

# The IAS News & Views



The monthly publication of the Indiana Astronomical Society, an amateur non-profit educational organization ([www.iasindy.org](http://www.iasindy.org))

February, 2011

Volume 78, Issue 2

**The February General Meeting  
February 19, 2011  
7:00 PM  
Holcomb Observatory  
Butler University**

**Why the Heisenberg Uncertainty Principle is Necessary for Life on  
Earth**

**Dr. Richard Ditteon – Rose-Hulman Institute**

Despite the title – “a cheap attempt at sensationalism to grab your attention” -- this talk is really about the physics of stars. I will attempt to explain how we know that nuclear reactions are the source of the energy that the Sun produces. Also, I will show how we know that the conditions inside the Sun are right for those nuclear reactions to actually occur. The answers to these questions will ultimately lead us to understand the title of the talk.

Richard Ditteon has been a member of the Physics Department at Rose-Hulman Institute for 27 years. For the past 19 years he has also been the director of the observatory and is responsible for establishing the Oakley Observatory on the Rose-Hulman campus and the Oakley Southern Sky Observatory in Australia. His current research involves photometry of main belt asteroids, which is useful for determining their rotation period and shape.

***IAS NEWS***

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## **IAS Calendar of Events for February**

General Meeting February 19  
Board Meeting February 22  
March General Meeting March 26

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## **The President's Corner**

Man what a winter! I can't remember the last time I had a scope out or the roof rolled off the observatory. My refractor project is still sitting as it was just after Thanksgiving. I have been working like crazy getting my observing plans set up for this coming year but I really prefer to look through a telescope. I have been getting the gear ready for WSP which occurs the end of this month.

The Board is deep in planning for the new year for the Society. Whether you are an armchair enthusiast, or an avid observer; a newcomer or an old hand at observing we need to hear from you about the direction you want us to take. Let us know your interests in activities and speakers so we can make this a fun adventure for all of us. Do you want a different kind of speaker. Or do you want to use the Link more effectively. Do you want to take more field trips. We need to hear from you and need folks who can help organize events. Don't be shy or bashful. Let's have fun and make 2011 the best year we have had.

I would like to see **Teams** of members who were willing to help out with events at the Link. If we have enough people involved you don't have to do it too often. We also need teams of folks willing to do public events. They are fun as well as very important to our goals as a Society. They are really easy to do and you do not have to know everything there is about the universe to be successful. Give Gerald a call and let him know he can count on you.

I could use help with the articles for the News and Views. If you have something to contribute I would greatly appreciate it.

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## **New ATM Group Meets**

I am pleased to announce that a new ATM group met at Jim Ehler's home to talk about telescope making and interests. I was surprised that most were not throbbing to do a mirror. Most just wanted to build and refurbish telescopes. There seems to be a lot of talent in the group. One is a machinist, one a welder, and one a mirror grinder. We will have more information about this later.

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## **Planetary and Lunar Observing**

Several people have expressed an interest in planetary and lunar observing. As spring begins to roll around and we can begin observing again let's get some observing programs together. let me know if you are interested.

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## **Astronomical League**

### **GLOBE at Night 2011, Feb 21 – March 6, March 22 – April 4**

Members of the Indiana Astronomical Society are invited to participate in the 6<sup>th</sup> annual global campaign to measure night sky brightness known as "GLOBE at Night." GLOBE at Night provides us with an opportunity to go outside between 8 and 10 PM on a clear, moonless night, and observe the constellation Orion. With the new moon occurring on the 4<sup>th</sup>, the best opportunity will be during the weekend of 5 & 6 March and April 2 & 3. Let's hope for clear nights during these periods.

Participation does not require any special training or instruction. The GLOBE at Night web site provides all the information needed so visit: [www.globeatnight.org/](http://www.globeatnight.org/) In 2010, citizen scientists from 86 countries submitted over 17,800 observations.

To participate, all you have to do is compare your view of the nighttime sky with the 7 Magnitude Charts in the downloadable Family Activity Packet. These charts will help you determine the magnitude of faintest stars that you can see at your location. You are also encouraged to observe from more than one location, for example, your home and a favorite dark site. Submit your report on the GLOBE at Night web site.

Bill Conner AL/Cor

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## Happy 100th Birthday AAVSO

By Kurtis Williams, [Professor Astronomy](#)

Welcome back to a new year (and technically a new decade, though I [celebrated that a year early](#)!) All of us on this celestial ball have just started a new revolution about the Sun (technically the center of mass of the Solar System, which is close to the Sun, but that's not important for most people), so we tend to look forward to a new year full of possibilities and discoveries yet unwritten (or half-written, in my case, but that's another column).

I've [blogged many times](#) about the important contributions that non-career astronomers have made and continue to make to the science of astronomy. Just earlier this week a 10-year old Canadian student, Kathryn Gray, [became the youngest known person to help discover a supernova](#) (exploding star).

One of the largest organizations of citizen astronomers is the [American Association of Variable Star Observers](#), or AAVSO. The AAVSO was organized in 1911, which makes this year their (*let's see, subtract 1911 from 2011, borrow 1 from the thousands column....*) centennial! [100 years](#)! That's no small accomplishment, and the organization is only continuing to grow in membership and impact.

Members of the AAVSO participate in science by monitoring the brightnesses of stars. Many stars change their brightness, hence the term "variable". The [reasons for these variations](#) are many. Some stars are really close pairs of stars that periodically eclipse each other. Some stars grow and shrink in radius due to an unstable structure. Some stars are pulling material off their companions. And some stars have planets that occasionally block a tiny amount of light of their parent star.

The most important tool needed to study variable stars is time. While many variable stars change their brightnesses in predictable fashion, many others are unpredictable. And professional telescopes have too many varied research projects to sit and stare at a star that may do nothing for months, years, or even decades before it does something interesting. The total membership of the AAVSO does have the time and telescope power to watch these stars and notify the big telescopes when something unexpected happens.

But the AAVSO does much, much more than simply act as night watchmen for professional astronomers. Their measurements of star brightness are often just as accurate, and in some cases better, than those obtained by professional astronomers. AAVSO members and their data regularly appear in scientific papers. They are discovering hitherto unknown planets around other stars. They are discovering changes in variable stars that professionals would never have noticed. This is all cutting edge science.

You do not need to have a degree in astrophysics to participate in the AAVSO. You don't even need to have thousands of dollars worth of equipment. You just need an interest in astronomy, a willingness to learn how to make astronomical measurements, and dedication to looking up at the sky. Why not stop by the [AAVSO website](#), read about [their centennial celebration](#) and their history, and see if any of their ongoing projects tickles your fancy. There's no reason you can't discover a supernova or a planet yourself!

## Observing Activities

**None planned**

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### Activities for February:

#### Link Observatory

None planned

#### McCloud Activities—

NAG –There is no NAG. See you next April.

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 Observatories for observing call Hoppe at 1-765-296-2753.

### Other Observing Activities

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 2010 observing season. 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.

### IU Kirkwood Observatory

Kirkwood Observatory on the IU campus will be open each Wednesday evening through the summer, 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.

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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## NASA Space Place

### Planets in Strange Places

By Trudy E. Bell

Red star, blue star, big star, small star—planets may form around virtually any type or size of star throughout the universe, not just around mid-sized middle-aged yellow stars like the Sun. That's the surprising implication of two discoveries in 2006 from the 0.85-meter-diameter Spitzer Space Telescope, which is exploring the universe from orbit at infrared (heat) wavelengths blocked by the Earth's atmosphere.

At one extreme are two blazing, blue "hypergiant" stars 180,000 light-years away in the Large Magellanic Cloud, one of the two companion galaxies to our Milky Way. The stars, called R 66 and R 126, are respectively 30 and 70 times the mass of the Sun, "about as massive as stars can get," said Joel Kastner, professor of imaging science at the Rochester Institute of Technology in New York. R 126 is so luminous that if it were placed 10 parsecs (32.6 light-years) away—a distance at which the Sun would be one of the dimmest stars visible in the sky—the hypergiant would be as bright as the full moon, "definitely a daytime object," Kastner remarked.

Such hot stars have fierce solar winds, so Kastner and his team are mystified why any dust in the neighborhood hasn't long since been blown away. But there it is: an unmistakable spectral signature that both hypergiants are surrounded by mammoth disks of what might be planet-forming dust and even sand.

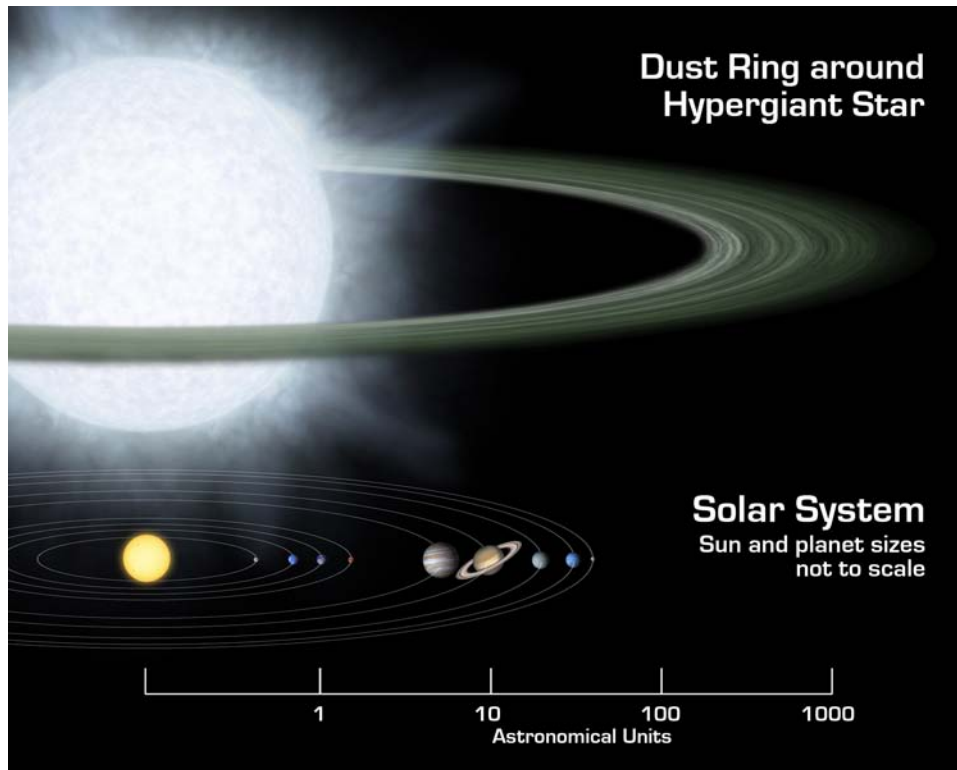
At the other extreme is a tiny brown dwarf star called Cha 110913-773444, relatively nearby (500 light-years) in the Milky Way. One of the smallest brown dwarfs known, it has less than 1 percent the mass of the Sun. It's not even massive enough to kindle thermonuclear reactions for fusing hydrogen into helium. Yet this miniature "failed star," as brown dwarfs are often called, is also surrounded by a flat disk of dust that may eventually clump into planets. (This brown dwarf discovery was made by a group led by Kevin Luhman of Pennsylvania State University.)

Although actual planets have not been detected (in part because of the stars' great distances), the spectra of the hypergiants show that their dust is composed of forsterite, olivine, aromatic hydrocarbons, and other geological substances found on Earth.

These newfound disks represent “extremes of the environments in which planets might form,” Kastner said. “Not what you’d expect if you think our solar system is the rule.” Hypergiants and dwarfs? The Milky Way could be crowded with worlds circling every kind of star imaginable—very strange, indeed.

Keep up with the latest findings from the Spitzer at [www.spitzer.caltech.edu](http://www.spitzer.caltech.edu). Kids and their grownup friends can enjoy beautiful images from Spitzer while playing Spitzer Concentration at The Space Place ([spaceplace.nasa.gov/en/kids/spitzer/concentration](http://spaceplace.nasa.gov/en/kids/spitzer/concentration)).

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



Artist’s rendering compares size of a hypothetical hypergiant star and its surrounding dusty disk to that of our solar system.

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## Stargazer

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### Membership Status

The following changes in membership took place in January:

Total Membership: 154

**Renewals: 14**

New student members:

New Members:

Gary and Kathy Rhyne – Indianapolis

Reactivated from Inactive status:

Daniel Rogers – Crawfordsville

Jeff Licquia – Fishers

Inactive Status

Meera Chandler – student member now attending MIT

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## **IAS 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. 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. (Contact Greg via the webpage [iasindy.org](http://iasindy.org) under the contact us section)

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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 you 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: 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
- \* Meade 2x Barlow
- \* 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 \$550.00 – Call Bill at 892-2036 or e-mail at [bwilhite@tds.net](mailto:bwilhite@tds.net).

**For Sale**

Celestron Celestar 8" with tripod mount, Dec. motor & hand controller, & instruction manual.

Also included in the package...

Counter balance weight system, Celestron 25mm SMA 1-1/4 eyepiece, Orion Dew Zapper 20w 12v, 8" glare shroud, Full scope astrosystem's weather cover, Antares right angle finder scope, Celestron Star Diagonal 1-1/4" , Stellarvue Red-dot unity finder, Celestron (Pelican style) Hard Case for scope. \$750.

Contact Thad Hatchett at [astronomynut@comcast.net](mailto:astronomynut@comcast.net) or give me a call at home at 812-375-0192.

**For Sale:**

2 eyepieces for sale:  
3mm Televue Radian  
7mm Pentax SMC  
Both for \$300

Jim Zdobyłak  
[zobe1@aol.com](mailto:zobe1@aol.com)  
317-862-4715



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

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## Board Meeting –February 22, 2011

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 need further assistance, please contact Jeff Patterson via the webpage [iasindy.org](http://iasindy.org) under the contact us section

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## 2011 Calendar of Meetings

	<b>NAG</b>	<b>General</b>	<b>Board</b>
January		22-Jan	25-Jan
February		19-Feb	22-Feb
March		26-Mar	29-Mar
April	9-Apr	23-Apr	26-Apr
May	7-May	21-May	24-May
June	11-Jun	25-Jun	28-Jun
July	9-Jul	23-Jul	26-Jul
August	6-Aug	20-Aug	23-Aug
September	3-Sep	17-Sep	20-Sep
October		22-Oct	25-Oct
November		19-Nov	22-Nov
December		17-Dec	

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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 Stats**

### **Accessing the IAS News & Views**

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

### **IAS News & Views**

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 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

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

### **Membership Coordinator**

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

## February Calendar, 2011

**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 New Moon ●	3	4	5
6	7	8	9	10	11 1 <sup>st</sup> QTR ☾	12
13	14	15	16	17	18 Full Moon ○	19 General Meeting
20	21	22 Board Meeting	23	24 3rd QTR ☾	25	26
27	28					