

LAMONT'S SEED: GEORG VON NEUMAYER'S INTEREST IN MAGNETISM, METEOROLOGY AND ASTRONOMY

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ABSTRACT: From 1835 Johann von Lamont (1805–1879) was director of the observatory at the village of Bogenhausen, north-east of Munich (today part of Munich). He was a scholar with varied interests and the ability to achieve something excellent with sparse funding. Although he started his astronomical research with a brand new Fraunhofer refractor, he mostly had to work with older instruments until his death in 1879. For instance, he used a Reichenbach meridian circle not only to determine the positions of more than 37,500 stars but also to determine the exact time at noon. He also was involved in the project of the European arc measurement. However, his main interest changed to magnetic measurements and subsequently his observatory became one of the first magnetic stations of Europe. Lamont also started a Bavarian and European magnetic survey. Further, he intensified his meteorological observations in 1840 with the aim of expanding the observatory to become the meteorological centre of the Kingdom of Bavaria. He analysed the various datasets collected and published his results in the *Astronomischer Kalender für das Königreich Bayern* (1850–1953) and the *Annalen der Königlichen Sternwarte bei München* (1848–1876). Due to financial restrictions Lamont had established a workshop for precision engineering in his observatory, where he invented and constructed new instruments. Most notably, his magnetic travel-theodolite became *the* instrument for expeditions and magnetic stations and used worldwide. In 1849 his magnetic work culminated in the publication of a textbook on earth magnetism.

At this time, Georg von Neumayer (1826–1909), while studying mathematical and physical sciences at the Polytechnical and Engineering School in Munich, read the reports of the successful expedition of James Clark Ross (1800–1862) in search of the magnetic pole in the southern hemisphere. This laid the foundation of Neumayer's interest in a German expedition to the still unknown Antarctic region and his investigation of the magnetic field of the earth. After his final examination he underwent practical training with Lamont during winter 1849–1850, at a time when the latter was one of the leading experts on earth magnetism. During their discussions Neumayer learnt a lot

about Lamont's different interests and how he dealt with them. Although Neumayer only stayed a few months at the observatory, Lamont's input determined Neumayer's future life as a scientist, referring to the construction and calibration of instruments and astronomical observations and timing, as well as magnetic and meteorological measurements and magnetic surveys, and instilled in him the importance of promptly publishing his results. When Neumayer decided on a career path, his main aim was to continue Ross's magnetic measurements in the south polar region. A starting point was Hobart, where Ross had set up a magnetic observatory that functioned from 1841 to 1853. However, a station at Melbourne seemed more suitable to Neumayer to serve as a base station for magnetic investigations of Antarctica.

When Neumayer established the Flagstaff Observatory for Physics of the Earth at Melbourne in 1857, he followed the ideas of his scientific mentor Lamont in all aspects concerning measurements at the observatory, including a magnetic survey of Victoria. When he returned to Germany in 1864, he promoted the observation in the southern hemisphere of the transits of Venus in 1874 and 1882, the importance of which he had also learnt from Lamont.

In the long run, it may seem that Neumayer made a wrong decision because instead of Melbourne, Hobart became the Australian gateway to Antarctica. At the time, however, there were many more resources available in Melbourne, making it undoubtedly a better choice. Meanwhile Neumayer's legacy in Australian earth-magnetism and meteorology is unforgotten.

*Editorial note

Dr Cornelia Lüdecke was unable to travel to Melbourne to present her paper at the Humboldt Kolleg/Joint Symposium, the abstract for which is printed above. Her paper was presented on her behalf by Professor Rod Home AM. Readers are referred to a related paper that Dr Lüdecke presented to the Royal Society of Victoria's 2009 Georg von Neumayer Symposium, 'Neumayer's Impact on Meteorology in Germany'. *Transactions of the Royal Society of Victoria* 123(1) (2011): 35–47.