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Star Points for February 2013

“Forgotten Constellations”

by Curtis Roelle

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Like the changing ads on billboards lining a highway, different patches of stars have changed names over time. Besides western culture, far-flung civilizations around the globe have projected their beliefs, values, mythologies, and tools onto star fields scattered across the celestial sphere. Let us take a look back at a few of the forgotten constellations.

Today there are 88 recognized constellations — the same number as keys on a piano. They were adopted by international treaty in 1930. That is the treaty that set the constellation borders. The modern definition of a constellation isn't so much a star picture or pattern as it is an area of the sky. The 88 completely cover the sky, like a quilt blanket made with oddly shaped patches.

Just as the official constellations depict creatures — both living and mythical — as well as devices and inventions, so also do the defunct ones. Sources for these names include Richard Hinckley Allen's "Star Names: Their Lore and Meaning" and George Lovi and Will Tirion's "Men, Monsters and the Modern Universe."

Most people have heard of the constellation Taurus, the bull. But have you ever heard of Taurus Poniatowski, or Poniatowski's Bull? It was named after the king of Poland in 1777, and its stars occupy part of the modern summer constellation Ophiuchus, the serpent bearer, which itself is probably unfamiliar to some readers.

Amateur astronomers may have heard of, if not seen, Musca, the fly, in the far southern sky never visible from Maryland. Years ago there was another fly in the sky. Musca Borealis — the northern fly — located in what is now Aries the ram, buzzing above the animal's back.

Felis was a cat, and is not to be confused with the 90-year-old cartoon character Felix the cat. Felis' stars are now part of the Hydra the female water serpent constellation, and are located about 10 degrees south of the star Alphard, which Tycho Brahe referred to as Cor Hydriæ, the serpent's heart.

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February Meeting: Wednesday, February 13, 2013, 7:30 p.m., at Bear Branch Nature Center

Speaker: WASI secretary Bob Clark will present “Amateur Telescope Making in the Internet Age.”

President's Message

by Vanessa Thomas

Dear WASI members,

At last month's business meeting, WASI members foolishly, uh, I mean, prudently elected me president for 2013. I've only been a member for about four years and am still learning a lot about the club and meeting all the friendly and knowledgeable people in it. But I'm honored that you would pick me to be your president, and I'll try to live up to the duties as best I can. I hope to get a chance to meet and talk to each of you at an upcoming meeting or WASI event in the near future.

I'd also like to congratulate the other officers who were elected to serve with me:

Christian Ready, 1st Vice President

Tony Falletta, 2nd Vice President

Bob Clark, Secretary

Wayne "Skip" Bird, Treasurer

I am looking forward to the next year for the club. Curt (Roelle) is lining up some great speakers for our upcoming meetings. Speaking of which, did you know that our own Bob Clark is an author? At February's meeting, he'll be giving us a summary of his book, entitled "Amateur Telescope Making in the Internet Age." In future months, we'll be hearing from professional astronomers about the James Webb Space Telescope and black holes, including other great speakers and topics. If you have a topic you'd like to talk about, or have an idea for a speaker, please talk to Curt or to me.

We'll also be reinvigorating our group observing, after each monthly meeting and at regular member observing events. Club members Steve Conard and Paul Henze have volunteered to revive our member observing nights. (See Steve's article later in the newsletter.) We'll also be setting up our telescopes after each monthly meeting, so please bring yours, if you have one! If it's clear, we'll enjoy the dark skies at Bear Branch. If it's cloudy, we'll talk telescopes and check out what scopes people have. (It might help someone who's considering buying their first or next telescope.) If you've been having a problem with your scope or have questions about how to use it, others will be there to help out or lend advice.

Our observatory committee is also hard at work determining the best way forward amidst our present circumstances and challenges. But I can tell you that they're absolutely motivated to make something happen this year! If you want to know more about these efforts or become involved, please remember that all members are welcome to attend the observatory committee meetings and provide input. Talk to me or Curt, who is the committee chairperson, to find out when the next observatory meeting is. (We also announce meetings via the Yahoo email list.)

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Star Points, *cont.*

Besides cats, the sky is full of dogs. There is of course Canis Major and Canis Minor, the greater and lesser dogs. There used to be two other named dogs that are now grouped together in the hunting dogs constellation Canes Venatici. As shown in Alexander Jamieson's 1822 "A Celestial Atlas," the northern dog is named Asterion and the southern dog is Chara.

Other dogs in the sky include the defunct constellation Cerberus, a mythological three-headed guard dog at the gates of hell. It was usually depicted as being clinched in the left hand of strongman Hercules.

There are a number of antiquated contraptions among the discarded constellations of old, such as Officina Chemica, the chemistry set. The modern constellation that took its place, Fornax, the furnace, doesn't seem to be much better. There is also Machina Electrica, an electrical machine, and Apparatus Sculptoris, a sculptor's apparatus, whose modern name is simply Sculptor. The printing press was even honored once with the constellation Officina Typographica just east of Sirius, the brightest star in the night sky.

There was also Quadrans Muralis, a mural quadrant device used for measuring stars. The name is still remembered today in a January meteor shower called the Quadrantids. The quadrant is situated between Hercules' right foot and the left hand of Boötes, the charioteer.

A hot-air balloon, the constellation Globus Aërostaticus was named in commemoration of the great ascent by the Montgolfier brothers in 1783. Its location was near the eastern edge of the modern constellation Microscopium, the microscope.

But the most famous former constellation of all is one that is said to have been first created in ancient times by Claudius Ptolemy. Its name was Argo Navis, and it was a great sailing ship but now consists of four separate constellations. They are Puppis, the stern; Vela, the sails; Carina, the keel; and Pyxis, the mariner's compass.

The only parts of the ship that rise above our horizon are all of Pyxis, most of Puppis, and some of Vela. Carina never rises in Maryland, so whenever I travel southward I try and catch a night or two just viewing the bright and seemingly unfamiliar broad spattering of bright stars in this region.

This past January I observed Argo Navis once again, this time from the West Indies. Carina's very bright star Canopus underscores Sirius and the bright winter stars of Orion above it. Simple binoculars plainly showed the large Eta Carinae Nebula. They also enabled identification of interesting star clusters such as IC 2602, the "Southern Pleiades," as well as light and dark patches in the Milky Way along which the constellation formerly known as Argus sails forever.

Just as a rose by any other name smells just as sweet, so does Argus by any other name shine just as brightly throughout winter nights in the tropics.

"Star Points" by Curtis Roelle appears in the Carroll County Times on the first Sunday of each month. Visit the website at <http://www.starpoints.org> or send email to StarPoints@gmail.com.

President's Message continued

Outgoing president and current planetarium director Jim Reynolds is also spearheading the charge to get the planetarium at Bear Branch upgraded. Some improvements have already been made. Look for more in the coming months. If you want to help out or even learn how to operate the planetarium yourself, talk to Jim. I'm sure he'd be happy to have your help.

Finally, I consider myself incredibly lucky to work in the Office of Public Outreach at the Space Telescope Science Institute in Baltimore. I get to spend my days writing about the Hubble Space Telescope and NASA's next great space observatory, the James Webb Space Telescope. So each month, I'll try to share some cool bit of news from Hubble or about Webb. This past week, we released a new Hubble image of galaxy M106, which was composed, in cooperation with STScI's spectacular image processors, by a prominent amateur astronomer named Robert Gendler, who combined archived Hubble data and ground-based observations he and another amateur, Jay Gabany, made with their 12.5- and 20-inch telescopes in New Mexico. Here's the result:

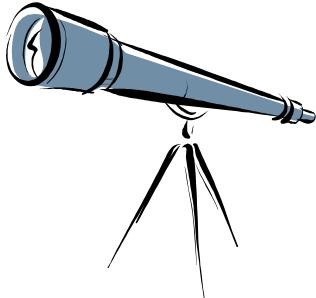


In case you don't know, Hubble's data archive is available to all — amateur and professional astronomers alike. If you're interested in learning how to mine this rich and incomparable data archive and to process your own Hubble images, I recommend you check out the Hubble Image Processors website at <http://hubblesite.org/gallery/hubble-image-processors/>.

That's all for now! I hope to see you at the meeting on February 13th!

Vanessa

Upcoming WASI Events



Soldiers Delight Public Stargazing February 9, 8 p.m., at Soldiers Delight Natural Environment Area in Owings Mills

Monthly Meeting February 13, 7:30 p.m., at Bear Branch Nature Center (BBNC)

Planetarium Show February 16, 7:30 p.m., at BBNC

WASI Member Observing March 2, BBNC

WASI Snow Policy

For public WASI events, such as the monthly meeting, planetarium programs, and public star parties, our snow policy is to follow the lead of the Carroll County Schools. If school activities for the time of our event — be they evening or on weekends — have been canceled, then so will the WASI event. Check your radio and television stations for school closings.

Welcome, New WASI Members!

WASI extends a warm welcome to the following new members.

Scott Campanella & Beatrice Bordzol of Westminster, Maryland

Gary Coker of Reisterstown, Maryland

Joseph Francis of Washington, DC

Stephen Gray of Owings Mills, Maryland

Larry & Donna Kettish of Marriottsville, Maryland

Frank, Melanie, Tommy & Evelyn Roelke of Westminster, Maryland

Alan Solomon of Glen Burnie, Maryland

Want to join the Westminster Astronomical Society?

Sign up online at www.westminsterastro.org/members

or bring a check for \$25 made out to WASI

to our next meeting at Bear Branch Nature Center.

Members Observing Notes

by Steve Conard

It has been several years since we've had regular members observing nights at Bear Branch. This was primarily caused by lack of regular participants — and had dwindled down to just a couple of regulars before being discontinued. There are a number of new members who have joined WASI since we last had these monthly events, so Paul Henze and I have suggested that it would be worth trying to revive the gatherings.

Our first try will be at Bear Branch on Saturday, March 2. Sunset is around 6:00 pm, and we'll set up before twilight ends. We'll try to be there until 9:00. If the weather is predicted to be mostly cloudy or worse, we'll cancel — posting the cancellation on the Yahoo message board. In that past, we would have a back-up date in the event of poor weather. This time around, we'll just wait for the next regularly scheduled event — which will typically be somewhere between 3rd quarter and new moon. The tentative date for the next one will be Saturday, March 30.

These events are intended primarily for members, but we'll initially welcome everyone. We'll try to incorporate themes. For March 2, the theme will be a micro-Messier Marathon. Our goal will be that everyone in attendance will see 10 or more of the best spring-evening Messier objects — either through your scope or one of ours. We look forward to suggestions for future themes. We'll also provide some type of junk food — expect the unexpected here! In the future, we'll also try some in alternate locations, such as Piney Mountain or the fabled Willow Oak Observatory.

If you intend to participate, we ask a favor of you. We've found that more people attend when they know that others are planning to attend. We'll post a reminder once or twice before each event on the Yahoo message board — if you think you'll attend, please send a response saying so. And afterward, send another message saying you were there and what you saw that left an impression on you. Paul and I are looking forward to seeing you there!

Minutes of Meeting on January 9, 2013

Bear Branch Nature Center

Called to order at 7:40 by James Reynolds, President

Wayne Bird (Treasurer) presided due to Jim's infirmity.

The previous motion to award to Prof. Shie an honorary membership was voted and approved.

Reports were called for:

Observatory:

Bob Clark reported for the observatory committee that everything was being reconsidered.

Outreach:

Skip reported that we are being invited, again to the Girl Scout day at the Udvar-Hazy Center.

Elections:

The following were elected to 2013 offices:

President	Vanessa Thomas	by acclimation
VP1	Christian Ready	by acclimation
VP2	Tony Falletta	by acclimation
Treasurer	Skip Bird	by acclimation
Secretary	Bob Clark	by acclimation

It was announced that we need to find candidates for guest speaker.

Brian might be going to California to continue work on SOFIA.

Adjourned 9:45 PM

Respectively Submitted,
Robert L. Clark, Secretary



The Art of Space Imagery

by Dr. Tony Phillips

When you see spectacular space images taken in infrared light by the Spitzer Space Telescope and other non-visible-light telescopes, you may wonder where those beautiful colors came from. After all, if the telescopes were recording infrared or ultraviolet light, we wouldn't see anything at all. So are the images "colorized" or "false colored"?

No, not really. The colors are translated. Just as a foreign language can be translated into our native language, an image made with light that falls outside the range of our seeing can be "translated" into colors we can see. Scientists process these images so they can not only see them, but they can also tease out all sorts of information the light can reveal. For example, wisely done color translation can reveal relative temperatures of stars, dust, and gas in the images, and show fine structural details of galaxies and nebulae.

Spitzer's Infrared Array Camera (IRAC), for example, is a four-channel camera, meaning that it has four different detector arrays, each measuring light at one particular wavelength. Each image from each detector array resembles a grayscale image, because the entire detector array is responding to only one wavelength of light. However, the relative brightness will vary across the array.

So, starting with one detector array, the first step is to determine what is the brightest thing and the darkest thing in the image. Software is used to pick out this dynamic range and to re-compute the value of each pixel. This process produces a grayscale image. At the end of this process, for Spitzer, we will have four grayscale images, one for each for the four IRAC detectors.

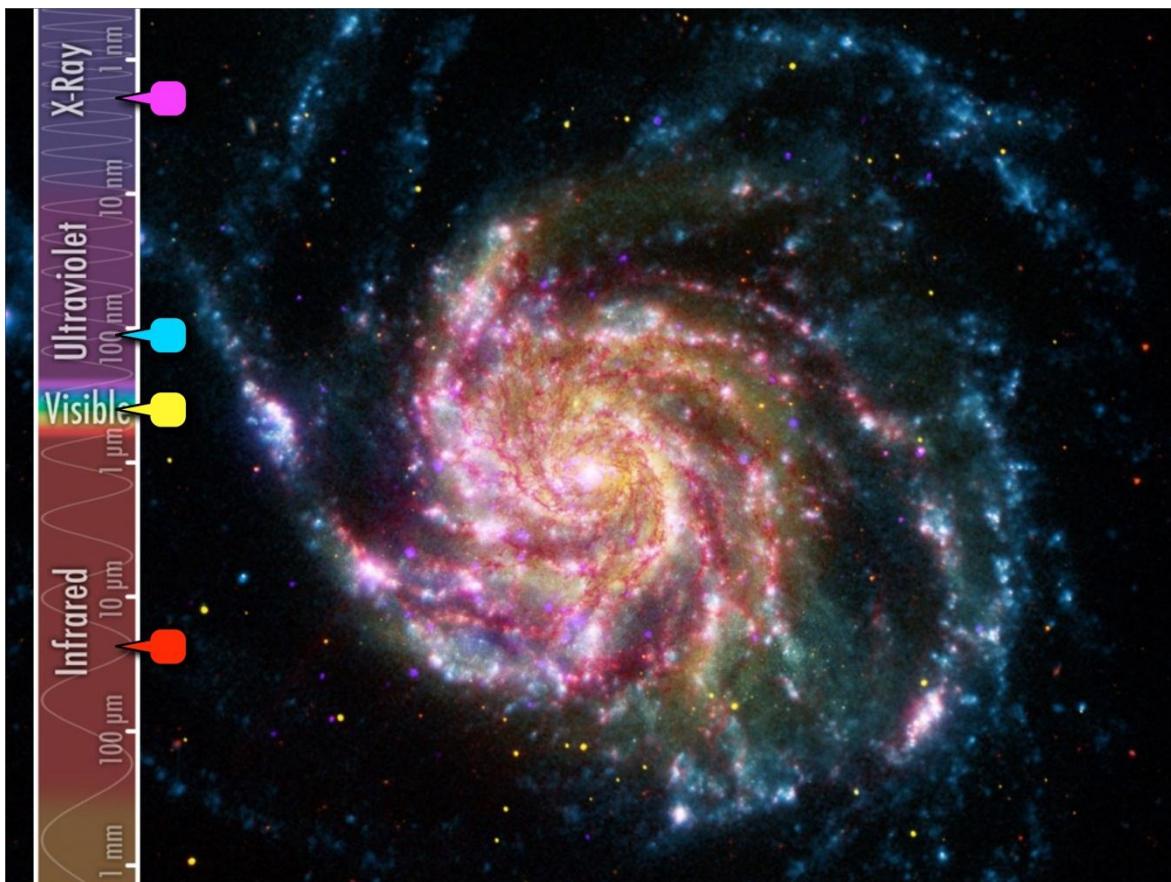
Matter of different temperatures emit different wavelengths of light. A cool object emits longer wavelengths (lower energies) of light than a warmer object. So, for each scene, we will see four grayscale images, each of them different.

Normally, the three primary colors are assigned to these grayscale images based on the order they appear in the spectrum, with blue assigned to the shortest wavelength and red to the longest. In the case of Spitzer, with four wavelengths to represent, a secondary color is chosen, such as yellow. So images that combine all four of the IRAC's infrared detectors are remapped into red, yellow, green, and blue wavelengths in the visible part of the spectrum.

(continued on next page)

Download a new Spitzer poster of the center of the Milky Way. On the back is a more complete and colorfully illustrated explanation of the “art of space imagery.” Go to spaceplace.nasa.gov/posters/#milky-way.

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



This image of M101 combines images from four different telescopes, each detecting a different part of the spectrum. Red indicates infrared information from Spitzer's 24-micron detector and shows the cool dust in the galaxy. Yellow shows the visible starlight from the Hubble telescope. Cyan is ultraviolet light from the Galaxy Evolution Explorer space telescope, which shows the hottest and youngest stars. And magenta is X-ray energy detected by the Chandra X-ray Observatory, indicating incredibly hot activity, like accretion around black holes.