SYNOPSIS OF A COURSE OF LECTURES

By Professor H. N. Russell

At the University of Toronto during February, 1924

Two or more lectures will be devoted to each division

I. The Extent of the Universe.

Distances and Motions of the Stars. Motion of the Sun. Its use for measuring greater distances. The Brightness of the Stars. Apparent and Absolute Magnitudes. Star Colors and their measurement. Variable Stars, and their use in determining great distances. Distances of Star Clusters and the Milky Way.

II. The Sizes and Masses of the Stars.

Stellar Diameters. Eclipsing Variables. Interferometer measures. Stellar Masses. Binary Stars. Slow-moving pairs. Relation of mass to brightness. Similarity of Masses. Dynamical Parallaxes. Stellar Densities. Giant and Dwarf Stars.

III. The Analysis of Light.

The Observation of Spectra. The Origin of Spectra. Modern Atomic Theory. Excitation and Ionization of Atoms. The Interpretation of Complex Spectra. Black Body Radiation.

IV. The Analysis of Stellar Atmospheres.

The Sequence of Stellar Spectra—its dependence on Temperature. Temperatures found from color-index or heat-index. Stellar Diameters. The effects of Density. Spectroscopic Parallaxes. Saha's Theory of Ionization. Pressure in Stars. Electron haze. Problem of the Photosphere.

V. The Constitution and Evolution of the Stars.

The Interior of a Star. Radiation Pressure. Eddington's Theory. What determines Stellar masses. Relation between Stars and Atoms. Stellar Evolution. Giant and Dwarf Stars. Influence of mass. The B-stars. The Time Scale. Age of the Earth and Sun. Probable origin of the Solar System. Sources of Stellar Energy. Special problems. Cepheid variables. Long-period variables. Novae.

VI. The Nebulae.

Dark Nebulae—their abundance, size and probable nature. Galactic Nebulae—gaseous and otherwise. Appearance. Spectra. Relation to Stars. Source of Luminosity. Probable Nature. Non-galactic Nebulae—Spiral and globular Forms. Spectra. Motions. Probable size and distance. Jeans's theory of their nature

ROYAL AST. SOC'Y OF CANADA, TORONTO MEETINGS, 1924.

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Prof. H.N. Russell of Princeton University will deliver a special course of astronomical lectures in the Physics Building (University), beginning Tuesday, Feb. 12, at 8 p.m., and daily (except on Saturday and Sunday) to the end of February, on Thursdays (Feb. 14, 21 and 28) at 8 p.m. and all other lectures at 5 p.m. -- 14 lectures altogether.

This Society's February meetings will be merged into these lectures.

This is an exceptional opportunity for hearing one of the foremost astronomers.

Come and bring your friends. All visitors welcome.

A. F. Hunter,   F. T. Stanford,

    2nd Vice-President.   Gen. Secretary.

UNIVERSITY OF TORONTO
DEPARTMENT OF ASTRONOMY

Course of Lectures by HENRY NORRIS RUSSELL.

On the invitation of the Board of Governors of the University, Henry Norris Russell, Ph.D., Professor of Astronomy in Princeton University, will deliver a special course of lectures during the month of February.

The subject will be "APPLICATIONS OF MODERN PHYSICS TO ASTRONOMY." The course will probably begin on Tuesday, February 12, and will last until the end of the month. The lectures will be given in the Physics Building daily (except on Saturday and Sunday) at 5 p.m. or in the evening.

Professor Russell is one of the most productive of American astronomers and his numerous researches have brought him world-wide distinction. In addition, he is a lucid and forceful lecturer, and he will present the subject in a simple manner so as to be followed by the amateur as well as by the professional scientist.

Admission will be free. Further details will be announced later.

C. A. CHANT.

January 12, 1924.