

WESTMINSTER ASTRONOMICAL SOCIETY  
of Carroll County, Maryland

Newsletter for November 1985, Vol 2 No 11

Steve Rice Makes Independent Discovery of Comet

At the October 11 Star party, members of WAS and the Baltimore Astronomical Society (BAS) were packing up to call it an early night, after one last look at Comet Hartley-Good. Around 1:00 a.m. EDT Steve Rice and Robert Sier Jr. were sweeping the Northeastern Sky with Dave Peasagno's 13.1" Odyassey I when a faint object was noticed as Steve was observing the constellation Auriga the Hunter. As "Bobby" stepped to the eyepiece, Steve turned and said "Oh no! I wonder if I discovered a comet!"

Those who know Steve are familiar with his unusually keen and sometimes questionably good eyesight. When Steve finds an object he calls faint, that object is usually invisible to anyone else. Nobody observed the mystery object except Steve and Bobby. After the star party Steve, Bobby, and Curt Roelle went to Curt's home to observe with his 12.5" reflector; the night was too beautiful and clear to waste. While walking to his van Steve remarked "Remember that if a new comet is discovered in Auriga in the next week or two, I saw it first."

WAS members  
at Star Party  
held September  
13 in Freder-  
ick. Those  
present are  
from left to  
right: Kegan  
Breuning, Rob-  
ert Sier Jr.,  
Steve Rice,  
and Blaine  
Roelke.

Photograph by  
Walt Richards



Indeed a comet was discovered in Auriga. Comet 1985m was discovered by H. Thiele of the Max Planck Institute in West Germany. This writer does not know the exact date of discovery. In IAU circulars provided by Mike Potter of the Space Telescope Science Institute, the earliest predicted position found was by S. Nakano, Tokyo, for October 8.66200 U.T. (Circular No. 4122). Although discovered several days before being observed by Steve, Steve appears to have made an independent discovery, without previous knowledge of its existence or position. Steve regrets that he did not take himself more seriously and hopes for better luck next time he encounters an unfamiliar object. He will carefully record time and position, and estimate the magnitude.



Steve has learned the hard way how important a maintained observing log book is, such as that described by Mike Potter in WAS' Observational Astronomy #3.

Steve has earned himself recognition among more experienced observers in the society. Next time he looks in the eyepiece and says "Oh No! What is it?" others will respond more quickly.

### November Meeting

On December 4 (November meeting) Fred Espenak, infrared astronomer at Goddard Space Flight Center, shall be guest speaker at the Westminster Astronomical Society. Mr. Espenak is an authority on the subject of solar eclipses. He has led numerous tours and expeditions around the country as well as around the world. When the last eclipse went through this country on May 30, 1984, Fred Espenak provided the ephemeris in his article in Astronomy magazine (May 1984, pp. 34-39). Mr. Espenak is also an expert eclipse photographer, and will bring a number of his slides. In the current eclipse draught WAS members shall find refreshment in the photographs of Fred Espenak.

The meeting shall be Wednesday December 4. Dinner with the speaker begins at 6:00 p.m. at Fan's Chinese Restraunt, 59 W. Main Street, at the corner of Bond & Main. Free parking is available in the rear. The meeting, in Room 111 Lewis Hall, Western Maryland College, begins at 7:30.

### WAS Welcome Wagon

Three persons joined at the October meeting. WAS now has 23 members, up from six one year ago. Welcome aboard the following:

Barry H. Willen	Andrew Jack Demario Jr.	William Shuey
18 Cree Court	2505 Bert Fowler Rd.	96 Carrollview Ave.
Randallstown 21133	Manchester 21102	Westminster 21157
521-4269	374-9177	848-0247

### November Star Parties

In November the New Moon falls mid-week, so Mike Scalion has planned two Saturday night star parties, November 9 and 16. Mike has a Meade Deep Sky 10" reflector housed in a rotating observatory. All are encouraged to come see it for themselves. A map is enclosed with this issue. The address is 2201 Green Haven Way, Hampstead (telephone 239-3105). The star party begins near the end of twilight.

### December Star Party

December's star party will be at Key Observatory in Keymar, two miles from the historical home of Frances Scott Key. Although Blaine Roelke will be in Washington for a meeting with Carl Sagan and the Planetary Society, the observatory shall be open for viewing with the 17.5". A map is enclosed in this newsletter. The address is 6700 Keysville Rd., Keymar. The observatory is about 1.5 miles south of Taneytown, West of Rt. 194.



### Another Successful Astronomy Day

The second WAS Astronomy Day of 1986 was another success thanks to those who helped by giving their time, and the visitors who made it worthwhile. Over 100 people attended the Fall Astronomy Day held October 19 at the Eldersburg Branch of the Carroll County Public Library. Already several visitors have joined WAS and several more have indicated an interest in joining.

Exhibits included telescopes, astrophotos taken by members, books, posters, models, free handouts, a microcomputer, videotapes, and also a moon rock courtesy of NASA-Goddard. Nothing would have been possible without the help of Ken Flynn Jr., Steve Rice, Blaine Roelke, Curt Roelle, Mike Scalion, and Robert Sier Jr. Special thanks goes to the FAD coordinator Eugene Sterner, who ensured smooth running by keeping in close contact with Library personnel during the planning and display phases. At the Spring Astronomy Day of June 8, Ken Flynn was a visitor. In October after joining, Ken was an exhibitor at FAD.

### WAS T-Shirts & Logo Contest

Mike Scalion has suggested that the club commission T-shirts to be printed for members. Mike has found a store that provides free graphics and reasonable prices on T-shirts, sweatshirts, and hooded sweatshirts. The only problem is we do not have a logo to print on the shirts. The solution is to have a logo contest.

On a piece of paper sketch your logo idea. A logo should follow these simple guidelines: A logo (1) displays the name Westminster Astronomical Society (or simply WAS), (2) relates to the subject of astronomy, and (3) optionally contains some local geographical reference (e.g. the Maryland "crab" nebula).

Bring your candidate sketches to the November meeting, or mail them to this newsletter. You may submit more than one design. The entries shall appear in the December, and if necessary January, issues of the newsletter. A final design shall be selected by a vote of the club at the January business meeting. The person with the winning logo shall win something -- probably a T-shirt.

### WAS Members Observe and Photograph Halley

Those who attended the August 23 star party probably remember the promise that those present would experience the first chance in their lives to see Comet Halley. However near dawn a haze remained dimming the chance to see the comet. Also Halley was about one magnitude fainter than predicted. Only two members, Steve Rice and Robert Sier Jr., thought they saw it, observing with Curt Roelle's 12.5" telescope. The rest shuffled sleepily home after watching Venus rise.

The first confirmed sighting by WAS members was on the morning of September 12. Mike Potter and Blaine Roelke observed Halley with the 17.5" reflector at Key observatory. Mike described the comet as unimpressive, except for a bright star-like condensation at the center of the coma that was easily seen. Mike estimated Halley's magnitude at around 13.

Two mornings later on September 14th four persons were



remaining at the September star party in Frederick. About 2:00 a.m. they drove to Westminster to again attempt to view Halley with the 12.5". Around 3:00 a.m. the comet was high enough to view but could not be seen. Although the night was very dark, a mercury vapor light two blocks away seemed to be interfering. After extinguishing the light another attempt was made to observe Halley. This time the comet was clearly seen, and was viewed by Curt, Todd Bonner, Steve Rice, and Robert Sier Jr. Roelle estimated the magnitude to be around 13.5 by comparing Halley with the faint galaxies of Stephan's Quintet, which was at a similar altitude with the comet.



Kegan Brauning (Grandson of Walt Richards) focuses for a better view at the eyepiece of Steve Rice's C8 at the September 13 star party.

Photograph by Walt Richards

The first member to photograph Halley was Mike Scalion on the morning of September 13. Although the comet was not seen visually in his 10" reflector, Halley is seen with the aid of a magnifying glass as a tiny fuzzy star on the photographic print. Since then Mike has seen the comet visually with his telescope.

Now that Halley is getting brighter, it should be seen by thousands of amateurs this month. At the October 11 star party Halley was observed in Steve Rice's Celestron 8 and Curt Roelle's 6" reflector. Steve has recently reported a possible sighting with a 7x35 binocular. This is possible since Halley is glowing about one magnitude brighter than predicted. On the night of the 17th the comet glides south of the Pleiades star cluster and should easily be seen in binoculars from sufficiently dark skies. On the 27th Halley makes its first close pass to the earth at a distance of 57.7 million miles. The only closer approach will be on April 11.

#### USNO Recovers Halley in Downtown D.C.

Early one October morning two astronomers at the U.S. Naval Observatory (USNO) in downtown Washington recovered Halley's Comet. Jim DeYoung and Ted Rafferty used the 26" Clark refractor and 24" Cassegrain to see Halley, then at 10th magnitude, on an "exceptionally clear" morning. The time was around 4:00 a.m. October 17. Note in the previous article that at least seven WAS



members using amateur instruments observed Halley more than a month before the USNO astronomers using the historic Clark. Of course the difference in the levels of light and air pollution must be considered.

The USNO has a new book "written at the layman's level for armchair astronomers". The booklet contains "detailed star maps, Halley Chronology, and helpful observing hints". The cost is \$1.25 and the order number is 008054001211. It can be ordered from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402.

### WAS to Join Astronomical League

WAS shall shortly become a member of the Astronomical League, a federation of astronomy clubs across the country, and the largest organization of amateur astronomers in the United States. Benefits are many, including a strong voice of thousands for accomplishing such goals as curbing light pollution. The Astronomical League, or A.L., offers a number of observing programs, a 10% discount book buying service, technical advisory services, educational and program materials for member societies, regional and national conventions (more about that next month!), and even a computer user's group. Information about all benefits will be received by each member in the League's quarterly newsletter "The Reflector". This move is an outward and visible sign of the rapid growth the Westminster Astronomical Society has experienced in the last year.

### Nominations Needed For 1986 Election

The Executive Committee is seeking individuals who wish to run for 1986 office at the annual election/business meeting, January 29. Nominations will be accepted for the following five offices:

- (1) President                      (3) Secretary      (5) Director at Large
- (2) Vice President                (4) Treasurer

These five individuals are the members of the Executive Committee. Four non-elected offices are appointed by the President. The appointed offices are:

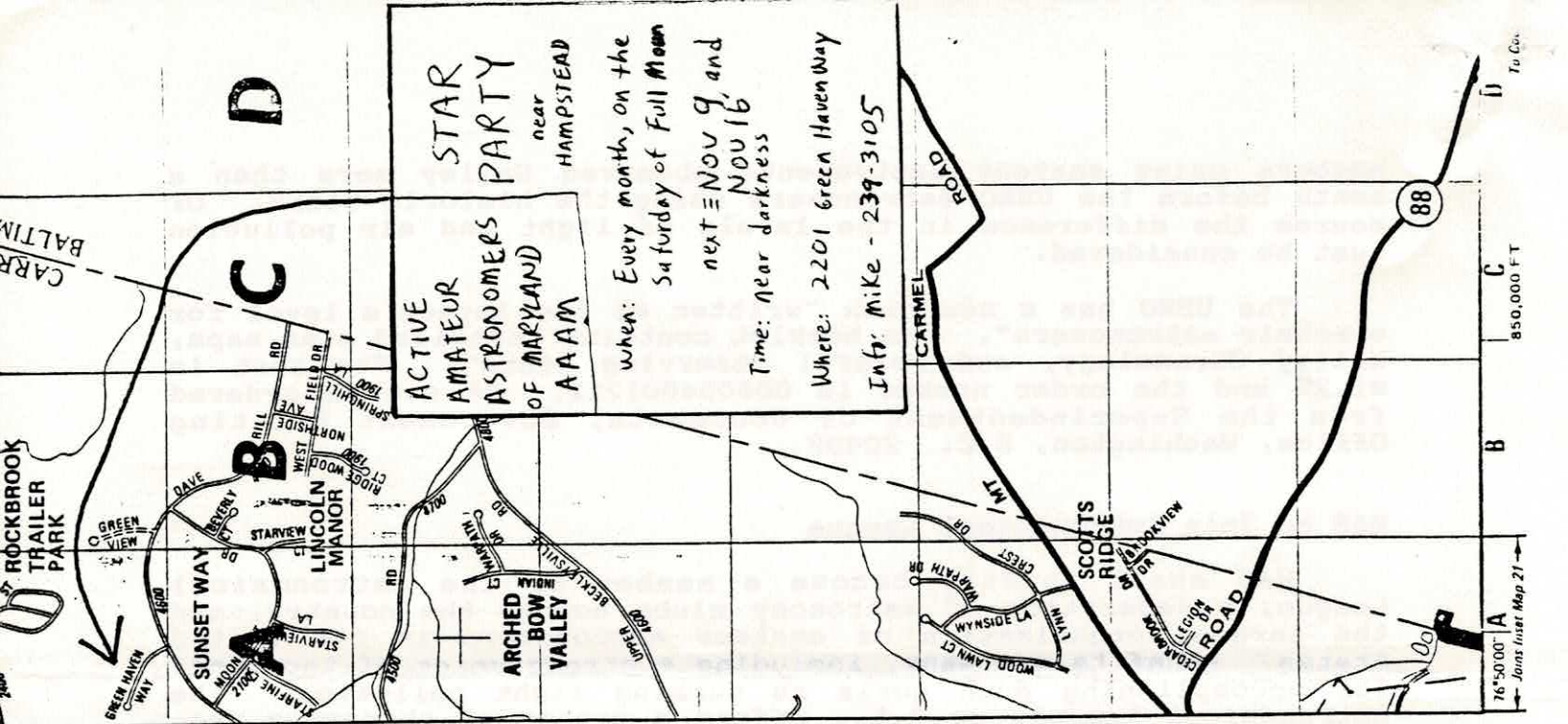
- (1) Program Chairman              (3) Newsletter Editor
- (2) Observing Chairman            (4) A.L. Correspondent (ALCOR)

Appointed officers are not members of the Executive Committee. Thus Committee members may also hold appointed office.

Nominations received by the Committee by January 15 shall be printed in the newsletter for inspection before the election. However, nominations remain open through the January 29 meeting up until the time of the election. Those wishing to learn more about each position, or if you wish to nominate someone or be nominated, please contact any committee member listed below:

<b>Pres</b> Curt Roelle 848-6384	<b>Treas</b> Blaine Roelke 756-2886
<b>VPres</b> Todd Bonner 848-7839	<b>Dir</b> Tom Appler 239-8070
<b>Sec'y</b> Tom Prall 374-6503	

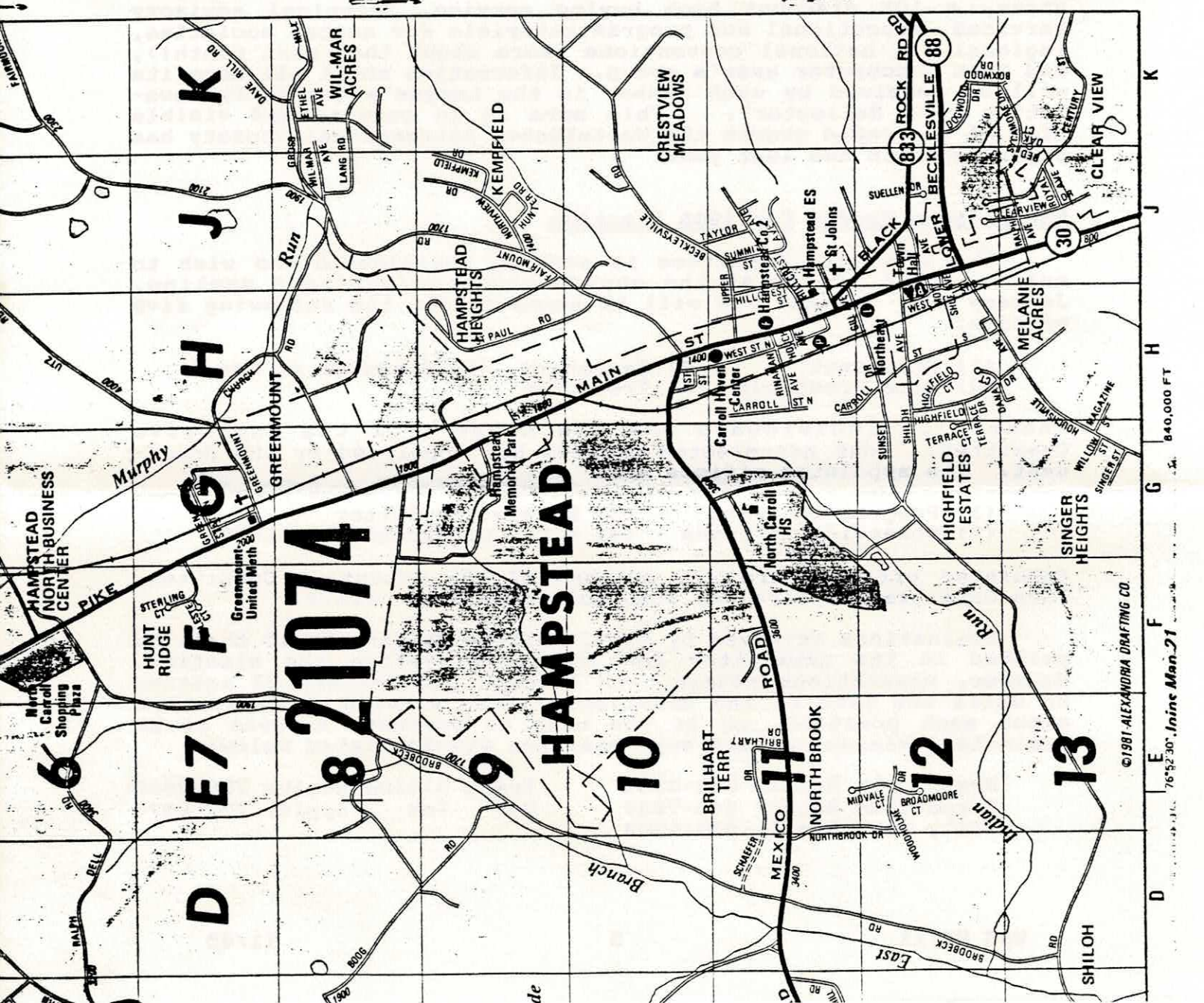




**ACTIVE AMATEUR ASTRONOMERS OF MARYLAND AAAM**  
**STAR PARTY**  
 near HAMPSTEAD

when: Every month, on the  
 Saturday of Full Moon  
 next  $\pm$  NOV 9, and  
 NOV 16,  
 Time: near darkness

Where: 2201 Green Haven Way  
 Infr: Mike - 239-3105



**821074**

**HAMPSTEAD**

**10**

**11**

**12**

**13**

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Infr: Mike - 239-3105



## Dropping In On the Space Shuttle

Steve Rice has been using his shortwave radio to eavesdrop on the Space Shuttle communications. This sort of activity began several years ago when one of the Shuttle astronauts, Owen Garriot, himself an amateur radio buff, began conversing with ground-based amateur radio stations from orbit. Steve ran into some problems monitoring the recent spacelab mission. The international crew frequently used German in communicating with the ground.

Curt Roelle watches live T.V. transmissions from the Space Shuttle on Channel 56, WNVC, Fairfax, Virginia. The station usually broadcasts live from the floor of the United States Senate in Washington. In a telephone interview for this newsletter, the station reported that when a Shuttle mission is in space it is given as much air time as possible, i.e. when the Senate is not in session. Roelle has seen live television from the Shuttle and Houston Control on channel 56 all day long. Although 50 miles away, Roelle's steerable T.V. antenna gets fair reception. At other times the station broadcasts sports (football and basketball), and foreign language programming (Spanish, Chinese, etc.).

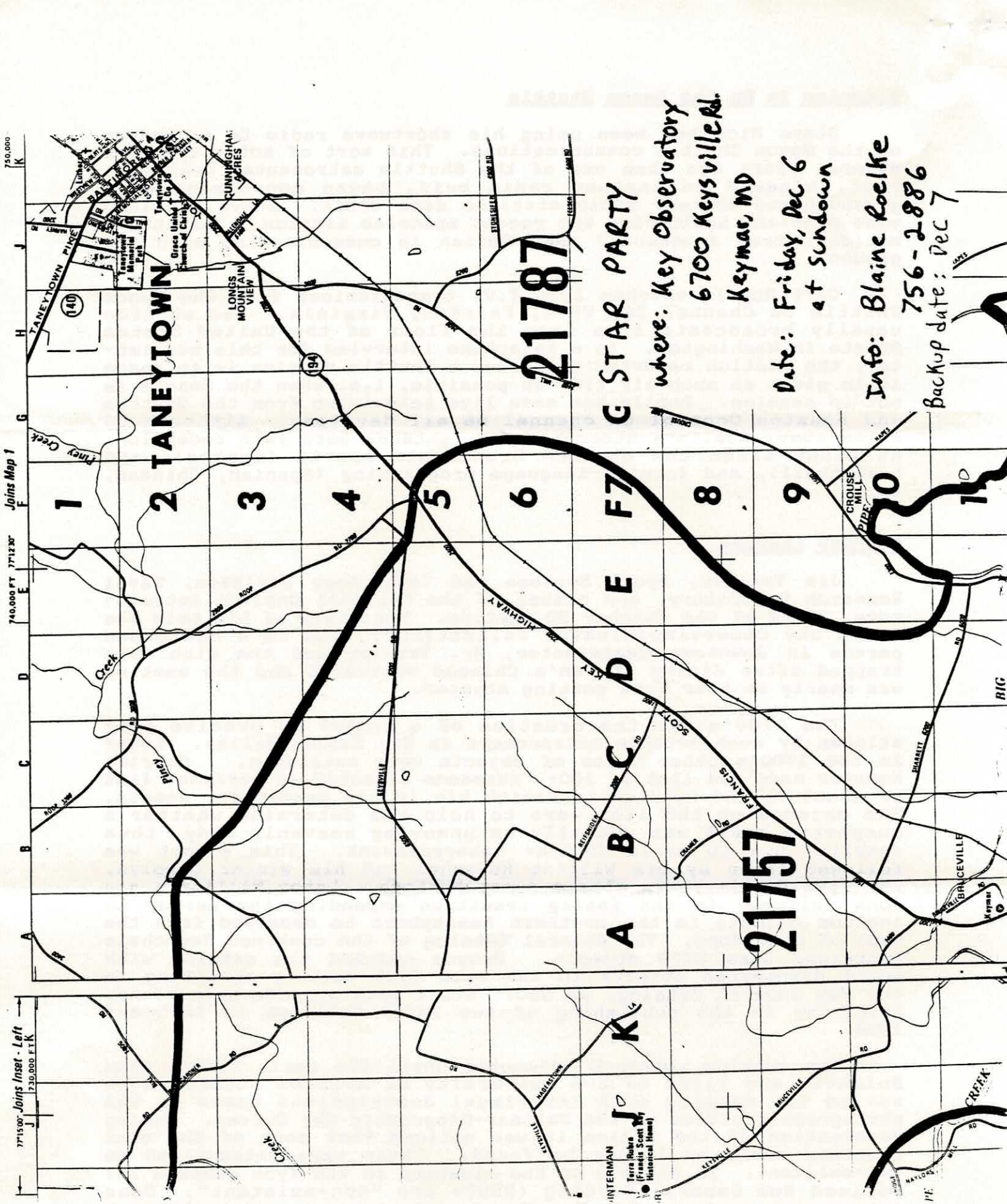
## October Lecture

Jim Trexler, Space Systems and Technology Division, Naval Research Laboratory, and member of the National Capital Astronomers, spoke at the October 30 meeting. The title of his talk was "Deep Sky Observing/Cluster Validation". Due to a Halloween parade in downtown Westminister, Mr. Trexler and the club were trapped after dining at Fan's Chinese restaurant and the meeting was nearly an hour late getting started.

The 1700's saw the creation of a number of precise star atlases by such notable astronomers as Sir Edmund Halley. Later in the 1700's other types of objects were cataloged. Charles Messier made his list of 100+ "nuisance objects", a personal list of clusters and nebulae to assist him in his search for comets. The objects on the list were to help him determine whether a suspected comet was actually an unmoving heavenly body, thus enabling him to avoid further embarrassment. This effort was followed later by Sir William Herschel and his sister Carolyn, who like Messier were also a comet hunters. Later William's son John followed in the family tradition expanding the survey to include objects in the southern hemisphere he observed from the Cape of Good Hope. The General Catalog of the combined Herschels contained some 5079 objects. Dreyer updated the catalog with newly discovered objects in the late 19th century resulting in the New General Catalog, or NGC. Still more objects were found, resulting in the publishing of two Index Catalogs in 1895 and 1908.

The catalog remained untouched until the early 1970's when Sulentic and Tifft of the University of Arizona attempted to revise the catalog with new visual descriptions based on the photographic plates of the Palomar-Geographic Sky Survey. During examination of the plates it was noticed that some of the star clusters could no longer be found. These were categorized as non-existent. In all 173 of the clusters in the (you guessed it) Revised New General Catalog (RNGC) are "non-existent". Some astronomers such as Jim Trexler questioned this seemingly high





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740,000 FT 77°12'30"

750,000 FT

720,000 FT K

INTERMAN  
Terra Rubra  
(Francis Scott Key  
Historical Home)

21787

21757

G STAR PARTY

where: Key Observatory  
6700 Keysville Rd.  
Keymar, MD

Date: Friday, Dec 6  
at Sundown

Info: Blaine Roelke  
756-2886  
Backup date: Dec 7





number.

Mr. Trexler then discussed two Messier objects and their subsequent recovery. At the position of M48 given by Messier was located nothing. Five degrees south of this position was a very large cluster. Upon closer examination of Messier's notes it was found that Messier had made an error and plotted the cluster's position 5 degrees too far to the north. NGC2548 is now accepted as being M48. [Indeed Norton's Star Atlas plots M48 in the incorrect position, with NGC2548 5 degrees to the south with its Herschel designation 22 -- Ed]

In another case M47 in Puppia was missing. Nothing was seen at the position of M47, which was plotted to the east of M46. Again Messier had made an error, and NGC2422, west of M46, is now known as M47. [Norton's Atlas does not show an M47, but does show NGC2422, once again by the Herachel General Catalog number of 38 -- Ed]

A different case is not a missing Messier, but a misclassified one. Again a mistake of Messier, M73 (NGC6994) in Aquarius, is simply a small group of 4 stars and is not thought to be a true cluster. Messier described it as being surrounded by nebulae, which has not been observed since. Perhaps, Mr. Trexler musea, Messier exhaled his breath onto the eyepiece while viewing.

Mr. Trexler's search for nonexistent clusters began with Herschel's Cluster NGC6775. He recommends reading In the Shadow of the Telescope, the autobiography of John Herschel. This cluster was listed as nonexistent in the RNGC. Mr. Trexler and a private group of amateur astronomers own and operate Hopewell Observatory located west of Dulles International Airport, in the Bull Run Mountains of Virginia. One night Mr. Trexler asked a group of observers to observe Herschel's Cluster, to see if it was truly missing. Those present easily observed it with a 6 inch F/8 refractor. Members of the group then went to the U.S. Naval Observatory and looked the cluster up on the Palomar plates. In further study they photographed it with the National Capital Astronomers' C14.

As part of his study, Mr. Trexler read the writings of great astronomers, many of them long gone, to learn the definition of a cluster. What constitutes a cluster? How many stars are needed to form a cluster? How large or small can a cluster be and still be called a cluster? The best summary is found in Wyatt's Principles (1964):

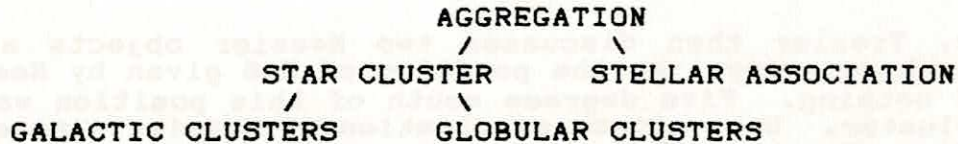
1. One star in 1000 is a member of an aggregation.
2. No large stellar group can be an accidental clumping.

Furthermore the following statements:

- o There are 800 to 1000 known clusters in the Milky Way.
- o There are 12 to 1000 stars in a cluster, typically 50-100.

The aggregation (1.) can be broken down as follows:





Stellar associations are groups of stars that were formed in the same primordial nebula as a cluster of stars. Since formation, the stars have spread, caused by the rotation of the galaxy which "smears" the stars abroad. Thus associations are usually older stars from broken clusters. Many stars in the sky are members of associations that originated in Orion. Another association are the stars of Ursa Major (Big Dipper). In this case the group is too large to be called a cluster. It is an association.

The other branch of the stellar aggregations, the clusters, are divided into two groups. The older are the globular clusters. These are large circular masses of hundreds of thousands of stars. Mr. Trexler is more concerned with the other branch, the galactic or open clusters. It is from the galactic clusters that the list of nonexistent objects belong.

Mr. Trexler has taken several steps to explain why the clusters are nonexistent. One of the most obvious sources of mistakes are errors in precession. Over many years the earth wobbles on its axis causing the stars to shift positions. The clusters are too far away for their real or "proper" motions with respect to other background stars to be seen in such a short time and are thus ignored. But the precessional errors may be a source for some errors. Using the originally plotted positions found in the NGC catalog and a precession method found in the Explanatory Supplement to the Astronomical Ephemeris and the American Ephemeris and Nautical Almanac, Mr. Trexler precessed the position of each of the nonexistent clusters. The results showed that the RNGC positions were in agreement. Clearly this does not explain the missing clusters.

Next Mr. Trexler obtained the Smithsonian Astrophysical Observatory (SAO) atlas on magnetic tape, a listing of 500,000 stars. Plotting regions of the sky at fainter and fainter limiting magnitudes, Mr. Trexler could make finder charts of the cluster area. The fainter the magnitude the better the clusters stood out, up to a reasonable limit before faint background stars became too numerous cluttering the chart.

For this type of work Mr. Trexler recommends the Hans Vehrenberg Atlas Stellarum, a moderately priced (less than \$200) photographic star album. The SAO star plots and corresponding sections of the Vehrenberg combine nicely to aid in cluster searching.

The National Capital Astronomers formed a special interest group called the Cluster Validation Group (CVA). CVA published a catalog containing the 173 nonexistent clusters. This volume is no longer in print but should be reprinted someday. Mr. Trexler is still interested in the program but has found it difficult to find others to assist him. Perhaps WAS astronomers who are lucky to have such dark skies can help, he said.

Anyone interested in learning more can contact Curt Roelle (949-6384). Curt worked with Mr. Trexler in 1983 in the program.



When active, Mr. Trexler would send members a list of objects, coordinates, SAO charts, AAVSO charts, and Vehrenberg charts to assist in locating the objects on the list. Everyone can participate, with the larger apertures preferred.

Mr. Trexler recommends a 6 inch F/8 refractor as the perfect instrument for observing open clusters. Mr. Trexler's dual 6 inchers allow two persons to view simultaneously without any light reduction due to splitting of the image. A photograph of Mr. Trexler, the instrument, and Walter Scott Houston may be found in the SEP-83 Sky and Telescope, p. 250.

### Corrections

V2.9-4 The telephone number for the recorded USNO Halley's Comet Service should have been 202-653-0258.

V2.10 Figures 3 and 4 should be interchanged.

We apologize for any trouble or confusion that was caused.

### WAS CALENDAR

November	5	8:00 p.m.	Astronomy Lab at WMC Lewis Science Hall
	9	p.m.	Star Party, Mike Scalion -- Hampstead
	12	8:00 p.m.	Astronomy Lab at WMC Lewis Science Hall
	16	p.m.	Star Party, Mike Scalion -- Hampstead
	19	8:00 p.m.	Astronomy Lab at WMC Lewis Science Hall
	26	8:00 p.m.	Astronomy Lab at WMC Lewis Science Hall
December	3	8:00 p.m.	Astronomy Lab at WMC Lewis Science Hall
	4	6:00 p.m.	Dinner with Speaker -- Fan's Restraunt
		7:30 p.m.	WAS November meeting -- Rm. 111 Lewis
	6	p.m.	Star Party, Blaine Roelke's -- Keymar



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