The IAS News & Views

Volume 78, Issue 12 www.iasindy.org

IAS General Meeting December 17, 2011
7:00 PM
Holcomb Observatory
Butler University

Annual Christmas Party and General Election Night

Our annual Christmas party will be held at the Holcomb Observatory beginning at 7:00 PM. Come One! Come All!! There has been a change this year. The Society is not furnishing a meal. We will have a light pitch in. Please bring desserts, finger foods such as veggie platters, fruit platters, desserts, and dips and chips(etc.). 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

Election Night December 17, 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. 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 -
Jeff Patterson

Vice President and Program Chairman -
Doug Brown

Treasurer:
John Shepherd

Secretary:
Betsy Brown

Board of Directors (Two to be elected)
John Kramer
John Molt

Report presented by Jeff Patterson
Nominating Committee

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, Treasurer
1546 Trace Lane
Indianapolis, IN 46260
Absentee ballots must be received prior to the election

Other News

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 Hours 9-5 EST

IAS Membership Status

The following changes in membership took place in November:

Total Membership: 143

Renewals: 7

New Members:
Danny Barnes – Camby, IN
Ken Koontz – Indianapolis, In
Mark Marshall – Carmel, IN

Inactive status:
Dave Adler - Brownsburg
Jeremy Bingham – Camby
Jack Joswick - Avon
Arlo Paulson – Westfield
Donald Schlensker – Fishers
Hal Turner – Bloomington

IAS Calendar of Events for December

General Meeting December 17

NASA Space Place

Re-thinking an Alien World:

The Strange Case of 55 Cancri e

Forty light years from Earth, a rocky world named “55 Cancri e” circles perilously close to a stellar inferno. Completing one orbit in only 18 hours, the alien planet is 26 times closer to its parent star than Mercury is to the Sun. If Earth were in the same position, the soil beneath our feet would heat up to about 3200 F. Researchers have long thought that 55 Cancri e must be a wasteland of parched rock.

Now they’re thinking again. New observations by NASA's Spitzer Space Telescope suggest that 55 Cancri e may be wetter and weirder than anyone imagined.

Spitzer recently measured the extraordinarily small amount of light 55 Cancri e blocks when it crosses in front of its star. These transits occur every 18 hours, giving researchers repeated opportunities to gather the data they need to estimate the width, volume and density of the planet.

According to the new observations, 55 Cancri e has a mass 7.8 times and a radius just over twice that of Earth. Those properties place 55 Cancri e in the “super-Earth” class of exoplanets, a few dozen of which have been found. Only a handful of known super-Earths, however, cross the face of their stars as viewed from our vantage point in the cosmos, so 55 Cancri e is better understood than most.

When 55 Cancri e was discovered in 2004, initial estimates of its size and mass were consistent with a dense planet of solid rock. Spitzer data suggest otherwise: About a fifth of the planet’s mass must be made of light elements and compounds—including water. Given the intense heat and high pressure these materials likely experience, researchers think the compounds likely exist in a “supercritical” fluid state.

A supercritical fluid is a high-pressure, high-temperature state of matter best described as a liquid-like gas, and a marvelous solvent. Water becomes supercritical in some steam turbines—and it tends to dissolve the tips of the turbine blades. Supercritical carbon dioxide is used to remove caffeine from coffee beans, and sometimes to dry-clean clothes. Liquid-fueled rocket propellant is also supercritical when it emerges from the tail of a spaceship.

On 55 Cancri e, this stuff may be literally oozing—or is it steaming? —out of the rocks.

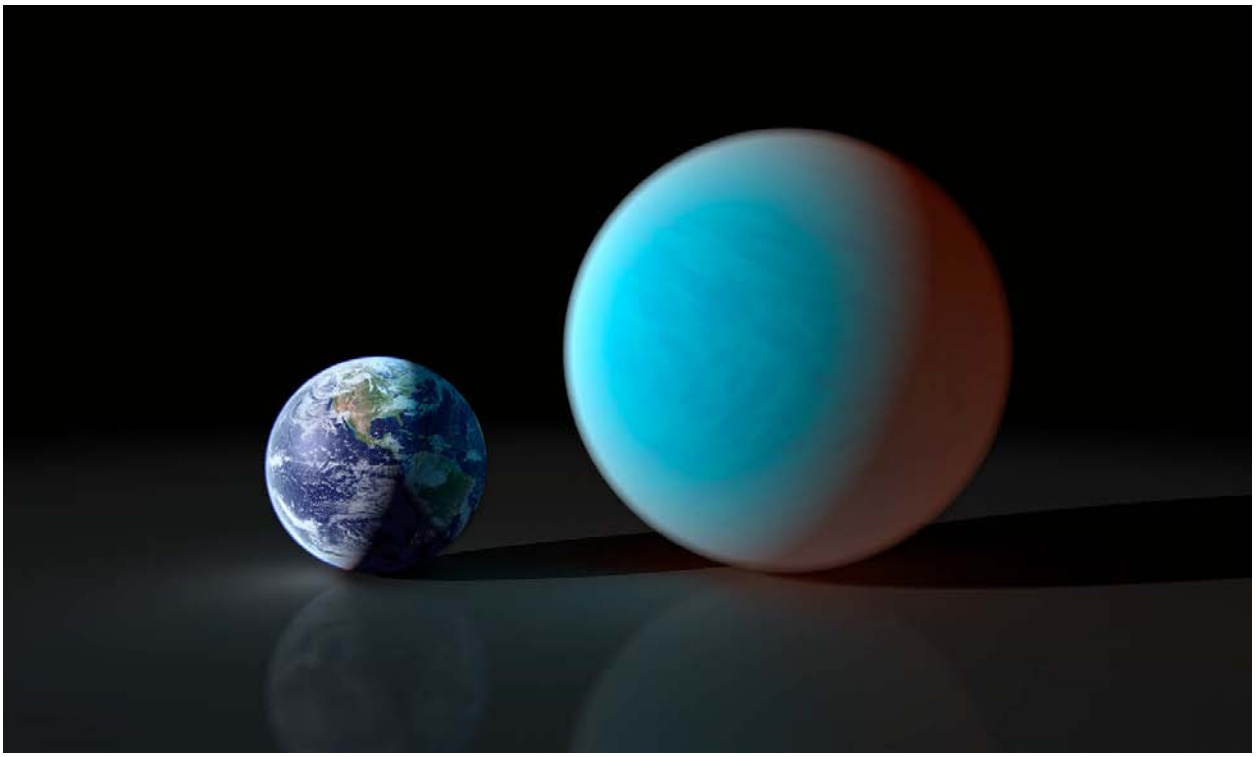
With supercritical solvents rising from the planet’s surface, a star of terrifying proportions filling much of the daytime sky, and whole years rushing past in a matter of hours, 55 Cancri e teaches a valuable lesson: Just because a planet is similar in size to Earth does not mean the planet is like Earth.

It’s something to *re*-think about.

Get a kid thinking about extrasolar planets by pointing him or her to “Lucy’s Planet Hunt,” a story in rhyme about a girl who wanted nothing more than to look for Earth-like planets when she grew up. Go to http://spaceplace.nasa.gov/story-lucy.

The original research reported in this story has been accepted for publication in *Astronomy and Astrophysics*. The lead author is Brice-Olivier Demory, a post-doctoral associate in Professor Sara Seager's group at MIT.

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 the size Earth with the rocky "super-Earth" 55 Cancri e. Its year is only about 18 hours long!

Observing Activities

Activities for December:

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.

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.

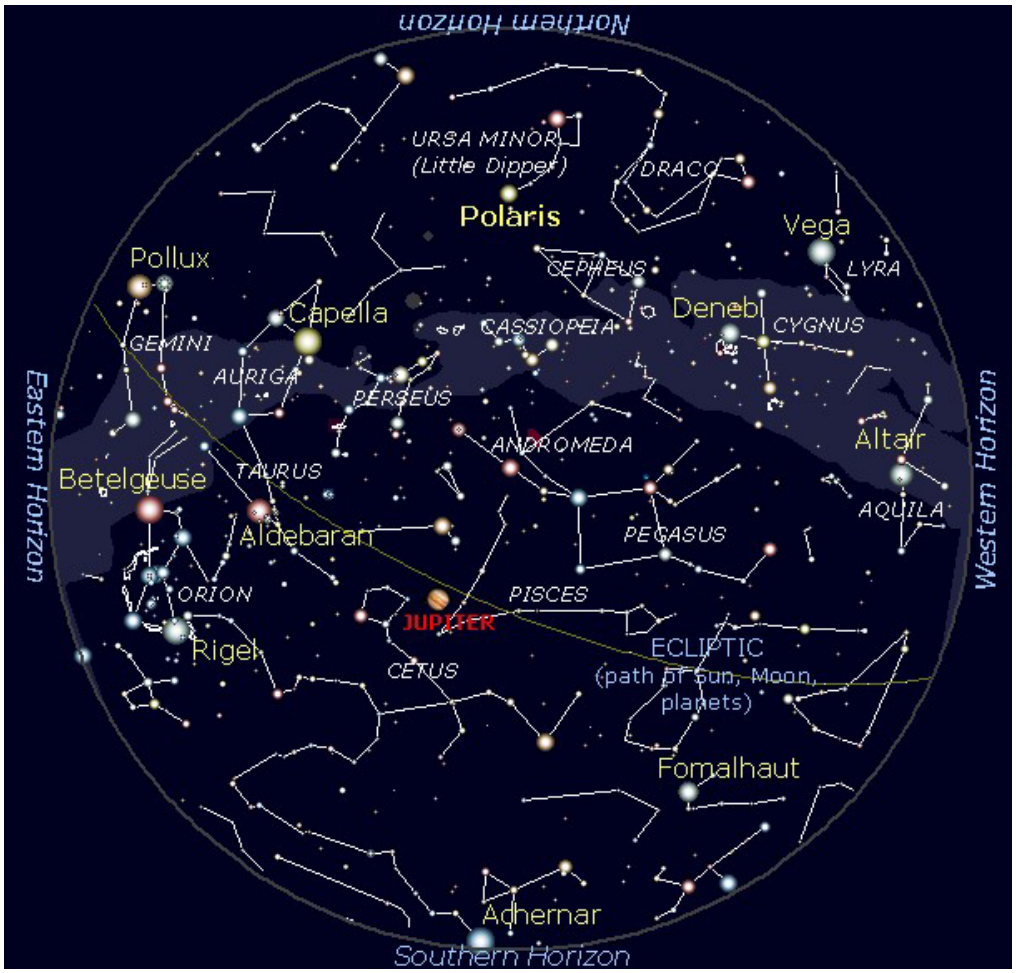
For those interested in going to Prairie Grass Observatory for observing call Hoppe at 1-765-296-2753.

Other Observing Activities

Star Gazer

November 25, 2011
Stargazer #569

December 2011



This chart shows the night sky as appears **on the 1st at 9 p.m., on the 15th at 8 p.m., and on the 31th at 7 p.m. from latitude 30º N.** Hold the chart so the direction you are facing is at the bottom. For example, if you are facing north, turn the chart around so "Northern Horizon" is at the bottom as you hold it out in front of you. The stars on the lower part of the chart are those you will be facing in the sky. The stars at the chart's center represents the part of the sky straight overhead. *[Sky chart generated using Cartes du Ciel freeware.]* / To keep your eyes adjusted to the darkness as you look a the night sky, use a red-light flashlight to view the chart. You can make your own by putting red cellophane over the light or by coloring the lens of the flashlight with a red marker pen.

- **Sun**
  Dec. 1 – Sunrise: 7:10 a.m.; Sunset: 5:25 p.m. / Dec. 15 – Sunrise: 7:20 a.m.; Sunset: 5:27 p.m. / Dec. 31 – Sunrise: 7:28 a.m.; Sunset: 5:36 p.m. (Times exact for Waco, TX)
- **Moon**
  Dec. 2: 1st Quarter / Dec. 10: Full / Dec. 17: 3rd Quarter / Dec. 24: New
- **Night Sky Events** *[Held at arm's length, the width of your fist is 10º and the width of your index finger is 1º. The width of a full Moon is ½º.]*

  2 Fri. evening: The Moon is at 1st quarter.
  4 Sun.: Mercury is in inferior conjunction between Earth and Sun, passing into the morning sky.
  6 Tue. evening: The large gibbous Moon is to the left of bright Jupiter.
  10 Sat.: The full Moon, called the Moon Before Yule and the Long Night Moon, features a total lunar eclipse visible only over the extreme western and northwestern U.S., the Pacific, and the far east.
  13 Tue. all night: The Geminid meteor shower peaks with the best chance of seeing meteors before the 10:30 p.m. moonrise; face east and look upward.
  17 Sat. morning: The 3rd quarter Moon is below Mars high in the south.
  9 Mon.: Saturnalia, an ancient Roman festival honoring the god Saturn, father of Jupiter.
  19 Mon. morning: A waning crescent Moon is a fist-width (held at arm's length) to the right of Saturn with the star Spica between them; the next morning the Moon is below them.
  21 Wed.: Winter solstice – Northern Hemisphere's first day of winter and shortest day of year.
  22 Thu. morning: A thin crescent Moon is to the upper right of Mercury and straight above the star Antares which is near the southeastern horizon; binoculars will help in spotting Mercury and Antares.
  22 Thu. all night: The Ursid meteor shower peaks with the best chance of seeing meteors coming after midnight; face north and look upward.
  24 Sat.: The Moon is new.
  26 Mon. early evening: At dusk the crescent Moon is to the lower right of Venus low in the west southwest, and above the brilliant "evening star" the next night.

- **Naked-eye Planets** *[The Sun, Moon and planets rise in the east and set in the west due to Earth's west-to-east rotation on its axis.]*

Evenings: Venus and Mercury (setting in west southwest), Jupiter (east)
Mornings: Saturn (very low in east); Mars (east), Jupiter (low in west)
* *Mercury* is near the southwestern horizon at dusk, just below Venus, most of the month.
* *Venus* is climbing higher daily, becoming the prominent “evening star” in the west.
* *Mars* is up in the east well before sunrise.
* *Jupiter* is well up in the southeast in the early evening and high in the west by morning.
* *Saturn* is beginning to emerge from the glare of the rising Sun low in the east at dawn.

- **Emergence of the “Evening Star”**

The planet Venus is emerging in our evening sky for its stint as the “evening star” until well into 2012. Now setting nearly two hours after sunset, it is getting slightly farther above the setting Sun each evening, and will be at its best in late March when it will dominate the western sky for nearly four hours after sunset. It sinks back into the setting Sun in late May after which it once again becomes the “morning star” in June. Other than the Moon and an occasional fleeting super-bright meteor, Venus is the brightest natural object in the night sky – brighter than any star or other planet.

- **Night Sky Regions**

On any clear, moonless night away from city lights, the night sky appears to be filled with millions of stars, so no wonder learning the night sky can seem so daunting. But while there really are millions of stars in our section of our Milky Way galaxy, we can't see near that many with our naked eyes.

Surprisingly, under reasonably dark skies, most of us see only several hundred individual stars on any given night, and less than three thousand are ever visible from planet Earth without optical aids – and the vast majority of those are quite faint.

Brighter stars number in the dozens with only 21being in the brightest category called 1st-magnitude stars. So, you're thinking, maybe I could learn the names of 21 stars, but then what about finding them.

That's were constellations come in. Using bright and moderately bright stars, and lots of human imagination, the ancients invented constellations to help them learn the night sky. Of the countless hundreds of imaginary sky pictures made up over the millennia, today only 88 official constellations are recognized by the International Astronomical Union.

Admittedly, 88 constellations is a lot to learn, but we can make it easier. Of those 88, nearly three dozen are too far south ever to be visible from our mid-northern latitudes ,or are faint and devoid of interesting naked eye objects. Thus, by learning some 50 constellations, one can be quite at home in the night sky.

Since even that's still rather challenging, I found it helpful to partition the night sky into nine regions. With each region I associate a theme or story to tie together the region's constellations. Some come from antiquity; others I made up. These nine regions helped

me learn my way around the night sky, and they have helped students in my stargazing classes – so maybe you will find them helpful as well.

Over the next year in this column, we will present each region, one each month. As a preview, here are the nine regions with the season(s) each is best seen: Circumpolar (year around); Great Winter Arc (winter); Southern Ship (late winter); Cosmic Baseball (spring, early summer); Macho Quadrangle (summer); Sagittarius' Tea Party (summer); Milky Way Triangle (summer, fall); Andromeda's Rescue (fall); and Water World (fall). Next month we'll look at the Circumpolar Region as seen in the winter.

- **Astro Milestones.** Dec. 14 is the birthday of Danish astronomer **Tycho Brahe** (1546-1601). Dec. 25 is the birthday of **Isaac Newton** (1642-1727), father of modern physics. Dec. 27 is the birthday of **Johannes Kepler** (1571-1630), discoverer of elliptical orbits.

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.

IAS LIBRARY:

There is now a link on our website page for our new 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:
Starmaster 14.5 F4.3 Hybrid Truss "Go to" **Dobsonian** Telescope
Registered Zambuto mirror – never washed
Excellent condition, Bought new in 2003, Always stored indoors
Rarely used in the past 3 years
Features include:

- Sky Commander Digital Setting Circle
- Sky Tracker GoTo tracking system
- 1.6" thick mirror for quick cool downs
- Feather Touch Precision Focuser
- Astrosystems DewGuard and wiring package
- TeleVue ParaCorr
- Kendrick Laser Collimator and Cheshire Collimator system
- Two Gel Cell 12 volt batteries with Charger

- Telrad Reflex sight
- Catsperch observing chair
- Cover for Truss units

Price: $ 5500.00
Direct cash purchase only
Email ldenglish32@gmail.com
Phone: 317-518-0601

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

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 –There is No Board Meeting in December. Have a Happy Holiday

2011 Calendar of Meetings

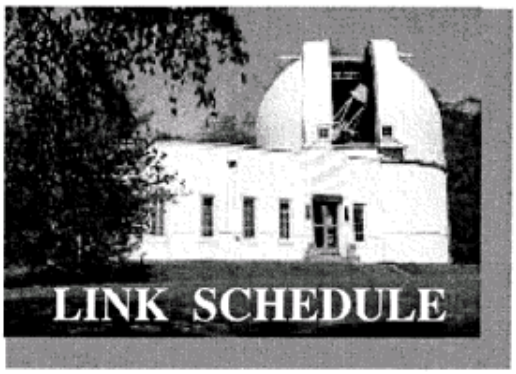
	NAG	General	Board
January		22-Jan	25-Jan
February		19-Feb	22-Feb
March		26-Mar	29-Mar
April	9-Apr	23-Apr	26-Apr
May	7-May	21-May	24-May
June	11-Jun	25-Jun	28-Jun
July	9-Jul	23-Jul	26-Jul
August	6-Aug	20-Aug	23-Aug
September	10-Sep	17-Sep	20-Sep
October	1 Oct	22-Oct	25-Oct
November		19-Nov	22-Nov
December		17-Dec	

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**

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**

December Calendar, 2011

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

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