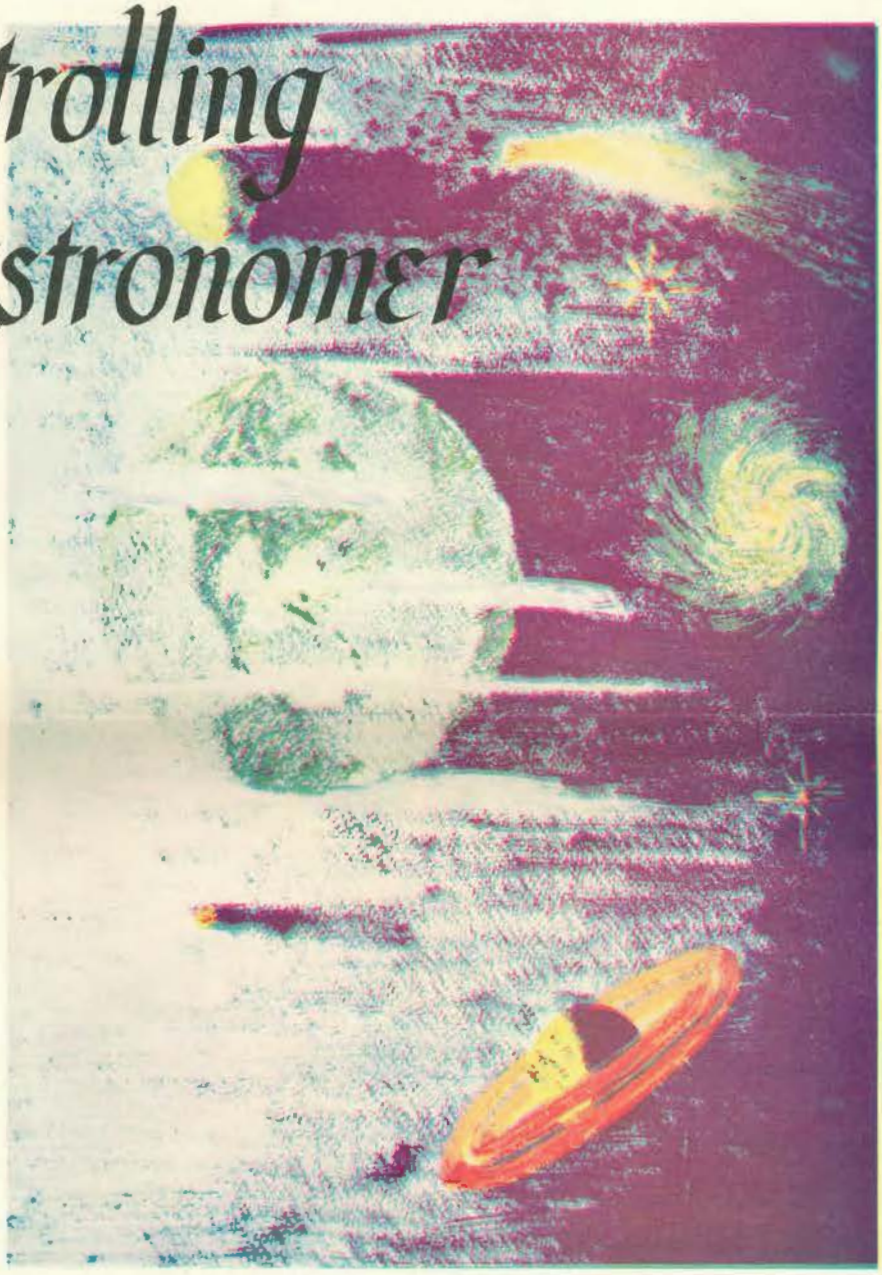
The Strolling Astronomer

Volume 6, Number 10 October 1, 1952

ASSOCIATION OF LUNAR AND PLANETARY OBSERVERS



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STAFF

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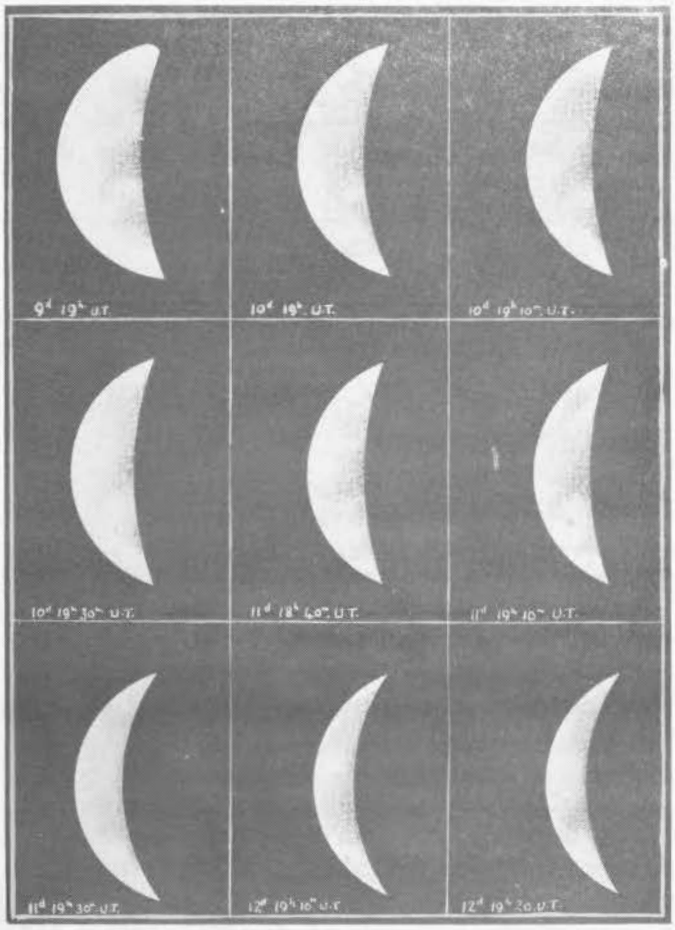


Figure 1. Drawings of Mercury by R.M. Baum in April 1951.

Figure 2. Mars.
E.J. Reese. 6-inch refl. 240X
April 22, 1952. 5^h25^m, U.T.
C.M. = 337°

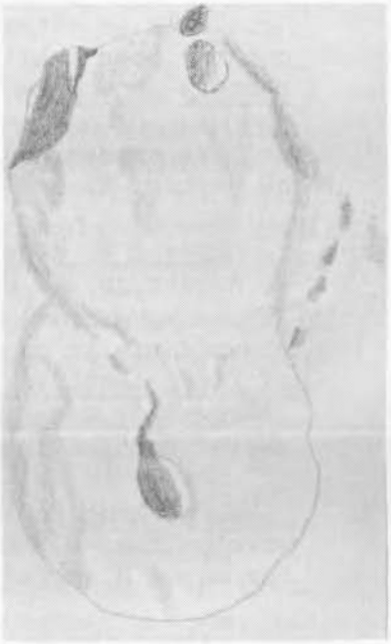
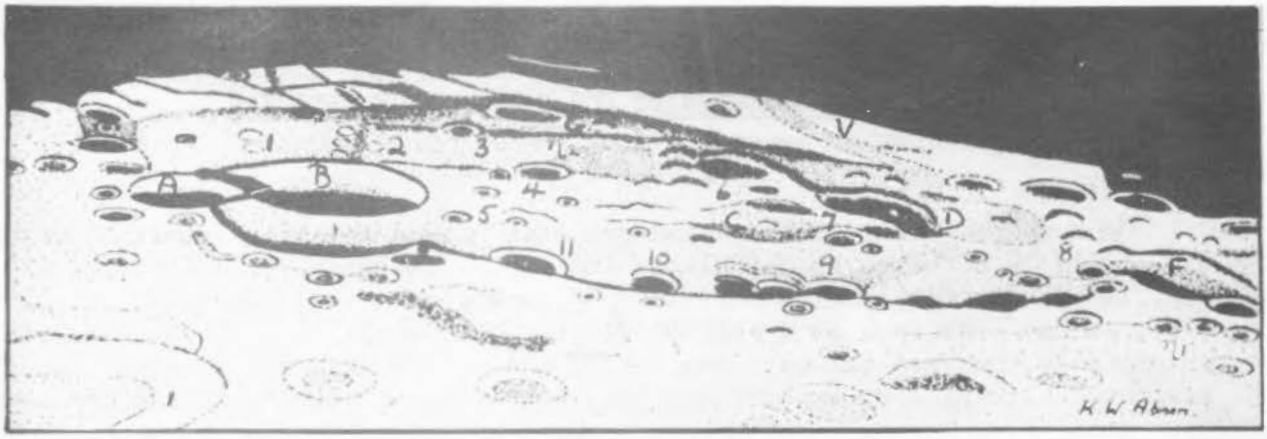


Figure 3. Lunar Craters Haze and Haze D. E.E. Hare.
12-inch refl. March 30, 1952.
$2^h\ 0^m$, U.T. Colongitude = 317°.8

Figure 4 (Below). Lunar Walled Plain Bailly. K.W. Abineri. 8-inch refl. 232X. February 9, 1952. 22^h, U.T. Colongitude = 79°.0



Errata in September, 1952 Issue. On pg. 125, line 43 read "The German text is keinen allgemeinen Zusammenhang." On pg. 128, line 3 read "difficult enough". On pg. 131, line 32 read "to have seen". On pg. 132, line 20 read "in the same number". On pg. 132, line 37 read "the 1865 'photogram'", not "1856". On pg. 132, lines 38-39 the sentence should begin "If it did not". Of course, our preceding issue was Number 9 of Volume 6, not Number 8.

New Mercury Recorder. Mr. Donald O'Toole is no longer able to serve as Mercury Recorder of the A.L.P.O. We have been fortunate in securing as new Mercury Recorder:

Jackson T. Carle
2734 N. Sixth Street
Fresno 3, California

Mr. Carle is already known to many California amateurs, and his name has frequently been mentioned in recent issues of this periodical. All observations of Mercury should be sent to Mr. Carle at the address above.

We express our thanks to Mr. O'Toole for assisting the A.L.P.O. by serving as Mercury Recorder.

David W. Rosebrugh Honored. On October 1, 1952 our Charter Member, David W. Rosebrugh, 66 Maple Ave., Meriden, Connecticut was awarded The Fifth Amateur Astronomers Medal by the Amateur Astronomers Association of New York City for his efforts in popularizing active observing by amateurs. Mr. Albert G. Ingalls of The Scientific American and Mr. Edward A. Halbach of the Milwaukee Astronomical Society were similarly honored. We congratulate our colleagues on this deserved recognition of their efforts.

Previous recipients of the Medal have been Dr. Russell W. Porter for his work on the 200-inch Hale Telescope and Mr. Leslie C. Peltier of Delphos, Ohio for comet discoveries and celestial observations.

About the Polar Regions Section of the Wilkins Map. In our previous issue we published a Special Section of the Wilkins map of the moon showing the north polar regions, and in this issue we similarly publish a special map of the south polar regions.

As readers may already have noticed, there are written references on each published section to features near both the north and the south pole. This situation has arisen because Mr. Wilkins' original Special Section showed both polar regions but on a scale rather small for the written references in our reduced-size reproduction.

A RARE OPPORTUNITY FOR THE AMATEUR OBSERVER

by Walter H. Haas

On November 20, 1952 the naked-eye star Sigma Arietis, stellar magnitude 5.5, will be occulted by the planet Jupiter. Immersion will occur at $10^h\ 51^m$, U.T., at San Francisco at a position-angle of about 210°; emersion, at $12^h\ 40^m$, U.T., at San Francisco at a position angle of about 115°. These data will be essentially the same all over the United States and Canada. By P.S.T. immersion will come at 2:51 A.M. on November 20; emersion, at 4:40 A.M. Add one hour for

M.S.T., two hours for C.S.T., and three hours for E.S.T. Immersion will be at the bright limb of Jupiter; emersion, at the dark limb. Of course, the phase of the planet will be very slight only 12 days after opposition. Conditions for observing the occultation will be best in the Western States, and it appears doubtful that emersion can be observed to any purpose east of the Mississippi.

Observations of this occultation of a star by Jupiter may be undertaken to study either the position of Jupiter or its atmosphere. As regards the former, the predicted times of immersion and emersion may be wrong by as much as ten minutes. The wise amateur will hence not trust them too far and will be sure to be at his telescope more than ten minutes before the event. One cannot turn time back! Of course, both immersion and emersion should be carefully timed with a watch or clock having a known error. The observation of the effect of the atmosphere of Jupiter, naturally that portion above the reflecting surface, on the light of the star will probably hold more interest for most A.L.P.O. members. When the light of the star is passing through the Jovian atmosphere, we may expect the star to be both dimmed and reddened. These effects should be studied most attentively. They demand that the observer give the most constant scrutiny to the star while it is close to the Jovian limb. Through reliable observations of the duration and degree of such effects on the star we may hope to secure information about the Jovian atmosphere not otherwise obtainable. The fact that the star on this occasion will approach the Jovian limb obliquely rather than normally is a definite advantage in this project.

The morning hour of this phenomenon is definitely unhandy for the average amateur. Nevertheless, we urge that it is worthwhile to make a special effort for a rare and valuable opportunity like this one. Occultations of stars by planets are infrequent events, the writer having witnessed only one in 19 years devoted to astronomy.

As an example of what may be seen we quote from pg. 602 of Camille Flammarion's classic Les Terres du Ciel (translation by writer): "On September 14, 1879 at 10:07 P.M. (Melbourne Time) the astronomers in the observatory of that city observed Jupiter occult the star 64 Aquarii. Mr. Ellery saw the star remain glued to the limb for two minutes, then enter upon the disc, doubtless an effect of refraction in the atmosphere of Jupiter. Mr. White made the same remark. These observations were made with refractors. In the large reflector Mr. Turner distinctly saw the star disappear gradually behind the disc, then reappear for ten seconds through the atmosphere of Jupiter, like a luminous point seen behind a slab of glass."

We express our thanks to all A.L.P.O. members who attempted to observe the occultation of a telescopic star by Mars on August 30, 1952. Bad weather was evidently widespread in the Eastern half of the country, where the phenomenon was visible; and we know of no successful observations at this writing. We wish all would-be observers better fortune with Sigma Arietis on November 20 and eagerly await word of what they see. It is recommended that observers use a fairly high power and, if at all possible, a clock-driven telescope.

MERCURY: THE FAVORABLE APPARITION OF MARCH-APRIL, 1951

by Donald O'Toole

Following in the path of the unprecendented cooperative Mercury observational program of April, 1950 (C. B. Stephenson, "Mercury in April, 1950", The

Strolling Astronomer, Volume 4, Number 11, pp. 2-5, 1950), a rather large number of observations and drawings were received from persons who observed Mercury in the similarly favorable evening apparition of March-April, 1951. However, whereas during the former year the majority of the observations were from the U.S., during 1951 all were from other countries except several by O'Toole in the earlier part of the apparition. The other observers were M.B.B. Heath, R. M. Baum, and P. A. Moore, all in England, and G. D. Roth in Germany. About two dozen drawings were contributed, and a considerably greater number of observations were merely described. All dates and times are here given by Universal Time.

Geometrical dichotomy fell near 12^h on April 3. Heath found the planet "very near half-phase" on April 1, and O'Toole drew the terminator straight on April 1; Moore did not actually observe half-phase but obtained views before and after which would appear to place observed half-phase, or dichotomy, about on April 3. So we appear to have evidence that observed dichotomy occurred before predicted but not earlier than when the phase-angle i was equal to 80°.

Special attention was given to a comparison of the observations with those of the previous year, as discussed by Mr. Stephenson. Results were rather negative, though not necessarily without merit on that account. We here follow the Mercury nomenclature of Antoniadi's map on pg.193 of F.L. Whipple's Earth, Moon, and Planets. The bright area on the northwest limb, which Cragg some time ago suggested might be Argyritis, was not seen consistently enough to merit any particular remarks, though it was, for instance, seen by Roth on April 6 very much in the position it commonly occupied in 1950. On this date it was the brightest object on the disc in an orange filter. However, the planet was perhaps rather crescentic by that date for a bright object to be identified with Argyritis. Similar results were secured for the southwest bright limb spot;it was seen once rather well by O'Toole on March 31 but was missed completely by Moore observing about seven hours earlier.

It is singular that O'Toole observed on April 1 what must very probably have been the identical twin dark markings which he saw on the terminator in 1950 on three successive dates. While not so intense as in 1950 and definitely no longer darker than the surrounding sky, these two markings in 1951 were at a very similar latitude; and the northern one was called the larger, as it was the previous year. The only difference at first glance appears to be that the terminator at the time of the observation was strongly concave in 1950 and straight in 1951. However, it can easily be computed that the longitude of the terminator, allowing for Mercury's libration in longitude, differed by only 12 degrees, being 67° on the mean date of April 25, 1950 and 79° on April 1, 1951. On both occasions the location of the markings on Antoniadi's map is along the eastern edge of the dark marking known as Atlantis. Whatever the meaning of these objects, they may be kept in mind and looked for in the future. According to O'Toole, in 1950 at least they were certainly for one day among the most spectacular Mercurian details ever seen by him.

Some notes about the bright cusp-caps were made during the apparition, but no sufficiently systematic brightness-comparisons were obtained to merit consideration here. In a beautiful drawing on April 9 Baum depicted a blunting of the southern horn (not specifically defined as a cusp-cap). This observer has contributed nine truly magnificent drawings,which are reproduced as Figure 1 on pg. 137. It is of peculiar interest to note that Moore found no cusp-caps on four different dates,indeed recording an overall dusky southwest region on the planet on every date on which he observed.

A similarity in the appearance of the telescopic Mercury to the naked-eye moon is alluded to by Baum, a comparison which O'Toole seconds wholeheartedly. Harkening back to an earlier era, Baum says of his blunted southern horn: "No doubt the observation of Schroeter's so-called 'Mercurial Mountain'". A number of readers might like to look into that speculation!

Regarding the characteristic surface detail, the apparition produced the usual interesting differences among the various observers. While often some wonderful trends can be found within the work of a given observer, it is seldom that two observers will agree at all on any but the coarest of the planet's features. Consequently, we note with interest a terminator bright spot in the form of a projecting "peak" north of the center drawn by Moore on April 4 and mentioned by Roth in a view about 30 minutes earlier on the same date. The value of the phase-angle i was 96° at the time. Heath makes no mention of this "peak". However, it is interesting to note that in Baum's drawings some days later the region of Pentas is particularly prominent, in the three drawings on the top row of Figure 1 on pg. 137. By holding Baum's original drawings away from the eyes and blurring them slightly out of focus, one secures a beautiful projecting "peak" on the terminator of each drawing in precisely the position of Moore's "peak".

It appears desirable to mention the following observation by Heath on April 14, copied verbatim here: "Several times (particularly about $19^h\ 20^m$) had persistent impression of a slight darkness inside the horns of the crescent slightly darker than outside sky. The first time I have ever suspected such an appearance, although the planet can rarely be followed so far into the crescent phase [i was 138°] An unskilled person saw this without being told of it, and not knowing I had already suspected the same thing. Not quite sure if illusion or not." This phenomenon is becoming more and more frequently observed on both Mercury and Venus, and a satisfactory explanation for it has yet to be found.

EXCELLENT NEWS FROM ABROAD

Dr. James Q. Gant, The Montana, 1726 M St., N.W., Washington 6, D.C. visited Europe last spring and summer. He took this opportunity to attend the June 25, 1952 meeting of the British Astronomical Association and to make the personal acquaintance of a number of our English astronomical colleagues, including H. P. Wilkins and P. A. Moore. As most of our readers already know, Mr. Wilkins is the Director of the Lunar Section of the British Astronomical Association;and Mr. Moore is the Secretary of this Section.

Dr. Gant brought back some very good news with him! Mr. Wilkins and Mr. Moore are preparing two books on the moon. The first is a semi-popular book with abundant maps and drawings, expected to come off the press early in 1953. The second is a full scientific treatise on the moon, expected to be released in late 1953 or 1954. Their publication will certainly fill a long-standing very real need. No worthwhile description of the lunar surface features has appeared since Goodacre's Moon in 1931, a book now long out of print. The names of the authors Wilkins and Moore assure us of the high quality of their literary work. All serious lunarians must look forward eagerly to the publication of these two books.

While in England, Dr. Gant visited Mr. Wilkins at the latter's home near London, met his family, and observed with his 15-inch reflector in a very convenient English type of mounting. Dr. Gant also toured the Greenwich Observatory with Mr. Wilkins and saw the famous old buildings and instruments. Our

traveller also saw many thousands of pen-and-ink lunar drawings by Mr. Wilkins and the original of the 300-inch map of the moon - which is truly something to behold. Dr. Gant expresses the hope that other A.L.P.O. members will be able to visit Great Britian occasionally and to make the personal acquaintance of our fellow astronomers there. Our English friends have been important contributors to The Strolling Astronomer since its beginning.

THE FOURTH CONVENTION OF WESTERN AMATEUR ASTRONOMERS

by Frank Kettlewell

The University of California at Berkeley became a stargazer's mecca when more than 250 Western Amateur Astronomers held their fourth annual convention at the Leuschner Observatory on the campus, August 17-20, 1952. Delegates began registering on Sunday morning, August 17, and by Sunday afternoon were on their way to visit the nearly completed Morrison Planetarium in Golden Gate Park, San Francisco.

The Convention was formally opened at 9:30 A.M. on Monday, August 18, in California Hall on the U.C. campus, where the delegates were welcomed by W. C. Marion, President of the Eastbay Astronomical Society, host to the Convention. Dean Alva R. Davis and Dr. Sturla Einarsson welcomed the delegates on behalf of the University of California and the Astronomical Society of the Pacific respectively. The principal address was given by Dr. Otto Struve, Chairman of the Department of Astronomy at Berkeley. His subject was "The Place of the Amateur in Astronomy." Dr. Struve lauded the amateur astronomers and said that their achievments have contributed much to the advancement of the science. Dr. Struve proved not only by words but by deeds that he is a friend of the "backyard stargazers" when, through his interest and cooperation, all the facilities of the Leuschner Observatory were thrown open for the use of the Convention.

For three days with morning and afternoon sessions the delegates listened attentively to 21 papers and addresses on the various phases of astronomy, including telescope making, mirror testing, observing, sunspots, variable stars, meteorites, and features on the surfaces of the moon and the large planets. Many papers were illustrated with slides.

The evening entertainment began with the annual banquet at the Hotel Claremont, followed by the first star party on the grounds of the John Muir School. The weather was perfect for the entire three days and nights; not a cloud or wisp of fog came in to interfere with the very clear skies, and the many fine telescopes (most of them homemade) were kept busy until the early morning hours. On Tuesday afternoon came one of the highlights of the Convention, the trip to the cyclotron and the huge bevatron (now under construction) in the hills back of the campus. On Tuesday evening Dr. Struve gave a talk to the Convention in California Hall on "What I Don't Know About Flying Saucers". Following Dr. Struve's interesting lecture another star party was held, this time at the Leuschner Observatory.

The Convention concluded on Wednesday afternoon and evening with a trip to the University's Lick Observatory, on Mount Hamilton 4200 feet above the floor of the Santa Clara Valley. The party stopped briefly enroute at the Chabot Observatory (21-inch refractor), home of the host Eastbay Astronomical Society. Box lunches were taken up to Lick, and the Observatory staff kindly furnished hot

coffee. Fine weather followed the delegates from Berkeley to the top of Mount Hamilton; and after refreshments and a view of the clear sunset over the Pacific, the visitors began their tour of the Observatory facilities. They were shown completely through the huge dome which will house the new 120-inch reflector, even the grinding and polishing room where work will soon begin on the huge piece of glass.

Soon the stars were out bright; and the delegates began forming in lines to look through the 12-inch and 36-inch refractors, which were placed at their use for the whole evening. Never will we forget the eyepiece of the Ring Nebula in Lyra through the big 36-inch.

Near midnight the 1952 Convention of Western Amateur Astronomers adjourned, and the delegates began journeying down the mountain and on to their various homes and observatories.

Los Angeles was chosen as the site of the 1953 Convention.

Postscript by Editor. Mr. Frank Kettlewell, 325 El Cerrito Ave., Piedmont 11, Calif. is an active amateur in the Bay Region and himself contributed much to making the Fourth Convention a pleasant and successful gathering.

A.L.P.O. members will be especially interested in an experiment carried out to test the visibility of thin wires of different sizes. These were placed in a wood frame near the top of the Campanile, a high tower on the campus, and were viewed in ordinary-sized telescopes from a distance of about 1100 feet. Drawings were made at the eyepiece by 31 persons, naturally without knowledge of the true arrangement. Mrs. Natalie Leonard, the Editor of Astronomical Information Sheets, planned the experiment and has promised to publish the results.

Foreword by Editor. Mr. Anthony Paluzíe-Borrell, Diputacion 337, Barcelona, Spain has again kindly writeen an article for The Strolling Astronomer. Mr. Paluzíe is the Librarian of the Sociedad Astronómica de España y América at Barcelona and is a regular contributor to their journal, Urania. On this occasion Mr. Paluzíe has favored us with a subject refreshingly new on these pages, that of the very diverse sources of the names of the asteroids. Last spring Mr. M.B.B. Heath, an active British planetarian and a contributor to our efforts, visited Mr. Paluzíe at Barcelona and was much impressed with the scope of our Spanish colleague's researches into the names of the minor planets and of lunar features, as well as other subjects.

THE MEANINGS OF THE NAMES OF THE MINOR PLANETS

by Anthony Paluzíe-Borrell

At the age of 15 I remarked some differences between the lists of star names in two different books on astronomy which I had;and these became the basis of my present private library of astronomical books containing some 500 volumes, the fruit of some 40 years of devotion to astronomy. Then, I had the idea to prepare a comprehensive list of star names, which now includes more than a thousand names and their meanings. (This list is awaiting a good publisher.) Finally I included the meanings of the names of the minor planets; and I hope that a few notices about my work will be of interest to the readers of The Strolling Astronomer, for the asteroids are also "strollers".

My first source of information was a handbook of classical mythology because the asteroids discovered first have mythological names. An encyclopedia supplied the names of those from Slavic and Scandanavian mythology. I then contacted the Astronomische Rechen Institut at Berlin, now at Heidelberg; and Dr. I Groeneveld gave me the meanings of about 100 names and the good advice that I write directly to the discoverers of minor planets or to the observatories where they had worked. My task thus became to correspond with all observatories where minor planets had been discovered. Consequently I have collected a good set of autographs of the principal authorities in astronomy, among them those of Messieurs van Biesbroeck, Stein, Jekhowsky, Bosler, Nicholson, Coddington, Baillaud, Buchar, van den Box Hatanka, and Clemence, Madame Laugier, the widow and the daughter of Metcalf, and others. Using the international language Esperanto, I have corresponded with Dr. Sirk of the Vienna University, who knew the widow of Palisa, and with a Greek professor of literature at Athens.

At last I wrote to Dr. Herget, the Chairman of the Minor Planets Sections of the I.A.U., at Cincinnati, Ohio; having found all the meanings but some 300, I asked him for help in searching these out. Dr. Herget's answer was very surprising; for instead of giving me some of these 300 meanings, he inquired whether I desired that the I.A.U. publish my list. The reader can conjecture my answer! Since Dr. Herget's letter arrived 150 more names have become known and have been added to my list. Now only 150 names are without significance.

I am greatly indebted to all these gentlemen who have kindly helped me. On my part I have disclaimed any rewards which the I.A.U. might give me.

The 150 unknown names are very difficult to find because they are of asteroids whose discoverers are long dead. After this historical summary I give the following examples of the meanings of minor planets names:

12. Victoria. In honor of the British Queen Victoria. Several republican elements protested because the mythological tradition had been broken to glorify a sovereign. A cultivated periodist solved the problem by calling attention to the goddess Victoria, the daughter of the goddess Styx and the giant Pallas. She was also called Nike.

323. Brucia. In honor of Miss Catherine Bruce, the donoress of the Bruce photographic telescope at the Heidelberg Observatory.

373. Melusina. The heroine of the novel by the French Jean d'Arras in 1387. Daughter of an Albanian king, each Saturday she changed her lower parts into a snake tail. She married Raymond, Earl of Poitiers, on the condition that he do not see her on Saturdays. When he broke this condition, she changed herself completely into a snake and crying fled through the window. She reappeared whenever the death of some Lusignan approached.

444. Gyptis. Marseille, the most ancient city of France, was founded by the immigration of Greek navigators from Phocaea in Asia Minor near 600 B.C. According to legend, Protis, chief of the expedition, was chosen as the husband for Gyptis, the daughter of the king of the Segobrigs. This king assigned the ground where Massalia (Marseille) was built.

584. Semiramis. Wife of Ninus, king of Assyria, and killed by her son. The word Semiramis derives from Samouramat, which means "the elevated heaven."

694. Ekard. Named by Mr. and Mrs. Nicholson, when students at the Drake University, Des Moines, Iowa. They were the first to compute its orbit and made up the name by spelling Drake backwards.

In connection with the history of the discovery of the minor planets we have: 998 Bodea, 1000 Piazzia, 1001 Gaussia, 999 Zachia, 1002 Olbers, not to mention 1134 Kepler and 1322 Copernicus. With American astronomy we can mention 767 Bond, 784 Pickeringia, 792 Metcalfia, 819 Barnardiana, 854 Frostia, 855 Newcombia, 892 Seeligeria, 990 Yerkes, 991 McDonalda, 1024 Hale, 1123 Shapleya, and others.

1010 Marlene. The name of a star which cannot be seen in the sky: Marlene Dietrich, A German motion picture star. The set 1228 Scabiosa, 1229 Tilia, 1230 Riceia, 1231 Auricula, 1232 Cortusa, 1233 Kobresia, and 1234 Elyna (all are the names of planets except that 1230 is in honor of the astronomer Rice of Boston) was discovered by Reinmuth at Koenigstuhl, Heidelberg. The first letters from each word form Stracke, a German professor of astronomy in whose honor the planets were named.

1372. Haremari. An anagram made for the feminine computers of minor planet orbits (humorously a harem) at the Astronomische Rechen Institut.

724. Hapag. The initials of a German navigation line, Hamburg Amerika Paketfahrt Aktien Gesellschaft.

1395. Aribeda. From Astronimische Rechen Institut Berlin Dahlem. (These two were named by Dr. Herget in a report published in M.N.R.A.S., Vol. 111, no. 2, 1951.)

I am personally partially responsible for the names of two asteroids, 1421 Esperanto and 1462 Zamenhof, discovered by my Finnish friend Dr. Y. Väisälä at Turku (Abo), Finland. For several years I had corresponded with him in the international language Esperanto invented by the late Dr. Zamenhof. Once I asked Dr. Väisälä to commemorate the author of the language which had provided the means of communication between us. The result was the naming of these two asteroids.

I must end this article because the minor planets already catalogued number more than 1560; and the Editor of The Strolling Astronomer, my dear friend, Mr. Walter H. Haas, would be very angry with me if I should give all the meanings!

AN OBSCURATION IN PLATO

by Patrick A. Moore, F.R.A.S.

The observations of Plato secured at the Meudon Observatory by Mr. Wilkins and myself seem to call for some further comment, as they appear to prove a definite case of obscuration inside this great walled plain. The object concerned is a floor-craterlet near the eastern wall. On Mr. Wilkins' drawing in The Strolling Astronomer, Vol. 6, pg. 96, it is not shown; but the site is on the prominent light streak running to the east wall,perhaps five miles from the wall itself.

An old chart by W. R. Birt, dated 1870, indicates something in the position; but it is omitted from charts made in 1874 by Birt and in 1883 by A.S. Williams. Neither observer was using a telescope equal in size to Mr. Wilkins 15-1/4-inch reflector or to my own 12-1/2-inch reflector, but on a chart made by Williams in 1892 the object reappears as a distinct white spot.

On November 23, 1920, Dr. W. H. Steavenson used the 28-inch refractor at Greenwich Observatory to make a detailed drawing of Plato. In the position re-

ferred to, he drew in a large craterlet with interior shadow, not much inferior to the well-known pair north of the center of Plato; he noted it as "very conspicuous". Yet on April 3, 1952, using an even larger refractor under excellent conditions of atmosphere and illumination, we were unable to see a trace of the object, even though a special search was made for it. That Dr. Steavenson could have been mistaken is so unlikely that the possibility can be ruled out - and in any case he had seen the object on previous occasions in the 28-inch, noting it as one of the only five objects on the floor seen as definite craterlets. It is equally impossible that Mr. Wilkins and I could have overlooked a feature in this position, particularly as our two drawings were quite independent, and agree excellently - and also agree in other respects with Dr. Steavenson's chart. The clear inference is that the eastern crater was not visible to us, because it was obscured.

Some six hours after our drawings had been made, Mr. T. A. Cragg in America examined Plato with a 12-inch reflector and aaw nothing whatever on the floor (S.A., Vol. 6, pg. 86), despite good conditions. As the interior details were glaringly obvious to us, and could not possibly have been overlooked with a much smaller instrument than the one we were using, there seems no escape from the conclusion that between our observation and Cragg's the whole floor became affected. If the obscuration spread from the east, our failure to see Dr. Steavenson's craterlet is easily accounted for.

Owing to the courtesy of those at the Cambridge Observatory, including Dr. Steavenson, Mr. Wilkins and the writer are to pay a visit there this aatumn, when it is hoped that further observations of Plato can be secured with a really large telescope. Meanwhile, it seems that there is no doubt that the craterlet under the eastern wall was obscured throughout the night of April 3-4, 1952.

Postscript by Editor. It is indeed a pleasure to publish this article by Mr. Moore, the Secretary of the Lunar Section of the British Astronomical Association. He has presented us with a very strong case for an obscuration in Plato- or at least for an intrinsic variation in the visibility of a lunar feature. We must surely attach great weight to the results of such experienced workers as Steavenson, Wilkins, and Moore when they are secured with large telescopes. Mr. Moore's argument might be bolstered still further if we had observations of Plato intermediate between the one at Meudon, near $20^h\ 45^m$ on April 3, U.T., and the one by Cragg, near $2^h\ 45^m$ on April 4, U.T. Were any such made? A drawing of Plato representing an intermediate position of the "obscuring matter" in its apparent advance over the floor from the east wall would be positive evidence of the very greatest value.

We must all envy our English friends their opportunities to observe with the large refractors at Meudon and Cambridge. Is it too much to hope that professional astronomers at other observatories might be occasionally willing to permit qualified A.L.P.O. members the use of large telescopes for some of our projects?

The irregular shading of the Meudon drawing of Plato, on pg. 96 of our July issue, is accidental and is not intended to represent depressions in the floor or anything else. As Mr. Wilkins states clearly on pg. 94, the floor looked remarkably uniform and level.

BOOK REVIEW

by Walter H. Haas

Pictorial Astronomy. By Dinsmore Alter and Clarence H. Cleminshaw of the Griffith Observatory, Los Angeles. 296 pages. Numerous illustrations. $4.50.

Thomas Y. Crowell Company, New York. 1952.

Just off the press, this book by the Director and the Associate Director of the Griffith Planetarium is worthy of a place in the library of every amateur astronomer. It is modern, giving Jupiter credit for 12 satellites; it is reliable, as we should expect from the authors. It is written in a popularized and very readable style so that it may be recommended to anyone as a first book on astronomy. Much of the book has been rewritten from articles in The Griffith Observer.

Pictorial Astronomy is not primarily intended as a text, though it might be so used for a high school descriptive course or a college cultural course. It gives more attention than the usual text to subjects high in popular interest, as we might expect from the close contact of the authors with the general public at planetarium lectures. In this connection an attack on pp. 109-111 on the astrological nonsense now enjoying such a vogue is certainly in order. The question of life on other worlds is considered, both as regards the physical conditions on other planets in the solar system and as regards speculations on the existence of earth-like planets of other suns.

The illustrations are especially deserving of praise, and it is difficult to see how so many fine photographs can have been included for the price of the book. These include such familiar favorites as the Mount Wilson photograph of the last quarter moon. Some photographs of Mars, Jupiter, and Saturn on pg. 93, made by Herbig and Bunton with the Griffith 12-inch Zeiss refractor in 1939, should be especially interesting to A.L.P.O. members. Besides the photographs, there are many figures well chosen to illustrate the text. One on pg. 63 shows clearly that the orbital path of the moon is always concave to the sun. A figure on pg. 149 demonstrates the principle of meteoric radiants by showing the apparent divergence of parallel lines of telephone wires from a single distant point.

The book is divided into eight sections, as follows: the sun, the earth, the moon, eclipses, the planets, comets and meteors, stars and nebulae,, and miscellaneous. The reader with a flair for arithmetic may wish to try out the suggestions given for predicting lunar and solar eclipses by nothing but addition and subtraction. Some of the chapter headings should intrigue the most casual reader; we might mention, for example, "Sunburned Mercury", "The Martian Dream", "Refrigerators of the Sun", and "The Visit of Arcturus to the Sun". A chapter on "How to Recognize the Stars" should be adequate for the nature lover wanting to learn the chief stars and constellations. Of course, the book avoids mathematics and formulas. There are tables of data on the various astronomical objects, which are easily found and are handy for reference.

By special arrangement with the publishers the Editor is selling this book to interested persons. The price is $4.50. You will be supporting your A.L.P.O by buying your copy from the Editor. Pictorial Astronomy will be an ideal Christmas gift for your friends.

OBSERVATIONS AND COMMENTS

On pp. 27-28 of the February, 1952 Strolling Astronomer we told our readers how F. H. Thornton, an active member of the Lunar Section of the British Astronomical Association, had directed attention to some peculiar appearance in the lunar crater Haze, just southwest of the walled plain Petavius. Mr. Thornton

did not say just what the peculiar appearance is. As a result several persons directed their telescopes to Haze; among the recent observers are R. Venor of the Montreal Centre in Canada, D. P. Barcroft, and E. E. Hare. On June 17, 1952 Mr. H. P. Wilkins wrote Mr. Barcroft that he (Wilkins) understood that Thornton had seen a white cross, presumably formed by ridges, at sunset, a feature then prominently visible when nothing else in Haze was illuminated. This cross has escaped recent observers, whose views have been under morning lighting.

Mr. Hare had perhaps the best view in his 12-inch reflector on March 30, 1952 at colongitude 317°.8; and his drawing is given as Figure 3 on pg. 137. It will be noticed that Haze joins on its south side with a crater of similar size, Haze D. The most prominent markings were a near-central crater in Haze and a crooked black line, probably the shadow of a ridge or a fault, running southward from this crater. Barcroft on May 27 with a 6-inch reflector at colongitude 306°.5 recorded several features not noticed by Hare, perhaps because Barcroft had much lower solar lighting. There were a pair of intersecting ridges near the south end of Haze and a cleft or ridge running northward from the near-central craterlet and crossing the north rim of Haze to enter Petavius. The north and northeast corners of the floor were definitely darker than the rest. Although these objects are absent from lunar maps, Mr. Barcroft has found them to be clearly shown on photographs in the classic Paris Atlas by Loewy and Puiseux. Mr. Venor has contributed drawings with a 6-inch refractor on February 29 at colongitude 311°.9 and on April 28 at 310°.9, the latter appearing to show several craters just under the west rim of Haze.

Before going further, we should define the term colongitude for our newer readers. It is simply the lunar eastern longitude of the sunrise terminator. Colongitude is approximately, but not exactly, 0° at first quarter, 90° at full moon, 180° at last quarter, and 270° at new moon.

Mr. Keith W. Abineri, 102 Chalk Hill Road, Wembley Park, Middlesex, England has submitted a careful drawing of the giant lunar walled plain Bailly as he saw it on February 9, 1952 near colongitude 79° in an 8-inch reflector at 232X. His drawing, including letters and numbers for convenience in referring to the different features, is reproduced as Figure 4 on pg. 137. The libration, rather important for this formation on the southeast limb, was only slightly favorable to Mr. Abineri in this view. Readers may wish to compare this drawing and description to the article by H. P. Wilkins on pp. 63-64 of our May, 1952 issue and to Section XXII of the Wilkins map on pg 76 of that issue. It should be noted that Abineri's notation, which we follow here, differs from that of the Wilkins map. With excellent definition during most of a three-hour study, Mr. Abineri noted the prominent rings A and B, the depressions C, D, and G, dark areas near D and west of 6, as well as many hillocks, craterlets, and ridges. A number of craters were seen well along the foot of the north wall. The southeastern walls of depression 6 and D formed a continuous ridge, which bounded a dark area to its east. Two apparent clefts, η_1 and η_2, were noted. The former, however, located north of F, looked like a crater-valley. There was much detail, including complex terraces and passes, on the southern interior slopes. The great valley or pass, V, was very obvious, as also to Abineri on January 11, 1952; yet it does not appear on lunar maps. A number of craterlets were seen along the western and northern outer slopes, and there appeared to be a crater-valley due north of A and B.

Mr. Abineri remarks that many of the features require confirmation from other observers. We invite other A.L.P.O. members to study Bailly and to report their results.

E. E. Hare made a rough sketch with a 12-inch reflector of the walled plain Wilhelm Humboldt, lying on the moon's west limb due west of Petavius, on March 30, 1952, near colongitude 318°. Hare saw several craterlets and elevations on the floor but particularly directs attention to two tiny crater-pits surrounded by white rings in the south part of Humboldt. He wonders whether it is not the rule for such round white spots to have craterlets at their centers. Probably it is; one thinks at once of the Linné white area and its included small craterlet.

Observing W. Humboldt with a 3-inch refractor on January 12, 1952 at colongitude 98°5, Mr. Alan P. Lenham, 43 Newcastle St., Swindon, Wiltshire, England was impressed by a very bright patch on the west wall. Humboldt lay on the sunset terminator, but the floor was apparently blank of detail for the small aperture.

Several reports on searches for possible lunar meteors and/or possible lunar meteoritic impact-flares have recently been received. Those members interested in the general background of this project might like to reread pp 72-74 of our May, 1952 issue. Robert M. Adams, 324 South Valley, Neosho, Missouri on June 25 and 26, 1952, spent a total of 75 minutes in lunar meteor searches with a 3-inch refractor at 53X. These are, as usual, U.T. dates. His results were negative. E. L. Forsyth, R. R. 1 - Box 4, Fallbrook, Calif. carried out such searches for 135 minutes on July 31 and for 120 minutes on August 2, using a 6-inch reflector. He also saw nothing. Having reached first quarter on July 30, the moon was rather bright for seeing dim objects when Mr. Forsyth looked. We learn of other lunar meteor searches from the Bulletin of the Black River Astronomical Society at Lorain, Ohio. On April 27 and 29, 1952 Mr. L. Rick, Mr. G. Diedrich, and Mrs. D. Diedrich spent a total of 125 minutes in watching. Of this amount 50 minutes represents a <u>simultaneous</u> watch for 25 minutes on April 29 by Messrs. Rick and Diedrich, at different locations with different telescopes. Each of the three observers had a 6-inch reflector. On July 28 L. Rick and J. Ward observed simultaneously for 30 minutes from different locations. The Lorain observers also obtained completely negative results.

On July 4, 1952 at colongitude 50°5 R. M. Adams made a drawing of the lunar crater Kepler with a 10-inch reflector at 288X. His drawing shows the central peak and a smaller peak to its south, both objects being recorded on Section XIX of the Wilkins map.

O. C. Ranck has secured drawings of several different lunar craters in recent months. He sketched the crater Gassendi on July 6 at colongitude 74°3 and on September 2 at 62°5. In his July 6 view he remarked a small craterlet on the southwest rim. However, his September 2 drawing, made with a Barlow Lens, was by far his best of Gassendi to date. Mr. Ranck attributes this success to the Barlow Lens, and the Editor heartily seconds this opinion that the Barlow is a valuable telescopic auxiliary. For our lunarians and planetarians a Barlow is likely to be the most practical way to obtain high magnifications, especially with reflectors of short or ordinary focal ratios. Ranck's September 2 drawing shows a number of bright spots and streaks on the floor, at least a few of them revealed to be hills or ridges by their shadows, a thin and broken line of shadow at the foot of the west inner wall, and a pronounced darkness of the southwest corner of Gassendi.

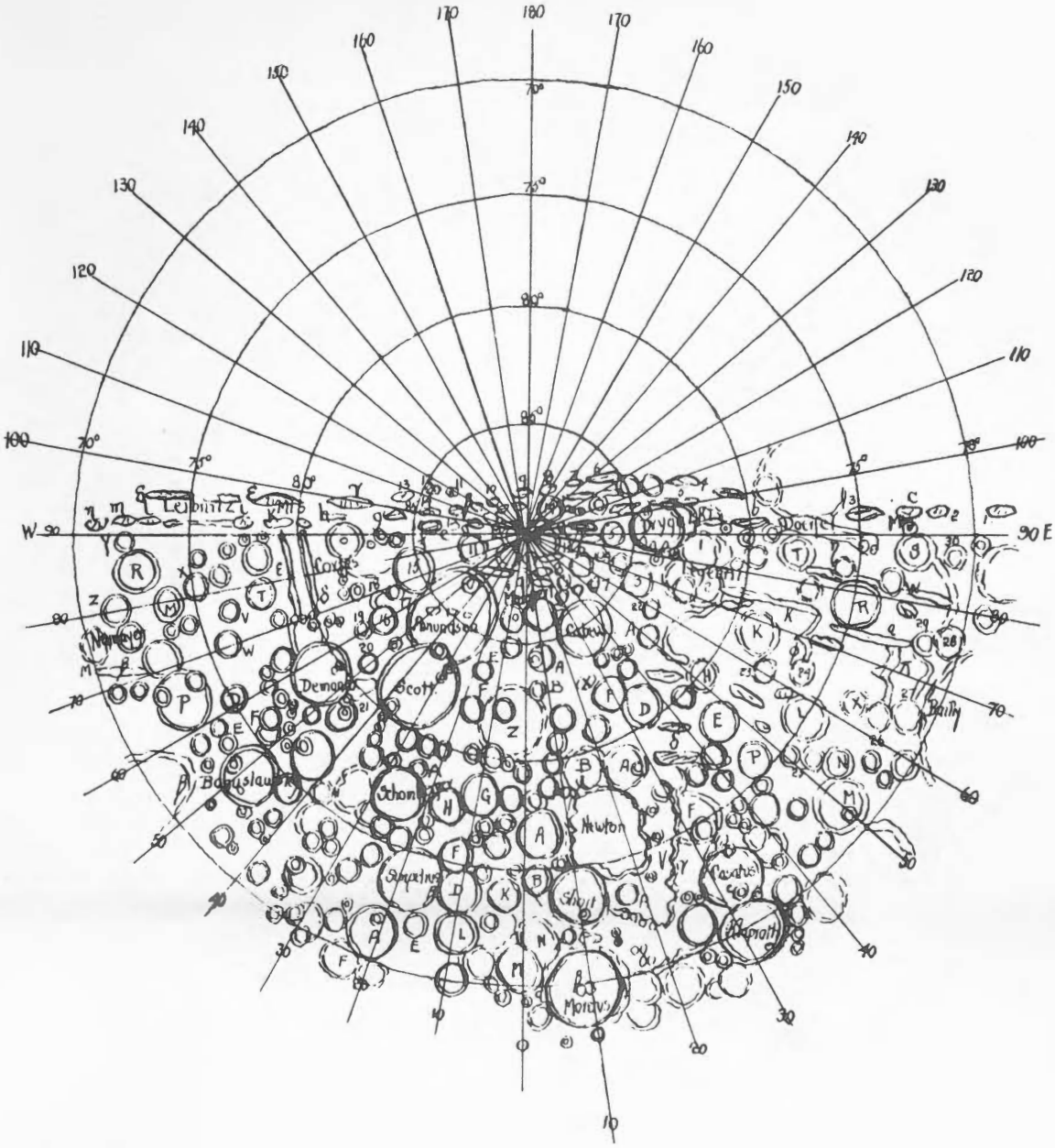
A drawing of the lunar crater Hercules by Mr. Ranck on July 28 at colongitude 342°8 shows well the prominent crater in the southwest part of the floor and a smaller crater on the south rim. The latter, however, is depicted as a horseshoe-shaped formation on the Wilkins and Goodacre maps (Section XIV). Ranck further detected a terrace in the brightly sunlit east inner wall of Hercules.

Ranck drew the crater Vitruvius on August 27 at 349°1 and thus when it was about one-fourth full of shadow. Goodacre's "low central hill" (pg. 94 of his Moon) is shown as a large, triangular bright elevation casting a fair sized shadow. This inconsistency is so puzzling and the "hill" is so much larger than on the Wilkins and Goodacre maps that we urge our members to examine Vitruvius near the sunrise terminator. This crater is on Section III of the Wilkins map. Ranck draws a wide ridge in contact with the west wall of Vitruvius and a small crater a little to its southeast, the latter being shown by Wilkins.

A. P. Lenham has constructed a detailed chart of the lunar crater Theophilus on the basis of observations with his 3-inch refractor from 1947 to 1951. We shall be glad to lend this chart to interested members, and it should be encouraging to many of them as an example of a lunar study carried out with very modest instrumental means. Mr. Lenham directs special attention to several features in his map. Along the foot of approximately the northern half of the inner wall of Theophilus is a depression concentric with the rim of the crater. A chain of small craters on the southeast inner wall is also worthy of note. Two small areas in the west part of the floor are sometimes visible as dark areas and are sometimes indistinguishable from the rest of the floor. A brighter area of the floor has occasionally been seen just southeast of the central mountains. Lenham is especially interested in mapping the central mountains and will be glad to correspond with other A.L.P.O. members who have studied them.

In a view of the crater Seleucus on February 14, 1952 at colongitude 139°.2 and thus under high lighting, Mr. Lenham found evidence of dark bands on the walls. Seleucus may thus belong to the "banded craters" in which Wilkins, Moore, Lenham, and other British lunarians have become very interested. Aristarchus is the type crater of this class, and the dark bands on its east inner wall should be within the reach of even a 2-inch telescope. Those wishing to examine Seleucus for the possible presence of dark bands on its inner walls will find this crater on Section XVIII of the Wilkins map, near the northeast limb and almost due east of Aristarchus.

A. P. Lenham has further studied the crater Hercules, especially some darker shadings in its northern half. He employed a 3-inch refractor for this study in 1949, 1950, and 1951, usually at powers of 128X and 166X. He writes that when the age of the moon is 7 days, 3 hours a dull tone has spread from the base of the north wall almost to a horseshoe-shaped mountain block near the center of the floor. (Something of this mountain-block may be present in Section XIV of the Wilkins map.) About half of the area affected by the "dull tone" has also been covered by a darker shade, likewise spreading southward from the north wall. By the time that the age of the moon is 8 days, 3 hours, Mr. Lenham continues, the "dull tone" is almost completely covered by the "darker shade". In fact, part of the north inner wall has become shaded, and on this wall a banded structure can be suspected. When the age of the moon has increased to 12 days, 4 hours, three bands are distinctly present on the north inner wall, the dark area has intensified, and in Hercules D (the largest crater on the floor) dark areas have developed. Lenham thinks that his instrument and powers may show the dark bands on the north inner wall better than larger telescopes and higher mangifications, perhaps because high power and improved resolution diminish the boundary contrast between areas of differing tone. If such is true, however, the Editor would argue that the true appearance must be that revealed by the larger telescopes. Let us remember that H. P. Wilkins in the Meudon 33-inch resolved the Aristarchus dark bands into tiny and separated dots (The Strolling Astronomer, Vol. 6, pp. 95 and 96, 1952). The Editor would further urge that the age of the moon is a very crude measure of solar illumination, making no allowance for the sometimes large lunar libration in longitude, and that colongitude should therefore always be used in its place.



SOUTH POLAR.

South of Malapert, and close to the South Pole, is a great mountain (b), another further east beyond which is the ring 14 and, in extreme libration, the peaks 6–9 become visible but only their summits. The mountain 4, beyond Drygalski, is rarely to be seen. The Author's measures are given for the principal features as follows:— Latitudes Only:—
Meton. 73°9'N; A 72°22'N; B 71°16'N; q 70°55'N; r 73°45'N; Euctemon 76°25'N; C 75°57'N; Scoresby 77°58'N; A 80°4'N; L 81°7'N; M 81°30'N; N 82°19'N; Challis 79°26'N; Main 81°7'N; Gioja 83°14'N; A 84°53'N; B 86°23'N; Anaxagoras 73°33'N: Drygalski 84°S; Malapert 86°S; Cabæus 84°30'S: Shackelton 85°15'N; A 87°32'N; nearest crater to N. Pole 89°; Peary 86°30'N: Nansen 80°N; B 86°N:

SPECIAL SECTION OF THE H.P. WILKINS MAP OF THE MOON
SHOWING THE SOUTH POLAR REGIONS.

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