



# The Night Sky

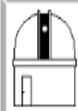
The Newsletter of  
The Astronomy Club of Akron

www.acaoh.org

Volume 24 Number 9

September 2002

## Monthly Meetings Return Friday



### Black River OTAA Star Party 2002

By Rich Ruggles

As was stated in the news letter, this was a rain or shine event.

I'm sure it was the weather that made you decide not to go, but you missed out on a great time. The food was exceptional this year. An 8 layer sausage lasagna was so heavy that one scoop almost broke my Styro-foam plate. Of course the ¼ lb hot dogs were always good.

This year's desserts were the topper. Some one made the most awesome chocolate covered strawberries. A Black River Board member stood and asked "who made the chocolate strawberries?" then told the Treasurer to "give that person a 3 year free membership so we can look forward to more of these.

It didn't start raining till we were half way through the drawing. But before the drawings began, we had some musical entertainment by Dave Lingre of BRAS. He put together a trio of 2 guitars and tambourine players which gave them good 3 part harmony. Dubbed "the instant

Black River Band" they performed 4 original songs written about astronomy. They were quite good and we expect a CD to come out by next year. (yah right)

There were 3 separate drawings this year. The regular tables of great prizes like eyepieces, the Sky software, lasers and gift certificates. They always have some goofy things too. This year it was "Night Vision Goggles". They were a plastic pair of 5x binoculars with a flashlight mounted above them. What a hoot. The package read "See 50 feet at night".

The other 2 drawings were for the BIG prizes. First a 14mm Meade 82 deg. wide field eyepiece \$300.00 value. The second was for a 8" f7 Dob a \$500.00 value. Everyone, including myself, was hoping to win them both. Well, one person did win them both. (he was happy but the rest of us weren't.)

The Swap table had many deals that many took advantage of including me.

About 60 amateur astronomers participated in this years BRAS OTAA.

I hope you can make it next year.

### Next Meeting

The next meeting will be on Friday, September 27 at 8:00 pm. At the Kiwanis Hall on Portage Lakes Drive.

We have several items to discuss.

I am sure you did something astronomical related over the past three months, so be prepared to speak up when I call for sightings, news or new business.

Our speaker will be our own Jay Svitko, who will finish up his series on the Messier objects. This is an excellent presentation you should not miss.



### Scopes on Loan

Want to do some observing but seem to be without the optical means?

The Astronomy Club of Akron is quite willing and able to come to the rescue. We have several telescopes that members may borrow for a three month period.

So don't let the lack of a telescope keep you from enjoying the wonders of the universe.

Contact Rich Ruggles for information.

## Activities Calendar

### Club

September 27, ACA Monthly Meeting 8 PM  
 October 4 + 5, Hidden Hollow '02  
 October 12, Scope Out 2002  
 October 18, Aurora Astronomical Society  
 October 25, ACA Monthly Meeting  
 November 2, ACA Dark Sky Star Party  
 November 22, ACA Monthly Meeting

### Celestial

September 26, Venus at Max. Brightness  
 October 2, Asteroid Ceres at Opposition  
 October 6, New Moon  
 October 13, Mercury at Max. Western Elong.  
 October 21, Full Moon  
 October 21, Orinids Meteor Shower

## OFFICERS 2002 – 2003 AND TRUSTEES

### PRESIDENT

Frank Koby 330-794-9087 fkoby@speedynet.net

### VICE PRESIDENT

Jeff Hudson 330-668-6881 jeff@hudsonstuff.com

### TREASURER

Gregg Crenshaw 330-785-7377 starsforall@core.com

### SECRETARY

Jay Svitko 330-929-0222 felistigris@hotmail.com

### ASSISTANT SECRETARY/TREASURER

Gary Smith 330-633-9873 garysmithsmitty@earthlink.net

### NIGHT SKY EDITOR

Ray Hyer 330-784-3970 rhyer@neo.rr.com

### OBSERVATORY DIRECTOR

Ray Paul 330-658-3125

### STATUTORY AGENT

Rich Ruggles 330-644-5912 astronomy1on1@cs.com

**TRUSTEES:** Joe Conte.....330-825-0671

Ethel Lillie

### 2002 – 2003 COMMITTEES AND CHAIRS

OTAA REPRESENTATIVE Lou Poda...330-773-8160

The deadline for article submission is **two weeks before the next meeting**. All word processing files should be saved in straight ASCII text files or any version of Word to minimize import problems. We will not turn away **any** submission, as long as the article's subject is astronomy or a related topic. If you don't have access to a computer, don't hesitate to write something out long hand. As long as it is legible, I will slave over the keyboard and get it published.

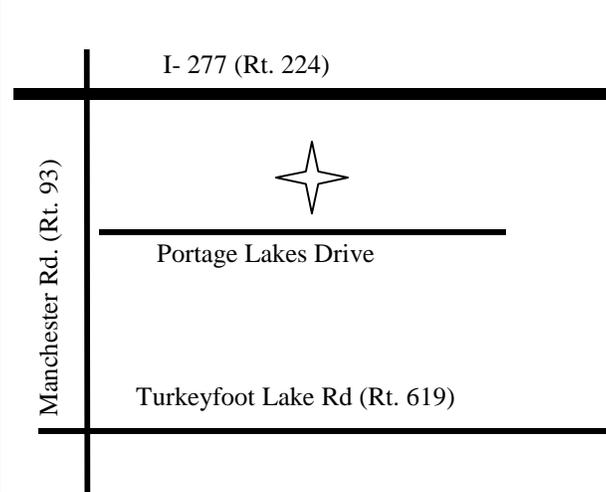
**PLEASE SEND IN YOUR ARTICLES!!!!**

Send your articles, items for sale, and comments to:

**Ray Hyer, 725 Brewer St. Akron, OH 44305** Email: [rhyer@neo.rr.com](mailto:rhyer@neo.rr.com)

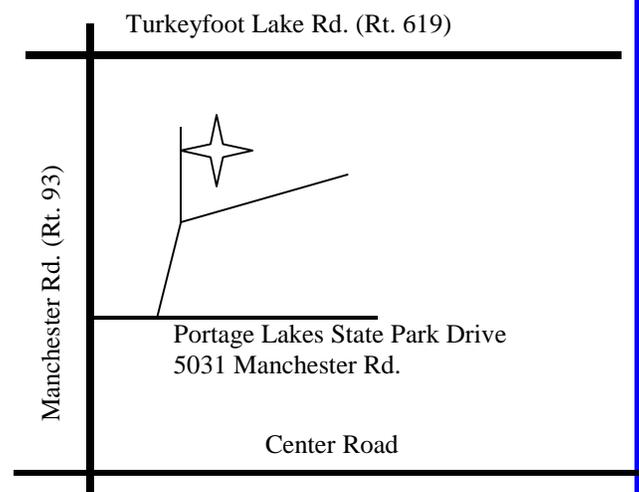
### MONTHLY MEETING LOCATION:

The Astronomy Club of Akron meets at 8:00 PM at the Kiwanis Hall, 725 Portage Lakes Drive.



### OBSERVATORY LOCATION:

The ACA Observatory is located within the Portage Lakes State Park on Manchester Rd. (Rt. 93). Turn left off Manchester Rd, then left at the first drive. Observatory is across the street from the Park Office.





## Ether Drag

By Jeff Hudson

### Thanks!

**John, John and Dave** for letting me use their telescopes at Fishcreek elementary. I promise I will bring my telescope the next time.

**Vic** for setting up the ACA events web page. I have a nice web page where I can enter new events and update existing ones. I built the events list from emails I have received.

If you know of an upcoming event, email the date, time and details and I will see it gets onto the web page. Point your web browser to <http://www.acaoh.org/events.php>

### NASA News

They have fixed all of the orbiters and the crawler, so the next space shuttle flight is scheduled for October 2, 2002. This will be the 15th shuttle mission to visit the space station and the 26th flight of Space Shuttle Atlantis.

The primary objective of the mission is to deliver S1 Truss to the ISS. The crew will perform three space walks to install, activate and outfit the S1, which will be attached to the starboard end of the S0 (S-Zero) Truss. Looks like the ISS is starting to take shape. Look at <http://spaceflight.nasa.gov/station/assembly/index.html> for more details and a time line on the assembly and for those of you into building models check out this web page <http://spaceflight.nasa.gov/station/assembly/models/>

### What is a Solar Sail?

A solar sail is a spacecraft with a large, lightweight mirror attached to it that moves by being pushed by light reflecting off of the mirror. When the light from the Sun hits the surface of the solar sail, the energy, or momentum, of photons (light particles) is transferred to the sail.

As the light is reflected away, it gives the sail a slight "push." Newton's Third Law of Motion states that for every action there is an equal and opposite reaction. The reaction here causes a change in momentum, pushing the sail and giving the spacecraft thrust.

A photon reflecting off the mirror-like surface of a solar sail gives the sail a double kick - a push equal to twice the photon's momentum. One push from the sail slowing and stopping the photon and one from it reflecting the photon and accelerating it away.

The planetary Society is working on a mission to fly a solar sail in Earth's orbit to demonstrate control under sunlight pressure. There was a suborbital test flight on July 20 2001 and a full orbital test flight is planned for late 2002.

The spacecraft is named Cosmos 1 and is designed as eight triangular blades. When combined, their total structure is equivalent to a disk. Each blade can be pitched to vary the direction of the reflected sunlight pressure so that force may be applied in any direction.

Check out the details at <http://www.planetary.org/solarsail/index2.html>

and for those of your interested in building a model check here <http://spacecraftkits.com/cosmos1/asmby.html>

### Until Next Time ...

I intend this column I write every month to be part of an on going series that provided little tidbits of information or ideas I find interesting. It should encourage you to investigate the ideas further and come to your own discoveries. If there are any items you would like me to re-visit or expand upon, please contact me.



## Astronomy Garage Sale

I need to dispose of the following equipment to make room for the next one...

**Meade 10" LX200 Classic** (EMC, non-GPS) with all normally supplied accessories, including HD field tripod; looks and works great \$1900

**Meade 10" LX-3** (MCOG coatings) all normally supplied accessories (including HD tripod and HD wedge) plus Dec motor, illuminated polar finderscope reticle and motor-focus, looks and works great \$1050

**Meade 12" LX200 Classic** (EMC, non-GPS) with all normally supplied accessories, including Giant field tripod, Supercharged by Dr. Clay, looks and works great \$2600  
**Celestron orange-tube C8** with footlocker, forks with clock drive, fixed-height tripod and wedge - OTA could use paint, footlocker is a little beat but all else is nice and clean - optics nice \$600

**Meade Superwedge** as new \$325  
**Celestron Starhopper 8" Dob** excellent \$300  
John Crilly (Wadsworth, Ohio) days 330-336-6666, eves 330-334-6668





## Astronomy On the Road

By Rich Ruggles

It will soon be October and that means the last 2 major star party conventions are just around the corner. If you haven't gone to any this year, here is your last chance.

**Oct. 4,5,6 Hidden Hollow**  
2002 Astronomy Convention and OTAA star party, hosted by the Richland Astronomical Society.

This biannual convention has it all: Speakers, Vendors swap tables, and 32" of aperture in the Warren Rupp Observatory. All the details were in last month newsletter but if you need more go to [www.wro.org](http://www.wro.org) for map and more.

**Oct.12th Scope Out 2002 Telescope Fair**

Hosted by, and held at, the Cincinnati Observatory, home of the oldest daily used telescope in the world. and the birth place of astronomy in the US.

There will be speakers all day with the Keynote speaker to take the podium after dinner. Every telescope manufacturer and related accessories will have a table. Truly a place for good deals on all the name brands.

There will be an observing session after dark. The Cincinnati club has 18", 20", and 22" Obsession's along with many 10" and above scopes to look through.

For a map and all the info go to [www.cincinnatiobservatory.org](http://www.cincinnatiobservatory.org) We have found a deal on lodging a couple of blocks from Dick Clarks Restaurant and night club.

It's a fun place to be Friday

night. If your interested contact me at [astronomy1on1@cs.com](mailto:astronomy1on1@cs.com) or 330-644-5912.

**Oct. 18th 7:30 Aurora Astronomical Society** monthly meeting followed by a star party weather permitting.

Moore Outdoor Education Center, Bissell Rd Aurora

**Oct. 25th 8:00 Astronomy Club of Akron** monthly meeting Kiwanis Civic Center Portage Lakes Dr Akron.

**Mark your calendar.**  
**NOVEMBER 2nd The Fall Dark Sky Star Party**

This year it will be a multi club dark sky star party with invitations to, Mahoning Valley, Wilderness Center, Chagrin Valley, Sandusky Valley and Aurora. The location this year will be at a private air strip just out side Alliance Oh. We will be permitted to camp all night on the site. From Akron take SR 224 East to SR 225 and go South on SR225 to the BARBER AIRPORT. Look for the ACA sign's to direct you to the observing site.

For more info or directions to any of these contact me at [astronomy1on1@cs.com](mailto:astronomy1on1@cs.com) or call 330-644-5912.

---

(continued from page 4)  
Copernicanism was not heretical.

In the end, after three tries (holding an aged and tired Galileo under house arrest the whole time), they convicted Galileo of violating the ban placed on him ... essentially a technicality. He was sentenced to recant Copernicanism, never publish his views, and live under house arrest for the rest of his life. His

books were banned.

It is said during his recanting of Copernicanism in front of the inquisition Galileo muttered "and yet it moves" (referring to the Earth's motion around the Sun), but this is not supported by Vatican documentation. He did manage to get some of his views published outside of Italy, but it was a fairly limiting punishment.

Galileo's fame saved him from what was almost certainly a death penalty, a death penalty that was dished out to other scientists who challenged the Church's opinion that faith was more important than outright observation in understanding God's Universe.

In the mid-80s, the Pope John Paul II opened up the Vatican archives on this whole fiasco to an investigative team from the Vatican. The official conclusion was that Galileo was innocent of the charges against him, but in fact, the report reads more like it is seeking to get people to forgive the inquisition for its actions, which while wrong, were understandable given the historical context. Basically, the Church was asking forgiveness...

Galileo's books weren't removed from the list of banned books because the list was dropped several decades earlier.

If you are interested in this, I suggest either reading Galileo's "dialogue on the two chief world systems" in translation or read Dava Sobel's "Galileo's Daughter" which has a lot of fascinating "behind the scenes" descriptions of what was going on.

(Be sure to read Part 2 of this story in next month's newsletter.)



## Galileo's Story, Part 1

By Jay Svitko

In the early 1600s, Galileo had been using his telescope to conduct observations of the night sky. His telescope revealed several things that were inconsistent with the old Earth-centered model of the Universe but consistent with Copernicus' sun-centered model.

The most important of these observations (in terms of supporting the Copernican model) was the fact that the planet Venus exhibited phases, something it could not do if it orbited the Earth instead of Venus. Actually, the key was its change in size while exhibiting phases. A full Venus is on the opposite side of the Sun from the Earth and thus appears much smaller than a crescent Venus.

In any case, Galileo published these observations in a publication he called the "Sidereal Messenger". He was even called to Rome to present his results there.

The Cardinals generally found Galileo to be intelligent, but if they contradicted Galileo or failed to understand his arguments, Galileo called them fools. This gave Galileo a lot of enemies in the Vatican, something that would affect his later interactions with the Vatican. He did make friends during this first trip to Rome with Cardinal Barberini who would later become Pope. The Cardinal didn't buy all Galileo's theories, but felt his to be a brilliant scientist and supported him.

OK, after this first trip to Rome, the Lutherans seize on the sun-centered model of the

Universe as another example of "Roman foolishness" and many embrace the Copernican model.

Never mind that Copernicus was a devout Catholic prelate... he was from Poland in northern Europe, so he was not Roman. This action by the Lutherans meant that in many Catholic circles teaching Copernicanism was seen to be heretical.

I emphasize now that the Catholic Church NEVER officially declared it a heresy (although they did ban Copernicus' book "De Revolutionibus"). The Catholic Pope does however place a Papal ban on Galileo, forbidding him from promoting a Copernican model publically. At this point, Galileo is stuck. He is a good Catholic, so he obeys the Pope.

It is during this decade-long period under the ban that he does much of his work on physics which would become the basis of Newton's Principia (e.g. the apocryphal dropping of different mass stones from the tower of Piza).

But Galileo continues to privately espouse a Copernican model and continues making more observations in support of it.

After this decade passes, the Pope dies and Cardinal Barberini (who I mentioned earlier was sympathetic to Galileo) ascended to the Papacy. Galileo saw his chance and went to Rome to get the ban lifted so he could publish his results.

At this point, it is unclear from Church records what happened. But it is clear that the Pope encouraged Galileo to write up his results but did not lift the ban. Maybe he wanted to see the results privately...I'm not

a historian. But it is clear Galileo walked away from this meeting thinking he should write about his discoveries.

As such, in 1632, Galileo wrote and published a book called "A Dialogue about the Chief World Systems" in which he managed to get his theory past censors by insisting the two astronomical theories (sun-centered vs. Earth-centered universes) were presented on equal footing.

However, the dialogue's three characters were almost defiantly biased. The character speaking for the Sun-centered universe was Salviati. Sagredo is a Venetian nobleman who is hosting the dialogue and is an intelligent (but uninformed) individual. Then, as a defender of the earth-centered universe Galileo created Simplicio (note the name), a straw man who is shown to be stubborn like a mule in his defense of the Earth-centered universe.

Now here is the problem... not only does the dialogue go in favor of Salviati (it had to, Salviati spoke for Galileo)...but Galileo put many of the Pope's own words regarding the importance of "faith vs. observation" in the mouth of Simplicio... basically he called the members of the Vatican supporting the ban simpletons. Essentially, a Galileo who didn't think much of his "enemies" decided to publicly insult some extremely powerful people.

Needless to say, Galileo created his own pile of dung to step in here. The inquisition went after him and ironically had a darn hard time prosecuting him...he had not committed heresy since (Continued on page 5)