OBSERVATIONS

A MONTHLY PUBLICATION OF THE

Chester County Astronomical Society

AUGUST 2001

(VOLUME 9, NO. 8)

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

CCAS August Meeting & Observing Session

DATE: **Friday/Saturday August 17/18, 2001**
TIME: sunset
PLACE: Brandywine Valley Association
LOCATION: PA Route 842
West of West Chester, PA (see map)

During the summer months of June, July and August we combine the Observing Sessions with the meetings. The August Observing Session will be on Friday August 17, 2001 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 August 18, 2001. 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 `scope. CCAS Observing Sessions are always free of charge. Children are always welcome as long as an adult accompanies them.

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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 August 31, 2001 at 8:30 p.m. EDT. There will not be a formal program, just 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.

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"Thanks, Mike!"

I'm taking this opportunity to thank Mike Turco for nominating me for the Astronomical League's annual Mabel Sterns Award. This award, named in honor of the AL's first newsletter editor, is to recognize outstanding newsletter editors among the AL's many member societies. Michael Mills, of the Northern Virginia Astronomy Club, received the first place award this year. I received the second place honor. It is nice to know my efforts are appreciated so much. Thanks!

Jim Anderson

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Calendar Notes

September 11, 2001 (Tuesday)	CCAS Meeting West Chester University 7:30 p.m. EDT	Location:
Sept. 14-15, 2001 (Friday, Saturday)	Black Forest Star Party Location: Cherry Springs State Park, PA (in Potter County, northern PA)	
September 15, 2001 (Saturday)	MEGAMEET X Location: Pulpit Rock Astronomical Park (near Hamburg PA)	
September 18, 2001 (Tuesday)	Backyard Observing Class Location: Flower & Cook Observatory 7:00 p.m. EDT	
October 2, 2001 (Tuesday)	Backyard Observing Class Location: Flower & Cook Observatory 7:00 p.m. EDT	
October 8, 2001 (Monday)	WHYY FM SkyTour Location: Arcola Intermediate School 8:00 p.m. EDT	
October 9, 2001 (Tuesday)	CCAS Meeting West Chester University 7:30 p.m. EDT	Location:
October 16, 2001 (Tuesday)	Backyard Observing Class Location: Flower & Cook Observatory 7:00 p.m. EDT	
November 6, 2001 (Tuesday)	Backyard Observing Class Location: Flower & Cook Observatory 7:00 p.m. EST	
November 13, 2001 (Tuesday)	CCAS Meeting West Chester University 7:30 p.m. EST	Location:
November 20, 2001 (Tuesday)	Backyard Observing Class Location: Flower & Cook Observatory 7:00 p.m. EDT	
December 4, 2001 (Tuesday)	Backyard Observing Class Location: Flower & Cook Observatory 7:00 p.m. EDT	
December 11, 2001 (Tuesday)	CCAS Meeting West Chester University 7:30 p.m. EST	Location:

Newsletter Deadlines

These are the deadlines for submitting material for publication in the newsletter, through the December 2001 issue.

Issue	Deadline
September 2001	08/27/2001
October 2001	09/26/2001
November 2001	10/27/01
December 2001	11/26/01

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Upcoming Meeting Topics

CCAS Vice President (and Program Chair) Steve Limeburner reports that we have speakers scheduled for the September and October Society meetings. In September Professor Rajul Pandya, of West Chester University's Department of Geology & Astronomy, will speak to us about meteorology and weather forecasting. In October, Dr. David Koerner, of the University of Pennsylvania, will speak to us about the scientific quest for extraterrestrial life.

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CCAS Backyard Observing Class

Based on feedback received from students in our first-ever *Beginning Astronomy* class, held this past Spring, we have re-vamped the *Intermediate Astronomy* class planned for this Fall. The Fall 2001 class will be called *Backyard Observing*, and will concentrate on actual observing: how to find things in the night sky, what's there to see, etc. Each class will include some actual observing, if it is clear that night. Students will be encouraged to bring binoculars and telescopes, if they have them. Each class session will center on some specific constellations visible that night, as well as lunar, solar, and planetary observing. The class will consist of 6 one-hour sessions, on the first and third Tuesdays of the month, starting with September 18. This is the tentative schedule:

Sept. 18	Lyra & Cygnus
Oct. 2	Pegasus & Andromeda
Oct. 16	Cassiopeia & Cepheus
Nov. 6	Lunar & Solar Observing
Nov. 20	Perseus
Dec. 4	Taurus & Saturn

All classes will be held at the University of Pennsylvania's Flower & Cook Observatory, located in Willistown Township on Providence Road, just west of the intersection with Warren Avenue. Classes will begin at 7:00 p.m. (ET). Registration will be limited to 40 students, due to the classroom size. Further details will be published as they are worked out by the Education Committee. If you would like to assist with this effort, please contact CCAS Education Chair Kathy Buczynski at 610-436-0821, or via e-mail at kbuczynski@aol.com

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WHYY 91 FM SkyTour: October 8, 2001

On Monday October 8, 2001, from 8:00-9:00 p.m. the WHYY SkyTour program will be broadcast live from the Mallon Planetarium at Arcola Internediate School, where a large star party will be taking place at the same time. The program is hosted by Derrick Pitts, Chief Astronomer of the Franklin Institute of Science in Philadelphia. The CCAS has been invited to attend the star party and bring along our telescopes to help give attendees a look at the October skies. We encourage as many members as possible to attend this event. The CCAS will be mentioned in the advertising for the SkyTour, which will be mailed out to the 5500+ members of WHYY.

Directions: Take US 202 North to US 422. Take US 422 West to the Oaks exit. At the end of the exit ramp, turn right onto Egypt Road. Continue on Egypt Road for 1/10 mile or less, going straight at the next traffic light, until you come to Pinetown Road. Turn left on Pinetown Road. At the second stop sign, turn left on Eagleville Road. Follow this road to the top of the hill. Arcola Intermediate School is on the right side of Eagleville Road.

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Astronomus: 4

A Journal for Young Astronomers

By Bob Popovich

"The Birds!"

Good Evening. By the title of this month's installment you might have been expecting a Hitchcock movie, but we've got a much better way to spend the beautiful nights of summer than watching movies. Let's go look at birds in the night sky. Birds in the sky? At night? Maybe a movie would be a better idea! Ah, but these aren't just any birds. These birds are immortal creatures of Zeus, the god of gods in Greek mythology.

From his throne atop Mt. Olympus, Zeus must have had a wonderful view of the heavens. And being the god of gods he decided, one fine summer night long ago, to place in the night sky two very different, very beautiful birds. One was an elegant swan just to look at and the other a powerful eagle to be his hunting companion.

Let's take flight by starting with our friend from last month, Lyra. Just to its left is the constellation of the swan—Cygnus. Know by the asterism the Northern Cross, it is nearly overhead and is easy to spot because it fits its name perfectly and because it has a bright white star marking its tail named Deneb (Arabic for "tail"). We can also see that it is in a southbound flight right through the middle of the Milky Way. Cygnus has been flying for a long time because Deneb is over 1,400 light years away.

Now let's look at the end of its long, slender neck at a yellow star named Albireo. Albireo actually changes its brightness over time. Let's keep an eye on it during the summer and see if we can notice the change. And not only that, but Albireo is also a double star with a lovely blue companion. Mythology tells of Zeus turning himself into this elegant bird in order to impress a princess in whom he'd taken a fancy.

Even with modest binoculars Cygnus is as magnificent as any swan could hope to be. It is filled with countless stars of varying colors and brightnesses in all sorts of groupings. And all of them are set against the soft, glowing background of the Milky Way. As often as you glide through this area, you'll never be at a loss for something new and beautiful to observe. A fitting reminder for us mortals of the great Zeus.

Now imagine a line drawn from Vega in Lyra to Deneb in Cygnus. Then let's extend a line of equal length south from Deneb. That will bring us to another bright star named Altair (Arabic for "flyer") in the constellation of Aquila, the eagle. Altair marks the head of the eagle. The constellation looks a bit like a crooked capital "T" with Altair at the point where the 2 lines of the "T" meet.

This raptor is flying straight at the swan but don't worry because, as binoculars will show, the eagle is a too busy to be interested in the swan. The dim stars around Altair are arrows that the eagle is carrying to Zeus. Let's hope that Zeus isn't aiming at Cygnus. Those Greek gods can be fickle!

With the three bright stars of Vega in Lyra, Deneb in Cygnus and Altair in Aquila, we now have a geometric shape that means summer to every amateur astronomer. These three bright stars in the constellations of Lyra, Cygnus and Aquila invite us up to the summer heavens simply to enjoy its beauty and power. Devoting night after night sailing through this area, we should have no trouble seeing this geometric marker of the season. Can you tell what shape it is? Send me a note at b2n2@aol.com with the answer.

Next time we'll stay with our royal theme- "All Hail the King."

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"In astronomy, aperture is everything!"

Cartoon by Nicholas La Para

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August Skies

Moon Phases

Full Moon	8/04
Last Quarter	8/12
New Moon	8/18
First Quarter	8/25

The Planets

Mercury shows up in our evening sky during the month of August, but remains too close to the horizon after sunset to get much of a look at it.

Venus is in the morning sky this month, passing close to Jupiter at the beginning of August.

Mars remains the big show in our evening sky. It is not hard to find, as it is a very bright reddish-orange "star" visible soon after sundown each night in the southern part of the sky. Mars is still close to Earth this month, but the distance is increasing. As the newsletter goes to press, Web sites are reporting that Mars is encased in a planet-wide dust storm, meaning you can't see much surface detail right now. Experts say such storms usually take a while to die out.

Jupiter and Saturn are in the morning sky in August. On August 15, during the day, you can watch the crescent Moon occult (pass in front of) Jupiter. Look for the Moon below the Sun, at about 4:50 p.m. EDT. Train a telescope on the Moon, and you should see Jupiter nearby. Then watch the show!

Uranus is in Capricornus this month, and reaches opposition on August 15. This is a good month to find Uranus, as it is in our evening sky.

Neptune is also in Capricornus, and therefore also in our evening sky this month. Being dimmer than Uranus, it will be harder to find.

Pluto is in Ophiuchus, and in our evening sky. You'll need at least an 8" telescope, dark skies, good finder charts, and patience to find Pluto.

Nova in Sagitta

Contributed by Steve Limeburner (via e-mail of 08/03/2001)

"I was surfing the net looking for something good to observe with my 10" Dob during Full Moon (yeah, right) and came upon a very interesting object. On July 23, the star WZ Sagittae exploded in a nova outburst and is currently at about magnitude 9.5, which is relatively bright considering that this star is normally about 15th magnitude, and beyond the range of most amateur instruments.

WZ Sagittae is one of the few known examples of a repeating nova. Previous recorded outbursts were in 1913, 1946, and 1978. The star will be high in the sky throughout the rest of the season (R.A. 20h 07.6m Dec. +17° 42') With a good finder chart down to mag. 9.5 (I used *Uranometria 2000.0*), you may identify the star. Over several weeks, observe it as it fades slowly down to magnitude 13! For more info on this star and variable stars in general check out this Website:

www.kusastro.kyoto-u.ac.jp/vsnet/gcvs/SGEWZ.html

Also, you can check it out in *Burnham's Celestial Handbook, Vol. III*, page 1536."

Perseid Meteor Shower

This annual meteor shower, considered by many to be the best of the repeating showers, peaks on August 12. The good news is that this year they peak on a weekend. The bad news is that the Moon will be at Last Quarter on August 12, and will therefore produce enough glare to wash out many of the fainter meteors. Meteor showers such as the Perseids, however, occur over several days. The days leading up to the peak will not be as good this year because of the Moon, but the days after the peak will get better as the Moon gets "smaller" and therefore dimmer.

The best time to observe the Perseids is after midnight, when our part of the Earth is facing "head on" into the stream of meteors. Face toward the northeast, as the constellation Perseus will be rising there. The meteors will appear all over the sky, but they seem to radiate from a spot in Perseus (which is why they are called the Perseids). By facing that direction you will see more meteors. Sitting in a comfortable chair (for example, a lounge-type beach chair) can make the watching easier and more enjoyable.

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The Great Daylight Fireball of July 23, 2001

Did you see it? A lot of people saw and/or heard this meteor enter the Earth's atmosphere at about 6:19 p.m. EDT on Monday July 23. This extremely bright fireball of a meteor was seen in broad daylight across parts of the northeast United States, and even into Canada. According to Sky Publishing's Web site, Defense Department satellites tracked the meteor for several seconds beginning at 6:19:11 p.m. EDT. Using that data, scientists have concluded that the meteor entered the atmosphere at an altitude of 82 kilometers over Scranton, PA, travelling roughly east to west, and probably broke up over Williamsport, PA at an altitude of 32 km, which is where the satellites lost track of it. The calculated trajectory, along with eyewitness reports, lead scientists to believe that any fragments (meteorites) that survived the fall are probably scattered over the rugged woodlands of the Sproul State Forest in western Pennsylvania. The satellites' sensors recorded 1.3 billion joules of luminous energy, which is the kinetic energy equivalent of 3,000 tons of TNT (1/5 the size of the atomic bomb dropped on Hiroshima). Experts say that meteors in this size range hit the Earth about 10 times a year, but usually over the oceans where no one sees them (except the spy satellites). If this was a stony meteor, as most are, it would have been about the size of a car and weighed between 30 and 90 tons when it hit the atmosphere. The experts don't agree on the size, because some of the other data (acoustic and seismic data) indicate a less energetic event, and therefore a smaller meteor. Whatever the actual size, it sure got a lot of people's attention!

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From the e-mail sack… (continued)

In the December 2000 issue of *Sky & Telescope* magazine, an article written by Mike Turco, "It's Gotta Be White," was published. Since that time, Mike has received numerous e-mail messages from around the world. In the April edition of *Observations* we published some of that e-mail, from Fiona Hobson, who lives on a sheep farm 100 kilometers from the nearest small town in South Africa. Here's a more recent missive from Fiona, our correspondent in the Southern Hemisphere:

"Rob and I have just returned from a three-week holiday in Britain, my first-ever trip out of South Africa, so at last I have seen your northern skies. It was amazing. Amazing to see Orion the "right" way up, disappearing low on the southwestern horizon. Here at home, besides being upside down, Orion is gloriously high up. The Moon, a few days before First Quarter, startled me by being a back-to-front "C", not a normal "C" as it is in the evening here. And it was weird to see the Moon and Jupiter moving clockwise across the sky as they set, instead of anti-clockwise. Castor and Pollux were high up, with their "feet" below them, instead of lying upside down on our northern horizon, and Leo was the "right" way round. We saw the Big Dipper for the first time, and Polaris, and Cassiopeia. Great fun. But the night was horribly short. Friends we visited in the north of Scotland said that in the height of summer it never gets darker than a sort of twilight. So we feel for you."

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Cartoon by Nicholas La Para

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Black Forest Star Party: Sept. 14-15

This annual star party is held at Pennsylvania's first official "dark sky" State Park, Cherry Springs State Park, in northern Pennsylvania. Ed Lurcott, Steve Limeburner, and Pete LaFrance have all been there and can attest to the excellent observing conditions. Ed has flyers for this year's event, or you can register via their Web site at www.bfsp.org, and print out more information about costs and facilities. The list of speakers for the daytime sessions includes Ed Ting, who is well known for

his telescope review Web site, Scopereviews.com. Ed has also written many articles for *Amateur Astronomy* and *Sky & Telescope* magazines. Another speaker will be Mel Bartels, a very widely-respected amateur telescope maker. Mel will give two talks, one called "Future Trends in Amateur Astronomy" and the other "How to Build a Computerized Motor Drive System for Your Telescope". Best of all, if the weather is clear, the observing from this site is probably the best of any star party in the northeast US. The camping site and the observing site are one and the same, so your observing site (telescope) is right outside your tent or camper. Convenient!

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MEGAMEET X Star Party: Sept. 15

This annual star party is held at the observatory site of the Lehigh Valley Amateur Astronomers, Pulpit Rock Astronomical Park. It is located near Hamburg, PA, north of Reading. If you've heard of Hawk Mountain, well, Pulpit Rock is on the same mountain. This is an excellent observing site, and you can leave the party at any time if you don't want to stay all night. Ed Lurcott has a number of flyers for this event. There is also more information on the Web site of the Lehigh club, www.lvaas.org The LVAAS has 4 permanent observatories at this site, including a 40" telescope now under construction.

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HOW MUCH TELESCOPE DO YOU NEED?

By Nicholas La Para

A while back in "Cooling Aperture Fever," I looked at the tradeoff between light-gathering power vs cost and ease of use as telescope aperture increased, and found that the same increase in light-gathering is going to cost more (in $ and unwieldiness) as you go up in aperture. Nonetheless, it remains true that more aperture shows you more objects, and *shows more better*. That is a factor I perhaps underrated in the earlier article. Recently, I looked at the globular cluster M13 through three scopes. In my 4" APO refractor it was an interesting but hardly heart-stopping object, with stars *almost* at resolution. In a 10" Dob (with more than 6x the light-gathering) it was beautiful, with strings of delightfully sparkling resolved stars. And in the club 20" (with 4x the light-gathering of the 10"), it was stunning, even though I had to climb a ladder to look at it.

The rule of thumb I suggest is this: Get as much aperture as you can manage. "Manage" means manage financially, and manage physically. "Manage financially" includes an absolute must: do not swap dollars for optical quality; that is, don't buy an increase in aperture at the cost of poorer optical quality. Buy the biggest aperture you can afford *that has good optics*.

"Manage physically" depends on all the following factors: storing the scope ("scope" here includes the mount); lifting and moving the scope (house to car; house to yard; etc.); transporting the scope to another site (lifting it in and fitting it in the car); setting up the scope for observing (time and time again); observing with the scope (ladders?); tearing the scope down, getting it home; putting it away. A lot to consider.

So how much telescope do you need? That can depend on what you want to observe. If you observe only double stars, you don't need to go very large to have plenty to observe. If you want to go after all the galaxies you can garner, then you need all the aperture you can muster.

But what if you do general observing, and want to see many different kinds of objects? Can we get even a semi-quantitative handle on what different size scopes offer? That's what I'll try to do here. And the criterion I'll use is *visual impact*. This is different from just seeing an object, which means merely that you can notice something, and identify it as such-and-such. I call that "glimpsing." No, this is about more than that; it's about what makes many of us get out under the night sky: Beauty.

First a word of warning. There are some quite good 60mm (2.4") scopes available (for $$), but expect the department store/discount store/science store stuff to have poor optics, crummy eyepieces, a finder no better than a soda straw, and a mount and tripod made of spaghetti. Moving up to an 80mm (3") scope gives you better odds for a decent scope. Talk to your local Astronomy Club people before buying!

That said, with a decent 2.5-3" scope (and mount!) you can have beautiful views of the moon. More aperture will show you more details, of course, but you can see plenty at this size. You can also get quite fetching views of the most beautiful planets, Jupiter and Saturn. You can also see the phases of Venus. Mars won't be much more than a orange disk at its closest (2003 will be the next close encounter with Mars, and a very close one at that). Mercury will be just a bright star-like object. With this size scope, I recommend a copy of the book *Turn Left at Orion* as a guide.

What about outside the solar system? Objects to see are double stars, open clusters, globular clusters, planetary nebulas, emission nebulas, galaxies. The order in which these objects were just given indicates the order of increasing aperture needed to see at least some of these things with real visual impact. To try to quantify this fact to some extent, I turned to the two volume set *The Night Sky Observer's Guide* by Kepple and Sanner (and a host of other observers who contributed experienced opinions) to provide the basis for the comparisons. This work surveys all the constellations visible from northern latitudes, though some of these constellations only skim the horizon as seen from here. For each constellation Kepple and Sanner give lists and descriptions *by aperture* of "interesting stars," including multiple stars and colorful stars, and deep-sky objects. Each object gets a * to ***** rating. For my analysis I counted the objects with "real visual excitement" at the minimum aperture they are described as such. For "real visual excitement," I used the following criteria: double & colorful stars and open clusters had to have a rating of at least 4 stars; because globulars and

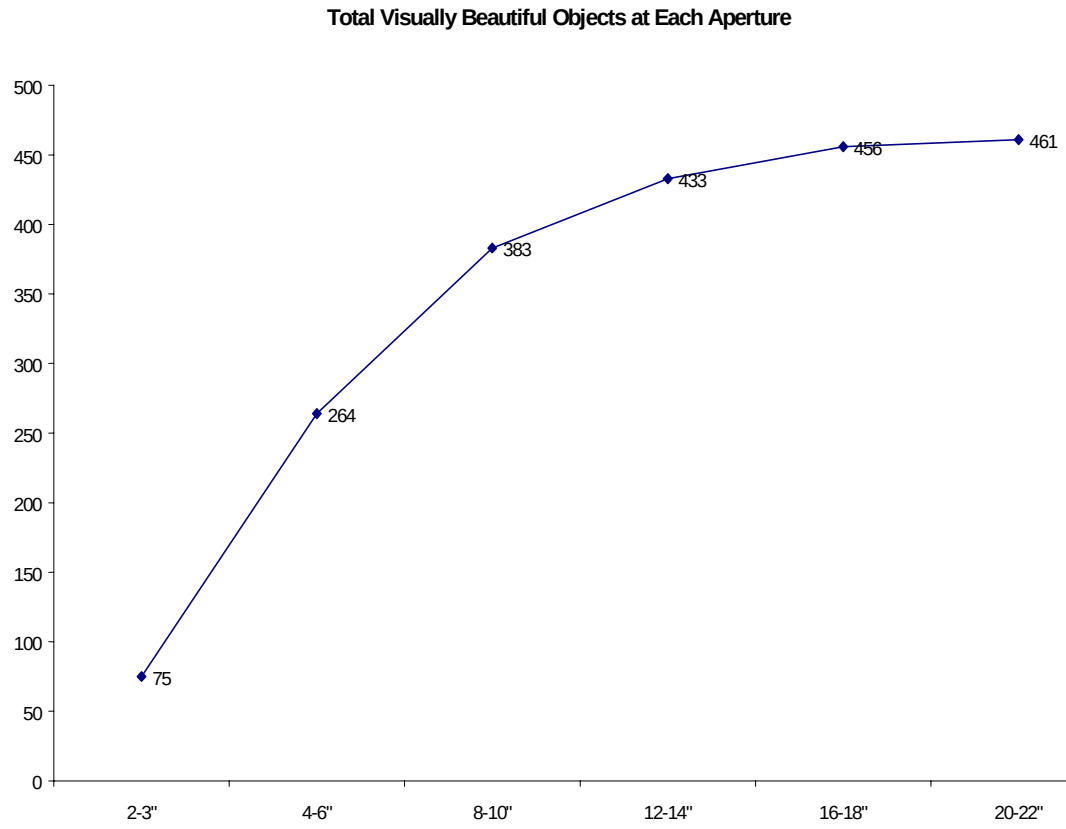
planetary & emission nebulas are dimmer, and galaxies are **much** dimmer, they had to have not only at least 4 stars, but also a superlative (such as "beautiful!" or "superb!") in the description to be counted for that aperture. The results are given in this table:

BEAUTIFUL OBJECTS ADDED AT EACH APERTURE

Aperture	Open Clusters	Multiple Stars	Globular Clusters	Planetary Nebulas	Emission Nebulas	Galaxies	Total Added	Cumulative Total
2-3"	1	74	0	0	0	0	75	75
4-6"	24	158	2	3	1	1	189	264
8-10"	26	61	9	14	3	6	119	383
12-14"	4	12	6	10	2	16	50	433
16-18"	0	0	1	3	0	19	23	456
20-22"	0	0	0	0	0	5	5	461
Totals	55	305	18	30	6	47	461	

Of course, you can see more objects at each aperture than the numbers above indicate, but remember, these are the "showpieces" at their minimum aperture for "showing off."

Making the assumption that what is beautiful at one aperture is (even more) beautiful at larger apertures (there are a few exceptions like the Andromeda Galaxy, where the object is too extended to fit in the narrow field of view of a large, longer focal-length instrument), we can chart the cumulative total of beautiful objects seen at each aperture:



We see that the gain in numbers of beautiful objects falls off as aperture goes up. However, this chart does not show the gain in beauty with increasing aperture for already beautifully seen objects, so keep that in mind. Perhaps the next chart (on next page) is more revealing. It shows how each aperture adds to the total number of each type of beautifully seen object.

I interpret this chart as follows: it shows that at 8-10" you've just about stopped accumulating open clusters and double stars; larger apertures do get you gains in appearance, but this is not going to be that much, for many of these objects are already seen quite beautifully. By 12-14" you have gained almost everything except a few galaxies; again larger apertures will bring gains in appearance of already beautifully seen objects. Finally, if you want to bag the few remaining galaxies that can be visually beautiful, you have to pump up the aperture to really big scopes – and leave the ground, since after 12-14", you have to use ladders.

So what are the conclusions? You'll have to draw your own, but here's how it looks to me. The smallest scopes can provide glimpses of many dimmer objects, but also knock-your-socks-off views of many open clusters and double stars (double stars are often lovely; if you haven't yet, try them). An 8-10" scope has gotten you most of the gains in numbers, though you can still gain in visual impact by

going larger. The 12-14” range looks like a good middle ground that might have the best of it all: the vast majority of beautiful objects are available, you stay with your feet on the ground, and while this size scope is by no means cheap, it is not the most expensive. Portability is an issue, however. Finally, if you have to have those last few galaxies and the best possible views of everything else, well, go for broke.

What have I got? I have a 4” APO which shows clusters and doubles beautifully, an 8” Dob arriving in a few days, and in my dreams…hmmm.

What do you think?

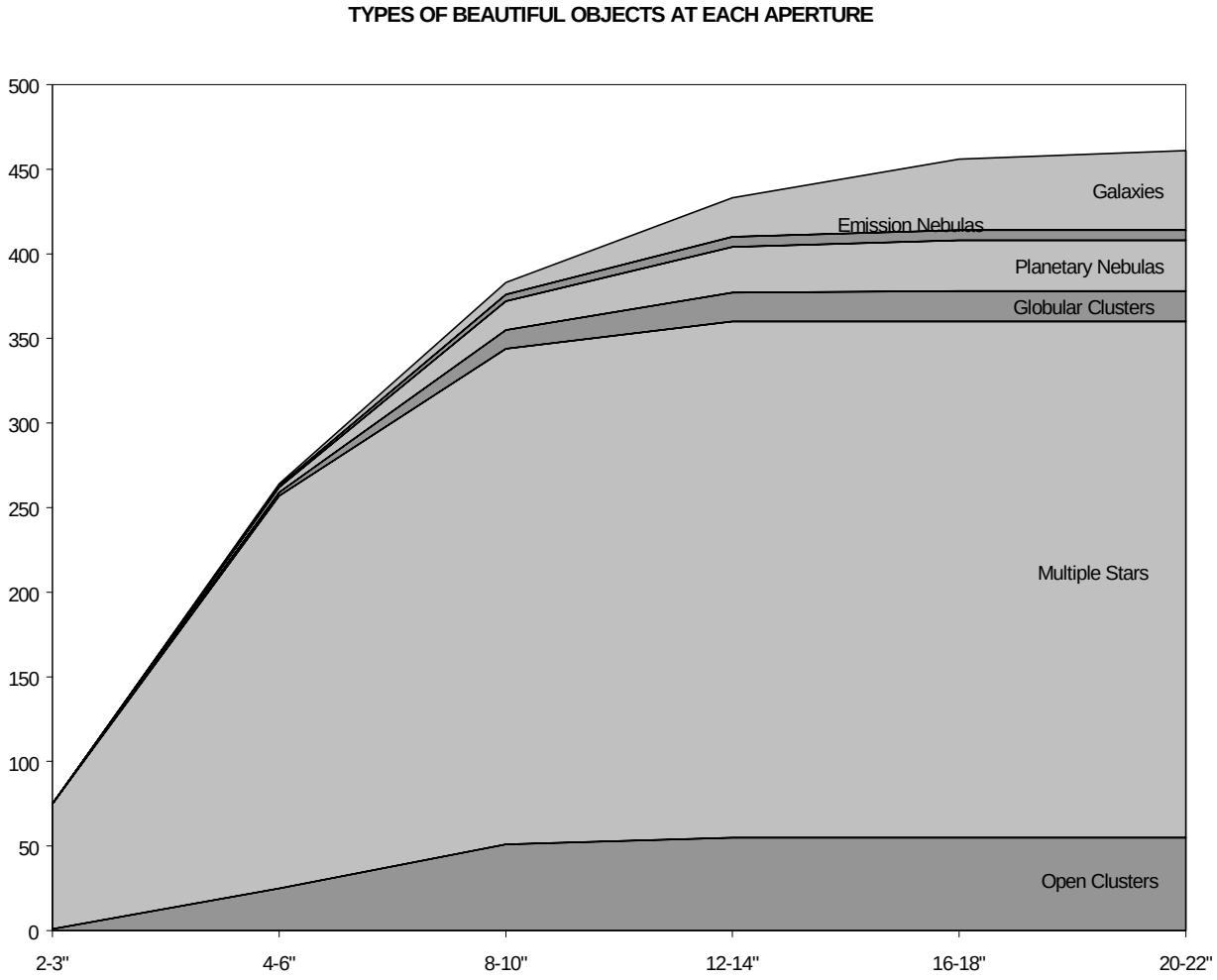


Photo by Nancy Armstrong

Report on the Mason-Dixon StarParty

By Ed Lurcott

Need rain? Just schedule a star party, it never seems to fail. The Mason-Dixon Star Party of last June 22-24 proved it. Friday we arrived during a downpour: we did not even get out of the car for two hours! The rain, lightning, wind, and pea-sized hail finally let up long enough to set up the tents. It stayed cloudy all through Saturday. On Saturday night there were breaks in the clouds that allowed observing of Mars and some other real showpieces, but it did not allow any serious deep-sky observing. Representing the CCAS were my son Steve, his friend Jodi, my daughters Linda and Nancy, and grandkids Janel, Alyssa, Shannon, and Gabriel, in addition to myself.

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

jimanderson1956@aol.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:

jimanderson1956@aol.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
(610-857-4571)

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) 857-4571

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

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Pete LaFrance
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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)
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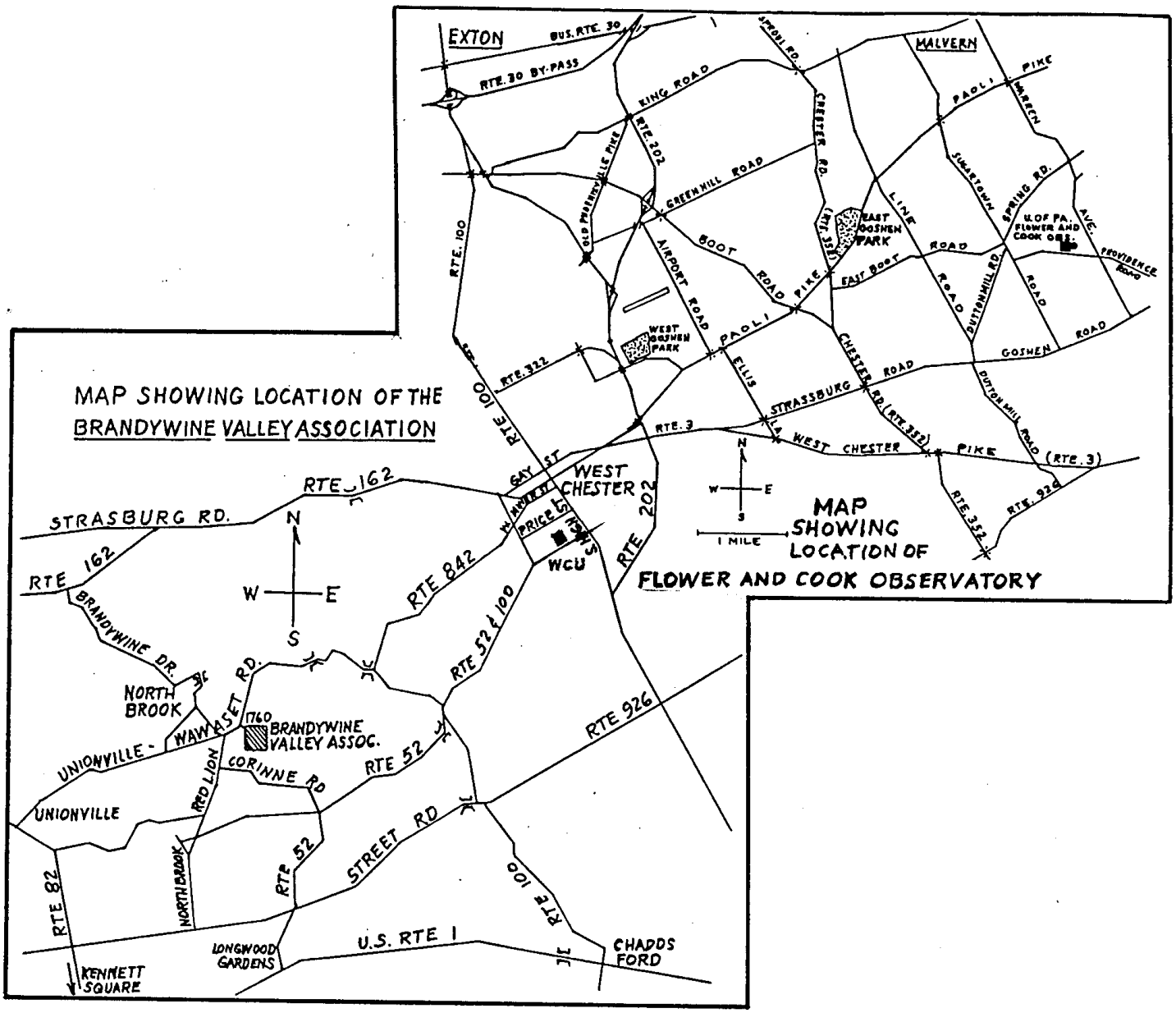
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BUS. RTE. 30
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