

The site of the Castlehill Observatory



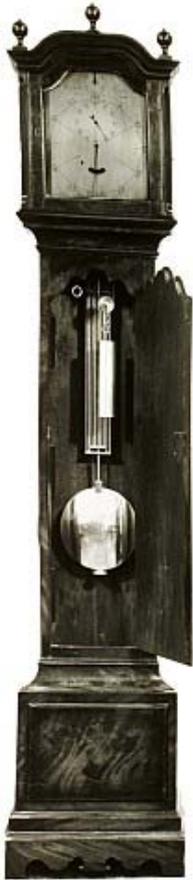
At one time Aberdeen had the finest astronomical observatory in Scotland, financed by public subscription, organised by Marischal College and equipped with the best instruments in the country. The time was between the years 1781 and 1796. The observatory was located near the centre of town at the top of the Castlehill, a site that would be useless for the same purpose today but in the 1780s industry was powered by water, ships by sail and the oil street lamps gave out scarcely a glimmer in the gloom.

The driving force behind the observatory was Patrick Copland, officially Professor of Mathematics at that time but in fact acting Professor of Natural Philosophy, having exchanged his duties with Professor Robert Hamilton (after whom 'Hamilton Place' is named). In 1780 Copland had initiated a public subscription fund in the name of the College aimed at acquiring astronomical instruments for the University that could be used amongst other purposes for teaching the principles of navigation. Generous contributions soon came from the Town, from within the College and from many of '*the Gentlemen in Aberdeen and the Neighbouring Country*'. The fund built up to be enough not only to buy instruments but to build an observatory.

Some years earlier, Copland had made the acquaintance of the Astronomer Royal, who was based at the Greenwich Observatory. Copland went to London to seek his advice, spent several months in the capital, became very friendly with some of the best London instrument makers and was warmly welcomed by the Earl of Bute, Chancellor of Marischal College and former prime minister. Bute had a private passion for Natural Philosophy and contributed two magnificent instruments to the observatory that even the generous local benefactions could not have afforded. They were an equatorial telescope by Sisson with finely divided precision scales by Ramsden and a Ramsden transit telescope of 3 inch (75 mm) aperture and 4 foot (1.2 m) focal length.

The observatory was built within not much more than a year of launching the subscription. It is perhaps parochially smug to compare this speed of progress in Aberdeen with Edinburgh's experience. There they had raised more than enough money for a similar purpose some 40 years earlier but by 1780 had only managed to spend it building little more than a folly on Calton Hill. A proper observatory was not constructed there until around 1820 and not

equipped for another 10 years. In Aberdeen, the Castelhill observatory consisted of 3 rooms: a small central room and two circular wings about 12 feet (3.7 m) across with conical domes. The eastern dome was fully rotating to allow views in almost any direction. The western dome had only an opening slit in the North-South direction to allow the transit telescope observer to determine when celestial bodies crossed the North-South line and measure their altitude.



Other major instruments in the observatory were a master clock by Marriott with the recently invented temperature compensated pendulum (illustrated here), a journeyman clock by John Gartly (who in 1790 became the ‘Manager of the Towns Public Clocks’), a 2 foot (0.6 m) radius quadrant by McCulloch with an accurate scale divided by Troughton, a 2.75 inch (70 mm) diameter polar axis telescope by Dollond, shown here photographed at the observatory site.

This suite of instruments strongly reflected the thrust of astronomy at the time.

‘Mapping’ was a key issue: mapping the sky and also mapping the Earth. This was one reason for the precision scales.

Latitude and longitude define a location on Earth and these can be measured with precision astronomically. In 1780 even the size of the solar system was not well known and star catalogues were incomplete. In respect of terrestrial

mapping, the Ordnance Survey had not yet been created. Moreover, the link between astronomy and navigation was not a mere hook to lure subscribers.

A freelance teacher of mathematics and navigation became the ‘Assistant Keeper of the Observatory in Aberdeen’. Andrew Mackay used the observatory to improve the accuracy with which Aberdeen was located on maps (by several miles) and while assistant keeper produced his best selling book on ‘The Theory and Practice of Finding Longitude at Sea or Land’ with examples worked from actual observations made at Castlehill.



Astronomy was changing, though. Messier’s publication of his list of nebulous objects highlighted that there were unknown objects in the sky besides stars. Herschel’s wide reflecting telescopes could see further into the depths of space than conventional refracting telescopes. They offered some hope of understanding nebulae. The Castlehill Observatory could have moved with the times but in the 1790s immediate outside events became more pressing than long-term astronomical answers. The French populous had revolted, French ships were harassing our commercial vessels and there was a possibility the revolution could spread to Britain. The government decided that Aberdeen needed a permanently stationed garrison. A barracks was to be built in a prominent, central location – on the Castlehill. The observatory and neighbouring St Ninian’s chapel were demolished. The government were generous in giving compensation to Marischal College, who decided that the next best site was on the roof of their own building. Domes were duly built there at the very end of the century and the instruments moved but within three decades that building too would be demolished and the new professoriate following Copland didn’t have the interest or initiative to take astronomy forward to its next stage. Nowadays, unchecked stray light within towns deprives citizens of even a half-decent view of the starry sky.

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