



Newsletter of the Baton Rouge Astronomical Society

To the members of the Baton Rouge Astronomical Society (BRAS)

Our June BRAS meeting will be held on **Monday, June 13 at 7 PM** at the LASC Planetarium on River Road. Since the doors will need to be shut when the program begins (just a few minutes after 7 PM), you **MUST** plan to be there earlier than normal. Please **DO NOT BE LATE**. The LASC personnel will lock the outside doors and will not allow late comers to come in. If you are not sure where LASC is located, it is in the old train station on River Road across the street from the Old State Capital building.

This will clearly be a meeting that you can bring your spouse and make it a family night out. The show should be worth it--and it is free.

The Planetarium manager, Jon Elvert, in association with Lisa Chumney, one of our own BRAS members, will direct the show for us. It will consist of, first, their current public show, ***Bad Astronomy: Myths & Misconceptions*** and then they will give us a tour of the night sky. If you have never been to the Planetarium or if it has been a long time since you were there, this will be a treat for you. The LASC hosted one of our meetings a few years ago and it was terrific. You will be amazed at how well the Planetarium can show the sky and stars to us.

For July, we are working on a meeting at the **LIGO facility in Livingston, Parish**. For our last LIGO meeting, we had a barbecue picnic and a tour of their education building and then a tour of their observatory. This is science on the cutting edge that you will not want to miss. Since the LIGO facility is in a dark sky area, some members may want to bring their scopes depending on the time and the LIGO staff's approvals. Again, this will be a family meeting so don't come alone.

CHANGE IN DUES BILLING TIMING

We are planning for a change in our dues billing system to make it on an annual basis rather than on the anniversary of joining. We plan to give more details in a later newsletter and let the membership vote at our next meeting at HRPO.

HAPPY BIRTHDAY—NEPTUNE

Did you know that Neptune is having a “one year” birthday this summer and you are all invited to the party. Well, in terms of Earth, one year is the time that it takes Earth to complete one full revolution around the Sun. Thus, with Neptune completing its first full revolution around the Sun since its discovery in 1846, it is clearly time for a First Birthday Party for Neptune. Coincidentally, 1846 is the same year that the theory of gravitation was announced and the *Principia* was published by Newton.

Neptune was not found by chance—it was actually predicted to exist based on calculations of the effect shown by Uranus as it traveled. At just past midnight, local time, Johann Galle, acting on calculations just received from Le Verrier in Paris, spotted the predicted planet through the Berlin Observatory’s 9-inch refractor, resulting in a graduate student exclamation “That star is not on the map.”

We now know that Galileo may have been made the discovery in 1613 when on two successive nights he noted that two stars in his field of view moved farther apart. He was too busy with other matters, such as mapping sunspots, that he never followed up. It has now been shown that he was probably observing Neptune.

Neptune was spotted, but not recognized, over the next two centuries by astronomer John Herschel and Johann von Lamont—always hiding in plain sight like a great cosmic Waldo. The planet is not flashy at its magnitude of 7.8 but its bluish disk is easily noticeable with enough scrutiny.

To understand why Neptune’s 1846 discovery is so special, we have to go back a few decades. In 1821, when French mathematical astronomer Bouvard published revised tables of Jupiter, Saturn and Uranus, he realized something was askew in the outer solar system. For the previous few years, Uranus seemed to be moving faster in its orbit than it should, and he presciently suspected that an unknown planet might be responsible. For a brief period, in 1829-1830, the tabular and observed positions of the planet matched, but thereafter the planet began to lag behind its calculated pace. Was something awry in Newton’s clockwork universe?

Sadly, Neptune does not clear the horizon until about 1 AM during this month but by late August or mid-September, it will be ready for a full birthday party in prime time, fully dressed in its blue-green robe. Sky & Telescope will publish any pictures of Neptune this fall. An exposure setting of 10 seconds or less should be enough to capture this distant pearl.



DISCOVERY TELESCOPE Johann Galle discovered Neptune using this beautiful 9-inch Fraunhofer refractor, which is currently on display at the Deutsches Museum in Munich.

Omega Centauri- The Milky Way's Largest Globular Cluster

—BY Ben Toman, BRAS Vice President

The first time I ever saw a globular cluster was through the 20" OGS at the HRPO. Dr. Rob Hynes was the operator and he told us how that fuzzy, cotton ball-looking patch (I believe it was M13) was actually a close grouping of hundreds of thousands of stars. I climbed the ladder and looked through the scope. I'm sorry to say I was a little disappointed. "This isn't NEARLY as cool as Saturn," I thought. Well, after a little bit of time spent learning about these clusters and more opportunities to view them through various telescopes, I can say they are some of the objects I like to observe the most.

OMEGA CENTAURI was a name I vaguely remembered from my one astronomy class back in college in Michigan. In an email from my former professor, he mentioned how cool it must be that we can see it down here. (It's really a Southern sky object, after all.) Now I had to go look it up to remember what he was talking about! Before I talk about Omega Centauri, though, here's a little information on globular clusters in general...

Most accounts give credit to Abraham Ihle as the discover of the first cluster in 1665. It was the cluster that is now known as M22. With his magnification, though, it was not possible to resolve individual stars in the cluster so he referred to it as a "round nebula." Charles Messier, working around 100 years later, would be the first to resolve stars in a globular. (M4, specifically.) At that time, around 1782, there were 33 known and it was William Herschel that resolved nearly all of them into stars on his way to discovering over 30 more. It was also Herschel that gave them the name "globular cluster."

It is now known that globular clusters are tightly concentrated groups of stars that range in size from 10's of light years across to more than 200 light years across. Unlike open clusters (i.e. M44, M41, M35) which can contain hundreds to thousands of stars or more, globular clusters are thought to contain tens of thousands to MILLIONS of stars. Some of these clusters are even thought to be the left over remnants of dwarf galaxies that were absorbed by other larger galaxies.

So, what's so special about Omega Centauri? It was discovered by Edwin Halley in 1677. (One of the first to be discovered if you are keeping track of the timeline.) He saw it as a nebula, but we now know it as the largest globular cluster in our Milky Way Galaxy. It is thought to contain as many as 10 million stars and at a magnitude of around 3.7, it is actually visible to the naked eye in a dark sky. It is roughly 10 times as massive as any other known globular in our galaxy and spans approximately 230 light years of space at a distance of about 17k-18k light years from us. And the most special thing about Omega Centauri? Even though it's primarily a Southern Sky object, WE CAN SEE IT here in Louisiana. It's not going to be the greatest view of it you'll find because it only climbs to about 12 degrees above the horizon in the South, but it's still quite impressive. This is a globular cluster with an apparent size of 36 arc minutes. For those of you counting, that's larger than half a degree of sky, or larger than the full Moon. Needless to say, binoculars are the perfect tool for viewing this cluster.

Right now (May-June) is a great time to get out and see this object. It's at it's highest at around 10pm and is located in the constellation Centaurus. You can use Spica as a guide. Spica rides much higher in the sky, but lies in line above Omega Centauri when they both cross due South. The tricky part is finding a low enough horizon. Believe it or not, I've found a break in the trees at the HRPO where, with some clever positioning around the grounds, I've been able to show it off to several club members and some of the general public on the weekend. It's an object that is virtually impossible to see up in the northern US because it never rises high enough above the horizon.

