

9900 EAST JEFFERSON

DETROIT, MICHIGAN 48214

Many THANKS . . . Nov. '66

Behind the scenes efforts of E.J. 'Dick' Love in Detroit and Bryan R. Frisbie, Minerals Attache, in Lima resulted in pressive ceremony which took place June 14 in Lima, Peru, South America.

Ambassador J. Wesley Jones presented a letter of commendation from Mayor Jerome P. Cavanagh and a medallion of the City of Detroit to Engineer Alberto Giesecke in appreciation for the cooperation and assistance rendered to the Detroit Astronomical Society by Engineer Giesecke and the staff of the Geophysical Institute of Peru.

Cosmic Rays and Changes in the Earth's Magnetic Field

Those who attended the June Meeting learned a great deal about Cosmic Rays. The Bell Sys-em Science Movie explained the nature of of these rays and the exciting story of their discovery. It was pointed out that this radi-ation is the result of a bombardment of the earth by small particles of matter traveling at terrific speeds. Collision of these parti-cles with molecules of gasses in the earth's atmosphere often results in a secondary bomb-ardment of an increased number of particles. One of the possible effects of such radiation is an alteration of the heredity pattern in

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Ingeniero Alberto Giesecke (right), Executive Director of the Geophysical Institute of Peru, receiving Detroit Mayor Cavanagh's letter of commendation and the City of Detroit medallion for his invaluable assistance to the D.A.S. 1966 Eclipse team.

Dr. Carlos Monge M., President of the Geophysical Institute, looks on as the presentation is made by United States Ambassador J. Wesley Jones.

JULY Program of Events at Sylvia Allen Center

Friday, July 7, 1967

8:30 p.m. - Movies

'Rockets and Jet Propulsion' and
'Volcanic Eruptions'

Friday, July 14, 1967

8:30 p.m. - Beginner's Class

'Locating the Summer Constellations'

9:30 p.m. - Optics

The Dall-Kirkham Telescope

Friday, July 21, 1967

8:30 p.m. - Optics

'Elements of Mirror Grinding'
Basic instruction rules and shortcuts for
the beginning telescope maker.

9:30 p.m. - Observing

'Locating by the Drift Method'

A simple way of finding clusters, nebulae and
galaxies whose coordinates are known.

Friday, July 28, 1967

8:30 p.m. - Beginner's Class 'The Milky Way'

Friday, July 28 (continued)

9:00 p.m. - Optics

Explanation of the Foucault and Ronchi
Tests. Instruction in polishing and parabo-
lizing for the beginning telescope maker.

Friday, August 4, 1967

8:30 p.m. - Optics

'Assembling a Newtonian Telescope'
For the beginning telescope maker. How to
design and arrange the optical elements in
a Newtonian telescope.

9:30 p.m. - Movie

'How Many Stars'

Friday, August 11, 1967

8:30 p.m. - Optics

'Collimating the Newtonian Telescope'

9:30 p.m. - Beginner's Class

'Variable Stars'

We wish to welcome...

for the Month of June:

The return of one time D.A.S. member, Dexter Combs, and new Junior Associate member --son, Bob. They have a 4 inch 'scope but have some pretty 'big' plans for future viewing --'big' being around a 20 inch reflector, (We did hear some of the Maksutov enthusiasts trying to win them over - so if you're as curious to the outcome of this venture as we are, we'll let you know their decision in this column.)

Harold V. Cooper, Jr. is an ambitious new Junior member who saw the D.A.S. listed in S & T. The only time we see him away from the grinding barrel (where his 8 inch mirror is shaping up nicely) is when he is attending a program in the lecture room.

John O'Gara's name first came to the attention of the mailing committee from Charles Johnson who receives all telephone inquiries. John has a 2 1/4 refractor and is making a 6 inch reflector.

David Smolinski does his observing with a 1.6 Unitron. He saw the D. A. S. program listing in the Shopping News section 'Things to See and Hear in Detroit'.

Besides their interest in Astronomy, our new members share something else. They love to travel. Dexter and Bob Combs hail from

Livonia; Harold Cooper lives almost next door in Westland. The last two Juniors could never 'share the ride' to the Sunday Meetings where we first met them. John is from East Detroit and David is from Wyandotte.

From Near and Far, the D.A.S. Welcomes You All.

THEY'RE OFF!

Maksutov Group III has sent in the order! Via the grapevine: Out of Groups I and II, Earl McBae's telescope is nearest completion. We're looking forward to being able to print a photo of the completed instrument soon.

MAIL IT NOW

August 4, 5 and 6. Great Lakes Regional Convention at Indiana Central College, Indianapolis, Indiana.

Registration fee is \$2.00 per person; \$3.00 per family. Mail to Mr. Clyde Fishburn, 2304 Morris Rd., Indianapolis, Ind. 46217

WANTED

Suggestions, items, etc. for the Newsletter, Mail to: Lee Johnson (Mrs. Harvey J. of the Peruvian eclipse chasing Johnsons), 25170 Strawberry Lane, Southfield, Mich. 48075; or Linda Lloyd, 14298 Lauder, Detroit, Mich. 48227

News from the EAST

Rattle Run Observatory

The letter was addressed to the Detroit Astronomical Society. It bore the return address of *Space Optics Research Laboratories, Inc., Old Powder Mill Road, West Concord, Massachusetts.*

Many moons ago a telescope for the Rattle Run Observatory had been started as a Junior Project. The topic of Optical Accuracy had been tossed about with no final word on testing the mirror. And then, MAY 1967,

Tom Waino (with Space Optics) agreed to give the D.A.S. mirror a thorough read out. What did he find? Here is Tom's letter (of good news from down East) to you:

I have checked your 12 1/2 inch paraboloid against our 16 inch 1/20 wave test flat.

By auto-collimation, I have found and measured spherical aberration of 0.011 inches which would indicate 0.0055 inches spherical aberration at your focus. This is one half the auto-collimation value because of double reflection on the paraboloid.

You have a low zone of 1 1/4 inches from the edge. The center is flat and the curve drops from 3 inches to 5 inches from the center and rises up to the edge. The very edge is turned down since I don't see both diffraction lines at the edges.

The knife-edge and the light moves together in my measurements. It is a smooth curve since I don't see any other zones.

In referring to the calculation sheets, one method shows that the mirror is accurate to 1/13 of a wave, the other 1/9 wavelength.

Working with only the Foucault test, you have done a remarkable job of radius figuring for a 12 1/2 inch F5 mirror, I wish to congratulate you for a job well done. I hope the Society will get together and put this mirror to use, If I can be of any help, you may count on me.

To the Editor:

The Observatory Building Project is behind schedule because the weather turned contrary. However, the future looks sunny and we're optimistic about having a 'good' report for the August Newsletter.

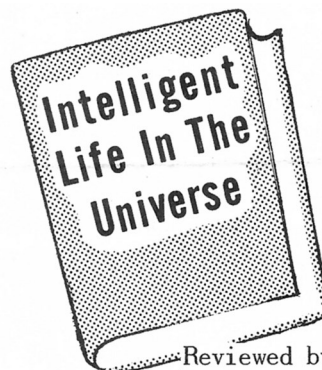
The Observatory Committee

The BOOK CORNER

We proudly present a new column this month which will review at least one scientific publication in each issue.

It will not be concerned with literary style or skill but will look at books from the standpoint of interest to our members.

If you know of a particularly good book you think should be included, call Doc Marshall at 393-6631 days or 535-7117 evenings.



Reviewed by C. D. 'Doc' Marshall

INTELLIGENT LIFE IN THE UNIVERSE by I. S. Shklovskii and Carl Sagan. 488 pages. Published in U.S. in 1966 by Holden-Day, Inc, Originally published by Shklovskii in Moscow in 1963 entitled *Universe, Life, Mind* (English translation).

Sagan received permission to translate and add to it, He added about as much material as was in the original,

His contributions are clearly marked but the book flows as smoothly as if written by one person. While it contains considerable technical detail in small print, an intelligent layman can enjoy it,

The first third treats with the structure, properties and evolution of planets, stars and galaxies, The remainder discusses the probability of intelligent extra-terrestrial life and the difficulties of optical, radio or direct contact,

A fascinating section suggests that any civilization is self-limiting and will destroy itself before achieving the technical ability to communicate with other worlds.

The book objectively presents both sides of the argument concerning other life and is well written, While one should not skim over it like a detective story, it is a delight to read.

OIDVR Astronomy

Don't miss the message. Get on the Beam.
phone: Mark Christensen at 425-3475.

Cosmic Rays

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living organisms resulting in mutations, lethal and otherwise. Fortunately, the earth's magnetic field tends to deflect a great portion of these electrically charged cosmic particles preventing them from reaching the earth's surface and atmosphere, otherwise this biological effect might be most drastic.

Recently it has been discovered that the magnetic poles of the earth have reversed many times. Indeed, in recent geologic periods they have reversed every few hundred thousand years. During the period of reversal the strength of the magnetic field drops to zero. At such times the protective shield against cosmic radiation ceases to exist. Within the last year, studies of ocean bottom sediments show that during these periods there have been abrupt changes in populations of tiny marine animals with some species entirely disappearing.

For those who are interested in pursuing this subject further, two articles in Scientific American Magazine are recommended: 'Reversal of the Earth's Magnetic Field' in the February 1967 issue; and, 'Tekites and Geomagnetic Reversals' in the July 1967 issue. The latter article written by B. Glass and B. C. Heezen, a pair of marine biologists, offers a fascinating theory which suggests that magnetic reversals with their attendant influence on changes in life forms are caused by collisions between the earth and large cosmic bodies.

Open House *July 23*

Mr. and Mrs. Oliver Grunow of 26520 West Chicago (west of Telegraph Road) will hold an Open House for D.A.S. members and friends on Sunday afternoon, July 23, between 2 and 6 o'clock.

Leigh LaChapelle, Planetarium lecturer, has scheduled his program to start at 5:00.

Hope to see you at the Open House July 23.

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Mr. Hartleib has received only four requests for the Astro League Automobile Emblems ---far below the number necessary for a bulk order. If you are interested, 'phone him at : TI 6-6703 before Tuesday, August 1.

Vermont

The 33rd Stellafane Meeting will be held on Saturday, August 5, at Breezy Hill, Springfield Vermont. Registration fee is \$2.00. Guests are welcome without fee, also children under 16.

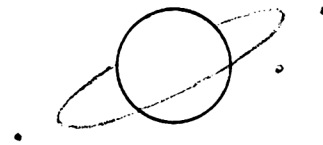
George A. Wood, Jr. will be Master of Ceremonies for the 42nd anniversary year of the Stellafane Meetings.

WHY?

The following question was received the other day and, who knows, maybe we can run a Question and Answer Column. It will depend on whether you have any Questions and whether our Astronomical Sleuth can find an Answer.

Question: I notice that both Sky and Telescope and the Observer's Handbook give the position of Jupiter's Satellites for every night of the year. Why isn't the same information available for Saturn? I understand that some of them can be seen in a small telescope.

Answer: Four of Saturn's satellites may be found with telescopes of 3 inch aperture or larger. The tables of Jovian Satellites are carried in the Navigational Almanacs. This originated at the time when accurate chronometers or radio time signals were not available. Since the four Galilean Satellites can be easily seen in the small telescope on the sextant, the moment of their contact with the



disk of the planet can be noted and the exact Universal Time obtained from a table listing times of transits and eclipses. Thus a navigator who had been at sea for weeks could set his chronometer exactly, a necessity in finding his correct longitude. We believe that the custom of listing these events today is a result of this practice in the past,

Perhaps the establishing of position tables for Titan, Rhea and Iapetus would be an interesting project for some of the D.A.S. observers. If some enterprising person decides to organize a Saturn Patrol to chart positions of the satellites for several nights until enough data can be collected to perform the mathematics necessary to make future plotting, the News-letter would be pleased to publish your project steps and tables, We also offer to act as a clearing house for exchange of information. If you have any ambitions along these lines, let us know.

Eclipse Report



"Vi" Love

Vi guided us, in her 3rd Chapter of 'The Unscientific Side of the South American Eclipse', along the Transandean Highway --past the Barriadas; through a native market; around the llamas; high into the Andes sharing with us the awesome view of the wide open spaces (inhabitants of said spaces viewed with awe our D.A.S. Eclipse family) ---and back to the city of :

Chapter IV- LIMA

by V. E. 'Vi' Love

Monday, November 7, 1966

Since my story from now on will mention the trials and tribulations of Dick Love and Dick Lloyd, for the sake of clarity, I will use their given names instead of nicknames. Henceforth - Dick Love will be Edgar and Dick Lloyd will be Richard.

Edgar and Richard spent the morning trying to locate the equipment, so I went exploring with Saigeons and Sutters. We had been provided with street maps which were a big help -when we could find street signs. This section of Lima contains the government buildings and business section and is known as El Viejo (the old part). The streets are two cars wide, the sidewalks wide enough for 2 people. The largest store that we found was a Sears -about the size of the first floor of the old Rosenbaum store in Pittsburgh or the old Kerns store in Detroit. Business seemed to be conducted mainly in 'stalls'. I must confess that I had read many travel references to 'stalls' and had a completely erroneous idea about them. They are one room stores, about the size of a double garage or smaller, with no front wall. During siesta and at night, an iron grille curtain dropped across the opening. This made it possible to really 'window shop', for the entire contents of the shop would be visible.

Many of the old homes and churches erected in the late 15th and early 16th centuries under Spanish rule, were open to the public.

Our American architects could find an answer to the maximum use of a city lot and still insure absolute privacy. The houses were built flush with the sidewalk, huge double wooden gates permitted

the entrance of carriages to a paved court. There was often a second court beyond this. Here there would be a fountain, a profusion of flowers and much beautiful tile work. Houses had two stories and all rooms opened on the courts, upstairs rooms opening on a balcony.

The old Catholic churches of this period defy description. The exteriors were often elaborately carved stone. The interiors were resplendent with the entire wall behind the main altar usually covered with gold, often inlaid with precious stones. Each of the many niches would be occupied by a nearly life-size figure. The pulpits and choir stalls were intricately carved wood. Many churches had either oil paintings or murals on other walls. Despite their antiquity, most of these edifices are still in use.

After lunch, we were conducted on a tour of the city. This time we all rode in an almost -new minibus with our guide, Felix, and a non-English specking driver. The following places made lasting impressions on us:

The Palace de Larria with its beautiful flower-filled patio and lovely fountain.

The Palace of Torre Tagle - considered an architectural work of art in Moorish and Liman styles, with its tile work and Moorish type carving on the balconies. There was a private chapel in gold leaf and a narrow enclosed balcony overhanging the street where young ladies could view their serenading suitors with-out being seen. This building is now used by the Ministry of Foreign Affairs.

The President's Palace - the main entrance had a guard of 4 soldiers, much photographed in their black jackets with red epaulets, red breeches, black knee-high boots and metal Roman style helmets with a white crest and red plumes, We were permitted to enter a side door and take pictures in some of the official rooms. No, we did not see the President.

The Cathedral - across the *Plaza de Armas* from the *Palace*. Here Pizarro's mummified remains lie in a glass case.

The former *Headquarters of the Inquisition* with its carved mahogany ceiling. Here the Spanish conducted the inquisition of heretics from 1550 to 1754. Now occupied by the Council of Generals of the Army.

Felix proudly pointed out some of the newer buildings - *The Ministry of Education*, 22 stories, built in 1956; *Central Social Security hospital* for Employees, 16 stories, built in 1956; *National Sports Stadium* seating 50,000, built in 1952; *Neighborhood Housing Units*, built by the government for middle income families. We passed groups of these houses

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1966 Eclipse Report

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in various parts of the city each time we were on tour.

As our bus driver bluffed his way through traffic, we noted that the majority of cars were old American cars in fairly good condition often bearing expired license plates. One car had 1962 license plates. Seems a fine is imposed for not having the proper license, but one is not forced to stop driving. If one applies for the current year's license, all fines for previous years must be paid.

After dinner, Ted Kaleveldt and his wife picked us (Saigeons & Loves) up at the hotel and drove us to their charming home in one of the newer suburbs - San Isidro. Prior to leaving Detroit, Newell Saigeon, a ham radio operator (W8HKL), had been given Ted's name (OA4KF), by Ken Stecker (W8SS). Newell and Edgar (W8AFT) hoped to be able to con-

tact Linda Lloyd and Doc Marshall through Ken and let them know that the equipment had not arrived.

San Isidro reminded me very much of San Francisco without hills. The houses were built close together and had tiny front yards. Hetty and I learned quite a bit about life of the upper middle class in Lima. The K's are originally from Holland and Mr. K. is head of a pharmaceutical business in Lima. Mrs. K. does her shopping in a modern shopping center, sends the children to private school, and has an Indian girl who 'lives in' helping with the house work and the children. Every 3 or 1 years they return to their own country for a visit. While Mrs. K. was answering Betty's and my questions, the men had retired to the 'radio shack' on the second floor and were able to talk to Doc and Linda by 'phone patch. After a delightful evening, the K's returned us to our hotel.

(to be continued)

The Detroit Astronomical Society
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