

BULLETIN

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President :

Professor A. M. Low
D. Sc.



Vice Presidents :

P. E. Cleator and
L. J. Johnson

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Editor : E. J. Carnell

HEADQUARTERS' ADDRESS :

92, Larkwood Road,
South Chingford,
London, E.4

EDITORIAL ADDRESS :

17, Burwash Road,
Plumstead,
London, S.E.18

NOTES FROM LAST MEETING

German publication **Das Neue Fahrzeug** will no longer be sent to members unless applied for to Secretary. Reason being minority of members understanding German language.

Librarian A. Janser's biological lecture was one of most interesting this year. Discussed aspects of space travel in terms of food values, germs, physical fitness and other problems of survival whilst navigating space.

Coventry member W. P. Dunphy won April contest for improved rocket proving stand.

JULY MONTHLY MEETING

Will be held, as usual, on first Tuesday in month (**July 6**) at "Mason's Arms," Maddox St. W1, 7 to 10 p.m. Lecture, "Spectroscopic Application in Astronomy" by member S. Klemantaski.

CORRESPONDENCE—Re "A Three-Year Old Mystery."

The following letter is another of the items unavoidably withheld from the last **Journal**.

Dear Sirs,—On page 17 of the June, 1936 issue of the **Journal**, Mr. Ralph Stranger discusses the Jansky effect. He suggests that these radio waves come from the stars, having been radiated as such from relatively near objects. I would like to call attention to some other possibilities.

Professor A. E. Eddington, of Cambridge University, has calculated that space has distributed throughout its reaches a sparse scattering of hydrogen and possibly other light atoms existing at a high individual temperature. These particles are then highly excited and may, by colliding with the earth's atmosphere on the side on which it meets oncoming reaches of space, effect considerable electrical or electromagnetic disturbance. These individual disturbances may reasonably be in the region of frequency Mr. Jansky has noted for the radio waves he has detected, coming from the space-incident side of the earth, and specifically may be the cause of those waves, adding up to a considerable total effect. This effect is weak, and the atoms Professor Eddington describes, free in space, are relatively few, so the several items entering seem to conspire to the reasonableness of my explanation of the effect.

Again, it is possible that the red shift of the spectrum as found by Messrs. M. L. Humason, E. Hubble and others, in light coming from extremely distant nebulae represents **not** an exploding universe (as Professor Eddington supposes), but may indicate instead that the light has decreased in velocity after travelling a great distance from its original source. This is particularly likely if the Sun and other stars catch a hold on the electromagnetic medium, as seems to have been found from the solar eclipse results for the Einstein shift. If the material masses of the stellar bodies catch a hold on the medium, and reveal it by affecting light passing through the locally disturbed region of the medium, then the medium should catch a very slight hold on light itself and slow it down after a great time from the source.

Mr. Humason found that there is about a 6 per cent shift in the spectrum when the object observed is found at about 100,000,000 light-years from the earth. This may be interpreted as the object fleeing the earth with about 12,000 miles per second velocity, or it may be taken to mean that the light has lost velocity to the same extent. If the latter, then light would seem to lose all its velocity after 1-2/3 billions (American notation) light years from the source—provided the effect is a linear one, which Dr. W. D. McMillan of the University of Chicago says probably is not true. [See a letter to **Nature**, Jan 16 1932 issue, from Dr. W. D. McMillan.] At any rate, space (the medium in Space) may slow down the light to where its wave-length, retained unaltered, would create a **frequency** in the region observed by Jansky. As to why the frequency should be observed in a narrow band instead of a broad band, the radiation necessarily would have become extremely attenuated from objects billions of light-years distant, and only such frequencies as it would present to the earth's atmosphere in resonant bands would be strongly re-enforced so that we could detect them. In other words, I mean to say that Jansky also has inadvertently detected radio-frequency resonant bands or **lines** in the electromagnetic spectrum of absorption for the earth's atmosphere. The same argument for spectral bands in the radio-frequency spectrum of the earth's atmosphere holds good for either explanation of the observed Jansky effect.

Very truly yours,

William J. Lovejoy.

Chicago, Illinois, USA