Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

CULTURE AND COSMOS

A Journal of the History of Astrology and Cultural Astronomy

Vol. 18 no 1 Spring/Summer 2014

Published by Culture and Cosmos
and the Sophia Centre Press,
in partnership with the University of Wales Trinity Saint David.
in association with the Sophia Centre for the Study of Cosmology in Culture,
University of Wales Trinity Saint David,
Faculty of Humanities and the Performing Arts
Lampeter, Ceredigion, Wales, SA48 7ED, UK.

www.cultureandcosmos.org

Cite this paper as: Davenhall, Clive, 'Dr Katterfelto and the Prehistory of Astronomical Ballooning', *Culture and Cosmos*, Vol. 18 no 1, Spring/Summer 2014, pp. 45-53.

British Library Cataloguing in Publication Data
A catalogue card for this book is available from the British Library

ISSN 1368-6534

Printed in Great Britain by Lightning Source

Dr Katterfelto and the Prehistory of Astronomical Ballooning[1]

Clive Davenhall

Abstract: Regular telescopic astronomical observations made from balloons began after World War II, though scientific, particularly meteorological, ballooning dates from the mid-nineteenth century. However, astronomical ballooning has a curious prehistory at the dawn of lighter-than-air travel in the 1780s. The self-styled Dr Katterfelto (c.1743?-99) was a German-born travelling showman, lecturer and considerable self-publicist who in 1784-85 claimed to have made important astronomical discoveries from observations made from a balloon. It is unlikely that he made any such observations, or, indeed, any balloon flights. However, the episode throws some light on the world of the itinerant, eighteenth-century astronomical lecturer and the diffusion of contemporary astronomical and scientific knowledge.

Introduction

Gustavus Katterfelto (c.1743?-1799; see Fig. 1) was a German-born travelling showman and lecturer who performed throughout England and Scotland from 1776 until his death in 1799.[2] In Britain during the eighteenth century there was a tradition of itinerant lecturers who gave talks and demonstrations on scientific and other subjects (see Fig. 2).[3]

---

[1] This paper was presented at the INSAPVII conference in Bath, October 2010.

[2] D. Paton-Williams, *Katterfelto: Prince of Puff* (Leicester: Matador, 2008); see also P. Fara, 'Katterfelto, Gustavus', in *Oxford Dictionary of National Biography* (Oxford: Oxford University Press, September 2004); online edn., updated October 2007, at http://www.oxforddnb.com/view/article/15187 (accessed 1 October 2010).

[3] For an overview see H. C. King in collaboration with J. R. Millburn, *Geared to the Stars: the Evolution of Planetariums, Orreries and Astronomical Clocks* (Toronto: University of Toronto Press, 1978), Chapter 9. For more detailed discussions in the limited context of travelling lecturers who worked in Bath see T. Fawcett, 'Science Lecturing at Bath 1724–1800', *Bath History*, Vol. vii (Bath: Millstream Books, 1998), pp. 55-57; or T. Fawcett, 'Science Lecturing in Georgian Bath', Chapter 11 of P. Wallis, ed., *Innovation and Discovery: Bath*

Clive Davenhall, 'Dr Katterfelto and the Prehistory of Astronomical Ballooning', *Culture and Cosmos*, Vol. 18 no , Spring/Summer 2014, pp. 45-53.
www.CultureAndCosmos.org

Fig. 1: Gustavus Katterfelto (c.1743?-1799). On the right, Katterfelto's solar-illuminated microscope is being used to show bacteria. This woodcut appeared in the *The European Magazine* and *London Review* for June 1783, p. 406.

The lecturer and author James Ferguson (1710-1776) is an example of a well-respected practitioner in this tradition, whose lectures and demonstrations had a serious intent.[4] Katterfelto, by contrast, was a

and the Rise of Science (Bath: Bath Royal Literary and Scientific Institution and The William Herschel Society, 2008), pp. 144-151.

[4] J. R. Millburn in collaboration with H. C. King, *Wheelwright of the Heavens: the Life and Work of James Ferguson* (London: Vade-Mecum Press, 1988); P. Rothman, 'Ferguson, James (1710–1776)', in *Oxford Dictionary of National Biography* (Oxford: Oxford University Press, September 2004), online edn., updated October 2007, at http://www.oxforddnb.com/view/article/9320 (accessed 25 June 2010); and C. Davenhall, 'James Ferguson: a

travelling showman and lecturer who worked at the margins of the same tradition. His performances were a mixture of genuine scientific phenomena and apparatus with conjuring tricks and other entertainment.

Fig. 2: 'The Kentish Hop Merchant and the Lecturer on Optics' (1809). This early nineteenth-century caricature illustrates the perils of the itinerant lecturer. During a talk in Kent about optics before a small audience a local merchant mishears the subject as 'hop-sticks'. The instruments on the lecturer's table include a telescope and a magic lantern. This hand-coloured engraving is by Isaac Cruikshank after a drawing by the caricaturist George Woodward. (Reference: 10198206; reproduced courtesy of the Science and Society Picture Library)

The first untethered, manned balloon flight took place on 21 November 1783 in a balloon made by the Montgolfier brothers and launched from near Paris. Balloon flights then became a craze that spread rapidly through Europe. They proved equally popular in the British Isles, with the first manned flight being made from Edinburgh on 27 August 1784. At the height of the balloon craze Katterfelto claimed not just to have made balloon flights, but to have conducted astronomical observations

Commemoration', *Journal of Astronomical History and Heritage* 13, no. 3 (2010): pp. 179-186.

during them and to have made important discoveries from these observations. These claims are almost certainly fabrications: there is no evidence for such astronomical observations or discoveries and Katterfelto probably never made any balloon flights. This short note describes this curious, illusory prehistory to astronomical ballooning.

Fig. 3: A lunar halo and cross above the balloon *Zénith* in March 1875. The balloon was flown by the brothers Gaston and Albert Tissandier, who were pioneering meteorologists and aviators. Scientific, and particularly meteorological, ballooning did not take off until the mid-nineteenth century. The drawing is likely to be by Albert Tissandier. (Reference: LC-DIG-ppmsca-07435; courtesy the Library of Congress)

Actual astronomical ballooning began much later. Balloons began to be used as platforms for making scientific, particularly meteorological, measurements from the mid-nineteenth century (see Fig. 3) and occasional astronomical measurements were made from balloons from

this time.[5] Victor Hess established the extra-terrestrial origin of cosmic rays from balloon-borne measurements in 1912.[6] However, modern telescopic astronomical observations from balloons began in 1956 when Blackwell, Dewhirst and Dollfus photographed the sun.[7]

Gustavus Katterfelto

Gustavus Katterfelto's origins, the details of his life, even his date of birth and proper name, are unclear. His biography is further confused by his considerable capacity for self-aggrandisement and embellishing his own life-story. He was of German extraction, but other details of his early life remain obscure. The first facts that are known with reasonable certainty are that he and his wife arrived in Hull from Germany in 1776 and he almost immediately began advertising and presenting his show. It seems likely that he was already an experienced showman and had been travelling in Europe for some years. He claimed to have given a series of prestigious presentations before Royalty throughout the capitals of Europe, but these performances are almost certainly inventions.

Katterfelto's early years in Britain are also obscure, though he probably toured mostly in Northern England for a few years. In 1780 he moved to London, initially setting up for business in the Great Rooms at the Spring Gardens in the West End. Formerly a Huguenot chapel, by the 1780s the Spring Gardens had become a prestigious venue. Though Katterfelto demonstrated contemporary scientific apparatus, such as globes and orreries, his shows were unashamedly spectacle and entertainment and they quickly gained him a reputation. In 1782, London suffered a serious influenza epidemic on which he was able to capitalise. His equipment included a solar-illuminated microscope which he used to project images of the germs ostensibly responsible for the outbreak (but

[5] For meteorological ballooning see, for example, K. Anderson, *Predicting the Weather: Victorians and the Science of Meteorology* (Chicago: Chicago University Press, 2005), pp. 92, 96-97. An early example of astronomical observations from a balloon is J. Glaisher, 'Lines in the Solar Spectrum, as observed in the Balloon Ascent, 31st March last', *Monthly Notices of the Royal Astronomical Society* 23 (1863): pp. 191-192.

[6] D. Kolak, 'Hess, Victor Franz', in T. Hockey, ed., *Biographical Encyclopaedia of Astronomers* (New York: Springer, 2007), pp. 500-501.

[7] D. E. Blackwell, D. W. Dewhirst and A. Dollfus, 'Photography of Solar Granulation from a Manned Balloon', *The Observatory* 77, no. 896 (1957): pp. 20-23.

actually just random bacteria in a drop of water). He also sold patent remedies that he advertised as a sure cure for the contagion. Unsurprisingly, almost as quickly as his reputation as a showman rose, he gained a counter-reputation as a quack and mountebank, peddling worthless remedies.

Katterfelto was also famous for his outrageously inflated self-publicity, or 'puffing' in the language of the time. He had handbills printed and placed advertisements in newspapers for his shows, all making extravagant claims for the wonders that would be presented. He would also pseudonymously submit to newspapers reviews of recent shows, ostensibly from satisfied customers and again extolling the wonders that were on display. There were also hints, which again he encouraged, of a darker side to his performance, with rumours that some of the effects were created using occult powers or with diabolic assistance. He kept a black cat (who subsequently produced a brood of black kittens) who was suspected to be his familiar.

Katterfelto's reputation declined as rapidly as it had risen. In 1784 he left London and from then until his death in 1799 he eked out a precarious living as a travelling showman, continuously touring the English provinces and Scotland. He is buried in the Church of St Gregory in Bedale, North Yorkshire.

Flights of Fancy

In late 1784 Katterfelto was touring East Anglia, having left London in July. At this time the balloon craze was at its height and Katterfelto was always keen to incorporate the latest sensation into his shows. While in London he had claimed to have launched unmanned balloons before Catherine the Great in St Petersburg as early as 1762. Had this outrageous and unsubstantiated claim been true it would have made him a genuine pioneer of ballooning. The following report appeared in the Norfolk Chronicle for 2 January 1785:

> The 23rd of December was the day that Dr Katterfelto was to ascend in his large Air Balloon in this city, with … various mathematical instruments etc. to take some astronomical observations. The day was very clear for it, but rather too cold to continue for a long time in the highest part of the atmosphere, so Dr Katterfelto, therefore did not expect it was in his power on that day to make observations sufficient, so he was obliged to put off his ascending; as he made his calculation by his thermometer, that if he had ascended three miles

> only from the earth that day, the cold must at that distance have been nine times greater, and he was to remain a few hours in the evening in the highest part of the atmosphere purposely for astronomical observation, he would therefore have felt the cold still more severe.[8]

It seems that Katterfelto was planning a balloon ascent from Norwich to make astronomical observations, but the attempt had to be postponed due to cold weather. A few days later a second report in the Norfolk Chronicle gave some further details:

> The London, Dublin, Edinburgh, Glasgow, Aberdeen, Oxford and Cambridge papers express that the philosophers and learned at the above cities have a very great desire of hearing from the Norwich, Bury and Ipswich papers that Dr Katterfelto has ascended in his air-balloon in the city of Norwich, as the learned gentlemen in the above cities do expect that Dr Katterfelto will make some very useful discoveries in Astronomy etc. etc. Dr Katterfelto being by all accounts one of the first astronomers as well as philosophers in the three kingdoms, and as the observations which he made four years ago at Greenwich have caused since that time a great advantage to this kingdom, particularly to the navy.[9]

Katterfelto was now claiming to have already made important ground-based astronomical observations some years earlier, as well as promising air-borne ones to follow. There is no evidence that any ascent was made from Norwich. These reports, however, presaged a pattern. Similar articles appeared in the local press wherever Katterfelto was touring throughout the following year. They were doubtless written by Katterfelto himself: it had long been his practice to put his own accounts in local papers in order to drum up interest in his shows. The reports often describe flights that he had made before Royalty in London and the discoveries that had followed. They only appear where Katterfelto was currently touring and are not mentioned in the London press or Court Circulars.

The series concludes with a report in the Lincoln, Rutland and Stamford Mercury for 30 December 1785 that an ascent had:

---

[8] *Norfolk Chronicle*, 2 January 1785, quoted in Paton-Williams, *Katterfelto*, p. 110.

[9] *Norfolk Chronicle*, 8 January 1785, quoted in Paton-Williams, *Katterfelto*, p. 118.

> … proved of very great benefit to our navigators and it is expected will in time benefit the whole world in general, and as no person in this kingdom, or abroad, have made any useful discoveries by the ascending in their various air balloons, besides that great and wonderful philosopher Doctor Katterfelto, the gentlemen belonging to the Admiralty, as well as the whole Royal Society, have made a report to the King, that a salary may be granted to the Doctor for his useful discoveries, and if it is only £300 a year, they think it is no more than he is worthy of...It is also reported that Dr Katterfelto is to be admitted at the next meeting a member of the Royal Society.[10]

By 1786 the balloon craze was over and Katterfelto dropped the subject. It is doubtful if he ever made a balloon flight.

Discussion

It is difficult to think of a worse platform for making astronomical observations than the rolling basket of an early balloon with, in the case of hot air balloons, the additional disadvantage of broiling, churning air from the brazier. Modern telescopic astronomical observations from balloons did not begin until the 1950s. Katterfelto's claims to have made astronomical discoveries from balloons are an illusory prehistory to astronomical ballooning.

Katterfelto certainly had some knowledge of astronomy. Globes, orreries and telescopes featured in his shows. In Liverpool in 1791 he used telescopes and other apparatus to project the solar eclipse of 3 April before an audience. His letters to various East Anglian newspapers in 1785 show an awareness of contemporary astronomical concerns. For example, the claimed improvements in navigation that would result from his work mirror the widespread interest in applying astronomical methods to navigation, particularly the determination of longitude at sea.

Katterfelto's invented claims to Royal patronage and election to the Royal Society seem an attempt to outdo the honours bestowed on his compatriot William Herschel following the then-recent discovery of Uranus in 1781. In particular, his claim of a recommendation for a pension of £300 per annum was, inevitably, more than the £200 per annum awarded to Herschel. Alternatively, as an itinerant lecturer and

[10] *Lincoln, Rutland and Stamford Mercury*, 30 December 1785, quoted in Paton-Williams, *Katterfelto*, pp. 118-119.

showman, perhaps he was trying to appropriate the sort of honours that had been bestowed on James Ferguson some twenty years earlier, when Ferguson was awarded a pension of £50 per annum and elected an FRS.

In any event, Katterfelto's claims echo the astronomical concerns and developments of his time. Particularly when touring in the provinces he was far from centres of fashion, culture and learning and was performing to a largely lay audience. Nonetheless he seems to have assumed that references to recent astronomical and scientific issues would find some resonance with his target public.

Acknowledgements
David Paton-Williams has recently published the first full-length biography of Katterfelto. His excellent study introduced me to Katterfelto and was the source for much of the material discussed here. The interpretation and any mistakes remain my own.