

January 2009

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S*T*A*R

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On the web at:

<http://www.starastronomy.org>

Edited by: Ahmad & Hanna Jrad



January's Meeting

The next meeting of S*T*A*R will be on Thursday, January 8. Our program will be "*Celestial Navigation*" by Justin Dimmell, Island School, Eleuthera, Bahamas. All are welcome. The meeting will begin promptly at 8:00pm at the Monmouth Museum on the Brookdale Community College campus.

Editor's Corner

Many thanks to Gavin Warnes, Mike Lindner, Steve Fedor, & Randy Walton for contributing to this month's Spectrogram.

Reminder to pay membership dues \$25/individual, \$35/family. Donations are appreciated. Make payments to our treasurer Rob Nunn at the January meeting or mail a check payable to S*T*A*R Astronomy Society Inc to:

S*T*A*R Astronomy Society

P.O. Box 863

Red Bank, NJ 07701

February Issue

Please submit articles and contributions for the next *Spectrogram* by January 25. Please email to stargaze07@verizon.net.



Orion's Sword & M42
Credit: Hunter Wilson

Calendar

- ❖ Sep 4, 2008 – "*Past Saturn and 7 More Years to Pluto:*" New Horizons Mission, Michael Lewis, NASA Solar System Ambassador
- ❖ Oct 2, 2008 – "*An Idea That Would Not Die*" by Robert Zimmerman
- ❖ Nov 6, 2008 – "*Tour of Monmouth Museum & Demonstration of Planetarium*" by S*T*A*R's own Dennis O'Leary
- ❖ Dec 4, 2008 – "*Why does the sun shine for billions of years?*" by S*T*A*R's own Arturo Cisneros
- ❖ Jan 8, 2009 - "*Celestial Navigation*" by Justin Dimmell, Island School, Eleuthera, Bahamas
- ❖ Feb 5, 2009 - "*ATM Night*" S*T*A*R Members will bring and talk about their home made telescopes
- ❖ Mar 5, 2009 - "*Solar Telescopes*" by Alan Traino of Lunt Solar Systems
- ❖ Apr 2, 2009 – "*Low Energy Routes to the Moon and Beyond*" by Dr. Edward Belbruno of Innovative Orbital Design
- ❖ May 7, 2009 – "*TBD*"
- ❖ Jun 4, 2009 – AGM

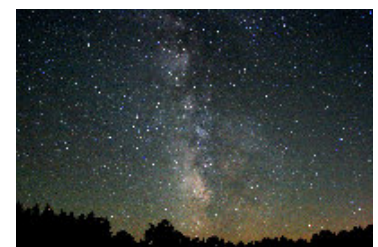


Image of the Milky Way over Cherry Springs
Credit: Tony Rousos

President's Corner

By Gavin Warnes

First, I'd like to wish everybody a happy, dark and transparent New Year!

2009 is the International Year of Astronomy, which presents a great opportunity for us to promote our hobby and our club. There are lots of events and projects planned and I am sure that we can participate in some of them. Please visit the IYA website at <http://www.astronomy2009.org/> to find out more.

2009 also brings us a brand new website. Mike Lindner has been working extremely hard to roll out an entirely new platform that enables us to truly present ourselves as the dynamic and active club that we are. The site already features a gallery of much more recent photos that appear on the home page, upcoming events, observing conditions, working links, back issues of the Spectrogram, automatic astronomy news feeds and our ever popular discussion forum. The beauty of the new system is that it can be maintained by many people, so our next step will be to assign owners for various sections who will be able to create more content. You can read more about the website evolution in a later article (page 4) by Mike Lindner.

There seems to be strong interest in a bus trip to the Rose Center in New York City from both S*T*A*R and ASTRA. In the coming days we'll check availability with various bus companies and pick a date (most likely March 14th or 28th).

The annual Village School star party in Holmdel is scheduled for February 10th. This is always a very popular event, so we will need a lot of volunteers. Please contact Rich Gaynor at richg870@aol.com or post on the discussion board if you can help. Hopefully it won't be quite as cold as last year!

Keep looking up!

Gavin

December Meeting Minutes

By Steve Fedor

The December 2008 meeting of S*T*A*R Astronomy Club began at 8:06 pm on 12/1. It was attended by 31 members and non-members. President Gavin Warnes chaired the meeting and began by discussing the evening's agenda, urging all members to pay their dues and discussing upcoming speakers and events. Gavin noted that the grace period for non-payment of dues would be over on Jan. 1, 2009.

The evening's presentation was "Why the Sun Will Shine for Millions of Years." It was presented by Star's Arturo Cisneros.

Arturo presented a fascinating talk on the solar reactions occurring within the sun and the effect of magnetic moments of neutrinos on solar observations. He also discussed, often humorously, his past research and how it has often been the basis for other works. The talk ended at 9:14 at which time coffee break began.

The meeting resumed at 9:47 with Nancy McGuire presenting "Object of the Month." This month's objects were galaxy NGC 404, the Little Ghost Nebula (NGC-6369), the Witch Head nebula (IC 2118) and IC 410, wreath shaped nebula.

Gavin announced he thought it would be a good idea if the club revitalized the library. Presently it is a collection of older books which some worth saving while others are out of date.

Mike Lindner then discussed his efforts to update the club web site. He addressed the various advantages of the new site and answered questions and took opinions on how the site should be arranged. He then presented a humorous video on "irrelevant Astronomy."

Outreach chairman Rich Gaynor announced a star party at the Village School which will be on 3/4/09 and an Earth Day event scheduled for 4/26/09.

Gavin then discussed the following issues:

-Warned everyone to be careful when walking outside in the grass areas. There are numerous holes caused by animals which present a tripping hazard.

-Organized an observing committee to hold monthly observing sessions and help new members get started.

-Announced Charles Kirby is retiring from coffee duty and asked for members to volunteer to take over. Unfortunately no one volunteered.

Ken Legal announced he is looking for a dob mount for a 6 inch scope.

It was noted that the January meeting will be held on January 8th since the usual first Thursday of the month is New Year's Day.

The meeting was then adjourned.

Superstar Hide and Seek

By Dr. Tony Phillips

It sounds like an impossible task: Take a star a hundred times larger in diameter and millions of times more luminous than the Sun and hide it in our own galaxy where the most powerful optical telescopes on Earth cannot find it.

But it is not impossible. In fact, there could be dozens to hundreds of such stars hiding in the Milky Way right now. Furiously burning their inner stores of hydrogen, these hidden superstars are like ticking bombs poised to 'go supernova' at any moment, possibly unleashing powerful gamma-ray bursts. No wonder astronomers are hunting for them.

Earlier this year, they found one.

"It's called the Peony nebula star," says Lidia Oskinova of Potsdam University in Germany. "It shines like 3.2 million suns and weighs in at about 90 solar masses."

The star lies behind a dense veil of dust near the center of the Milky Way galaxy. Starlight traveling through the dust is attenuated so much that the Peony star, at first glance, looks rather dim and ordinary. Oskinova's team set the record straight using NASA's Spitzer Space Telescope. Clouds of dust can hide a star from visible-light telescopes, but Spitzer is an infrared telescope able to penetrate the dusty gloom.

"Using data from Spitzer, along with infrared observations from the ESO's New Technology Telescope in Chile, we calculated the Peony star's true luminosity," she explains. "In the Milky Way galaxy, it is second only to another known superstar, Eta Carina, which shines like 4.7 million suns."

Oskinova believes this is just the tip of the iceberg. Theoretical models of star formation suggest that one Peony-type star is born in our galaxy every 10,000 years. Given that the lifetime of such a star is about one million years, there should be 100 of them in the Milky Way at any given moment.

Could that be a hundred deadly gamma-ray bursts waiting to happen? Oskinova is not worried.

"There's no threat to Earth," she believes. "Gamma-ray bursts produce tightly focused jets of radiation and we would be extremely unlucky to be in the way of one. Furthermore, there don't appear to be any supermassive stars within a thousand light years of our planet."

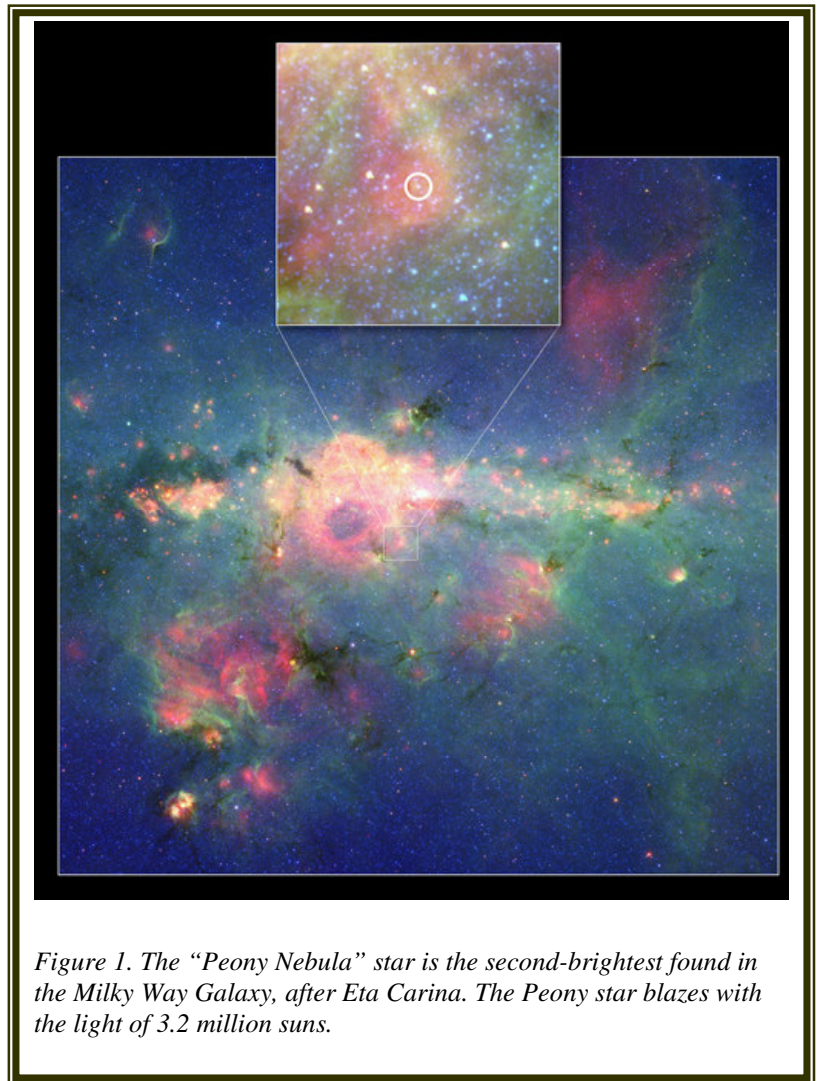


Figure 1. The "Peony Nebula" star is the second-brightest found in the Milky Way Galaxy, after Eta Carina. The Peony star blazes with the light of 3.2 million suns.

Nevertheless, the hunt continues. Mapping and studying supermassive stars will help researchers understand the inner workings of extreme star formation and, moreover, identify stars on the brink of supernova. One day, astronomers monitoring a Peony-type star could witness with their own eyes one of the biggest explosions since the Big Bang itself.

Now *that* might be hard to hide.

Find out the latest news on discoveries using the Spitzer at www.spitzer.caltech.edu. Kids (of all ages) can read about "Lucy's Planet Hunt" using the Spitzer Space Telescope at spaceplace.nasa.gov/en/kids/spitzer/lucy.

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

What's up With that Web site?

By Michael Lindner

The Original

When I joined STAR Astronomy in 1996, the club was very different than it is today. We were packed shoulder-to-shoulder in a tiny, stiflingly hot room at the Holmdel Nature Center, instead of having a comfortable, spacious meeting room at the Monmouth Museum. The cast of characters was different, yet the same (Dan Pontone was president). The Spectrogram was on paper, and the club's web site at <http://www.monmouth.com/~ksears> consisted of a single page of text at the home page of Kay Sears.

Kay was an elderly and a true gentleman (he has since passed away). I never heard him utter an unkind word. He knew just about everything there is about astronomy, and was always helping others learn. At the time, I was building my first telescope, and Kay not only talked me through some of it, but also built a dimmer circuit for my finder scope and gave it to me.

That's not to say Kay was the only good member of the club. Many others helped me get started. For instance, Dan Pontone and Don Odegard took me out observing, loaned me a scope, and showed me how to start to star hop to find objects. Lots of other club members (forgive me if I don't list you all) helped me to learn and enjoy astronomy. But this article is about the web site, and Kay was the webmaster back then.

A STARastronomy.org is Born

At the time, I worked for AT&T, writing software for the launch of AT&T WorldNet internet services. I knew the importance of a web site in today's world. It serves as a bulletin board for communicating things to club members, and also as a recruiting poster to get outsiders interested in the club. I knew right then, that I could improve on the web site. I cautiously offered to help Kay. Turns out he was more than willing to give up the job entirely! That's how <http://www.starastronomy.org> was born. One of the newer members, Gordon Waite, donated space on his business' web site for the club's use.

Running the web site took a fair bit of experience. Web pages are written in a language called HTML (HyperText Markup Language). If you go to a web site and click "View Source" you can see what it looks like. At that time there were few decent tools for developing web sites, so the entire site was written by me by hand, using a regular text editor. To make it easier I used a technology called SSI (server side includes) which let me write the menus at the top and some other stuff once for all the pages, instead of writing the same thing over and over and having to keep them all up to date. Still, whenever

someone wanted a picture on the web site, or some text, it had to be done by hand.

Discussions

I realized we needed some sort of discussion forum. After some research, I recommended we purchase a product called WWWThreads. It cost \$75 to buy, and \$25/year for maintenance and upgrades. The STAR Discussion Board was born! It was a big hit right away. Unfortunately, two years later the company that made WWWThreads was bought by another company, and they raised the maintenance price to \$150/year!

Fortunately (for the club, not me), they had a programmer (me) who would do the job for free. So, our discussion board began diverging from the original product. I added features like having some of the discussion board posts appear on the home page, so I didn't have to edit the home page by hand each month to announce the next month's meeting. I added headline news, and icons. I also added many anti-spam and security features as the need arose.

Later, Gordon switched his server from Linux to Windows. Sadly, this meant rewriting some of the software, and losing the ability of the web site to handle email. However, business is business, and we certainly had no cause to complain; Gordon had been more than generous just to host the web site.

The Great Crash of '07

Fast forward to last year. Gavin and I discussed ways to make the site "better." There are lots of tools now called CMS (Content Management Systems) that make it easier to maintain a web site and update the contents without having to have a lot of programming experience. We chipped in money to put up a new site on a commercial server to experiment with this. Thus, <http://www.starastronomy-beta.org> was born. This work went along pretty slowly, as there wasn't an urgent need, and I didn't have much free time.

Then, over the summer, Gordon had a horrible server crash, and his machine was out of commission for several weeks. Of course, this was a disaster for his business, but it also took our web site down. Nothing was lost, because I made weekly backups of everything on the site and kept a copy at home. However, without a server to run the site on, the data wasn't useful. We got a second commercial server and put up <http://www.starastronomy-gamma.com>.

Now we had an urgent need, but even less time, since I had to re-upload the entire site and fix all the inevitable glitches when moving from one machine to another. Oh yeah, we switched operating systems from Windows back to Linux at the same time.

Eventually, we got things working again, & moved the pointer to the new site so <http://www.starastronomy.org> was up and running again.

Ch Ch Ch Ch Changes

In experimenting I had discovered a tool called drupal. Drupal is an open source, free CMS software package that's very flexible. There are thousands of plugins and add-ons for it to do different things. What I liked about it as a programmer is that it is "clean". I could write about 10 pages about what that means, but suffice it to say that I believe it will ultimately be less buggy and frustrating, less likely to be "hacked, and will last longer than many of the other tools I looked at. I bought some books, learned how to use it, and started designing the new site. At this point I've put in many hours creating, designing, & programming the new site (so I hope you like it!).

But what does all this mean? A "traditional" web site consists of web "pages" that are like pages of a book. You write files in HTML and they are stored in folders on the server. When a web browser wants to look at a page, the web server takes the file and sends it over the internet. In a URL like <http://www.robgendlerastropics.com/Nighthawk.html> the last part "Nighthawk.html" is actually the file name on the server.

Drupal is a "Web 2.0" package, which is a fancy way of saying it uses technology that makes the site "more dynamic". In drupal, there are no actual web pages. Information is stored in a database, and when a web browser asks for a page, <http://www.starastronomy.org/Library/Spectrogram> the web server runs a program that looks at the page that was requested and fetches data from the database and sends it to the web browser. Because you are really running a program instead of just returning a file, the thing can be programmed to do something other than just returning static data.

For instance, <http://www.starastronomy.org/Library/Spectrogram> looks up all the issues of the spectrogram, makes a summary of each one puts an introductory paragraph at the top, splits the result into pages, if need be, adds the menus, header images, footer, style and formatting information, etc.

This is very powerful in several ways. First of all, if we want to change the look of the site, we can do that in one place, and all the pages on the site change. If we want to add some content, we can do that in an editor something like MS Word instead of having to learn HTML, and the software will convert it to HTML and store it in the appropriate place on the site. If that content is an issue of the Spectrogram, it will now appear in the web page <http://www.starastronomy.org/Library/Spectrogram> and if it's the newest issue a summary of it will appear in a box on the home page.

When we add new events to the site, not only do they go on the events page <http://www.starastronomy.org/Events> but a summary of the next five upcoming events in the next two months appear in a box on the home page. That even changes according to the day the viewer is looking at the page, without a human having to do anything. So people with no web programming experience can keep the site current, and the latest and greatest information automatically appears in a professional up-to-date manner. That means more people can edit the site and more and better looking content will be there all the time.

There are some other cool things as well. On the home page view, 5 random photos are picked from the Photos section of the web site, and displayed in a (hopefully eye-catching) dynamic display. We can even add dynamic decorations to one page or all pages (although this may take real programming work, not just simple editing).

Of course, there are some down sides. The previous site was designed to be as easy on web browsers as possible. That made it extremely quick to load, and while it wasn't the fanciest layout, it had a standard look on all web browsers on all platforms under most conditions.

The new site, in order to provide all these neat features, relies heavily on browser technology. It uses cookies, JavaScript, CSS, DHTML, AJAX, etc. If you don't know what all those stand for, suffice it to say that they are all things that a modern browser does, but older ones (or ones with features turned off) don't. The good folks who provide drupal and its add-ons have done their best to see that drupal sites degrade gracefully under older or buggy browsers, but it's not a perfect world. In addition, all that baggage makes the site slower both because of the extra work being done (looking up stuff in a database) and because of the greater amount of data to be transferred.

Also with great power come migraine headaches. Our site is becoming a more and more of a magnet for spammers. Fortunately, drupal also provides us with many security features that I hope will be sufficient to protect us.

The Future

So like everything in life, the new web site has its pluses and minuses. I hope that the pluses outweigh the minuses. As we get the site more in line we hope to be adding more new features. Members will eventually be getting logins that may provide them with private information (like contact numbers), and perhaps even allow everyone to contribute to the site (via personal email addresses, home pages, photo galleries, blogs, etc.).

If you have feedback about the site as it is (such as something that you like, or don't like, or that doesn't work) or as you'd like it to become (a feature request, etc.) please let me know. I can be reached at webmaster@starastronomy.org

Are you a S*T*A*R Member?

S*T*A*R is the proud owner of a **monstrous 25" Dobsonian Obsession reflector – which members can gain access to!**

Meetings are the first Thursday of each month, except July and August, at 8:00 PM at the Monmouth Museum on the Brookdale Community College campus. Meetings generally consist of lectures and discussions by members or guest speakers on a variety of interesting astronomical topics. S*T*A*R is a member of United Astronomy Clubs of New Jersey (UACNJ), the Astronomical League (AL), and the International Dark Sky Association (IDA).

Memberships: () Individual....\$25 () Family...\$35

Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

Email _____

Make checks payable to: S*T*A*R Astronomy Society, Inc. and mail to P.O. Box 863, Red Bank, NJ 07701



2009 January Celestial Events

Supplied by J. Randolph Walton (Randy)

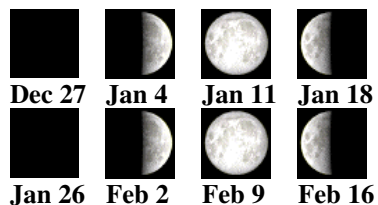
Day	Date	Time (EDT)	Event
Sat	3	06:55	Mars Rises
		07:22	Sunrise
		08:00	Quadrantid meteors peak (ZHR=120)
		10:55	Moon Rise
		16:47	Sunset
		18:03	Jupiter Sets
		18:20	Mercury Sets
		20:37	Venus Sets
		22:20	Saturn Rises
Sun	4	06:56	First Quarter Moon
Wed	7	17:00	Moon next to M45 (Pleiades)
Sat	10	06:53	Mars Rises
		07:21	Sunrise
		16:26	Moon Rise
		16:54	Sunset
		17:42	Jupiter Sets
		18:20	Mercury Sets
		20:50	Venus Sets
		21:45	Saturn Rises
		22:27	Full Moon
Sat	17	06:50	Mars Rises
		07:19	Sunrise
		10:39	Moon Sets
		17:02	Sunset
		17:22	Jupiter Sets
		17:37	Mercury Sets
		20:58	Venus Sets
		21:20	Saturn Rises
		21:46	Last Quarter Moon
Sat	24	06:30	Mercury Rises
		06:50	Mars Rises
		07:15	Sunrise
		15:35	Moon Sets
		17:02	Jupiter Sets
		17:10	Sunset
		20:53	Saturn Rises
		21:05	Venus Sets
Mon	26	02:55	New Moon
		06:06	Annular Solar Eclipse in South Atlantic
		07:25	Moon Rise
Sat	31	05:50	Mercury Rises
		06:27	Mars Rises
		06:55	Jupiter Rises
		07:09	Sunrise
		17:18	Sunset
		20:20	Saturn Rises
		21:10	Venus Sets
		23:02	Moon Sets
Feb	2	10:21	Moon Rise
		18:13	First Quarter Moon

In the Eyepiece

Here is a list of objects for this month. This is reproduced from www.skyhound.com with the kind permission of its creator and author of SkyTools Greg Crinklaw.

Object(s)	Class	Con	RA	Dec	Mag
NGC 1501	Planetary Nebula	Camelopardus	04h06m59.4s	+60°55'14"	13.3
Cleopatra's Eye	Planetary Nebula	Eridanus	04h14m15.8s	-12°44'21"	9.6
The California Nebula	Diffuse Nebula	Perseus	04h03m12.0s	+36°22'00"	5.0
NGC 1664	Open Cluster	Auriga	04h51m04.4s	+43°42'04"	7.2
MSH 04-12	Quasar	Eridanus	04h07m48.4s	-12°11'36"	14.8
NGC 1360	Planetary Nebula	Fornax	03h33m14.6s	-25°52'18"	9.6
Crystal Ball	Planetary Nebula	Taurus	04h09m17.0s	+30°46'33"	10.0
Palomar 2	Globular Cluster	Auriga	04h46m06.0s	+31°22'54"	13.0
K 2-1	Planetary Nebula	Auriga	05h07m07.1s	+30°49'18"	13.8
NGC 1624	Open Cluster	Perseus	04h40m25.4s	+50°26'49"	11.8
M35 & NGC 2158	Open Cluster	Gemini	06h08m51.9s	+24°20'28"	5.6
M 38	Open Cluster	Auriga	05h28m39.4s	+35°50'24"	6.8
Sigma Ori	Multiple Star	Orion	05h38m44.8s	-02°36'00"	3.8
M37	Open Cluster	Auriga	05h52m22.3s	+32°32'40"	6.2
The Trapezium	Multiple Star	Orion	05h35m16.5s	-05°23'23"	5.1
NGC 2017/HR 1944	Multiple Star	Lepus	05h39m16.2s	-17°50'58"	6.4
Beta Mon	Multiple Star	Monoceros	06h28m49.1s	-07°01'59"	3.8
NGC 2112	Open Cluster	Orion	05h53m52.2s	+00°23'32"	9.1
IC 418	Planetary Nebula	Lepus	05h27m28.2s	-12°41'50"	10.7
NGC 1931	Open Cluster	Auriga	05h31m24.8s	+34°15'12"	10.1
IC 2149	Planetary Nebula	Auriga	05h56m23.9s	+46°06'17"	11.2
NGC 1893 & IC 410	Open Cluster in Nebula	Auriga	05h22m41.1s	+33°23'49"	7.8
M 50	Open Cluster	Monoceros	07h03m12.3s	-08°19'28"	7.2
Crab	Diffuse Nebula	Taurus	05h34m30.0s	+22°01'00"	8.4

Moon Phases

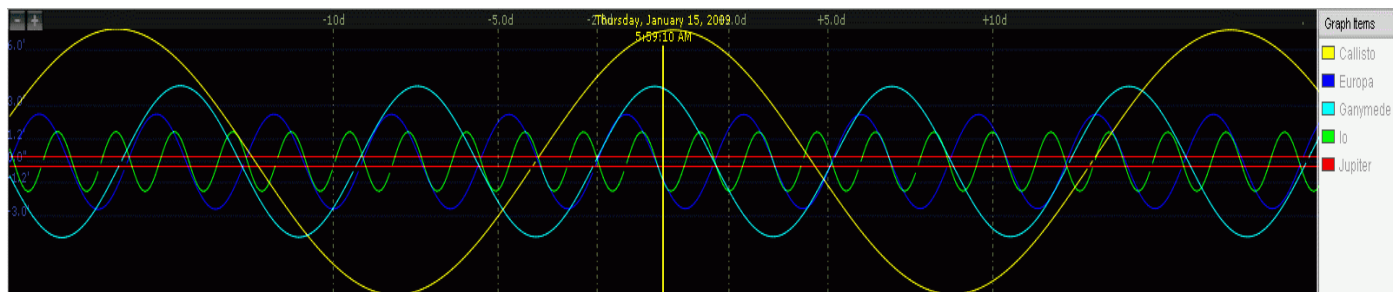


AstroPuzzle Solution for December 2008



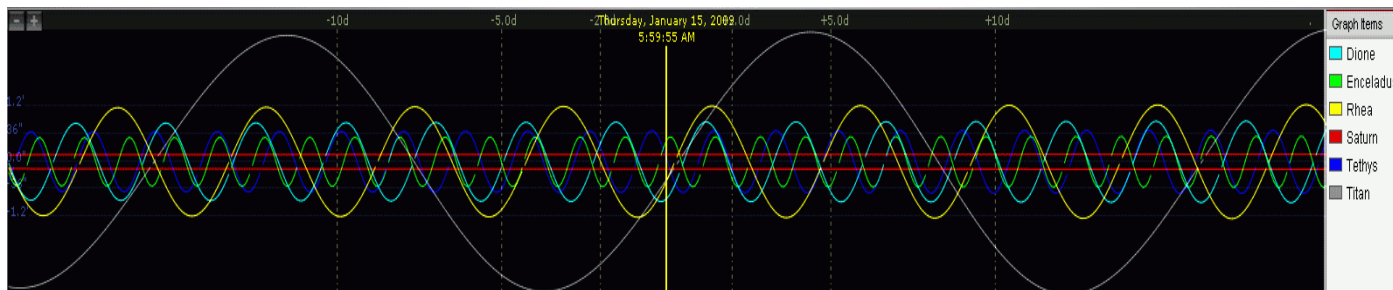
Jupiter Moon Calendar

Here is a graphical depiction of the visible moons of Jupiter for the month of January 2009.

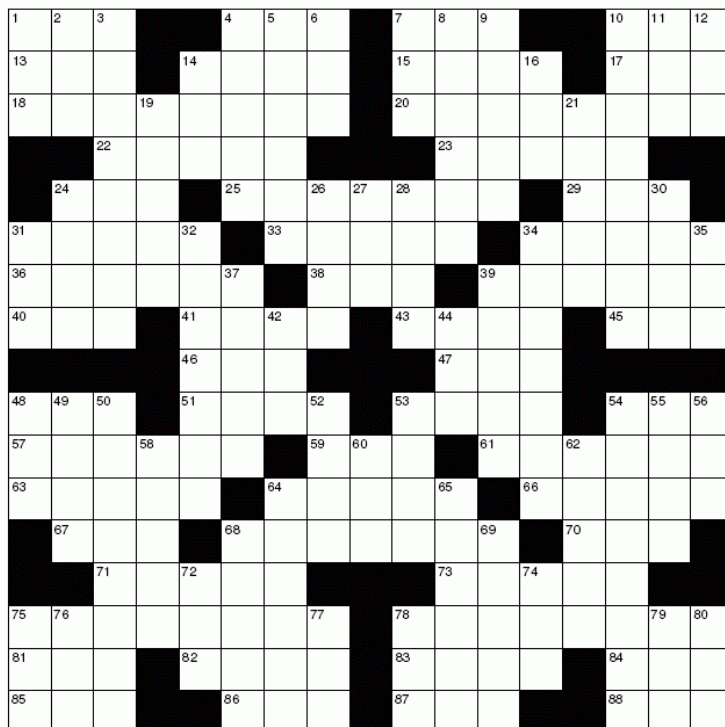


Saturn Moon Calendar

Here is a graphical depiction of the visible moons of Saturn for the month of January 2009.



AstroPuzzle - January 2009 - Constellations



www.CrosswordWeaver.com

ACROSS

- 1 Yes
 4 Wing
 7 Stage of life
 10 Legume
 13 Lawyer's title
 14 Clunk
 15 Animal stomach
 17 Business title ending
 18 **The sculptor (originally his studio)**
 20 Religious stories
 22 Fable writer
 23 **The (American) Indian**
 24 Brassiere
 25 **The snake**
 29 Body of water
 31 Trips
 33 Dirty
 34 **The Table (mountain)**
 36 Woke up
 38 Container
 39 Become distinctive (2 wds.)
 40 Possessive pronoun
 41 Doctor's picture
 43 Ethereal
 45 Beam
 46 Make lace
 47 **The lion**

- 48 Liable
 51 Won
 53 Make less distinct
 54 British thermal unit
 57 Southern California city
 59 Imitate
 61 City
 63 **The whale (or whatever) menacing Andromeda**
 64 **The ram**
 66 Maned animals
 67 Doctoral degree
 68 Crescent-shaped figure
 70 Pouch
 71 Agog
 73 Maintain
 75 ____ Hall
 78 Ancient word usage
 81 Is
 82 Chicken product
 83 Veal
 84 BB association
 85 Unpleasant
 86 Rested
 87 Sun's name
 88 Harden

DOWN

- 1 Yea

- 2 Escudo
 3 **The water carrier**
 4 Singing parts
 5 Whorled
 6 Rainy mo.
 7 American College of Physicians (abbr.)
 8 Granular
 9 Makes money
 10 Tall, thin beer glass
 11 Compass point
 12 American Cancer Society (abbr.)
 14 Cycles per second
 16 Compact bundle
 19 Jumps
 21 Transported by bus
 24 Smirch
 26 Jewel
 27 Pressure unit
 28 Bunsen burner
 30 Land mass
 31 __ Lanka
 32 **The sextant**
 34 Concerning the mayor
 35 Whichever
 37 **The dragon**
 39 German psychologist
 42 Snacked
 44 Queasy
 48 College football conference (abbr.)
 49 Preparation (abbr.)
 50 Anchored
 52 Drat!
 53 Purple vegetable
 54 Retaining water
 55 Powdered drink
 56 Ship initials
 58 African nation
 60 Pastry
 62 **The scales (weighing)**
 64 **The charioteer**
 65 Music player
 68 No Nonsense competitor
 69 Do very well
 72 "To the right!"
 74 Extremely high frequency (abbr.)
 75 Automobile
 76 **The altar**
 77 Eastern Standard Time
 78 Abdominal muscles (abbr.)
 79 Compass point
 80 Bad (prefix)

Note: All clues in bold are proper constellation names. For example, "The greater bear" is "UrsaMajor"