

SESQUICENTENARY OF THE ROYAL ASTRONOMICAL SOCIETY OF LONDON

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The Royal Astronomical Society of London, one of the oldest scientific organizations of its kind, observed its sesquicentennial on June 26, 1970 in a festive session. The founding father of modern stellar and extragalactic astronomy, Sir William Herschel, was its first president. The century-and-a-half since the foundation of the Society represent an incomparable jump in man's understanding of the world in which he lives and the universe he contemplates. Historians of science confidently compare the extent of man's astronomical advancement during this period to his progress during the entire six thousand years since the dawn of civilization.

The panorama and magnitude of expanded horizons were eloquently exposed by a series of appropriate addresses by leading British astronomers. The setting was also very well chosen. The location was the historic Royal Institution of Great Britain, famous for a galaxy of distinguished directors, great physicists and chemists in the years of triumphant rise of physical science. Sir Bernard Lovell, director of Jodrell Bank Radio Astronomy Laboratories, presided over the anniversary observances and opened the solemn session in the very same Lecture Theatre where, more than a century before, Faraday held his sensational lectures on the wonders of electricity. Sir Bernard gave an introductory review of the breathtaking growth of celestial science since the prevailing elementary world views at the time the Society's first President, William Herschel, "broke the gates of heavens" as stated on his memorial tablet next to the tomb of his son, Sir John Herschel, in Westminster Abbey.

After Sir Bernard's introduction, the first speaker was to have been Professor Sydney Chapman, past President of the Commission of the International Geophysical Year. With his sudden death only ten days before the celebration, his devoted friend, Professor Cowling of Leeds University, read Dr. Chapman's prepared address. It was a human and exceptionally warm presentation of the glorious vista of our Earth, starting with a quotation from Genesis, through man's struggle for the realization of our planet's sphericity, all the way to the complexities of geomagnetism. Then followed Dr. Blackwell, Savilian Professor of Astronomy at Oxford, who reviewed not only the discoveries but also the riddles still extant in our planetary

system. Supposedly these were to have been solved long ago by Laplace with his once triumphant deterministic mathematical equations.

Next, the Astronomer Royal, Sir Richard Woolley, discussed the tremendous breakthrough into cosmic space beyond our solar system. It began with Herschel's rather vague notions of distances of stars and progressed to the daring study of the shape of our own Milky Way star system. Herschel's great revelation was really when he created the notion of "Island universe," as this assiduous and untiring observer sighted the spiral patches of light beyond our own galaxy. The crucial breakthrough in the 19th century occurred 18 years after the foundation of the Society when, in 1838, Bessel measured with reasonable accuracy the distance of one of the nearest stars outside our solar system. It was an astounding realization of the vastness of cosmic space and its emptiness when the increasing precision of measurement revealed that it would take well over four years to reach the nearest star at the speed of light.

An exciting session followed with Fred Hoyle, Plumian professor of astronomy at Cambridge, as chairman during the address of Sir Martin Ryle of Cavendish Laboratory, sometimes called "laboratory of genius." One might state that two modern astrophysicists confronted each other since they are known to represent two different hypotheses in the explanation of the origin of the universe. Sir Martin expounded the most up-to-date topic, the problem of quasars, in which he is one of the pioneers. His title, however, was modestly formulated as "Extra-galactic Nebulae." The hypotheses of both these astrophysicists start with the phenomenon of the observed expansion of the universe in the form of receding external galaxies. Yet, Fred Hoyle's "steady state" hypothesis advocates the perpetual creation of atoms to balance the dissipation of matter through cosmic expansion. Martin Ryle, on the other hand, from his observations favors the initial explosion of a once extremely compact universe, the so-called "big bang" hypothesis, which is based on the existence of microwave background from the farthest recesses of our observable universe some eight billion light years distant. Both Fred Hoyle and Martin Ryle seem to enjoy their friendly learned disputes as they eagerly search for observational facts in support of their respective speculations. Once before, in the history of the Society, Sir Arthur Eddington had his famous learned disputations with Sir James Jeans.

The last address of the Sesquicentenary Celebration, given by Professor H. Bondi of London's King's College, offered an appropriate topic on the prospects and future of astronomy. As the vast amount of new observational data combined with widening vistas seem to solve some enduring riddles of cosmology, new mysteries emerge in an ever-expanding manner until we may admit with a poetic visionary, that "the universe will jealously conceal from man the ultimate mysteries of creation."

There was a social climax to the sesquicentennial of the oldest astronomical society. It was a gala reception offered by the Lord Mayor of London, Sir Ian Bowater, in the majestic medieval Guildhall. All three premises, the Ambulatory, Great Hall and Crypt, had fabulous floral decorations. According to strict English tradition it was a formal, dignified occasion with glittering display. This historic event culminated with a solemn message of Royal Greeting proclaimed to the hushed audience from the Patron of the Society, H.M. Queen Elizabeth II.