

The Archives of the Norman Lockyer Observatory

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ABSTRACT

The archives of the Norman Lockyer Observatory are held in the library of the University of Exeter and comprise two distinct groups of documents. Firstly, correspondence and other papers of the astronomer Sir Joseph Norman Lockyer (1836–1920) and secondly, correspondence and working papers of the Norman Lockyer Observatory at Sidmouth, Devon; these are mainly for the period 1921 to 1961. A catalogue of the letters received by Lockyer from over 900 correspondents has been prepared and the listing of the other papers is in progress. In addition, the Observatory holds a collection of over 8000 photographic plates, of which over 6000 are of stellar spectra, especially of variable stars, some of which are from the 19th century.

1. Introduction

This description of the archives of the Norman Lockyer Observatory that are held in the library of the University of Exeter is based on the presentation given during the 24th General Assembly of the International Astronomical Union in Manchester, UK, at the meeting of Commission 41 on 2000 August 16. Additional information about subsequent changes in their management and about other related material is also given.

Norman Lockyer was born in 1836 and became an amateur astronomer and science journalist during the 1860s while serving as a clerk in the War Office. In 1868 he devised a spectroscopic method

of observing prominences and this led to a change to an academic career at what is now the Imperial College in South Kensington, London, where he set up and directed the Solar Physics Observatory. He was the editor of *Nature* from its founding in 1869 until 1919 and he wrote 17 astronomical books. He was knighted in 1897 and he received many national and international honours. The biography of Lockyer by Meadows (1972) contains an extensive bibliography while a summary of his scientific work is given in Wilkins (1994).

One of his sons, W.J.S. Lockyer, became an astronomer and the assistant director of the Observatory. Sir Norman retired as professor of astronomical physics in 1901 and two years later he married a widow, Mary Brodhurst, who had inherited land at Sidmouth in Devon. They built a retirement home there in 1910 on the slopes of Salcombe Hill. Then, at the suggestion of Francis McClean, the son of the astronomer and philanthropist, Frank McClean, work started in 1912 on the building of the Hill Observatory on the ridge above the house. Activities there were interrupted by the First World War, and the appeal for funds was not as successful as Lockyer had hoped, so that his 30-inch reflector was never installed on the new site. Sir Norman died in August 1920 and the observatory was renamed the “Norman Lockyer Observatory”. His son became director until his sudden death in 1936. The two main telescopes, known as the Kensington and McClean Telescopes from their origins, were twin refractors and were used mainly for stellar spectroscopy. This period is described in Wilkins (1998).

In 1948, after the Second World War, the University College of the South-West of England at Exeter, now the University of Exeter, provided additional funding and, in effect, took control of the NLO Corporation, which was a company with charitable status that owned the Observatory. Astronomical observing ceased, however, in 1961 and the site was then used for various geophysical observations. All activities ceased in the early 1980s, except for limited use by the local astronomical and amateur radio societies. The library and archives were transferred to University of Exeter. In 1986 the NLO site was sold to East Devon District Council and the furniture and auxiliary equipment were sold by auction.

The Council sold some land and out-buildings and it used the proceeds to refurbish the domes and the McClean Telescope and to build an extension to the Mond Building to provide a meeting room and a radio room for use by the local societies. The Observatory was re-opened in 1989 (see Ward 1990) just after I had retired from the Royal Greenwich Observatory and had moved to Sidmouth. The NLO

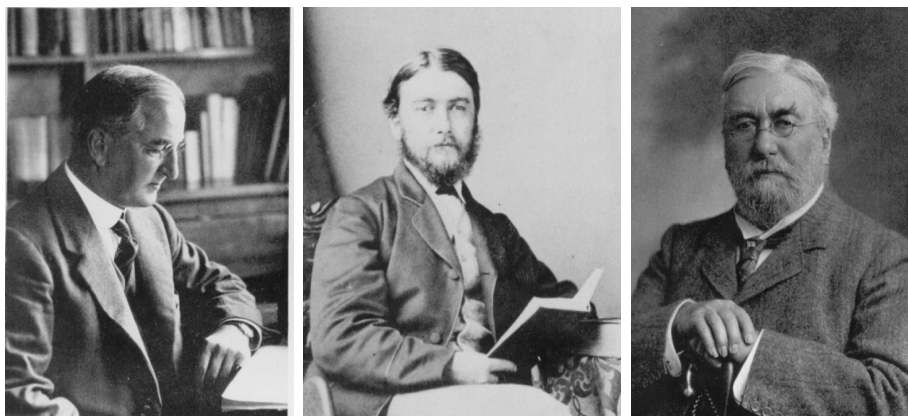


Figure 1. *Left:* based on a photo of W.J.S. Lockyer from a memorial booklet. *Middle:* early photo of Norman Lockyer (based on an RAS photo published in *Astronomy Now* in February 1999). *Right:* photo used as the frontispiece to the biography attributed to his wife and daughter.

Corporation was liquidated in 1992; its assets were distributed between the Royal Astronomical Society (for the Sir Norman Lockyer Memorial Trust), the East Devon District Council and the University of Exeter. At that time it was the intention that part of the archives should be transferred to the Science Museum at South Kensington, but in 1995 it was agreed that they should not be split, but that all should be cared for by the University.

The two amateur societies were given responsibility for the operation of the Observatory on condition that it was regularly opened to the public and to school groups. This was so successful that in 1995 the Council built a major addition to the Mond building for a planetarium and for exhibitions. At the same time the two societies combined to form the Norman Lockyer Observatory Society, which is now an educational charity. In 1996 a Meteorology Group was formed and regular observations are made. There is also a small history group and there is considerable interest in the local “Jurassic Coast”, which was given the status of a World Heritage Site in 2002.

One of the conditions of the agreement with the Science Museum was that the University would prepare a catalogue of the archives. Consequently, I sorted and listed Norman Lockyer’s pre-retirement correspondence, which was considered to be the most important part of the

archive. At this time the Lockyer correspondence and other early documents were kept in secure conditions in the main university library. At first I listed the Lockyer letters in the library, but progress was slow until it was agreed that I could take batches of letters home. I also obtained the assistance of members of the NLO Society in listing the correspondence of the Observatory during the pre-war period. I had found much of this later correspondence in a pile of assorted documents with the NLO library books, which were then ‘awaiting disposal’ in the basement of another building as the University had no interest in them. I obtained a reprieve for the collection and so I sorted the documents and gathered and re-shelved the books during my visits to the University. The listing of the NLO correspondence in the NLO files that I had saved was also done by the members of the Society in their homes.

All this voluntary activity came to end after the appointment of a new University Librarian as my direct access to the NLO library and the archives was denied when the standards of archival provision and care at the Library were upgraded and professionalised. My listing of the Lockyer correspondence was, however, sufficiently advanced for me to produce a few copies of the catalogue in February 2000. It had been

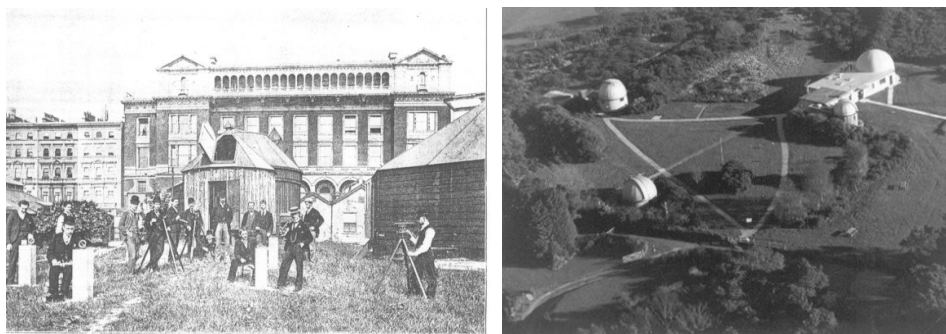


Figure 2. *Left:* part of the Solar Physics Observatory at South Kensington, with some students, in 1893. In the background is the building used by the Royal College of Science in which Lockyer was the Professor of Astronomical Physics. It became known as the Huxley Building from 1932, but it has been renamed since it was taken over by the adjacent Victoria and Albert Museum a few years ago. *Right:* NLO at Sidmouth, Devon, based on a colour photograph taken by John Dunkley, one of the members of the NLO Society, in 1995 after the opening of the extension for the planetarium.

the intention that the catalogue would be made widely available on the website of the University Library, but this was not done. A part-time archivist, Ian Mortimer, was, however, appointed and the archival material from both buildings was gathered together in a new secure environment in the Old Library building. He produced brief descriptions of two of the principal classes into which the material was divided and a ‘rough handlist’ of the NLO files and boxes of working papers that were transferred with the library from Sidmouth to Exeter. His place has since been taken by a full-time archivist, Charlotte Berry, who has already carried out a lot of additional work on these archives. In particular, full collection-level descriptions of the material are now available on the website. The catalogue of the Lockyer correspondence is available for use in the reading room for the Special Collections section of the Library. It is expected that detailed lists of all of the Lockyer collections will be made available on the Special Collections website in the future.

2. Principal Contents of the Archives

The archives are now held in three principal classes as follows.

EUL MS 110: Lockyer Research Papers, c1860–1920. The most important part of this class is the residue of the correspondence between Lockyer and over 900 correspondents. Unfortunately, it consists almost entirely of the letters received by Lockyer as it appears that he rarely kept even notes about his outgoing letters. I did, however, find in the Library of Congress a few letters written to Simon Newcomb and so there are copies of these in the collection. I would be glad to receive information about other such letters in the archives of other observatories and institutions. It is clear that many letters have been lost as there are some unlikely gaps in the correspondence; moreover, some of the letters referred to by Meadows (1972) in his biography of Lockyer could not be found. Luckily, Meadows had kept photocopies of many of them and these are now available. There are only a few letters relating to Lockyer’s editorship of *Nature* or to the Solar Physics Observatory. Some notes on my catalogue are given below.

Amongst the remainder of the class are: eclipse notebooks; notes on lectures and addresses; papers relating to the Royal Commission on Scientific Instruction, of which he was secretary in 1871–1877; papers relating to the transfer of the Solar Physics Observatory from South Kensington to Cambridge in 1913; and personal papers relating to his

awards and honorary degrees. One interesting item is the observation notebook that he started in 1862 after he acquired the 16-cm refractor with which he carried out his early research, and which is still in use in the Observatory at Sidmouth. I found this by chance amongst the much later NLO observing notebooks in a storeroom in the university library.

EUL MS 72: Norman Lockyer Observatory Papers, c1913–1989. This class consists of two types of material. Firstly, there are correspondence files, reports and memoranda, account books, visitors' books, photographs of the observatory and individuals, and other items of an administrative and historical character. Secondly, there are the 'research files', most of which are boxes of assorted working papers whose value, if any, could only be assessed after a careful examination by someone familiar with the field, such as the observation of variable stars.

One particularly interesting item is the manuscript prepared by W.J.S. Lockyer for a book with the title *In thunderstorms with a camera*. He was a meteorologist (Wilkins and Wilson 1997), as well as being an astronomer and a keen amateur photographer. It is a pity that the last chapter is missing and that the book was not published. There is also a collection of reprints of his research papers, but not of the many articles that he wrote for *Nature*.

EUL MS 114: Papers of Norman Lockyer (RAS) c1876–c1969. These are papers relating to the Hill Observatory and the Norman Lockyer Observatory that were transferred (at my suggestion) to the university on long-term loan from the Royal Astronomical Society (RAS). They include a lot of administrative papers as they were given to the Society by a relative of W.N. McClean, who was treasurer of the Norman Lockyer Observatory Corporation for many years. They also contain some papers relating to the gift by his father, Frank McClean, of a telescope to the Royal Observatory at the Cape of Good Hope. There are also some smaller collections of relevant documents.

EUL MS 128: Papers relating to the Norman Lockyer Observatory, 1851–1985. These papers were passed to me by a retiring member of the Physics Department of the University, who had acted as the liaison officer between the Department and the Librarian at the Observatory at Sidmouth. Many of the documents relate to the day-to-day running of the Library, but in addition there are various items of more

general interest, such as a telegram that Marconi sent by ‘ether waves’ from Canada to Lockyer in 1903.

EUL MS186: Lockyer Papers (Sid Vale collection), 1895. This contains a small group of letters that were given, at my suggestion, by the Sid Vale Heritage Centre in Sidmouth to the University. Three of them are from Sir William Ramsey, the discoverer of the inert gas helium, whose existence in the Sun had been postulated by Lockyer some 25 years earlier. The Centre has a display of various Lockyer memorabilia, such as medals, as well as photographs and publications.

EUL MS236: Letters to Sir Norman Lockyer, 1869–1919. This small collection of letters was lent for use in the preparation of the centenary edition of *Nature* in 1969 and was returned by a private donor in 2001.

EUL MS246: Financial papers of the Norman Lockyer Observatory, 1944–1966. These are papers that were generated in the University while it was funding the Corporation.

3. The Catalogue of the Lockyer Correspondence

When I first saw the Lockyer correspondence it was kept in a large number of brown paper envelopes in four main categories that related to the biography of Lockyer that was written by Herbert Dingle, but published under the names of Lockyer’s wife and daughter (Lockyer, Lockyer and Dingle 1928). Correspondingly, the letters from one person were often scattered in several envelopes and so it was agreed that I should sort them into alphabetical order and by date. In general, I also sorted them by person rather than by institution, but cross-references are given in the catalogue where appropriate. Letters to other members of the family and various ephemera, such as newspaper cuttings and graphical items have been filed and listed separately from the main collection as ‘Z-files’. For each letter I have usually given a brief description of the contents in a few lines. For many correspondents there is only one letter, but for some, such as F.C. Penrose, there are many letters over many years. This correspondence is now part of EUL MS110. The principal correspondents in the catalogue are given in Table 1.

4. Other Related Sources

The University also holds some of the records of the amateur societies (mentioned above) that have used the Norman Lockyer Observatory

Table 1. Principal correspondents in the catalogue of the Lockyer correspondence in EUL MS 110.

Pages	Correspondents
A 1	Frederick A. Abel, George B. Airy, Edmund Antrobus, Lord Avebury
B 9	George Baden-Powell, William Black, British Association for the Advancement of Science, John Browning
C 22	William M. H. Christie, George J. Clarke, Agnes M. Clerke, William Crookes
D 31	Warren de la Rue, Henri Deslandres, Duke of Devonshire, John F. D. Donnelly, Henry Draper
E 40	John Eliot
F 44	Lazurus Fletcher, Michael Foster, Edward Frankland
G 54	Archibald Geikie, David Gill, Howard Grubb, Amédée V. Guillemin
H 63	Richard B. Haldane, George E. Hale, Alexander S. Herschel
H 71	John R. Hind, Joseph D. Hooker, William Huggins, Thomas H. Huxley
J 80	Jules Janssen
K 83	Lord Kelvin, G. King-Hall, George Knott, (Krakatoa)
L 88	Samuel P. Langley, Urbain J. J. Leverrier, William J. S. Lockyer, Henry G. Lyons
M 98	Charles Meldrum, James A. H. Murray
N 110	(Nature), Hugh F. Newall, Robert S. Newall, Simon Newcomb
P 116	Benjamin Pierce, Francis C. Penrose, Edward C. Pickering, (Prince of Wales), Charles Pritchard
R 135	William Ramsay, Isaac Roberts, Henry E. Roscoe, Royal Astronomical Society, Royal Society
S 145	Edwin L. Sambourne, G. M. Seabroke, William N. Shaw, C. William Siemens
S 155	C. Piazzzi Smyth, Balfour Stewart, George G. Stokes, Alexander Strange
T 165	Peter G. Tait, J. F. Tennant, Alfred Tennyson, William T. Thistleton-Dyer, Herbert H. Turner
W 177	Thomas W. Webb, William J. L. Wharton
Y 185	Charles A. Young

from about 1973 onwards. These records were not, however, listed by Ian Mortimer. I understand that the University is reluctant to keep such records or to add to the collection and so I have (also reluctantly) stored at home other papers that I believe would be best kept at the University, where they would be in better conditions and could be made accessible to others.

It is probable that most of the papers generated at the University for the Norman Lockyer Observatory Corporation between 1948 and 1992 when it provided the secretary and most of the funding are held in the Devon Record Office, but I have not yet confirmed this.

The archives of the Imperial College at South Kensington contain papers relating to Lockyer's activities there, as well as letters that Lockyer wrote to T.H. Huxley.

The archives of the University of Leicester also contain much material relating to Lockyer and the Observatory at Sidmouth. This was collected by Professor A.J. Meadows at about the time of the publication of his biography of Lockyer. A manuscript list of the contents was made by David DeVorkin, who was then a student working with Meadows.

The Bodleian Library at the University of Oxford contains the archives of the British Association for the Advancement of Science (BAAS) and these include many papers relating to the British Science Guild, which was started by Lockyer in 1905 to encourage greater support for science by the government. Lady Lockyer continued to be active in the Guild until it merged with the BAAS in 1936.

The website of the National Register of Archives shows the existence of other correspondence and papers, including the letters to Sir David Gill at the Royal Geographical Society, the letters to Sir George Stokes at the Cambridge University Library, and the correspondence with Macmillan, the publisher of *Nature* and of Lockyer's astronomical books.

The archives of the Royal Greenwich Observatory, now in the Cambridge University Library, contain papers relating to the Norman Lockyer Observatory as both Dyson and Spencer Jones served on the Research Committee of the Observatory.

5. Photographic Plates

The Norman Lockyer Observatory Society has recently recovered from the Science Museum the photographic plates that were deposited there

when the Observatory was cleared at the time of the sale in 1986 (see White 2003.) There are nearly 8000 glass negatives, of which over 6000 are of stellar spectra. Some are from the 19th century, while others are from the Observatory at Sidmouth, when a special study was made of variable stars, such as γ Cassiopeiae. A catalogue will be made available on the NLO website. There are also some lantern slides that were used for lectures (see Ponsford 2003).

Contact at the University of Exeter

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