

1846 to a curacy in Bolton, where he remained till 1849, when he became curate and then vicar of Appleby, in Lincolnshire. He married, in 1854, Elizabeth, daughter of Admiral Sir Phipps Hornby, Rear Admiral of England. He became Prebendary of Leicester St. Margaret's in 1880, and in 1882 Rural Dean of Manlake. He resigned the living of Appleby in 1891, and went to live at Halecote, near Grange, Westmoreland. His health failed soon after, and he died, after a long and painful illness, at Scarborough, 1897 February 28.

Canon Cross was interested in astronomy from boyhood. One of his earliest recollections at Rugby was that of an eclipse of the Sun, on Sunday afternoon 1836 May 15, when Dr. Arnold altered the hour of divine service so as to allow the boys to watch the phenomenon. During his curacy in Bolton he made good use of a small telescope which ultimately became the finder to a larger equatorial. At Appleby he built a good observatory; and the mirrors for his large reflector were polished by his brother William.

[This brother, Colonel William Assheton Cross, who died in 1883, was also a Fellow of our Society. From the notice in the Council Report for 1884 February it is clear that the two brothers had much in common. Colonel Cross was educated at Rugby and Trinity, Cambridge; and in his college days had mounted a 5-inch by Dollond, once the property of the Rev. W. R. Dawes. From Lassell he learnt to grind mirrors, and made a 15-inch of great excellence, which he mounted equatorially. The following sentence is interesting from several points of view: "By a rude stroke of fate, one which denotes the rapid strides that have been made in the size of astronomical instruments in the course of one generation, Dawes's refractor, mentioned above, was degraded to become the finder of the new reflector." It may here be mentioned that the only surviving brother is the Right Hon. Viscount Cross, Lord Privy Seal.]

Canon Cross was, however, more interested in transit observations than in using his reflector. In his summer holidays, which were always spent in Rannoch, he took great interest in collecting all the details, and, as far as possible, discovering the stations used in the last century by Maskelyne in the Schehallien experiment; and though he never identified the actual spot where the principal observations were taken, he got a good approximation to it.

He was elected a Fellow of the Society on 1862 May 9.

ALEXANDER FREEMAN was born in London 1839 January 28. He was educated at Merchant Taylors' School, and at St. John's College, Cambridge, where he graduated in 1861 as fifth wrangler. He was elected a Fellow of his college in 1862 May, and in the same year he obtained the Chancellor's medal for legal studies. Soon after this he took holy orders, and became M.A. in 1864.

Soon after taking his degree Mr. Freeman devoted himself to astronomy, which was the great love of his life. His first pub-

lished communication was to the *Messenger of Mathematics* in 1863, "on the variations of the node and inclination of a disturbed planet deduced from the lunar equation of latitude." Some further papers were published in the same periodical, in the *Proceedings* of the Cambridge Philosophical Society, and in volumes of the *Monthly Notices* from 1872 to 1892. These included observations of *Saturn's* ring, and occultations of stars by the Moon, and an interesting paper on a graphic conversion of stellar coordinates. In 1878 he published with notes a translation of Fourier's "Analytical Theory of Heat," which was produced by the Cambridge University Press. He also edited the third edition of Cheyne's *Planetary Theory*.

From 1880 to 1882, during the illness of the late Professor Challis, Mr. Freeman was appointed as his deputy, and he lectured for him on "Practical Astronomy and the use of Astronomical Instruments." On two occasions Mr. Freeman examined for the Smith's prize.

In 1882 Mr. Freeman married the daughter of Colonel Pater-son, of the Buffs, and soon after that he was appointed Rector of Murston, near Sittingbourne, in Kent, which position he held until his death. Here he was greatly respected, and his kind, courteous and amiable manner made him a great favourite in the neighbourhood. He had always hoped to obtain an astronomical appointment, which would have been so congenial to his tastes, but in this he was unsuccessful.

He was a great reader and a hard-working man, and was always engaged in some astronomical work. He possessed an observatory with a  $6\frac{1}{2}$ -inch refractor, by Grubb, with which he spent the happiest hours of his life. About three years ago Mr. Freeman fainted while on a visit to the Archbishop of Canterbury, at Addington, and was compelled to take a three months' rest. He still, however, insisted on working hard, with the result that in 1897 March he had another prostration, from which he never recovered, and was confined to his room till June, when he died. This long and painful illness was borne most uncomplainingly, and throughout it he did all he could for his parish and for the large school of 400 children attached to his church. Mr. Freeman has left a widow and four children—three daughters and a boy.

He was elected a Fellow of the Society 1864 January 8.

WILLIAM GODWARD was born in 1829 at Wakefield, where his father was a schoolmaster. At the age of eighteen he entered the *Nautical Almanac* Office, where his father and his uncle (William and John Godward) were at that time also serving, under Lieutenant Stratford; and he remained there for the long period of forty-three years, being appointed to the Chief Assistantship in 1869 on the retirement of Mr. Richard Farley. Among several improvements contributed by him to the *Nautical Almanac* may be specially mentioned his interpolation tables, which superseded others of a much more laborious character, and