

VIRGINIA JUNIORS

A talk by Mr. Holloway greatly increased our knowledge of comets. His description of Comet Burnham augmented by his model of its orbit was both timely and of great interest. These strange visitors from space are the subject of recent theories. Some scientists think that these fiery objects are only icebergs made of frozen gases and icy bits of dust. What do you think????

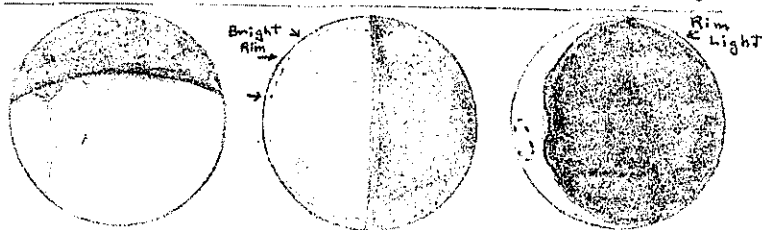
-----June LoGuirato

JUNIOR DIVISION NEWSTHE VENUS REPORT: 1959

The Eastern Elongation of 1959 found the NOJA prepared for the planet Venus. Our project was already set up and, as early as February and March we were taking in drawings. By August third, when the project was officially closed, a total of 105 observations from Washington State, England and D.C. area had been turned in, a success we hadn't dare hope for.

The project report has been finished analyzing such things as phase estimates (a rather interesting report on that has been developed), Ashen Light sightings, of which there are enough to warrant sending a report on them to both BAA and ALPO Venus sections, filter work, and markings. The most interesting part of the report is, although short, the beginning of an analysis of markings to determine the possibility of optical illusions. In following seasons, when the drawings have come in, this will be carried on even further.

--- Michael Mattingly
Venus Project Head



Roy Troxel

Joe Holdeman

Michael Mattingly

NEW MEMBERSJunior

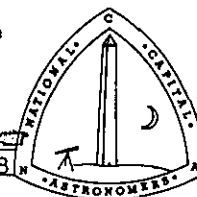
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★ S T A R D U S T



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★ S T A R D U S T



APRIL, 1960

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C. H. MAYER TO SPEAK ON RADIO ASTRONOMY

Radio Astronomy has already revealed many interesting new facts about the structure of our galaxy and stars and nebulae within it, but it has been discovered recently that important new information concerning our own solar system can also be obtained by this new field of science. The Moon and the planets emit thermal radiation most efficiently in the infra-red; but their thermal radio emission, although weaker, can be measured with comparable or sometimes greater accuracy. This provides astronomers with a means for probing into the atmospheres of the planets.

The Naval Research Laboratory has been a pioneer in radio astronomy research, and it is therefore a privilege to have a representative of the Lab speak to us on this unique new branch of science. Mr. Mayer is the Associate Head of the Radio Astronomy Branch of NRL. He obtained his B. S. degree in electrical engineering at the State University of Iowa in 1943 and his M. S. degree, also in electrical engineering, from the University of Maryland in 1951. He has been doing research in radio astronomy at NRL since 1947.

APRIL ACTIVITIES

- 1,8,15,22,29 - TELESCOPE MAKING CLASS 7:30PM, Fairfax High School. Grady Whitney, Instructor.
- 2 - RADIO EMISSION OF THE MOON AND PLANETS - Mr. C. H. Mayer. Business meeting follows. Dept. of Comm. Aud., 8:15PM
- 4,11,18,25 - TELESCOPE MAKING CLASS - 7:30-10, Chevy Chase Comm. Building, 5601 Conn. Ave. Hoy Walls, Instructor.
- 6,13,20,27 - TELESCOPE MAKING CLASS 7:30-9:30 PM, Bladensburg Mat. Center, 4600 Varnum St. Bill Isherwood, Instr.
- 8,22 - VIRGINIA JUNIORS MEETINGS at Westover Baptist Church, 1125 N. Patrick Henry Dr., Arl., Va. Room 234, 8 PM
- 9 - MD-DC JUNIORS MEETING - Chevy Chase Community Building, 5601 Conn. Ave., NW, 2:30 PM. Leith Holloway will lead a discussion on "Lunar Eclipses".
- 16 - DISCUSSION GROUP - "COMETS" led by Dave Rotbart. Foyer of Dept. of Commerce Auditorium. 8 PM.

"I was thinking the day most splendid till I saw what the not-day exhibited,
I was thinking this globe enough till there sprang out so noiseless around me myriads of other globes." --- Walt Whitman

TO ALL MEMBERS:

A Trustees meeting was called on February 16, 1960 for discussing the raise in subscription price of Sky and Telescope from \$2.50 to \$3.00 as of July, 1960. Members present were: Leo Scott and Betty Lipscomb, Trustees; Lillian Gregor, President and Trustee; Leith Holloway, Vice-President.

The following proposals for amending the By-Laws were voted on and approved by the Trustees. These changes are made necessary to keep the increase in subscription cost of Sky and Telescope from requiring amending of the By-Laws periodically.

THE FOLLOWING BRACKETED INFORMATION IS TO BE OMITTED FROM THE BY-LAWS, THE UNDERLINED TO BE INSERTED, AND TO BE VOTED ON AT THE APRIL 2ND MEETING:

ARTICLE I - MEMBERSHIP DUES AND VOTINGSection 1. Paragraph a, Line 6

Junior members may elect the privilege of Sky and Telescope in which case the annual dues shall be [~~\$4.00~~] \$1.50 plus the contract subscription cost.

Section 1. Paragraph b, Clause 1

Regular membership - Annual dues, individual [~~\$5.50~~] \$3.00 plus contract subscription cost; Two members of the same family living at the same address [~~\$7.50~~] \$5.00 plus the contract subscription costs. [Two dollars and fifty cents of the above dues shall be applied to the privilege of membership that includes Sky and Telescope.]

Section 1. Line 22

All full members shall enjoy the same privileges, except that the subscription to Sky and Telescope shall not be a privilege of membership of present Life Members and Honorary Members. However, present Life Members may elect this privilege upon the payment of [~~\$2.50~~] per year the contract subscription cost.

Annual dues shall be payable at the beginning of the fiscal year, September First. Members joining the corporation at times other than the beginning of the fiscal year will accompany their application with the full year's dues and at the beginning of the next fiscal year, they will be given credit toward the following year's dues [at the rate shown below for each month from the beginning of the fiscal year to the month of their election] on a prorated basis.

- [a. Junior members without Sky and Telescope - 10 cents per month]
- [b. Junior members with Sky and Telescope - 33 cents per month]
- [c. Regular members, individual - 46 cents per month]
- [d. Regular members, two members of the same family - 63 cents per month]

The above clauses a,b,c,d have to be eliminated completely due to the prorated basis.

COMETS TO BE TOPIC OF APRIL DISCUSSION

Comet Burnham (1959k) ought to be visible to the naked eye in April so our discussion this month should be timely. Our discussion group will be led by Dave Rotbart who was co-discoverer of the Pajdusakova-Rotbart Comet (1946c). Dave discovered this comet on May 30, 1946, and, in 1947, he received a medal for this accomplishment from the Astronomical Society of the Pacific. Come prepared to contribute to the discussion with observations and photographs of 1959k and previous comets.

THE DETERMINATION OF TIME

Despite the adverse weather conditions, we had a very good turnout for the March meeting to hear Dr. R. Glenn Hall, the Assistant Director of the Time Service Division of the Naval Observatory, speak on the Determination of Time.

There are various basis for time - the rotation of the earth, a day (universe time); the revolution of the earth about the sun, a year (ephemeris time); and the transition frequency of atoms as used in atomic clocks.

By definition the ephemeris second is a given fraction of the tropical year 1900. Universal time is determined by the use of a Photographic Zenith Tube which takes pictures of the stars as they pass directly overhead. The time between transits on successive nights determines the length of the solar day.

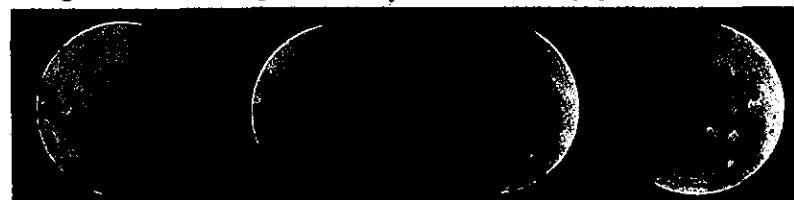
In a quartz crystal clock a crystal subjected to an alternating electric field is placed in an ascillator circuit, the crystal then imposes its steady natural frequency on the circuit and the resulting current can run a synchronous clock motor with an error of no more than one part in a billion. However, temperature and age produce changes in the crystal frequency.

An atomic clock of greater precision has been made with cesium based on the fact that the cesium atom has a natural vibration. Atomic clocks establish a more precise and invariant standard for the length of time than the astronomical one. Another important advantage is that the right time can be checked instantaneously without waiting days or years for correcting astronomical measurements.

This reporter would like to recommend a very interesting article on Atomic Clocks by Harold Lyons which appeared in the February, 1957 issue of the Scientific American. ---Ellen Stolarik

ATTENTION OBSERVERS

There will be no scheduled observing night at the 5" telescope during April. Those who wish to be notified of special observing sessions telephone Larry White at JE 3-3261.



0640 UT

0712 UT

1000 UT

1023 UT

The above series of photographs were taken by Bob McCracken. Most interesting was the fact that certain craters, notably the craters that lie on the rays of Tycho, seemed to gleam brightly during the eclipse. In the telescope the effect was striking. A $3\frac{1}{4}$ inch refractor of 40" focal length was used with Adox KB-17 film in the prime focus. Exposures ranged from 1/150 sec. to 1 sec. Bob also plotted a light curve with a photo-electric photometer with which he took light readings every few minutes.