COMING UP AT THE OBSERVATORY....

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astronomy Thursday</td>
<td>June 5</td>
</tr>
<tr>
<td>FOTOKids</td>
<td>June 6</td>
</tr>
<tr>
<td>Astronomy Friday</td>
<td>June 6</td>
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<tr>
<td>Saturn Saturday II</td>
<td>June 7</td>
</tr>
<tr>
<td>History Tours</td>
<td>June 8</td>
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<tr>
<td>*FOTO Meeting</td>
<td>June 9</td>
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<tr>
<td>Astronomy Thursday</td>
<td>June 12</td>
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<tr>
<td>Astronomy Friday</td>
<td>June 13</td>
</tr>
<tr>
<td>@ Oxford Art Show</td>
<td>June 14-15</td>
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<tr>
<td>Astrophoto Workshop</td>
<td>June 19</td>
</tr>
<tr>
<td>Astronomy Thursday</td>
<td>June 19</td>
</tr>
<tr>
<td>Late Night Observatory</td>
<td>Jun 21</td>
</tr>
<tr>
<td>Celestial Sips Wine Tasting</td>
<td>June 20</td>
</tr>
<tr>
<td>Stonelick Stargaze</td>
<td>June 21</td>
</tr>
<tr>
<td>Late Night @ the COC</td>
<td>Jun 21</td>
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<tr>
<td>Sunday Sun-day Sundae</td>
<td>Jun 22</td>
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<tr>
<td>Life on Other Worlds?</td>
<td>June 23</td>
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<tr>
<td>(UC Communiversity)</td>
<td></td>
</tr>
<tr>
<td>History of Astronomy &amp; Vintage</td>
<td></td>
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<tr>
<td>Baseball Symposium</td>
<td>June 28</td>
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<tr>
<td>Stonelick Stargaze</td>
<td>June 28</td>
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*Note the monthly FOTO Members Meeting has moved to 2nd Mondays - 7:30pm at the Observatory

Hello friends! With summer coming on, the balmy evenings are perfect for enjoying the night sky. Jupiter, Mars and Saturn are all visible after nightfall, and there are some beautiful star clusters, nebulae and galaxies visible through telescopes at this time of year. You never know when a shooting star will suddenly streak across the sky. The Stonelick Lake star parties have been hopping, with lots of new people coming and learning how to use star charts to find the constellations, planets and deep sky objects.

Planning is underway for ScopeOut this September. Many FOTO volunteers are needed to make this event a fun and educational experience for everyone. If you would like to help, please contact Dale Zoller or come to the ScopeOut planning meeting (see announcement later in this newsletter).

Please mark your calendar for the FOTO Picnic, which is held in lieu of the monthly FOTO meeting in July. The picnic this year will be on Sunday, July 13 starting at 6 PM at COC. Burgers and hot dogs will be grilled and you are welcome to bring other items for the grill if you want. Drinks will also be provided. A sign-up sheet will be circulated at the June meeting, for members to bring their culinary specialties to share.

See you at our next FOTO meeting, on Monday June 9, 7:30!

Did You Know... 

There is a bar of 30 million stars in the center of our galaxy which reaches 27,000 light years across. The bar attaches to the spiral arms of the galaxy at each end of the bar.
**Vintage Baseball & Astronomy**

June 27-28th at the Observatory

An Inter-disciplinary Symposium
In memory of historian Craig Waff.

Invited Speakers include **Chris Eckles**, Chief Curator, Reds Hall of Fame HOF Museum; **Greg Rhodes** (Founding Director Red’s HOF); **Rob Landis** (NASA, researching Observatory founder O.M. Mitchel); **Marc Rothenberg** (National Science Foundation).

**Full Symposium**

The full Symposium includes the Friday evening Ice Cream Social, Saturday programs and Saturday Evening banquet ($159 per person). Or you can join us for only the Friday Ice Cream Social ($25 per person) or just the Saturday evening banquet for $59 per person.

Registration closes on June 15th so call or sign up online at the Observatory’s new website soon! **www.cincinnatiobservatory.org**

**Volunteers Needed**

Some volunteers are still needed to work at the June 27th (evening) and 28th (all day and evening) Craig Waff Symposium that will be conducted at the Cincinnati Observatory. This will be a national, joint symposium centered on the history of astronomy and the beginnings of baseball. Typical volunteer services that are required include: manning the telephone, registration table, security guard for the buildings, setup and clean-up for the breakfast, lunch and most importantly being ambassadors of the Observatory and our members. If you are available for any of these dates please let John Ventre know jeventre@ix.netcom.com.

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**FOTO Kids and Teens**

By Aashi Mital

Summer is on the way, so let’s enjoy the warm weather. We’re meeting on Friday, June 6th at 7:30 p.m. in the Herget Building to celebrate the Sun!

June 21st marks the summer solstice in the northern hemisphere. Midsummer Day, or the day of the solstice, has the most hours of sunlight for those of us living north of the equator. It also marks the first day of summer!!!

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**Astro Evenings at the Observatory**

**Thursday**, June 5, 12 & 19th
**Friday**, June 6 & 13th
8:30 pm - 10 pm

A core program of the Observatory is our ongoing Astro Evenings which take place most Thursdays and Fridays year-round.

The evenings are all volunteer staffed and include a short presentation on ever-changing and fascinating topics followed by a guided stargaze through the oldest telescope in the United States (weather permitting).

Also included is plenty of time for Q&A on any astro topic and a historical tour of the observatory, where you’ll not only see how the old telescopes work, but also learn about the role that Cincinnati has played in the birth of astronomy in America. **Free for Observatory members!**

Make your reservation online! [www.formstack.com](http://www.formstack.com)

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**Meet Me Outdoors**

Looking for one site to find this summer’s best outdoor recreation events?

[http://meetmeoutdoors.com](http://meetmeoutdoors.com)
ScopeOut 2014 Update

By Dale Zoller

ScopeOut 2014 will be held Saturday, September 13, 2014. As in the past, the main event will run from 12-5 pm. We will hold the raffle drawing from 5-6 pm and then the dinner and keynote presentation from 6-8:30 pm. This year's keynote speaker is James Albury, co-host of the PBS show "Star Gazers." Mr. Albury's topic will be "Engaging the Public in Astronomy." Viewing will follow the keynote presentation from 9-11 pm (weather permitting).

We are looking to improve the kids’ activity area with more hands-on, science-related activities this year. Some ideas include: soda rockets; crater making; JPL Toolkits; AIAA "rocket" build & launch; "Galileo" experiments (acceleration ramp, pendulum, tennis ball drop, etc.); paper plate sundials; "Galileo" or "Project Star" telescopes; pinhole solar projector; prism infrared light & thermometer demo. We still need additional volunteers to help run the various activities in this area. If you are interested, please email me at dale.zoller@fuse.net.

We also need presenters for the afternoon classroom talks. Potential topics for the talks include: exoplanets; current planetary exploration missions (New Horizons/Dawn/Juno); remote astrophotography; commercial spaceflight; astro-mythology, citizen science (planet hunters, etc.). Please let me know if you would like to do a presentation on one of these topics.

ScopeOut requires a substantial number of dedicated volunteers to make it run smoothly. We will have signup sheets available at the June FOTO meeting. If you would like to volunteer and cannot make the June FOTO meeting, please email me at dale.zoller@fuse.net. Thanks in advance.

ScopeOut 2014 Planning Committee Meeting

By Dale Zoller

The next ScopeOut 2014 Planning Committee meeting will be on Tuesday, June 17 at 6:00 pm at the Observatory. ScopeOut is the Observatory's annual open house and science fair and will be held on Saturday, September 13, 2014. Anyone interested in helping with the planning of the various ScopeOut activities is invited to attend.

Late Night at the Observatory

Saturday, June 21
10:30 pm-12:00 am

Can’t sleep? Looking for a unique Friday night out? Get a sneak preview of the next season’s planets and stars a month or two ahead of everyone else. Recommended for adults only.

Admission is $10 per person
To make reservations please call 513-321-5186 or go online! www.formstack.com

The Observatory at Space Fest ’14

By Terry Powell

To all the volunteers who helped out at The Air Force Museum’s SpaceFest back on the 17th, thank you all very much. You folks did a fantastic job. Our tally sheet recorded 194 people who stopped by our exhibit and I’m certain there were even more than that.

I am very gratified by the number of volunteers. It made the event easy and fun for us all. Also gratifying were the number of new faces in the group, it bodes well for the COC and the future of this event.
Astronomers Find A New Type Of Planet: The 'Mega-Earth'

Astronomers have discovered a new type of planet -- a rocky world weighing 17 times as much as Earth. Theorists believed such a world couldn't form because anything so hefty would grab hydrogen gas as it grew and become a Jupiter-like gas giant. This planet, though, is all solids and much bigger than previously discovered 'super-Earths,' making it a 'mega-Earth'.

The newly discovered 'mega-Earth' Kepler-10c dominates the foreground in this artist's conception. Its sibling, the lava world Kepler-10b, is in the background. Both orbit a Sunlike star. Kepler-10c has a diameter of about 18,000 miles, 2.3 times as large as Earth, and weighs 17 times as much. Therefore it is all solids, although it may possess a thin atmosphere shown here as wispy clouds.

http://www.sciencedaily.com/releases/2014/06/140602115837.htm

**FOTO's June Meeting**

*By Dave McBride*

On June 9th at 7:30pm the program committee will host Slawomir J. Bucki, known by most people as Bucki (pronounced “Bookie”), giving his presentation on “How Do You Know?”

This presentation is a brief journey through the most fundamental methods astronomers use to answer common questions about astronomical objects, such as “how far is this star or galaxy?”, “what is the mass of that star?” or “how old is the Universe?”. The methods are presented in a logical and to some extent chronological order so that it can be shown how the methods used to obtain one answer can be used subsequently to address the next questions. The objective is to show how science is built in progressively more elaborate steps and that all scientific claims and facts have a solid foundation based in observational evidence.

Bucki was born in Poland and lived / worked in many countries, including Mexico, Brazil, Belgium, Turkey and the USA. He has a degree in Mechanical and Electrical Engineering from Mexico National University and has been working for Procter & Gamble for the past 25 years, all of them in the Engineering area. He is currently studying for a BSc in Astronomy degree via a Distance Learning program from the University of Central Lancashire (UCLan) in the United Kingdom. He has completed most of the courses and only needs to take one additional course and write his Dissertation to complete his degree.

**Craig's Corner**

*By Craig Niemi, Executive Director*

Ice Cream and Astronomy! Baseball and Astronomy!

We hope you can join us on the 22nd for Sunday Sun-day Sundae. If you haven’t brought friends and family to a Sun-Day, you are missing out on a great event.

The safe telescope viewing, planet walk and Paul Nohr Sundial work together to reveal the power of our sun, the scale of our solar system and our place in it. All easier to comprehend while enjoying a sundae.

And we hope you can join us the end of June for the Craig Waff Symposium. Your options include the full 2 days of astronomy and baseball or your choice of single day sessions. Both include the Banquet and dual keynote presentations on Saturday night.

If you can make it to the sessions but you’d like to join us for the Banquets and keynotes talks, there is that option.

Our thanks to the symposium organizers, Trudy Bell (Waff), John Ventre and Valerie Niemi. And our thanks to Xavier University for hosting the banquet!

**Did You Know. . ..**

90% of the life of a star is spent in the Main Sequence.
Highlights of the May FOTO Meeting

By John Barnes

The May 12, 2014 FOTO meeting was called to order at 7:30 by President Michelle Gainey. We welcomed first time attendee Bob Ralston.

On a sad note, FOTO sends its condolences to the family of one of our members, Andy Bruggeman, who died on April 27. Andy will be remembered as an excellent photographer.

Amazon Smiles and Kroger now have systems in place to reward the COC with a portion of the money you spend on purchases. Go to their websites and select the COC; you'll be helping raise funds for one of your favorite nonprofits and it will not add to your checkout price.

Looking for volunteer opportunities? We still need help with Kid’s Outdoor Adventure Expo at Coney Island on June 20, and the Craig Waff symposium, scheduled for June 27-29 at the COC. We could also use some help with the Hospitality Committee. Would someone like to chair this committee? And we would love to have more Presenters. Our Presenters do a valuable service for the COC. They are the foundation on which Astronomy Thursdays and Fridays are built. Many of our programs might not go forward without the talents they possess, the time they donate, and the expertise they have acquired.

FOTO has provided a new and valuable addition to the COC – a flat screen TV. Now we need to train a number of members on its operation. If you are interested in learning how to operate the TV, keep looking for an announcement of a training date. John Blasing and Dave McBride have agreed to schedule a time and provide the training.

We were lucky to have, as our speaker for this meeting, Dr. Terra Clark. Dr. Clark, the owner of several refracting telescopes, spoke about the world of astronomy as viewed through classic long focal length achromatic refractors. Her presentation was particularly significant to members of the COC who have had the pleasure of looking through our own long focal length refractors: the Mitchel and Alvin Clark scopes.

Congratulations to Aaron Eiben, our new Outreach Astronomer! Aaron’s employment is made possible by a very generous, two-year grant from the Haile Foundation. Aaron brings a wealth of knowledge, a passion for the COC, and a flair for teaching. Welcome aboard!

The next FOTO monthly meeting will take place the second Monday in June, June 9, at 7:30 PM. And you can start looking forward to the annual picnic (which will take the place of the regular July meeting) to be held on Sunday, July 13. We hope to see you at both.

Did You Know. . ..

A Black Hole with the same mass as the Earth would be smaller than an eyeball.

Be an Observatory Star with Your Kroger Rewards Card!

By Lyn Marsteller

You can help the COC earn cash back all year on purchases from Kroger by registering your Kroger Plus card online. It's as simple as 1, 2, 3 and 4 - and you keep your Fuel Points!

Please register or re-enroll at krogercommunityrewards.com, and sign in. You must re-enroll once a year.

- Go to the My Account tab and enter your email address and password,
- Then select Edit Kroger Community Rewards, and most importantly,
- View organizations to select the Cincinnati Observatory Center or enter 55142,
- Confirm your selection.

If you don’t have a Kroger Rewards card yet, simply ask for one at your checkout the next time you are shopping at Kroger. Kroger will send the Observatory a quarterly portion of the proceeds it collects from the Community Rewards program. This does not affect your Kroger Fuel Points, so go ahead, be a star!
Art & Local History
(& Science!)

The Observatory will join other Museums & Historical Sites of Greater Cincinnati members June 14-15 at the Oxford Museum Associations Arts & Craft Fair. Volunteers are welcome to share the history of the Observatory and are offering solar viewing for their visitors. Contact John Ventre at 513-321-5186.

Stargazing at Stonelick State Park

Saturdays – June 21st & 28th

By Craig Niemi

Summer Skies

Need help with your telescope? Bring it for expert tips setting it up and exploring the night sky. Stargazing begins at dusk. Open to all ages.

Stargazes are weather permitting. “Friend” the Stonelick Lake Stargazers Facebook page for weather and schedule updates.

Celestial Sips Wine Tasting

Friday, June 20th 8:00-10:30 pm

Celestial Sips for the Summer Solstice

Celebrate the Summer Solstice at this unique wine tasting event.

We’ll feature four organic biodynamic (planted and harvested according to the phases of the moon) wines selected by sommelier Shannon Depenbrock of D.E.P.’s Fine Wines. While sipping and sampling savory appetizers, enjoy the historic Observatory buildings and grounds, and if clear, see spectacular Saturn and its Rings through America’s first telescope. Then raise a toast to the Solstice with champagne and sweets.

Cost: $60 per person. You must be 21 or older. Space is limited.

Reservations are required by calling 513-321-5186 or visiting www.cincinnatiosservatory.org/publicevents to sign up online.

New Star Gazers

Dean Regas guest hosting “Star Gazer:”

Star Gazers airs locally on channels 14 and 48 and you can watch each month’s episodes on our website: http://www.cincinnatiosservatory.org/stargazer.html “Keep Looking Up”

Star Will Swallow Two Planets

Two worlds orbiting a distant star are about to become a snack of cosmic proportions. Astronomers announced that the planets Kepler-56b and Kepler-56c will be swallowed by their star in a short time by astronomical standards. Their ends will come in 130 million and 155 million years, respectively.

As far as we know, this is the first time two known exoplanets in a single system have a predicted 'time of death," says lead author Gongjie Li of the Harvard-Smithsonian Center for Astrophysics (CfA).

The Kepler-56 system provides a glimpse into the future of our solar system. In about five billion years our Sun will become a red giant star, swelling to immense proportions and engulfing Mercury and Venus.

The star Kepler-56 is becoming a red giant star as well. It already has ballooned out to four times the Sun’s size. As it ages, it will continue to expand outward. Not only will the star grow larger, but its tides will get stronger, dragging its planets inward to their eventual doom.

http://www.sciencedaily.com/releases/2014/06/140602115835.htm
Welcome New & Renewing Members!

Tim Annett
Olivia and Brent Ballard
John Barnes
Gene and Karen Bertke
Dave and Peggy Bosse
Philip Breen
Peggy Bustamante
William Y. Cartwright
Boyd & Melinda Colglazier
Andrew Cox
Mary Hinton
Lee Hite
Don Gorth and Kathy Hoctor
Bill and Mary Hopple
Anthony Arnott and Shely Morillo
Evan Noga
Gary Powell and Holly Hummel
Chris Ridenour
Lori Rutherford
Christine and Charlie Schiff
Michael Schneider
Megan Smale
Jim Teufel
Venkata Vadrevu
Nancy Lu Walters
Mike & Kimberly Warth
Dwight Welren
Lawrence Yates
Gregory Yudovic

History of the Observatory
Sunday, June 8th 1-4 pm

The Mt. Adams Observatory: frame 6 of the 1848 Fontayne & Porter Panorama
Courtesy the Public Library of Cincinnati & Hamilton County

Drop in anytime between 1-4 pm. $5 per person suggested donation. Free for members. Group tours by appointment.

Harsh Space Weather May Doom Potential Life On Red-Dwarf Planets

Life in the universe might be even rarer than we thought. Recently, astronomers looking for potentially habitable worlds have targeted red dwarf stars because they are the most common type of star, composing 80 percent of the stars in the universe. But a new study shows that harsh space weather might strip the atmosphere of any rocky planet orbiting in a red dwarf’s habitable zone.

http://www.sciencemag.org/content/344/6179/671

Brown Dwarf Found Lurking 7.2 Light-Years Away

This artist's conception shows the object named WISE J085510.83-071442.5, the coldest known brown dwarf. Brown dwarfs are dim star-like bodies that lack the mass to burn nuclear fuel as stars do. This appears to be the coldest "brown dwarf" known -- a dim, star-like body that surprisingly is as frosty as Earth's North Pole.

Amazon “Smiles” on the Observatory

Amazon will donate 0.5% of the price of your eligible purchases to Cincinnati Observatory Center whenever you shop on AmazonSmile.

AmazonSmile is the same Amazon you know. Same products, same prices, same service. Next time you shop at Amazon simply start at

http://smile.amazon.com/ch/31-1665954
Sunday Sun-day Sundae
Sunday, June 22  1-4pm
By Craig Niemi

Astronomy AND ice cream! What could be better?
The Sun is the star attraction today. You can learn all about our nearest stellar neighbor. Sunday Sun-day Sundae includes hourly programs about the Sun, tours of the historic buildings, and safe solar viewing of sunspots and solar flares out of our 1845 telescope (weather permitting). Great for all ages!

As a special treat we will also have free ice cream sundae for those in attendance. Cost: $7 per person. No reservations are needed.

Sun Prominence image by Observatory member Steve Rismiller

Astrophotography Workshop
3rd Thursday February-November
Next Session: Thursday, June 19th
7:00 – 9:30 pm

This monthly course will teach you the tricks of the trade, help you get the most out of the equipment you already have, and point you toward the best upgrades. You might find your images in a future Observatory calendar.

Free for Cincinnati Observatory members. Space is limited. Call 513-321-5186.

Greater Cincinnati STEM Collaborative

By Craig Niemi

Here are a couple of great opportunities from a couple of our partners:
The Observatory is not offering camps this summer due to a full schedule of Teacher Professional Development workshops and special events. Our friends at iSpace are offering several Summer Camps including robots, Science Meets Art and lots of rockets.
The Cincinnati Museum Center’s Girls in Real Life Sciences is a free program for girls 8-14 to participate in real science. Be sure to check out their May newsletter. www.greatercincystem.org

Museums and Historic Sites of Greater Cincinnati

By Craig Niemi

MHS is comprised of over 30 participating sites across Greater Cincinnati. Each site offers a unique perspective on local history and culture through public programs, exhibits, lectures, and tours. www.historicgreatercincinnati.org

Eyes of the Night

Mr. John Ruthven is offering signed, limited edition giclee prints of his "Eyes of the Night" which features the Observatory!

Each signed 14"x 20" print is on sale for $150. The total run will be limited to 250 prints. Proceeds support the Observatory’s programs. To order contact Craig Niemi at 513-321-5186 or craig@cincinnatiosbervatory.org

Apollo Rendezvous

Saturday, June 14th 9a-5p

Apollo Rendezvous is one of the noted annual gatherings of amateur astronomers in the United States. In its 44th year, amateur astronomers meet with friends and colleagues from around the country at the Boonshoft Museum of Discovery in Dayton. Presented by the Miami Valley Astronomical Society. www.mvas
NASA’s “Flying Saucer Readies for First Test Flight

It only sounds like science fiction. To test a new technology for landing heavy payloads on Mars, NASA is about to drop a flying-saucer shaped vehicle from a helium balloon high above Earth's surface.

A saucer-shaped test vehicle holding equipment for landing large payloads on Mars is shown in the Missile Assembly Building at the US Navy's Pacific Missile Range Facility in Kauai, Hawaii.

Big-Screen Monitor Operator Training

By John Blasing

A training session for operating FOTO's new big-screen monitor will be held on June 9th at 6:30pm, immediately preceding the regular monthly FOTO meeting. All interested FOTO members are encouraged to attend. If you can't attend this session, worry not: other sessions will be forthcoming. Please feel free to contact Dave McBride or John Blasing with any questions or remarks.

New 'Gas Dwarf' Class of Alien Planets Revealed

For astronomers, planets around other stars tend to come in two basic types: rocky worlds and gas giants. Now, scientists have identified a third class of exoplanets, called "gas dwarfs," that fall in between the others.

The team studied more than 600 planets discovered by NASA's Kepler space telescope and compared their sizes to the amount of elements other than hydrogen and helium contained in their star — a characteristic known as metallicity.


Hubble Unveils a Colorful View of the Universe

Prior to this survey, astronomers were in a curious position. They knew a lot about star formation occurring in nearby galaxies thanks to UV telescope facilities such as NASA's Galex Observatory, which operated from 2003 to 2013. And, thanks to Hubble's near-infrared and visible capability, they had also studied star birth in the most distant galaxies.

The addition of ultraviolet data to the Hubble Ultra Deep Field using Hubble's Wide Field Camera 3 gives astronomers access to direct observations of regions of unobscured star formation and may help us to fully understand how stars formed. By observing at these wavelengths, researchers get a direct look at which galaxies are forming stars and, just as importantly, where the stars are forming. This enables astronomers to understand how galaxies like the Milky Way grew in size from small collections of very hot stars to the massive structures they are today.

http://www.spacetelescope.org/news/heic1411

The Ringed World!

Saturday, June 7th
9-11pm

The lord of the rings shines in prime time! The magnificent planet, most breathtaking object in the universe – Saturn - takes center stage at the Cincinnati Observatory for Saturdays. $7 per person. No reservations needed. Check out the What’s Up web page for any updates.