

Astronomical Society of Edinburgh Journal

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Nora Jenkinson with Harperdean Astronomical Society members, c. 1990.

The future of the City Observatory

For some time the Society has been anxious about the state of the Playfair Building which houses the Cooke refractor and also the other Building in which we have our monthly meetings. The buildings are leased from the City Council. The buildings are deteriorating and may become unfit for any use in the not too distant future.

The City has plans to redevelop Calton Hill, including the buildings of astronomical interest. To review progress towards the completion of these plans myself and Alan Ellis met with City Council officials on 13th September 2005. Chairing the meeting was Lynne Halfpenny, Head of Museum and Arts, City of Edinburgh Council.

We were informed that the Council has appointed architects and hopes to set up a management group within the next six months which will develop a plan. Once the plan is completed funding will be secured (hopefully) and work can commence. Work on the whole site may not be completed until 2010/2011.

The ASE will be invited to be represented on the management group. The ASE now has the choice of two possible scenarios. One scenario is separating ourselves from the City Observatory because of its deteriorating state and because its upkeep is expensive. Rates and electricity are significant costs which result in our relatively high membership fee. Separation would mean giving up the lease and our use of the premises. We would meet elsewhere.

This scenario does not mean the historic City Observatory will be lost. No doubt the City Council will develop it at some stage and it will be accessible to the public as a historic building - though probably not as a working observatory. This scenario means that the Society may become separated from any future plans. The scenario means that a working Observatory will be lost. That may not, these days, be seen as of much consequence due to the light pollution in the centre of Edinburgh and also a lot of us now have our own instruments.

The other scenario is going along with the City Council and participating in the formation of the development plan and having a real input into the future of the Observatory and having a share in the running of the Observatory when the work is completed. On the downside it may be expensive for the Society to continue to be running the Observatory while the work is being carried out. In addition, the future, after completion, may be in partnership with the Council rather than leasing the building or running the buildings by ourselves.

These are the issues that the Society will have to ponder over the next few months and possibly make some decision on future strategy at our AGM in March 2006.

Des Loughney, President, ASE

Obituary: Nora Jenkinson

We are very sorry to have to tell everyone of the passing of Nora, one of our most remarkable characters, at the great age of 97.

Eleonora Cree Laurie was born at Dolphinton near East Linton, the daughter of a blacksmith. She trained as a nurse and qualified SRN and SCM. She married William Jenkinson and they took over the farm at Harperdean near Haddington in 1946.

Her interest in astronomy began at about the age of 8, passed down, she believed, from her grandfather James Laurie of Berwickshire. After her husband died and her son Ian took over the farm Nora took up astronomy again. She went to classes at Edinburgh University and passed the GCE in astronomy, then in 1974 she started up a class for her own grandchildren and their friends, every Tuesday night. This ran for an amazing 28 years, only 6 meetings had to be cancelled because of severe weather. It developed into "Harperdean Astronomical Society" and at one time had 20 members. They explored every aspect of astronomy with books, slides, videos and home-made apparatus, and made observations from a small summer-house observatory, with instrumentation which began with a 4-inch refractor, a bequest from a friend, Willie Aitchison, to an 8-inch reflector which they build entirely themselves, even grinding the mirror, and finally to a 14-inch Celestron. Several of Nora's young people went on to take degrees in science and one became a professional astronomer at Teneriffe. Jamie Shepherd, Robert McNaught, Dave Gavine, John Rostron, Duncan Waldron, Neil Bone and others used to go and help out, and the ASE Council were so impressed that in 1993 they awarded Nora the Lorimer Medal and with it Honorary Membership of ASE. Our President, Dr John Reid, made the presentation amidst a great celebration with friends and family. Then in 1997 Rob McNaught arranged for his discovery of Asteroid 4504 to be named "Jenkinson" in her honour.

Nora was also greatly interested in local history - she wrote a book and some articles, and was very active in the affairs of the ancient St Mary's Collegiate Kirk. She drove a Jaguar well into her 80s, loved motor sport and was an avid follower of Formula One on TV. At 91 she made a helicopter flight to the Lake District to attend the wedding of her granddaughter Nicola.

After about 2 years of failing health Nora died on August 11 (appropriately - Perseid Maximum night) and was buried in the churchyard of St Mary's. She leaves 2 sons, 6 grandchildren and 3 great-grandchildren to whom we extend our condolences.

D. Gavine

Centenaries of 2005

This year sees the centenaries of several astronomers. Here are some with a Scottish connection.

John Robison (died 1805)

Born near Glasgow in 1739, the son of a merchant, he took his MA at the University in 1756, and was inspired by the physical sciences, becoming friendly with James Watt and Joseph Black. Although his father wanted him to be a minister John went to sea as a midshipman. He was an instructor in navigation, surveyed the country around the St Lawrence, and investigated the connection between the aurora and the magnetic needle. In 1762 he was asked by the Board of Longitude to test Harrison's chronometer on its first voyage but neither the Board nor the Admiralty would pay his expenses. He gave up the Navy and returned to Glasgow to lecture in Chemistry.

In 1770 he went to St Petersburg with Admiral Knowles whom Catherine the Great had appointed to reform the Russian navy, and was made professor of mathematics at the military academy at Kronstadt with the rank of colonel. In 1773 he returned as professor of natural philosophy at Edinburgh but found the average student to be far below his expectations in mathematical ability (*Nothing has changed - Ed.*)



He published his lecture courses - they contained a great deal of astronomy but are incomplete, and found time to write articles on optics, astronomy and electricity besides some religious and metaphysical speculations on the sciences. In 1785 he made and published observations on the positions and orbit of the "Georgium Sidus" (Uranus), which had been newly discovered by William Herschel.

Robison was LLD of Glasgow and of New Jersey, FRS and FRSE. His son, Sir John Robison (1778-1843) was a well-known scientist and administrator.

(Dictionary of National Biography 47, 434, by Paul Wood.)

*Tomb of Johann von
Lamont in Munich,
courtesy of Storm
Dunlop.*





Edward Sang (born 1805)

Born in Kirkcaldy, one of 11 children of Edward Sang, sometime provost of the town, he was educated by the brilliant but eccentric Edward Irving who instilled a love of astronomy. (This man became a flamboyant preacher but was ejected from the Church of Scotland for "heresy" and started up his own denomination - the Irvingites).

He entered Edinburgh University at a very early age and was in delicate health, but his mathematical talent soon caught the attention of professors Leslie and Wallace. He worked in Edinburgh as a surveyor and civil engineer but taught classes in mathematics, physics, navigation and astronomy in the city and in Leith. From 1841 he was briefly professor of Mechanical Sciences at Manchester New College, then went to Sebastopol to help set up railways, ironworks and engineering schools.

In 1854 he returned to teach mathematics in Edinburgh and to publish a formidable 112 papers, mostly on engineering subjects, astronomical tables and 7-place logarithms. For 40 years he laboured on a huge work - astronomical, trigonometric AI and logarithmic tables to 15 and 28 places, which were unpublished at his death in 1890 but his two daughters who had helped him presented the 47-volume manuscript to the Royal Society of Edinburgh. Sang was LLD of Edinburgh, FRSE, awarded the Makdougall-Brisbane and Keith Medal of RSE and the silver medal of RSSA. Some of his apparatus is preserved in the scientific instrument collection at the Royal Museum of Scotland.

(*Dictionary of National Biography* 48, 939, by A.D.D. Craik.)



Johann von Lamont (born 1805)

John Lamont was born at Corriemulzie near Braemar. When he was only 12 his father, a forester, died and he was sent to be educated at St James' monastery at Regensburg, Germany. Prior Benedikt Deasson instructed him thoroughly in mathematics and physics, he was appointed assistant at Bogenhausen Observatory near Munich, and took his doctorate of philosophy in 1830. He became director of the observatory in 1835 and professor of astronomy in 1852.

He devised new instruments for astronomy, meteorology and terrestrial magnetism, founded a Meteorological Association for setting up weather stations, participated in a world-wide network of simultaneous magnetic recordings and was involved in the triangulation survey of Bavaria. He observed the satellites of Saturn and Uranus, estimating the mass of the latter, found a 10.3 year magnetic declination cycle which seemed to coincide with the solar cycle, produced a 20-vol catalogue of 80,000 stars and devised a chronometer to time meridian transits of stars. He published *Handbuch des Erdmagnetismus* (Berlin 1849), *Astronomie und Erdmagnetismus* (Stuttgart 1851) and numerous other works.

His many honours include FRS, FRSE and title of nobility from the King of Bavaria. He died, single, in 1879 and his considerable wealth was used to found scholarships in sciences. A statue of him in Munich has him with an open hand, into which the locals put small coins (he was a Scotsman!) and in 1935 Sir James Jeans unveiled a memorial cairn to

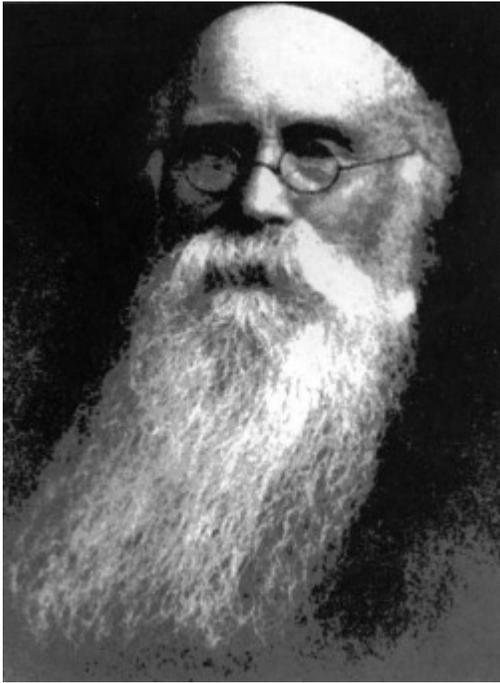
him on Deeside.

(*Dictionary of National Biography* 32, 343, by M. Dörries; *Dictionary of Scientific Biography* 7, 607, by D.B. Herrmann.)

Ralph Copeland (died 1905)

He was born in 1837, the youngest of several sons of Robert Copeland, a farmer and part-owner of a cotton mill, at Woodplumpton in Lancashire. After grammar school he was apprenticed in an older brother's cotton mill but soon went off to Australia in search of adventure, as a sheep farmer and gold miner. Here he developed an interest in astronomy. On the voyage home he studied John Herschel's *Outlines of Astronomy*. He was then briefly an apprentice in a locomotive firm in Manchester, where with some work mates he set up a small observatory, but decided to re-train as an astronomer because of depression in the cotton trade making engineering insecure.

In 1865, after some time in a village in Hesse improving his German, he matriculated at the University of Göttingen and became a voluntary observer at the observatory. With Carl Börgen he made a series of observations of star places near the celestial equator. He took his doctorate with a dissertation "Über die Bahnbewegung von α Centauri" then with Börgen was invited on a German Arctic expedition to north Greenland, to carry out geodetic, meteorological, magnetic and natural history studies. On their return Kaiser Wilhelm I awarded them the Order of the Red Eagle.



In 1871 Copeland was appointed assistant at Lord Rosse's observatory at Birr, Ireland, where he studied the moon's radiant heat, then was assistant to Dr Robert Ball at Dunsink, where he got leave of absence to accompany Lord Lindsay to Mauritius to observe the 1874 Transit of Venus. In 1876 he became director at Lord Lindsay's great private observatory at Dunecht near Aberdeen, succeeding David Gill. Many observations were carried out, mainly on the spectra of comets, novae and peculiar stars. In 1882 he took charge of the Jamaica station for the international programme to observe the Transit of Venus, explored the superior seeing conditions in the Andes of Peru and Bolivia, discovered 5 new Wolf-Rayet stars and examined the peculiar variable η Argus. Results were published in *Astronomische Nachrichten*, *Monthly Notices*, *Copernicus*, and new information was sent out to other observatories in the *Dunecht Circulars*.

Lord Lindsay, now the 26th Earl of Crawford, learned that the government intended to do away with Scotland's Royal Observatory on Calton Hill when Piazzi Smyth retired, so he offered his own instruments and vast library to the nation provided a new observing site was chosen. In time this became the new Royal Observatory on Blackford Hill, with Copeland as Astronomer Royal for Scotland and Professor of Astronomy at Edinburgh University. He continued his observing programmes, using especially his favourite instrument, the 15-inch Grubb refractor, made several total solar eclipse expeditions with a huge long-focus camera, and began rigorous Astronomy courses for the new BSc degree. At the British Association's Cardiff meeting of 1891 he suggested that the bright streaks radiating from lunar craters might be lines of glassy spherules - an extraordinary anticipation.

Copeland was FRSE, a member of the Scottish Meteorological Society and a Director of its Ben Nevis Observatory. A robust and adventurous character, he refused to retire and died at the Observatory on 27 October 1905, he is buried in Morningside Cemetery with members of his family.

(*Dictionary of National Biography* 13, 319, by D. Gavine.)

Hermann Alexander Brück (born 1905)

Hermann Brück was born in Berlin in 1905 and was educated at the Kaiserin Augusta Gymnasium in Berlin-Charlottenburg, a school specialising in the Classics (Latin and Greek), where he also had excellent teachers in mathematics and physics. His enthusiasm for astronomy came from outside school. Once when he was in bed with some childish illness, he was given a book to keep him amused. It was J.J. von Littrow's famous *Wunder des Himmels*. He kept and cherished that book for the rest of his life. Another important influence was the enthusiasm generated by a public lecture on relativity which Einstein gave in 1915 at the Popular Observatory at Berlin-Treptow. Though he did not hear it personally, he began to read all the scientific books he could find, and decided he wanted to be an astronomer.

He attended the Universities of Kiel, Bonn and finally Munich, where he took his PhD in theoretical physics in 1928. Astronomy was originally to be his major subject, but having fallen under the spell of Arnold Sommerfeld's lectures on Quantum Mechanics, he switched over but kept up astronomy as his second subject. The practical astronomy classes



were held in Bogenhausen, the observatory made famous by Johann von Lamont, whose bi-centenary is being celebrated this year.

From Munich he began his astronomical career at the Potsdam Astrophysical Observatory where he worked first on solar spectroscopy with the tower telescope, and then on the observatory's main programme, the Potsdam Spectral Catalogue which complemented the Henry Draper Catalogue of spectral classification using spectra from the observatory's station in Peru. These happy days were destined to be blighted within a few years by the rise of Nazism. He decided to leave Germany in 1936, and obtained a temporary Research Assistantship at the Vatican Observatory near Rome where a spectral classification programme was also in progress. From there he went a year later to Cambridge where he was able to continue some solar spectroscopy (though the war caused much disruption in the observatory's work), rising to the rank of John Couch Adams Astronomer and Assistant Director of the Observatory. In 1947, in response to an invitation from Eamon de Valera, then Taoiseach (Prime Minister) of Ireland, he moved to Dublin where he undertook the task of re-founding the defunct Dunsink Observatory under the auspices of the Dublin Institute for Advanced Studies. There among other projects, he set up a large solar spectroscope for the near ultra-violet, with which to supply the extreme end of the Rowland Atlas, a programme which was completed before he left Dublin for Edinburgh after 10 years. He held the combined post of Astronomer Royal for Scotland and Regius Professor of Astronomy in the University of Edinburgh from 1957 until his retirement in 1975 at the age of 70.

Brück's years in Edinburgh were his most active and his most satisfying. He aimed from the start to introduce automatic methods of measurement and reduction into astronomy in order to deal with the vast amount of data that come from stellar spectra and direct photographs of the sky. For this purpose he appointed experts in technology and computing rather than astronomers. The result was the original Galaxy machine for measuring star images on Schmidt telescope photographs, which developed into the highly successful Cosmos machine. These foundations have borne ample fruit at the present flourishing Royal Observatory.

He occupied himself in his retirement with various historical projects including the history of the Royal Observatory Edinburgh (1983) and the life of Charles Piazzi Smyth (1988). His most recent work were biographical entries for the new Oxford Dictionary of National Biography (2004), including those of two of his predecessors, Piazzi Smyth and W.M.H. Greaves. Sadly he did not live to see this great opus in print. He retired to Penicuik and died on 4 March 2000.

Mary Brück. (Also *Dictionary of National Biography* 8, 341, by Sir Martin Rees.)

The Scottish Astronomy Weekend 2005

This year the Scottish Astronomy Weekend was held in the Thistle Hotel, Inverness, on September 23-25 at the invitation of Highland Astronomical Society. The 35 delegates included 3 of our members, Dave Gavine, Des Loughney and Harry Sutherland. The main speaker was Storm Dunlop, on "Peculiar and Interesting Stars", and the other speakers were Dave (on "Astronomers of the North of Scotland"), Andrew Elliott, Pauline Macrae, Mike Reuss-Newlands, Maarten de Vries and Ken Kennedy. Des gave one of the short contributions, on his visit to the observatories on Teneriffe. On Saturday afternoon many of the visitors went to see the HAS observatory next to the Culloden Battlefield site, which is named after the late Jim Savage-Lowden, and houses and 8-inch

reflector. The Society also have a very fine 11.25-inch Dobsonian which was the re-built reflector used by Dave Gavine on the roof of the Abbey School of Fort Augustus in the 1970s.

Book review: Atlas of the night sky

Atlas of the night sky, by Storm Dunlop, illustrated by Wil Tirion and Antonín Růkl, Harper Collins, London 2005, pp. 224, ISBN 0-00-717223-0

This is a very nice book by Storm, who has many years of experience in scientific publishing. It is similar in size and price (£ 20) to the 20th edition of Norton's *Star Atlas* but the two are very different. Norton has copious information and tables on all aspects of amateur astronomy, observing technique, telescopes and the like, indeed, Storm wrote the section on Variable Stars, but the charts of sections of the sky are not as clear as they used to be: They are on thin paper which won't lie flat so you can't use them outside and difficult to read in dim light. By contrast the charts in this new Atlas are superbly drawn by a master - Wil Tirion, they show a wealth of detail with stars down to mag 6.5 on a pale blue field, a chart for each constellation and notes on its most interesting objects: double stars, variable stars, clusters and nebulae, within reach of a small telescope or binoculars. Also, there are smaller maps showing details of interesting parts of constellations. However, taking a book of this quality outside on a damp night is probably not a good idea. There are also master charts for both hemispheres to show the locations of the constellations, and a few photographs.

One of the highlights of the book is the wonderful lunar cartography of Antonín Růkl, 16 clear and stunning pictures of sections of moon landscape in shades of brown, with, for each one, a mirror-image picture for aid in observing with a reversing eyepiece prism or star diagonal, and a libration chart.

There are also diagrams showing the visibility and positions of the major planets up to 2009, short notes on the solar system bodies and meteors, a brief introduction to astronomical observing and a list of useful addresses and websites.

Very highly recommended, and on sale in Edinburgh bookshops!

Dave Gavine

Recent observations

Aurora

Since the huge all-sky auroral storm of January 21/22 there have been only a few feeble glows and faint arcs visible from Edinburgh, which is odd because there have been unusually high magnetic activity and big sunspots at this waning phase of the solar cycle. Despite the fine weather during this summer and autumn there has also been a lot of cloud at nights. Likewise the Noctilucent Cloud season has not been very productive, displays were seen here on June 8/9, 19/20, 22/23, 28/29, July 1/2, 7/8, 11/12 and 20/21.

Meteors

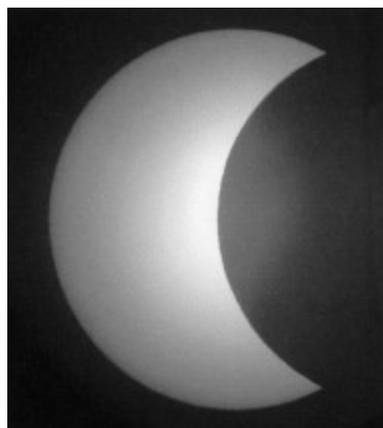
We were clouded out for the Perseid Maximum. Dave Gavine saw 8 meteors in an hour on Aug 7/8 and 15 in 1 1/2 hours on 14/15.

Variable stars

Lorna McCalman, Des Loughney, Dave Gavine and Ron Livesey have been carrying out systematic observations with binoculars and telescopes. Des collaborated with Janet Simpson of Inveraray on constructing light curves for the two Cepheids eta Aquilae and delta Cephei (BAAVS Circular 124), and they teamed up with Dave and Lorna in investigating the behaviour of the interesting semi-regular variable star Z Ursae Maioris, a long-term project. This star needs a telescope or very big binoculars as its big amplitude takes it down to nearly mag 9. It has quite a short period with a major and a minor peak with irregularities and lies in the Plough so it is circumpolar and can be observed all year except for midsummer when the sky is too bright. Observations of this star appeared in the last *ASE Journal*. The team's results were shown at the BAA Exhibition in Cambridge in June, and in BAAVS Circular 124.

Solar partial eclipse

True to form, it was overcast in Edinburgh on the morning of 3rd October, but clear nearly everywhere else. ASE members at Calton Hill and Dave at Joppa got only a second or two of tantalising glimpse through cloud. Your Editor is convinced we are jinxed. Maybe we should take up Meteorology instead.



Left: Ken Kennedy's picture from Dundee using a mylar filter. He got about a half-hour of clear sky.

Right: Dorothy Mackie and others at Calton Hill got only a brief glimpse.

Forthcoming events

All meetings are held at the City Observatory, Calton Hill, normally on the first Friday of the month, at 8pm.

- 2005-11-04 20:00 Bob Marriott, Director of the Instruments and Imaging Section, BAA
The Barwell meteorite
- 2005-12-02 20:00 Brian Kelly, former City Astronomer, Mills Observatory, Dundee
From the Sun to the outposts of the universe - the life of George Ellery Hale
- 2006-01-06 20:00 Roger Stapleton, University of St Andrews
The instruments at St Andrews University Observatory, past and present
- 2006-02-03 20:00 Melvyn Taylor, Variable Star Section, BAA
Blinking stars
- 2006-03-03 20:00 speaker to be arranged
probably a topic on radio astronomy
- 2006-03-17 20:00 Annual General Meeting

In addition there will be open evenings for members and the public every night from Nov 13-19 for observing Mars, also on Dec 16, Jan 20, Feb 17 and Mar 17.

About the ASE Journal

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