) Student Membership: A Student Member is one who is currently enrolled in school. A student membership entitles the student to participate in Society functions and receive the monthly newsletter and use the Yahoo site. The student cannot hold Society offices but may cast a vote in Society business.

(6) Member Emeritus: A Member Emeritus is a member so honored by the Board. They are entitled to all member privileges with payment of dues waived.

(7) Friend of the Society: A Friend of the Society is an individual or organization so designated by the Board. They are entitled to participate in Society functions and receive *the monthly newsletter* but may not vote or hold office. Dues are not assessed. These persons or organizations can include, but are not limited to, other astronomical societies, libraries, schools, planetariums, and individuals who have contributed to the Society.

(8) An application for membership shall be complete upon payment of dues.

## ARTICLE II

### DIRECTORS AND EXECUTIVE OFFICERS

(1) Except as provided by these bylaws or required by law, the entire control of the Society and its affairs shall be vested in the Board of Directors.

(2) The Board of Directors shall consist of seven (7) members elected from and by the membership at large. In addition, each Executive Officer shall be a voting member of the Board during their terms of office. In the event of a tie vote upon any matter, the President of the Society shall cast a second vote to break the tie.

(3) The age requirement for members of the Board of Directors and Executive Officers shall be 18 years or older.

(4) A member of the Board of Directors or an Executive Officer may be re-elected after their term of office expires.

(5) If a vacancy occurs in any office for any reason, including failure to attend meetings, the Board of Directors shall elect a member of the Society to fill the unexpired term of the vacant office. Failure by a Director to attend six (6) meetings of the Board of Directors during any twelve (12) month period may constitute a vacancy at the discretion of the Board.

(6) At each December meeting, here designated as the "Annual Meeting," the Directors shall be elected by the membership to succeed those whose terms expire.

(7) The Executive Officers of the Society shall be President, Vice President, Secretary, and Treasurer, all of whom shall be elected by written ballot or voice vote at the Annual Meeting. The term of office for the executive officers will be for one year starting January 1st of the next year.

(8) No person shall hold more than one Executive Office at a time.

(9) Members of the Board of Directors shall hold office for three years. Their terms shall be staggered so that two directors are elected at each annual meeting, with the exception of a year in which a third director is to be elected.

(10) The **President** shall preside at all meetings of the members and ensure that the purposes of the meeting are accomplished. The President shall annually nominate the Observatory Manager, the Editor of the monthly newsletter, the Web Supervisor of the official website, the Associate Web Supervisor, the Web Content Manager, the Librarian, the Equipment Loan Program Coordinator, the Public Events Coordinator, the Astronomical League Correspondent, the Membership Coordinator, the NAG coordinator, and the McCloud Stargaze coordinator,. The nominations will be ratified by the Board of Directors. The President will be responsible for communication with Indiana University.

(11) The **Vice President** shall preside in the absence of the President and shall act as Program Coordinator. The Vice President's principal responsibility is to obtain speakers or to develop a specific program for each of the general meetings.

(12) The **Secretary** shall keep minutes of all Business/Board meetings, initiate such Society correspondence as shall be directed to the Secretary, and ensure that records of the Society's business are maintained in permanent form.

(13) The **Treasurer** shall be responsible for all monies belonging to the Society. The Treasurer shall keep accurate records of all transactions and hold Society funds ready for disbursement at the order of the Board of Directors. The Treasurer shall also maintain insurance documents and prepare and submit all required state and federal tax returns.

(14) The **Board of Directors** shall compile and approve an annual inventory report showing the whole amount of real and personal property owned by the Society. The report shall be presented to the President at the January Board meeting. The Secretary shall file the report with the Society's records.

(15) The Board of Directors and Executive Officers shall establish official Standard Operating Procedures (SOPS) for operation of the Link Observatory, to clarify the requirements of these bylaws, detail agreements between the Society and other parties and to comply with any city, state, or federal rules or regulations. These procedures may be altered by the Board of Directors without a general members' vote. Such operating procedures shall be filed with the Society's records and shall be posted where deemed appropriate.

(16) The **Observatory Manager** shall be responsible for routine management of the Link Observatory. The Observatory Manager shall maintain an inventory of the IAS property at the observatory and schedule the use of the Link Observatory facilities. It is the Observatory Manager's responsibility to notify the President of any situation at the Link Observatory that requires the attention of Indiana University. The Observatory Manager is responsible for the security of the keys he holds for the Society, accounting for all keys issued to the Society, reporting of the status of the keys to the Board and issuance of keys in accordance with the directions of the Board.

(17) The **Editor** shall be responsible for publishing the monthly newsletter. The electronic copy is to be transferred to the Web Supervisor for placement on the website. The Editor shall be responsible for printing and mailing copies to members who have designated that they prefer “hard copies” and to Friends of the Society. It is the Editor’s responsibility to maintain a high level of excellence in the newsletter.

(18) The **Web Supervisor** shall be responsible for the operation and maintenance of the IAS website at the highest level of excellence.

(19) The **Associate Web Supervisor** shall assist the Web-Supervisor in their duties and know the system well enough to act as Web-Supervisor if needed.

(20) The **Web Content Manager** will function as-is the Society's liaison with the Web Supervisor. Duties include maintaining information on the website that is NOT design related and serving as the administrator of the two IAS Yahoo groups.

(21) The **Librarian** shall be responsible for the Society’s library including the maintenance of an inventory of all media, and check in/out records for the Society. The Librarian shall be responsible for recommendations to the Board for additional media.

(22) The **Equipment Loan Program Coordinator** shall be responsible for maintaining the loaner equipment and overseeing loan activities.

(23) The **Public Events Coordinator** is responsible for evaluating, scheduling and coordinating events requested by public and private institutions and individuals.

(24) The **Astronomical League Correspondent (ALCor)** shall serve as the Society’s contact person for Astronomical League matters. The ALCor will coordinate with the Membership Coordinator to ensure that membership rosters are sent to the League in accordance with Astronomical League procedures. The ALCor is also responsible for communicating League benefits and programs to the Society’s members.

As a collateral duty, the ALCor shall serve as the Society’s Awards Coordinator (AC) for the League. The Awards Coordinator will carry out these duties in accordance with instructions from the Astronomical League's Observation Program chairpersons.

(25) The **Membership Coordinator** shall collect dues from the members, keep accurate records of all transactions and transfer these funds to the Treasurer. The Membership Coordinator shall update and maintain Membership, Inactive membership



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and IAS Astronomical League databases. Each month the Membership Coordinator will send Notices of Pending Membership Expiration and Notices of Membership Expiration. In addition, the Membership Coordinator will send letters of welcome and introduction to all new members upon receipt of the application and dues.

(26) The **New Astronomer's Group (NAG) Coordinator** is responsible for coordinating the development and presentation of NAG programs at general meetings. Duties include the creation of an archive of NAG presentations for the future.

(27) The **McCloud Star Gaze Coordinator** will function as the Society's liaison with the McCloud Nature Park. Duties include coordinating the development and presentation of public programs at the Park.

### ARTICLE III

#### MEETINGS

(1) Members of the Board of Directors and Executive Officers shall be elected at the Society's Annual Meeting held in December.

(2) Society meetings shall be held each month and shall be open to the public.

(3) Notice of all Society meetings shall be published before the date of such meeting, and shall state the time, place, and purpose thereof.

(4) Ten (10) percent or 20 members of the Society, whichever is greater, shall constitute a quorum at general meetings. Only those members present shall be allowed to vote. Votes by proxy will not be recognized. With the exception of the annual election of officers, no vote by absentee ballot shall be recognized.

(5) Five (5) voting members of the Board of Directors shall constitute a quorum.

(6) Special meetings of the Board of Directors may be called at any time by the President or by any three (3) Directors upon at least two (2) days personal notice to each Director.

(7) The order of business at the Society's Board meetings shall be as follows:

- (a) Call to order
- (b) Reading of the past meeting's minutes

- (c) Reports of Officers and Directors
  - (d) Reports of committees
  
  - (e) Old Business
  - (f) New Business
  - (g) Adjournment
- (8) The order of business at the Society's general meeting shall be as follows:
- (a) Call to order
  - (b) Recognition of members and guests
  - (c) Reports and announcements of pertinent Society activities
  - (d) Program
  - (e) Adjournment

#### **ARTICLE IV**

#### **FINANCES AND DUES**

- (1) Annual membership dues shall be determined by the Board of Directors.
- (2) Funds of the Society shall be deposited or kept with a bank or trust company doing business in the State of Indiana. Said funds shall be disbursed upon the order or orders of Society officers as may be prescribed by the Board of Directors.
- (3) No officer shall receive, directly or indirectly, any salary, compensation, or fee from the Society. The Society may, however, pay compensation to employees or agents who are not officers or members of the Board of Directors.
- (4) The chairperson of any special committee shall file a written budget proposal with the Board of Directors if funding is required.
- (5) The President shall appoint three members of the Society, other than the Executive Officers, to act as auditors. The auditors shall examine the Society's financial records and express their opinion thereon, furnishing copies of such opinion to the President, Treasurer and Board of Directors at the March board meeting.

## **ARTICLE V**

### **ELECTIONS**

(1) The Board of Directors shall, at its September meeting, appoint a Nominations Committee consisting of three members of the Society and specify its chairperson.

(2) The Nominations Committee shall, by majority vote, make nominations for the offices to be filled. The report shall be presented to the Board at its November meeting.

(3) The Nominations Committee report shall be published in the December issue of the newsletter.

(4) Additional nominations may be made from the floor by any member in good standing at the time of the election.

(5) All nominees must agree to serve prior to the election.

(6) Offices shall be filled by majority vote of the membership at the annual meeting. Votes by absentee ballot shall be recognized, provided the signed absentee ballot is received by the Secretary before or during the annual meeting.

## **ARTICLE VI**

### **COMMITTEES**

(1) The President, by decree, may create or dissolve any special, or temporary, committees needed to conduct the business of the Society

(2) Creating or dissolving of standing committees requires a majority vote of the Board of Directors.

(3) The President may at his discretion serve as an *ex officio* member of any and all committees

## **ARTICLE VII**

### **RULES OF PROCEDURE**

(1) The rules of procedure at meetings of the members shall be according to Roberts' Rules of Order, Revised, so far as applicable and when not inconsistent with these bylaws.

## ARTICLE VIII

### AMENDMENT

(1) These bylaws may be amended by a 2/3 majority vote of the members present at any regular meeting of the Society, provided that a quorum is present, the amendment has been submitted by a member in writing at a previous meeting and published in the newsletter preceding the meeting where it is to be voted upon.

## ARTICLE IX

### DISSOLUTION

(1) Upon dissolution of the Indiana Astronomical Society, Incorporated, the assets of the Society shall be distributed for one (1) or more exempt purposes within the meaning of Section 501 (c) (3) of the Internal Revenue Code, or corresponding section of any future federal tax code. Any such assets not so disposed of shall be distributed to the State of Indiana or the City of Indianapolis, Indiana, for a public purpose, as may be required by law or tax statute.

## ***IAS NEWS***

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### **From the President**

I has been a great pleasure to serve as your president for the past 11 years. I want to thank the Board and previous Boards who have made my job easier. I have seen us grow from a local observing group to a Society involved in all kinds of outreach. I hope to see it grow even more and with LOSSC coming to the Link I think we will see great changes there as well. I am not gone but have rather moved into areas where I can get more involved in the public outreach and observing. I hope to spend a lot of time building the 20 inch Clyde Fishburn cassegrain for the Society. I will miss the leadership role but look forward to newer and better things to come.

Jeff Patterson

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### **The December Observing List**

Below please find a list of ten (10) objects to view this month. Those who complete the list will receive a certificate at the following general meeting. We're also providing a challenge object to help push the limits of your observing skills. It's not necessary to successfully view the challenge object to receive the certificate; we only ask that you try.

Please complete the following list to receive the December certificate:

Gamma Andromedae (Double star)  
Algol (Eclipsing binary in Perseus)

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M34 (open cluster in Perseus)  
M45 (the Pleiades or Seven Sisters, in Taurus)  
M77 (Seyfert galaxy in Cetus)  
NGC779 (galaxy in Cetus)  
NGC869 (half of the Double Cluster in Perseus)  
NGC884 (the other half of the Double Cluster)  
NGC891 (edge-on galaxy in Andromeda)  
NGC957 (open cluster in Perseus)

Challenge object for December 2012: NGC1365 in Fornax

The above objects are all located between 2 and 4 hours of right ascension and so are well-placed for evening viewing this month.

The Pleiades cluster is easy from a dark location. How many stars can you count with the naked eye? The Double Cluster is also a star-party favorite; both of which can be fit in a single low-power view. A Seyfert galaxy -- like M77 -- is undergoing starburst formation in its nucleus. Dates and times (EST) when Algol should be above the horizon and at minimum: 12:29 am on the 9th, 9:18 pm on the 11th, 6:07 pm on the 14th, 2:13 am on the 29th, and 11:02 pm on the 31st. NGC1365 is 10th magnitude but its light is spread over an area of 11x6'. It will require low power from a site with a good southern horizon on a clear, moonless night.

If you complete this list prior to the end of December, contact Bruce Bowman to ensure you receive recognition. Winners are asked to pick up their certificates at the following general meeting. At this time only IAS members are eligible.

Congratulations for the following IAS members for successfully completing the October list: Tom Hubbard, Steve Hubbard, Steve McSpadden, Wayne McSpadden, John Molt, and Mike Newberg. John also viewed the challenge object NGC7293.

## Q&A ABOUT THE IAS MONTHLY OBSERVING AWARD

Q1: Do I have to use my own equipment?

A: No...although bringing and using your own telescope is strongly encouraged. Also keep in mind that the IAS has an equipment loaner program.

Q2: Do I need to find the objects myself?

A: No. You need only make the observations. Conceptually, if we had 10 telescopes set up -- each trained on a different object -- you could just go from one to the other and become eligible.

Q3: What do I need to submit to you to receive the award?

A: Just contact me and let me know that you completed the requirements for the month.

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## New Telescope Operators

Four members have recently completed the requirements for becoming certified telescope operators.



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## Sheriden Airport Stargaze

Thank you to the volunteers and participants in this year's stargazing event at the Sheridan Airport held last Friday night. Telescopes and binoculars were provided by IAS members Eric Allen, Tom Hubbard, Steve McSpadden, John Molt, Gerald Venne and Sponsor, Keith Turner. Keith is the Director of the Carmel High School Planetarium and had invited the Carmel High School Astronomy Club and, with co-sponsor and teacher, Debbie Eberly, some classes from Smoky Row Elementary in Carmel to the event. Although the viewing was well-received by the attendees, no accurate count could be made as people arrived and left at different times and many made repeated visits to the various scopes as viewing targets changed. The weather was mild with some light wind, thin clouds, haze and airplane contrails. Objects viewed lower in the sky were murky until they rose above the haze that was most apparent within about 10 degrees of the horizon. Above that views were sharp. The Eberly's hangar provided a warm room and space to serve hot chocolate to the participants. Sorry, volunteers; there wasn't enough time for us to check that out, but look for another chance next year!

Gerald Venne  
IAS Public Events Coordinator

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## **Twin Lakes Star Party 2012**

Hosted by the folks of the Western Kentucky Astronomical Association October 6 through 13 at Pennyriple Forest State Forest in western KY. Weather was about average for star parties at this time of year; Saturday and Sunday evenings had little if any observing, Monday was cold but very clear all evening, the moon rose around 2. Frost was an issue for many - I needed to stop as the tarp below my scope and step ladder were too slippery - no issues for the instruments - I have dew controls for everything and plenty of batteries but didn't need them the rest of the week. Tuesday was good until around 1 when clouds rolled in. The rest of the evenings were pretty good except for Wednesday - the forecast for Saturday evening was gloomy at best - wrong! The field was empty by then though. Continuing the fine tradition of 'southern' hospitality, the folks of the WKAA made sure we were entertained and well fed. Plenty of beverages, fruit and snacks all week along with burgers and hotdogs Tuesday evening, beans and cornbread Wednesday evening and a catered meal of pork chops, ham and lots of sides for Saturday lunch preceding door prizes, continuing tradition many of us gathered at the Lodge for the Friday evening buffet. I played 2 rounds of golf on the course within Pennyriple State Forest too; a nice course though you'll need plenty of extra golf balls if your shots wander off the beaten path so to speak. It's a great location for the last reasonably nearby star party of the season, not too far away, usually with 6.5 magnitude skies. Accommodations can be anything from camping on the field, to the Lodge, to cabins within the park. If you've the opportunity to attend it's a great event with good skies, a lot of dobsonian telescopes and hosted by great people.

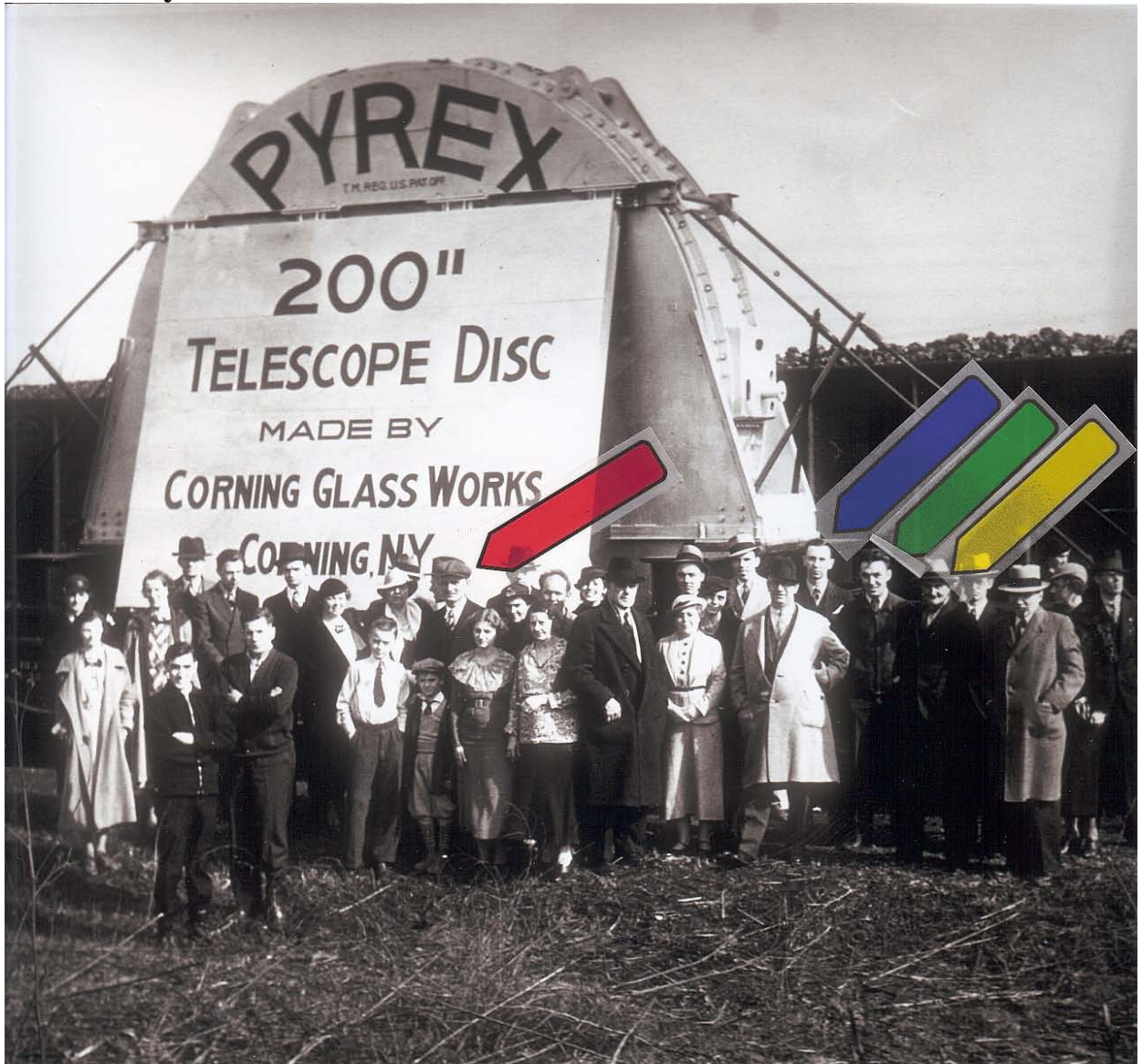
Submitted By John Molt

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## **Onions and Orchids**

Thanks to those who stepped up to take leadership roles in the IAS

## IAS History



Unlike the other picture taken in Brightwood Railroad Yards on Sunday, March 26, 1936, this one has our members posing for the camera. Note that even the kids are wearing ties!

The only people that I can identify are **red arrow** (Walt Wilkins) – the society’s newsletter editor for over 40 years, **blue arrow** (Alvey Pittman) – Goethe Link Observatory’s architect and later IAS officer & board member, **green arrow** (Vic Maier) – Goethe Link Observatory’s project engineer & **yellow arrow** (Samuel S. Waters) – Indianapolis Amateur Astronomers Association’s founder and president.

The photo was made from a slide in Clyde Fishburn’s collection

## IAS Calendar of Events for December Christmas Party December 15

### Observing Activities



## Activities for November:

**Link Observatory -**

**None Planned**

**Prairie Grass Observatory 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 John Shepherd at 1 317-862-3442.

For those interested in going to McCloud to observe, please call the park office 765 676 5437 before 4PM on the day you want to go out. They will give you permission to be there at night and make arrangements to cut off the lights.

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

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## IU Kirkwood Observatory Bloomington

The Kirkwood Observatory Solar Telescope is open on the "First Saturday" of each month from 1-3 PM. Viewers may even be able to see a solar prominence or two weather permitting. Updated weather conditions and closings will be posted at the Kirkwood Observatory Hotline at (812) 855-7736, and at the Observatory webpage, <http://www.astro.indiana.edu/kirkwood.shtml>.

Monthly openings of the solar telescope are planned for the first Saturday of each monthly during our 2011 and 2012 observing seasons. And if you want to follow the Sun in between our monthly Solar Telescope openings, the website [www.spaceweather.com](http://www.spaceweather.com) provides daily updates.

Kirkwood Observatory on the IU campus is open each Wednesday evening from spring break until mid-November, weather permitting! Join us for a night of observing the night sky with the Kirkwood 12" refractor. Please visit our schedule at <http://www.astro.indiana.edu/kirkwood.shtml>, for a list of dates and times. For updated weather conditions and closings, please call the Kirkwood Observatory Hotline at (812) 855-7736.

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## Astronomical League News

William Conner AL/Cor

### CONSTELLATION PRONUNCIATION GUIDE

From The Astronomical League "Astro Note #7"

Note the syllable that is to be em-PHA-sized is in CAPITAL letters

Andromeda - an-DR0M-eh-duh

Antlia - ANT-lih-uh

Apus - AY-pus

Aquarius - ack-KWAIR-ee-us

Aquila - ACK-will-ah

Ara - AY-ruh

Aries - AIR-eez

Auriga - or-EYE-gah

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Bootes - boe-OH-teez  
Caelum - SEE-lum  
Camelopardalis - ka-MEL-oh-PAR-da-lis  
Cancer - KAN-surr  
Canes Venatici - KAY-neeZ ven-AT-iss-see  
Canis Major - KAY-nis MAY-ger  
Canis Minor - KAY-nis MY-ner  
Capricornus - kap-rih-KORN-nus  
Carina - ka-REEN-uh  
Cassiopeia - kass-ee-oh-PEE-yah  
Centaurus - sen-TAW-rus  
Cepheus - SEE-fee-us  
Cetus - SEE-tuss  
Chamaeleon - ka-MEEL-eon  
Circinus - SUR-sin-us  
Columba - ko-LUM-bah  
Coma - KO-mah  
Berenices - bear-en-EYE-sees  
Corona - kor-OH-nah  
Australis - oss-TRAY-liss  
Borealis - bo-ree-ALICE  
Corvus - CORE-vuss  
Crater - KRAY-turr  
Crux - KRUX  
Cygnus - SIG-nuss  
Delphinus - del-FINE-uss  
Dorado - dough-RAH-dough  
Draco - DRAY-ko  
Equuleus - ek-KWOO-lee-us  
Eridanus - eh-RID-ah-nuss  
Fornax - for-NAX  
Gemini - JEM-in eye  
Grus - GRUSS  
Hercules - HER-kyou-leez  
Horologium - hor-o-LO-jee-um  
Hydra - HIGH-druh  
Hydrus - HIGH-drus  
Indus - IN-duss  
Lacerta - la-SIR-tah  
Leo - LEE-oh  
Leo Minor - LEE-oh MY-ner  
Lepus - LEE-puss  
Libra - LEE-brah  
Lupus - LEW-puss  
Lynx - LINKS  
Lyra - LYE-ruh  
Microscopium - my-kro-SKO-pee-um  
Monoceros - mon-OSS-er-us  
Musca - MUS-kah  
Norma - NOR-mah  
Ophiuchus - off-ih-YOU-kuss  
Orion - oh-RYE-un  
Pegasus - PEG-uh-uss  
Perseus - PURR-see-us  
Phoenix - FEE-nix  
Pictor - PICK-torr  
Pisces - PIE-sees  
Piscis - PIE-siss  
Australis - oss-TRY-nus  
Puppis - PUPP-iss  
Pyxis - PICK-siss  
Sagitta - sah-JIT-tah  
Sagittarius - saj-ih-TAY-rih-us  
Scorpius - SKOR-pih-uss  
Sculptor - SKULPT-tor  
Scutum - SKYOU-tum  
Serpens - SIR-pens  
Sextans - SEX-tans  
Taurus - TOR-russ  
Telescopium - tell-ih-SKO-pee-um  
Triangulum - try-ANGH-gu-lum  
Triangulum  
    Australe - oss-TRAY-lee  
Tucana - too-KAH-nah  
Ursa Major - URR-sah MAY-ger  
Ursa Minor - URR-sah MY-ner  
Vela - VEE-lah  
Virgo - VER-go  
Volans - VO-lanz  
Vulpecula - vul-PECK-you-lah

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## NASA Space Place

**It Takes More Than Warm Porridge  
to Make a Goldilocks Zone**

By Diane K. Fisher

The “Goldilocks Zone” describes the region of a solar system that is just the right distance from the star to make a cozy, comfy home for a life-supporting planet. It is a region that keeps the planet warm enough to have a liquid ocean, but not so warm that the ocean boils off into space. Obviously, Earth orbits the Sun in our solar system’s “Goldilocks Zone.”

But there are other conditions besides temperature that make our part of the solar system comfortable for life. Using infrared data from the Spitzer Space Telescope, along with theoretical models and archival observations, Rebecca Martin, a NASA Sagan Fellow from the University of Colorado in Boulder, and astronomer Mario Livio of the Space Telescope Science Institute in Baltimore, Maryland, have published a new study suggesting that our solar system and our place in it is special in at least one other way.

This fortunate “just right” condition involves Jupiter and its effect on the asteroid belt. Many other solar systems discovered in the past decade have giant gas planets in very tight orbits around their stars. Only 19 out of 520 solar systems studied have Jupiter-like planets in orbits beyond what is known as the “snow line”—the distance from the star at which it is cool enough for water (and ammonia and methane) to condense into ice. Scientists believe our Jupiter formed a bit farther away from the Sun than it is now. Although the giant planet has moved a little closer to the Sun, it is still beyond the snow line.

So why do we care where Jupiter hangs out? Well, the gravity of Jupiter, with its mass of 318 Earths, has a profound effect on everything in its region, including the asteroid belt. The asteroid belt is a region between Mars and Jupiter where millions of mostly rocky objects (some water-bearing) orbit. They range in size from dwarf planet Ceres at more than 600 miles in diameter to grains of dust. In the early solar system, asteroids (along with comets) could have been partly responsible for delivering water to fill the ocean of a young Earth. They could have also brought organic molecules to Earth, from which life eventually evolved.

Jupiter’s gravity keeps the asteroids pretty much in their place in the asteroid belt, and doesn’t let them accrete to form another planet. If Jupiter had moved inward through the asteroid belt toward the Sun, it would have scattered the asteroids in all directions before Earth had time to form. And no asteroid belt means no impacts on Earth, no water delivery, and maybe no life-starting molecules either. Asteroids may have also delivered such useful metals as gold, platinum, and iron to Earth’s crust.

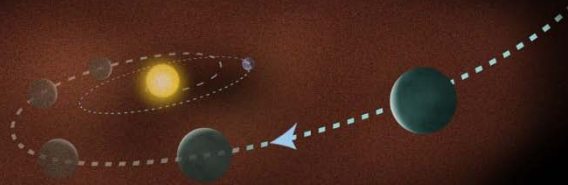
But, if Jupiter had not migrated inward at all since it formed farther away from the Sun, the asteroid belt would be totally undisturbed and would be a lot more dense with asteroids than it is now. In that case, Earth would have been blasted with a lot more asteroid impacts, and life may have never had a chance to take root.

The infrared data from the Spitzer Space Telescope contributes in unexpected ways in revealing and supporting new ideas and theories about our universe. Read more about this study and other Spitzer contributions at [spitzer.caltech.edu](http://spitzer.caltech.edu). Kids can learn about infrared light and enjoy solving Spitzer image puzzles at [spaceplace.nasa.gov/spitzer-slyder](http://spaceplace.nasa.gov/spitzer-slyder).

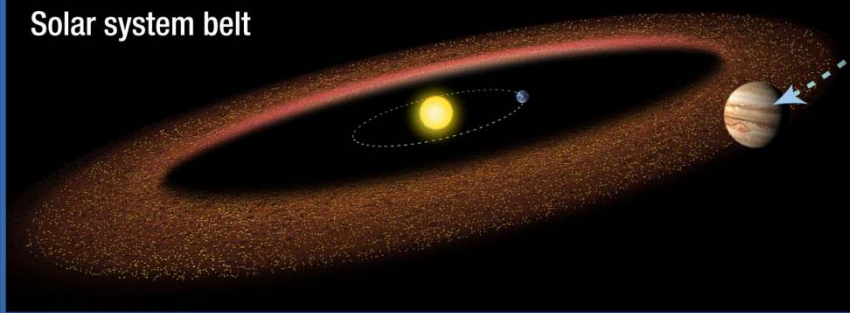
This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

### Three scenarios for asteroid-belt evolution

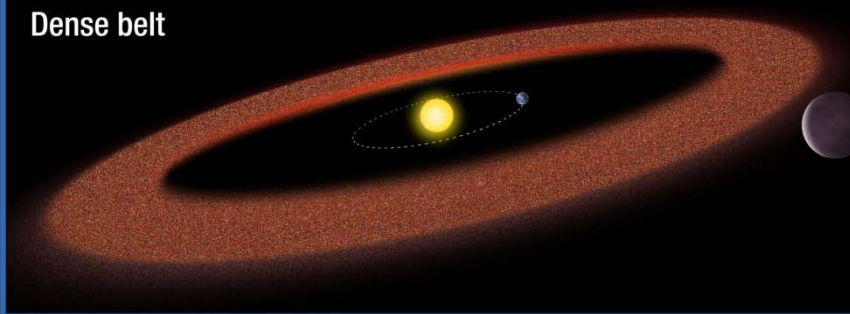
#### Disrupted belt



#### Solar system belt



#### Dense belt



*Our solar system is represented by the middle scenario, where the gas giant planet has migrated inward, but still remains beyond the asteroid belt.*

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### Do you have a question or need?

We have established 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 (Contact Jeff via the webpage [iasindy.org](http://iasindy.org) under the contact us section) –  
Observatory design and construction

Eric Allen ([ericandroberta@sbcglobal.net](mailto:ericandroberta@sbcglobal.net)) - Telescope making and mirror grinding

Brian Murphy ([bmurphy@monumentcompanies.com](mailto:bmurphy@monumentcompanies.com)) - "telescope construction and collimation".

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**Public Outreach Programs – If you want to schedule a program at the Link Observatory or at your site, please contact the following people:**

**Gerald Venne is our Public Events Coordinator.** He will be responsible for coordinating Public Events for the IAS. To schedule a public event contact Gerald Venne (Contact Gerald via the webpage [iasindy.org](http://iasindy.org) under the contact us section).

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.

If you would like to schedule the Goethe Link Observatory, please contact John Shepherd. Contact John via the webpage [iasindy.org](http://iasindy.org) under the contact us section)

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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:** Kenneth Novak 4-vane spider assembly for telescope tubes of 15.5-16" O.D.. The hub is 1.75" in length and sized for a 3/8" stud. Asking \$20 or will trade for other Dobsonian construction materials. Contact Bruce Bowman 317-539-2753

**For Sale: Books for Sale**

Three Volume Millennium Star Atlas, first edition, hard bound; virtually brand new. \$49. (original cost ~ \$200)

Observational Astronomy for Amateurs by J.B. Sidgwick \$1.

Amateur Astronomer's Handbook by JB Sidgwick \$1.

Physics of the Planet Mars by Gerard de Vaucoulerus (late 50's \$1

Photographic Atlas for Supernova Search, Vol II by Manuel Lopez Alvarez \$1

Vol III \$1

Atlas of the Andromeda Galaxy by Paul Hodge (new) \$5

The Cambridge Double Star Atlas by Mullaney and Tirion (new) \$4

IAS News and Views

Fundamental Astronomy, Second Ed, Karttunen, Kroger, Oja, et al \$1

The Magnificent Universe by Ken Crowell \$1; free to a good home (or bad)

Splendors of the Universe; A Practical Guide to Photographing the Night Sky  
by Dickinson and Newton (1997) \$1 ; fee to a good home (or bad)

contact Fritz Kleinhans  
317-290-1689  
[starman@iupui.edu](mailto:starman@iupui.edu)

**For Sale:** MEADE 8" F/4.5 NEWTONIAN

Includes German Equatorial Mount with three counterweights, felt-lined mounting rings, RA and Dec slow motion controls, accessory tray and 6x30 finder scope. Eyepieces include 25mm MA and 9mm Ortho. All instruction manuals are included.

Additional Accessories:

- \* Quartz RA motor drive incl battery pack
- \* Polar alignment viewfinder
- \* 12.5mm illuminated reticle eyepiece
- \* Meade 60mm guidescope with mounting rings and 1.25" diagonal
- \* 1.25" camera adapter
- \* Piggyback camera bracket

Aluminized mirror has been cleaned and collimated. Optics are excellent, like new.

Telescope is in very good condition. A complete package for wide-field astrophotography and deep sky observation.

Asking \$400.00 – Call Bill at 892-2036 or e-mail at [bwilHITE@tds.net](mailto:bwilHITE@tds.net).

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## 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. Philip Dimpelfeld 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.

Philip Dimpelfeld at [equipment@iasindy.org](mailto:equipment@iasindy.org)

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## Board Meeting – None in December

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### 2013 Calendar of Meetings

	General	Board	NAG	McCloud Stargaze
January	14	17		
February	11	14		
March	10	6		

## IAS News and Views

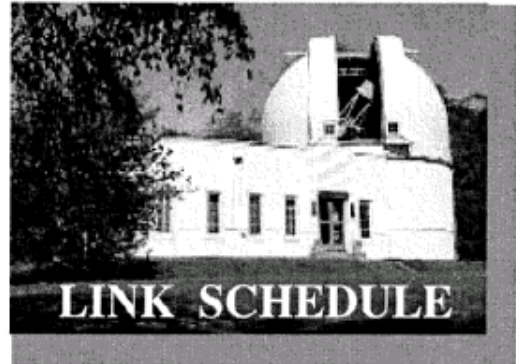
<b>April</b>	14	10		28
<b>May</b>	12	8	12	26
<b>June</b>	9	12	9	none
<b>July</b>	14	10	14	28
<b>August</b>	11	7	11	25
<b>September</b>	8	4	8	22
<b>October</b>	13	9	13	20
<b>November</b>	10	6		
<b>December</b>	15	15		

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## Goethe Link Observatory Observatory Address

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

Latitude: 39 degrees, 33 minutes north  
Longitude: 86 degrees, 24 minutes west  
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: John Shepherd* **Contact via the webpage [iasindy.org](http://iasindy.org) under the contact us section. DON'T WAIT UNTIL THE LAST MINUTE TO MAKE YOUR REQUEST OR YOU MAY NOT GET ACCESS.**

## IAS News & Views Monthly Newsletter for the IAS

### Accessing the IAS News & Views

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

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

IAS News and Views

Phone: (317) 300-0449  
[KB9SRB@hotmail.com](mailto:KB9SRB@hotmail.com)

**Membership information Contact via the webpage [iasindy.org](http://iasindy.org) under the contact us section**  
Contact any IAS officer or the Treasurer John Shepherd or Vicki Switzer

**Pay Your Dues by PayPal**

We can now pay dues on our website using paypal. There is a cart system where you can pay dues, order magazines, or donate to the Society. The cart is found in the Join the Society section of the website. You will have to establish a PayPal account for yourself to make the transactions.

**Observatory Manager**

John Shepherd **Contact via the webpage [iasindy.org](http://iasindy.org) under the contact us section**

**Public Event Coordinator**

Gerald Venne **Contact via the webpage [iasindy.org](http://iasindy.org) under the contact us section**

**Equipment Loan Program Coordinator**

Philip Dimpelfeld **Contact Phil at [equipment@iasindy.org](mailto:equipment@iasindy.org)**

**Membership Coordinator**

Vicki Switzer **Contact Vicki via the webpage [iasindy.org](http://iasindy.org) under the contact us section**

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**Logo Clothing**

The Board has developed a new supply of logo ware with our new logo using Mid Central Trophy in Kokomo, IN. Typically T shirts, sweatshirts, polo shirts, and caps are available. Now we are even making it easier for you. We have changed our method of order so that you can have better service. Call Linda, tell her this is an order for the IAS logo ware, discuss what you want and give her the size. She can determine the cost and shipping and mail the order to your home directly.

Linda

Mid-Central Trophy

422 Arnold Ct

Kokomo, IN 46902

765-453-5494

All Major credit cards are accepted.

Hours 9-5 EST



**December Calendar, 2012**

**For a more detailed Calendar of Events see the webpage [www.iasindy.org](http://www.iasindy.org)**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6 3rd QTR ☾	7	8
9	10	11	12	13 New Moon ●	14	15 General Elections and Christmas Party
16	17	18	19	20 1st Qtr ☾	21	22
23	24	25	26	27 Full Moon ○	28	29
30						