

The IAS News & Views



Volume 79, Issue 3

www.iasindy.org

**IAS General Meeting March 10, 2012
7:00 PM
Holcomb Observatory
Butler University**

Galactic Archeology in the Milky Way: Open Clusters as Fossils

Our Milky Way galaxy formed from a complex process that we still do not fully understand. Over the past few decades, the notion of a simple rapid collapse of gas and dust over galactic scales has evolved to include significant mergers of smaller galaxies to make up the grand spiral we see today. We even see signs of that accretion going on today. But how does one untangle all of these effects? Can one find the remnants of the building blocks of the Milky Way? Ideally one would have tracers, or 'fossils' liberally scattered through the Galaxy whose characteristics would allow one to piece together a timeline of evolution and growth. In the disk of the Galaxy, we have such tracers - galactic star clusters. The discovery and study of these clusters has produced new insights into the formation and evolution of the Milky Way disk, especially in its outermost regions. I will talk about how we have used the positions, motions, ages, and chemical compositions of these clusters to enhance our understanding of the Galaxy, and give a preview of work to come from major new surveys.

Biography

Eileen Friel joined the Indiana University Astronomy faculty in 2011. She previously served as Director of Lowell Observatory, and was for many years the Executive Officer (Deputy Director) for the Division of Astronomical Sciences at the National Science Foundation. Prior to joining NSF, she was Director of the Maria Mitchell Observatory and before that, a NATO/NSF Postdoctoral fellow at the Observatoire de Paris. She received her B.S. in Physics at the College of William and Mary and her Ph.D. in Astronomy and Astrophysics from the University of California at Santa Cruz.

IAS NEWS

Yahoo Group - Urgent - You may not be getting your messages

We are finding that some of us are not receiving messages from the yahoo group. Our suspicions are that your email service is flagging the messages as spam and killing the message before it comes to you. If you go on the yahoo group <http://tech.groups.yahoo.com/group/ias-indy/> and look at the messages and note that you have not been seeing them in your email then you need to work it out with your internet provider. Below is an article from Yahoo that tells you how to do it.

This article describes why members of your group may not be receiving emails.

Resolution

If a member is no longer receiving email messages from your group, even though you have confirmed that messages are being posted, it may be that their email provider is mistakenly identifying the group's email messages as spam, or is failing to deliver them. The member should check their email's spam folder to see if the messages are being redirected there.

If messages aren't in their spam folder, they should contact their email provider to ensure that messages are being delivered.

When contacting their email provider, we suggest that they provide them with the following link:

<http://tech.groups.yahoo.com/group/ygmailadmin/>

There, we maintain an up-to-date list of Yahoo! Groups outgoing mailer IP addresses. In addition, we would be happy to work with their email provider to answer any questions they have. They can contact our technical team by sending an email to ygmailadmin-owner@yahoogroups.com.

I apologize for the problem and we are trying to get through it as best as we can. I suggest you go online and check for messages. I changed mine from Comcast to hotmail and am back up running as usual again.

Membership Status

The following changes in membership took place in February:

Total Membership: 139

Renewals: 8

New student members: 0

New Members:

Steven Webster - Greensburg

Inactive Status:

Barney Allen – Rockville

Jim Garten – Greenwood

Jennifer Hatmacher - Zionsville

Gary Rhyne - Indianapolis

Other News

Winter Star Party



It's a new year and time to think about star parties. Several of our members started off the year with a trip to the WSP in the Florida Keys. It is a long way from Indy but the weather is generally great and the scenery is fabulous. I took my time going down and arrived in Big Pine Key on Sunday. I had stopped on Islamorada to fill up on a little sea food at Whaler's Harbor. All the shrimp, crab, and oysters you can eat. They lose money on me. I then rolled on in to Big Pine for the night. One of the things I do hate about WSP is the first day waiting to get in. You line up at 6am and they let us in at noon. So there is a mad rush for your spot. Opening day was hot with not a cloud in the sky. Got in and got all set up and went around talking to old friends that I had not seen in a year. First night was a little windy but not much dew. Found my A/P mount was having troubles. Got frustrated and just pushed the scope to interesting objects. The next night was the same way. I finally figured the battery backup in the hand pad had died and the database was corrupted. So out came the old trusty dob and I finished the week with the 22" and had a ball. The planetary observing was the best I had ever seen!! At 350 power Mars was very impressive and Saturn exquisite. I understand that the 32" of Joe Wambo at 950X blew you away. We had the typical dew problems but all in all it was pretty good. Mickey's had her normal fresh brownies and hot chocolate at night and treats during the day. Slushies are great at 85 degrees. Nice to be in short sleeves in February too. I sat down one afternoon and talked to Al Nagler about how he got started in the optical business. He loves to talk if you ask him a question. This is a good party with lots of venders and places to go.

Gas prices make this an expensive party (\$4.25 a gallon of Diesel) and it is about 1300 miles away. I hope to see you there next year. It will be time for another latitude adjustment by that time.

The Pres

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. Thanks to John Shepherd and Doug Sangunetti for getting it done. It was not as easy as it seemed. 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.

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

IAS Calendar of Events for February

March 10 General Meeting at Holcomb Observatory

March 6 Board Meeting 7:00 PM

March 8 Indoor event at Pike High School 5 pm (No outside observing)

March 20 Indoor event at Trafalgar Library 9 am and 12:30 PM (No outside observing)

March 21 Trafalgar Library 7PM Need Scopes*

March 26 Indoor event at Trafalgar Library 9:30 am (No outside observing)

March 27 Indoor event at Trafalgar Library 9:30 am (No outside observing)

March 28 Indoor event at Trafalgar Library 9:30 am (No outside observing)

We really need scopes at public events, please contact Gerald Venne at events-coordinator@iasindy.org

Observing Activities

Activities for March:

Link Observatory - None Planned

McCloud Activities– 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.

IAS News and Views

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.

Other Observing Activities

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 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.

Star Gazer

February 10, 2012

Stargazer #574

Stargazing Below the Equator

This column comes to you from beautiful New Zealand deep in the Southern Hemisphere where my wife and I, along with two other couples, have just begun a six-week adventure in what many, including myself, consider the most beautiful and fascinating country in the world. And upon crossing the Equator, we went from the middle of winter to the middle of summer.

New Zealand is situated nearly a thousand miles southeast of Australia and consists mainly of two long, narrow islands sitting end to end – the North Island and South Island – and extending nearly one thousand miles. The islands are separated by Cook Strait that took our inter-islander ferry three hours to cross. To the east is the dazzlingly aqua-blue Pacific Ocean and to the west the Tasman Sea. Christchurch, the South Island's largest city, is a major point of departure for flights to Antarctica.

IAS News and Views

New Zealand's total land space is about equal to that of Colorado. Most of its 4.4 million residents reside within its five major cities, so there's lots of sparsely populated areas – especially on the South Island. For stargazers that means many areas with dark skies free of light pollution.

Its highly varied land consists of miles (they use kilometres) of coasts, beaches, □ sounds, mountains, pastures, farm land, lakes, rivers, waterfalls, forests, and even □ glaciers. But the beauty comes with a price. Situated where two tectonic plates meet, it also □ has earthquakes, as Christchurch has been painfully aware this past year, and volcanoes, of which most, but not all, are extinct. □

The native Maoris of □ Polynesian origin settled the islands less than a thousand years ago while Europeans, mostly English, began settling in the 1800s. Today, Maoris □ represent less than 20 percent of the population, yet their □ culture – language, art, names of rivers, lakes, towns and the □ like – is a highly visible part of the fabric of New Zealand society, □ similar to native American culture in Oklahoma, New Mexico, and Arizona. English □ is the primary language, but Maori is also still in use.

A thumbnail sketch of New Zealand would be incomplete without mentioning the friendliness of the people – Kiwis as they call themselves, nicknamed after the kiwi bird. Their friendliness is more proactive and helpful than mere politeness, and it is contagious. Although I'm generally friendly by nature, I found myself seeking opportunities to be even more friendly and helpful to others.

An example of Kiwi friendliness: As I was changing a flat tire in a parking lot at the Auckland StarDome Planetarium, an older fellow stopped and asked if I needed anything. When I told him I could change the tire, but I had no idea where to get it fixed, he pointed me in the right direction. Later, after the tire shop replaced the tire, I asked the owner-manager the best way to get back to the hostel in which we were staying which was several kilometers away. Rather than simply give me directions, he got on his computer, had MapQuest calculate the route, and printed a map for me.

Unfortunately, I still got lost, but it wasn't his fault. I blamed it on having to concentrate so intently on New Zealand's English-style driving – traveling on the left side of the roads while seated on the right side of the auto. And, of course, I also blamed the “backward” driving for my whacking a curb which damaged the tire in the first place.

So what about stargazing, my primary reason for returning to this wonderful place? Well, so far it's been frustratingly limited owing to cloudy nights and the light-polluted cities we've been in most nights. But I have had one good, if brief, night of viewing, and though I saw nothing I didn't see during our previous trip to New Zealand in 2001, I was still thrilled.

Facing north I saw many of the constellations we see from home when facing south in the early evening this time of year – what we call the winter sky. I saw the constellations of the Great Winter Arc like Orion, Canis Major, Taurus, and Gemini. But even though they are familiar, they don't look like what we're used to seeing since from here they appear up-side-down. There's just

IAS News and Views

nothing like seeing the great hunter standing on his head or the big dog on his back with his feet up.

Facing south and peering into the part of the sky never visible from our mid-northern latitudes, I immediately spotted the four stars forming the Southern Cross, the signature constellation of the Southern Hemisphere. It is so small your fist held at arm's length will cover it, yet it is usually the first thing that comes to mind when we think of the deep southern night sky. Both the New Zealand and Australian flags feature this four-star pattern.

To its lower right were Alpha and Beta Centauri, the brightest stars in the constellation Centaurus, most of which is hidden from our northern view. Alpha Centauri is noteworthy for being our nearest stellar neighbor at a mere 4 light years away. It is actually a multiple star system consisting of Alpha Centauri and several other fainter stars bound together by gravity and orbiting each other.

High overhead I saw two stars that we can see from the southern U.S., but just barely – Canopus in the constellation Carina, and Achernar in Eridanus. Canopus, which rises a few degrees above our horizon, was a major guide stars for Polynesian sailors who long ago navigated the huge Pacific using the stars. They undoubtedly used Canopus when they discovered New Zealand. Achernar just barely rises above our horizon.

In seeing part of the Milky Way too far south to reveal itself to us in the U.S., two jewels came into view. The Eta Carina Nebula, a naked-eye area of nebulosity (cosmic cloudiness), is formed by the incredibly huge dying star Eta Carina. The star itself isn't visible, but the nebula is spectacular. The other is a naked-eye star cluster, formally designated IC 2602, but better known as the Southern Pleiades. As is often the case with naked-eye objects, both are even more dramatic through binoculars.

While I saw several other things that first night, I'll save them for another column when there will be even more observations and reflections to report.



Image: The New Zealand flag features the Southern Cross (photo by author)

Stargazer appears twice-monthly in the *Waco Tribune-Herald* and 60+ other newspapers. Paul Derrick is an amateur astronomer who lives in Waco. To be added to (or removed from) this free e-mail reminder, send your e-mail address (and name) to paulderrickwaco@aol.com.

Paul Derrick, PhD

918 N. 30th St. * Waco, TX 76707

254-753-6920 (home) * 254-723-6346 (cell)

See my Stargazer website at:

**** stargazerpaul.com ****

NASA Space Place

The Hidden Power of Sea Salt, Revealed

Last year, when NASA launched the Aquarius/SAC-D satellite carrying the first sensor for measuring sea salt from space, scientists expected the measurements to have unparalleled sensitivity. Yet the fine details it's revealing about ocean saltiness are surprising even the Aquarius team.

IAS News and Views

"We have just four months of data, but we're already seeing very rich detail in surface salinity patterns," says principal investigator Gary Lagerloef of Earth & Space Research in Seattle. "We're finding that Aquarius can monitor even small scale changes such as specific river outflow and its influence on the ocean."

Using one of the most sensitive microwave radiometers ever built, Aquarius can sense as little as 0.2 parts salt to 1,000 parts water. That's about like a dash of salt in a gallon jug of water.

"You wouldn't even taste it," says Lagerloef. "Yet Aquarius can detect that amount from 408 miles above the Earth. And it's working even better than expected."

Salinity is critical because it changes the density of surface seawater, and density controls the ocean currents that move heat around our planet. A good example is the Gulf Stream, which carries heat to higher latitudes and moderates the climate.

"When variations in density divert ocean currents, weather patterns like temperature and rainfall are affected. In turn, precipitation and evaporation, and fresh water from river outflow and melt ice determine salinity. It's an intricately connected cycle."

The atmosphere is the ocean's partner. The freshwater exchange between the atmosphere and the ocean dominates the global water cycle. Seventy-eight percent of global rainfall occurs over the ocean, and 85 percent of global evaporation is from the ocean. An accurate picture of the ocean's salinity will help scientists better understand the profound ocean/atmosphere coupling that determines climate variability.

"Ocean salinity has been changing," says Lagerloef. "Decades of data from ships and buoys tell us so. Some ocean regions are seeing an increase in salinity, which means more fresh water is being lost through evaporation. Other areas are getting more rainfall and therefore lower salinity. We don't know why. We just know something fundamental is going on in the water cycle."

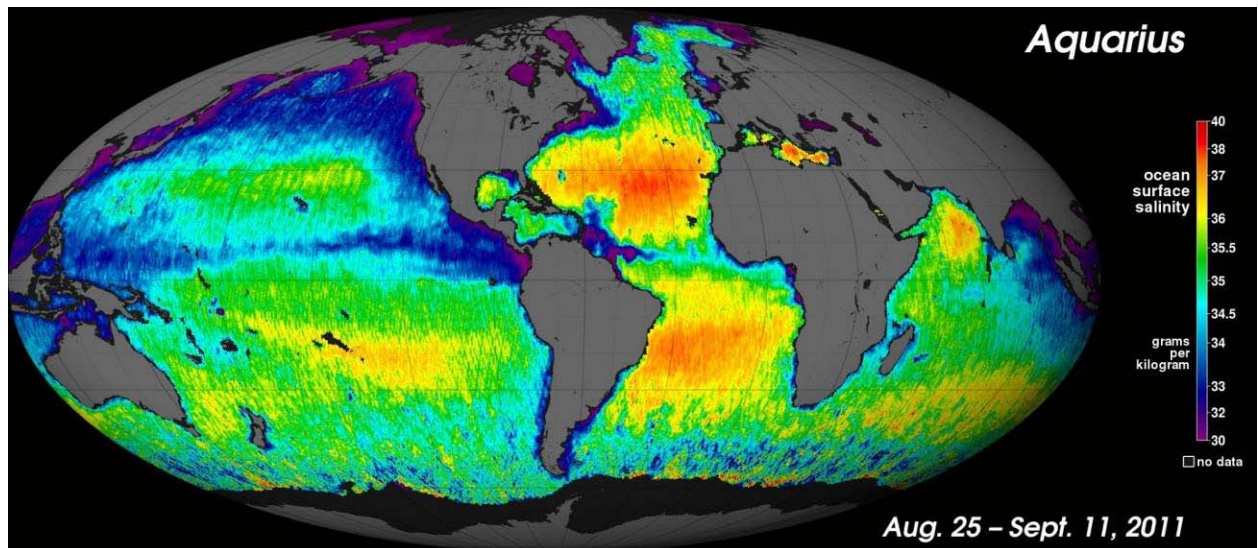
With Aquarius's comprehensive look at global salinity, scientists will have more clues to put it all together. Aquarius has collected as many sea surface salinity measurements in the first few months as the entire 125-year historical record from ships and buoys.

"By this time next year, we'll have met two of our goals: a new global map of annual average salinity and a better understanding of the seasonal cycles that determine climate."

Stay tuned for the salty results. Read more about the Aquarius mission at aquarius.nasa.gov.

Other NASA oceanography missions are Jason-1 (studying ocean surface topography), Jason-2 (follow-on to Jason-1), Jason-3 (follow-on to Jason-2, planned for launch in 2014), and Seawinds on the QuikSCAT satellite (measures wind speeds over the entire ocean). The GRACE mission (Gravity Recovery and Climate Experiment), among its other gravitational field studies, monitors fresh water supplies underground. All these missions, including Aquarius, are sponsors of a fun and educational ocean game for kids called "Go with the Flow" at spaceplace.nasa.gov/ocean-currents.

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



Caption:

Aquarius produced this map of global ocean salinity. It is a composite of the first two and a half weeks of data. Yellow and red represent areas of higher salinity, with blues and purples indicating areas of lower salinity.

IAS LIBRARY:

There is a link on our website page for our Multi-Media Library containing 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.

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.

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) - for CCD imaging and film photography.

Jeff Patterson (Contact Jeff via the webpage iasindy.org under the contact us section) –
Observatory design and construction

Eric Allen (ericandroberta@sbcglobal.net) - Telescope making and mirror grinding

Brian Murphy (bmurphy@monumentcompanies.com) - "telescope construction and collimation".

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 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 under the contact us section)

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: 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 \$450.00 – Call Bill at 892-2036 or e-mail at bwilhite@tds.net.

For Sale or Trade: CELESTRON HEAVY-DUTY TRIPOD, WEDGE, DRIVE, FORK ARMS

Heavy-duty tripod and wedge for the classic C8. Tripod has 2" legs that are extendable with step-locks and has a center post with an integral leg spreader. Wedge is cast iron with a hand-screw latitude adjustment. These components were built to last a lifetime and then some. I'm also including the drive base, fork arms, and power cord. This is the old-style base with the RA spur drive (no worm). The drive has slow-motion controls and setting circles and yes, it still works.

The C8 optical tube assembly is NOT included. \$300 takes all. I will also consider taking a good wide-field eyepiece in exchange (20mm f.l. minimum). Contact bruce.bowman@tds.net or call 317-539-2753

For Sale Starmaster 14.5" Hybrid Truss "Go to" Tracking Telescope and Televue Lens Package
All the equipment you need to do some spectacular deep sky stargazing.

<http://www.starmastertelescopes.com/hybridscopes.htm> (Redesigned 14.5 Hybrid Truss)

Zambuto mirror optics 14.5" primary F/4.3 Thin mirror allows fast equilibration of optics for superior performance Sky Tracker goto-then-track drive system - This device interfaces with a Sky Commander digital setting circle unit TRUE goto and full tracking abilities. NO external computer or platform is needed. Remote Hand Controller

2" Crayford focuser with 1-1/4" adapter

Secondary Mirror Heater to keep you dew free with wiring package from secondary to the 12 volt outlet on the Sky Tracker accessory plate.

Kendrick Laser Collimator and Cheshire Collimator system

Light shroud & truss case

Rigel Quickfinder

Catsperch observing chair

Includes Televue Lens Package:

- Televue 22mm Panoptic
- Televue 9 mm Nagler
- 2" TeleVue ParaCorr
- 2" Televue Big Barlow

Price: \$ 5500.00 Firm

Direct cash purchase only

Email ldenglish101@gmail.com

Phone: 317-518-0601

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 under the contact us section**

Board Meeting –March 6, 2012

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 9pm. Some meter sites are still free after 6PM but are hard to find. . Handicapped parking is directly in front of Starbucks entrance. The entrance to the building is to

IAS News and Views

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 under the contact us section

2012 Calendar of Meetings

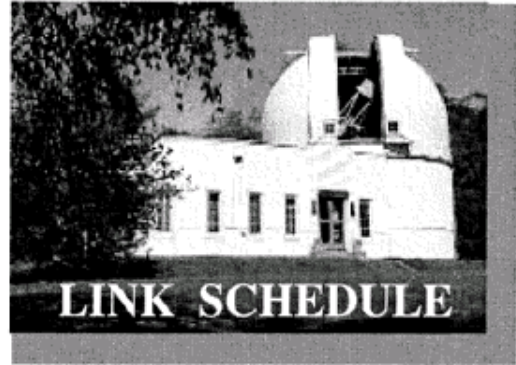
	NAG	General	Board
January		14	17
February		11	14
March		10	6
April	28	14	10
May	8	12	8
June	None	9	12
July	28	14	10
August	25	11	7
September	22	8	4
October	20	13	9
November		10	6
December		15	

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 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

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

Membership information Contact via the webpage 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 under the contact us section**

Public Event Coordinator

Gerald Venne **Contact via the webpage iasindy.org under the contact us section**

IAS News and Views

Equipment Loan Program Coordinator

Philip Dimpelfeld Contact Phil at philip.dimpelfeld@comcast.net

Membership Coordinator

Vicki Switzer Contact Vicki via the webpage iasindy.org under the contact us section

March Calendar, 2012

For a more detailed Calendar of Events see the webpage www.iasindy.org

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6 Board Meeting 7PM	7	8 Full Moon ○	9	10 General Meeting Holcomb Observatory 7PM
11	12	13	14 3rd QTR ☾	15	16	17
18	19	20	21	22 New Moon ●	23	24
25	26	27	28	29	30 1 st QTR ☽	31