Bays Mountain Astronomy Club

☞*Next Meeting: Sep. 2*☜

SKYWARD *BY BRAD DUNN*

I think mother nature is mad at us. The second planned "first light" opportunity for the 171/2" Dob was again canceled due to clouds at the August meeting. This is like having a new corvette sitting in the garage that you can only look at. Maybe we can take it for a spin at the next meeting. Since we can never seem to see any real starlight, the August meeting was held in the planetarium. Adam started the meeting by pointing out some of the basic things to look for in the sky this time of year and then let members of the club point out some of their favorite things to observe. I am always impressed with the vast knowledge of the members, but I was really blown away by one in particular this time. When the pointer was passed to Bob Smith, I was amazed at all the things that he was able to find in the night sky. Not only could he find almost anything, he also had an interesting story to tell about most of them. When I come to a meeting I look forward to learning something about astronomy that I didn't know. I definitely learned a lot from Bob and some of the other members that night. Thanks to all of you for sharing your stories and knowledge with us.

Fall gets a little bit closer every day, and as you know, things are starting to pick up in astronomy. StarFest will be held October 21st, 22nd, & 23rd at Bays Mountain Park. The cost this year will only be $50.00 per person. For more information and registration forms, log on to the Bays Mountain web site. The PARI star party starts on October 28th and last for three days. The registration fee for that will be $50.00 and can be found at the PARI website. Some members of the club are planning a star party at the gazebo at Natural Tunnel State Park the weekend of the 28th also since there will be no StarWatch observing that Saturday due to the Halloween festivities at the Park.

The speaker for the September meeting will be club member Brandon Stroupe. Brandon will be giving a talk on amateur astrophotography. After the talk, we will try once again to see some light through the "Big Dob" if weather permits. So keep your fingers crossed!!! Till then, clear skies!

Calendar

Special Events

Oct. 21-23 StarFest. Registration is now open! Go to the Park's website to find the form.

SunWatch

Every Sat. & Sun., 3 - 3:30 p.m.,

Mar. - Oct., weather permitting.

BMACers are always welcome to help.

StarWatch

7:30 p.m. Oct. 1 & 8

7 p.m.: Oct. 15 22 & Nov. 5

6 p.m.: Nov. 12, 19 & 26

BMACers need to arrive 30 min. early to set up.

BMAC Meetings

7 p.m., Discovery Theater

Sep. 2 Brandon Stroupe will present on amateur astrophotography.

Oct. 2 Topic TBA.

Newsletter Format Survey

Greetings! I wanted to be aware of what your thoughts are regarding the format of the newsletter. Would you prefer a digital copy only? Do you want to still receive the printed version? I will say that I still have to print some issues for those with no internet access. So, it doesn't save me any time to print less. In fact, it takes a little more time to create a subset of e-mails to post that the newsletter is available online. For years now, we have had the digital copy of the newsletter in PDF format on the Park's website. It is usually posted within a day of the newsletter being completed. The last two issues were digital only and I'm concerned that it has affected our club meeting attendance. Even if we continue printing and posting, this survey, of hopefully all full BMAC members, will let us know how trends are progressing.

Please send an e-mail or phone call to me about your choices. There are three to choose among:

1. Only printed desired.
2. Only digital desired.
3. Both printed and digital desired.

Thank you,

Adam Thanz
thanz@kingsporttn.gov
(423) 229-9447

EYE TO THE SKY *BY BOB SMITH*

Early evening observers should get in their last looks at the incredible planet Saturn. The "Ringed World" will be very low in the west by mid-month and gone by the end of September. Use the first few days of the month to observe both the ring system and the bright moon Titan. On September 1st, a thin crescent Moon is about 20° left of Saturn. In only a few weeks, the bright planet will be gone then reappear in the morning sky.

The planet Uranus is well placed for observing this month, coming to opposition on the 25th. It will be plenty high enough by around 9 p.m. for telescopic observation. Located in the dim constellation of Pisces, it is about 10° south of Algenib or γ Pegesii and a little left and below the pentagon at the head of Pisces. At magnitude 5.8 the planet is theoretically visible to the naked eye, but I think I'll start with binoculars. Consult a good star chart and decide about where the planet is hiding. Search the general area with binoculars for a blue colored "star." There are some true bluish stars around the sky, but in this case the planet is brighter than any nearby field stars. Locate the odd colored "star" again in your telescope and increase the power. With about 100X, the tiny (3.7″) face of the planet is revealed. As you study the planet consider that it is about 1.7 billion miles from Earth.

Jupiter is visible by 10 p.m. and high enough for observing by around midnight. At dawn it is almost squarely overhead. With the planet coming to opposition next month, this puts Jupiter in a wonderful position to observe all those tiny little details that are missed when observing lower in our atmosphere. It shines at magnitude -2.7 among the stars of Aries the Ram. The Galilean satellites put on a wonderful show all month—don't miss out on all the transit disappearances, occultations, eclipses and especially the shadow transits. The just-past-full moon is a little over 5° from Jupiter the night of the 16th.

If you're up at dawn checking out Jupiter, be sure you pick out Mars from the bright stars of Gemini. The "Red Planet" sits squarely in the middle of the constellation and close to 4th magnitude Delta (δ) Gemini on September 1st. At magnitude 1.4, Mars compares favorably with 1st magnitude Castor and Pollux and puts on a show as it passes Pollux headed east by around the second week of the month. By the end of September, Mars slides into Cancer and sits among the stars of the Beehive Cluster (M44). Although spanning only 5″, the face of the planet may reveal some gross surface detail under high magnification. A waning crescent Moon hangs 5° south of Mars the night of September 23rd.

Mercury puts on an impressive display this month in the pre-dawn sky. The first few days of the month finds the tiny planet about 5 degrees above the eastern horizon and rising higher as the sky lightens. At magnitude -0.3, Mercury is brighter than the nearby 1st magnitude Regulus (α Leonis) and should cut through the glow of approaching dawn with a clear sky. The planet continues to brighten for the next week until it reaches magnitude -0.9 around the 10th. By mid-month, Mercury slides back to the horizon and out of sight.

Photos are starting to come in from the DAWN spacecraft after it eased into orbit around the asteroid Vesta on July 16th. The initial orbit is about 1700 miles from the space-rock and shows a heavily pock-marked face on the 330 mile-diameter body. In about 20 days, the orbit will drop to about 400 miles and more detail will reach Earth. Look for Vesta in southern Capricornis and very close to 4th magnitude Psi (ψ) Cap. The asteroid is magnitude 6.9 and moving very slowly against the dimmer background stars. Several nights of observing and sketching the star field over a week will allow you to pick out Vesta.

Comet Garradd is still brightening and should be fairly easy to locate in September as it zips through the stars of Sagitta, Aquila and winds up the month in southeastern Hercules. This places comet Garradd almost overhead about 8-9 p.m. and it passes close to several bright "markers" in the night sky to aid in its location. On August 26th, it passes quite close to the globular cluster M71 in Sagitta. Then on September 2nd and 3rd, it slides by the interesting asterism Cr 399 better known as the Coathanger. This open cluster is easily located in binoculars by following a line north from Alshain, Altair and Tarazed (β, α and γ Aquila) for about two binocular fields. Toward the end of September, Garradd is a few degrees south of 109, 102 and 101 Herculi. The little 7th magnitude comet should be a favorite target right through fall.

STAR STUFF *BY TERRY ALFORD*

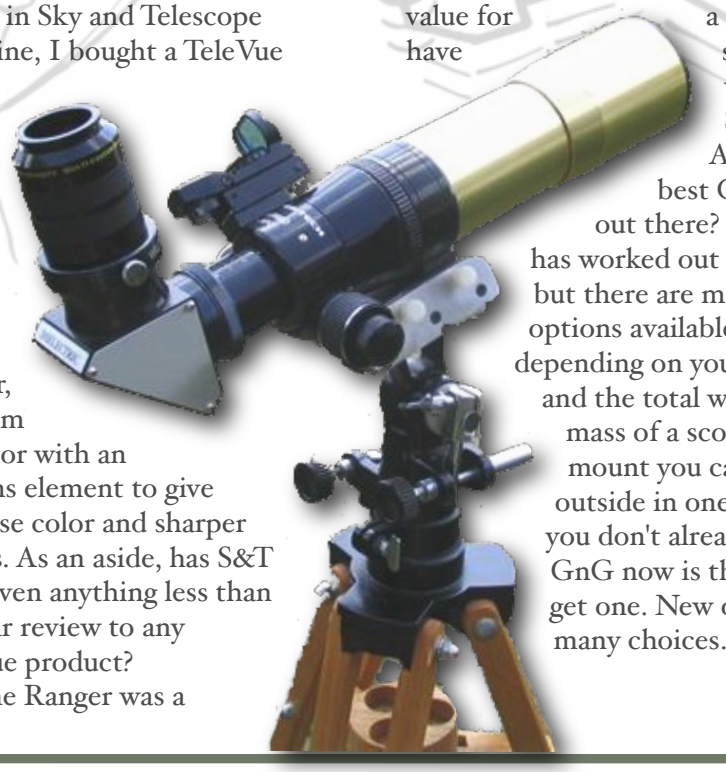
What is a "GnG" scope? Generally speaking, a "Grab and Go" telescope is one that can be carried outside in one trip. This means the scope, mount, tripod and eyepiece(s) ALL in one trip. Some amateur astronomers define the term even further by saying it should be possible to carry the scope package out in one hand. This would certainly be possible if it is a very small scope on a lightweight photo tripod.

What type of scope would qualify as a GnG? Schmidt-Cassegrains and Maksutovs are made in small and lightweight packages. However, they have thermal cool down issues and, to me, a very narrow field of view. Small, short focal length reflectors are free from these problems but collimation can be a nuisance. In my humble opinion, the "perfect" GnG is a smallish short focal ratio refractor.

The term wasn't around when I bought my first GnG scope more than 25 years ago. It was an 80 mm f/4 achromatic refractor called the "Multi Purpose Telescope" sold by University Optics. It came with an Amici prism diagonal to give correct images. It had a 30 mm eyepiece which gave 11X. It also cost nearly $300. I don't want to do the online inflation calculator and see what that would be today! But back to the scope. Being such a short focal ratio achromat, it was incapable of giving decent images at higher powers. Chromatic aberration was awful at anything above 25-30X. So the MPT was a GnG scope, but useful only as a large finder scope or for sweeping the sky at low power.

A couple of years later, Halley's Comet had come and gone from our nighttime skies. Many astro vendor's were anxiously selling off leftover optical inventory. I purchased a Celestron 80 mm f/5 achromatic refractor for less than $200 shipped. Not only did it have two eyepieces but also a 6X30 finder scope. But, the main feature of this scope was that it's CA (that chromatic aberration thing again) was much less than the MPT. This scope was able to use magnifications up to near 125X with acceptable images. It would also deliver low power, wide field views. It was a capable GnG and I kept it until 1997.

In February 1998, there was going to be a very nice total solar eclipse visible from the island of Aruba. Several of us BMACers planned on going for a nice winter vacation and, of course, to view and photograph the eclipse. I desired to have a GnG scope that had less CA and less bulk than the Celestron 80 mm. Base on a highly favorable review in Sky and Telescope magazine, I bought a TeleVue Ranger, a 70 mm refractor with an ED lens element to give less false color and sharper images. As an aside, has S&T ever given anything less than a stellar review to any TeleVue product?



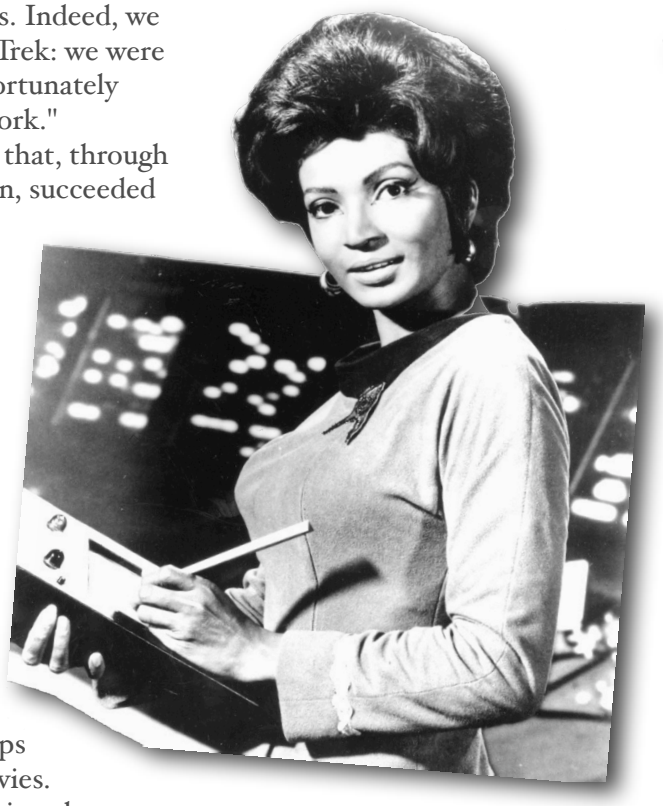
The Ranger was a very dependable performer. It was excellent as a telephoto lens. It gave great low power visual views and handled higher magnifications than the Celestron could. I would probably still have the Ranger today but the 66 mm Chinese apochromatic refractors that came out four or five years ago got me to again purchase another GnG. It was an AstroTech 66, an ED refractor with a focal ratio of f/6. It had a wonderful two speed Crayford focuser and a sliding dew cap. It also had the ability to use two inch eyepieces with the right star diagonal. I ordered the scope and have thoroughly enjoyed it ever since. With a 40 mm 2-inch eyepiece, it has 10X and nearly a 7 degree fov. Wonderful for scanning the Milky Way. With a 2.5 mm eyepiece tremendous detail can be seen on the Moon's terminator. CA is almost totally absent. This little scope is well built and is the best value for a GnG I have seen for a while. So is the AT 66 the best GnG scope out there? For me it has worked out very good but there are many more options available today depending on your budget and the total weight and mass of a scope and mount you can carry outside in one trip. But if you don't already have a GnG now is the time to get one. New or used. So many choices...

HAPPY BIRTHDAY STAR TREK

BY ROBIN BYRNE

This month we celebrate the anniversary of a work of fiction that went on to influence society in a myriad of ways. In 1961, Gene Roddenberry first conceived of a television series he described as a Western set in outer space. His intent was to incorporate into each episode a combination of action, adventure, plus a moral to the story. The pilot episode, "The Cage," was rejected by NBC, but they were interested enough to suggest a change of cast and encouraged a second pilot, which was titled "Where No Man Has Gone Before."

On September 8, 1966, NBC aired the first episode of "Star Trek," which was a success. Roddenberry was true to his intent and included morality tales in each episode. He wanted the show to illustrate what humanity had the potential to become. As Roddenberry said, "[By creating] a new world with new rules, I could make statements about sex, religion, Vietnam, politics, and intercontinental missiles. Indeed, we did make them on Star Trek: we were sending messages and fortunately they all got by the network." Despite a loyal fan base that, through a letter writing campaign, succeeded in convincing NBC not to cancel after the second season, "Star Trek" was canceled after the third season. It then went on to even greater popularity through reruns, eventually spawning five more television series (including an animated series), eleven feature films, games, hundreds of novels, and traveling museum exhibits of props from the shows and movies. But "Star Trek" lived on in other ways, as well.



For the era of the late 1960's, "Star Trek" was definitely ahead of its time when dealing with race and ethnicity. Roddenberry insisted on having a crew comprised of people from diverse backgrounds, much to the displeasure of the network. Showing people who were American, African, Japanese, Scottish, Russian, and even Vulcan, working together as one crew demonstrated visually the ideal of Earth uniting as a single planet without conflicts over nationality. Women were depicted as holding positions such as: scientists, technicians, and medical personnel. And, in an era of racial strife, whites and blacks worked side-by-side as equals, with "Star Trek" daring to show the first televised interracial kiss, between Kirk and Uhura. Whoopi Goldberg has often recounted how, as a child, she was thrilled to see a black woman on TV who wasn't a maid, and the influence that had on her future. Mae Jamison, the first African-American woman in space also grew up watching "Star Trek" and being inspired by the character of Uhura. NASA even got the assistance of Nichelle Nichols, who played Uhura,

(continued on page 6)

NASA SPACE PLACE

Solar System Size Surprise
by Dr. Tony Phillips

News flash: You may be closer to interstellar space than you previously thought. A team of researchers led by Tom Krimigis of the Johns Hopkins University Applied Physics Laboratory announced the finding in the June 2011 issue of Nature. The complicated title of their article, "Zero outward flow velocity for plasma in a heliosheath transition layer," belies a simple conclusion: The Solar System appears to be a billion or more kilometers smaller than earlier estimates.

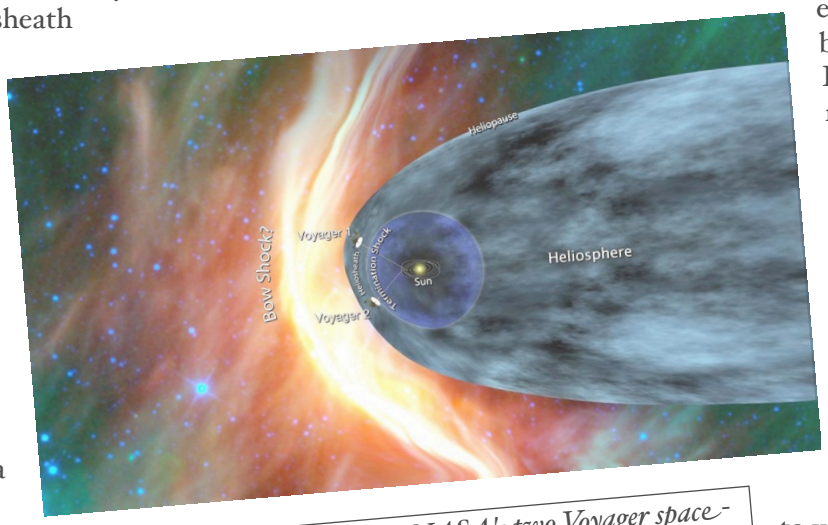
The recalculation is prompted by data from NASA's Voyager 1 probe, now 18 billion kilometers from Earth. Voyagers 1 and 2 were designed and built and are managed by NASA's Jet Propulsion Laboratory. Aging but active, the spacecraft have been traveling toward the stars since 1977 on a heroic mission to leave the Solar System and find out what lies beyond.

To accomplish their task, the Voyagers must penetrate the outer walls of the heliosphere, a great bubble of plasma and magnetism blown in space by the solar wind.

The heliosphere is so big, it contains all the planets, comets, and asteroids that orbit the sun. Indeed many astronomers hold that the heliosphere defines the boundaries of the Solar System. Inside it is "home." Outside lies the Milky Way. For 30+ years, the spacecraft have been hurtling toward the transition zone. Voyager 1 is closing in.

Much of Voyager 1's long journey has been uneventful. Last year, however, things began to change. In June 2010, Voyager 1 beamed back a startling number: zero. That's the outward velocity of the solar wind where the probe is now.

"This is the first sign that the frontier is upon us," says Krimigis. Previously, researchers thought the crossing was still years and billions of kilometers away, but a new analysis gave them second thoughts. Krimigis and colleagues combined Voyager data with previously unpublished measurements from the Cassini spacecraft. Cassini, on a mission to study Saturn, is nowhere near the edge of the Solar System, but one of its instruments can detect atoms streaming into our Solar System from the outside. Comparing data from the two locations, the team concluded that the edge of the heliosphere lies somewhere between16 to 23 billion kilometers from the sun, with a best estimate of approximately 18 billion kilometers.



This artist's concept shows NASA's two Voyager spacecraft exploring a turbulent region of space known as the heliosheath, the outer shell of the bubble of charged particles around our sun. Image credit: NASA/JPL-Caltech.

Because Voyager 1 is already nearly 18 billion kilometers out, it could cross into interstellar space at any time—maybe even as you are reading this article. "How close are we?" wonders Ed Stone, Caltech professor and principal investigator of the Voyager project since the beginning. "We don't know, but Voyager 1 speeds outward a billion miles every three years, so we may not have long to wait."

Stay tuned for the crossing.

For more about the missions of Voyager 1 and 2, see http://voyager.jpl.nasa.gov/. Another Voyager project scientist, Merav Opher, is the guest on the newest Space Place Live cartoon interview show for kids at http://spaceplace.nasa.gov/space-place-live.

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

MISCELLANEOUS

Happy Birthday

by Robin Byrne

(continued from page 4)

to help recruit woman and African-Americans into the astronaut corps.

Not only women and African-Americans were influenced by "Star Trek." Many people in the field of science and engineering grew up with the show, and were driven to make fantasy a reality. Physicist Stephen Hawking admits to being a fan, and has even made a guest appearance on "The Next Generation." After receiving hundreds of letters from fans, NASA named the first space shuttle "Enterprise," though it never flew in space due to being too heavy. Even our everyday language has been influenced by this show, with phrases like "Beam me up, Scotty."

With "Star Trek" influencing so many future scientists, how much of its technology has become a reality? You don't need to look farther than your cell phone to see a communicator, Bluetooth earpieces share an eerie resemblance to what was worn by Uhura, and computers that use voice recognition don't even have to respond with "Working" for us to know that our commands have been understood. Even some of the more extreme "Star Trek" technology is appearing in rudimentary forms. The ever-present tricorder now has a counterpart in a handheld device used on the International Space Station to detect bacteria and fungi. The universal translator may be a ways off in the future, but our military use a Voxtec Phraselator which can understand and speak 15,000 commonly used phrases in 50 different languages. In "The Next Generation," the holodeck creates a holographic reality, which today's 3D technology is trying to reproduce, and British researchers are working on a helmet that electronically stimulates the brain and other senses to simulate a real experience. The visor worn by Geordi La Forge may not be a reality, but doctors can electronically stimulate the retina, or even create an artificial retina, for blind patients to regain a small amount of vision.

It is hard to believe that it was 45 years ago that "Star Trek" began, and amazing how much it still lives on today. Gene Roddenberry's dream is slowly becoming reality, and we are all the richer because of his vision of what this world could be.

References:

Star Trek - Wikipedia

http://en.wikipedia.org/wiki/Star_Trek

4 Star Trek technologies that are almost here

By Charlie White

http://dvice.com/archives/2009/05/6-technologies.php

Social History: Star Trek as a Cultural Phenomenon

Dwayne Day

http://www.centennialofflight.gov/essay/Social/star_trek/SH7.htm

P.S.P. 2011

The PARI star party is coming soon on October 28-30. $50 registration. On-site camping is $50, on-site housing is $100, or stay off campus. Lots of great activities and fun at a very unique site. Go to www.pari.edu/psp.

Regular Contributors

BRAD DUNN

Brad is the current chair of the club and a member since 2007. During the day, he runs Dunn Professional Billing and Dunn Construction.

BOB SMITH

Bob is a founding member of BMAC, since 1980. He has also served as chair many times over the years. He currently works at Pioneer Industrial Sales.

TERRY ALFORD

Terry is also a founding member since 1980 and has been chair many times, as well. He has worked as an astronomy lab instructor at ETSU since 2001 and is also the sole proprietor of Celestial Woodworks.

ROBIN BYRNE

Robin has been writing the science history column since 1992 and was chair in 1997. She is an Associate Professor of Astronomy & Physics at Northeast State Community College (NSCC).

ADAM THANZ

Adam has been the Editor for almost all of the years since 1992. He is the Planetarium Director at Bays Mountain Park as well as an astronomy adjunct for NSCC.

StarFest 2011

Attend our 28th annual event on October 21-23 at Bays Mountain Park!

Greetings Everyone!

We are closing in on the 28th StarFest at Bays Mountain Park. With the weather cooling, expectations of crisp clear nights dance in the minds of all amateur astronomers in the region. I am very pleased with this year's events and hope to not disappoint with my first chairmanship of StarFest 2011. The event is hosted by the Bays Mountain Astronomy Club (BMAC) and the staff of Bays Mountain Park, and is being held on October 21-23, 2011. The theme to this year's StarFest is "Life Rocks!"

We will have many of our classic events - including displays of photos, art, and amateur telescope making (ATM); the ever popular swap shop; solar viewing; night-time observing with the public (so bring your favorite scope); and the still new and fresh planetarium will be open.

On the weekend of StarFest, we should have a colorful display of trees on Bays Mountain as it will be the peak of fall colors. Other activities available are the many wildlife exhibits, the barge ride, and plenty of trails to explore.

What is new?

The most obvious addition to this year is the Friday night schedule. The Orionids will be peaking that Friday night, so what better way to celebrate than with a "Meatier" Pizza Party, a presentation on meteorites, and a private meteor shower watch all night long. Also this year, we will have five keynote speakers in addition to the five meals offered. Attendance will be limited, and we don't wish to miss our old friends or the opportunity to meet new friends. Please complete the registration forms and mail it in, so we can see you in October. If you use a credit card, you can write it on the form or call Adam or Jason and they can process it for you.

What is happening?

Friday:

Pizza Party

Travis Paris - "Southeastern Meteorites and Impacts (Ancient and Modern)"

After the talk, StarFesters may enjoy the meteor shower for the rest of the night under the stars.

Saturday:

Check-in

Continental breakfast

Photographs, artwork, or ATM projects to share.

T-shirt - long-sleeved black shirt with a pocket on the front. The Bays Mountain logo will be on the front pocket in white and the "Life Rocks!" logo will be full size on the back also in white.

Dr. Richard Gray - "The Search For Habitable Planets"

Planetarium show

Lunch

George Privon - "Galaxy Mergers"

Swap Shop

SunWatch with Sabrina Hurlock

Dinner

Josh Emery - "Water and Organics on Asteroids"

StarWatch

Constellation Shootout

Sunday:

Country breakfast

Paul Lewis - NASA/JPL Solar System Ambassador.

Door prize drawing

Where do we stay?

Everyone is welcome to stay for both nights at the Park. StarFest is the only event during the year that allows such camping at the Park. Stake out some floor space in the Nature Center or Farmstead Museum and spread out your sleeping bag or cot. You may also car or trailer camp in the parking lot. There will also be limited tent camping space to first come first serve. Please note: all sleeping bags, cots, and other items need to be put away by 8:30 a.m. for both mornings. Please park in the main lots and NOT in the staff lot by the lower back door. The Park does not have showers and camp fires are not allowed in the Park. If you desire, several motels are also located in the Kingsport area and near to the Park. But, we do allow dogs on leashes. Note, they must not be in the areas where the animal habitats are, not in the planetarium, nor left in your vehicle.

The Bays Mountain Astronomy Club and Bays Mountain Park staff look forward to seeing you for StarFest 2011! Please contact me directly with your questions and comments.

Clear skies,
Todd Gray
StarFest 2011 Chairman
info4dillyshop@peoplepc.com

go to http://www.baysmountain.com/Astronomy/Starfest/starfest.html for the registration form. Only $50/person! Pre-registration is necessary.

The Bays Mountain Astronomy Club

Find out more at our website:
www.baysmountain.com
Edited by Adam Thanz:
thanz@kingsporttn.gov

Dues:

The Bays Mountain Astronomy Club requires annual dues for membership. It covers 12 months and is renewable at any time.

Rates:

$12 /person/year

$4 /additional family member

If you are a Park Association member, a 50% reduction in fees is applied.

Made on a Mac!

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Kingsport, TN 37660