



# OBSERVATIONS



A MONTHLY PUBLICATION OF THE  
CHESTER COUNTY ASTRONOMICAL SOCIETY

★President: Edwin Lurcott  
★Treasurer: Pete LaFrance

**SEPTEMBER 1996**  
(VOLUME 4, NO. 9)

★Vice President: Emil Volcheck  
★Secretary: William O'Hara

## CCAS September Meeting

DATE: **Tuesday September 10, 1996**  
TIME: 7:30 PM EDT  
PLACE: Department of Geology and  
Astronomy Lecture Room  
(Room 113 - Boucher Building)  
Schmucker Science Center  
West Chester University  
LOCATION: South Church St.  
West Chester, PA (see maps)

Parking is available behind Sykes Student Center on the south side of Rosedale Avenue, and behind the Bull Center at the corner of Rosedale Avenue and South High Street.

Our program for September will be presented by Pete LaFrance. Pete will describe how he uses weather-related services on the Internet to determine if it's worth going out to observe. Also, Geoff Burtner will have a presentation on meteors. Weather permitting, we will be able to go up to the University's observatory and use their 12" telescope after the meeting.



## September CCAS Observing Session

This month's observing session will be on September 26, 1996, on the night of the Total Lunar Eclipse. Details will be available at the September Society meeting. At the observing session, there will be help available to set up and use your telescopes. All members are invited whether they have a telescope or not. Telescope owners are always glad to share the view through their 'scope.

This will be the last total lunar eclipse visible from North America in this century. The eclipse will start about 1.5 to 2 hours after sunset, so the Moon will be well up in our sky when the eclipse starts. The Moon will be in the umbra (the darkest part of the Earth's

shadow) at 9:12 PM EDT. Make plans now so you don't miss the show, or you will have to wait until the next century to see another total lunar eclipse!



## MegaMeet V

CCAS has received an invitation to attend the Fifth Annual MegaMeet at Pulpit Rock, sponsored by the Lehigh Valley Amateur Astronomical Society. Pulpit Rock is the dark sky site of LVAAS, 1582 feet up in the Blue Mountains, between Lenhartsville and Hamburg PA. Gates are open from 4 to 9:30 PM Saturday Sept. 7, 1996. On "the Rock" are several observatories housing telescopes ranging in size from 8" to 40" in aperture. You can bring your own 'scope and stay as long as you want, camping overnight or leaving when you wish. Facilities are rather limited, consisting of Porta-Potties. If the weather is questionable call Priscilla at 610-683-6397 after 12 noon on Saturday for the go/no-go decision. Rain date is Saturday September 14, 1996. See Ed Lurcott for further information and maps.

As this newsletter goes to press, it appears that MegaMeet V will be postponed due to Hurricane Fran. Remember to call Priscilla before heading out!



## DelMarVa Dark Sky Star Party

The DelMarVa Stargazers will host a fall "Dark Sky" star party at Tuckahoe State Park, Queen Anne, MD, on September 13-15, 1996. Events include star gazing on Friday and Saturday nights, a swap table Saturday morning (bring your own table), and talking about telescopes and astronomy on Saturday afternoon.

Tuckahoe is in the DelMarVa Peninsula in a remote area, with no white lights visible from the observing field. Facilities include campsites, hot showers,

hiking trails, boating, fishing, birding, etc. Contact Ed Lurcott for further details and a registration form. The registration fee is \$15.00. Free coffee will be available, as well as some inexpensive snacks.



## Stella-Della-Valley Star Party

The Bucks-Mont Astronomical Association will host the 10th annual Stella-Della-Valley Star Party on October 11 thru 13, 1996. The party features guest speakers, demonstrations, observing sessions, door prizes, and a flea market. The event is held at Camp Onas in Ottsville, PA. Registration is \$25 for adults, \$40 for couples, and \$10 for children under 16. Contact Ed Melnick, 1443 Devon Road, Warminster, PA 18974, or call 215-443-7929.



## September's Skies

### Moon Phases

Last Quarter	9/04
New Moon	9/12
First Quarter	9/20
Full Moon	9/26

## The Planets

Mercury will be lost in the Sun's glare as the month begins, but in the last week of September Mercury will be making its best appearance this year in the morning sky.

Venus moves higher in the morning sky this month, rising three+ hours before the Sun. This month will be the best appearance of Venus for some time to come.

Mars also rises higher into the morning sky in September, appearing in the constellation Cancer.

Jupiter is easily found right after darkness falls in the evening, appearing as a very bright star in the south. It's near the top of the "Teapot" in Sagittarius.

Neptune is about four binocular fields east of brighter Jupiter. Neptune shines at about magnitude 7.8 in the constellation Sagittarius.

Uranus is in Capricornus, shining at about magnitude 5.7. It is about one binocular field east of fainter Neptune.

Saturn rises a few hours after sunset, looking like a bright star in the southeastern sky. On September 26, it will be about 2° from the Full Moon during the eclipse. Should be an interesting sight.

Pluto is in Ophiuchus, the Snake Handler, this month. You need to use at least an 8" telescope to find Pluto.

## Space Exploration Notes

### Historical Notes for September

In 1970, the Soviet robotic spacecraft Luna 16 returns lunar samples to Earth.

In 1975, NASA launches the Viking 2 spacecraft to Mars.

In 1976, Viking 2 lands on Mars.

In 1977, it is a busy month of September. NASA launches the Voyager 1 and Voyager 2 spacecraft on their Grand Tour of the outer Solar System. The Soviets launch their Salyut 6 space station, which would host 16 crews of cosmonauts over the next 4 years.

In 1979, Pioneer 11 is the first spacecraft to fly past Saturn.

In 1985, the International Cometary Explorer probes Comet Giacobini-Zinner in the first flyby of a comet.

In 1988, Israel launches its first satellite.



## Future Missions to Mars

With all the recent hoopla concerning the possibility that life once existed on Mars, it's a good time to review the upcoming missions to Mars. These missions were already planned and in various stages of progress when the "Mars rock" story broke.

There have not been any missions to Mars since the Viking missions in 1976: that's right, twenty years ago. On November 6, 1996, NASA will launch the Mars Global Surveyor. In September 1997, MGS will enter orbit around Mars, beginning a mapping survey, and serving as a communications relay for spacecraft that will follow it.

On November 16, the Russians will launch their Mars96 mission. It will carry many scientific instruments, and will work in tandem with MGS.

On December 2, 1996, NASA will launch Mars Pathfinder, which will land on Mars on July 4, 1997. It will carry a 22-pound robotic rover called

Sojourner. It all goes well, Sojourner will move around the landing site in the Ares Vallis region of Mars, collecting data.

Cost of the two U.S. missions this year: about \$470 million, which is what NBC TV paid for the right to broadcast the 1996 Olympics.

After these first three missions this year, there will be at least two more missions launched every 25 months, when the relative positions of Earth and Mars are favorable for a spacecraft launch. Plans include a variety of robotic rovers and high-tech instruments to study Mars in greater detail than ever before. Right now the projected schedule looks like this:

1998: A more powerful orbiter to replace MGS, and a second lander to explore the area around the south polar ice cap. It will have a shovel arm to dig into the soil and analyze what it digs up.

2001: A third orbiter and lander, designed in partnership with Russia.

2003: An American orbiter, and a network of landers designed by a number of other countries such as France, Germany, Japan, and Italy.

2005: An attempt to land a robotic spacecraft, collect Martian soil and rock samples, and then return the samples to Earth.

Reference:

"Invading Mars", *The Philadelphia Inquirer*, date unknown (I forgot to write it down on the clipping...)



**Comet Hale-Bopp**

Latest projections say that Comet Hale-Bopp will brighten to about magnitude 5.0 by the end of September, from magnitude 5.5 at the start of the month. Have you seen it yet? Have you found it without optical aid yet?

**September Coords for Comet Hale-Bopp**

<u>Date</u>	<u>R.A.</u>	<u>Dec.</u>	<u>Constell.</u>
9/4	17h 37.0m	-06° 23'	Ophiuchus
9/10	17h 33.9m	-06° 03'	Ophiuchus
9/20	17h 30.6m	-05° 32'	Ophiuchus
9/30	17h 29.7m	-05° 03'	Ophiuchus
	★   ★	★   ★	★   ★

**First Light**

What are those nasty stellar coordinates (like the ones in the table above) all about? Before starting this article, you may want to review the last installment of this column in the July 1996 *Observations*. That article discussed the celestial equator and some other basic coordinates.

To find a location on the planet Earth we use latitude (distance north or south of the Equator), and longitude (distance east or west of Greenwich, England: an arbitrarily selected point). Both of these "distances" are measured in degrees, not miles or kilometers.

Stellar coordinates are analogous to Earthly coordinates. Imagine the sky as a "globe" bigger than the Earth, surrounding it, with the stars fixed to it. We all know it's not like that, but this image makes it easier to understand stellar coordinates. To measure a star's position north or south of the Celestial Equator, we use something like latitude, except it is called declination. Like latitude, it is measured in degrees, with the North Celestial Pole being 90° north of the Celestial Equator, and the South Celestial Pole being 90° south. You may also see declination expressed as degrees + or -, with +45° = 45° north.

Then there is the second position measurement, the distance east or west of an arbitrarily-selected point. This is called right ascension, and is analogous to longitude on Earth. It is measured in hours and minutes, however; not degrees. The starting point is where the Sun crosses the Celestial Equator on the Vernal Equinox (the first day of spring in the Northern Hemisphere). This point in the sky is in the constellation Pisces. From here, right ascension is measured in hours, with the sky divided into 24 hours of right ascension.

Using these two coordinates, any object in the sky (like Comet Hale-Bopp) can be precisely located. Using these coordinates, you can "pencil plot" comets, asteroids, etc., on detailed star charts to use at the telescope in locating these objects. Just remember that it's like latitude and longitude lines, projected onto the celestial sphere, and you need

never feel intimidated by those weird numbers again!

**Also Available**

A free brief overview called *Getting Started In Astronomy* is available from the CCAS. It can be picked up at a CCAS function, or you can call the newsletter editor to get a copy mailed to you. Suggestions for improving this introduction to our hobby are always welcome. Articles for the *First Light* column, intended for beginners, are also needed.



**For Sale**

One University Optics primary mirror cell for a 10" or 10.1" Newtonian telescope primary mirror. Slightly used and modified. Retail for \$47.95+shipping, asking \$25.00. Contact Jim Anderson.



**Contributing to the Newsletter**

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 [skywalkr@voicenet.com](mailto:skywalkr@voicenet.com). Or mail to:

Jim Anderson  
1086 King Road IVY-312  
Malvern, PA 19355



**Membership Renewals**

Check the date printed on the address label of this issue of *Observations*. 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**

**Sky & Telescope Magazine Group Rates!**

Subscriptions to this excellent periodical are available through the CCAS at \$27 per year, about half the newsstand price, and also cheaper than

individual subscriptions! Make out a check to the Chester County Astronomical Society, note that it's for *Sky & Telescope*, and mail to Pete LaFrance.



**CCAS Membership Information**

The present membership rates are as follows:

- REGULAR MEMBER**  
(18 years or older) .....\$20/year
- SENIOR MEMBER**  
(65 years or older) .....\$10/year
- STUDENT MEMBER**  
(full-time college student) .... \$ 5/year
- JUNIOR MEMBER**  
(under 18 years old) .....\$ 5/year
- FAMILY MEMBER**  
(husband, wife & children) ....\$ 30/year

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

- President:** Edwin Lurcott (610) 436-0387
- Vice Pres:** Emil Volcheck (610) 388-1581
- Treasurer:** Pete LaFrance (610) 268-2616
- Secretary:** William O'Hara (610) 696-1422
- Public Rel:** Kathy Cseke (610) 644-9543
- Obs Chm:** Mike Tucker (610) 584-8236
- Newsletter:** Jim Anderson (610) 993-0261

