Meteor Section

FRANKLIN W. SMITH

PART I

No definitive reports of July observations have yet been received from any other region, but in several cases we were informed in advance that work was planned. We hope that it will be reported with the Perseid observations which have been planned for this month.

We have available for discussion therefore only the observations of B. S. Whitney who saw 133 meteors in 469 minutes in the very clear skies of Oklahoma and the writer who saw 66 in 620 minutes under much less favorable conditions in Pennsylvania. Two meteors, a Perseid and a Delta Aquarid, were photographed by the writer with an f.3.5 lens of 50mm. focal length.

This year furnished a good return of the Delta Aquarid shower as may be seen from the following table of radiants. Numbers 6, 7, and 8 refer to this shower.

Serial No.	Date 1936	R.A.	Dec.	No. of Meteors	Length of Watch (minutes)	Total No. of Meteors	Observer
6.	July 22.7	343	—18	7	154	36	BSW
7.	July 26.8	341	—15	15	180	32	FWS
8.	July 28.8	340	—17	8	215	57	BSW
9.	July 22.7	301	—6	6	154	36	BSW
10.	July 23.7	309	—4	6	100	19	BSW
11.	July 24.7	310	+2	6	220	21	FWS
12.	July 28.8	352	+15	6	215	57	BSW

407 Scott Ave. ,
Glenolden, Pa.

PART II

Report of the Wisconsin-Northern Illinois Region

L. E. ARMFIELD

Meteor observations from members in this region continued to mount during the month of July to a very gratifying total. Especially meritorious is the very fine work of Miss Mary Trimmier, director of meteor activities for the Chicago area. Her very neatly typed and duplicated reports cover a period of 18 nights of observation in July, with all of the 94 meteors that she observed carefully plotted on AMS maps. The most unusual record of Kenworth Kendall, who in 17 nights of observation from Milwaukee accumulated notable totals, is also worthy of high praise.

(Meteor Observation Totals: July, 1936.)

Observer:	Location:	Minutes:	Meteors:
Trimmier	Chicago	1980	94 (all plotted)
Kendall	Milwaukee	5454	476
Abrahams	Milwaukee	240	23
Boehm	Chicago	40	6
Diedrich	Milwaukee	302	28
Ketarkus	Racine	345	13
Keuziah	Springfield	120	45
Knott	Camp Minikani	120	20
Loepfe	Springfield	120	31
Rich	Camp Minikani	60	5
Schmid	Milwaukee	433	16
Sidoff	Springfield	120	21
12 observers		9334	778 meteors

Nova Program Notes

L. E. ARMFIELD

We heartily welcome initial observations from D. Moore and A. L. Peck of Milwaukee and E. H. Jones of Goffstown, New Hampshire.

The increased number of participants and nova regions received during July is pleasing indeed, as it lends much encouragement to the many observers who have not as yet reported observations of their assigned areas.

Observer	Region	Location	Magnitude of faintest star visible 7	6	5	4	3	2	1	Total Nights
Abrahams	59	Milwaukee	—	30	....	....	....	....	....	30
Ballhaussen	57	New York	....	....	....	....	....	....	....	....
Diedrich	43	Milwaukee	....	2	25	3	....	....	....	30
Halbach	2	Milwaukee	....	2	4	4	....	....	....	10
Hamilton	74	Norwalk	....	....	2	1	1	....	....	4
	75		....	....	2	1	1	....	....	4
	76		....	....	2	1	1	....	....	4
Jones	14	Goffstown	....	....	7	4	5	....	....	16
Keuziah	40	Milwaukee	....	2	11	5	....	....	....	18
Loepfe	42	Milwaukee	....	8	1	....	....	....	....	9
Loreta	17	Italy	....	3	5	....	....	....	....	8
	105		....	2	2	1	....	....	....	5
Moore	26	Milwaukee	....	8	9	4	....	....	....	21
Peck	15	Milwaukee	....	4	8	3	....	....	....	15
	57		....	2	5	1	....	....	....	8
Rosebrugh	1	Poughkeepsie	3	1	1	....	....	....	....	5
	52		....	1	....	1	....	....	....	2
Schmid	13	Milwaukee	....	10	8	7	3	....	....	28
	39		....	10	8	7	3	....	....	28
Seely	58	New York	....	1	9	1	....	....	....	11
Thomas	3	Cambridge	....	3	4	1	1	4	....	13
Trimmier	37	Chicago	....	....	1	3	4	....	....	8
	8		4	2	11	3	2	....	....	22
	60		....	1	5	5	....	....	....	11

16 Observers 24 Regions

The AAVSO naked eye star atlas has recently been completed by Mr. Brocchi and turned over to the chart curator for distribution. As is characteristic of all his work, Mr. Brocchi's atlas is a thing of beauty, consisting of 21 charts showing stars down to approximately the sixth magnitude.

While the AAVSO prefers to sell the atlas complete for the very nominal charge of a dollar and a half, professor Campbell believes individual maps can be made available to participants in the nova search at ten cents each. The AAVSO sincerely desired to gratuitously provide nova program members with individual maps having assigned regions duly outlined thereon.

The necessity of conserving AAVSO funds however, has made the charge mentioned above imperative.

As the atlas is now ready for distribution, we heartily recommend its purchase either in whole or in part by the members of the nova program. Other amateurs, not engaged in the nova survey, will find the complete atlas to be of great value for their particular needs.

The atlas may be obtained from Ferdinand Hartman, AAVSO chart curator, 171-25 144th Avenue, Springfield Gardens, Long Island, New York.

2046 So. 59th Street,
Milwaukee, Wis.

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AAAA Notes

A welcome communication from William Liebscher, our ambassador of good will, informs us that he has arrived in Los Angeles after an extended tour of the south and west. Bill visited many amateur astronomers enroute, including such well known men as Latimer J. Wilson, Oscar E. Monnig, and Harold Lower. He has also had the pleasure of visiting the amateur groups in San Diego, Riverside, Pomona and Los Angeles, all of which are very active and doing much good work.

We expect and hope to receive soon an article from Bill for publication in *Amateur Astronomy* which will give our readers an opportunity to enjoy also his visits with fellow amateurs.

Ed Martz, Jr., received a hearty welcome from the Milwaukee group during his recent visit at its headquarters. Ed stayed a week, generously devoting his time answering correspondence which had accumulated during Verne Armfield's absence from AAAA activities during the past six weeks due to illness.

Miss Mary Trimmier, devoting a week of her vacation to observation of Perseid meteors at Lake Geneva, was also a welcome visitor at MAS headquarters.

It was probably inevitable, but shortly after her arrival, Mary was pounding the typewriter unmercifully, compiling and typing observations and reports.

We are deeply indebted and extremely grateful for the great aid they rendered in bringing up to date the correspondence and reports.

T. R. Hedengren furnished the visitors a very delightful diversion from their arduous activities with an afternoon's sail on Lake Michigan in a very seaworthy sail boat of his own making.

Metropolitan Notes

METROPOLITAN ASTRONOMICAL SOCIETY
NEW YORK AND NEW JERSEY REGION
JAMES S. ANDREWS, Region Organizer
33 Franklin Place, Rutherford, N. J.

Other than showing to visitors who come to the Observation Roof some of the wonders of the sky with the 8-inch reflector, there has been little activity this summer. Seeing conditions have not been so very good. Comet Peltier 1936a was continually observed with the telescope, but was visible only on two nights with the naked eye.

AMATEUR TELESCOPE MAKERS OF NEW YORK
LEW LOJAS, President
1510 White Plains Road, Bronx, N. Y.

On August 8, this group again participated in another of Mr. Federer's field trips to view the stars with the telescope away from the bright lights of New York City. This time we met at Mr. Varela's home at Tenafly, N. J.

Mr. Federer used a 70-year old Fitch refractor, 5-inch diameter, Mr. Lojas his 8-inch reflector, and Mr. Varela his 80-mm. Zeiss Achromat, recently mounted on an equatorial.

Atmospheric conditions being excellent, powers were pushed to their high limits, to the astonishment of visitors who had never seen Jupiter, Saturn and the moon at 350 diameters.

A sensational meteor was also seen, very bright, red in color, slow moving, as it travelled from Ophiuchus to Auriga.

NEW JERSEY ASTROPHYSICAL SOCIETY
WINSTON HUSSAY, President
95 Green Street, Woodbridge, N. J.

On Tuesday, July 28, well over 200 interested men, women and children gathered in the local park to see Peltier's Comet. Three telescopes and several pairs of binoculars were available with an attendant to describe the aspects of the heavens.

So much interest was manifested in this outing that arrangements are being made to hold another in September when the society resumes its monthly meetings.

Richard Hutchinson has his small model observatory on exhibition at the Hayden Planetarium. It consists of a transit, 10-inch refractor with clock drive and a revolving dome, all to scale.

Chicago News

CHICAGO AMATEUR ASTRONOMICAL ASSOCIATION
WM. CALLUM, Secretary

On Saturady, July 25, the club met at Joseph E. Boehm's summer home at Lake Geneva. Most of the members arrived early in the afternoon and Mr. Armfield, Mr. Halbach and four or five automobile loads of our Milwaukee friends arrived soon after us. Of course swimming was in order and nearly every one splashed around with great enthusiasm all afternoon. The only way to get some of the telescope nuts out of the water is to show them a ham sandwich. Joe's motor boat was kept busy giving us trips on the lake. Eventually we all got assembled on dry land and applied ourselves to the supper which Joe had provided for us. We also showed great enthusiasm in this activity. Then we remembered that this was an astronomical meeting and acted accordingly. Joe's splendid 14-inch telescope was the center of attraction and it was busy all night. Jupiter, the Peltier comet, M-13, Saturn, Nova Lacertae and a number of other objects were examined. Joe's telescope is a credit to the club and an inspiration to the members. It has a fine 14-inch mirror, drilled for future use as a Cassegrainian, open fork mounting, cast iron base set on a concrete foundation, clock drive and an observatory with a sliding roof. It is a good example of practical design and fine workmanship.

Some of the members brought telescopes. Arthur Peck had a fine 4½-inch refractor, F. W. Nack had his 10-inch Cassegrainian and his 4-inch Mellish refractor and a member of the Milwaukee group had another fine refractor. There was also a number of smaller telescopes and binoculars. They were all kept busy till way into the morning.

This was one of the most instructive and enjoyable meetings the club has had and we heartily thank Joe Boehm who made it possible. His hospitality as a host is only equalled by his skill as a telescope maker, and that's going some.

The August meeting was held in the Adler Planetarium and Astronomical Museum on Sunday afternoon, August 2. Professor Carpenter called the meeting to order. Ed Martz, Jr., who has just returned from Jamaica, B.W.I., gave us a very interesting description of the W. H. Pickering Observatory, its work and instruments. Ed has been at this observatory for about four months, doing planetary work under Professor Pickering. We hope to have him give a talk

on this subject in the near future.

Gerald E. McCord who is chairman of the committee formed to revise the by-laws of the club, took the floor and read a well prepared draft of the revised constitution and by-laws. After a thorough discussion they were adopted with minor changes. Members will be given a copy of this document and are requested to give it some attention or we may have to elect a Supreme Court. The second article which states that the purpose of the club is to promote interest in astronomy, is worthy of special consideration. Perhaps the best way for members to increase their interest in and add to their knowledge of astronomy is to take an active part in one or more of the following programs: meteor work, nova program, planetary and lunar observation, occultations and variable star observation. A telescope is not required for the first two programs. The secretary will gladly put those interested in touch with the leaders of the program.

The July and August meetings at 1319 W. 78 Street were well attended. Mr. and Mrs. J. P. Jensen have returned from their western trip. They visited many of the large observatories and have many interesting things to tell.

1319 W. 78th Street,
Chicago, Ill.

Milwaukee News Notes

MILWAUKEE ASTRONOMICAL SOCIETY

H. L. GRUNWALD, Correspondent

Members of the Milwaukee Society are always highly pleased with the opportunity of presenting the subject of astronomy to interested groups or individuals by means of narration and telescopic observation. Such an opportunity came through a telephone message from Mrs. Louis Taylor to the public Museum requesting the use of a telescope, and on Saturday evening August 8, H. W. Cornell and Herbert Grunwald had the pleasure of a visit with the Taylors and their guests. The Taylor estate is located in the Fairy Chasm region north of Fox Point and is an ideal setting for the study of astronomy especially from the popular viewpoint because of its natural surroundings. The party consisted of Mr. and Mrs. Louis Taylor and their son John, Miss Elizabeth Oehlemschlieger, and the Rev. Henry William Roth, Dean of All Saints Cathedral. It is hoped that the evening proved to be as interesting and instructive to the host and his guests at it was for the members of our society. "The Hummocks" as the estate has been named is a haven for all wild life, especially migrating birds, and its owners are widely known for their interest in the study of the bird and its relation to humans. Many captivating stories were told about the friendliness of these winged creatures and their display of confidence as evidenced by their proximity to the people who act as their hosts. A cordial invitation was extended to the visiting astronomers to be present during the daylight hours when direct observation as well as instructive narratives may be combined in continuance of an acquaintanceship with this most interesting study. Such impressive contacts as this between individuals interested in different branches of natural science are indeed inspiring and should be encouraged as a pathway in our struggle toward a deeper understanding of life.

On Aug. 5, Edward Halbach motored to Madison where he addressed the Madison Astronomical Society on the timely subject of meteors and comets. Following the meeting, a large part of the group went to the Washburn Observatory where informal discussions were held and observations made until almost midnight. Arrangements were made for duplicate meteor height observations between Milwaukee and Madison during the Perseid shower.

Returning home from the visit with our Chicago friends on July 25 at Lake Geneva, six of us stopped by the wayside and retreated into a farmer's recently shocked oat field to observe meteors. A large shock of bundles was spread out to make comfortable mats for the observers. After two hours of counting meteors in a very clear sky, the bundles were reshocked and the party left, only to return shortly to search for a pair of lost glasses, later found trampled into the dust and broken. Rather a costly meteor expedition!

A shelter has been completed to cover the f.15.3 8-inch telescope recently acquired by A. C. Tabbatt. It is constructed of Masonite pressed wood on a wood framework, 4x10 base dimensions, 7 ft. high at the door end and 2 ft. high at the opposite end. The entire housing rolls away from the telescope on tracks to the north. The observing ladder is also stored in the shelter.

2431 N. 46th Street,
Milwaukee, Wis.

discussing their origin. Until we have a correct account of the shape, slopes, etc., of lunar craters, it is pretty nearly impossible to distinguish between theories of their origin. For example, we know very nearly exactly that if the material of the walls of a lunar crater were shovelled into the inner hollow, it would fill it up to the level of the outside plain. We have no idea how far this is true for different kinds of craters, for craters which break into others, and so on. Again, it is commonly said that the clefts (rills) on the moon's surface, are nearly vertical-sided canyons. If so they would hold shadow almost up to full moon; a glance shows that most of them do not; their slopes seldom exceed 30°!

There is certainly much for the amateur to do on the moon; it requires just as much steady observation as good meteor or variable work, not any more. The writer of these notes will be glad to advise readers how to get any of the European publications mentioned above, and will be grateful in return for information of work in progress in America.

9 Colebrook Terrace
Glasgow, W 2, Scotland.

Astronomy as a Hobby

R. D. COOKE

(Reprinted from THE HEXAGON, March 1936)

Ask a boy, a mature man, and an old man why they are interested in astronomy. The boy will say it is because he is so curious about the stars, the mature man will say it is because he is thrilled by the order and regularity of the physical universe in a world that is so topsy turvy, and the old man will say it is a refuge for a troubled mind confused by conflicting creeds and superficial philosophies. (Ask a woman why she is interested and she will say she isn't.) I believe I have much of the boy left in me, I know I feel the attitude of the mature man, and even sometimes I feel like the old man,—as far as astronomy is concerned.

Much the same could be said for any hobby from fishing to baseball, — curiosity, thrill or refuge according to your taste. But fishing and baseball are not in my line, and I shall not push the analogy too far. No apology is necessary for having a hobby, it is a natural function. Everyone has something to fill that need, even if it is only avoiding hobbies, and it would be interesting to know, if we only could, why the imagination is caught by one thing or another and why one person responds to chess and the next person to night clubs. Curiosity, thrill, refuge!

As I write, looking out at a blinding snow storm and at a sky that has been leaden for weeks and months, I wonder why indeed I ever thought astronomy might interest me, but it does. Among the many friends I have who are amateur astronomers, there are as many stories of how their interests in astronomy began. My own version of the story is not especially more interesting than the others. The approaches have been highly diversified and serve to illustrate the variety of special interests that may combine forces under the name of astronomy. One of these friends was a young mechanic who was challenged by the thought that, with his own hands, he could create the optical and mechanical parts of an astronomical telescope, and he did it. He is the instrument maker.

One was an engineer who wanted to understand the principles of lenses, prisms and mirrors. He studied optics and became skilled in the art of designing and fashioning pieces of glass, tools to make the light waves do his bidding. He is the optician. Another was an insurance salesman who saw that even without scientific training he could assemble data for the advancement of knowledge, using only a keen eye and good judgment. He spends hours at his telescope estimating the changes in the luminosity of variable stars, or under the open sky tracing meteors, delighting in the achievement of a tedious job well done. He is the observer.

One was a school teacher who liked mathematics and wanted something on which to exercise his imagination. He took the data of the observer and assembled them into useful form. He became the computer. One research engineer wanted to experience the thrill of seeing a direct spectrum of the sun and the Fraunhofer lines, and the spectra of sun spots. He wanted to correlate the spectra of stars with spectra produced in the laboratory. So he accomplished those things and went further and in due time was the amateur astrophysicist. Then there was the lawyer who was interested in a group of boys and wanted to find a new interest for them. He began telling them about

the stars and acquired a reputation for his interesting talks. Now he lectures to church, school and lodge groups, luncheon clubs and what not, proselyting new enthusiasts as he goes. He is the teacher.

A retired doctor came to wonder how the modern ideas of astronomy grew from the vague superstitions of the past. He delved into the lives of Eratothsenes, Aristarchus, Galileo, Copernicus and Newton and became the historian. Finally there was the old physics professor who just wondered about the vastness of time and space, the littleness of the earth and mankind. and the orderliness of everything. He saw the mark of an infinite wisdom behind it all and took comfort in the knowledge that he had a definite place in the scheme of things. He is the philosopher.

Thus we have a composite picture of the amateur astronomers. The chemist, perhaps more than any other class except the astronomers themselves, has a measure of all of these elements, instrument maker, observer, mathematician, scientist, teacher, historian and philosopher. The choice by the chemist of astronomy as an avocation is obvious enough. The wonder is there are not more of them. Possibly there are more than we suspect, for a few years ago I, too, was reticent about my interest. I felt the neighbors must have thought I was something of a nut, and I kept my enthusiasm under cover. In later years I have learned that I was unduly modest. Intelligent lay-interest in astronomy is fairly widespread.

I have already hinted at the activities which may occupy the interests of amateur astronomers. I should like to be more specific and to indicate some of the things that are being carried on by members of a group of amateurs in and about Milwaukee. First of all an unbelievable number have made creditable telescopes. Guided by the more experienced and by such literature as exists, they have ground, polished and figured paraboloidal mirrors from heavy plate glass and have assembled equatorial mountings ranging in elaborateness from those constructed of the simplest home-made parts, to finely-machined precision instruments with motor drives to follow the rotation of the earth. Reflecting telescopes up to fourteen inches aperture are in regular use. All of them are objects of which to be proud.

The many enthusiasts who are not equipped with telescopes find their interest in an organized program of meteor study under the guidance of the American Meteor Society. At the times of recognized meteor showers a group assembles for organized observing. There are observers assigned to definite areas of the sky, time keepers, plotters and in some instances pairs of observers separated a few miles for simultaneous observations on a base line to the end of computing trigonometric heights.

Telescopes are in constant use for observing brightness changes of variable stars, under a program sponsored by the Harvard University Observatory to whom reports are made. Telescopic cameras are also in use on the program. One man has designed and built a photoelectric densitometer for star images on plates that has won important recognition. He has been asked to make measurements on amateurs' plates from other parts of the country.

In co-operation with the Yale University Observatory, a few amateurs are interested in the eclipsing of stars by the moon, a world-wide program that is related to the period of rotation of the earth and to our measure of time. Besides observing these eclipses the work involves the careful prediction of the events for the location where they are to be observed and elaborate computations to reduce the results to usable form. It interests the mathematically minded.

The appearance in December 1934 of Nova Herculis, the brightest "new" star in a generation, has stimulated interest in a nation-wide nova program. The sky has been divided into small areas, one or more of which are assigned to each participant in the program. He undertakes to familiarize himself with his areas and to scan them telescopically as frequently as weather permits. It is hoped that by this means a new star will be caught early in its rise and reported by telegraph to Harvard Observatory. The early stages of novae have never been studied spectroscopically because by the time they are discovered it is already too late.

This is a chemist's view of amateur astronomy. When you ask why one picks on astronomy instead of something else I have to admit there is no accounting for tastes; it must be chance. There is one factor in this that has its equivalent in no other hobby to my knowledge. I refer to the close association with and encouragement from professionally trained leaders in the science, the directors of observatories and their associates. They have been very patient and very kind, and we of the amateur breed are bold enough to hope that our efforts may some day recompense them and justify their confidence in us.

1162 Kavanaugh Place,
Wauwatosa, Wis.

Meteor Section

FRANKLIN W. SMITH

PART I.

The observations for the month are shown in two tables. Table I includes all meteors observed from Aug. 1 to and including Aug. 15, and lists the shower meteors. Table II lists the O livier-Hoffmeister program contributions and includes meteors observed from Aug. 16 to Aug. 31, inclusive.

TABLE I.
SHOWER METEORS

Observer	Location	Date	Minutes	Meteors Shower	Stray	Total
Kendall	Milwaukee	August 4- 5	128			9
Abrahams	Milwaukee	" 6- 7	125			11
Boehm	Lake Geneva	" 7- 8	111			9
Smith	Glenolden	" 7- 8	60		2	2
Diedrich	Milwaukee	" 8- 9	62		2	2
Keuziah	Milwaukee	" 8- 9	95	4 Per	2	6
Klezjewski	Lake Geneva	" 8- 9	60			17
McNeill	Lake Geneva	" 8- 9	101			19
Mittendorf	Lake Geneva	" 8- 9	60			9
Schmid	Milwaukee	" 8- 9	76			2
Smith	Glenolden	" 8- 9	90		5	5
Strelitzer	Lake Geneva	" 8- 9	88			10
Trimmier, M. E.	Lake Geneva	" 8- 9	111			17
Trimmier, V. L.	Lake Geneva	" 8- 9	101			19
McNeill	Lake Geneva	" 9-10	60			10
Trimmier, M. E.	Lake Geneva	" 9-10	64			13
Diedrich	Milwaukee	" 10-11	105	6 Per	3	9
Jordan	Oak Park	" 10-11	180			10
Keuziah	Milwaukee	" 10-11	65			5
Knott	Camp Minikani	" 10-11	60	14 Per	1	15
McNeill	Lake Geneva	" 10-11	250			60
Trimmier, M. E.	Lake Geneva	" 10-11	255	41 Per	8	49
Jordan	Oak Park	" 11-12	150			25
Baird, Binney, Huffer, Zettle	Madison	" 11-12	154	29 Per	12	41
Jordan	Oak Park	" 12-13	120			22
Marsh	Frederick, Md.	" 12-13	180			25
Smith	Glenolden	" 12-13	315			26
Watson & Field	Baltimore	" 12-13				28
Kendall	Milwaukee	" 12-13	240			25
Jordan	Oak Park	" 14-15	120			10
Knott	Camp Minikani	" 14-15	60			10
Trimmier, M. E.	Lake Geneva	" 14-15	60	4 Per	2	6
Wilke	Camp Minikani	" 14-15	60			15
Jordan	Oak Park	" 15-16	150			10
	23 Observers		3916			570

TABLE II.
Olivier-Hoffmeister Program Contributions

Observer	Location	Region	Minutes	Meteors	
Abrahams	Milwaukee	Wisconsin-N. Illinois	1315	147	14 Plotted
Diedrich	Milwaukee	" " "	60	2	
Kendall	Milwaukee	" " "	954	77	
Keuziah	Milwaukee	" " "	334	25	
Schmid	Milwaukee	" " "	153	5	
Smith	Glenolden	Tri-State	257	28	All Plotted
Trimmier, M. E.	Chicago	Wisconsin-N. Illinois	1016	45	All Plotted
7 Observers			4089	329	

Totals, Table I and II: Minutes 8005; Meteors, 647.

The duplicate observations made by three members of Wisconsin-Northern Illi-

nois group, Mary E. Trimmier, Joseph E. Boehm and Edward Mittendorf, during the latter part of June have been reduced by the writer, and the numerical results are presented herewith.

June, 1936	C. S. T.	Magn.	End Height	Observer	Remarks
27	13^h10^m40s	—0.5	62.4 km.	M.E.T.-E.M.	Graphical Solution End point only.
27	14^h16^m10s	2.0	92.5±6 km.	M.E.T.-E.M.	End point only.

Further discussion of these interesting observations, and of the question of height determination in general, must be postponed until next month.

PART II.

Report of the Wisconsin-Northern Illinois Region.

L. E. ARMFIELD

The members of this region have continued their excellent work during August, as is evidenced by the good totals shown in the columns above.

We heartily welcome initial observations from the following persons: Charles Jordan of Oak Park, Illinois; Jean Klezjewski, Miss Jessie McNeil, Carl Strelitzer, Miss V. L. Trimmier, all members of the Chicago Amateur Astronomical Association, also P. K. Baird, W. R. Binney, Dr. C. M. Huffer, and John Zettle of the Madison Astronomical Society

407 Scott Avenue
Glenolden, Pa.

Nova Program Notes

L. E. ARMFIELD

We heartily welcome initial observations from John Luczka of Milwaukee, Wis.

The following observations of nova regions during August are hereby gratefully acknowledged:

Observer	Region	Location	7	6	5	4	3	2	1	Total Nights
Abrahams	59	Milwaukee	....	16	5	....	....	....	....	21
	56		....	2	....	....	....	....	....	2
Ballhaussen	57	Cambridge	4	6	2	1	....	1	....	14
Gale June	49	Des Moines	....	9	3	....	....	....	....	12
July	49		....	22	5	....	....	....	....	27
August	49		....	13	9	....	....	....	....	22
Halbach	2	Milwaukee	....	....	2	....	....	....	....	2
Keuziah	40	Milwaukee	....	11	9	....	....	2	....	22
Kirkpatrick	61	New York	....	6	....	....	....	....	....	6
Loreta	17	Bologna, Italy	....	6	1	....	....	....	....	7
	105		1	2	....	....	....	....	....	3
Luczka		Milwaukee	....	....	14	2	....	....	....	16
Moore	26	Milwaukee	....	1	8	4	....	....	....	13
Peck	15	Milwaukee	....	5	4	....	....	....	....	9
	57		....	....	9	....	....	....	....	9
Seely	58	New York	....	3	1	1	....	....	....	5
Rosebrugh	1	New York	3	1	1	....	....	....	....	5
	52		....	1	1	....	....	....	....	2
Thomas	3	Cambridge	....	1	4	1	....	1	....	
Trimmier	37	Chicago	7	....	....	2	1	....	....	10
	60		....	3	2	....	....	....	....	5
	8		4	3	1	4	....	....	....	12

14 Observers 21 Regions

2046 S. 59th Street
Milwaukee, Wisconsin

Harvard announcement card 388 dated Sept. 21, 1936, brings word of the discovery by Tamm of Bro, Sweden, of an 8^m nova in Aquilae in the following position:

1936 September 18.8021 U. T.
R. A. 19^h 14^m 00s, Dec. +1° 36'.

The new object should not be confused with the star designated Nova Aquilae No. 4, which is nearby.

A 12^m comet has been discovered by Jackson in the following position:

1936 September 20.8414 U. T.
R. A. 22^h 59^m 48s, Dec. —12° 47'.
Daily motion 1^m 5s east, 25' south.

Lunar Notes

WALTER H. HAAS

Our attention has been called to two interesting, and if not new, at least not generally recorded lunar formations. Ed Martz, from Jamaica, detected a rill, which I am venturing to name "The Piton Riverbed"; and Latimer J. Wilson, of Nashville, speaks of seeing a crater in the summit of Mount Huyghens in the Appenines.

Mr. Martz speaks of his formation as taking its origin east of Piton (though he thinks it may possibly originate from a pass in the mountain Piton itself), and running toward, and to, a small, bright, round crater which is east-northeast of Piton (probably Piazzi Smyth). Mr. Martz could not find this object on any of Professor Pickering's maps of the moon from his library. After describing the course, he concludes: "Its course, winding and jagged and narrow, and its origin in Piton as well as the delta-like mouth, certainly make it seem to me very much like a terrestrial riverbed; and it certainly seems that its course all the way to the north-east in the Mare Imbrium is downhill!"

The author on July 9, at 3:40 a. m., E. S. T., recorded the following: "The Piton Riverbed is not itself visible, but I can see a dark band running east from Piton to a point north-east of Kirch, and passing south of Piazzi Smyth." (Haas). This observation was made three days before lunar sunset on Piton. On the next night I noted the same dark, irregular, broken band along the course of the riverbed.

Mr. Wilson says that he was able to detect (although it was at the limit of vision, so confirmation is desirable), a minute craterlet in the highest peak of Mount Huyghens. Others at Nashville saw the same aspect. This has not yet been confirmed so far as is known here.

Lunar color observers are requested to note whether the sky, at the time of observation, is clear, slightly hazy, moderately hazy, or very hazy. This is important. The illumination of the sky around the moon is a good method for judging. Areas intensely green on the moon in a very clear sky, may be gray or even brownish in a hazy one. For example: Grimaldi at sunrise in February looked very green (the moon being very bright), and only slightly green in August (the moon being somewhat dimmed by haze).

The author would like to introduce the following terms to lunar observers: "*Plinius type of changes*" for changing bright spots; "*Eratosthenes type*" for changing dark areas; and "*Aristarchus type*" for changing dark wall bands. (These terms are based upon the principal craters which have been observed to exhibit such changes.)

August 10, 1936
New Waterford, Ohio

Beyer-Graff Copies

SCOTT HOUSTON

The owners of that excellent set of star charts, the Bayer-Graff atlas,doubtless have often wished they could obtain copies of small sections of it. The usual process is to trace the images laboriously by hand.

A much simpler fashion is to use the chart as a negative and photograph or print directly. Lay the chart face down on a glass plate supported between two chairs, then lay some velox No. 3 paper over the area to be copied, and put a 60-watt lamp about three or four feet from the chart. An exposure of about 20 seconds will be enough. The only care is to see that the light source is fairly far from the paper. The ink images on the chart are separated from the emulsion by the thickness of the chart paper and if the light source is too close the fainter stars will not print sharply.

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Green Nova Hercules

SCOTT HOUSTON

We call the attention of our observers to the unusual green color of nova Hercules. In the words of Professor Van Biesbroeck, the star is as "green as a stop and go light." The spectrum consists entirely of emission lines with almost all of the light concentrated in a band in the green. The members who visited Yerkes Observatory had an opportunity to see the star in the 24-inch reflector where its curious color was very evident.

This is all the more unusual because green stars, as we know them, are absent from the celestial sphere. Sirius is supposed to have faint tints of green, and B Librae is supposed to be somewhat green. But there are no actual green stars as there are red, white, yellow, or blue. (Components of double stars sometimes appear green because of an optical illusion). Yet the color of nova Hercules is more pronounced than most of the other highly colored stars.

807 E. Otjen Street
Milwaukee, Wis.

Calendar of Events

GEORGE DIEDRICH

(All times as C.S.T.)

October		
Wednesday	7	— Last Quarter at 6:28 A. M.
Friday	9	— Maximum of the Draconic Meteor Shower.
Sunday	11	— Delta Piscid meteor.
Thursday	15	— New Moon at 4:20 A. M.
Friday	16	— Mercury 18° 10' west of the sun at 6:00 A. M.
Saturday	17	— Conjunction of Venus and the Moon at 10:13 P .M. Venus 2°9'N.
Tuesday	20	— Conjunction of Jupiter and the Moon at 4:32 A. M. Jupiter 36'N.
	20-24	— Orionid meteor shower (AMS Shower) (Max. 19).
Friday	23	— First Quarter at 6:54 A. M.
Tuesday	27	— Conjunction of Saturn and the Moon at 8:54 P. M.
Thursday	29	— Full Moon at 11:58 P. M.
	30-31	— Epsiolon Arietid Meteor.
November		
Monday	2	— Epsilon Taurid meteors.
Thursday	5	— Last Quarter at 7:28 P. M.
Monday	9	— Venus in Aphelion.

3331 W. National Avenue,
Milwaukee, Wis.

Milwaukee News Notes

MILWAUKEE ASTRONOMICAL SOCIETY
Herbert L. Grunwald, Correspondent

On Thursday, Sept. 3, the Milwaukee Astronomical Society assembled for its first business meeting of the 1936-1937 season. The event opened with a dinner at the City Club, followed by the reports of the active committees. George Deidrich spoke for the Junior Society and the variable star section, Ed. Halbach covered meteor observation activities, Lynn Mathias, photographic, and Herbert Grunwald summarized the promotional events, such as lectures and demonstrations. The secretary read his regular annual report covering the business activities, and R. D. Cooke, our retiring president, spoke of the progress of the society during the last year, and offered program suggestions for the coming year.

Miss Wight, editor of Amateur Astronomy, reported on the activities of her staff, and also discussed plans for the next year.

The next order of business was the annual election to fill the vacancies on the board of directors created by the expiration of regular terms of office. The following were elected for a three year term: Miss Elizabeth Wight, Arthur Boyd, E. A. Halbach and H. L. Grunwald. Those remaining in office to complete unexpired terms are Herbert W. Cornell, Geo. A. Parkinson, M. J. W. Phillips, R. D. Cooke, Luverne Armfield, Lynn Matthias, and Scott Houston.

Convening after the meeting, the board of directors selected the officers for the coming year and named Herbert W. Cornell, president; M. J. W. Phillips, vice president; L. Armfield, secretary, and E. Halbach, treasurer.

Because of the increasing volume of correspondence placed in the hands of the secretary, it was decided to establish the office of assistant secretary to be appointed by the regularly elected secretary. Mr. Armfield named Miss Carolyn Nickels as the assistant.

After announcement of the board's action was made to the society, the meeting adjourned, to be followed by a general discussion.

2431 N. 46th Street
Milwaukee, Wis.

Much to the regret of his Milwaukee colleagues, Herbert L. Grunwald, AAAA advertising manager, has recently relocated in South Bend, Ind. While the MAS will sorely miss his valuable services, the AAAA being a national institution is extremely fortunate to have him continue his good work for the association. Mr. Grunwald will be very happy to receive his mail at 3635 Lincoln Way, W., South Bend, Indiana.

Chicago News

CHICAGO AMATEUR ASTRONOMICAL SOCIETY
Wm. Callum, Secretary

Since our regular meeting date conflicted with the Labor Day holiday, no September meeting was held. In fact the holidays have somewhat disorganized activities in amateur astronomy so there is not much to write about . The club has grown during the summer and some of the new members and old ones, too, are going to take part in one or more of the observing programs. It is fine to have an appreciation of the beauties and wonders of astronomy, but haphazard observing soon loses its interest and does not add a great deal to your knowledge. Systematic work on one of the programs grows in interest and the reports sent in by amateurs are of real value to the professional astronomers. That is the way in which budding geniuses are developed. It would not surprise the secretary to find that he had been irreverantly calling some genius by his first name. Carl Nicholson, who made the mirrors for the Schmidt camera for MacDonald Observatory, is an example of that already, and there are a few more suspected geniuses in the club.

According to our new constitution we will have a new set of officers next year. Members who are willing to fill any office are requested to send in their names so that the muck-rakers can get busy on their characters. The secretarial position requires a special combination. He must have sense enough to fulfill his duties fairly well, and he must be crazy enough to do a whole lot of work when he would rather be doing something else.

There is an active season ahead, and we ought to get in some good work this winter.

1319 W. 78th Street,
Chicago, Ill.