

ARMAGH, DUNSINK AND THE EARLY DAYS OF THE IRISH ASTRONOMICAL SOCIETY

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Abstract: The revival of astronomy at the historic Irish observatories of Armagh and Dunsink in the 1940s is recalled, with particular reference to the energetic initiatives of Eric Lindsay, both scientific and cultural, including the Armagh-Dunsink-Harvard Telescope in South Africa, the first such international collaboration in the history of astronomy.

Keywords: Eric Mervyn Lindsay, Hermann Brück, Armagh Observatory, Dunsink Observatory, Irish astronomy, amateur astronomy

1 INTRODUCTION

I am greatly honoured to be invited to this celebration of the centenary of the birth of Eric Lindsay, and to reminisce a little on the early days of Armagh Observatory which he effectively re-founded in its present modern form. It is hard to believe that it is more than thirty years since his death, so vivid, so unforgettable is his image in my mind. I knew him since 1950 when I came to Dunsink, to my first post, and even better after I married Hermann Brück, his opposite number in Dunsink and his intimate friend (Figure 1). If Hermann were still with us, it would be he, not me, who would be here to recount their experiences as they set about revitalizing "Ireland's two once-great observatories." This year is also the fiftieth anniversary of the first Sputnik which went up in October 1957, the year that my husband and I moved from Dunsink to Edinburgh.



Figure 1: Hermann Brück and Eric Lindsay at Dunsink, 1948.

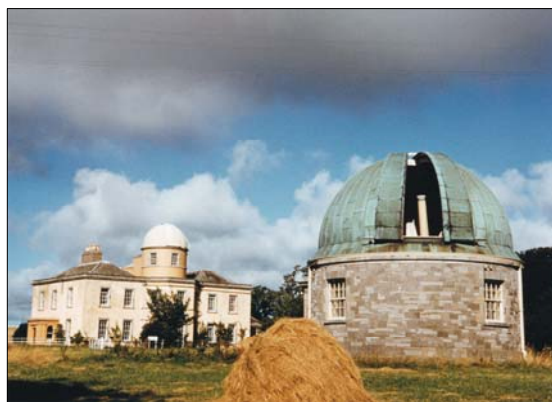


Figure 2: Dunsink Observatory in 1952.

2 ERIC LINDSAY AND IRISH ASTRONOMY

Both observatories, Armagh and Dunsink (see Figure 2), were by then fully functional, small observatories certainly, but with a good foothold on the international stage. All that transformation had come about within the previous ten years, and it is that decade, from 1947-1957, that I would like to recollect. Eric Lindsay raised Armagh from obscurity and Hermann Brück (Figure 3) did the same for Ireland's other observatory south of the border which was even more neglected, having stood idle for over a quarter of a century. The two observatories had a lot in common historically. Both were founded at the end of the eighteenth century, Dunsink around 1783 and Armagh in 1789. During much of the nineteenth century both made important contributions to astronomy, but declined rapidly in the twentieth century and ceased to have any impact. The original buildings survived, designed as observatories always were in those days as a residence for the astronomer in charge, with a telescope in its dome on the roof, so that the 'great man' could go observing at night direct from his dinner table. The buildings are still in use, though no longer family residences as they were in our time.

In the late 1930s, the young Eric Lindsay was appointed Director of Armagh Observatory. He was a product of the great Harvard school of astronomy in its golden age and Ireland's only professional astronomer; but the place he took over was woefully short of modern equipment, and in any case, he was unable to take up his duties on account of war work in London. As soon as the War was over, Eric set about realizing his dream of re-establishing his lovely historic observ-

atory as a modern institution and of doing research along the lines he had done at Harvard and at Harvard's astronomical outstation in Bloemfontein in South Africa. The adventurous solution which he worked out with his friend and former Professor at Harvard, the charismatic Harlow Shapley, involved joining forces with Harvard to acquire a new ultra-modern telescope which would be set up in Bloemfontein in order to observe the southern skies.



Figure 3: Éamon de Valera and Hermann Brück, in 1962, on one of Hermann's visits to Dublin from Edinburgh.

The advantage of South Africa—apart of course from the weather—was that one could observe from that latitude the most densely-populated areas of the Milky Way; and also our Galaxy's satellite galaxies, the Magellanic Clouds, which were, and still are, of particular interest to astronomers and cosmologists. The type of telescope that he and Shapley had in mind was a Schmidt: this is effectively a wide-angle camera; invented only in the nineteen-thirties, it solved the problem of how to produce sharp images of stars over a wide area of sky. Astronomers at the great Palomar Observatory in California were producing wonderful photographs with their large Schmidt telescope and were mapping the sky as visible from California. There was no equivalent instrument to capture the southern skies. The Lindsay scheme went further: it proposed that the project should be an all-Ireland one.

It was a bold plan. The two parts of Ireland were, officially at least, barely on speaking terms in those days; but Eric Lindsay was a devoted Irishman in the best sense of the word, and an optimist. "The stars are the same when you cross the border. There are no boundaries in the sky ..." he pointed out to the Taoiseach, Éamon de Valera (Figure 4), to whom the idea vastly appealed on political as well as scientific grounds. And he succeeded.



Figure 4: Eric Lindsay and Éamon de Valera during the early 1960s.

The story was recounted by Otto Struve, President of the International Astronomical Union, at the General Assembly in Dublin in 1955, and is published in the Union's Transactions. In the spring of 1946 a group of senior American astronomers was *en route* to Europe in order to renew contacts with their European colleagues which had been broken by the War. The group, including Struve and Shapley, found themselves stranded by fog at Shannon Airport. There, at the airport, they recognized the unmistakable tall bespectacled figure of the Irish Prime Minister who was waiting to meet important dignitaries from Rome.

The name de Valera may not mean as much to the present generation as it did fifty or sixty years ago. Eamon de Valera was the dominant figure in Irish politics south of the border for decades. He also had a serious interest in mathematics and astronomy; he had studied in his youth with the illustrious mathematician Sir Edmund Whittaker, then Director of Dunsink Observatory and Professor at Trinity College Dublin, and when he reached high office, Whittaker was his close adviser on matters connected with the revival of Irish science. De Valera founded the Dublin Institute for Advanced Studies, which includes the School of Theoretical Physics, during the War years, and he had an ambition that went back even earlier to acquire Dunsink Observatory for the nation.

Shapley promptly introduced himself to Mr de Valera, and that chance meeting in the fog at Shannon set the ball rolling. Eric Lindsay did the rest. All he put on record, in his modest way, was that it was his task to bring about the cooperation of the two Irish Governments, and that the negotiations occupied some considerable time. An agreement to provide the money for the shared telescope was signed by Mr de Valera and the Northern Ireland Minister for Finance on behalf of their two Governments. It was a triumph for Eric Lindsay's power of diplomacy, and his irresistible charm. Two historic 'firsts' were made by that agreement: it produced the world's first international telescope, and it was, reputedly, the first occasion when the two Irish Governments did business together. There is surely a lesson here: perhaps our country needs more Eric Lindsays and fewer politicians.

The practicalities at the Irish end were entirely in Eric Lindsay's hands. The telescope, known as the Armagh-Dunsink-Harvard or ADH Telescope (Figure 5), was constructed in the United States. It was completed and formally accepted by Harlow Shapley on behalf of the three participants in March 1950 in the presence of the British, Irish and South African Consuls in New York. The ceremony made news worldwide, including of course the Irish papers. When it came to installing the telescope in Bloemfontein, the responsibility fell to Eric and his Harvard colleague Bart Bok (Figure 6). Bart was a native of The Netherlands, an enthusiastic supporter of both Armagh and Dunsink, and a delightful personal friend whom my husband knew well from earlier days in Germany.

Meantime, Dunsink Observatory had been re-established, and, again, Mr de Valera was the prime mover. In 1946, just about the time the ADH plan was being sealed, Mr de Valera acquired the observatory premises, which was at the time rented out as a private residence, for the Institute. The route by which he was

then led to Hermann Brück seems to have been the grapevine: at any rate the first move was made by de Valera personally, who simply telephoned Brück at the Observatory in Cambridge saying, “Mr de Valera speaking”, and invited him there and then to come to see him in Dublin. All negotiations were done man to man; that was de Valera’s way. The re-opening of Dunsink Observatory was announced in the press on 13 October 1947, and it generated immense public interest. The Observatory would be open to the public for viewing the stars; and a world-famous Irish-American telescope was to be built in South Africa. I possess a fat book of newspaper cuttings from that period to prove it.

The reaction was the same in Armagh and Belfast. In 1948, the International Astronomical Union, that ‘United Nations’ of astronomy, held its first post-war meeting in Zurich. The papers reported that “Ireland was represented by Professor Brück, Dr Butler and Mr O’Connor from Dunsink and Dr Lindsay from Armagh.” That same summer, when Eric Lindsay’s brother-in-law, the distinguished American astronomer Carl Seyfert, gave a public lecture in Armagh, the Belfast Telegraph reported the presence of astronomers from Armagh and Dunsink observatories, as well as “... many amateur astronomers from Northern Ireland and Eire.” It is clear that from the start, astronomy—both professional and amateur—was truly an all-Ireland activity that knew no border, just as Eric had envisaged.



Figure 5: The Armagh-Dunsink-Harvard Telescope, showing Hugh Butler and Eric Lindsay, 1951.

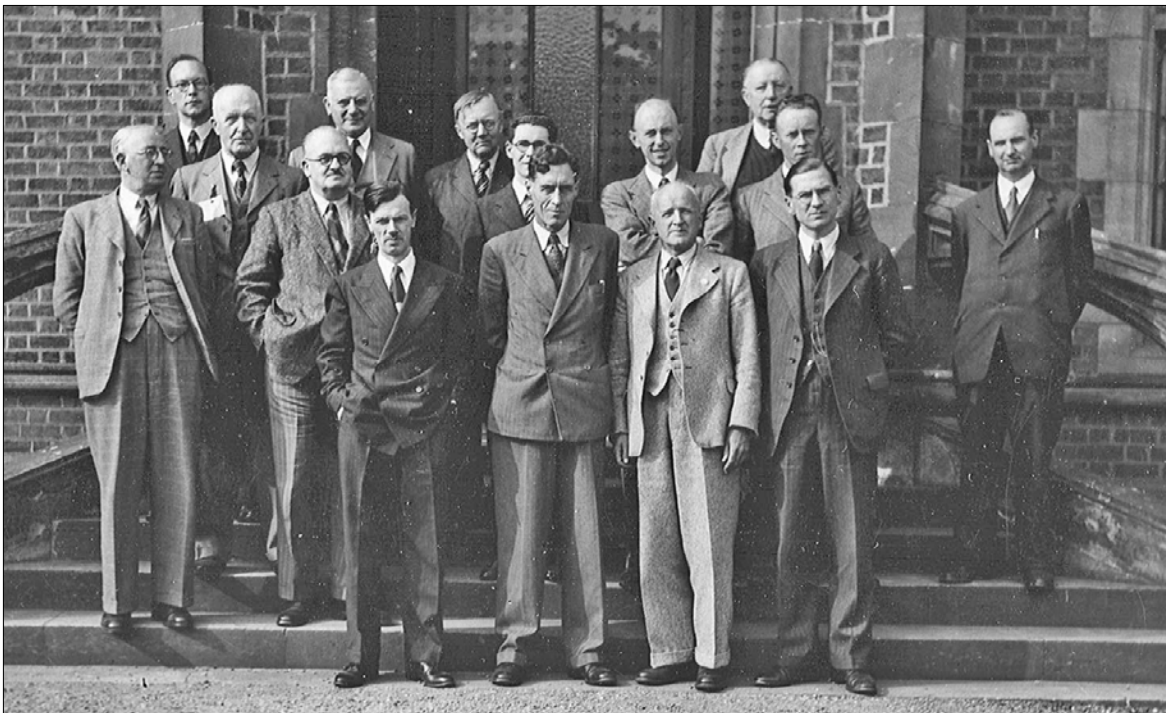
Dunsink’s tiny staff laboured on to get the old instruments working and new ones in place. When the ADH Telescope was ready, Harvard and Armagh had the first observational stints. Then it was Dunsink’s turn, and Hugh Butler, the Chief Assistant, spent several months in Bloemfontein in 1951-1952, with Eric, who had stayed on to introduce him to the instrument and to work with him.



Figure 6: Bart Bok together with the Dunsink Observatory staff, taken in Hermann Brück’s office during Bok’s visit in July 1953. The entire staff is included. Left to right: Gwen Butler, Peter Brück, Máire Brück, Bart Bok, G. McGreevy (vacation student from St. Patrick’s College, Maynooth), Gordon Thompson, Fred O’Connor, Patrick Murphy (Technician), and Hugh Butler.



Figure 8: Meetings of the Irish Astronomical Society around 1950: Society Dinner in Dublin on 7 May 1951 (above), and visit of the Society on 14 May 1949 to Queen's University Belfast (below). Many of the people in the upper image can be identified by comparison with the same image reproduced on page 26 in James O'Connor's book *The Irish Astronomical Society: A History, 1937-2006* (2006). Similarly, the lower image shows in the front row (left to right): Eric Lindsay, Patrick (later Lord) Blackett, Richard Hayward and Hermann Brück. Other members present include Muiris Maclonnraic (extreme left), Vincent Deasy (extreme right), John H. McElderry (third from left), Ernst Öpik (middle, back row), and Hugh Butler (behind Richard Hayward).



Hugh's photographs were, in the main, beautiful celestial vistas which were copied and displayed in our Visitors' exhibition (e.g. Figure 7). Dunsink's second stint, in 1955, was manned by Gordon Thompson, a young assistant, a native of Belfast. He observed several open star clusters in the Milky Way for the Dunsink programme, but the analysis of these photographs could not be completed at the time for want of certain auxiliary data. These were not available for some years; and the work was actually finished in Edinburgh; so, though I myself never used the ADH Telescope, I can say that I did have a small share in the results that came out of it. The ADH Telescope, as you will hear presently, figured dominantly in the Armagh and Dunsink research programmes for the rest of its existence.

The enthusiasm for astronomy in Ireland never flagged: every comet announced, every eclipse, every meteor shower, every sunspot or aurora borealis was of interest and was snatched upon by the media. A new 'buzzword' I hear today to describe the task of engaging the interest of the public in science is 'outreach'. We had no need of such exhortation in the 1950s. We had the Irish Astronomical Society, an enthusiastic amateur group that had existed for several years in Dublin, and whose story you will shortly hear about from James O'Connor, the society's historian.

The Society was an undoubted factor in the renaissance of Irish astronomy. Eric Lindsay was an ardent believer in the importance of amateur collaboration in astronomy, as you will hear, and on his urging, the Society extended its activities to include fellow star-lovers in the North. "The success of any society or indeed community," said Eric, "depends on those few whose idealism finds expression not in getting, but in giving." The Society had branches in Dublin and Belfast, and soon also in Armagh, Derry, and for a while in Clonmel. Eric Lindsay was designated President and H.A. Brück Vice-President. Brück gave lectures to the Society in Dublin, Armagh and Belfast in January 1948, and in April, the newspapers reported that "... close on 100 members of the Irish Astronomical Society from Dublin, Belfast and Armagh toured the Observatory at Dunsink." In June the Society met at Armagh; and so on, in different venues (Figure 8).

When the Royal Astronomical Society of London ventured with some trepidation to hold its first meeting on foreign soil in 1950 (Figure 9), it was the Irish Astronomical Society, not the academic establishment, that organized the Public Lecture by the Astronomer Royal, Sir Harold Spencer Jones. The Lecture was crowded out, like a pop concert. It was about this time, too, that Eric Lindsay suggested a planetarium for Armagh which he hoped would be another all-Ireland educational institution. In the event, this special ambition of his took a long time to materialize, and Eric personally raised the funds without support from the Irish Government.

The *Irish Astronomical Journal*, the Society's own magazine, was founded in 1950, with an editorial board consisting of Brück and Lindsay, representing the two Irish Observatories. It was a splendid example of active collaboration of professional and amateur astronomers, and, on another level, of the united character of science in a politically but not intellectually divided Ireland. The design of the cover by the young

gifted Belfast artist Raymond Piper showed the two observatories linked by the ADH Telescope, symbolizing this collaboration (Figures 10 and 11).



Figure 7. The Large Magellanic Cloud, photographed with the Armagh-Dunsink-Harvard Telescope.

The journal survived, despite many vicissitudes, until the year 2000. When we left Dunsink in 1957, we were both made Life Members of the Society. I am delighted to say that I am still a member, possibly one of the oldest by now, and that I have been receiving my regular newsletter without fail all these fifty years.

Our personal links with Armagh Observatory also endured. In the Dunsink era, my husband and Eric Lindsay were members of each other's Boards of Governors; they saw each other frequently, supported each other, and spoke often on the telephone. When we moved away, Eric invited Hermann to stay on as a Governor of Armagh Observatory, and this he did, not only throughout Eric's lifetime, but for many years afterwards, until the toll of age made travelling difficult, a total of 35 years.



Figure 9: RAS visit to Dunsink in 1950. Shown (left to right) are Máire Conway (now Brück), Professor Guthrie (Magee College), Dr Featherstone, Professor W.H. McCrea, Dr M.A. Ellison, Dr D. Menzel, unidentified, Col. K.E. Edgeworth.

When Eric died, the tributes of his staff and friends in astronomy at home and abroad were published in a special number of the *Irish Astronomical Journal* in 1975. The 20 plus contributors vied with each other to find words to express their memories of him: joyfulness, cheerfulness, humour, warmth, optimism, charm. I would like to read out all of what my husband wrote, but here is an extract that I think sums it up:

Eric's many astronomical plans and activities owed much of their success to his remarkable personality, to his great charm which everyone felt with whom he came in contact. His manner won him friends all over the world; it was simply impossible not to like Eric. He found it easy to establish happy personal contacts with people of all sorts, and personal relations were what mattered to him. He was fortunate, of course, in living at a time when relations between people could still play a major role in science, when the new bureaucracy had not yet taken over.

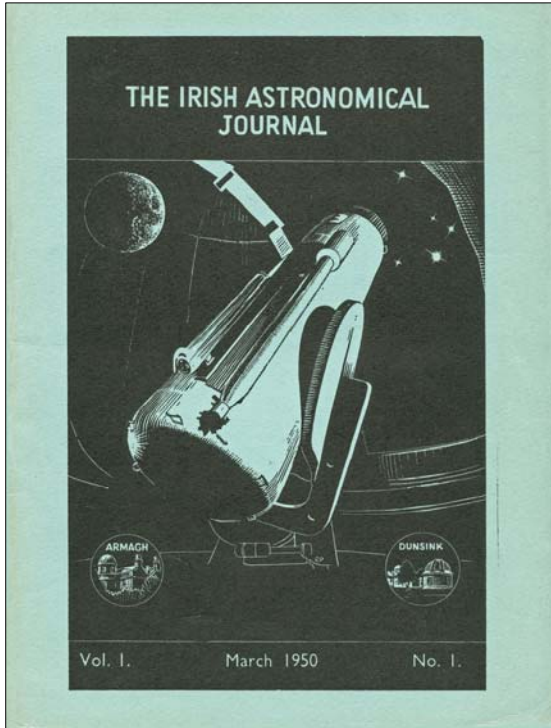


Figure 10: The cover of the *Irish Astronomical Journal*, designed by the Belfast artist Raymond Piper.

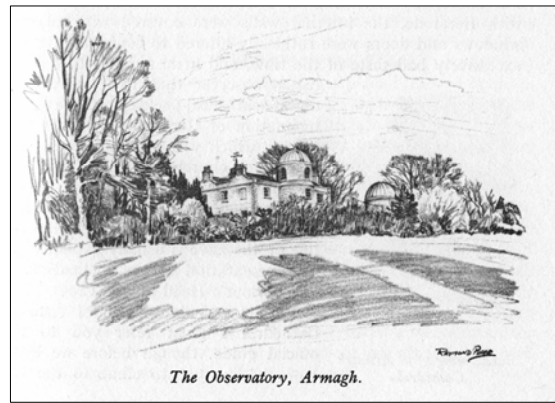


Figure 11: Piper's drawing of the Armagh Observatory, part of which was used on the cover of the *Irish Astronomical Journal*.

I would like to see that volume reprinted, as there is little any of us here can add to the picture of Eric Lindsay given there by his contemporaries who wrote with full hearts. What we can do, however, is to recognize his legacy, and the manner in which his spirit continues to pervade the Observatory which he virtually founded.

Mary (Máire) Brück, formerly Senior Lecturer in Astronomy at the University of Edinburgh, now retired, began her astronomical career at Dunsink Observatory, Dublin. She is a member of the Editorial Board of the *Journal of Astronomical History and Heritage*, and is an Honorary Fellow in the College of Science and Engineering, University of Edinburgh. She has a special interest in women astronomers of the past, and is the author of *Agnes Mary Clerke and the Rise of Astrophysics* (CUP, 2002).