

The Madison Bulletin

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OUR SOCIETY

J. S. Supernaw

It is significant, when the Extension Department of our State University announces a twelve-week course in popular astronomy, to have forty-seven in attendance for the first lecture. It is significant that among these forty-seven were housewives, grade and vocational school teachers, nurses, oil station attendants, doctors, store-keepers, lawyers, and ministers—a cross section of diverse interests and tastes but a lay group with the common desire to know more about the mystery of the universe.

The common need for discussion and “mutual benefits that evolve from congenial associations” gave rise to the organization of our present group, wherein we may share our problems and small successes. Thus, through the Madison Astronomical Society we hope to take “time out” from the noisy routine of our daily lives to study the rules and laws that govern larger systems and to be refreshed and stimulated by the larger view through our contemplation of the Splendor of the Heavens.

Plans have been made to establish a center for the exchange of ideas and problems, to form contacts with other amateur astronomical groups, and to aid in arousing interest in the study of astronomy in response to the interest already shown in our schools and to help form junior groups among these younger members. Those interested in meteorites and the variable stars have formed small study units. Among the lens makers, inventors, artists, lovers of nature, and cold-blooded fact-gatherers we hope to enjoy and disseminate a better understanding of the universe we live in and again a more intimate knowledge of those mysterious points of light scattered over the night sky.

We must of necessity proceed slowly. It is desirable that every member have his own telescope. There are several excellent refractors and reflectors already in our possession with several more still in the basement stage of construction. The more advanced members of our group have been generous in contributing their bit and have laid out systematic plans for study.

We ask patience from our pioneer friends in our elementary strivings. We are stimulated by their achievements and we hope to stimulate them by our youthful enthusiasm. We are proud to be a part of this family of amateurs. The future looks good to us, and we add our prayers to yours for Clear Nights.

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2317 Oakridge Avenue, Madison,
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NATIONAL EXCHANGE

With this issue the Madison Bulletin enters into a program of exchange between the leading amateur publications of the United States. This is done in an endeavor to disseminate the spirit of the amateur astronomer, to facilitate publication by reducing production costs, and to promote intercourse and friendship among the various amateur organizations. Duplication of material will be eliminated, and each subscriber will receive three times as much material as formerly with no increase in subscription costs.

Our subscribers receive not only our own paper, but also the internationally famous MAS Bulletin of the Milwaukee group, and the Astronomical Discourse of the leading group of meteor observers in the United States if not the world.

It is the hope of the Editors that this exchange will become the nucleus of a national organization of amateurs devoted to the problems of amateur and professional astronomy.

LET'S MAKE A TELESCOPE

The struggles of organization are over and now we stand upon the threshold of the Universe hoping to learn some of its mysteries.

You ask how? The answer—make your own telescope. Now the author does not intend this to be a “how to make it” paper. Rather he hopes only to show that there is one hobby which calls for no elaborate working quarters or expenditure of more than cigarette money.

Find some corner of the basement that you can call your own, hang a sign “Hands Off Please, Raise No Dust”. Your work bench will be a fifty gallon oil barrel, filled with water to make it steady, and provided with a firm wooden top placed so that you can walk around it.

The glass, grinding, and polishing materials can be procured from any one of several scientific houses. The cost will not exceed four to six dollars for a moderate size glass. For testing you will need only a discarded razor blade and a twenty-watt frosted light bulb and a small tin can. With this rough equipment you are equipped to perform one of the most delicate and exacting tests known to science.

The mounting for your scope is no more elaborate. A sheet iron tube a few shafts and bearings, and odds and ends. Here is where your ingenuity will come for the mountings are as varied as the play of the imagination and you will find yourself ever on the alert for parts.

In conclusion, I heartily recommend the book “Amateur Telescope Making” published by the Scientific American Publishing Company. If the idea appeals to you—get going by all means.

—Bill Binney

AMATEUR OPPORTUNITIES

It is a noteworthy thing that amateur astronomers about the country have distinguished themselves in many different branches of the science.

Of course the most popular field is that of meteors. These "shooting-stars" long paid little attention by professionals, have been mostly observed by the amateur, and the recent great increase in knowledge of these bodies is in great measure the result of the accumulation of amateur data over a long period of time. In this last year Mr. Wesley Simpson observed a total of 2319 meteors, a piece of observing that is truly tremendous.

The Missouri-Southern Illinois group of observers, of whom Simpson is the leader, gathered a total of 9013 observations to easily outstrip all other societies, being over 4000 meteors ahead of the second and third place California and Milwaukee groups.

These were all naked eye observations, but the amateur was also active in the field of telescopic meteors. Little was known about these latter until the Harvard Arizona Expedition of these last few years and even now the data on hand is meager and priceless work can be done along this line. Last year Knabe of California made 600 observations of telescopic meteors, an achievement of astounding magnitude. The nearest observer to him was Armfield of Milwaukee with 92 telescopic meteors carefully plotted on AAVSO charts. Besides these two outstanding men there were also a few others with observations ranging from one to 38.

Meteor observation is suitable for any equipment, whether the observer has nothing but his naked-eye or a

powerful 10-inch reflector built in his workshop, and much remains to be accomplished.

The long-period variable stars have claimed much attention and at the end of 1934 almost half a million such observations had been contributed by observers from Italy to Germany, South Africa to South America, New Zealand to India, and Florida to Wisconsin to California. Men like Leslie Peltier of Ohio and Jones of New England, Pickering of New Jersey and Brochii of Washington, have elevated themselves to permanent niches in the astronomical hall of fame by their merit. Peltier, an amateur, is probably better known in astronomical circles than the most of the professionals.

Contrary to the beliefs of some rather too modest amateurs, these variable star observations do not merely rest on the record sheets at Cambridge but are constantly being utilized in the investigation and discussion of particular stars.

While variable star observation demands a bit larger equipment of telescope and knowledge it is an excellent training for the person desirous of becoming a real astronomer; and people desirous of entering that rarest of all fields, comet discovery, find their best training here. Peltier, of whom previous mention has been made, has independently discovered several comets, a nova, all with a six inch telescope.

In photography some amateurs find their best satisfaction and valuable and interesting work can be accomplished here. Mathias of Milwaukee has taken photographs with his homemade six-inch reflector that include thirteenth magnitude stars and he is now engaged on a program on cepheid variables in cooperation with Yerkes

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A DOUBLE STAR MICROMETER

In the February issue of *L'Astronomie*, the organ of the Societe Astronomique de France, there is described, by M. Eug. C. Silva, a double-star micrometer for amateur use which combines accuracy of measurement with cheapness and simplicity of construction.

In principle it is what is known as a double-image micrometer similar to the one described by Bell in "The Telescope," page 171. Its operation depends upon the fact that any lens cut in two produces two sets of images, one for each half. In this micrometer a weak concave lens of twenty inches focal length is cut in half, or better yet two such lenses are divided and one half of each selected and ground until it is a perfect half-lens.

One half-lens is mounted, fixed to a plate which can be rotated about the optical axis, while the other half-lens is mounted so that it slides on this plate actuated by a fine screw. The rotating plate is graduated so that position angle can be read while a drum and counting scale on the screw records the travel of the movable lens. A Ramsden eye piece is used, focused on the line of separation.

When the two lens halves are so located that they form a single lens but one image of the double-star appears, but upon separation two images of the system appear their separation depending upon the travel of the lens. By alternately superimposing the image of the primary of one image on the secondary of the other image, and other possible combinations, and taking the average of the readings, the distance apart of the two stars can be measured providing

OPPORTUNITIES—

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Observatory. Down in Texas **Monig** takes photographs of comets that are of certain value and he and **Latimer Wilson** of Kentucky have made many fine photographs of the star clouds in the Galaxy. While meteors are hard to photograph yet the equipment is simple and any "catches" are of considerable value. Sun photography is simple and Dr. Hale of Mt. Wilson Observatory urges such activity. The moon of course is rather easily photographed.

The planets are better sketched than photographed and under the leadership of Pickering of Harvard, who first discovered Pluto, many amateurs have done drawings of the planets. **Buckstaff** of Oshkosh and **Latimer Wilson** among others have distinguished themselves. Fairly large instruments are needed however.

Little amateur work on double stars is done now days although in the past many men became eminent this way. Yet Prof. Van Biesbrock of Yerkes states that reflectors of eight or ten inches can do useful research here and has offered to so assist any amateur who is interested.

Space does not permit any more than a list of other activities which amateurs are engaged in but they include photo-electric photometry, spectroscopic work, and many other fields.

one knows the value of one revolution of the screw. This is usually obtained by measuring pairs whose distance is well known.

M. Silva claims to have found this instrument which is remarkably simple an extremely accurate instrument.