



The Observer

A Publication of The Cuyahoga Astronomical Association
PO Box 868, North Olmsted, OH 44070

2001 CAA Schedule

Monday, September 10

CAA General Membership Meeting at 8 p.m. in the Cleveland Metroparks Rocky River Nature Center. John Garvey will be our speaker this month. John will present "Albert Einstein".

Saturday, September 22

CAA presentation and star party at 8 p.m. at the Letha House Warm Up Room and CAA Observatory. Please bring your telescopes for the public star party that will follow the presentation. We need a speaker for this event. If interested in giving a talk, please contact Albert Matyas.

Monday, September 24

The meeting location for this month's board meeting has changed. The CAA Board Meeting will be held at 7 p.m. at Starbucks Coffee Co. Starbucks is located at 24950 Lorain Road, just west of Columbia Road in North Olmsted.

Monday, October 8

CAA General Membership Meeting at 8 p.m. in the Cleveland Metroparks Rocky River Nature Center. Program to be announced.

Saturday, October 20

CAA presentation and star party at 7 p.m. at the Brecksville Nature Center. We are looking for a speaker for this event to give a talk about Beginning Astronomy & What's up in the sky tonight. Please bring your telescopes for the public star party that will follow the talk in the Meadows picnic area.

If you are interested in giving a talk, please contact Al Matyas.

Saturday, October 27

It's that time of year again. Once again the Brunswick Hills Fire Department and the Medina County Park District are sponsoring the annual Halloween Bon Fire from 5 p.m. to 8 p.m. at Plum Creek Park which is just south of Sleepy Hollow Road on Plum Creek Parkway in Brunswick. It will be held rain or shine. A map will be provided in the October issue of *The Observer*. The CAA will provide telescopes at dusk for public stargazing. This event is usually well published and attended, so we will need a strong turnout with your telescopes.

Last year's turn out was great. We expect this year to be better. So, mark your calendars and prepare for a great time again this year.

Monday, October 29

CAA Board Meeting at 7 p.m. at Starbucks Coffee Co. Starbucks is located at 24950 Lorain Road, just west of Columbia Road in North Olmsted.

Saturday, November 3

Annual Twilight to Midnight event in the Cleveland Metroparks from 5 p.m. to midnight at The Chalet Recreation Area. The Chalet is located at 16200 Valley Parkway. A map will be provided in the October issue of *The Observer*. We need some volunteers to help out with some talks. The first talk will be at 7 p.m. and will be a general what's up in the night sky type of talk. The second talk will be on how to choose a telescope. We need some volunteers to bring their

scopes and talk about them (advantages, disadvantages, why you chose the type of scope you have, etc.). This talk will be between 10:15 p.m. and 10:30 p.m. Each talk is scheduled to last approximately 30 minutes. If you are interested in participating in any of the scheduled talks, please contact Al Matyas. The CAA will provide telescopes for public stargazing at dusk. This event is usually well published and attended, so we will need your telescopes.

Monday, November 12

CAA General Membership Meeting at 8 p.m. in the Cleveland Metroparks Rocky River Nature Center. This month we will be holding an election for the following 4 positions: Vice President, Secretary, and 2 Board Members. CAA member Chris Burke will be our speaker this month. Chris will present "Astrophotography".

Monday, November 26

CAA Board Meeting at 7 p.m.
Location to be determined.

Monday, December 10

CAA Christmas Party at 6 p.m. at the U.S. Coast Guard Club at the base of East 9th Street in downtown Cleveland. More details to follow.

Sky Events for September 2001

Saturday, September 1

The moon passes 3° south of Uranus, 3 a.m. EDT.

Monday, September 10

The moon passes 0.2° north of Saturn, 9 a.m. EDT.

Moon Phase Calendar for September, 2001

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 ☉
2 ☉	3 ☉	4 ☉	5 ☉	6 ☉	7 ☾	8 ☾
9 ☾	10 ☾	11 ☾	12 ☾	13 ☾	14 ☾	15 ☾
16 ☾	17 ☾	18 ☾	19 ☾	20 ☾	21 ☾	22 ☾
23 ☾	24 ☾	25 ☾	26 ☾	27 ☾	28 ☾	29 ☾
30 ☾						

Moon Phase Calendar for October, 2001

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 ☉	2 ☉	3 ☉	4 ☉	5 ☉	6 ☉
7 ☉	8 ☉	9 ☉	10 ☉	11 ☉	12 ☉	13 ☉
14 ☉	15 ☉	16 ☉	17 ☉	18 ☉	19 ☉	20 ☉
21 ☉	22 ☉	23 ☉	24 ☉	25 ☉	26 ☉	27 ☉
28 ☉	29 ☉	30 ☉	31 ☉			

Wednesday, September 12

The moon passes 1° north of Jupiter, 8 a.m. EDT.

Saturday, September 15

The moon passes 3° north of Venus, 3 a.m. EDT.

Tuesday, September 18

Mercury is at greatest eastern elongation (27°), 6 p.m. EDT.

The moon passes 8° north of Mercury, 10 p.m. EDT.

Thursday, September 20

Mercury passes 0.9° south of Spica, 4 p.m. EDT.

Venus passes 0.5° north of Regulus, 4 p.m. EDT.

Saturday, September 22

Autumnal equinox is at 7:04 p.m. EDT.

Monday, September 24

The moon passes 2° north of Mars, 9 p.m. EDT.

Wednesday, September 26

Saturn is stationary, 11 p.m. EDT.

Thursday, September 27

The moon passes 3° south of Neptune, 1 a.m. EDT.

Asteroid Fortuna is at opposition, noon EDT.

Friday, September 28

The moon passes 3° south of Uranus, 7 a.m. EDT.

Sky Events for October 2001

Sunday, October 7

The moon passes 0.5° north of Saturn, 3 p.m. EDT.

Tuesday, October 9

The moon passes 1.4° north of Jupiter, 8 p.m. EDT.

Saturday, October 13

Asteroid Laetitia is at opposition, 11 a.m. EDT.

Mercury is in inferior conjunction, 10 p.m. EDT.

Sunday, October 14

The moon passes 4° north of Venus, 10 p.m. EDT.

Sunday, October 21

Orionid meteor shower peaks.

Tuesday, October 23

The moon passes 0.1° south of Mars, 4 p.m. EDT.

Wednesday, October 24

The moon passes 3° south of Neptune, 8 a.m. EDT.

Thursday, October 25

The moon passes 3° south of Uranus, 1 p.m. EDT.

Monday, October 29

Mercury is at greatest western elongation (19°), noon EST.

Club News / Stories

**Cuyahoga Astronomical Association
Financial Report
September 3, 2001**

Bank Account Balance 8/7/01	\$1073.58
Cash On Hand 8/7/01	\$ 599.34
Total Assets 8/7/01 (approx.)	\$1672.92
Bank Account Activity:	
Deposits:	
8/14/01 Transfer From Petty Cash	\$ 618.00
8/14/01 Dues, Shirt & LED Sales	\$ 301.00
8/16/01 Interest	\$ 0.93

Expenditures:	
8/9/01 Observer's Handbooks	\$ 337.50
8/13/01 Newsletter	\$ 34.00
Bank Account Balance 9/3/01	\$1622.01
Petty Cash Activity:	
Deposits:	
8/13/01 Coffee Money	\$ 10.00
8-13-01 Memberships, 2002	\$ 114.95
8/13/01 Donation	\$.05
Expenditures:	
8/14/01 Transfer To Checking Account	\$ 618.00
Cash On Hand 9/3/01	\$ 106.34
Total Assets 9/3/01 (approx.)	\$1728.35

Art Nenadal, Treasurer

November Elections

This November the offices of Vice President, Secretary, and 2 Board Members will be filled through elections at our November general membership meeting. Each position has a term of two years.

The following officer's terms end December 31, 2001:

1. Vice President: Al Matyas.
2. Secretary: Jeff Lewis. Yours truly has volunteered to serve another 2 year term.
3. Board Member: Chuck Reinhart. Chuck is already our Observatory Director and is not interested in serving another term. Carl Kelley has volunteered to fill this empty board position.
4. Board Member: Dolores Stebner.

Newly elected officers' terms will begin January 1, 2002, and end December 31, 2003.

If anyone is interested in volunteering and running for any of these positions, please let one of our current officers know. We would like to see more names on the ballot, so please consider stepping up to the plate and running for one of these positions. Any member in good standing who has attended half of the meetings during the past two years is eligible.

It's CAA membership dues time again, again

It's that time of year again. Your membership expires at the end of this year. So before you blow your budget on Christmas shopping, please drag out your old checkbook and renew your membership with us. The board has held membership dues at their current levels for 2002. Dues should be paid by November 1 of each year.

Remember that we offer you the exceptional opportunity to renew existing magazine subscriptions at a good discount. Now is a good time to check what subscriptions you want. Don't forget to include your subscription number or mailing address label from the magazine for your current subscription so you won't be seen as a new subscriber. If you don't pay by October 1, 2001, we can't guarantee uninterrupted service for your magazine subscriptions. So, to take advantage of this discount plan you must have your dues form in early with, of course, the money. Your new subscription will be tagged onto the end of your current subscription. You can also purchase one of the best observing handbooks printed, *The Observer's Handbook* by The Royal Astronomical Society of Canada, at a good discount as well.

So please fill out the attached "2002 CAA Membership Dues & Subscription Order Form", and either bring it with you to one of our upcoming general membership meetings, or mail it to our P.O. Box, which is on the form.

Sign Up for Observatory Training

There will be a sign up sheet for observatory training at the September general membership meeting. If you are unable to attend the September meeting but would still like to sign up for observatory training, please contact Bob Wiersma or Chuck Reinhart to sign up.

Looking Up By Charles H. Grace

MORE ABOUT THE

MICHELSON-MORLEY EXPERIMENT

This is the second of three parts. Albert Michelson and Edward Morley (M & M) conducted an experiment to test the popular "ether hypothesis," which was that light and other electromagnetic waves are propagated through some kind of transparent fluid that fills all of space. Michelson was a Case professor and Morley a Western Reserve professor. This tells how they did their famous experiment, which was done in a basement in Cleveland.

It is difficult to describe the apparatus without diagrams, but here goes. Schematically, Michelson's interferometer consists of two arms set at right angles to each other in an L shape. Each arm has a mirror at the far end. At the intersection where the arms are joined there is a half-silvered mirror, toward which a light beam is directed. The half-silvered mirror splits the light beam in two. Each half of the split beam travels down one of the arms and is reflected back by the mirror at the end of its arm.

Thus, a monochromatic beam of light is divided by a half-silvered mirror, sent along two orthogonal paths, and later brought back together by further mirrors. When the two beams are recombined, they interfere in such a way as to produce a pattern of fringes. The pattern produced depends upon the difference in elapsed time required for the two beams to make the round trip.

If the entire apparatus is rotated through 90 degrees, the roles of parallel and perpendicular arms are reversed; the fringe pattern would shift if the difference in travel times changed. As explained last month, if they are moving in a medium such as ether, the beam traveling crosswise to the direction of flow will take less time to make a round trip.

The interferometer was on a heavy block of stone mounted on a disc of wood. The disk floated in a tank of mercury, so it could be rotated smoothly, arms and all. To increase the light path each of the interfering beams was reflected back and forth several times; four mirrors were used

to replace each of the single mirrors in the simple form of interferometer, to provide a total path length of 1100 cm.

The apparatus was first set so that one path lay in the direction of the earth's orbital motion, then the apparatus was turned through a right angle, so that the beams of light interchanged their roles. The beam which, in the parallel first position, traveled the slower, would travel the faster in the transverse second position. The two beams in the interferometer formed a system of interference fringes, and this fringe system could shift when the apparatus was rotated so as to pass through the two positions.

According to the ether hypothesis the interference fringes formed in this interferometer should have moved as the apparatus was slowly rotated a quarter turn. They didn't. The expected fringe shift due to the earth's orbital speed was four-tenths of a wavelength; however, no shift as large as even four-hundredths of a wavelength was observed.

Moreover, the experiment was carried out both at midday, when the earth's velocity relative to the sun was in the plane of the apparatus, and at 6 pm, when the velocity was normal to the plane of the apparatus.

This marvelous experiment posed an apparent dilemma about the speed of light. The October installment will tell about Albert Einstein's ultimate solution of the puzzle, and more about the people involved in the work. References will be given at the end of October.

Swap Corner

For Sale: Celestron 9.25" OTA less than 1 year old and in excellent condition. This is a great performer offering decent aperture in a manageable package. Includes 6 X 30 finder, telrad base, visual back, 90 degree diagonal, dovetail mounting bracket, dust cover, premium dew shield, dew heater strap (homemade) and 25mm plossl eyepiece. I've decided to upgrade my 12.5" Starmaster dob with a new equatorial tracking platform and need the \$\$\$. The C 9.25 is hard to get

The C 9.25 is hard to get and usually on backorder. You can have this like-new instrument now for \$1,050. I also have a f-6.3, reducer/corrector, LNIB for \$80.00. If interested and want a look, let me know, currently in my observatory. Lon Dittrick - 236-6239 or led500@stratos.net

For Sale: Z Optical 10-inch F-5 premium Dob. It has a NGF 2-inch low-profile focuser with a 1 1/4 inch adapter, a Telrad, a custom counterweight, and brass carrying handles. It has a high quality mirror. I will also give you the home made fork mount I made for the scope if so desired. Altogether, it's probably worth about \$1200. Will sell for \$600. I am thinking about buying another scope. If interested, please contact Mike Schwab (216) 226-6935.

Upcoming Astronomical Events

Other OTAA Events

Saturday, September 15, 2001: Black River Astronomical Society OTAA convention in Birmingham. See enclosed announcement.

Hidden Hollow Lite

COME ONE, COME ALL
to Hidden Hollow LITE 2001

Our biannual Hidden Hollow Conventions are well known throughout the Midwest, and have received some national attention! The Richland Astronomical Society is proud to announce the all NEW Hidden Hollow LITE! (actually we tried in 99, but it was rained out...)

So, tell all of your friends, get out your scope, pack the family and a snack in the car and come out to the Hidden Hollow Campgrounds (the same place we hold the Hidden Hollow Convention).

This is going to be a fun night for all of us! How often do you get to view a dark sky through a 31" f/7 telescope?

There will be:

NO vendors to disturb you!

NO speakers to talk you ears off!

NO registrations to get lost!

NO fees to pay (there will, however, be a donation box set up to help us defray the cost of the porta-pot – we suggest \$5.00 per car/group).

NO clouds to interfere with your views (hope, hope, pray, pray – You all know this one is out of our hands, right?)

When is this wonderful event? Friday, October 12, 2001 at the Hidden Hollow Campgrounds (Home of the Richland Astronomical Society and the Warren Rupp Observatory). We will open the observatory about 1 hour before sunset (about 6:00 p.m.).

How long will this last? ONE NIGHT ONLY!! – IF (and only IF) Friday night gets canceled due to weather – We will hold HH-LITE on Saturday, October 13, 2001 (the next night). If THAT gets canceled due to weather, then we will have to wait for 2003 for this new event!

How do I get there? Maps can be found on the website www.wro.org or email me at grilley@richnet.net (the website MAY be down in the next few days – we are having a dispute/discussion with our server host and might have to move to a new server).

If you have any other questions feel free to email them to me.

Clear skies,

Mike Grilley

Webmaster, WRO/RAS/ANO

President, RAS

Other News / Stories

The Nathan & Fanny Shafran Planetarium at the Cleveland Museum Of Natural History

Countdown! Update #8!

Where we've been...

★ Since the Museum opened its first planetarium in 1936, we've been a resource for Northeast Ohio teachers. Twenty percent of the 70,000 schoolchildren who visit the Museum in an average year participate in planetarium programs.

Where we're going...

★ Programs in the new Nathan and Fanny Shafran Planetarium will interpret the latest scientific research and provide students with valuable astronomy instruction to meet Ohio's science proficiency requirements.

★ The planetarium's new equipment will greatly increase the range of astronomy topics that can be presented. Special programs for preschool-age children, such as "Twinkle, Twinkle Giant Star," will be added to the roster of entertaining, informative shows.

★ The Shafran Planetarium will continue to feature live shows that astronomy instructors customize for each audience's needs. This is in contrast to the national trend of presenting impersonal, canned shows.

For more information about educational programming in the Shafran Planetarium, call (216) 231-4600 or 800-317-9155, ext. 272.

Note From The Desk of The Editor

I am always looking for articles for *The Observer*. If there are any aspiring authors out there who want to contribute an article, share a story or observation, etc. please do so, and I will include it in the next edition. Also, if you have any items for sale, or if you are looking for any items, send these in and I will include it in the *Swap Corner*. Remember, this is your newsletter, and participation from the general membership can only make the newsletter better. Please send articles, items for sale, items wanted, suggestions, and/or comments to:

Jeff Lewis

5623 Allendale Drive

North Olmsted, OH 44070-4622

Or you can send them via e-mail to bruisse@ameritech.net.

Thanks and Clear Skies!