



OBSERVATIONS



A MONTHLY PUBLICATION OF THE
Chester County Astronomical Society

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

MARCH 2002

(VOLUME 10, NO. 3)

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

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

CCAS March Meeting

DATE: Tuesday March 12, 2002
TIME: 7:30 p.m. EST
PLACE: Department of Geology and Astronomy Lecture Room (Room 113 – Boucher Building) West Chester University
LOCATION: South Church Street West Chester, PA (see map)

CCAS member Roger Taylor will share a talk with us called “Galileo’s World.” Roger is a very good and entertaining speaker. Those who have heard his talks at previous CCAS meetings will tell you to make sure you don’t miss an opportunity to hear Roger. Roger also writes a regular astronomy article for *The Kennett Paper*.

Upcoming topics:

April – Jeff Goldader, professor at the University of Pennsylvania, will talk to us about his work on the Hubble Space Telescope.

May – CCAS member Nicholas La Para will discuss “basic optics without math,” an explanation of how telescopes work and the different types of telescopes.



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, March 29 at 7:30 p.m. EST. It will be hosted by WISP, Penn’s Women Interested in the Study of Physics. Two members, Kelle Cruz and Nina Bonaventura, will speak about their research and recent observing experiences at Kitt Peak Observatory (Arizona), Cerro Tololo Inter-American Observatory (Chile), and Mauna Kea Observatory (Hawaii). Don’t miss this one!

After the lecture, there will be observing with the Observatory’s telescopes. The Observatory is located on Providence Road, just west of the intersection with Warren Avenue. A map is included on a later page. Children are always welcome as long as an adult accompanies them.



CCAS March Observing Session

The next CCAS Observing Session will be on Friday March 15, 2002 starting at sunset; or earlier, if you can get there earlier. If it’s too cloudy on Friday, then the Observing Session will be on Saturday March 16, 2002. At the observing sessions, there will be 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 telescope. CCAS Observing Sessions are always free of charge. Children are always welcome as long as an adult accompanies them.

A map showing the location of the BVA is included on a later page.



CCAS Beginning Astronomy Class

The Education Committee of the CCAS is offering a class intended to introduce people to basic astronomy. This series of eight classes will be held on the first and third Tuesdays of each month, starting at 7:00 p.m. and ending at 8:00 p.m. These are the dates on which the remaining classes will be held:

March 5	The Solar System
March 19	Star Charts/Planisphere
April 2	Stars
April 16	Constellations
May 7	Planetarium Field Trip (WCU)
May 21	Telescopes and Binoculars

The classes will be held at the Flower and Cook Observatory in Willistown Township. The FCO is located just a few miles south of Malvern. It is located near the intersection of Warren Avenue and Providence Road, just 0.3 miles west of Warren Avenue on Providence Road. A map is included on a later page.



Newsletter Deadlines

<u>Issue</u>	<u>Deadline</u>
April 2002	03/29/2002
May 2002	04/26/2002
June 2002	05/24/2002

March Skies

Vernal Equinox: March 20

The Sun crosses the equator on March 20 at 2:16 p.m. Eastern Standard Time, marking the official beginning of spring in the Northern Hemisphere. In the Southern Hemisphere, it is the beginning of autumn. Equinox means "equal night," meaning that on March 20 the night is about the same length as the day.

Moon Phases

Last Quarter	03/05
New Moon	03/13
First Quarter	03/21
Full Moon	03/28

The Planets

Mercury appears very low in our morning sky in March, too low for good viewing.

Venus is climbing higher in our evening sky as the month progresses, remaining visible for as much as 1.5 hours after sunset at month's end.

Mars is still in our evening sky. It is not too hard to find, as it is a bright reddish-orange "star" visible in the western part of the sky soon after sundown. It's the brightest "star" in Aries. We are too far away from Mars to see any details in a telescope.

Jupiter is still in Gemini in March, outshining every other star in the night sky. It is almost straight overhead as darkness falls. You can get a good look at Jupiter in a telescope now as soon as it's dark. Jupiter is always fun to look at: on the evening of February 24 I saw a shadow transit in progress. That's when one of Jupiter's moons passes in front of Jupiter, and you can see the moon's shadow, in inky-black dot, on the cloud tops of Jupiter.

Saturn is now high in the west (in Taurus) at nightfall, high enough for good telescopic viewing. Saturn is a glorious sight, with the rings tipped fully open to our view. How many moons can you see? On the evening of February 24, I saw 4 moons: Titan, Rhea, Dione, and Tethys.

Uranus and Neptune are too low in our morning sky now to be seen.

Pluto is still in Ophiuchus in 2002, and in March is high in the southern sky at sunrise.

Vesta near Saturn: March 19

You haven't seen an asteroid yet? On the evening of March 19, asteroid 4 Vesta will be quite close to Saturn, looking like an extra moon of Saturn: it will be about 6' due east of Saturn. This proximity can make it a lot easier for you to find Vesta, and "bag" your first asteroid.

Moon occults M35: March 21

The Moon will be near Jupiter in Gemini on the evening of March 21. We have the opportunity in our area to watch the Moon pass in front of the large star cluster M35 in Gemini. The Moon will be at First Quarter that night, and the leading edge will be the dark part of the Moon. In a telescope it may appear to be dimly shining with Earthshine (sunlight reflected off the Earth onto the Moon). Since the stars in M35 are fairly

bright and close together, you will be able to get a real sense of the Moon's movement.

Comet Ikeya-Zhang: Update

A report posted on the *Sky & Telescope* Web site on February 26 says that this comet is brightening somewhat faster than expected. The comet's coma (head) appears small and condensed but bright, and analysis indicates it has a high gas-to-dust ratio. "Gas comets" typically brighten more quickly as they approach the Sun than do "dust comets." Comet experts now say that Comet Ikeya-Zhang could brighten to magnitude 3.5, which means it could become visible to the naked eye. It is expected that it will develop a bluish-colored ion tail, perhaps as long as 10°-15°. This tail, though, may be more obvious to a camera than to the human eye. With over 300 highly-accurate measurements made as of February 25, orbital expert Brian Marsden of the Smithsonian Astrophysical Observatory has concluded that this comet is very likely a return of a comet last seen in 1661.

So where is it? In March, Comet Ikeya-Zhang is in our evening sky! It will move through Pisces and into Andromeda, not far from the planet Mars in our sky. In early April it will move north of the Sun and into our morning sky. Here are coordinates for plotting it on your star charts. A map is included on a later page.

Comet Ikeya-Zhang, C/2002 C1

Date	RA	Dec	Mag.	Constellation
Mar 4	1h 07.4m	+02° 47'	5.0	Pisces
Mar 6	1h 11.3m	+04° 42'	4.8	Pisces
Mar 8	1h 14.9m	+06° 42'	4.5	Pisces
Mar 10	1h 18.2m	+08° 49'	4.3	Pisces
Mar 12	1h 21.1m	+11° 01'	4.1	Pisces
Mar 14	1h 23.5m	+13° 19'	3.9	Pisces
Mar 16	1h 25.4m	+15° 43'	3.7	Pisces
Mar 18	1h 26.5m	+18° 11'	3.6	Pisces
Mar 20	1h 26.7m	+20° 44'	3.5	Pisces
Mar 22	1h 26.1m	+23° 21'	3.4	Pisces
Mar 24	1h 24.4m	+26° 00'	3.4	Pisces
Mar 26	1h 21.6m	+28° 41'	3.4	Pisces
Mar 28	1h 17.6m	+31° 24'	3.4	Pisces
Mar 30	1h 12.4m	+34° 07'	3.5	Andromeda
Apr 1	1h 05.8m	+36° 50'	3.5	Andromeda
Apr 3	0h 57.9m	+39° 33'	3.6	Andromeda
Apr 5	0h 48.5m	+42° 15'	3.7	Andromeda

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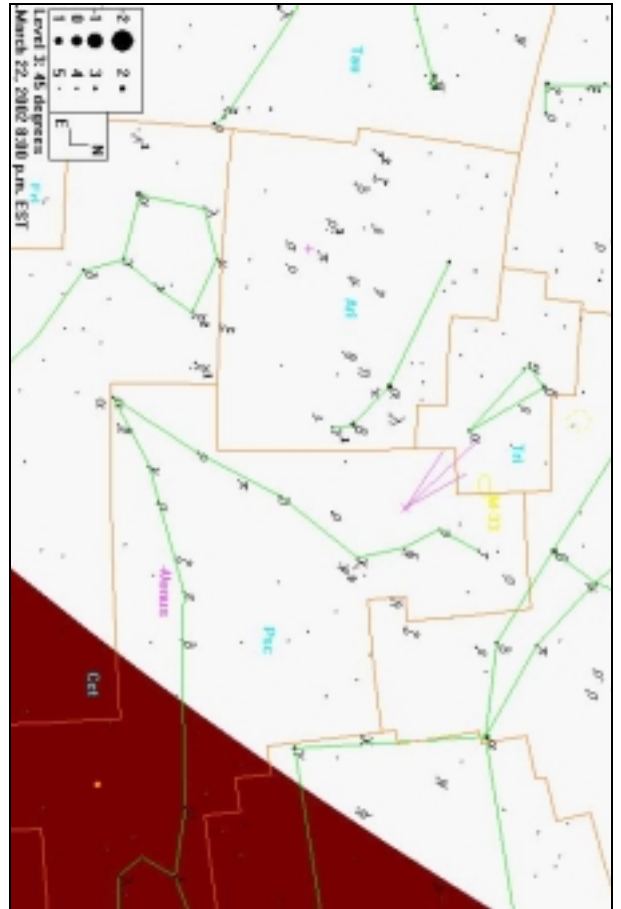
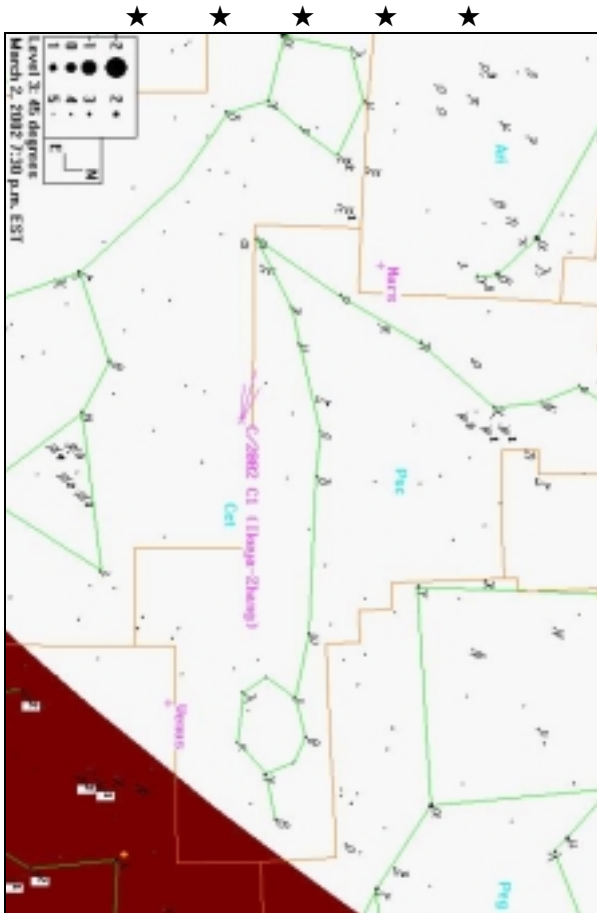
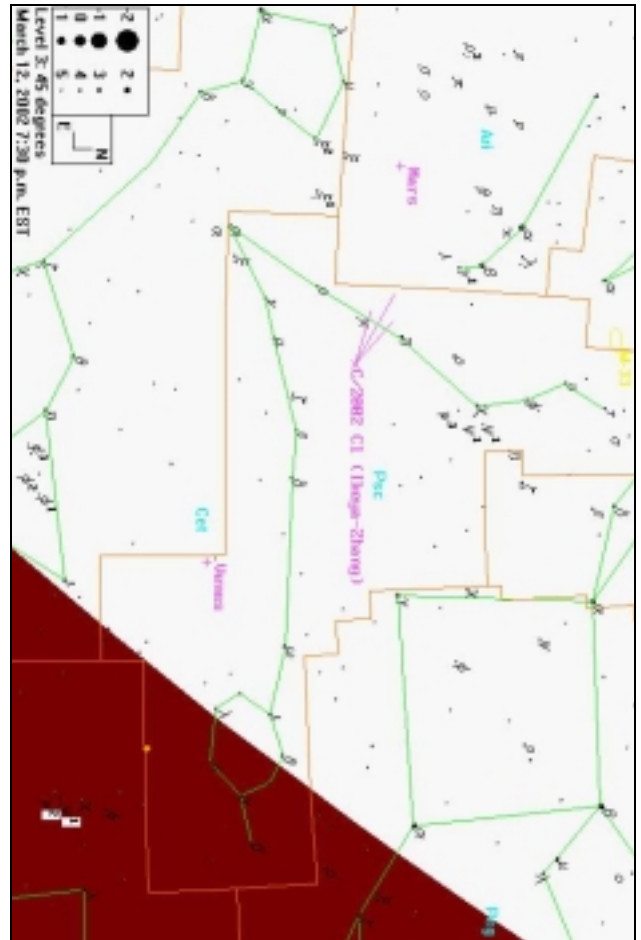
Help Needed at FCO: Friday April 12, 2002

There will be a group of Tiger Cubs visiting the FCO on April 12, and help is needed from CCAS members and telescopes to provide a good star night for them. Call Deb Goldader if you can help. Thanks. Deb's number is 610-407-9213.

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Calendar Notes

April 2, 2002 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EST
April 9, 2002 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EDT
April 12/13, 2002 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
April 16, 2002 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EDT
April 20, 2002 (Saturday)	National Astronomy Day Location: To be determined
May 7, 2002 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EDT
May 10/11, 2002 (Friday/Saturday)	CCAS Observing Session Location: BVA sunset
May 14, 2002 (Tuesday)	CCAS Meeting Location: West Chester University 7:30 p.m. EDT
May 21, 2002 (Tuesday)	Beginning Astronomy Class Location: Flower & Cook Observatory 7:00 p.m. EDT



Astronomus: 11

A Journal for Young Astronomers

By Bob Popovich

“Inseparable”

Our adventure this month has us setting sail with a pair of intrepid seafarers. “Wait a minute, this isn’t *Yachting* magazine!” Thankfully, you are correct. The only ocean tonight is the limitless ocean of space. And the seafarers? Why, Gemini the twins, of course. So grab your binoculars, your star chart and your life jacket and let’s shove-off!

Castor and Pollux, mythology tells us, were members of Jason’s crew of the Argo. These two sons of Zeus were charged with protecting the ship and all its hands from the terrors of Poseidon’s realm. (Greek gods were very territorial.) Interestingly enough, Castor was mortal while Pollux was immortal. As you might expect, there’s a lot more to this story but we’ll leave that for another time. Standing nearly overhead with their feet in the Milky Way and their arms outstretched, they beckon us to join them on a splendid journey across time and space.

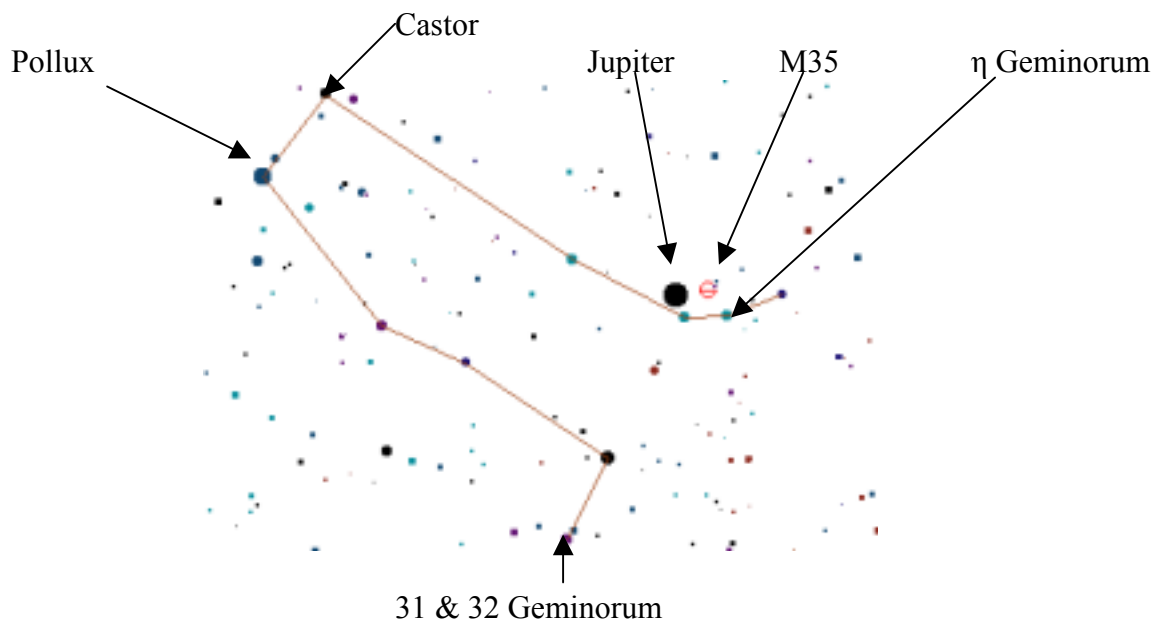
Let’s begin by locating our target. Turning south we see Orion standing high in the sky and, by early March, a bit to the west. Looking up and to the left of Betelgeuse we see a pair of bright stars that mark the heads of the twins: Blue-white Castor (α Geminorum) and orange Pollux (β Geminorum). Though these two stars have been viewed as twins for better than two millennia, they’re actually unrelated stars as Castor lies 50 light years from Earth while Pollux is only 34.

Looking from Castor, we see two dimmer stars forming a line towards Betelgeuse with a third star hooking upward. All three have a reddish hue. This third star (η Geminorum) marks one of Castor’s feet and is a variable star as well. But with a semi-regular period of 233 days and a magnitude change of less than 1, it’s not the best variable to follow.

Now let’s back up and find Pollux again. We see three stars again making a line towards Betelgeuse with a fourth star hooking downward. This fourth star marks one of Pollux’s feet. Right here we also see a pretty double star (31 and 32 Geminorum) though one of the pair is quite dim in binoculars. But notice the colors! If you can identify them, send me a note at b2n2@aol.com.

“But don’t the twins have arms?” “Of course they have arms.” (Unlike the Phillies pitching staff.) The stars marking the arms are up close to Castor and Pollux and though they’re rather dim, they can be seen as long as your eyes are dark-adapted.

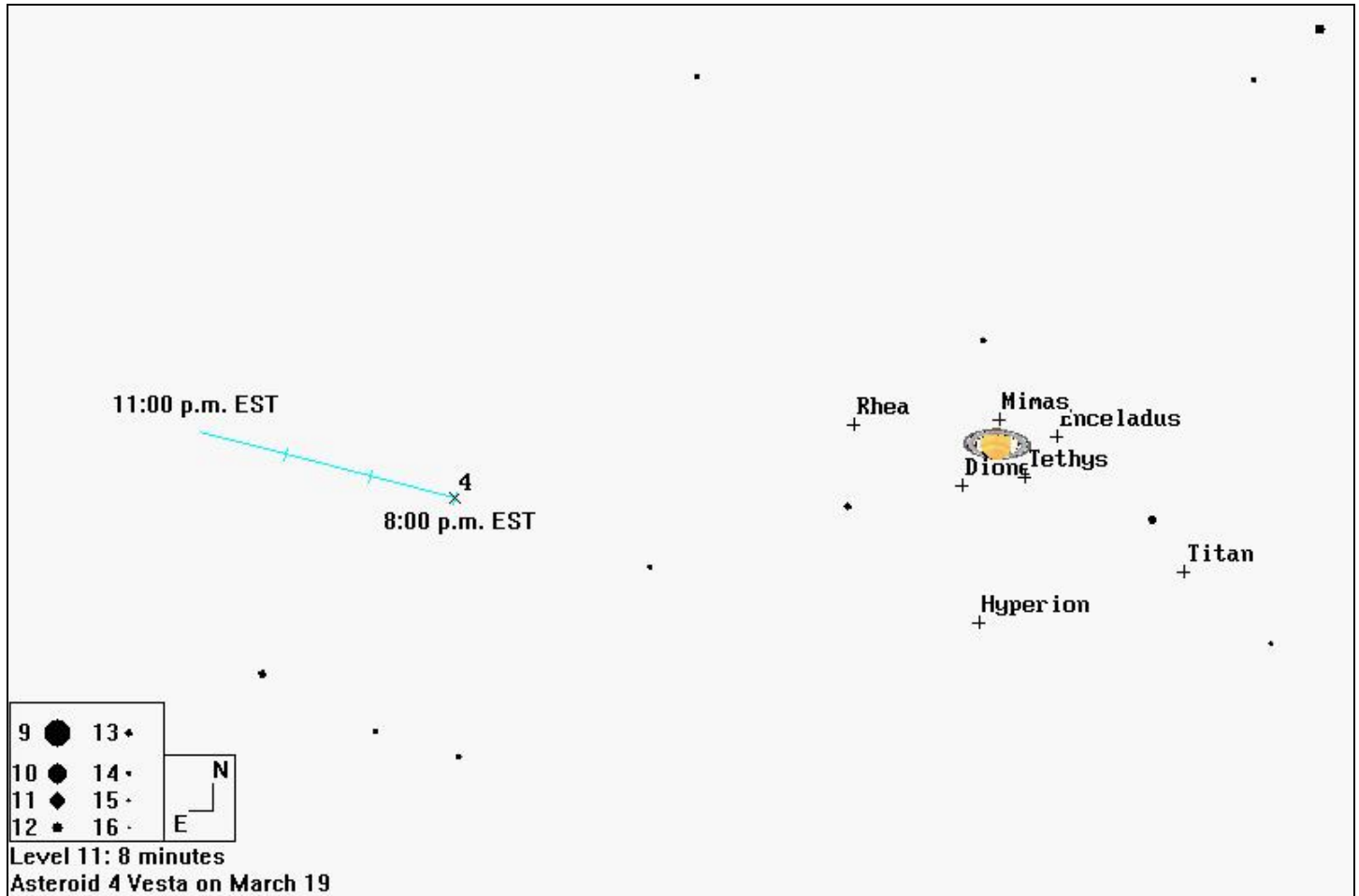
No voyage with the twins would be complete without enjoying item number 35 in Mr. Messier’s catalogue. This big, beautiful open cluster is located just beyond η Geminorum in one of Castor’s feet. It is faint in binoculars but it’s quite distinct and really quite pretty. If conditions are good, we might make out a handful of stars set against a soft background glow. As we enjoy this view, consider the fact that this cluster is some 2,800 light years away from us and is nearly 40 light years across.



Like last month’s constellation Taurus, Gemini is a member of the zodiac. So, the planets appear to pass through Gemini as they orbit the sun. And wouldn’t you know it, not one but two planets were discovered in Gemini: Uranus in 1781 by William Herschel and Pluto in 1930 by Clyde Tombaugh. And speaking of planets, Jupiter is passing near Castor’s shin so we’ll certainly want to spend some time enjoying the giant of our solar system. How many of the Galilean moons can we see tonight?

Before docking for the evening, let's be sure to cruise up and down the Milky Way. It stretches north & south from Gemini's feet and is a nice way to conclude this month's voyage. And though we may be dropping anchor for now, Castor & Pollux will remain in our skies for a while yet, with arms outstretched to greet us anew each time we look up to the late winter sky.

Next time: "Surf & Turf"



Charts of Comet Ikeya-Zhang (on page 3) and chart of Asteroid Vesta (above) were produced using a computer planetarium and charting program called *Guide 7.0*, by Project Pluto (168 Ridge Road, Bowdoinham ME 04008, USA or www.projectpluto.com).

The shaded area on the charts of Comet Ikeya-Zhang represents the horizon at that time of day in our area. In general, face westward at the time listed and hold the chart with the horizon line parallel with the ground. Use the planet Mars to help orient the chart and yourself to the sky. Note the area in the sky where the chart indicates the comet should be located. Sweep that area with binoculars or a telescope, looking for a fuzzy-looking star ("comet" means "hairy star").

CCAS Information Directory

CCAS Lending Telescope

Contact Kathy Buczynski to make arrangements to borrow the Society's lending telescope. CCAS members can borrow the lending telescope for a month at a time; longer if no one else wants to borrow it after you. Kathy's phone number is 610-436-0821.

CCAS Lending Library

Contact our Librarian, Bill O'Hara, to make arrangements to borrow one of the books in the CCAS lending library. Copies of the catalog are available at CCAS meetings. Bill's phone number is 610-696-1422.

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

jim.anderson@mckesson.com

Or mail the contribution, typed or handwritten, to:

Jim Anderson
1249 West Kings Highway
Coatesville, PA 19320-1133

Get CCAS Newsletters via E-mail

You can receive the monthly newsletter by e-mail. All you need is a PC or Mac with an Internet e-mail connection. To get more information about how this works, send an e-mail request to Jim Anderson, the newsletter editor, at:

jim.anderson@mckesson.com

CCAS A.L. Award Coordinators

These are the members to contact when you have completed your observing log for the Messier, Binocular Messier, Lunar, or Double Star Awards:

Messier (both): Frank Angelini
(610-873-7929)

Lunar: Ed Lurcott
(610-436-0387)

Double Star: Jim Anderson
(610-857-4751)

CCAS Purpose

The Chester County Astronomical Society was formed in September 1993, with the cooperation of West Chester University, as a non-profit organization dedicated to the education and enjoyment of astronomy for the general public. The Society holds meetings (with speakers) and observing sessions once a month. Anyone who is interested in astronomy or would like to learn about astronomy is welcome to attend meetings and become a member of the Society. The Society also provides telescopes and expertise for "star nights" for school, scout, and other civic groups.

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

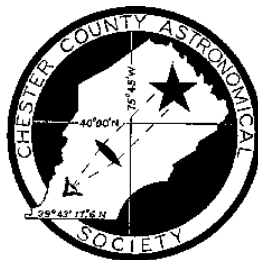
Secretary: Doug Liberati
(610) 827-2149

**ALCor and
Newsletter:** Jim Anderson
(610) 857-4751

Librarian: William O'Hara
(610) 696-1422

Observing: Ed Lurcott
(610) 436-0387

Education: Kathy Buczynski
(610) 436-0821



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

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

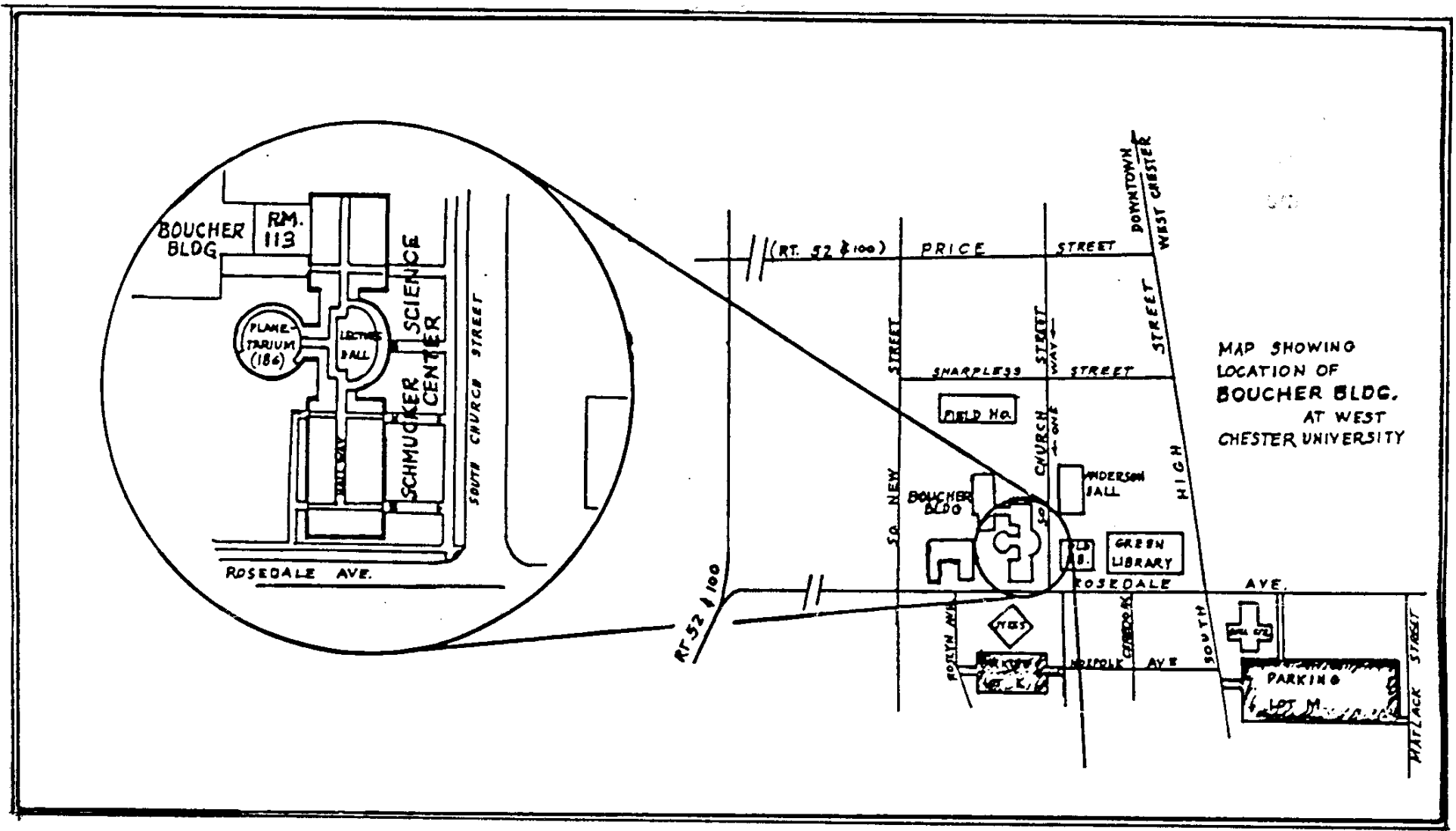
Sky & Telescope Magazine Group Rates

Subscriptions to this excellent periodical are available through the CCAS at a reduced price of **\$29.95** which is much less than the newsstand price of \$54.00, and also cheaper than individual subscriptions (\$39.95)! 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.

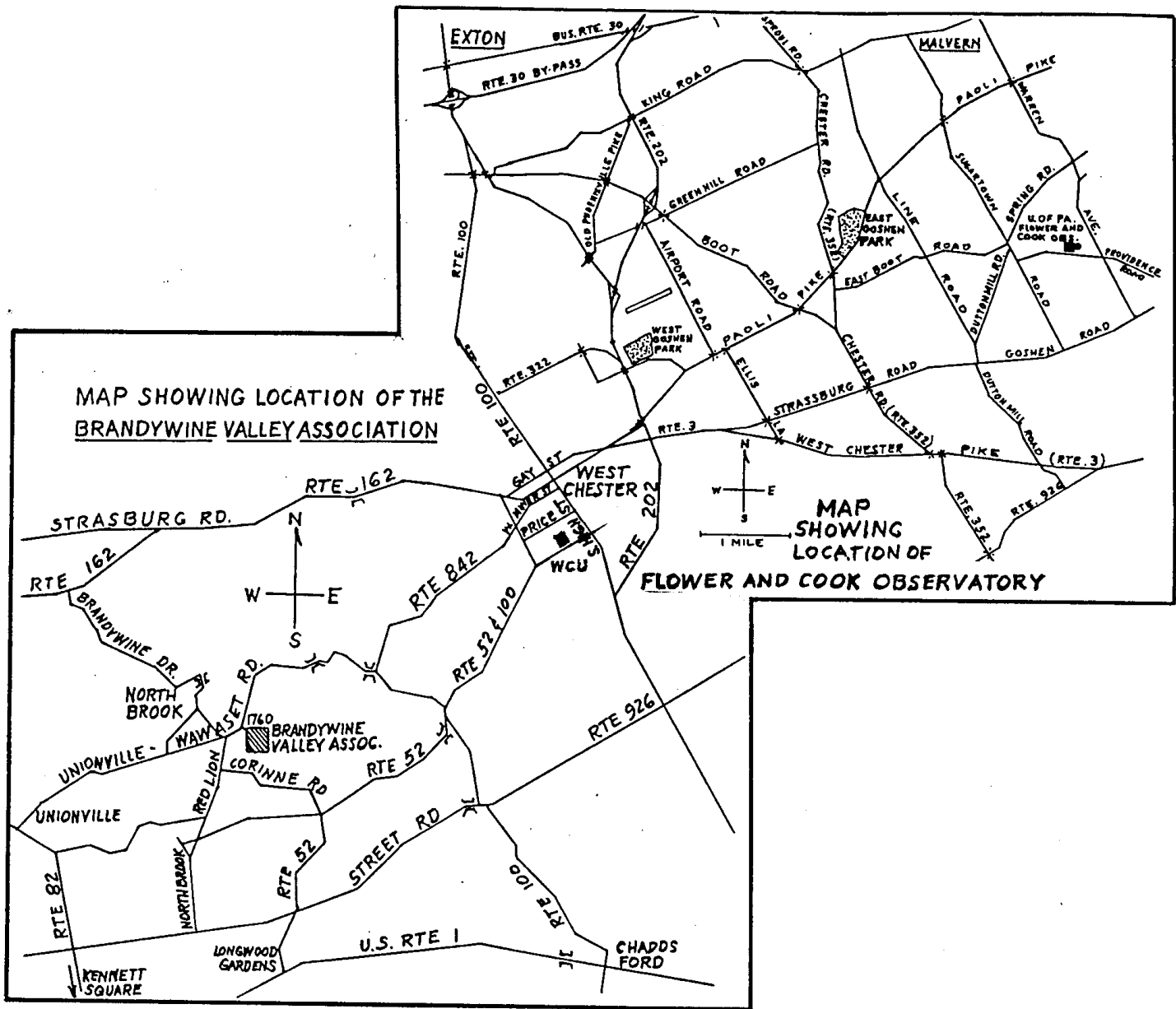
CCAS Website

Pete LaFrance is the Society's Webmaster. You can check our Website 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) or e-mail them to lafrance@chesco.com



Parking is available behind Sykes Student Center on the south side of Rosedale Avenue (Parking Lot K), and behind the Bull Center at the corner of Rosedale Avenue and South High Street (Parking Lot M). If you arrive early enough, you may be able to get an on-street parking space along South Church Street, or along Rosedale Avenue. You can take the Matlack Street exit from Rt. 202 South; Matlack Street is shown on the map at the lower right corner with Rt. 202 off the map. If approaching West Chester from the south, using Rt. 202 North, you would continue straight on South High Street where Rt. 202 branches off to the right. This would bring you onto the map on South High Street near Parking Lot M, also in the lower right corner.



To get to the Myrick Conservation Center of the Brandywine Valley Association from West Chester, go south on High Street in West Chester past the Courthouse. At the next traffic light, turn right on Miner Street, which is also PA Rt. 842. Follow Rt. 842 for about 6 miles.

To get to the observing site at the BVA property, 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 (so you don't ruin other observers' night vision).