



The Night Sky

A Publication of The Astronomy Club of Akron
Akron, OH USA

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Name

Dave Jessie
John Crilly
Gary Smith
Pete Flohr
Rosaelena Villasenor
Ray Paul
Glenn Cameron
Lynn Laux
Tom Mino
Jim Anderson
Mark Kochheiser
Gregg Crenshaw

Phone

330-688-9043
330-334-6668
330-633-9873
330-645-9153
unlisted
330-658-3125
330-456-2022
440-846-0966
330-923-7704
330-929-6482
330-882-3713
330-785-7377

E-mail Address

DJessie@neo.rr.com
jcilly@neo.rr.com
garysmith23@juno.com
jlf31@uakron.edu
revillasenor@hotmail.com
raymonpaul@brightdsl.net
glenn@cameronclan.org
gemma lady@msn.com
tjmino@neo.rr.com
starwatcher4863@aol.com
mkochheiser@neo.rr.com
gbcrenshaw@sbcglobal.net

2004 ACA Calendar	Summary
10/22/04 Fri 8:00 p.m.	ACA General Membership Meeting—Kiwanis Club
11/6/04 Sat 7:30 p.m.	ACA Observatory Open House—ACA Observatory
11/19/04 Fri 8:00 p.m.	ACA General Membership Meeting—Kiwanis Club
12/11/04 Sat 7:30 p.m.	ACA Observatory Open House—ACA Observatory

2004 ACA Calendar-Detail

Saturday, November 6

Open House and Star Party begins at 7:30 pm with random observing two days after the Southern Taurid meteor shower. Please bring your telescopes for the event.

Friday, November 19

General membership meeting beginning promptly at 8 pm at the Portage Lakes Kiwanis Club. Speaker to be announced. Last meeting of the year.

Saturday, December 11

Open House and Star Party beginning at 7:30 pm. Bring your telescopes and mittens!!



Sky Events for November 2004

Nov 5	Taurid (south) meteor shower peaks. May produce the occasional bright fireball. Moonlight interferes.
Nov 5	Last Quarter Moon at 5:53 UT.
Nov 9	Moon, Venus, and Jupiter within a circle 4.9° diameter at 21h UT (morning sky).
Nov 12	Taurid (north) meteor shower peaks. May produce the occasional bright fireball.
Nov 12	New Moon at 14:27 UT.
Nov 17	Leonid meteor shower peaks at 8 UT. No predictions of strong activity issued for 2004. Expect about 15 to 20 meteors per hour under best conditions.
Nov 19	First Quarter Moon at 5:50 UT.
Nov 26	Full Moon at 20:07 UT. The full Moon of November is called the "Frosty Moon" in old almanacs.

All times Universal Time (UT). (USA Eastern Daylight Time = UT - 5 hours)



November Sky Events: Detail

The forlorn Summer Triangle, high in the west during evening, is getting increasingly out of season. It's composed of bright **Vega**, **Deneb** higher above, and **Altair** far off to Vega's left. Late evening brings the bright **Orion** family of winter constellations rising up into the east. But the big drama in the first half of November comes at dawn, with **Venus** and **Jupiter**, the two brightest planets, shining close together in the east.



Riding high in the northeast sky as darkness descends is a striking zigzag row of five stars marking the Queen of Ethiopia, **Cassiopeia**. Few star patterns have a shape so easy to remember: a neat "M" or "W" depending upon on its position and which way you face. The Greeks added a nearby additional fainter star to the five main stars, so that the six together outlines Cassiopeia's Chair.

At this time of the year, as Cassiopeia ascends the early evening sky, she actually seems to resemble a sort of crooked number 3. At around 1 a.m. local daylight time, you'll find her nearly overhead, soaring high above Polaris, the North Star and

most resembling an "M." At that time, even those living as far south as 20° south latitude (northernmost Chile and northern Australia as examples) can see the Queen, hovering directly above their northern horizon.

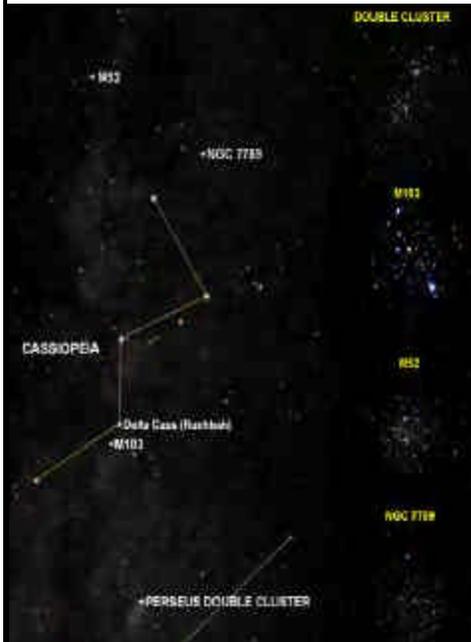


Cassiopeia circles in the north opposite to the **Big Dipper**, and so near to the pole that, like the Dipper, she too, never goes below the horizons of mid-northern latitudes. Cassiopeia lies almost completely within the Milky Way, embedded in some marvelous star fields. In contrast to the region around **Sagittarius** (which marks the center of our galaxy), in Cassiopeia we are looking out toward the outer edges of our galaxy. Nonetheless, there probably isn't a better place to start observing on a clear, crisp autumn night. If you own a pair of binoculars, there is excellent "sweeping" all through this part of the sky.



One object that will immediately catch your attention actually belongs not to Cassiopeia, but to an adjacent pattern of stars that represents her future son-in-law, **Perseus**. If you extend an imaginary line roughly 1½ times the distance from the star **Gamma** to **Delta Cass** (also known as

Ruchbah) and beyond, you'll come across a faint blur of light which binoculars will readily reveal as two magnificent clusters of stars.



An even more beautiful spectacle awaits you with a small telescope with low power. Popularly known simply as "**The Double Cluster**" it is indeed, one of the most brilliant telescopic sights in the sky.

There are other fine clusters of stars intermingled within Cassiopeia. Concentrate especially on that area between Ruchbah and **Epsilon Cass** for a beautiful field of stars, which includes the galactic star cluster **M103** as well as a couple of nearby smaller clusters.

Look also for an extremely rich swarm of faint stars not too far to the west of **Caph**, known as **NGC 7789**. Discovered in 1783 by William Herschel's sister Caroline, it has been described as appearing like a large cloud of small stars on a ground of stardust. In his classic observing handbook "Cycle of Celestial Objects," Admiral William H. Smyth (1788-1865) called it "a vast region of inexpressible splendor."

From descriptions such as these, it is obvious that you'll certainly enjoy exploring the region around Cassiopeia on dark nights. An amazing profusion of celestial treasures awaits you. Such treasures indeed seem especially fitting for a Queen!



Frontiers of Astronomy Lecture Series



Frontiers of Astronomy is a free lecture series that offers those with an interest in astronomy the chance to learn about some of the latest research in the field. Presentations are held at The Cleveland Museum of Natural History in Murch

Auditorium on Thursdays at 8 pm. No tickets or reservations are required. On clear evenings, the Museum's Ralph Mueller Observatory will be open afterward. Selected Thursdays, 8 pm. No tickets or reservations required. For more information, call (216) 231-4600, ext. 3362 or 3253.

Black Holes in the Universe: From the Sublime to the Essential Dr. Karl Gebhardt, University of Texas at Austin

Thursday, November 18, 8 pm

Black holes are among the most mysterious and important objects in the Universe. Once thought to be destructive forces, they may actually be creative ones. Black holes have been detected and measured at the centers of scores of galaxies, and a basic correlation exists between the evolution of their masses and those of their host galaxies. Karl Gebhardt highlights some of the more exciting recent observational discoveries in this field and describes their implications.

Light in the Darkness: The Role of Mass, Energy and Gravity in Modern Cosmology

Dr. Stacy McGaugh, University of Maryland

Thursday, December 9, 8 pm

We live in a vast, expanding Universe full of luminous wonders like stars, galaxies and quasars. These beacons of light are thought to be but a small part of a cosmos dominated by dark matter and dark energy. Stacy McGaugh describes why we think these invisible components are necessary, and examines the possibility that they may instead point to the need to extend Einstein's theory of gravity.

How the Milky Way Galaxy Changed with Time

Dr. Robert Zinn, Yale University

Thursday, March 24, 8 pm

The stars and star clusters of the Milky Way provide a "fossil record" of its evolu-

tion from what were probably several protogalactic fragments - huge gas clouds initially composed of only hydrogen and helium - to its current configuration, a typical spiral galaxy. Robert Zinn describes the techniques used to decipher this record, what has been learned and how well this information agrees with studies of distant galaxies, which offer "snapshots" of galaxy evolution as a function of look-back time.

The Evolution of Galaxies in Different Environments

Dr. Jacqueline van Gorkom, Columbia University

Thursday, April 14, 8 pm

The morphologies of galaxies vary from elliptical to spiral, depending on how densely clustered they are. We now know that this so-called density-morphology relationship differs with time. What causes this relationship and why does it change? Does it happen when galaxies are formed (nature), or does the environment affect the evolution of the galaxies (nurture)? Jacqueline van Gorkom presents the most recent data illustrating the density-morphology relationship and explores the various mechanisms that could affect the evolution of galaxies in different environments.

Executive Board Meeting Minutes for 10/19/04

1. ACA board meeting was held on 10-19-04. The meeting started at 7:30 p.m. In attendance were David Jessie, John Crilly, Gary Smith, Tom Mino, Glenn Cameron, Ray Paul, Lynn Laux, Jim Anderson, Rosaelena Villasenor and Pete Flohr.
2. John C. made a motion to defer paying the Kiwanis club for the use of their facility.
3. The board discussed the need for a P.O. Box for the club.
4. What address are we to use as the club contact?
5. Motion was made to change the bylaws format. Further review will follow at the next board meeting.
6. The treasure is not to disperse unauthorized funds for anything whatsoever, except normal operating expenses (newsletter, postage, misc. observatory expenses, etc)
7. The purchase of a laser printer for the club to print the newsletter will need further discussion.

—Pete Flohr, ACA Secretary

Secretary's Minutes for 10/22/04

1. Mr. Geoffrey Landis was the ACA's Guest speaker from the NASA Research center.
2. Secretary's minutes from last meeting were accepted.
3. Gary Smith read the treasures report which can be found in the newsletter.
4. Novembers club meeting will be November 19th at 8:00pm
5. The focus meeting is in need of some new ideas. Please contact Tom Mino or Ray Paul. We also need new committee members.
6. Club President David Jessie thanked everyone who supported the Kiwanis club Rose Remembrance Day.
7. The club recognized the passing of Ray Robinson.
8. Ray Paul discussed the possibility of the ACA holiday dinner being catered.

—Pete Flohr, ACA Secretary

Treasurer's Report: 10/1/04—10/31/04

Total Beginning Assets	\$ 7,866.90
<i>Income</i>	
Interest Earned	\$6.49
50/50 Drawing	\$ 22.00
Merchandise Sales	\$ 10.00
Dues	\$ 90.00
<i>Expenses</i>	
ACA Newsletter	\$ (89.68)
Speaker Dinner Reimbursement	\$ (28.44)
Total Ending Assets	\$7,877.27

Submitted 11- 02- 2004 Gary Smith

From the Veep: SO WHY A TRUSS DOBSONIAN?

Dobsonian telescopes (commonly referred to as "Dobs") are a common sight these days. Most of us know that they are conventional Newtonian reflectors on a novel, simplified altitude/azimuth mounting system. Many of us are aware that the

basic design is credited to John Dobson. Some of us remember that Mr. Dobson's concept was a "people's telescope" - one that could be put together at practically no cost using salvaged materials and unskilled labor. He felt that everyone would want a telescope if it were affordable, and that observing the Cosmos with even a very crude instrument would encourage people to become more spiritual. He wasn't a skilled optician or a trained engineer; his telescopes were crude but fairly effective. Mr. Dobson is still a popular figure among some groups of amateur astronomers (see <http://sidewalkastronomers.com>) and eagerly accepts speaking engagements (see <http://www.johndobson.org>). Despite an obvious lack of formal scientific training he enjoys writing and speaking about "conceptual cosmology", wherein he replaces much of modern physics with ancient Eastern philosophy.

The simplest and least expensive Dobsonian telescopes offered today reflect both acceptance of his basic mounting design and rejection of his philosophy. Modern so-called Dobs are built to a performance standard far beyond his concept. Gone are the broomstick secondary holders, plumbing component focusers, and porthole glass mirrors. Only the mount itself is replicated, and the use of fresh materials and modern manufacturing techniques have brought about large improvements there as well. Folks today expect a Dobsonian telescope to have smooth motions and very good to excellent optics.

Because of the simplicity of the basic mounting, it's possible to build a Dobsonian telescope in which nearly all of the cost is invested in the telescope itself. For many reasons, it is much easier to build an inexpensive, good-quality Newtonian reflector than any other telescope design. Thus, simple modern Dobs represent the most "bang for the buck" of anything on the market. Today the conventional wisdom when recommending a first telescope is to steer folks toward a Dob.

Compromises involved in using a conventional Dob involve two primary areas. First, the altitude/azimuth mounting doesn't permit the telescope to move as the stars appear to. This apparent motion is caused by the earth's rotation and is thus curved. This means that the instrument must be moved manually in two axes to follow an object. There are ways of getting around this, and I'll ad-

dress them later - but they involve added complexity and cost and thus move us away from some of the reasons for choosing a Dob in the first place. Second, the alt/az mounting doesn't permit the simple addition of mechanical setting circles, making it necessary to locate objects manually by the use of charts or memorization. There are ways around this as well, but again they add cost and complexity.

I mentioned "bang for the buck" earlier. How about a brand new 6" F/8 Newtonian telescope complete with accessories for \$200? A 10" for \$500? A 12" for \$900? A 16" for \$1300? You can see why many folks are willing to accept the compromises. For these prices one can acquire a reasonably well-built telescope with surprisingly good optics. Most of these are imports from China or Taiwan - and it's obvious that those factories have come a long way in learning to produce quality mirrors.

We can add features to these telescopes if we wish. An EQ platform may be placed under the base to provide equatorial tracking for \$600 and up. Motors can be added to the mount itself to make it track in both axes or even to automatically locate and point to objects on demand for \$1000 to \$2000. Digital setting circles are easily installed to help locate objects for \$400 or so. We can substitute premium mirrors and intricately machined focusers and mirror mounts. We can replace the solid tube of the telescope with a lighter truss structure which breaks down for transport. Each incremental investment enhances performance but moves us away from some of the economical advantages of the Dob design. In modest apertures (10" and below) most users forego the more expensive addons.

What about larger apertures? Above 12" a truss structure is nearly a requirement for portable use, as the optical tube of a 16" tube Dob weighs around 100 pounds and is the size of a water heater. A truss structure increases the cost of the instrument dramatically - but at the same time it makes other enhancements seem more worthwhile. A fairly high-quality 14" truss Dob with a hand-figured mirror and exotic hardware (mirror mounts, focuser, etc.) can be had for around \$2000. That may sound like a lot - but there's no more affordable way to acquire that much aperture with that much quality. Add motors for GoTo operation and you're still only at \$4000, and you have a setup that will travel in a passenger car and can easily be set up by one person.

All this explains why there are so many \$6,000 18" Obsessions and \$8,000 18" Starmasters out there. They are still called Dobsonians though they bear little resemblance to the crude "people's telescope" of John Dobson's dreams. What they offer is superb optics, beautifully crafted mechanical components, and amazing performance with substantial aperture in a portable package.

—John Crilly

Ramblings from the President

I'm not exactly sure why we got to see that beautiful lunar eclipse last week. All indications were bad - not only was it at the end of October (the beginning of the most overcast weather of the year) but also the weather forecasts indicated at least total cloud cover if not rain. All I can say is that we must be doing something right! While we did have some clouds, conditions were far better than the total washout that was expected. I was committed to doing an observing program in Stow for the Parks Department and saw the event from there with the help of several members. Many members, of course, were at our observatory in Portage Lakes State Park and viewed, photographed and showed this beautiful celestial display to visitors. Despite the mid-week timing, the threat of bad weather, and the fourth - and it turned out final - World Series game, we had many interested visitors at both locations. Speaking of the final World Series game, the fact that the 'Curse of the Bambino' was broken on the night of a total lunar eclipse probably will transfer the belief in one superstition to another in the minds of many. A photograph was posted to one of the many astronomy related internet groups I frequent and I've included it here. Created by Solar imaging guru Paul Hyndman, you really should check out his website at <http://www.astro-nut.com> All his images are wonderful but his Solar images are simply incredible. On another note, I'd like to thank Debbie Crenshaw for the delicious cakes she brought to our October meeting at the Kiwanis Civic Center! Thanks, Debbie! We are all indebted to your culinary skills. Members! Don't forget to help Debbie by making at least a small donation to fund her efforts at our next meet-



Image created by Paul Hyndman and used with his permission

ing which is, uncharacteristically, on the THIRD Friday of this month rather than the fourth as is most often the case. Everyone please have a wonderful Thanksgiving and let's remember to give thanks for all the marvelous astronomical events we've had this year!

—Dave Jessie

Observatory Director's Report

Every once in a while we just get lucky. On last Tuesday, the 26th of October, the weather forecast for the following evening basically called for clouds and possible rain. Lo and behold, by noon on Wednesday the skies were filled with clear blueness; on the evening of a total lunar eclipse, imagine that. We did have a large patch of clouds move in which socked us in for about an hour but it coincided perfectly with the period of totality during which nothing much happens. So we got to see the full ramp up to totality and the full decline of the eclipse on either side of the cloud cover.

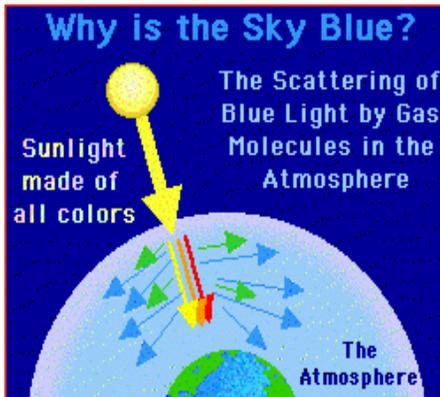
Lynn Laux and I set up her SAC4 camera on the piggyback refractor on top of the club scope. Using a .5 focal reducer on the 600mm scope we were able to get very nearly the whole moon on her chip. She took about 150 shots during the course of the eclipse and later condensed them into a photo mosaic which hopefully you can see on the club website by now. Very nice. Many thanks to everyone who set up a scope on that night. I believe we had about 50 visitors and with all the scopes, binoculars, and main scope to look through, coffee and doughnuts too, everyone seemed to enjoy the show.

Don't forget the open house and star party this Saturday, Nov 6. According to Dick Goddard we are entering the three cloudiest months of the year. It might be your last chance to observe for a while. For the last one on Oct 16 it was raining but we still had about 20 visitors. If you want to

talk "shop" regardless of the weather, stop out at 7:30 pm.

—Ray Paul

Did You Know?



Sunlight is made up of all the colors of the rainbow: **red, orange, yellow, green, blue, and violet**. The gas molecules in the atmosphere interact with the sunlight before the light reaches our eyes. The gas molecules in the atmosphere scatter the higher-energy (high frequency) **blue** portion of the sunlight more than they scatter the lower-energy **red** portion of the sunlight (this is called Rayleigh scattering, named for the physicist Lord John Rayleigh). The Sun appears reddish-yellow and the sky surrounding the Sun is colored by the scattered blue waves. When the Sun is lower in the horizon (near sunrise or sunset), the sunlight must travel through a greater thickness of atmosphere than it does when it is overhead, and even more light is scattered (not just blue, but also green, yellow, and orange) before the light reaches your eyes. This makes the sun look much redder.

—Zoom Astronomy

Planetarium Presenter Needed

The Hoover-Price Planetarium at the McKinley Presidential Library and Museum is looking for a new presenter. This individual must be knowledgeable in astronomy and cosmology and be able to present to groups in a friendly, articulate and professional manner. Must be familiar with Windows 98 and willing to learn Spitz A3P controls. Presenter needs to be able to work flexible hours during weekdays. For additional information, call **David Richards**, Planetarium Director, at the Museum at **330-455-7043** or evenings at **330-966-3912**.



Lunar Eclipse: October 27-28, 2004
Sequence taken from 8:15 pm to 1:10 pm
Orion Astroview 100mm
SAC IV 4/13
Piggybacked on Meade 14" LX200GPS
Astronomy Club of Akron Observatory, Portage Lakes, Ohio
by Lynn M. Laux & Ray A. Paul

Welcome!

Welcome, new ACA Members!

The ACA wishes to extend a warm welcome to new members...

**Carol Hosfeld
Donald Johnson & Family
Andrew Marek
Steve Rohweder**

We look forward to seeing you at all club events!

Article Submission

Please note the change in the deadline for article submission. All articles are due **the second Tuesday after the last meeting**. In the summer months, when there is no meeting, the deadline is **the second Tuesday after the fourth Friday (the day we would have met if there was a meeting) of the previous month**. This has been revised in order to get the newsletter into the mail **2 weeks after the last meeting or 4th Friday of the previous month**. All word processing files should be saved in any version of **Word** to minimize import problems.

If you don't have access to a computer, don't hesitate to write something out long hand.

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

**Lynn M. Laux
14274 Bridle Trail
Strongsville, OH 44136**

Or email:
gemmalady@msn.com



If you have any pictures of club events, astronomical images, rig pictures and the like, please submit them to:

<http://groups.yahoo.com/group/astronomyclubofakron>

