

Night Visions



October 2022

Newsletter of the **Baton Rouge Astronomical Society**

[NASA'S DART mission hits asteroid on September 26th, now we wait and see what happens. See Page 9 for details.](#)

Monthly Meeting October 11th at 7:00 PM, in person

You may also join this meeting via meet.jit.si/BRASMeet

(Monthly meetings are held on 2nd Mondays of the month, at Highland Road Park Observatory)

PRESENTATION: Craig Brenden will show and discuss the pros and cons of various finder scopes. There will be hands on, plus Q & A.

What's In This Issue?



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Outreach Report
Light Pollution Committee
Globe At Night
ALCON 2023



Article: "NASA's DART Mission"

HRPO EVENTS

OBSERVING NOTES – Phoenix – The Phoenix

40th Annual Deep South Star Gaze registration, release and field rules, P. 22-24

Like this newsletter? See PAST ISSUES online back to 2009
Baton Rouge Astronomical Society Facebook Page
BRAS YouTube Channel – Monthly Speakers via Jitsi

President's Message

It is October now, winter constellations are rising, nights are becoming longer, the weather is finally cooling and **THE PANDEMIC IS OVER!**. We can finally get back to business as usual, and need to start thinking about officer elections for next year. If you would like to volunteer or nominate someone, please let us know.

Artemis 1 has been delayed again due to hurricane Ian; the **DART probe** has impacted the asteroid Dimorphos – we won't know if this method of planetary defense will work for a few months (see Page 8).

There are a few **celestial events** this month –three double shadow transits on Jupiter but alas, they all happen during daylight hours, and there will be a very close conjunction on the 12th between the Moon and Uranus (less than 1°) with the western half of North America seeing an occultation. The **Orionid Meteor Shower** will peak at 1 PM CDT on the 21st.

We have several **Outreach** events this month. Sidewalk Astronomy at Perkins Rowe, the Maker faire at the Goodwood Library, Mid-City Market, and a few more. See Ben's **Upcoming Events** (Page 7).

HRPO will host the Spooky Spectrum this month, and in November HRPO will celebrate its 25th Anniversary!

BRAS has received **more donated telescopes**. We will be modifying/refurbishing them and others in the BRAS closet for donations to schools. BRAS will get another telescope for the Library Telescope program, modify it, and donate to the Livingston Parrish Library system.

To improve its **live streaming capabilities and hybrid meetings**, BRAS is investing into purchasing new microphones, cameras, a controller, and associated cables. We will also be getting some "**magnetic**" signs (BRAS Logo) for car/truck doors to use when we do BRAS business/outreach/and dark site observing.

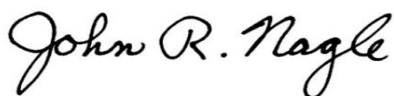
Scott C is putting the final touches on a "**BRAS Handbook**" that will contain officer contact information, policies, procedures, and basic information.

The next **MOON Night** will be on November 18th from sundown to 12 PM or later.

The annual **Rockefeller trip** will not happen for the next few years. Storms and hurricanes have damaged the buildings so much that the only solution is to raze the buildings and build new ones – this will take awhile.

The **40th Annual Deep South Star Gaze** registration, release, and field rules are attached on Pages 22-24.

This event is being held from October 25th-30th at the White Horse Christian Retreat Camp in Mississippi just over the northeast border of Louisiana. They have really dark skies (I have measured a 20.2 SQM reading there). If you go, please take pictures and maybe do a writeup for the newsletter!



Clear Skies.
John Nagle, 2022 President

P.S. If you haven't turned in your Survey, it's on Page 21 of this newsletter, and downloadable here: http://www.brastr.org/Documents/BRAS_Survey_for_2022.pdf

October Calendar of upcoming meetings

Light Pollution Committee: NEW TIME thru December: 6 pm Monday, October 10th, one hour before the monthly meeting. (In person only, Open to the public }

Monthly Member Meeting – 7 pm Monday, October 10th at the Observatory, in person and via Jitsi (Open to the public }

Monthly Business Meeting: 7 pm Wednesday, October 26th (Members Only), in person and via Jitsi

MOON (Members Only Observing Night) November 18th from sundown to 12 PM or later, at HRPO

ALCon 2023 ("Astronomical Gumbo") Committee Meeting Two meetings: Sunday, October 9, 2022, 7 PM and Sunday October 23, 2022, 7 PM, both online.



Monthly Meeting Minutes – September

- Welcome by the president, John Nagle.
- Barry Simon from the Pontchartrain Astronomical Society came by to invite the people in our group to participate in the 40th Annual Deep South Star Gaze from Tuesday, Oct. 25th to Sunday, Oct. 30th. This will be held at the same place it's been held for the past 4 years, White Horse Christian Retreat Center in Mississippi just across the state line north of Bogalusa. The price will be \$35; check their website for forms and details. Barry also mentioned that PAS was going to hold a fall Astronomy Day event at the Bogue Chitto State Park close to Franklinton on Oct. 1st.
- John introduced the scheduled speaker for the evening, Don Weinell, who brought in an Obsession brand 12.5-inch Dobsonian truss telescope that he's had for the past couple of years. He assembled and collimated it for everyone to see and answered questions. Santiago B. had also gotten a similar telescope recently from the New Moon company. He assembled his telescope for the group and answered questions also.
- Since Ben was not present, Scott C. discussed upcoming outreaches. There will be one at Port Hudson at 9:00 am on Friday, Sept. 16th; they are expecting 250 people to show up. There is also one coming up at Claiborne Senior Living at 1:00 pm on Thursday, Sept. 29th. The monthly outreach for Perkins Rowe will be Tuesday, Oct. 4th from 6:00 to 9:00 pm. There will be two outreaches on Oct. 15th. The Maker Faire at the Goodwood Library will be held from 10:00 am to 5:00 pm, and the Makers Market at Circa 1857 will be held from 5:00 to 10:00 pm that evening. Please check with Ben if you can help out.
- There is research ongoing into a new camera and a new controller for the AV equipment; this should show up soon.
- Steven is requesting help for the ALCON 2023 events; meetings are now twice a month; check elsewhere in the newsletter for times.
- Coffee and cookies were available and a raffle was held for those present onsite. Don rolled his telescope outside where he treated attendees to a view of Saturn.

Minutes submitted by Roz Readinger, Secretary



Happy Halloween!

2022 Officers:

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Frederick Barnett



Business Meeting Minutes – September 28th, 2022, 7 p.m.

(meeting is the last Wednesday of the month, in person, at HRPO)

1. **New Member Kit** – Scott C. has been collecting opinions about what he has done and is currently proofreading it. There were discussions about email and copies. Chris K. requested an edition of the handbook for the Observatory. There was a request to include the map for the dark sky site. There was discussion about what other info to include related to the dark sky site.
2. **Streaming Equipment** – Estimated cost for this upgrade was in the neighborhood of \$470 - \$480. The vote was to move forward with this. Ben will get with Trey on procurement and payment.
3. **Donations** – list, refurbish – There's an Orion that needs a new mount. There's another recent donation where the gears are shot; it was generally agreed this could be used as a raffle item.
4. **Radio Telescope – SDR (Software Defined Radio)** is the new way to do radio astronomy these days. John is still doing research on this for our site here. Chris K. would like for all the partners to come together for a meeting to decide what to do before the 25th anniversary event on Nov. 25th.
5. **Magnetic Signs** – Chris K. should have a price on these tomorrow from Next Day Signs.
6. **Library Telescopes – check out** – We still need to check the places and telescopes that have already been awarded. Thomas will check with EBR; John will check with WBR. LASM was mentioned as a place that would love to have one. Chris K. suggested that we could go through the closet donating a telescope a month to qualifying organizations. Steven proposed purchasing a new scope for Livingston Parish Library. This passed with 3 in favor, 1 nay, and 3 abstentions. There was a request to check with the St. Francisville Library, maybe a school in the area also.
7. **Outreach** – Makers Faire, etc. – Claiborne Senior Living is at 1:00 pm tomorrow; they do have enough volunteers for that; they'll be using the Sun banner and planet kit. Oct. 4th is the event at Perkins Rowe from 6:00 to 9:00 pm. Oct 14th is the next event for Port Hudson. Oct. 15th will have both the Makers Faire at Goodwood Library and the Makers Market at Circa 1857. There is another event that Chris K. knows about on Nov.14th.
8. **HRPO – Spooky Spectrum**, etc. – Chris K. has enough personnel for Spooky Spectrum. City Gelato will show up for that event as well as possibly the lemonade truck. The deadline for cylinder bids is tomorrow; there is currently no good quote from anywhere now. James drove the cylinders to two places that we are still waiting to hear from. One of the maintenance guys is going to ask BREC to flatten the parking lot out again. There was an unannounced visit concerning surge protection. The flashing on the dome has been looked at; work on this should begin within the next 60 days.
9. **Surplus equipment sale** – We need to figure out what to do with the boxed Meade that was donated. We need to get the info together for the sale. Chris K. suggested putting stickers on the telescopes to help identify which ones are being used for what purpose.

New Items

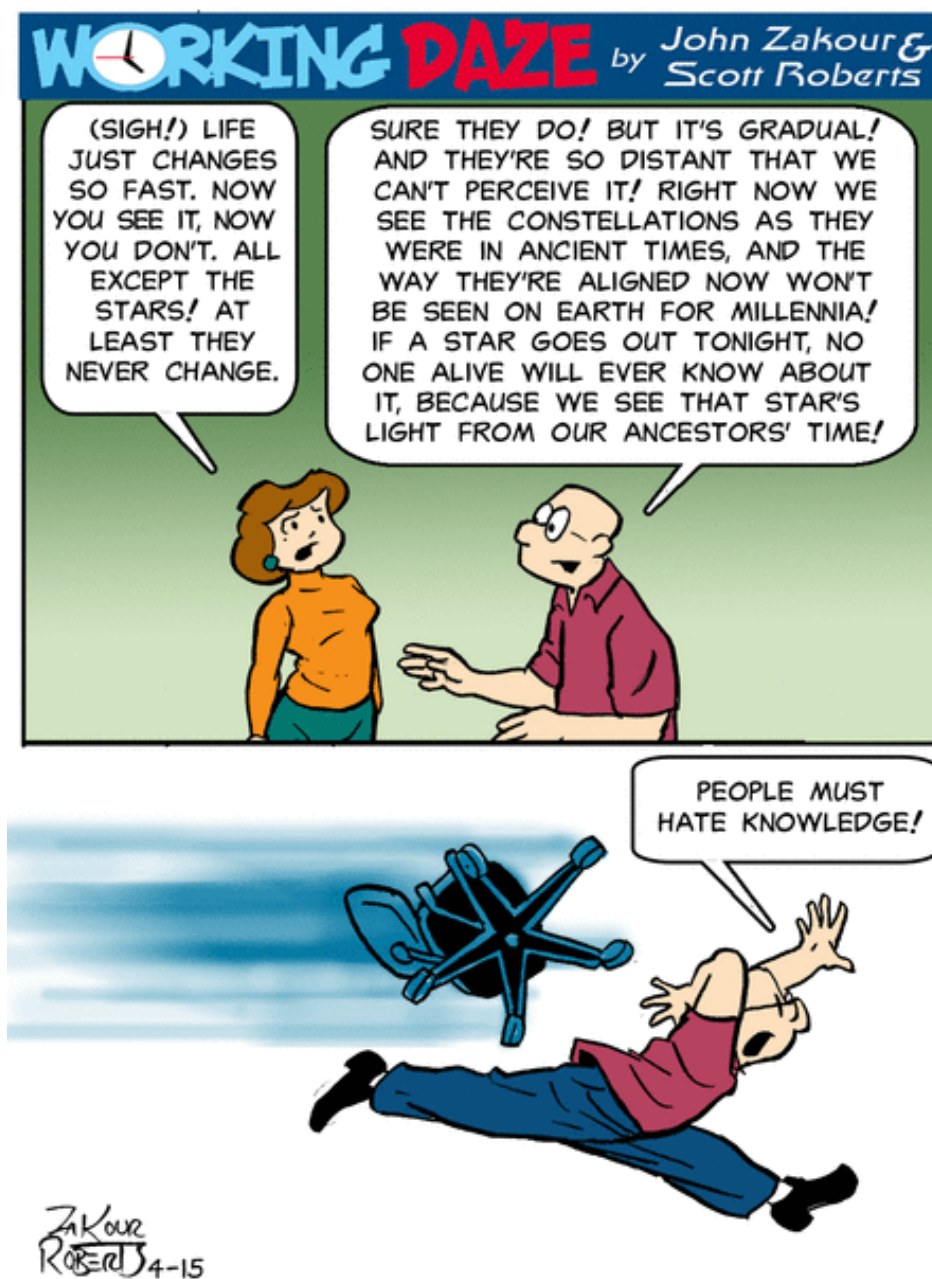
1. Thomas has suggested that the library try to obtain an “Institutional” subscription to the AL magazine “Reflector”. This is because of the possibility that Sky & Telescope will no longer be carried by the library. Chris K. offered to write a letter to Sky & Telescope and/or the owner (AAS) for Thomas. A vertical file section for astronomical events was also suggested. John is going to send Thomas the Calendar of Events information from the newsletter for the next couple of months.
2. Don has reported that the trips to Rockefeller are suspended for 3 to 4 years – storms have damaged the buildings so much that they will need to be razed and new buildings built. There was mention made of

the Feliciana Retreat Center and Camp Avondale. Don is checking into a new area in Kisatchie with an upcoming meeting planned.

3. **MOON Night** – This is proposed and planned for Nov. 18th from sunset to midnight; if nobody shows by 10:00 pm, this will be closed down.
4. **October Speaker** – Proposed speaker is Colin Turley who has lectured for Astronomy on Tap before; someone is checking to see if he’s available.
5. **ALCON** – Chris K. is requesting reimbursement for mailings; John is contacting Trey. John received an email from someone who offered to speak on minor planets.
6. **Deep South Star Gaze** – Barry’s forms and info for this event will be in the newsletter.

Members attending this evening were John N., Ben T., Chris K., Scott C., Steven T., Thomas H., and Roz R.

Submitted by Roz Readinger, Secretary





Outreach Report for September

Hi Everyone,

We started September off with a bit of weather bad luck and had to cancel our first Sidewalk Astronomy for the second half of 2022, but we've had some good luck with the back half of September.

The weather was wonderful, although still a tad hot, for our outreach at **Port Hudson Historic Site**. We worked with about 350+ students and adults throughout the morning and were able to give great views of the Sun and the Moon. On a side note, we also got to watch them fire a Civil War era cannon which was a treat! Despite how grand and thunderous it was, it was amazing to learn that they only utilize about 1/10th of the gunpowder load for those demos!



Our final outreach of September was just this afternoon (as I'm writing this, anyway.) We could not have had a better day for it. We were called up by **The Claiborne of Baton Rouge**, a senior living facility in the community. We had a wonderful experience sharing some views of the Sun and just general knowledge of the Solar System and astronomy with the residents and workers there. They were extremely grateful that we came out to share with them and are looking forward to having us back again in the near future. (Of course, Chris and Annette will be going back sooner with a nice display of rocks and some discussion about geology!)



A few Port Hudson pics (Cannon fire, and our booth)



A **big thank you** to our Outreach volunteers this month (pictured left): Troy, Scott, Annette, Chris, and Ben. We absolutely could not provide this service to our community without the volunteer efforts of people like them and others in our club. As I always say, the more the merrier so let me know if you'd like to help out with any of our upcoming events. They really are a great way to learn more about the hobby which you already love. (And you are helping to provide a valuable service to the community at the same time!)

That all being said, please see our list of upcoming events below. We'll need several helping hands especially on October 15th so I hope you'll consider tossing your hat in the ring!

Clear skies, Ben Toman

Upcoming Events

Tuesday, October 4th

6pm-9pm

Sidewalk Astronomy Perkins Rowe

Friday, October 14th

9am-11:30am

Port Hudson Historic Site

3 or more people needed for the same event as

September

(You'll get to see the cannon!)

Saturday, October 15th

10am-2pm (Time could change, but this was the timeframe for last year's event)

Baton Rouge Mini Maker Faire Main Library

Demo/Info table, solar observing

(Several people needed to do possible shifts. You need not stay all 4 hours.)

Saturday, October 15th

5pm-9pm (Maybe 6pm for us)

Mid City Makers Market at Circa 1857 on Government St.

Sidewalk Astronomy type event for us

Thursday, November 17th (pending)

5:30pm-8:00pm

Louisiana Master Naturalists of Greater Baton Rouge Hilltop Arboretum

(Possible night time viewing 5:30-6:30 followed by a 45 minute presentation)



Scott shows off the Sun to a resident. Chris (background) is also showing off some sunspots. The low telescopes made it easy for wheelchair bound residents to enjoy some telescope views, too.

Pics from The Claiborne of BR



Ben engaging in conversation about our Solar System with some residents of The Claiborne.



Chris and Annette discuss the scale distance of objects in our solar system with demos they've put together themselves!



Chris and Annette (Scott unseen) showing residents of The Claiborne the Sun through some filtered scopes.



LPC (Light Pollution Committee) Report

(NEW SCHEDULE thru December

: Meetings will be at 6 p.m. before the Monthly Meeting, which is held the 2nd Monday of each month. The public is welcome to join in.

There was no quorum present. No meeting was held.

John Nagle, LPC Chair Pro-Tem

Globe At Night

The target for the Globe at Night program is
Pegasus from October 17th through October 26th

If you would like to participate in this citizen science program, you can find instructions at
<https://www.globeatnight.org>

P.S. The “Loss of the Night” app can be used for information and for reporting your observations.

BRAS subreddit and a Discord server.

Our subreddit has been set up for us to reach out to the public. Please join us on there. <https://www.reddit.com/r/BRASastro/>

Our Discord server is for Members only, and requires the download of a free app. It's a fun place for us to hang out. To join the discord, email safey2007@gmail.com with the subject **BRAS Discord**.

To add a Flair next to your username, PM Amy Northrop.

.For Discord help, access **techsupport-faq**,
or message Amy orJustin: <https://discord.gg/6N8r8DDj>

It also has voice channels so that you can speak to people through Discord.

The best part about both of these is that you can access them on your phone with the free apps. Hope to see you there. ~ Amy Northrop

NASA'S DOUBLE ASTEROID REDIRECTION TEST (DART) SUCCESSFULLY IMPACTED ITS ASTEROID TARGET, DIMORPHOS, ON MONDAY, SEPTEMBER 26, 2022.



After 10 months of flying through space, DART successfully impacted its asteroid target on Monday, September 26, 2022. It was NASA's first attempt to move an asteroid in space and the world's first planetary defense technology demonstration.

Mission control at the Johns Hopkins Applied Physics Laboratory (APL) in Laurel, Maryland, announced the successful impact at 7:14 p.m. EDT (4:14 p.m. PDT).

As a part of NASA's overall planetary **defense strategy**, DART's collision with the asteroid Dimorphos demonstrates a feasible mitigation technique for protecting the planet from an Earth-bound asteroid or comet, if one were discovered.

"At its core, DART represents an unprecedented success for planetary defense, but it is also a mission of unity with a real benefit for all humanity," said NASA Administrator Bill Nelson.

"As NASA studies the cosmos and our home planet, we're also working to protect that home, and this international collaboration turned science fiction into science fact, demonstrating one way to protect Earth."

DART targeted the asteroid moonlet Dimorphos. It's a small body just 530 feet (160 meters) in diameter that orbits a larger, 2,560-foot (780-meter) asteroid called Didymos. Neither asteroid poses a threat to Earth. The mission's one-way trip verified that NASA can successfully navigate a spacecraft to intentionally crash into an asteroid to deflect it. This technique is known as **kinetic impact**.

Now the investigation team will observe Dimorphos using ground-based telescopes to verify that DART's impact altered the asteroid's orbit around Didymos. Scientists expect the impact to shorten Dimorphos' orbit by about 1%, or roughly 10 minutes. One of the primary purposes of the full-scale test is to precisely measure how much the asteroid was deflected.

To read the full article and see many more photos, visit SciTechDaily's website:

[Successful Impact! NASA's DART Mission Hits Asteroid in Historic Planetary Defense Test \(scitechdaily.com\)](https://scitechdaily.com/successful-impact-nasas-dart-mission-hits-asteroid-in-historic-planetary-defense-test/)

2023 Astronomical League Convention Update!

HELP! We Need Sponsors!!!

The AL has signed the Hotel contract

Our Oct ALCon 2023 meetings will be online and In-person

Oct 9, 7 PM

Oct 23, 7 PM

If you cannot make the meeting, you may work with a subcommittee.

We are looking for Sponsors, please check with the ALCon 2023 committee before, so we do not re-ask anyone.

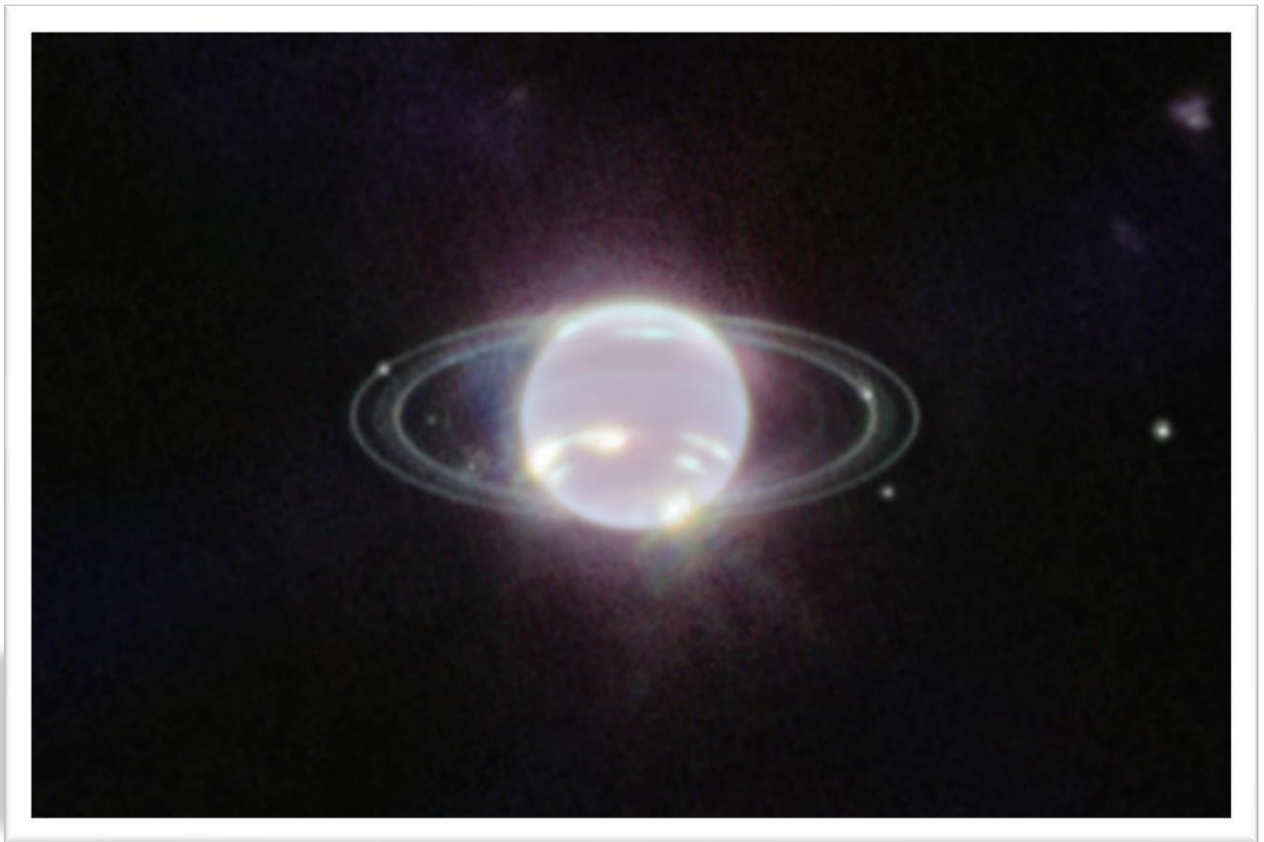
The 2023 ALCON Sponsorship Levels

Level	Price	Benefits
Galaxy	Above \$5000	Same as "Solar System" plus a 10-minute presentation[time slots are limited] during the conference.
Solar System	\$2000 to \$5000	Same as "Star" plus a large logo displayed on all conference signs and all slides used in the conference room between speakers. One full page for sponsor information in the Convention Program.
Star	\$1000 to \$1999	Same as "Planet" plus small Logo displayed on all conference signs and on schedule display. 1/4 page in Conference Program for logo and sponsor information
Planet	\$500 to \$999	Same as "Moon" plus Name displayed on Conference Hall display during breaks.1/8 page in Conference Program for logo and sponsor
Moon	\$100 to \$499	Name listed in Conference program and can provide items for inclusion in attendee bags.

After you sign someone up, let us know and have them send a check made out to "Astronomical League" with **ALCon 2023** in the memo line, to the attention of

Carroll Iorg (AL President)
Astronomical League
9201 Ward Parkway, Suite #100
Kansas City, MO 64114

NEW WEBB IMAGE CAPTURES CLEAREST VIEW OF NEPTUNE'S RINGS IN DECADES



September 2022, NASA's James Webb Space Telescope shows off its capabilities closer to home with its first image of Neptune. Not only has Webb captured the clearest view of this distant planet's rings in more than 30 years, but its cameras reveal the ice giant in a whole new light.

Most striking in Webb's new image is the crisp view of the planet's rings – some of which have not been detected since NASA's Voyager 2 became the first spacecraft to observe Neptune during its [flyby in 1989](#). In addition to several bright, narrow rings, the Webb image clearly shows Neptune's fainter dust bands.

Read the full article and see more photos here:

<https://webbtelescope.org/contents/news-releases/2022/news-2022-046>



Messages from HRPO

Highland Road Park Observatory



2022 HRPO DONATION DRIVE

1 October to 31 December / Goal: \$1500.

Our annual fundraising drive has been successful for many years. The agreement (as always) is for the public to give us Drive money, as long as we say what we're going to buy, and it is for public program use! The "wish list" is on our website!

There are three ways to donate:

- (1) Give at HRPO. We can write you a receipt. Only cash or check in person, please.
- (2) Mail a check to the [BREC Foundation](#), stipulating "HRPO" in the memo line of your check.
- (3) Donate online. Contact the BREC Foundation at (225) 226-7381 to receive instructions for stipulating online donations for HRPO.



SCIENCE ACADEMY

Saturdays from 10am to 12pm.

*for Cadets aged eight to twelve *\$5 per Cadet per week (\$6 if out-of-parish)
four Cadet minimum and sixteen Cadets maximum per session*

1 October = "The Spooky Session" It's the Saturday before the Spooky Spectrum! Cadets will preview some of that event's concepts, experiencing creepy legends and tales from the annals of space exploration.

15 October = "Uranus and Neptune" While between the oppositions of the Ice Giants, Cadets will review the Voyager data transmitted back to Earth in the late 1980s and investigate the possible plans to return to one of them in the 2020s.

22 October = "Fall Day" This stand-alone session allows Cadets to dive into demos and experiments not usually used for SA. Certain constellations and years are covered, and there is construction on an electronic circuit board!



SOLAR VIEWING

Saturday 1 October from 12pm to 2pm / No admission fee. For all ages.

Weather permitting, viewing of the Sun's image in three different manners—transferred onto a white surface, directly with safely-filtered optical light, and directly in safely-filtered hydrogen-alpha wavelength—will take place for two hours. Protective clothing and sunscreen are recommended.



EVENING SKY VIEWING

No admission fee. For all ages.

Saturdays (1, 15, 22 and 29 October) from 7:30pm to 10pm

Fridays (14, 21 and 28 October) from 8:30pm to 10pm

HRPO houses a 50-cm reflector, a 40-cm reflector and several smaller telescopes to bring the majesty of the night sky to the public. Trained operators, sharing duties via a rotating roster, work throughout the year in shifts. Each operator has a pre-planned list of objects to highlight. However, requests will be taken if there is time and if all present have viewed the previous target.



SPOOKY SPECTRUM

Saturday 8 October from 6pm to 10pm / No admission fee. For all ages.

Come visit on this moonless night—if you dare—as HRPO delves into the eerie side of astronomy, physics and aeronautics for the sixteenth consecutive year. We'll have creepy science demonstrations, some of which we've never used. And don't forget the stories. Strange sky phenomena...extra dimensions... extraterrestrials. Be warned—we want to make you think!



FRIDAY NIGHT LECTURE SERIES

7:30pm / For ages fourteen and older. / No admission fee.

14 October = “Wonders of the Fall Sky” BREC Education Program Specialist Amy Northrop will take the audience on a fascinating tour of Baton Rouge's autumn season. She'll highlight the celestial gems that will sparkle throughout the next three months—gems visitors will be able to see live if they continue to visit HRPO!

21 October = “The Spooky Sampler” We're getting close to Halloween...this lecture slot will be used to highlight a smorgasbord of unsettling stories, images and theories—for our adult audience.

28 October = “Supernova 1987A” It has been thirty-five years since this amazing event galvanized professional astronomers and amateur skygazers across the continents. BREC Program Aide James DeOliveira will discuss that special night and what the remnant has been doing since.



STEM EXPANSION: “Spooky STEM”

Saturday 29 October from 3:30pm to 7:30pm

For ages twelve to sixteen. / \$15 each per in-parish registrant; \$18 each per out-of-parish registrant. Advanced registration via WebTrac required [activity #531993].

This program offers advanced topics, topic extensions and all-new games and activities to an older crowd. Certificates will be earned, and a section of archived experiments, some not seen in over fifteen years (and some *never* performed on site) take place. There are also giveaways and door



OBSERVING NOTES OCTOBER

Phoenix – The Phoenix

Position: RA 1, Dec. -50°

Note: For six years I wrote these Observing Notes, featuring the 60 constellations we can see before midnight from Baton Rouge, containing objects above magnitude 10. For the next three years I expanded that information and put all my research in the same format, ending last April. Beginning with last May, Named Stars, Deep Sky and Other Stars are repeated here, for convenience. Monthly updates will be made to Sky Happenings and all that appears below that title.

Named Stars

Ankaa (Alpha Phe), from the Arabic “al- ‘angä”, “the phoenix”, or “Nair al-Zaarak”, “an-nairaz-zawrag”, “the bright star of the skiff”, also called Cymbae, and Lucinda Cymbae, mag. 2.40, 00 26 16.87 -42 18 18.4, is a spectroscopic binary star with the primary being an orange giant star. The pair has an orbital period of 3848.8 days (10.5 years). Also known as **HD 2261**, **HIP 2081**, **SAO 215093**, and **Gould 48**.

Wurren (Zeta Phe), mag. 3.94, 01 08 23.06 -55 14 45.0. Also known as **HD 6882**, **HIP 5348**, **Rst 1205**, **Rmk 2**, **SAO 232306**, and **Gould 89**.

Nenque (HD 6434), mag. 7.72, 01 04 40.15 -39 29 17.6. Also known as **HIP 5054**.

Deep Sky:

There are no objects above magnitude 10 in this constellation. There are a few notable objects.

Phoenix Dwarf Galaxy, mag. 13.1, 01 51 06.3 -44 26 41.0, 4.9’x4.1’ in size, is a dwarf galaxy in the local group. Also known as **PGC 6830**, **C149-447**, **ESO 245-007**, and **Schuster-West 1**.

Robert’s Quartet has a combined visual magnitude of 13.0 for a group of 4 galaxies: **NGC 87** (mag. 14.1); **NGC 88** (mag. 15.0); **NGC 89** (mag. 14.2); and **NGC 92** (mag. 13.8). These galaxies are in the process of colliding and merging. All are within a circle with a radius of 1.6’ (corresponding to about 75,000 light years).

Phoenix Cluster, also known as **SPT-C1 J2344-4243**, is one of the largest known galaxy clusters (42 galaxies), believed to contain around 3 trillion stars inside its 7.3 million light year expanse. It forms around 740 stars annually, representing the highest rate ever documented inside a galaxy cluster. It emits more X-rays than any other galaxy cluster observed. There is a super-massive black hole in the center of the system that has 6 billion solar masses and is expanding at a rate of 60 solar masses a year. The black hole is in **Phoenix A** (a part of the **Phoenix Cluster**), mag. 18.2, 23 44 40.9 -42 41 54, also known as **2MASX J23444387-4243124**.

HLX-1, or **Hyper-Luminous X-ray Source 1**, mag. 24.5, is an intermediate-mass black hole (the first one of its kind identified) in galaxy **ESO 243-049** (mag. 14.9), 01 10 28.3 -46 04 22.3. The black hole is believed to be a galactic remnant of a dwarf galaxy that was absorbed by **ESO 243-049** after a galactic collision. Also known as **2XMM J011028.1**, and **PDF J011027.6-460427**.

The following is a list of objects in Phoenix:

44 NGC; 21 IC; 258 ESO; 3 Dunlop; 23 MCG; 53 new ESO; 8 radio Galaxies; 4 Quasars; 41 PGC; 7 Fairall; 25 AM; 5 PKS; 1 Hu; 3 VV; 1 Rose; 1 Schuster-West; 14 AGC; 1 AGCS; 14 AS; 2 AGC; 5 Hi-Pass; 3 MC; 11 IRAS; 1 Phoenix Dwarf Galaxy; 1 AI; 1 HLX; and 1 Phoenix Cluster for a total of 552 objects.

Other Stars:

Nu Phoenicis, mag. 4.97, 01 15 10.57 -45 31 55.5, is a yellow-white main sequence dwarf star and is most likely surrounded by a disk of dust. Also known as **HD 7570**, **HIP 5867**, **SAO 21542**, and **Gould 93**.

HD 142, mag. 5.70, 00 06 19.0 -49 04 30.0, is a yellow sub-giant star with three planets in orbit. Also known as **HIP 522**, **SAO 214963**, and **Gould 37**.

HD 5388, mag. 6.8, 00 55 11.89 -47 24 21.5, has one planet in orbit. Also known as **HIP 4311**, **SAO 215291**, and **Gould 18**.

HD 8535, mag. 7.72, 01 23 37.24 -41 16 11.3, has one planet in orbit. Also known as **HIP 6511**.

HD 13724, mag. 7.90, 02 12 21.0 -46 48 59.0, has one planet in orbit. Also known as **HIP 10278**.

HD 2039, mag. 9.01, 00 24 20.28 -56 39 00.2, has one planet in orbit. Also known as **HIP 1931**.

WASP-18, mag. 9.30, 01 37 25.03 -45 40 40.389, has one transiting planet. Also known as **HIP 7562**.

Objects of interest beyond magnitude 10:

There are 5 WASP objects with each having one transiting planet.

HIP 65A, mag. 11.1, 00 00 45.0 -54 49 51, has one planet in orbit.

WD 2359-434, mag. 13.05, 00 02 10.77 -43 09 56.02, is a white dwarf star.

HE0107-5240, mag. 15.17, 01 09 29.10 -52 24 34.0, is one of the most metal-poor and oldest stars known.

The following is a list of stars in Phoenix:

25 Greek; 53 Lettered; 22 Numbered; 18 h; 5 Dunlop; 16 I; 1 MelO; 2 Slr; 2 Rst; 1 Rmk; 1 See; 6 HdO; 2 CorO; 1 CapO; 1 Wy; 1 LDS; 1 Mel; 3 Hu; 1 B; 3 L; 1 Mld; 2 HD; 1 GC; and 3 SAO for a total of 172 stars.

Sky Happenings: October 2022

(what follows pertains ONLY to the current month. Material above is good year after year.)

- Oct. 1st - Mercury is stationary at 10 AM CDT.
- Oct. 2nd - First Quarter Moon occurs at 7:14 PM CDT.
- Oct. 4th - The Moon is at perigee (229,488 miles or 369,325 km from Earth) at 11:34 AM CDT.
- Oct. 5th - The Moon passes 4° south of Saturn at 11 AM CDT.
- Oct. 7th - Asteroid Vesta is stationary at 1 AM CDT,
The Moon passes 3° south of Neptune at 10 PM CDT.
- Oct. 8th - The Moon passes 2° south of Jupiter at 1 PM CDT,
Pluto is stationary at 1 PM CDT,
Mercury is at greatest western elongation (18°) at 4 PM CDT.
- Oct. 9th - Full Moon occurs at 3:55 PM CDT.
- Oct. 12th - The Moon passes 0.8° north of Uranus at 2 AM CDT – the western United States including Alaska will see an occultation at 2 AM CDT,
A double shadow transit on Jupiter starts at 9:43 AM CDT,
Evening: High in the east, the Moon (a waning gibbous) will be less than 3° to the lower right of the Pleiades.
- Oct. 14th - Evening: In the east-northeast the Moon and Mars rise in tandem with Taurus, with 3° separation, between the Bull's horns.
- Oct. 15th - The Moon passes 4° north of Mars at 12 AM (midnight) CDT.
- Oct. 17th - Morning: The almost last-quarter Moon, in Gemini, will be around 3° to the right of Pollux,
The Moon is at apogee (251,258 miles or 404,328 km from Earth) at 5:20 AM CDT,
Last Quarter Moon occurs at 12:15 PM CDT,
Pollux is 1.8° north of the Moon at 1 PM CDT.
- Oct. 18th - Morning: The Moon, in Cancer, is about 5° above M44 (The Beehive Cluster),
Asteroid Juno is stationary at 7 PM CDT.
- Oct. 19th - A double shadow transit on Jupiter starts at 12:19 PM CDT.

- Oct. 20th** - Morning: The waning crescent **Moon** and **Regulus**, on the eastern horizon, have 4.5° of separation.
- Oct. 21st** - The **Orionid Meteor Shower** peaks at 1 PM CDT.
- Oct. 22nd** - **Venus** is in superior conjunction at 4 PM CDT.
- Oct. 23rd** - **Saturn** is stationary at 4 AM CDT.
- Oct. 25th** - **New Moon** (lunation 1235) occurs at 5:49 AM CDT.
- Oct. 26th** - A double shadow transit on **Jupiter** starts at 3:20 PM CDT.
- Oct. 27th** - Dusk: The waxing crescent **Moon** and **Antares**, on the southwest horizon, with only around 3° separation, will sink in the deepening twilight.
- Oct. 29th** - The **Moon** is at perigee (228,845 miles or 368,290 km from **Earth**) at 5:36 AM CDT.
- Oct. 30th** - **Mars** is stationary at 6 AM CDT.

Planets:

Mercury – **Mercury** achieves its best morning apparition for the **Northern Hemisphere** observers. It will rise in the east 68 minutes before the **Sun** on October 1st, at only magnitude 0.9. By the 5th, the planet will brighten to magnitude 0.0 and will be 7° high 45 minutes before sunrise. The planet will reach greatest western elongation (18°) on the 8th, now at magnitude -0.4. By the 16th, the planet will reach magnitude -1.0, but by the 18th, it will have fallen in altitude to 5° high 45 minutes before sunrise. On the 24th, the planet will be 1° southeast of the waning crescent **Moon**, one day prior to a new moon. The pair will be 4° high 30 minutes before sunrise in the bright twilight – an observing challenge. Soon after 9 AM CDT the **Moon** will occult **Mercury** for **US** observers – a challenge because the planet is only 10° away from the **Sun**. Take *all significant precautions* before making any attempts to view the occultation!

Venus – **Venus** is out of view, reaching superior conjunction on October 22nd. The planet will reappear in the evening sky later in the year.

Mars - **Mars**, in the middle of **Taurus** on October 1st, is a stunning object. Now, only two months from opposition, we are entering the best time to observe the planet. The planet rises around 9 PM and will brighten from magnitude -0.6 to -1.1 during the month. The planet will form a triangle with two bright red giant stars – **Betelgeuse** to its south and **Aldebaran** to its west. The **Moon** joins the planet on the 14th, separated by less than 4°, and the planet also stands within 1.1° of the **Crab Nebula (M1)** for three days starting on this date, passing due north of the nebula on the 17th. The planet's eastern movement will slow to a halt on the 30th, when it will sit 2.7° north of **Zeta Tauri**, and will then begin its retrograde motion. The planet's apparent diameter will grow from 12" to 15" during the month, and its phase will grow from 88% to 94%.

Jupiter -**Jupiter**, the brightest object in the evening sky, aside from the **Moon**, will be visible all evening, shining at magnitude -2.9 in southern **Aries**, below the **Square of Pegasus**. After its opposition in late September, the planet will maintain an apparent diameter of 50" for a few days in October, diminishing slightly to 48" by the end of the month. The planet will move above 45° altitude by around 11 PM local time in early October. The four **Galilean** moons – **Io**, **Europa**, **Ganymede**, and **Callisto** – orbit the planet with periods of two to 16 days. There will be three double shadow transits of **Jupiter** this month. The first, on the 12th, will begin with **Ganymede** starting transit ingress at 5:39 AM CDT, followed by its shadow's ingress at 7:14 AM CDT. **Ganymede** will egress transit at 8:18 AM CDT, followed by **Europa** starting transit ingress at 8:56 AM CDT. The double shadow transit will start with **Europa's** shadow starting transit ingress at 9:43 AM CDT, with **Ganymede's** shadow egressing transit at 10:04 AM CDT. **Europa** will egress transit at 1:24 PM CDT, followed by its shadow egressing transit at 2:14 PM CDT. The second event, on the 19th, will begin with **Ganymede** starting transit ingress at 8:58 AM CDT, followed by **Europa** starting transit ingress at 1:11 PM CDT. **Ganymede's** shadow will start transit ingress at 1:17 PM CDT, with **Ganymede** egressing transit at 1:40 PM CDT. The double shadow transit starts at 2:19 PM CDT when **Europa's** shadow starts transit ingress. **Europa** will egress transit at 3:39 PM CDT, with **Ganymede's** shadow egressing transit at 4:06 PM CDT, followed by **Europa's** shadow egressing transit at 4:50 PM CDT. The third event, on the 26th, will begin with **Ganymede** starting transit ingress at 12:19 PM CDT, followed by **Europa** starting transit ingress at 1:27 PM CDT. **Europa's** shadow will start transit ingress at 2:55 PM CDT, with **Ganymede** egressing transit at 3:04 PM CDT. The double shadow transit will start at 3:20 PM CDT with **Ganymede's** shadow starting transit ingress. **Europa** will egress transit at 3:56 PM

CDT, with its shadow egressing transit at 5:25 PM CDT, with **Ganymede's** shadow egressing transit at 6:07 PM CDT.

Saturn – Saturn, in eastern **Capricornus**, will be visible at nightfall, and will not set until nearly 3 AM local time in early October, and shortly before 1 AM local time at the end of the month. The planet, at magnitude 0.5, is the brightest feature in **Capricornus**, and will be 30° high in the southern sky during the first few hours of darkness. The disk spans 18", with its polar diameter a smaller 16". The disk will shrink by about 3% this month. The rings span 40" across their long axis, and they have an apparent tilt of 15° to our line of sight with the northern face sunlit. The planet's largest moon, **Titan**, shines at magnitude 8.5. You can find it north of the planet on the morning of October 8th and 24th, and due south of the planet on the 16th. Fainter moons **Tethys**, **Dione**, and **Rhea**, all at 10th magnitude, change their relative locations from night to night. The moon **Iapetus** will move from an inferior conjunction with the planet on the 4th to reach western elongation on the 24th, a day after the planet reaches a stationary point. On the evening of the 3rd, this 11th magnitude moon will be a mere 18" southeast of the planet. In late October, **Iapetus's** brighter hemisphere will face up, increasing its magnitude to 10, and you can find it just 0.5° east of the 4th magnitude star **Iota Capricorni**.

Uranus – Uranus, at magnitude 5.7, will be occulted by the Moon on the night of October 11/12 – the occultation will only be visible for the western United States, western **Canada**, and **Alaska**, all other observers will see it 0.8° south of the **Moon** at about 2 AM CDT. The planet is approaching next month's opposition. To find the planet, locate the 2.5 magnitude star **Monkar (Alpha Ceti)** – the planet is 12° due north of the star. The aqua-colored planet is located between **Sigma Arietis** and **53 Arietis** all month. Through a telescope, the 4" wide disk will be visible.

Neptune – Neptune starts October at about 9.5° west-southwest of **Jupiter**. **Neptune**, a month past opposition, is well placed in eastern **Aquarius**, a few degrees south of the **Circlet of Pisces**. Binoculars will reveal the planet about 5.5° south of **Lambda Piscium**. The planet will glow at magnitude 7.7, and a telescope will reveal its dim bluish disk spanning 2".

Pluto – Pluto is in **Sagittarius**. The planet's positions, by my estimates, in relation to the star **SAO 188667**, are as follows: On October 3rd – about 0.1° east and a touch north of the star; on the 7th – 0.05° east and a touch north of the star; on the 11th – 0.07° east and a touch north of the star; on the 15th – 0.1° due east of the star; on the 19th – 0.15° due east of the star; on the 23rd – 0.27° due east of the star; on the 27th – 0.4° east of the star; and on the 31st – 0.6° east and a touch north of the star.

Moon –

Favorable Librations – Shi Shen Crater on October 7th; Dugan Crater on the 8th; Hausen Crater on the 20th; and Andersson Crater on the 22nd.

Greatest North Declination on the 16th (+27.4°)
 South 3rd (-27.4°) and on the 30th 9-27.5°
 Libration in Longitude: East Limb Most Exposed on the 11th (+5.5°)
 West 24th (-5.0°)
 Libration in Latitude: North Limb most Exposed on the 5th (+6.7°)
 South 19th (-6.8°)

Asteroids / Minor Planets Asteroid 2 Pallas – Pallas's positions, according to the **RASC Observer's Handbook, 2022 USA Edition**, are as follows: On October 8th – 06 43.60 -16 14.4, at magnitude 8.7 in **Canis Minor**; on the 18th – 06 54.52 -18 51.2, at magnitude 8.6 in **Canis Minor**; and on the 28th – 07 03.40 -21 31.5, at magnitude 8.5 in **Canis Minor**.

Asteroid 3 Juno – Juno's positions, according to the **RASC Observer's Handbook, 2022 USA Edition**, are as follows: On October 8th – 22 42.24 -09 44.7, at magnitude 8.4 in **Aquarius**; on the 18th – 22 40.49 -11 01.6, at magnitude 8.6 in **Aquarius**; and on the 28th – 22 41.70 -11 53.1, at magnitude 8.8 in **Aquarius**.

Asteroid 4 Vesta – Vesta's positions, according to the **RASC Observer's Handbook, 2022 USA Edition**, are as follows: On October 8th – 21 52.75 -22 27.1, at magnitude 6.8 in **Capricornus**; on the 18th – 21 54.43 -21 57.4, at magnitude 7.1 in **Capricornus**; and on the 28th – 21 58.82 -21 12.2, at magnitude 7.2 in **Capricornus**. **Vesta's** positions, by my estimates, are as follows: On October 1st – about 2.8° east and a touch north of **M30**; on the 5th – about 2.8° east and a touch north of **M30**; on the 10th – about 2.9° east and a little north of **M30**; on the 15th – about 3.1° northeast of **M30** or about 1.4° southwest of **41 Aquarii**; on the 20th – about 3.2° northeast

of **M30** or about 0.9° southwest of

41 Aquarii; on the 25^{th} – about 5° northeast of **M30** or about 0.3° southwest of **41 Aquarii**; and on the 30^{th} – about 5° northeast of **M30** or about 0.5° northwest of **41 Aquarii**.

Asteroid **27 Euterpe** – **Euterpe's** positions, according to the *RASC Observer's Handbook, 2022 USA Edition*, are as follows: On October 18^{th} – 03 33.38 +16 47.4, at magnitude 9.7 in **Taurus**; and on the 28^{th} – 03 26.99 +16 24.7, at magnitude 9.3 in **Aries**.

Asteroid **115 Thyra** – **Thyra's** position, according to the *RASC Observer's Handbook, 2022 USA Edition*, on October 28^{th} is 03 29.03 +41 47.2, at magnitude 9.9 in **Perseus**.

Asteroid **324 Bamberga** – **Bamberga's** positions, according to the *RASC Observer's Handbook, 2022 USA Edition*, are as follows: On October 8^{th} – 03 53.49 +39 31.2, at magnitude 9.5 in **Perseus**; on the 18^{th} – 03 52.72 +41 02.0, at magnitude 9.3 in **Perseus**; and on the 28^{th} – 03 47.234 +42 02.8, at magnitude 9.1 in **Perseus**.

Comets – Comet **C/2017 K2 (PanSTARRS)** – **K2's** positions, *by my estimates*, are as follows: On October 1^{st} – about 3° east-northeast of **Chi Lupi**, or about 1.7° north and a touch east of **Xi Lupi**; on the 3^{rd} – about 1° east and a touch north of **Xi Lupi**; on the 5^{th} – about 1.6° southeast of **Xi Lupi**; and on the 7^{th} – about 2.7° southeast of **Xi Lupi**.

Meteor Showers – There is only one **Major (Class I) Meteor Shower** active in October – the **Orionids**, active from September 26 through November 22, peaks on October 21^{st} with a maximum zenith hourly rate (mzhr) of 23.

There are five **Minor (Class II) Meteor Showers** active in October – the **Southern Taurids**, active from September 23 through November 12, peaks on October 18^{th} with a mzhr of 5; the **Epsilon Geminids**, active from September 27 through November 18, peaks on October 19^{th} with a mzhr of 2; the **Leonis Minorids**, active from October 13 through November 3, peaks on October 21 with a mzhr of 2; the **Southern Taurids**, active from October 11 through December 8, peaks on November 5^{th} with a mzhr of 5; and the **Northern Taurids**, active from October 13 through December 2, peaks on November 12^{th} with a mzhr of 5.

There is one **Variable (Class III) Meteor Shower** active in October – the **Draconids**, active from October 8 through October 9, peaks on October 8^{th} with a mzhr of <2.

There are twelve **Weak (Class IV) Meteor Showers**, all have a mzhr of <2, active in October – the **Daytime Sextanids**, active from September 22 through October 13, peaks on October 3^{rd} ; the **October Camelopardalids**, active from October 5 through October 7, peaks on October 6^{th} ; the **A Carinids**, active from October 13 through October 14, peaks on October 14^{th} ; the **October Ursae Majorids**, active from October 10 through October 20, peaks on October 16^{th} ; the **Tau Cancrids**, active from September 23 through November 12, peaks on October 21^{st} ; the **October Zeta Perseids**, active from October 25 through October 25, peaks on October 25^{th} ; the **Lambda Ursae Majorids**, active from October 18 through November 7, peaks on October 28^{th} ; the **Southern Lambda Draconids**, active from October 29 through November 8, peaks on November 4^{th} ; the **Chi Taurids**, active from October 24 through November 13, peaks on November 4^{th} ; the **Kappa Ursae Majorids**, active from October 28 through November 17, peaks on November 5^{th} ; the **Andromedids**, active from October 24 through December 2, peaks on November 6^{th} ; and the **Omicron Eridanids**, active from October 23 through December 2, peaks on November 13^{th} .

Mythology:

Phoenix – the Phoenix

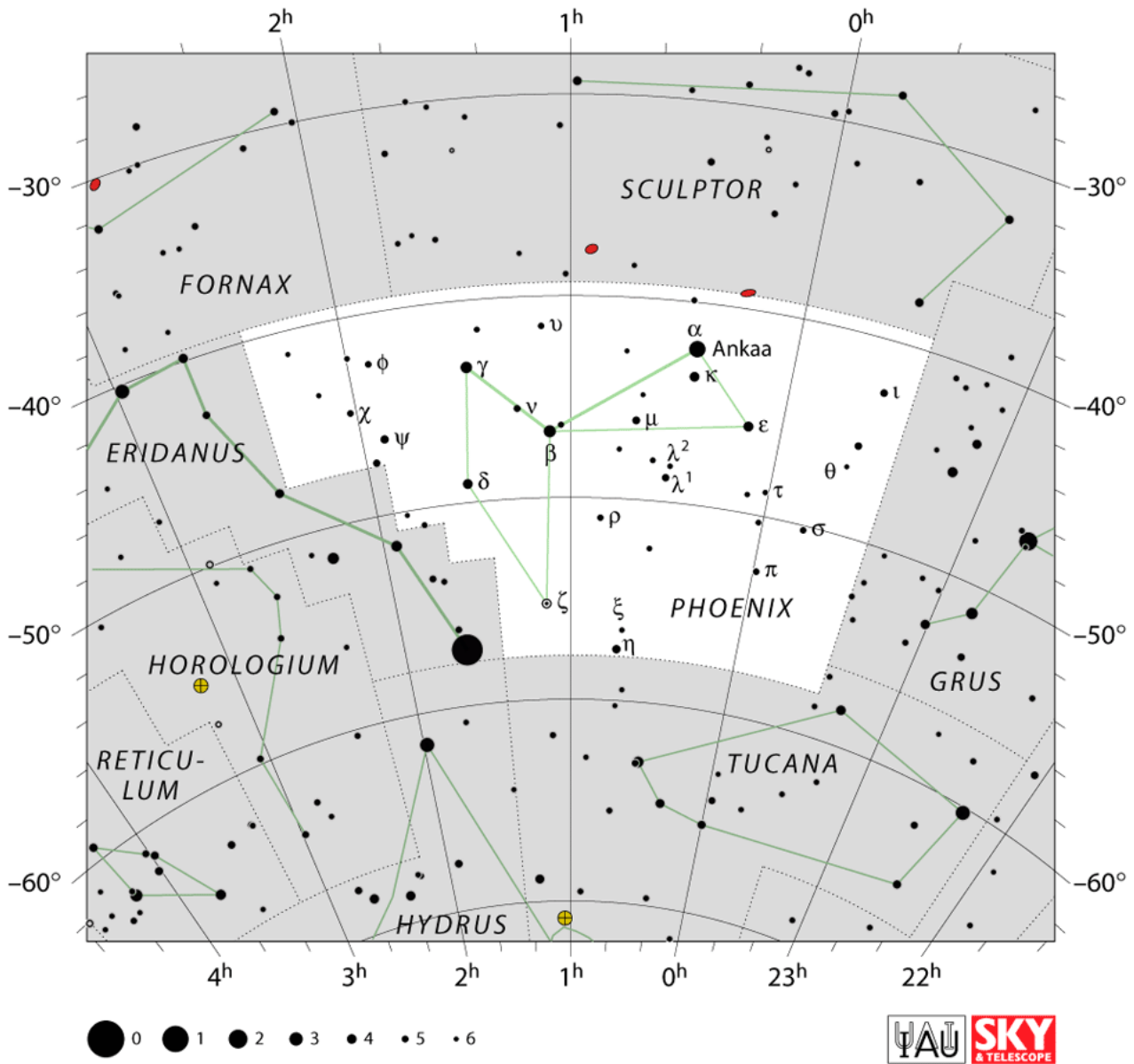
The Phoenix is a constellation representing the mythical bird that supposedly was reborn from its own ashes. The constellation was invented at the end of the 16th century by the Dutch navigators Pieter Dirkszoon Keyser and Frederick de Houtman.

Ovid, in his *Metamorphoses*, tells us that “the Phoenix lived for 500 years, eating the gum of incense and the sap of balsam. At the end of its allotted span, the bird built itself a nest of cinnamon bark and incense among the topmost branched of a palm tree, ending its life on the fragrantly scented nest. A baby phoenix was born from its father’s body. The nest was both the tomb of one phoenix and the cradle of the next. When it was old enough to carry the weight, the young phoenix lifted the nest from the tree and carried it to the temple of Hyperion, the Titan who was the father of the Sun god.



*Fawkes, Dumbledore's Phoenix from Harry Potter Movie
(sculpture by Colibri Workshop)*

[ColibriWorkshop - Professional, Traditional Artist | DeviantArt](#)



The End

BRAS Survey for 2022

(This information will be used for club purposes only)

Last Name _____ First Name _____

Phone (Cell) _____ (H) _____ (W) _____

Best time to reach you _____

Email _____ Do you text? (circle one) Yes No

I. Astro experience level (circle one) 0-1 years 2-5 years 6-10 years 10+ years

II. What are your current astronomy-related interests? Check all that apply.

Observing Interests	Other Interests
<input type="checkbox"/> Naked eye <input type="checkbox"/> Binocular <input type="checkbox"/> Telescopic <input type="checkbox"/> Moon <input type="checkbox"/> Planets <input type="checkbox"/> Solar <input type="checkbox"/> Meteors/Comets <input type="checkbox"/> Deep Sky <input type="checkbox"/> No special interest/general viewing	<input type="checkbox"/> Art/graphics and drawing <input type="checkbox"/> Computers and Astronomy related programs <input type="checkbox"/> Astrophotography/CCD imaging <input type="checkbox"/> Radio Astronomy/shortwave <input type="checkbox"/> Outreach/Sidewalk Astronomy (showing the sky to the public) <input type="checkbox"/> Telescope Making <input type="checkbox"/> Credentialling thru AL's stepped learning programs (earning badges and certificates) <input type="checkbox"/> Introducing my kids to astronomy
Other _____	Other _____
_____	_____
_____	_____
What type of program(s) would you like to see presented at our monthly meetings?	

III. I am interested in helping with:

<input type="checkbox"/> Demonstrate Astronomical Equipment <input type="checkbox"/> Give a Club meeting Program <input type="checkbox"/> Public Observing Programs <input type="checkbox"/> Advertising/Public Relations/Articles	<input type="checkbox"/> Light Pollution Committee <input type="checkbox"/> HRPO events/Other Committees <input type="checkbox"/> Coordinate refreshments at meetings <input type="checkbox"/> Donate Items to the Club's Raffle Box
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Other ways you can help: _____

What special skills or knowledge do you have (programming, newsletter, website, handyman, networking)? _____

Please bring this to the next meeting, or drop it off at the Observatory, or send to:

Baton Rouge Astronomical Society, c/o Trey Anding, Treasurer, P. O. Box 83162, Baton Rouge, LA 70884

Or scan and send a pdf to president@brastro.org



**2022 40th Annual DEEP SOUTH STAR GAZE
Fee Form**

White Horse Christian Retreat Camp – October 25th – October 30th, 2022

NAME _____

ADDRESS _____ (City) _____ State) _____ (Zip) _____

TELEPHONE () _____

CLUB AFFIL. (if any) _____ EMAIL _____

1. Registration Fee – \$35.00 per person, \$55.00 per couple or family----- \$ _____

2. Lodging Reservation Choices - Select desired lodging type (2a, 2b 2c or 2d) if staying on-site

2a) Bunk Reservations (bring you own bedding, pillow, towels and soap, etc.)

Note – if staying for 5 nights the rate is \$25.00 per night, if staying for 3 or 4 nights the rate is \$30.00 per night, and if staying for 1 or 2 nights the rate is \$35.00 per night

	Rate	# of people	Amount Due
Tuesday (10/25)	\$ per person _____ X	_____	= _____
Wednesday (10/26)	\$ per person _____ X	_____	= _____
Thursday (10/27)	\$ per person _____ X	_____	= _____
Friday (10/28)	\$ per person _____ X	_____	= _____
Saturday (10/29)	\$ per person _____ X	_____	= _____

Bunk Reservations Total \$ _____

2b) Camper, RV or any other vehicle overnight: Reservations – Electrical hookup for rv’s and campers in designated areas only. If tying into a breaker for a camper or rv or otherwise staying overnight in a camper, rv or other vehicle the fee is \$35 per night. There are no sanitary hook ups for campers and rv’s. Generators can be used only in designated areas outside of the “Arena Field”. Picnic canopies are permitted on the observing field in compliance with our Light and Parking Rules.

	Rate (per night)	(Add \$5 for # people more than 2)	Amount Due
Tuesday (10/25)	\$35 per rv, camper or any other vehicle overnight if not in a bunkhouse		_____
Wednesday (10/26)	\$35 per rv, camper or any other vehicle overnight if not in a bunkhouse		_____
Thursday (10/27)	\$35 per rv, camper or any other vehicle overnight if not in a bunkhouse		_____
Friday (10/28)	\$35 per rv, camper or any other vehicle overnight if not in a bunkhouse		_____
Saturday (10/29)	\$35 per rv, camper or any other vehicle overnight if not in a bunkhouse		_____

Camper, RV or any other vehicle overnight: Reservations Total \$ _____

2c) Day Use Fee – This fee only applies to those who chose to come up for a day only and leave that night,

No overnight lodging of any type needed – Day use fee is \$10 Total \$ _____

Deep South Star Gaze/Spring Scrimmage - Observing Field Rules and Regulations – revised 8-15-22

At the Deep South Star Gaze or Deep South Spring Scrimmage events held at the White Horse Christian Retreat Center, light restrictions will be in effect from deep dusk until dawn on the observing field and its approaches. Parking rules on the observing field and its approaches will be in force for the duration of the star gaze. These rules have been designed to make the star gaze an enjoyable experience and are based upon our previous 39 years with the Deep South Star Gaze. These rules are common sense and should be familiar to anyone who does regular astronomical observing from a dark site. Many regulations are the same or quite similar to rules found at other star parties.

- 1. Spots on the observing field are strictly *first come, first serve*, with the exception of the Registration Canopy (north side of the field). RV's and campers because of size, have to set up outside of the Arena Field. Small telescope trailers will be permitted as long as space permits.**

Attendees are prohibited from setting up any vehicle or equipment on the "Arena Field" until after the field is staked and marked. (This should be completed by noon on the first day of the event. (Other areas where set up is permitted at White Horse will not be laid out and attendees can park there upon arrival. Some direction may be given, particularly if arriving with an RV or Camper who have reserved 30 amp breaker tie in.)

We will lay out the field based upon registration numbers and the condition of the field. Each spot (observation station) will be approximately 15 feet wide. New arrivals should "key" off of what is already set up as we want to avoid creating spaces which are either too narrow or too wide between "observation stations" (*observation stations consist of your telescopes, canopies or tents*). Telescopes will be set up within a registrant's spot closest to the field center (center line runs the length of the field. There will be an approximately 15 ft. corridor between (from the outside – vehicles, then canopies and then equipment) running the length of the field. No gaps will be left between canopies other than enough space to walk and/or move equipment. Our main objective is to conserve space on the field. Note too that canopy size should be no larger than 12' x 12'. The field layout may be modified based upon registration numbers as circumstances dictate. 30 amp ac power will likely not be available to anyone set up on the Arena Field, hence no rv's or campers here. Lower amperage electrical power is limited. Capability to run your equipment on battery power is recommended.

2. Once set up in a spot, your vehicle should be closest to the fence, preferably tail in, behind your car is your canopy and in front of that your telescope equipment. You can also park your vehicle outside of the Arena Field. There will be no driving into or out of the Arena Field at night.
- 3. Vehicle Parking outside of the Arena Field and AC Power -**

RVs and campers should be parked off of the south side of the road leading to the main White Horse Building. This is where we will have some 30 amp power. Before settling in anyone arriving in an rv or camper should come to the Arena Field and ask for help in getting a spot to set up. There is no guarantee of power availability.

Tents can be set up behind telescope equipment in lieu of a canopy or within a canopy. If registration is light we may be able to allow tent setup adjacent to a canopy. Do not expect this, in all likelihood you will not be able to set up both a canopy and a tent on the Arena Field unless the tent is under a canopy or if you elect to move your vehicle off the field. Tents can also be set up outside of the Arena Field.

AC electrical power will be available from a few 20 amp outlets within the barn. As several may want to tie into the same power source, tripping is a possibility. If that happens, lines will have to be removed from the power source in order (last one in is the first one out). The DSSG management is not providing extension cords or junction boxes. The run from the outlets to where telescopes will be on the Arena Field will be a minimum of 100 feet and a maximum of 300 feet. It is anticipated that heavy use could result in multiple tripped circuits. The cord run could also result in significant voltage drops. If you use cord(s), please secure it to the ground to prevent a tripping hazard. (Hint: use batteries if at all possible.)

We will have trash barrels strategically located around the fields.

Registration check-in will take place at the Registration Canopy located on the north side of the Arena Field.

"No Equipment" (*reduced rate*) registrants should park their vehicles as close to the entry gate to White Horse (where the "white horse" statue is). If parked in this area you can park your vehicle (observing our light prohibition rules) and leave when we call out "time windows" for departure. (8 pm, 10 pm and midnight).

4. **No one parked on the Arena Field will be allowed to drive off at any time between dusk and dawn except in the case of an extreme emergency.** Other registrants parked outside of the Arena Field can also leave (yellow parking lights only) during our departure windows.
5. White lights of any kind are forbidden after dark unless light rules are suspended due to weather conditions or an emergency. In the case of a true medical emergency, white lights are justified. Do whatever is necessary to make your car, truck or van "astronomy friendly". This includes turning off interior light master switches, removing fuses, leaving vehicles unlocked after dark (*to avoid light flashes via remotes*), covering lights that cannot be turned off, etc. The best practice is to simply plan ahead and not open doors after dark if there's any question of lights coming on.
6. Flashlights and computer screens (at night) have to be red shielded, keep flashlights pointed down as much as possible. Some red shielded lights are still too bright. Head lamps which strap around the forehead are generally way too bright and they unavoidably to not point down most of the time, please avoid using these. Use judgement and ask your neighbor if your light is too bright. If told by multiple people that your light is too bright, please take steps to correct this.

Note - **Use of laptops on the field – any laptop used on the Arena Field must have its screen red shielded. If found to be too bright, the screen illumination can be turned down. Additionally it is a good idea to also shroud your laptop within an enclosure or “computer tent” – see links. This serves a double purpose as it also protects your computer from dew. If possible, please set up your computer so the screen is pointed away from other observers.**

Links to buy red screens and computer enclosures/tents

https://www.amazon.com/s?k=computer+tent&ref=nb_sb_noss_1

<http://www.astrogizmos.com/Computer.htm>

7. Lasers or Red Dot Finders – red dot finders are perfectly fine for use at the DSSG. Green (or any other color) lasers used as a finder/pointer on telescopes or as hand held night sky pointers are prohibited.
8. Music – everyone has different tastes. If you like to listen to music when observing, use earphones.
9. The White Horse Christian Retreat Camp prohibits alcohol and it's use on its grounds and in any of its buildings. Please respect their rules. We do not intend to forfeit our ability to continue to use the White Horse Christian Retreat Camp for the Deep South Star Gaze. Having said this, we are not roving policemen.
10. As stated elsewhere during the duration of any Deep South Star Gaze or Deep South Spring Scrimmage event no attendee is permitted to openly display (open carry) or conceal carry any firearm. If you have a firearm and feel you need to carry it in your vehicle, that is where it has to stay. **NO EXCEPTIONS!** This in accordance with Mississippi state law. Registration is not allowed if you refuse to abide by this rule. Proper signage will be posted.

See - https://midsouthgunlawyer.com/mississippi-gun-laws-and-other-weapons/#_Toc449690857
11. Pets are not allowed on White Horse Christian Retreat Camp grounds or in its buildings. No exceptions! You will have to leave if you are found with a pet at any Deep South Star Gaze event.
12. Football, frisbee, baseball, volleyball, etc. is not allowed near telescopes/equipment which has been set up. There are lots of other open areas on the property where you can throw a ball or toss a Frisbee.
13. Campfires, cook stoves, Sterno or propane heaters, barbecue pits are not allowed on the observing fields. While they are specifically not disallowed OFF the observing field, care must be taken to fully shield their light output so as not to be visible from the field. If light from a “cooking device” is visible on the field, you may be required to extinguish the device. **NO USE AT NIGHT.**
14. Smoking is not allowed on the observing fields. If you need to smoke please move far away from any area where scopes are set up. Smoking is not permitted in any buildings at the White Horse Christian Retreat Camp.
15. Quiet generator use will be permitted in conjunction with RV or camper operation. Their use is not permitted on the Arena Field.