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JOHN ELLARD GORE (1845-1910)*

A. P. FitzGerald

On the desk before me, as I write, is a book entitled, "Studies in Astronomy." On the flyleaf is written, "J. Kelly, from his friend the author, 1904 Oct. 7."

The author was John Ellard Gore, son of the Manse, ex-Indian civil servant and noted Irish amateur astronomer.

Gore was born at Athlone on 1845, June 1. The eldest son of the Venerable John Ribton Gore, Archdeacon of Athenry. He was educated privately and at Trinity College, Dublin, where he took an engineering degree in 1865, being first in his year. In 1868, he gained second place in the open competition for the Indian Public Works Department. He was posted to the Punjab, as Assistant Engineer in connection with the construction of the Sirhind Canal. His career in India was relatively short—about eleven years. It would appear that he did not get on too well with his Chief and as he is reputed to have been an outspoken young man, there was trouble. It is understood that one of the reasons for his early retirement was his action in writing to an Indian newspaper, criticizing the policy of the Department. At any rate, he returned to Ireland on two years furlough in 1877 but he never returned to India. In 1879, he retired from the Indian service and drew a pension for the remainder of his life.

There is no evidence that Gore studied Astronomy at Trinity College but his father's house was not far from Mr. Cooper's Observatory at Markree, County Sligo, and it possible he may have made his first acquaintance with the subject there. However that may be, his interest was attracted to the heavens in the clear air of the Punjab. He began systematic studies of the sky with small telescopes and binoculars. Indeed, one of the most remarkable things about Gore is that he gained an unique position in astronomy, in spite of the fact that he never had a telescope of even moderate size and most of his observations were made with binoculars.

Gore was thirty-four years of age when he retired from the Indian service. On his return to Ireland he resided with his father until the latter's death when Gore settled in Dublin where he spent the remainder of his life. He was a bachelor and lived in lodgings. He has been described as a grave quiet man, with few friends, but very much liked by all who knew him.

* From an almost finished manuscript prepared in 1964 by the late Mr. A. P. FitzGerald shortly before his death.

As an observer, Gore devoted himself, mainly, to the consideration of double and variable stars. His first observations, made in India, were published in 1877, in a small volume entitled, "Southern Stellar Objects for Small Telescopes". This volume related to objects between the Equator and fifty-five degrees south declination.

In 1884, January 28, Gore presented to the Royal Irish Academy his first paper entitled "A Catalogue of Known Variable Stars With Notes and Observations". This catalogue lists 191 stars and one of its most remarkable features is the extraordinary wealth of detail on each star which is given in the notes.

In the volume of Proceedings of the Royal Irish Academy consulted by the writer, there is inserted, at the conclusion of Gore's paper, a newspaper cutting, from which the following extract is taken:

A New Star

"Mr. J. E. Gore, writing to the "Daily Express", says: "A very remarkable celestial phenomena has just been observed. In the middle of the well-known nebula in Andromeda a small star has made its appearance within the last few weeks and is now engaging the attention of astronomers The new star which is situated close to the original nucleus of the Nebula, was seen by Mr. I. W. Ward of Belfast on August 19 at 11 p.m. It was also seen at Rheims by M. Lajoye on August 30, and by Dr. Hartwig at Dorpat on August 31 . . . Lord Crawford and Dr. Copeland at Dun Echt described it as "A Veritable 7.5 magnitude star with a fairly continuous spectrum. On the evening of Sept. 5, I found the stellar nucleus very conspicuous, with a binocular field-glass and estimated it at about 7th magnitude."

The star referred to was Nova Andromedae (August 1885) but it is not clear from the cutting whether Gore was then inferring that Ward was the discoverer of the new star.

In 1887, June 13, Gore presented to the Academy "A Revised Catalogue of Variable Stars with Notes and Observations". He described this catalogue as being "Of all stars now certainly known to be variable in light". He stated that his own observations were made at Ballysodare, County Sligo, with a binocular field glass. In a later report he refers to his observations being made with a field glass having object glasses two inches in diameter and magnifying a power of six diameters, made by Browning of London. With this glass, he wrote, stars to about 9th mag. or fainter—when not close to brighter stars—could be readily discerned in a clear sky in the absence of moonlight.

In this catalogue the stars—190 in all—are divided into three classes. Class I includes stars in the spectra of which the metallic lines are extremely faint or entirely invisible. The stars in Class 2 have spectra in which the metallic lines are numerous and easily visible and Class 3 stars include those in which, beside the metallic lines there are numerous dark bands in all parts of the spectrum.

Each class is further subdivided and an indication is given whether

the spectrum is "fine", "very fine" or "superb".

In addition, there are thirty-nine pages of detailed notes on the stars listed in the Catalogue.

As an example of Gore's tenacity of purpose it may be noted that during the five years 1883-1888, he made 167 observations of the variable star, U Cephei, which he stated, "showed a variation of light of a little more than one magnitude, but with no regular period".

During the period that Gore was compiling his catalogue of variable stars, he was also interesting himself in stars that were suspected of being variable.

In 1884, May 12, he presented to the Academy a "Catalogue of Suspected Variable Stars with Supplementary Notes". This is a monumental document covering 158 pages and giving details of 736 stars. In describing the star 66 Ceti, he stated that this star, which was given in the Armagh Catalogue as 6.5 mag, to be about 5.3 mag on 1883 Sept. 27.

Gore also devoted considerable time and attention to binary stars and he computed the orbits of many of these objects. His reputation as a computer was high. In 1890, he presented to the Academy a "Catalogue of Computed Binaries" containing fifty-nine stars.

During the years 1884-1890, Gore discovered four variable stars. The first, in 1884, was W Cygni, a long-period variable (132 days) the variation of magnitude being 5.0 — 6.7.

A year later he discovered S Sagittae, a Cepheid variable, the period being 8.38 days and the magnitude variation being 5.4 — 6.1 This variable was discovered with binoculars.

In the same year, on December 13, he found U Orionis. A long-period variable (374 days) with a magnitude variation ranging from 5.4 — 12.3.

Gore's last variable was X Herculis discovered in 1890. This star has a period of about 92.5 days.

W. W. Bryant, in his "History of Astronomy" published in 1907, named Gore as being one of the three leading observers of variable stars in the British Isles, the others being Stanley Williams of Brighton and The Rev. T. D. Anderson of Edinburgh.

But Gore's main work, that by which he is best remembered, was done in the field of cosmology. About 1870, R. A. Proctor had pointed out that the apparent crowding of fainter stars towards the Plane of the Milky Way could not be wholly due to their distance because the brighter and, presumably, nearer stars showed a similar characteristic. In 1889, Professor Schiaparelli published a Memoir on the apparent distribution of stars visible to the naked eye, which confirmed Proctor's conclusions. Gore, using independent methods, verified the conclusions of Proctor and Schiaparelli. He examined the positions of all the brighter stars in both hemispheres, a laborious exercise involving hundreds of stars down to the eighth magnitude. He interpreted his results in the same way as Proctor, namely, as indicating that stars of all sizes and luminosities were mixed together in the galactic zone.

John Ellard Gore

Gore wrote several books in which he speculated on the structure of the heavens. In his "Planetary and Stellar Studies" (1888) he suggested that a possible thinning out of the ether of space at the boundaries of our universe would have the effect of cutting off from our view the light of external universes. It must be remembered, of course, that at that time the implications of the famous Michelson-Morley experiment, conducted while Gore's book was in the press, had yet to be generally accepted. That famous experiment finally disproved the hypothesis of a stationary "luminiferous ether".

Subsequently, however, Gore stated that telescopic observations yielded strong evidence against the existence of any extinction of light.

In his "Scenery of the Heavens" (1890) Gore considered the origin of the galaxy. But his most important work is "The Visible Universe" (1893). In it he surveyed the whole field of cosmology. He examined Herschel's theory of the stellar system and compared it with later theories. He concluded that the galaxy is a finite system but that similar systems existed at immense distances from it. In "The Worlds of Space" (1894) he discussed the possible habitability of other planets, a topic which came to the headlines at that time through the works of Camille Flammarion.

Gore wrote several other works (a list of which is appended). He was elected a member of the Royal Irish Academy on 1875, April 12. The reason for his election is not clear as he was then still in India.

During the time that his book "Planetary and Stellar Studies" was in the press, Gore visited Portadown. While there he had correspondence with W. F. Denning, regarding the inclusion in the book of some of Denning's planetary drawings. It would seem that Denning, when making available drawings, had suggested that Gore might include in his work a chapter on meteors. The following is Gore's reply:—

Portadown,
Co. Armagh.
2 July 1888.

Dear Sir,

Many thanks for your kind letter which was forwarded to me here. I am much obliged for your offers of help in the way of drawings for my little work. I am sending my publishers your drawings in the Journal forming plates XI and XVI of Vol. VI which seem to be very suitable especially the one showing "The markings on Jupiter". I have not the numbers of the journal with me here containing your drawings for Mercury and Venus ("as a morning star"), so I would be much obliged if you could send copies of these to Messrs. Roper & Drowley, 29 Ludgate Hill, London E.C., if not too much trouble. My little work is now going through the press, and will, I hope, appear in a few weeks. I did not include anything about meteors—simply because I know so little about the subject. I fear it is now too late to add another chapter.

Yours very truly,

W. F. Denning, Esq., F.R.A.S.

J. E. GORE.

Gore also published a translation of Flammarion's best-seller "Popular Astronomy". The following is a letter which he received from Flammarion. It is interesting in that it indicates the high regard which Flammarion had for Gore's works.

French Astronomical Society,
Paris.

17 April 1893.
Rue Cassini, 16.

My dear and learned Colleague,

Nothing can be more welcome to me than your gracious proposal. I have all your works in my library and I esteem them very much. We pursue the same end—progress through light. It seems to me that my "Popular Astronomy" would have the greatest success. 100,000 copies have already been printed and with the supplement "The stars and astronomical curiosities" it really embraces the whole of astronomy. "The Heavenly Territories" could follow and I would bring this new edition into line with the latest discoveries. "The Atmosphere" is really a popular work on Meteorology. When you make up your mind on which volume you will make a start I will send you the latest French edition.

I am very glad that this opportunity has arisen to enable me to express to you the deep regard which I have long had for your own splendid volumes and I beg of you to accept my kindest regards.

Flammarion

Gore was a founder member of the British Astronomical Association of which he was a first Vice-president and Director of the Variable Star section for many years. He died on 18th July, 1910, his death being the result of a street accident. He was knocked down by a jaunting car in Grafton Street, Dublin. The driver was indicted for having caused Gore's death but was acquitted. The judge who presided over the Court said, "There was no doubt about it, that any person crossing the streets of Dublin took his life in his hands".

Even the year 1910 had its traffic problems.

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* It is interesting to note that this paper contains enough data for Gore to have constructed a rudimentary "H-R" diagram, had he attempted to do so, several months before Hertzsprung's construction in 1905—*Editor*.

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