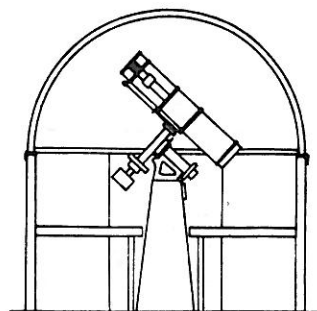


The Spectrum



elg

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The BUFFALO ASTRONOMICAL ASSOCIATION, Inc

 * JULY - AUGUST *
 * 1984 *
 * SUMMER ISSUE *

ASTRONOMER from the PAST

Pierre Charles LeMonnier was a French astronomer, 18th century. He was born in Paris in November Of 1715 and passed away May 31, 1799, near Bayeux. He attended at the Académie of Sciences when he was but 20 years of age. He had prepared an elaborate map of the Moon. In that same year was chosen to accompany Maupertis and Clairaut on a geodetic expedition to Lapland. He was instrumental in securing the introduction of English methods and instruments in French astronomy circles. In 1741 he introduced the use of the transit instrument at the Paris Observatory

He visited England and Scotland in 1748 for the purpose of observing the annular eclipse of July 25th that year. He made a careful study and observations of the disturbances of Jupiter and Saturn which later investigations confirmed; also an important series of lunar observations covering a period of 50 years. He investigated the terrestrial magnetism and atmospheric electricity, and succeeded in determining the places of a large number of stars.

He was a lecturer at the Collège de France during a large portion of his career and was admitted to the Royal Society in 1739; upon the founding of the Institute was one of the 144 original members.

He authored such writings as:- Histoire Céleste (1741); Théorie des comètes (a translation with annotations of Halley's 'Synopsis') (1743); Nouveau zodiaque (1755); Observations de la lune, du soleil, et des étoiles fixes (1751-1775); Lois du magnétisme (1776-1778) and others.

Darwin Christy

CORRECTION

"Whoops by your editor"

The last issue of the SPECTRUM contained a problem in which we were asked to use only three digits to represent a number greater than all the atoms in the universe. The answer given was 999. This certainly complied with three digit requirement but the number was even smaller than the number of atoms on the tip of a pin, let alone the universe. The answer should have had the digits on three different levels so that one was a base, one an exponent and the third, the exponent of an exponent. The expression would then read "9 to the power of 9 to the 9th power".

If you raise 9 to the 9th power by successive multiplication you get a value of about 400 million. This is only to the ninth power. What happens if you keep on multiplying 400 million times? To make the example simpler let's take the base 10 instead of 9. The number would not be significantly different because it is already so huge.

10 to the 9th power is the figure 1 followed by nine zeros or 1 billion. By the same token, 10 to the 1 billionth power would be the figure 1 followed by a billion zeros. They say that this is a number greater than the number of atoms in the universe, and I won't argue. Such is the magic of the exponent in mathematics.

Ed Lindberg

*** DOUBLE STARS WITH CONTRASTING COLORS ***

For many years I have wanted a list for some public nights of double stars that are colorful, besides the one well known crowd pleaser Albireo (Beta Cygni). Such a list has been long needed for some public nights because of the long twilight of summer, light pollution, at times a lack of bright planets, or a full moon which severely dims the view of practically all celestial objects. Under those conditions the most interesting objects to show are double stars but if both of the stars that form a double are of the same color, the public thinks that they are plain white and all look the same and they soon become bored with doubles. If a double has a color contrasting companion, they find double stars interesting and notice the beautiful colors.

In late November 1983, I asked our local double star experts Rowland Rupp and Shaun Hardy to see if they knew of any such listing of stars; but unfortunately they did not. After giving an observation report about a double star at the December B.A.A. meeting, I asked the audience if anyone was aware of a listing of color contrasting doubles, but again no luck. In the January 1984 issue of our club newsletter, The SPECTRUM, Rowland Rupp wrote an article on the subject, which included a short list of double stars from some reference material. Soon afterward came letters responding to that article from amateur astronomers Ken Brown of Rochester, N. Y., Don Magor of No. Miami Beach, Fla., and Shigeru Morikubo from Atsugi Shi, Japan with little or no luck.

Reading Sky & Telescope and Astronomy magazines for more than ten years, I have never seen a list of color contrasting doubles or come across one looking through some older issues. The same is true for the Observer's Handbook, Norton's, Burnham's, and the Webb Society's Handbooks. Over the months I have compiled a list of seventy-four (74) doubles with contrasting colors which should help popularize 'double stars' such as the Messier Catalogue has done for the deep-sky objects. Never before has anyone photographed in color the resolved image of a colorful double star, and some day it would be nice to see that finally accomplished too. (Refer to the next two pages - ed)

Carl Milazzo

| NAME OF COLOR CONTRASTING DOUBLE STAR | COLOR AND MAGNITUDE OF PRIMARY STAR | SEPARATION IN ARC SECONDS | COLOR AND MAGNITUDE OF SECONDARY STAR | RIGHT ASCENSION HR. & MIN. | DECLINATION DEG. & MIN. |
|--|---|---------------------------------|---|----------------------------------|----------------------------|
| Σ 3053 Cas. | GOLD 6 | 15" | BLUE 7½ | 00 ^h 00 ^m | +65° 49' |
| 55 Psc. | GOLD 5½ | 7 | WHITE 8 | 00 37 | +21 10 |
| η Cas. | YELLOW 3.6 | 11 | REDDISH 7.2 | 00 46 | +57 33 |
| ξ Psc. (Σ 100) (β 1029) | WHITE 4.2 | 23 | YELLOW 5.3 | 01 11 | +07 19 |
| ϕ Cas. | WHITE 5.0 | 134 | BLUE 7 | 01 17 | +57 58 |
| Σ 163 Cas. | ORANGE 6½ | 35 | WHITE 8½ | 01 47 | +64 36 |
| λ Ari. | WHITE 4.8 | 37 | YELLOW 7.4 | 01 55 | +23 21 |
| h 647 Psc. | REDDISH 9 | 26 | WHITE 9½ | 02 00 | +07 27 |
| γ And. (Σ 205) | GOLD 2.2 | 10 | BLUE 5.4 | 02 08 | +42 06 |
| ι Tri. (6) (Σ 227) | YELLOW 5.4 | 4 | WHITE 7.0 | 02 10 | +03 04 |
| O Σ 226 Cas. | BLUE 6½ | 63 | YELLOW 7 | 02 16 | +59 48 |
| ι Cas. | YELLOW 4.7 | 2.3 | BLUE 7.0 | 02 25 | +67 11 |
| η Per. | GOLD 3.9 | 28 | BLUE 8.6 | 02 47 | +55 41 |
| Σ 336 Per. | YELLOW 6½ | 9 | WHITE 8 | 02 58 | +32 13 |
| Σ 320 Cep. | REDDISH 6½ | 5 | YELLOW 9½ | 02 59 | +79 13 |
| Pi Cam. (97) | ORANGE 6 | 55 | BLUE 8½ | 03 39 | +59 49 |
| O Σ 67 Cam. | ORANGE 5 | 1.7 | BLUE 8½ | 03 53 | +60 58 |
| 32 Eri. | YELLOW 5.0 | 7 | WHITE 6.3 | 03 53 | -03 06 |
| β 87 Eri. | ORANGE 6.2 | 1.8 | BLUE 9.3 | 04 17 | +20 35 |
| Σ 644 Aur. | BLUE 6½ | 1.5 | GOLD 7 | 05 07 | +37 14 |
| h 3752 Lep. | YELLOW 5½ | 3.1 | BLUE 6½ | 05 20 | -24 49 |
| γ Lep. (S498) | YELLOW 3½ | 95 | ORANGE 6 | 05 42 | -17 53 |
| η Gem. | REDDISH 3.3 | 1.6 | GOLD 6.5 | 06 12 | +22 31 |
| 38 Gem. | WHITE 5½ | 7 | YELLOW 7½ | 06 52 | +13 15 |
| h 3934 CMa. | BLUE 7 | 14 | WHITE 8½ | 07 09 | -21 43 |
| δ Gem. | WHITE 3½ | 6 | ORANGE 8 | 07 17 | +22 05 |
| Σ 1254 Cnc. | GOLD 6½ | 63 | YELLOW 8 | 08 38 | +19 51 |
| ι_2 Cnc. | GOLD 4½ | 31 | BLUE 6½ | 08 44 | +28 57 |
| ϵ Hya. (Σ 1273) | YELLOW 3.5 | 3.1 | WHITE 6.9 | 08 44 | +63 06 |
| β 584 Cnc. (S571) | BLUE 6.9 | 93 | GOLD 7.7 | 08 37 | +19 44 |
| α Leo. (Regulus) | WHITE 1.4 | 177 | GOLD 7.9 | 10 06 | +12 13 |
| 88 Leo. (Σ 1547) | YELLOW 6½ | 16 | ORANGE 8½ | 11 29 | +14 39 |
| Σ 1561 UMa. | YELLOW 6.3 | 10 | GOLD 8.6 | 11 36 | +45 23 |
| 2 CVn. (Σ 1622) | REDDISH 5½ | 11 | YELLOW 8 | 12 14 | +40 56 |
| δ Crv. | BLUE 3.1 | 24 | GOLD 8.4 | 12 28 | -16 14 |
| 24 Com. | GOLD 5.2 | 20 | BLUE 6.7 | 12 33 | +18 39 |
| 32+33 Com. (Σ I 23) | REDDISH 6 | 195 | YELLOW 6½ | 12 50 | +19 27 |

| NAME OF COLOR CONTRASTING DOUBLE STAR | COLOR AND MAGNITUDE OF PRIMARY STAR | SEPARATION IN ARC SECONDS | COLOR AND MAGNITUDE OF SECONDARY STAR | RIGHT ASCENSION HR. & MIN. | DECLINATION DEG. & MIN. |
|--|---|---------------------------------|---|----------------------------------|----------------------------|
| 35 Com. | GOLD 5 | 29" | WHITE 9 | 12 ⁿ 51 ^m | +21° 31' |
| Σ1764 Vir. | GOLD 7 | 16 | WHITE 8½ | 13 35 | +02 38 |
| ε Boo. (Σ1877) | GOLD 2½ | 2.9 | BLUE 5 | 14 43 | +27 17 |
| ξ Boo. (Σ1888) | YELLOW 4.8 | 7 | ORANGE 6.9 | 14 49 | +19 18 |
| Hh457 Lib. (P212) (Sh190) | ORANGE 6 | 22 | REDDISH 7½ | 14 55 | -21 11 |
| 18 Lib. (Σ1894) | GOLD 6 | 20 | YELLOW 9½ | 14 56 | -10 57 |
| μ Boo. | WHITE 4.3 | 108 | YELLOW 6.5 | 15 22 | +37 33 |
| κ Her. (Σ2010) (7) | YELLOW 5.3 | 28 | GOLD 6.5 | 16 06 | +17 11 |
| α Her. (Rasalhague) | REDDISH 3-4 VAR. | 5 | YELLOW 5.4 | 17 12 | +14 27 |
| δ Her. | BLUE 3.2 | 9 | YELLOW 8.8 | 17 13 | +24 54 |
| σ Oph. (39) | GOLD 6 | 11 | WHITE 7 | 17 15 | -24 14 |
| Σ2194 Her. | GOLD 6 | 16 | WHITE 8½ | 17 39 | +24 32 |
| μ Her. (Σ2220) | YELLOW 3½ | 34 | REDDISH 9.3 | 17 45 | +27 45 |
| S694 Oph. | GOLD 6½ | 82 | BLUE 7 | 17 50 | +01 08 |
| 95 Her. | WHITE 5.1 | 7 | YELLOW 5.2 | 17 59 | +21 36 |
| ο Dra. (47) (Σ2420) | GOLD 4½ | 34 | BLUE 7½ | 18 51 | +59 20 |
| δ Lyr. | REDDISH 4.3 | 620 | BLUE 5.6 | 18 52 | +36 54 |
| οΣ525 Lyr. | YELLOW 6 | 45 | BLUE 7½ | 18 53 | +33 54 |
| S711 Sgr. | YELLOW 7 | 45 | BLUE 8½ | 19 05 | -26 55 |
| οΣΣ178 Aql. | YELLOW 5½ | 90 | BLUE 7½ | 19 13 | +15 00 |
| Σ2521 Vul. | REDDISH 6 | 71 | WHITE 9½ | 19 24 | +19 48 |
| β Cyg. (Albireo) | GOLD 3.1 | 34 | BLUE 5.1 | 19 29 | +27 52 |
| 84 Sge. (HN) | REDDISH 6½ | 28 | WHITE 8½ | 19 37 | +16 27 |
| αX Cyg. (οΣ391) | BLUE 9 | 19 | REDDISH 9-11 VAR. | 19 56 | +44 08 |
| β Cap. | YELLOW 3.1 | 205 | BLUE 6.0 | 20 18 | -14 56 |
| γ Del. (Σ2727) | GOLD 4.5 | 10 | YELLOW 5.5 | 20 44 | +15 57 |
| 52 Cyg. | BLUE 4½ | 7 | GOLD 9½ | 20 44 | +30 32 |
| 12 Aqr. (Σ2745) | YELLOW 5.8 | 2.9 | BLUE 7.9 | 21 01 | -06 01 |
| β Cep. (Σ2806) | BLUE 3½ | 14 | WHITE 8 | 21 28 | +70 20 |
| ξ Cep. | WHITE 4.6 | 8 | YELLOW 6.6 | 22 02 | +64 23 |
| 41 Aqr. (Hh753) | GOLD 6 | 5 | YELLOW 7½ | 22 12 | +21 19 |
| Σ2894 Lac. | BLUE 6 | 16 | WHITE 8 | 22 17 | +37 31 |
| δ Cep. | YELLOW 3.5-4.3 VAR. | 41 | BLUE 6.2 | 22 27 | +58 10 |
| ο Cep. (34) (Σ3001) | GOLD 5½ | 3.2 | YELLOW 8 | 23 16 | +67 50 |
| 94 Aqr. | YELLOW 5 | 13 | GOLD 7 | 23 17 | -13 44 |
| WZ Cas. (οΣΣ254) | WHITE 7½ | 58 | REDDISH 7.4-10 VAR. | 23 59 | +60 05 |
| h3945 CMa (ADS5951) | REDDISH 5 | 27 | WHITE 7 | 07 16 | -23 13 |

++ OBSERVATION REPORTS ++

April 28-29 galaxies M-65 & M-66 were observed with my newly completed 10" f:4.5 Dobsonian. M-66 is the brighter of the two (+9.7 magnitude). I found that M-65 appeared brighter, even though it is at magnitude +10.3, perhaps owing to its more elongated outline. I also captured NGC 3628 in the field of view at 46x with a 25mm eyepiece. NGC 3628 is just 35' north of M-66 and is fainter than the other two. I hopped over to Hercules and observed M-13, the Great Globular Star Cluster. I resolved most of the stars around the outer circumference. Stars were speckled across the central portion. The faint galaxy NGC 6207, just $\frac{1}{2}^{\circ}$ NE of M-13, at +12.3 magnitude was just within the grasp of my eye, I caught it with averted vision. It tells you something about my observing sight. I hope as the leaves grow it will block out stray light from reaching my eye and maybe capture fainter galaxies.

Steven Krickovich

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April 8-9 a very curious night, an aurora was noted pressed low along the northern horizon. Although usually of low intensity, at intervals it flared quite brightly. The aurora was an amorphous curtain at 10 to 15 degrees above the horizon but at greater altitudes, up to 35°, it possessed a spined or ray-like form. The most intense outburst occurred at 10:10 PM-EST at which time a distinct fluorescent green color demonstrated. Some pulsating was noted but only of the slow variety, say, four cycles per second.

What was strange about this aurora was the fact that its parent solar flare occurred on a solar surface totally devoid of sunspots.

April 20-21 for the last month I have been following the slow progress of Pluto as it travels through Virgo. To be sure Pluto has become quite an easy sighting for I find that it is visible even in my 6" f:10 reflector. Anyone who can still see variable star Chi Cygni at minimum or glimpse galaxy NGC 3172, near Polaris, can certainly view Pluto.

April 26-27 I observed the Sun and found it to be quite heavily spotted. Within a roughly 200,000 by 120,000 mile area lay several 40,000 mile in diameter spots plus many more on down to 5,000 or so miles. The larger sunspots consisted of a multiple of umbral centers which were enveloped by extensive penumbral areas. With the Sun currently so active one can easily see why one of the strongest solar flares in years occurred only hours earlier.

I also observed Mars at 206x with my 6" f:10 reflector. The disk now 16 arc seconds in diameter and rich in detail. At 11:00 PM-EST dark mare Sinus Meridiani on central meridian. Dark region Acidalius to the north is very prominent. Adjacent desert areas about the north polar region almost white in color perhaps due to a high latitude haze.

April 27-28 due to a near city magnitude limit of only 4.0, John Riggs and myself traveled out to Beaver Meadows. Though some haze was still evident the naked eye limit was 6.5. Thus began a most exceptionally productive night. Early in the night found eruptive variable star SU Ursa Majoris near maximum light. The night was so transparent and still that stars as faint as magnitude 16.2 could just be glimpsed with the 12.5" reflector!

April 29-30 extremely fine night out at Beaver Meadows. The faintest stars visible to the naked eye were of magnitude 6.7, telescopically, with the 12.5" reflector, the visual limit was deeper than magnitude sixteen.

At high power the central star of the Ring Nebula (M-57) was detected. Several other very faint stars appear to lie "upon" the ring itself. Considerable structure noted on the ring surface with some nebular striation even visible crossing the less than dark central hollow.

The off center tri-axial dust lanes of globular cluster M-13 were quite apparent at medium power. Similarly M-8 & M-20 were virtually of equal excellency both with and without nebular filters.

On a fine night such as this perhaps the most potent instruments of all are binoculars. Laying on the Observatory floor and sweeping the Milky-Way with binoculars can be a

most impressive experience!

May 12-13 although I completed my deep-sky survey several months ago, in my variable star work, I do occasionally come across a number of 'new' galaxies. Often located on deep "e" charts. These chance galaxies can be very precisely estimated, as per their integrated magnitudes, against the companion stars located upon the same chart field. The faintest galaxy noted has been estimated at magnitude 15.0. To date my deep-sky observations total 2520.

May 26-27 I observed the Great Red Spot of Jupiter, quite prominent but presently almost white in color. Simultaneously (2:00 AM-EDT) the Jovian moon Io was noted casting a shadow on the planet's disk just north of the north equatorial belt.

June 1-2 a super night, within a thirty minute period I caught three eruptive variable stars at maximum light. X Leonis, usually found to be of magnitude 15.5, was tonight an easy magnitude 12.5. SU Ursa Majoris when faint, usually shines at about magnitude 14.1 but tonight looks to be of magnitude 12.2. Most interesting of all was variable star U Geminorum. Observed during late twilight this star was found just above tree top level and was estimated to be of magnitude 8.9. When faint it usually is found to be of only magnitude 14.2.

Michael Idem

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At 9 PM on April 8th we saw a brilliant aurora while driving on the Youngman Expressway, which was greenish and extended 25 degrees above the northern horizon. The aurora went through a cycle throughout the night of being bright and active for 5 minutes, then dim low and passive for 20. The rays at times extended 40 degrees up and were yellow and green and at times there were slowly waving curtains. In addition there was a low and gentle arch and an occasional glowing patch that was faint but could be seen nicely from a dark site along from a back road.

Adrienne & Jerry Morris

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Four large sunspots were seen on February 24th using a number 15 welder's filter in front of binoculars. With a telescope about 50 were seen spread across the solar disk and in both hemispheres, with the four large ones paired as a double-double near the northern meridian.

The Rosette Nebula in Monoceros which is also known as NGC 2237 on March 24th was observed which is an old H II region of low surface brightness shaped like a Christmas W wreath a degree in diameter. In the center is a bright open cluster that some how Messier missed called NGC 2244 and is $\frac{1}{2}$ degree in diameter with about 75 stars, many of which are 6th magnitude.

A first magnitude blue Lyrid meteor was seen at 9:50 PM on April 21st, taking $1\frac{1}{2}$ seconds to travel 30 degrees the big dipper. Later that night using an 18 inch telescope, VV 172 was seen which is easy to locate but is extremely faint. It is an alignment of five +17 magnitude galaxies extending 2 arc minutes and their unresolved image equals +15 magnitude. It is located 18 arc minutes NNW of the 11.9 magnitude, near edge-on galaxy NGC 3735, which is a degree NNE of the 3rd magnitude star Lambda Draconis.

(My favorite time of day is night - my favorite night is one that is clear and moonless)

Carl Milazzo

* * * * *

??? WHO'S JOB IS IT ???

This is a story about four people named EVERYBODY, SOMEBODY, ANYBODY, & NOBODY. There was an important job to be done and EVERYBODY was sure SOMEBODY would do it. ANYBODY could have done it, but NOBODY did it. SOMEBODY got angry about that, because it was EVERYBODY'S job. EVERYBODY thought ANYBODY could do it but NOBODY realized that EVERYBODY wouldn't do it. It ended up that EVERYBODY blamed SOMEBODY when NOBODY did what ANYBODY could have done!!!

* * * * *

Larry Carlino has received his new 22" f4.2 Dobsonian.

Shaun Hardy is a most capable and energetic Arts and Education Director at the Kenan Center in Lockport. He is deeply involved in his work and is doing an excellent job.

Ernst Both now has a record collection numbering over 800, with most of the recordings being of piano concertos. Not only is Ernst a well-known astronomer and an outstanding mycologist, he is also one of the finest musicologists in the area.

Beverly Botto is working on a painting of the Trifid Nebula for Rowland Rupp; a Christmas gift from Irene.

On the way back from viewing the eclipse in Atlanta, Carl Milazzo and Jerry Morris stopped at the National Radio Astronomy Observatory in Green Bank, West Virginia. They were there about four and a half hours and took a six mile walk around the grounds. They continued on to Pittsburgh where they visited the Allegheny Observatory.

Steve Desmond is taking courses in movie making at R.I.T. this summer and loving every minute of it. Watch out Hollywood!

Pat Loebel is possibly moving to New York in July to look for a job in real estate or the hotel business.

Marguerite Aiple spends the summer enjoying the local cultural scene. She goes to Art Park, takes a couple trips to Chautauqua to hear the concerts, and takes in a few plays at Niagara-on-the-Lake where she often stays a day or two.

Bill, the son of Clarence and Judith Owens, has finished his junior year in high school, and has been interested in astronomy for about a year. He is refurbishing a 3" reflector that he obtained from the Lockport Astronomical Society. He is working on the focuser and the diagonal holder. The family enjoys camping and plans to go on these outings as usual this summer.

Rosemary Paar is a very busy lady. She is a Girl Scout council delegate and troop organizer in Hamburg, along with her regular job at Gold Circle on Camp Road. She owns a 6" reflector and is becoming very enthused about astronomy, and takes great pleasure in viewing and discussing astronomy with John Yerger. One of her greatest hopes is to go to Midland, Ontario, on September 15th to see the Pope when he visits Canada.

Julius works at the steel mill and is a great help to Rosemary. As she doesn't drive, he chauffeurs her to her job and various activities. He is a great home body and takes pride in his gardens, both flower and vegetable. He likes remodeling and is planning on redoing the bathroom. He has been gathering copper pipes to use in replacing all the plumbing in the house. Julius is Hungarian and as a result the Paars have some beautiful objects from Hungary which were recently put on display at the Lakeshore Branch Library in Hamburg.

Early in the spring, Steve Krickovich finished a 10" Dobsonian with a binocular finder. He is a zealous observer and has seen two-thirds of the Messier objects. He is also a photography enthusiast.

Marvin and Sheila Scroger are driving son, Michael, and Steve Krickovich to Stellafane at the end of July where Michael and Steve will pitch a tent and have a great weekend enjoying the many telescopes. After dropping them off, Marvin and Sheila will journey to Stowe, and pick up Mike and Steve on their way home.

Michael has been busy for a couple years with an unusual hobby; making stained glass sun catchers. He made a stained glass window of various colors which won a blue ribbon at the Erie County Fair. He made enough money selling sun catchers to purchase the materials with which he built a telescope. He ground his own mirror. He graduated from Lancaster Senior High School in June, and has been accepted at Buff State where he hopes to take classes in computers and astronomy.

Adrienne and Ken Kimble celebrated their 10th wedding anniversary on May 11th. Best wishes for continued happiness.

Edith L. Geiger

* * * * *

1984 - 1986 OFFICERS ELECT

Congratulations to you and I hope you have a very good two years as such!!! ed.

Kenneth Biggie - President

Doris Koestler - Vice President

Kenneth Kimble - Secretary

John Raymond - Treasurer

* * * * *

'SPECTRUM' deadline for SEP:OCT issue August 29th

CONGRATULATIONS!

Larry Carlino's sketches of Jupiter appeared in the recent issue of the ALPO Journal which is published periodically; this being the April issue. The article contained two of Larry's drawings in the coverage of Jupiter for '76-'77 and also a mention of Larry's observations and color notes. He has had other sketches of Jupiter and Mars published in the ALPO Journal in previous years.

Three students from the after school extra curricular club which Al Kolodziejczak sponsors, entered the New York State Energy Research and Development Competition in Albany, and two of the students won first place in the design category, with each winning a \$500 grant. They had designed a street lamp to cut down on light pollution.

It was a weekend of demonstrations and slide shows where students were in competition with those from schools including the prestigious Bronx School of Science. Al and two other advisors accompanied the students to the competition.

On June 21st, Al and the three students will give their award winning program before the Sweet Home Board of Education.

* * * * *

E.L.G.

OBSERVATORY NOTES

As part of the summer star party events this year, a special refresher session will be held at Beaver Meadow Observatory on Friday, July 6, from 7:30 - 9:00 PM, clear or cloudy. The main purpose of this session will be to review the proper use and care of the equipment and Observatory and to provide training on how to conduct a Public Night at Beaver Meadow. Public Night is the most effective way our club has to reach out and share and expose others to astronomy. Volunteers for Public Night are always needed and welcome. If you would like to become involved with Public Night, please come for this session. Following the refresher session, there will be an introduction to astrophotography with the Beaver Meadow equipment. It's not too early to begin thinking about Halley's Comet! The introduction to astrophotography will also have a follow-up night on August 10, starting at 7:30 PM, at Beaver Meadow. If you have never been to the Observatory before, the evening's activities will give you a good overall view of the facilities available. If clear on July 6th, a regular star party will take place after dusk.

Observatory users should take note of the recent addition to the eyepiece equipment at Beaver Meadow - an excellent 3 x Dakin Barlow lens donated by our own John Liptak. The new Barlow has already seen service on Mars and Saturn this spring with beautiful results. John's thoughtful and generous contribution to the Observatory will be much appreciated by observers on those steady nights when high power may be used to the full. Thank you John!

Don't forget that Public Nights during July and August will be held every clear Saturday night at Beaver Meadow Observatory from 9-12 PM. Check the "Gusto" section of the Friday, Buffalo News for details, or call me, John Riggs, at 875-7965.

John Riggs

* * * * *

JULY 6th ONLY, rain or shine beginning at 7:30 PM for John Riggs' refresher session at Beaver Meadow Observatory. It is so that he can explain the operational procedure to our club's 12.5 inch f:6.8 Newtonian Telescope. It is housed in an observatory at the Buffalo Audubon's Nature Sanctuary at 1610 Welch Rd., North Java, N. Y. For more information see John Riggs' Observatory Notes, preceeding this notice.

JULY 13th if clear, otherwise come the next evening rain or shine around sunset to our newly elected President, Ken Biggie's unobstructed backyard horizon. It is located at 37 Villa Dr., West Seneca, N. Y. If you want to make sure his skies are clear on Friday, call him at 675-8932.

JULY 20th if clear, if NOT come the next night rain or shine, starting around sunset to Claudia Bielinski's at 5450 Clinton St. (route 354) in Elma, N. Y. Phone 668-2860 for confirmation of clear skies. Claudia has a 6 inch reflector, dark skies and excellent horizon, especially in the south with only one degree obstruction.

JULY 27th ONLY IF CLEAR starting near sunset at our club's Beaver Meadow Observatory which contains our club's home-made 12 inch telescope and is surrounded by dark skies. This is also the weekend of the "50th anniversary" of Stellafane, located in the Green Mountains near Springfield Vermont. Over 2000 amateur astronomers from all over the nation bring with them 500 telescopes, some as large as 24 inches of aperture. Activities are many talks, evening lectures, observing, telescope design competition, displays, and a swap table.

AUGUST 3rd ONLY, rain or shine at Dr. Jack Mack's beginning near sunset. He has a 5 inch f:5 refractor at 1 Hunters Lane, Williamsville, N. Y.

AUGUST 10th ONLY IF CLEAR!! Dan Marcus' teaching of hands-on-experience astrophotography at the Beaver Meadow Observatory beginning at 7:30 PM-EDT. &&& See Dan Marcus' notes following the star party notices.!!!!

AUGUST 11th ONLY- RAIN OR SHINE beginning at 2:00 PM at Miro Catapovic's cottage at 5161 E. River Rd., Grand Island N. Y. There will be rides in his new 35 foot boat, water skiing, swimming, fishing and observing with his C-8 which has a home-made tripod; perhaps we will see a few Persied fireballs also.

AUGUST 18th ONLY, rain or shine starting at 2:00 PM at Triston Dilapo's geodesic dome home under construction on a 10 acre lot. It is at 8715 Cole Rd., North Boston, N. Y. on a hill top elevation of 1630 feet with a 360 degree unobstructed horizon with dark skies. There is a 10 foot deep 1½ acre pond with a dock, many trails, a creek gully and a home-made computer controlled 18 inch Dobsonian Telescope of the new ultra light design.

AUGUST 25th ONLY, rain or shine beginning at 2:00 PM at Martin Lots number 316 cottage of Rowland Rupp's on Lime Lake where swimming, fishing and boating are allowed. Bring your own meat (a grill will be available) and a dish to pass (to coordinate, call 839-1842). The Rupp's will supply drinks, condiments and utensils. If you can bring a lawn chair and some kind of table, that would be nice. About an hour before sunset we will all convoy eight (8) miles to Larry Carlino's observing cabin on a hill 1600 feet elevation near Franklinville, N. Y. There he has an 18 inch Dobsonian telescope with skies that are pitch-black and have a perfect southern horizon.

AUGUST 31st if clear, if not, come the next night rain or shine to Clare Owen's starting around sunset at 7635 Arnold Dr., North Tonawanda, N. Y. He has recently been elected secretary of the Lockport Astronomy Club and his sons, Bill and Tom, are also amateur astronomers and are planning to build a 10 inch telescope. If you want to make sure that their skies are clear on the 31st, call 692-8832.

MAPS TO STAR PARTIES

Carl Milazzo

WAKE UP IN THE "SPECTRUM"! * * * * *

Are you interested in photographing the star or thinking of shooting Halley's Comet? Well, come and join us at the Beaver Meadow Observatory on Friday, July 6th (after John Riggs' 7:30-9:00 review session on how to use the telescope), and again on Friday, August 10th at 7:30. On both nights the moon sets late, thus making it a nice bright 'easily' focused object to practice prime focus photography on. We will also be using the guide scope for guiding while photographing with a 'piggy back' camera so you can practice tracking for long exposures. If you have one bring the following:-

1) Your camera and normal lens, T-mount, Notebook and film (color slide or B & W).

If you do not have any or all of the mentioned items, I'll be bringing my equipment and film for anyone to use. If you have any questions on what to bring, transportation, film, film processing or wish to help, call Daniel Marcus at 773-5015.....

} * * * * *

SPECTRUM deadline for SEP:OCT issue August 29th

+ + + WELCOME NEW MEMBERS + + +

JERRY W. SILVERSCHATZ

FRANK R. RICCHIAZZI

MARK SCHMIDT

DAVID J. SEPULVEDA

BRIAN GIFFORD

RANDY & SUE STIEFLER

* * * * *

SOLAR ECLIPSE

Adrienne and Jerry Morris and I saw the broken annular solar eclipse on May 30th from Piedmont Park in Atlanta, Georgia, and for all of us it was our very first eclipse. Among the thousands of eclipse watchers in the park were the local amateur astronomers, people from all over the nation, amateurs from Japan and Dr. Ron Schorn from Sky & Telescope Magazine. We were using a number 14 welder's filter for the binoculars and a 10x 0 finder and a filtered 3½ inch Questarscope. Partial phase started at 10:50 with a temperature of 70 degrees with a crystal-clear sky that was blue even along the horizon. At mid-eclipse, at 12:23, the air cooled to 54 degrees and the sky was blue 5 arc degrees from the still brilliant sun. The ground looked dark like just after sunset, with an eerie yellow, and the tall nearby trees acted as a natural pin-hole camera forming thousands of 7-inch skinny crescents dancing in the breeze; the streetlights came on for about five minutes. Some people near a white building saw shadowbands and I saw with the Questar a glow around the sun that seems to have been the corona. The sun very rapidly broke up from a razor thin crescent starting at both poles into Bailey's Beads and short arcs that raced along the limb like the lights around the sign of a movie theater. For 9 short seconds it was happening in addition, some of the 50 beads were changing in brightness slowly which was usually the most brilliant ones. Venus was seen nicely 4 degrees to the west of the sun and the birds became silent and roosted in the trees. The only sounds were from the people cheering and yelling, and from newspaper, radio and TV reporters on the ground & the buzzing and circling of three helicopters just above the tree tops.

Carl Milazzo

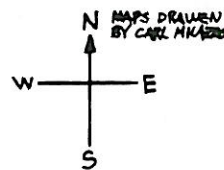
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A meteor was seen at 12:50 AM on May 6th which was -6 magnitude and green in Chepheus. It moved 15 degrees towards the east and lasted 2½ seconds leaving a glow for about a second.

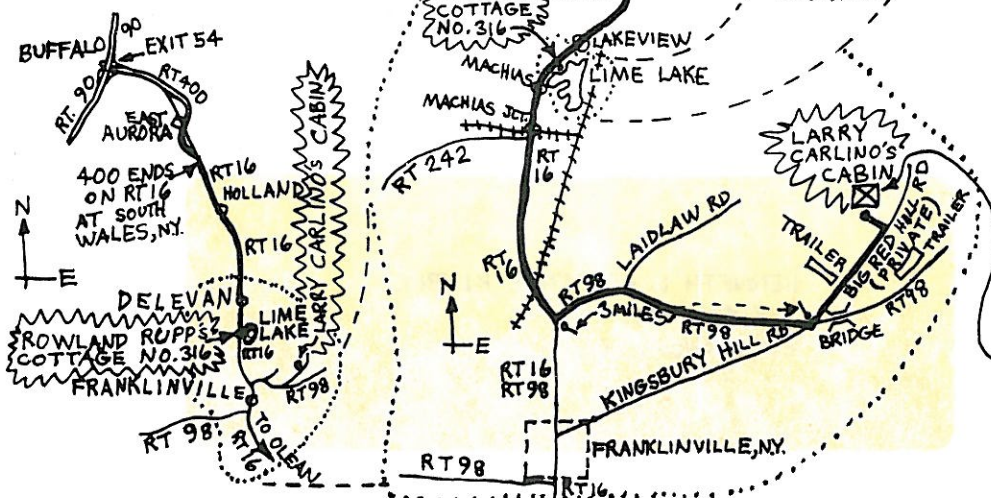
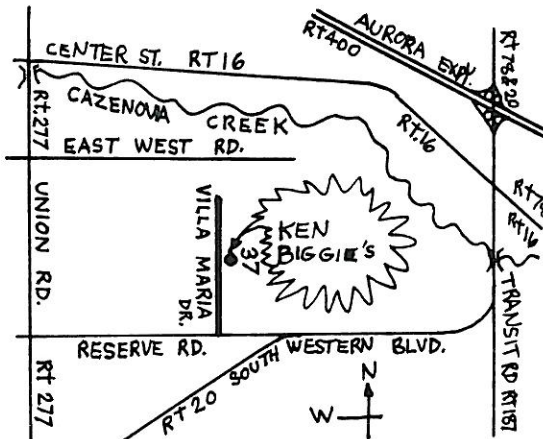
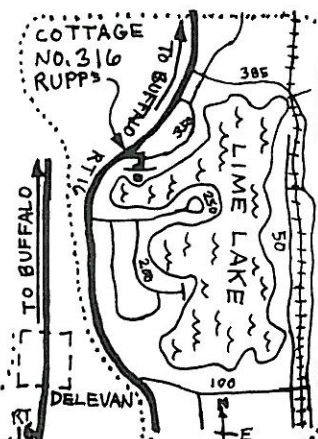
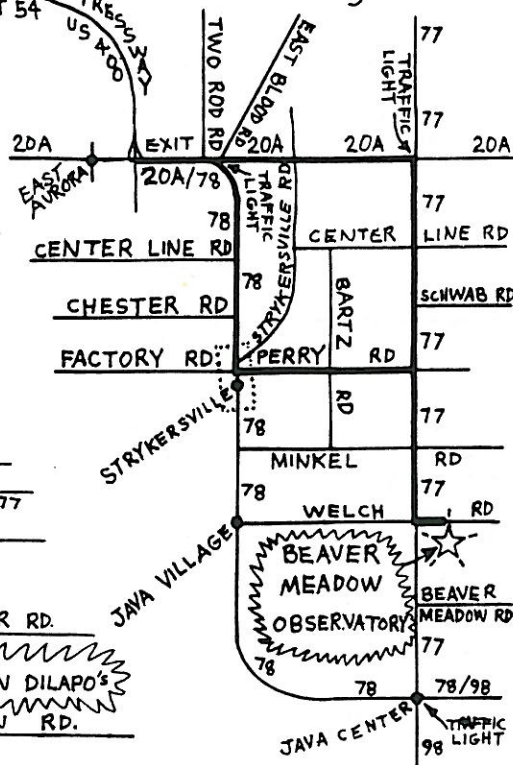
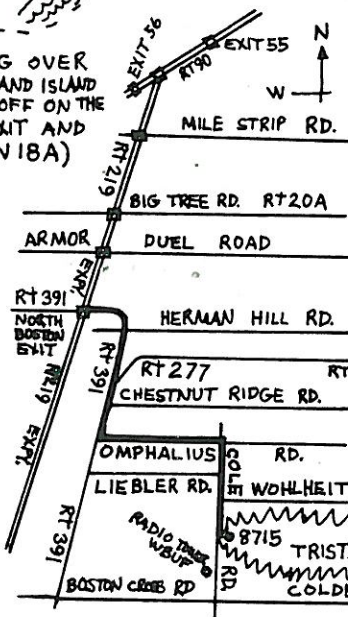
On May 31st the brightest, largest and richest globular cluster in our galaxy was seen with 10x50 binoculars from Clifton Forge, Virginia. It was 4th magnitude, Omega Centauri which resembled the Andromeda Galaxy in both brightness and apparent size.

Carl Milazzo

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AFTER GOING OVER
THE SOUTH GRAND ISLAND
BRIDGE, GET OFF ON THE
VERY FIRST EXIT AND
FIRST RAMP (N18A)



LARRY CARLINO'S OBSERVING
"CABIN IS ABOUT 1/2 MILE UP
BIG RED HILL RD (PRIVATE)
WHICH IS A STEEP DIRT ROAD.
GO PAST TWO TRAILERS AND
THE CABIN IS ON THE LEFT.

-: ASTRONOMICAL HAPPENINGS :-

SOLAR: The Sun is on its way south making the nights become longer for more time to observe the night skies. It will leave **CANCER** and enter **LEO** in July and in August it will leave **LEO** and end up in **VIRGO**, awaiting the next 'SPECTRUM'

LUNAR: The Moon's phases for July & August will be:-
First Quarter on July 5th and August 3rd.

Full Moon on July 12th and August 11th.

Last Quarter on July 20th and August 19th.

New Moon on July 28th and August 26th.

The July Full Moon is also known as the "Buck" while the August Full Moon is known as the "Sturgeon".

Lunar Conjunctions are with Mars & Saturn on the 7th of July; Uranus on July 9th; Neptune & Jupiter on July 11th; Mercury on July 30th; Saturn on August 3rd; Mars on August 4th; Uranus on August 5th; Neptune & Jupiter on August 7th; Venus on August 27th; and again Saturn on August 31st.

PLANETARY: Conjunctions between Venus & Regulus on August 7th; Mercury & Venus on August 16th. Stationary are Saturn on July 13th; Mercury on August 13th; Uranus on August 18th and Jupiter on August 29th. Mercury is at greatest elongation, 27° east on July 31st.

METEORS: for July: 6th - Sagittarids; 14th - Alpha Cygnids & Phoenicids; 16th - Omicron Capricornids; 23rd - Capricornids ****; 27th - Alpha-Beta Perseids; 29th Delta Aquarids ****; 30th - Alpha Capricornids & pscis Australids.

for August: 1st - Alpha Capricornids; 6th - Iota Aquarids; 11th Epsilon Pegasids; 12th - Perseids **** & Delta Aquarids (Northern) & Upsilon Pegasids (new in 1975); 20th - Kappa Cygnids (Fireballs) ** & Iota Aquarids (Northern); 22nd - Omicron Draconids; 26th - Zeta Draconids.....

GOOD OBSERVING from your editor, Darwin Christy.....

* * * * *

Acknowledgements:-

Ed Lindberg

Carl Milazzo

Steven Krickovich

Michael Idem

Adrienne & Jerry Morris

Edith Geiger

John Riggs

Daniel Marcus

Darwin Christy

and anyone else who I might
have missed !!!

MEMBERSHIP

FAMILY - \$ 15.00

(ANNUALLY)

REGULAR MEMBER - \$ 10.00

STUDENT - \$ 5.00

SENIOR CITIZEN - \$ 5.00

Subscription only - \$ 2.00

* * * * *

*** * * AN ANCIENT CONSTELLATION * * ***

MACHINA ELECTRICA, The Electric Machine is one of Bode's constellations of 1800. It is only noted that he had placed it south of the central portion of the Constellation, Cetus but it is now generally left out of the maps and catalogues.

With Bode, it was the Elektrisir Machine and Machine electrique and the Italians named it Machina Elettrica. Any one interested in looking up ancient constellations, this one is surely a challenge....

Darwin Christy

* * * * *

I have just been informed that if you look up on a dark clear night, you should have seen at least five meteors. If you did not see any, then I am informed that you were NOT looking.....

* * * * *

The September-October issue will feature a program for a programmable calculator - and - an article on "What's Wrong With Astrology."

Your EDITOR is looking for feature articles for the coming year as well as shorts, observation reports, astronomical trivia and even programs for computers of all manufacture. Perhaps they will not be printed in the very next issue of the "SPECTRUM", but they will appear in an up and coming issue - for-sure !!!

' SPECTRUM ' deadline for SEP:OCT Issue August 29th

-8-

Buffalo Astronomical Association, Inc.

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