Newsletter of the Baton Rouge Astronomical Society

www.brastro.org

June 2013

What's in this issue:

PRESIDENT'S MESSAGE

Greetings Everyone,

Summer is here and with it the humidity and bugs, but I hope that won't stop you from getting out to see some of the great summer time objects in the sky. Also, Saturn is looking quite striking as the rings are now tilted at a nice angle allowing us to see the Casini Division and shadows on and from the planet. Don't miss it!

I've been asked by BREC to make sure our club members are all aware of the Park Rules listed on BREC's website. Many of the rules are actually ordinances enacted by the city of Baton Rouge (e.g., No smoking permitted in public areas, No alcohol brought onto or sold on BREC property, No Gambling, No Firearms or Weapons, etc.) Please make sure you observe all of the Park Rules while at the HRPO and provide good examples for the general public. (Many of which are from outside East Baton Rouge Parish and are likely unaware of some of the policies.) For a full list of BREC's Park Rules, you may visit their Park Rules section of their website at http://brec.org/index.cfm/page/555/n/75

I'm sorry I had to miss the outing to LIGO, but it will be good to see some folks again at our meeting on Monday, June 10th. If you've got any suggestions or concerns, please take the time to come speak to me. We are always looking for new ideas and ways to engage our club members. Also, if you feel you have an interest in becoming more involved in club activities (observing, outreach, volunteering at the HRPO, etc.) let us know! The more active members we have, the more fun our activities become.

I hope to see you all out at our meeting and please feel free to bring a friend. Also, if you still receive this newsletter, but are not paid up on your club dues, please consider sending in your payment.

Clear Skies,
Ben Toman
BRAS President

NOTES FROM THE VICE PRESIDENT

Well the hot, humid days of June are here, with the frequent afternoon showers and partly cloudy skies. Not the best conditions for deep sky observing, but it is usually pretty good for planetary observing. The good thing is Saturn is well placed at sunset for the whole month and the seeing is usually steady this time of year. To enhance your views of Saturn, at our next BRAS meeting, Jon Nagle is going to do a presentation on the different eyepiece filters and how to use them to improve details in planetary observations. Deep sky too. Much of what he will cover comes from a fine series of articles from the Shreveport-based magazine Astronomy Technology Today. Be ready to take notes.

Also, Chris Kersey will report on the latest developments (or lack thereof) on light pollution efforts in Baton Rouge.

We had a good attendance at the BRAS picnic at LIGO. About 30 people attended, including a few PAS members. Steve Edmondson and Trevor McGuire set up their solar scopes for some very nice views. Jupiter is gone but Mercury is still visible in the western sky after sunset. Keep an eye open for this month's full moon, on the morning of the 23rd. It will be at perigee (its closest point in its orbit to the earth) at the same time as it is full, making it the largest full moon of the year.

Merrill Hess

BRAS Vice President

MESSAGE FROM THE HRPO

FRIDAY NIGHT LECTURE SERIES
all start at 7:30pm
7 June: "Olbers' Paradox"
14 June: "The Tunguska Incident"
21 June: "Our Place in the Universe"
28 June: "The Dynamic Sun"

CALL FOR VOLUNTEERS: ON SITE
* Saturday, 29 June from 6pm to 10pm. *Two volunteers in addition to regular BRAS compliment, each for two-hour shift.* **Evening Sky Viewing Plus**. Marshmallow roast, demo and clock tables; small telescope; setup and takedown. Easy; training provided.

AMERICAN RADIO RELAY LEAGUE FIELD DAY
Saturday, 22 June from 2pm to 10pm
Free; for ages eight and up.
The Baton Rouge Amateur Radio Club will take part in an exciting nationwide emergency exercise. The Amateur Radio Service is the original "social medium", with ten of thousands of licensed hams (including high schoolers and grandparents) from coast to coast.
With an amateur radio license, one can…
*talk across the country with no monthly bill to pay
*learn basic electronics and hone math skills
*talk to an astronaut on the International Space Station
*try out for fun contact awards
*talk away from home with a handheld or mobile unit
*have reliable communication if an emergency situation shuts down cell phone and internet access

2013 H.R.P.O. SPRING CLEANING

HRPO personnel is in the process of its annual spring cleaning, which includes some special items this year. Those who have visited in the past two weeks will notice a set of black panels set up by the front exit doors; these are the background for an upcoming permanent display on the Sun. The Zodiac display will be replaced in the next thirty days.

Also, the defunct—and quite old—LSU computers that were housed along the northwest wall have been relocated to the storage shed; they will be surplused by LSU within the next four to five weeks.

OBSERVING REPORT: TRIPLE PLANETARY CONJUNCTION

On the nights of Sunday, 26 May and Monday, 27 May HRPO personnel went to the Burbank Soccer Complex to view the tight arrangement of Mercury, Venus and Jupiter. Sunday night was poor, to say the least; Wally didn't even bother to come. Tom, Chris D., John L. and I were there along with some patrons. Right when we were picking up one of the planets peeked through for about a minute.

On Monday night I brought the same equipment—10x binoc with SkyWindow, and the AstroScan. Tom, John N. and Wally each had his telescope (I think Wally was actually using a

spotting scope). John L., Erin and Trey also showed up. The weather was marginally better; during the early time there we saw a nice rainbow in the northeast. During the last hour of 8pm to 9pm the weather improved. Tom got a picture of all three objects using a camera without his telescope. What struck me was the reddish hue all three had; the color and the fluttering of the image low on the horizon were so intense that when I finally caught my first planet of the night I was convinced it was nearby Betelgeuse.

LIGHT POLLUTION UPDATE

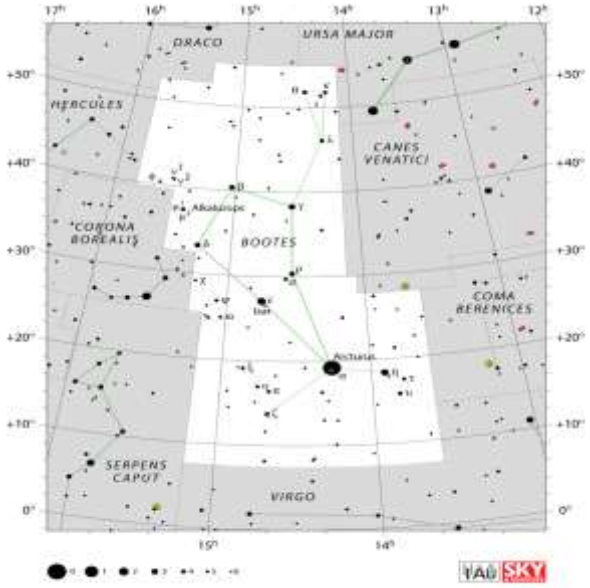
HRPO Education Curator Erin Anding and I had a productive talk with EBRP Chief Traffic Engineer Ingolf Partenheimer on 16 May. During that meeting Mr. Partenheimer promises to help amateur astronomers insomuch as he could. He was very sympathetic, it seemed, with our concerns. With BRAS VP Merrill Hess' permission I will outline the results of that meeting during both the BRAS business meeting and the regular monthly meeting.

OBSERVING NOTES

Constellation of the Month
Boȍtes - The Herdsman or The Plowman

Position in the sky

Right Ascension: 15 Hours Declination: +30 Degrees



Named Stars:

Arcturus (Alpha Boo)" The Guardian of the Bear", mag. -0.06
Position 14 13 4 N19 27, The third brightest star in the sky, an Orange Giant

Nekkar (Beta Boo) Sometimes called Meres, mag. 3.5, Position 15 00 1 N40 35, a Yellow Giant

Seginus (Gamma Boo), mag. 3.03, position 14 30 1 N38 32, a variable White star, and has an optical companion (mag. 12.5) at a distance of 33'

Izar (Epsilon Boo) "The Veil", sometimes called "Pulcherrima- The Loveliest" in Latin, and Mirak "The Loins" in Arabic, and Mizar, mag. 2.37, position 14 45 0 N27 09, a triple star. Primary mag. 2.47, smaller secondary mag. 5.04, tertiary mag. 12.0. Pri. And sec. separated by 2.9 arc sec. with sec. 2.8" NNW of pri. Pri. And ter. separated by 175.5 arc sec.

Mafrid (Eta Boo) also called Saak, mag. 2.68, position 13 52 3 N18 39. A spectroscopic binary.

Asellus Primus(Theta Boo), mag. 4.05

Asellus Secondus(Iota Boo), a triple star. Pri. mag. 4.8, Sec. mag. 7.5, Ter. mag. 12.6. Pri. and Sec. separated by 38.5 arc sec., Pri. and Ter. separated by 86.7 arc sec.

Asellus Tertius(Kappa Boo) "The Third Donkey Colt", a binary star. Pri. mag. 4.5, Sec. mag. 6.6, position 14 11 7 N52 01. Pri. and Sec. separated by 13.4 arc sec.

Alkalurops(MU Boo) "The Shepard's Staff", mag. 4.30. A triple star – Inkalunis, Clava, and Venabulum. Pri. mag. 4.3, companions are a close double star, with the sec. at mag. 7.0, and ter. mag. 7.6, lying 108 arc sec. from the Pri. Position 15 22 6 N37 33. Sec. and Ter. separated by 109.1 arc sec.

Alazal(Pi Boo), mag. 4.93, position 14 38 4 N16 38. A close triple star, Pri. mag. 4.9, Sec. mag. 5.8, Ter. mag. 10.4. Pri. and Sec. separated by 5.6 arc sec., Pri. and Ter. separated by 128 arc sec.

Nadlat(Psi Boo), mag. 4.52.

Merga(38 Boo), "The Chained Woman". Mag. 5.74

Deep Sky Objects – No Messier, no Open Clusters, no Nebulae. Multiple NGC objects, Variable stars, Multipe stars, and Stars with Planetary systems will be listed later.

Boȍtes is traditionally depicted as a herdsman with two hunting dogs on a leash and a club in his other hand. The two dogs, Asterion and Chara, are represented by the constellation Canes Venatici, the hunting dogs.

Most commonly, Boȍtes is taken to represent Arcas, son of Zeus and Callisto, daughter of the Arcadian King Lycaon. Arcas was brought up by his grandfather, the King, who one day decided to test Zeus by serving him his own son for a meal. Zeus, however, saw through Lycaon's intensions, and transformed the cruel king into a wolf, killed all of his sons with thunderbolts, and brought Arcas back to life.

Zeus's wife Hera, having heard of her husband's infidelity, transformed Callisto into a bear. Callisto roamed the woods until, years later, she met her son, who was now grown up. Arcas did not recognize his mother and began to chase her. Callisto hid herself in a temple, where he could not hurt her without risking being convicted to death for defiling a sacred place. To avoid a tragedy, Zeus placed both of them in the sky: Callisto as Ursa Major, and Arcos as Boὸtes.

A second legend identifies Boὸties with Icarius (not to be confused with Icarus, son of Daedulus). According to this tale, the god Dionysus taught Icarius how to cultivate vines and make wine. When Icarius offered some of his new vintage to shepherds, they became so intoxicated that their friends thought they had been poisoned, and in revenge they killed Icarius. Icarius's dog Maera fled home howling, and led Icarius's daughter Erigone to where his body lay beneath a tree. In despair, Erigone hanged herself from the tree; even as the dog died, either of grief or by drowning itself. Zeus put Icarius in the sky as Boὸtes, his daughter Erigon became the constellation Virgo, and the dog became Canis Minor or Canis Major (according to different authorities).

In another myth, Boὸtes is credited for inventing the plough, which prompted the goddess Ceres to place him in the heavens.

NGC's in Boὸtes

NGC 5466 mag. 9.1, position 14 05 5 N28 32, with a diameter of 11 arc sec. 1.5 deg. NE of 11 Boo.
NGC 5248 (Caldwell 45) mag. 10.2, position 13 35 1 N09 08, measures 6.5 by 4.9 arc min.
NGC 5676 mag. 10.9, position 14 34 1 N49 41, a spiral galaxy 3.9 by 2 arc min.
NGC 5008, an emission line galaxy.
NGC 5548 a Seyfert galaxy, mag. 12.9, position 14 15 7 N25 22, size 0.5 by 0.5 arc min.
NGC 5653 mag.12.9, position 14 28 0 N31 25, Type S HII galaxy, 0.5 by 0.4 arc min.
NGC 5714 mag. 13.4, position 14 38 5 N46 39, 1.9 deg. WNW of 38 Boo
NGC 5717 mag. 14.4
NGC 5721 mag. 14.9
NGC 5722 mag. 14.7
NGC 5723 mag. 15
NGC 5724 mag. 16.9
NGC 5778 (also classified as NGC 5825). Type E galaxy
NGC 5529 mag.4.8, position 14 15 6 N36 14, a flat galaxy 52' NW of HD125351
NGC 5886 Type SBb
NGC 5888 Type SBb
NCG 5698 A broad spiral galaxy, host of 2005 supernova SN2005bc
UGC 9242 position 14 25 4 N39 32, 1.8 deg. NW of Gamma Boo . A flat galaxy, needle thin.

Variable Stars

T Boo, position 14 11 8 N19 18. Nova observed in April 1860 at mag. 9.7 – has not been observed since.
R Boo, mag. 13.1 to 6.2 over 223.4 days, position 14 35 0 N 26 57, a Mira Variable.
S Boo, mag. 13.8 to 7.8 over 220.7 days, position 14 21 2 N54 02, a Mira Variable.
44 Boo, Double Variable, Pri. mag 5.3, Sec. mag. 6.1, position 15 02 2 N47 51.
ZZ Boo, Double Variable, mag. 6.4 to 5.8, position 13 53 9 N26 10.
V Boo, mag. 12.0 to 7.0 over 258 days, position 14 27 7 N39 05.
W Boo, mag. 5.4 to 4.7 over 450 days, position 14 41 2 N26 44.
BL Boo, a pulsating variable, member of Cluster NGC 5466, metal poor.
Lambda Boo, a pulsating variable Dwarf star, metal poor.

Multiple Stars

Delta Boo, Pri. mag. 3.5, Sec. mag. 7.8, Pri. is a yellow giant, Sec. a white star.
Nu Boo, a binocular binary, Pri. mag. 5.0, Sec. mag. 5.0, Pri. - an orange giant, Sec. a white star.
Xi Boo, a quadruple star. Pri. mag. 4.7 - a yellow star, Sec. mag. 6.8 -an orange star, Ter. mag. 12. Quad. mag 13.6., Pri. and Sec. separation is 6.7 arc sec., Pri. and Ter. separation is 282.7 arc sec. Pri. and Quar. separation is 1 arc sec. to the NNW.

Stars with Planetary systems

Tau Boo, mag. 4.5, position 13 44 9 N17 42. Tau Boo (single planet) at 5.95 Jupiter masses.
HAT-P-4b, mag. 11.2 a hot Jupiter with 0.68 Jupiter mass.
HD 128311, mag.7.51, a two planet system. HD128311b is the smaller planet with a mass of 2.18 Jupiters, and HD128311c is the larger planet with a mass of 3.21 Jupiters.
HD132406, mag. 8.45, HD132406b is a gas giant with a mass of 5.61 Jupiters.
WASP-23, mag. 12.7 ,WASP- 23b, 0.884 Jupiter mass.
HD131496, mag.7.96, HD131496b has a mass of 2.2 Jupiters.
HD132563 is a triple star. Parent star is HD132563b, mag. 9.47, and it's planet, HD132563Bb has 1.49 Jupiter masses and orbits a single star in the triple system- a spectroscopic binary.
HD136418, mag. 7.88, HD136418b has a mass of 2 Jupiters.
WASP-14, mag. 9.75. WASP-14b has a mass of 7.341 Jupiters, and is one of the most massive and dense exo-Planets known.

Other Stars in Boȍtes with magnitudes between 3 and5

Rho Boo mag. 3.58	44 Boo mag. 4.76	20 Boo mag. 4.86
Sigma Boo mag. 4.46	Upsilon Boo mag. 4.06	Omega Boo mag. 4.81
12 Boo mag. 4.83	Phi Boo mag. 4.54	A Boo mag. 4.83
45 Boo mag. 4.93	O Boo mag. 4.60	
31 Boo mag. 4.86	6 Boo mag. 4.91	

Meteor Showers associated with Boȍtes

Quadrantid – The most prolific annual meteor shower. Radiant located in northern Boȍtes, near Kappa Boo. Quadrantid meteors are dim, but have a peak visible hourly rate of approximately 100/hour on Jan. 3/4. The zenith hourly rate is approximately 130/hour at their peak. Meteors from this shower often appear to have a blue tint.
Alpha Boȍtes begins on April 14, peaking on April 27/28, and finishes on May 12.
June Boȍtids, also known as the Iota Draconids. Typically only 1 to 2 dim, very slow meteors are visible/hour, the average June Boȍtid has a magnitude of 5. The shower lasts from June 27 to July 5, the peak on the night of June 28th.
Beta Boȍtids are a weak shower beginning on Jan. 5th, peaks Jan. 16th, and ends on Jan. 18th.
Phi Boȍtids are another weak shower beginning April 16th, peaks on April 30/May 1, ends on May 12th.
Lambda Boȍtids are another weak annual shower.
Rho Boȍtids is a minor shower peaking in November, and lasts 3 days. Gamma and Nu Boȍtids have been hypothesized in 2006 and 2012 respectively.

BRAS Dark Site Viewing Dates
Primary June 8th Secondary June 15th

MAY ASTRONOMICAL EVENTS

June 1-13 Mercury will be to the upper left of Venus. Look WNW 45 minutes after sunset.

June 9th, shortly after sunset, a very thin crescent Moon will be 6 to 8 degrees below Venus.

June 10th, A larger crescent Moon will be 8 to 9 degrees to the left of Venus after sunset.

June 18th, A dimmer Mercury will be 2.1 degrees to the left of a brighter Venus.

June 19th, Mercury will be 1.9 degrees to the lower left of Venus at a magnitude of +1.2.

June 20/21st, Summer Solstice- the shortest night of the year. Summer begins at 1:04 AM June 21st EDT, 12:04 AM CDT.

June 22/23rd, The largest full Moon of 2013 will rise around sunset.

Venus (mag. -3.8) will be low on the WNW horizon all month.

Jupiter (mag. -1.9) After passing 1 degree from Venus on May 28th, it appears closer to the horizon each evening, finally disappearing around June 6th or 7th, and reaches conjunction on the far side of the Sun on June 19th.

Mercury (mag. -0.4) On June 1st. Will fade by about 0.1 mag. each successive evening. A half hour after sunset on June 1st, Mercury, Venus, and Jupiter form an almost straight 9 degree line with Mercury at upper left, Jupiter at lower right, and Venus almost half way between them. On June 12th, Mercury reaches greatest elongation, 24 degrees from the Sun, at mag. +0.5 and will appear as a thick crescent in a telescope.

Best viewing of Venus, Mercury, and Jupiter will be in the late afternoon.

Saturn will be near its highest in the south as night falls. Saturn will fade from mag. +0.3 to +0.5 during June. At month's end, Saturn will be within ½ degree south of Kappa Virginis (mag. 4.3).

Neptune (mag. 7.9) in Aquarius and Uranus (mag. 5.9) in Pisces rise in the middle of the night. Best viewing of both will be in the morning just before the sky begins to brighten.

Mars is dim (mag. +1.4), and rises about ½ hour before the Sun on June 1st. By month's end, Mars is more than 7 degrees above the horizon a half hour before sunrise. Ten minutes later, one could possibly see Jupiter poking just above the horizon.

John Nagle
BRAS Observing Chairman