

Friends of The Observatory Newsletter

July 2003

Phone 513-321-5186

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www.cincinnatiobservatory.org Bill Cartwright, editor

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A Letter From President Huber

Dear "Friends",

I trust that everyone has enjoyed the official start of summer. The good news is that the nights are beginning to get a little bit longer now so there will be more time for astronomy.

I hope everyone can attend the FOTO Family Picnic this year. As always it is BYOM (Bring your own Meat) and "a something" to share. FOTO will have a grill going as well as solar observing and other fun and games. Don't forget we are starting early 6:00 PM, so there will be time for all the activities. We are looking forward to another great family event at the Observatory.

Lastly, while you are at the "O" for the picnic be sure to check out all of the construction that is going to be happening this summer. The Mitchel building is going to be getting the face lift so it can look as good as the Herget building.

Planning Meeting

We'll meet at 6 PM on **Wednesday, July 16th**, but instead of Max & Ermas, we'll meet again at **Indigo's on Hyde Park Square**. It's located on Erie near the SW corner of Erie and Edwards.

FOTO Summer Family Picnic

By Greg Huber

Don't forget that this year July is the Annual FOTO Family Picnic on July 3rd starting at 6:00 PM with all sorts of fun and adventure. There will be great food, good astronomy talk, as well as some solar observing (weather permitting) and all sorts of other out-of-this-world fun.

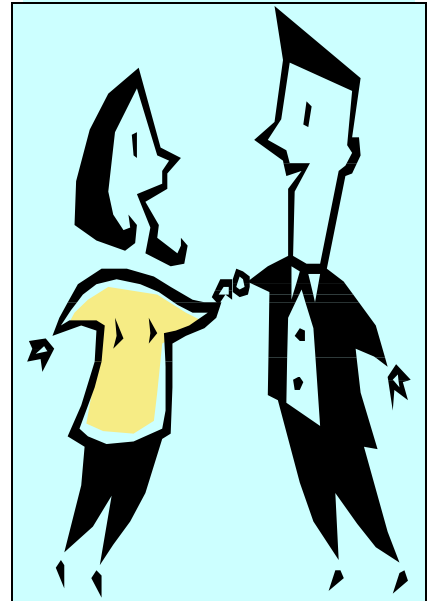
Bring your own meat, as FOTO will have the grill fired up and ready to go. Please check the list provided as a reminder for what was signed up for. If you're not signed up, don't worry. Throw together, or pick up, a favorite munchie and come on over.

Our thanks to long time FOTO member **Dave Bosse** who spoke about eyepieces at the June meeting.

Did You Know....

At the peak of the Ice Age, worldwide sea level dropped 425 feet.

Welcome New Members!



**Ken Bruns, Randall R Gross,
James & Laura Caccia,
Aaron Clark, Thomas F Phalen,
Mark & Mary Edwards,
Barbara Gloeckner,
Jeffrey & Amy Hammond,
William & Phyllis Hopple,
Jeff Kapela, Judy Keeney,
Rose Koch, Tom Scherman &
Michelle Wullkotte,
and Stephen R Wavra.**

Stonelick Lake Star Parties

By Scott Naylor

The June Stonelick Star Party will be held on **Saturday, June 28th** with a cloud date of Saturday, July 5th. The July dates will be **Saturday, July 26th** with a cloud date the following Saturday, August 2nd.

These parties are held at Stonelick Lake State Park, which is open to the public all night year 'round. They will be setting up around dusk in the beach overflow parking lot.

For updates, or information, phone **Scott Naylor** at 513-575-5556.

DIRECTIONS: Take Columbia Parkway (US 50) east through Mariemont, Terrace Park and Milford. Turn left on 131 past Milford, and go past Pleasant Hill, Buckwheat, and 132. Look for a tractor dealer on the right (about 2 miles past 132), there's a road to the left 727 that will take you to Stonelick Lake State Park. Turn at the Stonelick sign on your right and go toward the beach.

We meet at a parking lot just before the beach area on the left.

Paul Nohr's Astronomy Classes

Paul's 7 PM Monday night beginners' class will meet on July 14th and July 28th.

The 7 PM Tuesday night volunteer class, aka "Introduction to College Astronomy", on July 8th and July 22nd.

Interested in attending? It's free to all FOTO and CAS members. Call **Paul Nohr** at 513-321-5186, or email him at pnohr@fuse.net.

Favorite FOTO Programs

Thanks for all of the FOTO members who participated in last month's FOTO favorite program survey.

Here are the results:

First choice: Harrison and his Clocks
Second Choice: 10 SuperCool events to witness.

Third Choice: Stellar Evolution

FOTO Picnic Goodie List

The annual FOTO summer picnic will be **Thursday, July 3rd** at the **Observatory** starting at **6 PM**. Please remember to bring your own meat.

Picnic Supplies List

Hamburger & hot dog buns (x2): Sam Vessel

Pickles: Sam Vessel

Ketchup, mustard and Mayo/Miracle Whip: Mary Fitzpartick and Chris Parrett.

Cups: Jeff Green

Napkins

Plates

Forks, knives, and spoons: Sharron McDonald

Paper Towels

Salads (x2): Dave Bosse and Minnie Mehuron

Soda Pop: Bill Bachelder and Kirk Schrotel.

Lemonade and Iced Tea: Linda Magee
Special Secret Dessert

Desserts (x2)

Chips (x2): Rick Hunter

Pretzels: Erica Dalton and John Cilage
Veggies (x2)

Did You Know....

The great red spot on Jupiter has been visible for at least the last 400 years.

New Presenter and Observatory Assistants

By John Ventre

Congratulations to **Mike Helfen**, our new Observatory Presenter, and **Aaron Clark, Diana Batsch, Leah Henize, Rick Lefever, Kelly Kalb, and Steve Wavra**, our new Observatory Assistants. Mike has been promoted from his Observatory Assistant position. These volunteers conduct the public viewing sessions, typically on Astronomy Thursday and Friday evenings. They join our other 12 Presenters and 50 Telescope Pointers and Observatory Assistants. Thanks to all of these volunteers!

July's Word of The Month

The July word is "Ylem"

Answer to June's Word: "Undae"
"Undae" are mobile planetary surface features made of sand. Mars has a number of these "dunes" that are blown around by the Martian atmosphere.

Trivia Answer

In 1705, a prediction was made that a comet seen in 1682 would return in 1758. Who made this prediction?

Answer:

In 1682 Sir Edmund Halley predicted the return of a great comet in 1758. This comet now bears his name as Halley's Comet.

Ault Park Dances

On Thursday July 17th, there will be another Ault Park Dance. We are looking for volunteers to bring out scopes, supervise an information table, and generally spread goodwill about FOTO and the COC.

If you're not familiar with this event, every year the Ault Park Advisory Council (APAC) sponsors 3 dances throughout the summer. The dances are held from 6 to 10 PM, and offer the general public a "hot" local band (this Thursday I think it's the Modulators), some free food, the opportunity to purchase beer, and general revelry. Last year was the first year FOTO decided to set up a table and some telescopes so the public could see the Moon, Venus, and ask astronomical questions. Overall, it's a sort of romantic night...dancing and astronomy . . . and beer.

This year, we don't have many astronomical objects to view before 10 PM. (It doesn't get dark until 10 PM. Maybe Jupiter and some double stars . . . M13?) But we do plan on setting up the table and some scopes starting at 7 PM. We need volunteers. Bring fancy telescopes or simple ones or no telescope at all. You need no experience with telescopes to help out.

Please let me know if you can help.

Chuck Strubbe
www.chuckstrubbe.com
513.886.7600

ScopeOut 2003



The first planning meeting for Scope-Out 2003 is scheduled for July 23rd at 5 PM at the Observatory. Everyone is invited to join the committee or to stop by with your suggestions.

This year's ScopeOut will be Saturday, October the 4th. Tentative plans are to follow the same format as in previous years. Vendors, history tours and talks in the afternoon, followed by dinner and the keynote speaker. Tricia is contacting **Dava Sorbel**, author of "Longitude", to see about speaking this year. There's nothing in writing so if you have suggestions for a keynote speaker please let us know.

We'll also be looking for "local talent" to give novice and advanced talks during the day. **Rick Hunter** will be giving his Mars presentation. If you have a topic you'd like us to consider just let me know.

Events like ScopeOut couldn't be done without lots of help from our amazing pool of volunteers. We hope we can count on your support again this year. Contact **Craig Niemi** at craig_niemi@yahoo.com, phone 513-231-7912

FOTO-SETI Update

FOTO's 31 dedicated members have completed 23,497 SETI studies, an increase of 939 studies, representing over 52 years of computer time!

It's time to sign up to become part of the greatest search in history!
<http://www.space.com/searchforlife>

July Picnic is Next

Don't forget that July is the FOTO Family Picnic at the Observatory. Please bring a munchie to share with others. The picnic starts at 6:00 PM on Thursday, July 3rd. There will be solar viewing through the Observatory's new Coronado Hydrogen Alpha Filter.

Bring the family and have a great time.

Here's What Meteors Can Do



Meteors have a way of leaving their mark when **a)** they're big; and **b)** they become meteorites (a meteor is in the atmosphere; a meteorite has hit the ground).

This Mars Global Surveyor image, made in April, shows an old meteorite

impact crater that was buried long ago, but then later partially unburied from within the layered rocks on the floor of a much larger (and older) crater in eastern Arabia Terra.

The erosion processes that began to exhume the crater, however, stopped some time ago, because today the whole area is covered by a blanket of dust, said astronomers with Malin Space Science Systems, which operates the spacecraft's camera.

Avalanches of this dust have created dark streaks on the walls of the partly exhumed crater. This photo covers an area of 1.9 square miles (3 square kilometers) near 20.9°N, 320.8°W. Sunlight illuminates the scene from the lower left.

The Summer of Mars: What You'll See, How to Observe



Mars will be an incredibly bright, colorful light in the sky. And with a telescope of moderate size, a patient observer might make out hints of surface features.

http://science.nasa.gov/ppod/y2003/13jun_hebesphenomegacorona.htm?aol469637

Hubble Looks Way Back in Time



A new series of images taken by the Hubble Space Telescope contain 25,000 galaxies, many of which are interacting and in the process of formation. Some of these galaxies are so far away, they're seen when the Universe was only 2 billion years old. Astronomers are using Hubble and the Chandra X-Ray observatory to survey two large areas of the sky to build a deeper understanding of galaxy evolution.

FOTO Imaging Group

Meeting 7:30 PM Wednesday,
July 16th, at the Observatory

Topics will include how to image Mars on its upcoming opposition. FOTO-imaging is open to all levels of experience and types of equipment. Techniques explored at the monthly meeting can be practiced at the FOTO Dark Sky Site at Stonelick Lake. Be sure to join Scott Naylor's AstroNet email and phone list for updates on regularly scheduled Stonelick evenings and impromptu sessions during the week when the clouds break.

For more information about the FOTOImaging Group or the AstroNet Group, contact:

Craig Niemi
craig_niemi@yahoo.com
Scott Naylor
scottnaylor@fuse.net

Did You Know....

Our Sun is a variable star whose brightness waves and wanes over an 11 year cycle. The change, only about 0.1%, is still large enough to influence climate on Earth.

Communications Breakdown: How the Loss of SOHO Could Impact Everyday Life



The chance of failure for media broadcasts and routine consumer and military communications dependent on satellites will rise this week if a spacecraft vital to forecasting solar storms goes offline as expected.

http://www.space.com/scienceastronomy/soho_value_030619.html

Did You Know....

Gamma Ray Bursters (GBAs) flash a couple of times a day. In a few seconds, the energy they produce is equal to the output of our Sun for its entire life.

Mars Rover Set for Early Arrival

NASA successfully trimmed the course of a Mars-bound rover on Friday, putting the spacecraft on track for an early January arrival at the Red Planet.

The first of as many as six trajectory correction maneuvers "worked perfectly," mission manager Jim Erickson said from NASA's Jet Propulsion Laboratory.

The maneuver involved a series of rocket firings that increased the spacecraft's velocity relative to the sun by nearly 32 mph....enough to fine-tune its path for a January 3rd arrival.

Universe Slightly Simpler Than Expected



A pair of black holes, center left, devour all light at the center of a giant elliptical galaxy in this artist's depiction.

The universe just became a little less mysterious. Using images from the Hubble Space Telescope, astronomers at the University of Florida have concluded that two of the most common types of galaxies in the universe are in reality different versions of the same thing.

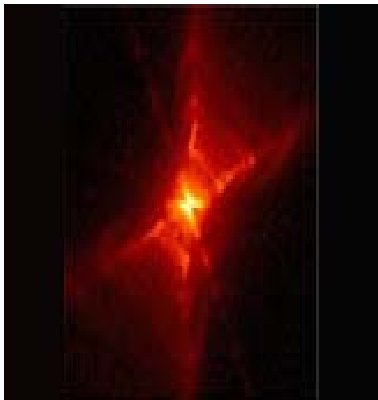
<http://spaceflightnow.com/news/n0306/21simple/>

Helios Prototype Solar Aircraft Lost In Mishap

The remotely operated Helios Prototype aircraft, a proof-of-concept solar-electric flying wing designed to operate at extremely high altitudes for long duration, was destroyed when it crashed Thursday on the Hawaiian island of Kauai.

<http://spaceflightnow.com/news/n0306/26helios/>

New Hubble: Puzzling Nebula is Way Out of Round



Gravity is good at making things round. Planets, moons, stars and even giant gas clouds tend toward the spherical because gravity wants them that way.

But not the Red Rectangle, an odd amalgam of gas and dust ejected by a dying star. The protoplanetary nebula, as it's called, was photographed by the Hubble Space Telescope. Raghendra Sahai of NASA's Jet Propulsion Laboratory showed the image off here this week at a meeting of the American Astronomical Society.

Sahai doesn't know for sure why the Red Rectangle, officially named HD 44179, is not round. But there are new clues in the new photo.

Very fast outflows of material, in narrow jets, appear to be behind the strange shapes, Sahai said. They move at 40 miles per second (65 kilometers per second). In this image, the jets are just a few years old, providing an opportunity to examine the process more thoroughly than ever. It's also likely that a second star orbits the primary star evident at the center of the nebula, and that might have something to do with the jets' behavior and the nebula's shape.

Protoplanetary nebulae represent a late stage of evolution for stars like our Sun, which swell to become red giants. The Red Rectangle is destined to evolve into a planetary nebula. Such objects have nothing to do with planets, but to early astronomers they looked a bit like the smudges on the sky that our solar system's outer planets presented in a telescope.

<http://www.space.com/astronotes/astro notes.html>

Uncharted Meteors

In 1967, NASA's Mariner 4 spacecraft was cruising through the solar system, not far from Earth, when something unexpected happened.

"Mariner 4 ran into a cloud of space dust," says Bill Cooke of the Marshall Space Flight Center Space Environments Team. "For about 45 minutes the spacecraft experienced a shower of meteoroids more intense than any Leonid meteor storm we've ever seen on Earth." The impacts ripped away bits of insulation and temporarily changed the craft's orientation in space.



An artist's rendering of Mariner 4 in space. Credit: NASA.

Fortunately, the damage was slight and the mission's main objective--a flyby of Mars--had been completed two years earlier. But it could have been worse.

"There are many uncharted dust clouds in interplanetary space. Some are probably quite dense," says Cooke. Most of these clouds are left behind by comets, others are formed when asteroids run into one another. "We only know about the ones that happen to intersect Earth's orbit and cause meteor showers such as the Perseids or Leonids." The Mariner 4 cloud was a big surprise.

http://www.windows.ucar.edu/tour/link=/mars/exploring/mariner_il.html

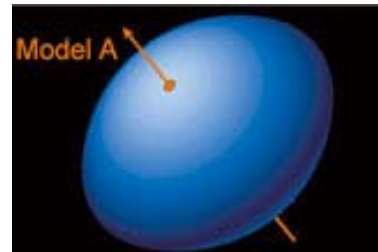
Powerful 'Conveyor Belts' Drive Sun's 11-Year Cycle

NASA and university astronomers have found evidence the 11-year sunspot cycle is driven in part by a giant conveyor belt-like, circulating current within the Sun..

<http://spaceflightnow.com/news/n0306/25solarcycle/>

Out of Round: Surprisingly Flat Star Found

Stars are commonly thought to be round, but astronomers have long known this is never quite true. New observations, however, have detected the flattest star ever.



The fast-spinning star is about 50 percent wider at its equator than if measured from pole to pole. The standard model of stellar composition and rotation -- which assumes solid-body rotation and a mass concentration at the center of the star -- can't account for the extreme out-of-round shape. Researchers said the finding presents "an unprecedented challenge for theoretical astrophysics."

The star, called Achernar, is about six times more massive than the Sun. It sits 145 light-years away in the Southern Hemisphere constellation Eridanus, the River.

<http://www.space.com/astronotes/astro notes.html>

Astronauts Announced For Canadian Arrow

A team of Canadian private rocket builders announced their astronaut selection today, as part of their preparations to launch the Canadian Arrow - a ship based on the original V2 design used in World War 2. The six astronauts include three pilots, an aerospace engineer, a Ukrainian astronaut (who was a backup for a 1997 space shuttle mission), and a 28-year old who has the potential to be the youngest astronaut ever. The Canadian Arrow is considered one of the front-runners to win the X-Prize, which gives \$10 million to the first private group to place a three-person team in space.

New Evidence that Stars Form Like Dominos

An international team of astronomers have gathered new evidence to support the "domino theory" of star formation; that star formation occurs in sequence in galaxies driven by the movements of gas and stars at the core.

A new instrument attached to the 8m Gemini South Telescope, called CIRPASS, allowed the astronomers to measure the composition of a whole range of stars at the centre of galaxy M83. A detailed analysis of the data is now underway.

An Optical SETI

The Optical SETI telescope, at 72 inches, is the largest optical telescope in the U.S. east of the Mississippi River.

And in a very short time, when the light detectors, camera, and analysis equipment are in and operational, it will be the first custom-built, professional optical observatory ever dedicated full-time to the Search for Extraterrestrial Intelligence (SETI).

Just another observatory? Not on your life!

Instead of watching a relative handful of selected stars (less than 0.0001% of all that Optical SETI is theoretically capable of watching) we'll be monitoring a vast slice of the sky each night for a visible sign of intelligent life elsewhere in the universe.

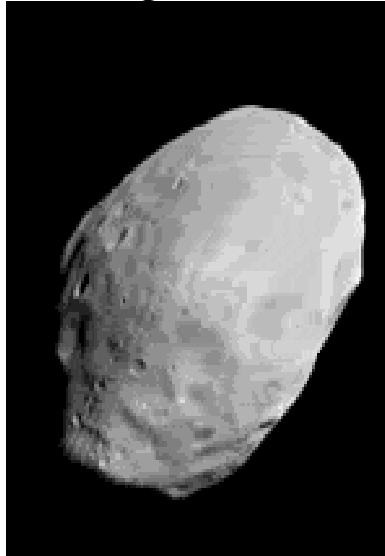
The Search for Life in the Universe

This is the first part of a two-part essay by Neil deGrasse Tyson, Director of the American Museum of Natural History's Rose Center for Earth and Space, which houses the world renowned Hayden Planetarium.

In part one, deGrasse Tyson discusses humanity's quest for an answer to the question, "Are we alone?" and explores the diversity of life on Earth and, perhaps, on other worlds.

http://www.space.com/scienceastronomy/astrobio_tyson1_030625.html

Mars Surveyor Snaps Phobos



NASA's Mars Global Surveyor took several photos of Mars' moon Phobos on June 1, 2003. The first image is a low-resolution shot of Phobos about to set behind the Red Planet; while the second, higher resolution image shows incredible details on the moon's surface. Phobos orbits Mars three times a day at an average distance of only 9,378 kilometres - if you stood on the surface of Phobos, Mars would nearly fill the sky above.

Off the Charts: Hot Stars Surprise Astronomers



The stars -- some massive and some not so big -- are in a cluster of [young stars](#) in the Orion Nebula. Some of them soared above 108 million degrees Fahrenheit (60 million degrees Celsius). The hottest massive star known before had been around 45 million degrees Fahrenheit (25 million degrees Celsius), according to the researchers involved with the finding.

http://www.space.com/news/star_clusters_000112.html

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