Cromwell Tower, King's College

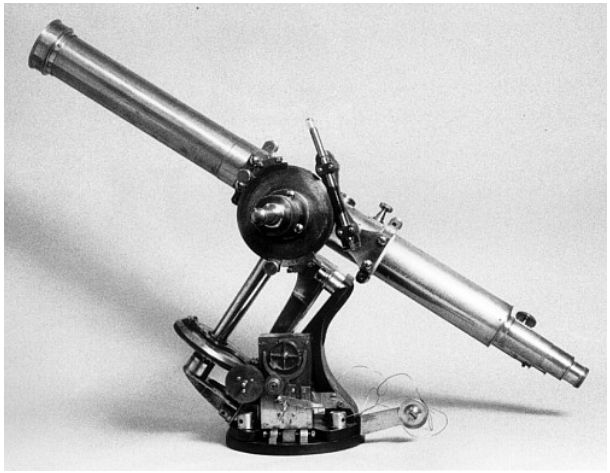
David Gill – leading 19th century astronomer

Sir David Gill (1843-1914) FRS, PRAS, K.C.B. etc., became one of the 19th century's leading observational astronomers[1]. He began his astronomical career at the Cromwell Tower Observatory in the early 1860s. Gill had been private student in James Clerk Maxwell's Natural Philosophy class at Marischal College in 1859-60. He was the eldest son in the third generation of a notable Aberdonian watch making family who had their shop at 78 Union Street. The plan for him was to follow in his father's footsteps and he was already earning a good living in his family's business when he became involved with the Cromwell Tower Observatory. Indeed, 'time' may have brought Gill into contact with Professor David Thomson, Professor of Natural Philosophy, whose class-rooms were in the Cromwell Tower and who was responsible for the Observatory on the top.

Gill, inspired by Maxwell, wanted to bring accurate time to Aberdeen and in 1863 encouraged Thomson to use their stellar observations made with the observatory's transit telescope to accurately set-up a mean-time clock that he brought from his business to the observatory. He built in electrical contacts to that clock, enabling it to act as a master clock for one or more slaves. The first slave clock was nearby King's College turret clock that they equipped with an electrically operated Bain's pendulum. You can just see where the insulators were in the quad, insulators that supported the wires running from the Cromwell Tower to the turret. (The illustration below taken in 2012 shows the last remnant). Later, wires were strung to Marischal College and after that to a clock outside Gill's Union Street shop.

They probably wouldn't have been noticed among the mass of telegraph wires that were appearing in every city in that decade. Through Gill's wires, accurate time was brought to the citizens of Aberdeen in the 1860s at all hours of the day and night, not simply at one O'clock when the time gun was fired in Edinburgh or the time ball dropped in Greenwich.

Gill assisted Thomson set up an equatorially mounted 3½ inch (85 mm) refracting telescope with clockwork drive (illustrated on the next page) under the second dome at the Cromwell Tower observatory and they got involved with some 'real astronomy' trying to measure binary star separations. Gill was hooked on astronomy and over the late 1860s set up at his family home at 48 Skene Terrace his own 12 inch (300 mm) reflecting telescope, with



David Gill's 1860s photograph of the Moon © Aberdeen Art Gallery & Museums Collections

precision mounting and drive of his own construction, to make better binary star measurements. In 1870 he married and his wife Isobel would be his constant companion in his astronomical life, though never his assistant. In 1869 he and photographer George Washington Wilson also took one of the first high definition photographs of the Moon. This, amongst other achievements brought him to the attention of Lord Lindsay who was setting up at Dun Echt a personal observatory that would rival most of the professional observatories in the world. Gill, by now running the family clock business and making over a thousand pounds a year, gave up his job in 1872 to become Director of the Dun Echt observatory at a salary that was a small fraction of this amount[2].

[To face page 38.

ISOBEL BLACK AND DAVID GILL, LIEUT. 1ST ABERDEENSHIRE RIFLE CORPS, BEFORE THEIR MARRIAGE.

The 'Gill story' would take him away from Aberdeen, running successful astronomical expeditions to Mauritius and Ascension island[3] in the 1870s before being appointed Her Majesty's Astronomer at the Cape of Good Hope at the end of the decade. His *forte* was precision measurement and he made the Cape Observatory one of the premier astronomical observatories in the world. He was a pioneer of stellar photography and perhaps the main driving force behind the Carte du Ciel photographic survey of the skies, the first ever big multi-national, multi-observatory project that ran for at least two decades. Using his precision instrument skills, Gill made significant contributions to the geodetic surveying of South Africa. He retired in 1907 to spend his last years near the centre of scientific communications in London. He died in 1914 and is buried in St Machars churchyard in Old Aberdeen, only a few hundred metres from the Cromwell Tower, to be joined in 1919 by his companion in astronomical life, Isobel Gill.

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[1] George Forbes "*David Gill, Man and Astronomer: Memories of Sir David Gill, K.C.B., H.M. Astronomer (1879-1907) at the Cape of Good Hope*" John Murray, London (1916). This biography includes much personal information as well as an account of his astronomical achievements and a list of over 150 scientific papers written by Gill.

[2] Sir David Gill "*A History and Description of the Royal Observatory, Cape of Good Hope*" HMSO, London (1913) contains autobiographical notes, particularly describing Gill's Cromwell Tower experiences.

[3] Mrs Gill [sic] "*Six Months on Ascension: an unscientific account of a scientific expedition*" John Murray, London (1878) is an insightful account by Isobel Gill of a 19th century scientific expedition and of the Gills.