



OBSERVATIONS



A MONTHLY PUBLICATION OF THE
Chester County Astronomical Society

★ *President:* Mike Turco
★ *Treasurer:* Pete LaFrance

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★ *Vice President:* Steve Limeburner
★ *Secretary:* Doug Liberati

http://members.tripod.com/~ccas_2/ccas.html

CCAS June Meeting & Observing Session

The next meeting is scheduled for Friday June 30 (cloud date is Saturday July 1). In June, July, and August we combine our meetings with the Observing Session at the Brandywine Valley Association. Before darkness falls, we tend to whatever business needs to be taken care of. There may or may not be a informal presentation of some kind. The Observing Sessions then start at about 8:30 p.m., when it becomes fully dark. At the observing sessions, there is help available to set up and use your telescopes. If you're having trouble using your telescope, or finding your way around the sky, come on out and get some assistance. All members are invited whether they have a telescope or not. Telescope owners are always glad to share the view through their `scope. CCAS Observing Sessions are always free of charge. Children are always welcome.

To get to the observing site at the BVA, turn off Route 842 into the parking lot by the office: look for the signs to the office along Route 842. From that parking lot, go up the farm lane to the left; it's about 800 feet or so to the top of the hill. If you arrive after dark, please turn off your headlights and just use parking lights as you come up the hill.



Public Open House: F & C Observatory

There will be a **FREE** public open house program at the University of Pennsylvania's Flower & Cook Observatory in Malvern, PA on Friday June 23, 2000. The informal program starts at 8:00 p.m. EDT with an "Astro Chat". Guests can ask any questions they have about astronomy, and those present will try to answer them. If the skies are clear, there will be observing with the Observatory's telescopes. Children are of course welcome as long as they are accompanied by an adult. The Observatory is located on Providence Road, just west of the intersection with Warren Avenue. A map is included on a later page. Also see the Calendar Notes for a listing of upcoming open house programs at the F & C Observatory.



Calendar Notes

June 20, 2000 9:48 p.m. (Tuesday)	Summer Solstice Summer begins!
June 23-25, 2000	Mason-Dixon Star Party York, PA
July 28/29, 2000 (Friday)	CCAS Meeting & Observing Session BVA 8:00 p.m. EDT
August 25/26, 2000 (Friday)	CCAS Meeting & Observing Session BVA 8:00 p.m. EDT



Summer Solstice: June 20

On Tuesday June 20 at 9:48 p.m. EDT, the Sun stops its northward journey in our sky, and starts heading south again. This event marks the start of summer in the Northern Hemisphere, and the start of winter in the Southern Hemisphere.



Mason-Dixon Star Party: June 23-25, 2000

The 11th Annual Mason-Dixon Star Party is being held on Friday June 23 through Sunday June 25 this year. This excellent star party, with good dark skies, is hosted by the York County Astronomical Society and the York County Department of Parks and Recreation. It is held at Spring Valley County Park, south of York, not far off Interstate 83. It's not hard to get there from here. This year's guest speaker is Dr. Larry Marshall of Gettysburg College. Ed Lurcott has heard Dr. Marshall before, and says that he is a good speaker. Several members of our Society have attended the York Star Party in previous years, and all have reported enjoyable experiences (well, except for that one year it rained most of the time...). For more information, contact Ed Lurcott at 610-436-0387. He has copies of the information flyer and the registration form.



President's Message June, 2000

It's just not the same at night when the big planets are not within range of a telescope. Viewing the Jovian and Saturnian systems is always a treat. Jupiter and its larger moons present a dynamic miniature system. From Earth however we cannot see the great differences in the Galilean moons. Each has a spectacular character of its own. None however is more spectacular than Io.

The Galileo spacecraft has made three close flybys of Io, taking dramatic photos and instrument readings of a world like no other. Io is about the size of Earth's Moon and orbits about 260,000 miles above Jupiter, not much different than the Earth - Moon distance. Yet Jupiter is so big and massive when compared to Earth that its effects on its closest moon are much more drastic. As recently reported on MSNBC, Galileo "found oceans of soupy lava, molten rock spewing from superheated geysers and vast sulfur plains, like fields of yellow snow, punctuated with streaks of green and spots of vivid red." Alfred McEwen, a planetary geologist at the University of Arizona, characterizes Io as a world where, by Earth standards, there is never a pleasant day. At its coldest, Io's temperatures drop to minus 280 degrees F, while in the lava lakes the temperatures reach almost 3,000. "This is the greatest temperature range of anything in the solar system," says McEwen.

Because of its position relative to Jupiter and Jupiter's other moons, Io is constantly being churned and pulled by tidal forces. McEwen stated that every 42 hours, every point on Io goes from high tide to low tide, with its rocky surface rising and falling by up to 300 feet or more. This constant tidal motion is what triggers the endless volcanoes. "The dimensions of Io are constantly being squeezed and expanded," McEwen said. "That's like bending a piece of metal back and forth - it heats up."

Along with McEwen, John R. Spencer of the Lowell Observatory in Flagstaff, AZ co-authored a study on Io that appeared in a recent article in the journal *Science*. "There are an awfully lot of quakes going on," said Spencer. "If you were on Io, everything around you would be rising up and down by at least 30 meters every day. It would be like being on a boat in the ocean."

Io's atmosphere is one-billionth as dense as Earth's and is mostly sulfur dioxide. Io spews out so much sulfur gas that the entire complex of moons and natural satellites around Jupiter is affected. "There is a huge cloud of glowing gas that has escaped from Io and is just hanging around in Jupiter's magnetosphere now," said Spencer. Studies suggest that sulfuric acid deposits, possibly from Io, cover large areas of Europa.

Spencer also said that, by some estimates, Io is slowly shrinking, at the rate of about one ton every second, due to evaporated rock being ejected into space. Over the 4.5 billion

years of the solar system's existence, Io has shrunk approximately two miles in diameter. But since it is 2,000 miles in diameter, it is not expected to ever boil away to nothing.

McEwen said that Io is melting and remelting itself. "We estimate that Io has been completely melted at least 400 times - and perhaps as many as 4,000 times - over the age of the solar system"

So, the next time you peer through your eyepiece at the big planet, seek out its closest moon. Take a good, long look at it and imagine the extreme temperatures, the heaving, lava-flowing surface, and the gases being ejected into space. So much different than a quiet evening on Earth.

By the way, the gas giants are now appearing for your viewing pleasure in your SE skies about one hour before sunrise, and are quite close together (from 1.5 degrees apart on June 1 to 4 degrees by June 30). Enjoy the show and exercise your imagination.

Mike Turco



June Skies

Moon Phases

New Moon	6/02
First Quarter	6/08
Full Moon	6/16
Last Quarter	6/24

The Planets

Mercury is in the evening sky in June, making it's best appearance of the year during the first 10 days of the month. It will be visible low in the western sky after sundown, as it gets dark. Try to spot this elusive planet; this is your best chance this year.

Venus is lost in the Sun's glare for most of June.

Mars is lost in the Sun's glare this month.

Jupiter rises shortly before the Sun in June.

Saturn is near Jupiter for most of the month, in the morning sky. Near the end of June, they will form pretty arrangements with the waning crescent Moon and the Pleiades.

Uranus and Neptune are in the constellation Capricornus. They rise in the east at about midnight in June.

Pluto is in the constellation Ophiuchus, in the evening sky during June. Determined hunters will need dark skies, at least an 8" telescope, a good finder chart, and plenty of patience in order to bag Pluto (a 14th magnitude pin-prick of light).



M64, The Black-eye Galaxy
In Coma Berenices

For Sale: Meade 10" f/10 LX-200 Telescope

Frank Angelini is selling this telescope, along with the following accessories: Milburn Wedge, original hard shell case, an assortment of eyepieces (4mm --40mm), a glass-type solar filter, and much more. The GO-TO software has all the latest updates. This is a fantastic package deal for either the beginner, or the serious veteran, at \$2500.00 for the whole outfit.

Frank's phone number is 610-873-7929.



What's the Weather Tonight?

While visiting one of my favorite weather Web-sites last week, I noticed they had a link to something called "Star-cast". So I thought I'd give it a try. It has a link to a color-coded US map, giving predictions for observing conditions (4 levels: poor, fair, good, excellent). You can also click to see the prediction for the following day. They also have a link to a page of "highlights" on what is visible that night.

If interested, point your Web browser at

<http://www.intellicast.com/star/>

then click on the [Sky Watch](#) link, and that will take you to the map. As mentioned, they have a link to "tonight's highlights" on both pages.



CCAS Newsletters Now Available via E-mail

You can now receive the monthly newsletter by e-mail. When the newsletter is finished, I convert it to a special type of file (a .pdf, for Portable Document Format) using a utility called Adobe Acrobat. Then all you need on your PC, besides an Internet connection with e-mail, is the Adobe Acrobat Reader program for your PC or Mac. This program is available free of charge from Adobe. Just connect to their Website at www.adobe.com and follow the links and directions for downloading and installing the correct Reader program for your PC or Mac. On the main screen (home page) of Adobe, at the top look for a "button" labeled "Products" and click it. On the next screen, scroll down to where it says "Adobe Acrobat Reader", and click that. Then click on "Download Now". Make sure the version number of the Reader you get is at least 4.0 because I'm using Adobe Acrobat version 4.0 to make the .pdf files. If you have an earlier version of the Reader, like 3.0, you'll have problems reading the files I make with Acrobat 4.0. The 4.0 Reader, however, can read 3.0 files without a problem, so if you're currently using a 3.0 Reader you will still be able to read older files produced by Acrobat 3.0 if you upgrade your Reader to 4.0.

Once you've done that, then just send me an e-mail to let me know you want to switch to e-mail delivery of the newsletter. The biggest advantage of getting your newsletter this way is you get it two to three days earlier. Another of the advantages

of getting the newsletter this way is that the photos and/or drawings that are color in the original will be in color in your copy of the newsletter. When we make the paper copies for mailing, they get copied in black & white, and sometimes the copy quality of pictures is not good. Another advantage is that getting your newsletter by e-mail will save the Society money in copying and mailing expenses. In the past year some issues have cost the Society \$75.00 and more in copying and mailing costs. So if you want your newsletter by e-mail, send me an e-mail at sny114@aol.com and I'll get you set up on the e-mail distribution list.



Contributing to Observations

Contributions of articles relating to astronomy and space exploration are always welcome. If you have a computer, and an Internet connection, you can attach the file to an email message and send it to the editor at SNY114@aol.com Or mail the contribution, typed or handwritten, to:

Jim Anderson
19 Bluff Road
Thorndale, PA 19372-1104



CCAS Website

Pete LaFrance has set up a Web page for the Society on the World Wide Web (Internet). He has included some pictures taken by CCAS members. Check it out at:
http://members.tripod.com/~ccas_2/ccas.html

Pete welcomes any additions to the site by Society members. The contributions can be of any astronomy subject or object, or can be related to space exploration. The only requirement is that it is your own work; no copying copyrighted material! Give your contributions to Pete LaFrance (610-268-2616).



AL Observing Programs

One of the benefits of joining the CCAS is that you also become a member of the Astronomical League, a national federation of astronomy clubs. The AL has a series of Observing Awards, and 4 observing clubs based on these awards have been started in the CCAS. These are the Messier Club, the Binocular Messier Club, the Lunar Club, and the Double Star Club. Working on these awards also gives you a plan of observing: "What will I look at tonight?" becomes "Which Messier objects are visible tonight that I haven't seen yet?" Each club has a volunteer coordinator:

Messier Clubs (both): Frank Angelini (610-873-7929)
Lunar Club: Ed Lurcott (610-436-0387)
Double Star Club: Jim Anderson (610-380-4512)



CCAS Lending Library

Our Librarian, Bill O'Hara, has the books in our library all ready for members to borrow. You can drop by Bill's place (call first, of course) to borrow a book. Or you can call Bill before a meeting and ask him to bring a book to the meeting for you. Copies of the catalog are available at CCAS meetings. Bill's phone number is 610-696-1422.



Membership Renewals

Check the date printed on the address label of this issue of *Observations*; "exp." appears in front of it, just after your name. If you are due to renew, you may send your renewal check made out to our Treasurer, Pete LaFrance. Mail to:

Pete LaFrance
413 Church Rd.
Avondale, PA 19311-9785



Sky & Telescope Magazine Group Rates

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of \$27.00, which is much less the newsstand price of \$48.00, and also cheaper than individual subscriptions (\$37.95)! Make out a check to the Chester County Astronomical Society, note that it's for *Sky & Telescope*, and mail to Pete LaFrance. Or you can bring it to the next Society meeting and give it to Pete there. Buying a subscription this way also gets you a 10% discount on other Sky Publishing merchandise.



CCAS Membership Information

The present membership rates are as follows:

- REGULAR MEMBER**.....\$20/year
- SENIOR MEMBER**.....\$10/year
- STUDENT MEMBER**.....\$ 5/year
- JUNIOR MEMBER**.....\$ 5/year
- FAMILY MEMBER**.....\$ 30/year



CCAS Officers

For further information on membership or society activities you may call:

- President:** Mike Turco (610) 399-3423
- Vice Pres:** Steve Limeburner (610) 353-3986
- Treasurer:** Pete LaFrance (610) 268-2616
- Secretary:** Doug Liberati (610) 827-2149
- ALCor and Newsletter:** Jim Anderson (610) 380-4512
- Librarian:** William O'Hara (610) 696-1422
- Observing:** Ed Lurcott (610) 436-0387

