

# David Gill and his work

## Early Years

David Gill (1843-1914) was one of the most famous observational astronomers of his time. He worked here at the Royal Observatory for twenty-eight years.

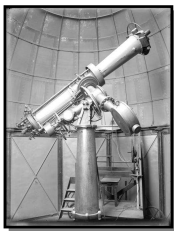
He was born in Aberdeen, Scotland, and was brought up to succeed his father as a watchmaker, though he also studied at Marischal College.

On inheriting the business, he sold it and went to work in 1872 for Lord Lindsay, a wealthy amateur astronomer. Here he became an expert on instrumentation.



Afterwards he came under the influence of GB Airy and in 1879 this led to his appointment as HM Astronomer at the Cape.

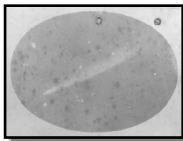
## Heliometer expert



Gill became an expert user of the heliometer, a split-lens telescope, with which he measured the distance between the earth and the Sun and the distances to many stars.

## Early Photography

In 1882 he received a photograph of a bright comet from an amateur photographer, W. Simpson of Aberdeen,



Cape, which made him realise how sensitive photography had by then become.



He mounted a borrowed lens (left) on a telescope and succeeded in making a better photograph of the comet that showed stars in the background. He saw that this was going to be a most efficient way for making accurate catalogues of star positions.



## Experimental Work



He constructed a special photographic survey telescope (right) which was also a flop because the problems of wide-angle photo-telescope lens design had not yet been understood.

In 1885 he tried to photograph the faint corona of the Sun with a special telescope provided by the pioneering astrophysicist William Huggins. This was not a success.

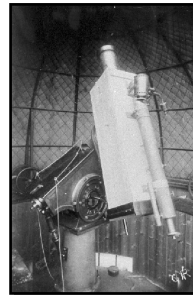


## First Photographic Survey

This conventional "portrait lens" (right), by Dallmeyer of London, turned out to be ideal for surveying the stars and Gill made use of it in a successful telescope.



The result was the Cape Photographic Durchmusterung (CPD), the first star catalogue made by photography. This made Gill famous.



## Carte du Ciel (1887)

Gill was co-leader with Admiral Mouchez of the first world astronomical congress, held in Paris, the Astrophotographic Congress or 'Carte du Ciel' (Map of the Sky).

Its purpose was to share out the photographic mapping of the sky between many observatories. The Cape telescope (above right) was one of about 12 worldwide constructed for this project. This Congress was the precursor of today's International Astronomical Union.



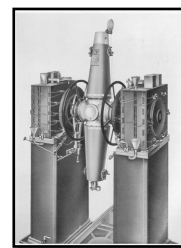
## New Instruments



Gill watched with envy the rise of astrophysics (the study of the physics of the stars) but could not persuade his superiors to support him in this type of work.

His prayers were answered when his friend and frequent visitor, Frank McClean, offered to finance the 24-inch telescope seen here.

Next to the McClean telescope was a laboratory for comparing earthly substances to what was found in the stars.



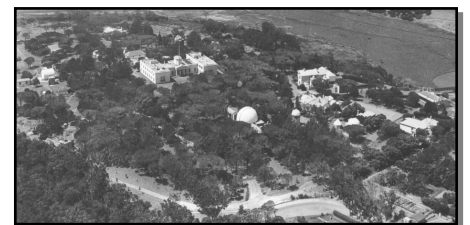
The 'Reversible Transit Circle' (1901) shown here was a major contribution by Gill to the accurate measurement of positions and was copied widely.

## Later years

Portrait of Gill at the height of his fame.



In 1896 he became Sir David Gill.



The Royal Observatory as Gill left it – an aerial photograph taken before about 1920. It was then considered to be one of the finest observatories in the world. Many of Gill's buildings still exist.

In addition to his astronomical work, Gill carried out geodetic surveying and was trusted by both the German and British governments to define the border between Namibia and the Cape.

He died in England in 1914.