

## THE D.A.O. ASTROPHYSICAL CLUB

During the past year the scientific staff of the Observatory have met weekly in the library on Friday afternoons for the discussion of astrophysical problems. The papers presented have been of considerable importance, and have covered the whole field of astrophysics, from atomic theory to the spiral nebulae. The majority have dealt with the physical properties of the stars, such as, their mass, density, temperature, etc., and the general stellar problems of the distances, distribution and motions of the stars.

The papers were followed by interesting and critical discussions in which all members participated. The problems presented called forth many solutions, some ingenious and some otherwise. Many new theories came into being, flourished, and died, during the lifetime of a cup of tea and a piece of cake.

In addition to the regular papers, our local problems were discussed, and helpful criticism exchanged. The weekly meetings have kept the members in touch with the various programmes in progress, here and elsewhere, but have also materially assisted in maintaining the harmonious spirit of the institution.

Since its organization on January 4, 1927, (J.D. 2424885.4791) fifty-two consecutive meetings have been held. Every talk has been interesting, and every member has enjoyed the association together. At the last one, on December 30, at which the Director presided, the club fittingly celebrated its first birthday.

The papers presented by the various speakers were as follows:

1. *Papers by Dr. J. S. Plaskett*—
- Jan. 14.—Three Peculiar Spectra— $\nu$  Sag., H.D. 50820, H.D. 45910, (D.A.A. Vol. 4, No. 1).
- Feb. 11.—On Corrections to Proper Motions.
- Mar. 11.—Extra-Galactic Nebulae. (*Hubble*).
- Apr. 15.—On the Masses of the Stars. (*Gerasimovic*).
- May. 12.—Parallaxes of the Helium Stars. (*Kapteyn*).
- June 17.—The Period-Luminosity Law of Cepheid Variables. (*Leavitt and Shapley*).
- Aug. 5.—The Rotation of the Galaxy. (*Lindblad and Oort*).

- Sept. 16.—The Stationary H and K lines of Calcium and Sodium.  
 Oct. 28.—The Rotation of the Galaxy as determined from observations of the Class B Stars at Victoria.  
 Nov. 25.—Researches on the Distribution of the Absolute Magnitudes of the Stars. (*Malmquist*).  
 Dec. 30.—The Masses and Luminosities of the Eclipsing Variables. (*McLaughlin*).

2. *Papers by W. E. Harper—*

- Jan. 21.—Variations in the Orbital Elements of Boss 3511.  
 Feb. 18.—Correlation between Radial Velocity and Spectral Class (Review of literature).  
 Mar. 18.—The Relation of Hydrogen Line-widths to Absolute Magnitude for Class A Stars (*Fairfield*).  
 Apr. 22.—The Spectra of the Visual Double Stars. (*Leonard*).  
 May 27.—The Spectra of the Cepheid Variables. (Review of literature).  
 July 27.—Distribution of the Stars according to Spectral Type. (Review of literature).  
 Sept. 23.—Methods of Determining the Absolute Magnitudes of the B- and A-type Stars—First paper.  
 Oct. 21.—Methods of Determining the Absolute Magnitudes of the B- and A-type Stars—Second paper.  
 Dec. 2.—Determinations of the Absolute Magnitudes of the A-type Stars at Victoria.

3. *Papers by H. H. Plaskett—*

- Jan. 28.—Theoretical Interpretation of Spectroscopic Absolute Magnitude.  
 Feb. 25.—The Planetary Nebulae.  
 Apr. 1.—A Photographic Study of the Flash Spectrum (*Carpenter*).  
 Apr. 29.—*Milne's* Model of Stellar Chromospheres.  
 June 2.—Review of *Eddington's* Monograph—"The Internal Constitution of the Stars."  
 July 15.—Diffuse Matter in Interstellar Space, (*Eddington*).  
 Sept. 2.—The Spectrum of Z Andromedae.  
 Sept 30.—Absorption Line Intensities in Astrophysical Spectra. (Review of literature).  
 Nov. 4.—Intensity Distribution in Spectral Lines (*Ormstein and Minnaert*).  
 Dec. 9.—*Unsöld's* Chromospheric Theory.

4. *Papers by J. A. Pearce—*

- Feb. 4.—The Cepheid Problem (Review of literature).  
 Mar. 4.—The Solar Motion as determined from Proper Motions. (Review of literature prior to 1900).  
 Apr. 8.—The Reflection Effect in Eclipsing Variables (*Eddington*).  
 May 6.—The Dwarf Comparison to Castor. (*Van Gent, Joy and Sanford*).  
 June. 10.—The Solar Motion as determined from Proper Motions. (Review of literature since 1900).  
 July 8.—The Solar Motion as determined from Radial Velocities. (Review of literature).

- Aug. 26.—Introduction to Stellar Statistics. (*Charlier*).  
 Oct. 7.—The Determinations of Colour Indices. (*Seares*).  
 Nov. 11.—The Distribution of the Class B Stars. (*Shapley* and *Charlier*).  
 Dec. 16.—Corrections to the *Preliminary General Catalogue*. (*Raymond Boss* and *Jenkins*).

5. *Papers by Dr. C. S. Beals*—

- Oct. 14.—The Imperial College, London—Account of College, Staff, Equipment and Work in Progress.  
 Nov. 18.—Excitation of Spectra—Discussion on the Laboratory Methods.  
 Dec. 23.—Zeeman Effects and Multiplet Structure. (*Back* and *Landé*).

6. *Papers by occasional speakers*—

*Dr. H. Zanstra*, Professor of Astronomy, University of Washington.

- Mar. 25.—On the Luminosity of Comets.  
 July 22.—On the Width of Spectral Lines.  
 Sept. 9.—Elementary Principles of Celestial Mechanics.  
*A. E. Johns, M.A.*, Professor of Mathematics, Brandon College.  
 Jan. 4.—China:—Its Educational, Social and Political Problems.  
*R. M. Petrie*, University of British Columbia.  
 May 20.—Measurement of the Velocity of Light. (*Michelson*).  
 June 24.—The 1924 Opposition of Mars—Résumé of Observations at Mt. Wilson, Lick and Flagstaff Observatories.  
 Aug. 12.—Measurements of Planetary Radiation. (*Coblentz* and *Lampland*).  
*P. M. Millman*, University of Toronto—  
 June 29.—Japan, the Modernization of the Old Empire.  
 Aug. 19.—Statistics of Short Period Binary Stars.

NOTES:—*Dr. Zanstra* spent the months of July, August and September at the Observatory, during which time he obtained a number of plates of planetary nebulae with the slitless ultraviolet spectroscope.

*Mr. A. E. Johns* spent two months at the Observatory, working on the problem of the variations in the spectroscopic elements of Boss 3511. He graduated from University of Toronto in 1907; 1907-1910, was a lecturer in Mathematics at Toronto; 1910-1926 on the staff of the West China Union University, Chengtu, his last appointment being Professor of Mathematics, and Dean of the Arts School. He was unable to return to China, owing to the Civil War, and is now teaching Mathematics in Brandon College.

*Mr. R. M. Petrie* is in his final year at the University of British Columbia. During the past three years he has spent the five summer months at the Observatory, as an assistant.

*Mr. P. M. Millman* is a Junior in the University of Toronto, in Mathematics and Physics. He is a graduate of the Canadian Academy, Kobe, Japan, in which country he resided for 17 years. During the past summer he was an assistant, at the Observatory.

J. A. P.

D.A.O., Victoria, B.C.

January 1, 1928.