In Memoriam

Jim Hysom (1933–2017): An appreciation

Edmund James (Jim) Hysom was a leading UK optical expert, a lifelong member of the BAA, a long-term member of Council and Director of the Instruments & Observing Methods Section from 1973 to 1981. He was known to many members through his company, Astronomical Equipment (AE) Ltd., which was renowned for the high-quality optics it produced. He was also a great character, always full of stories about past and present acquaintances.

Jim began life at The Red House in Harpenden, Hertfordshire, on 1933 Nov 26. At the time his parents were living in nearby Kimptom running a café. They later moved to the Plough & Harrow in Southdown, Harpenden. Jim attended Manland Primary School and did well, but he deliberately failed his 11+ exam after realising that his parents could not afford the uniform for a grammar school. He completed his education at Manland Secondary Modern.

He was elected to the BAA just after his 16th birthday, on 1949 Nov 30, and in 1950 he made his first 6-inch *f*/8 mirror. Around that time he met Jean Thompson, and they became engaged at the end of 1950. They married in 1958 and had three sons: Colin, Iain and Malcolm. In the 1950s, Jim was a member of our Lunar Section and contributed drawings to its periodical. In later years he would send in occasional observations to other Sections, and sometimes he made use of the telescopes of Cambridge University Observatory, but he will always be remembered for *making* telescopes and optics.

At the age of 21, in 1954, Jim spent his deferred National Service on Gibraltar, operating radar sets and enjoying telescope views over the Straits to the African coast. After completing his National Service he returned home, and the Hysoms bought their first house in Woodmansterne, Surrey.

Jim Hysom in his workshop, holding the tool used for polishing large mirrors. ***(Taken from a 1991 video by Martin Mobberley.)***

In 1957 Jim joined the firm of Cox, Hargreaves and Thomson, a company which specialised in making difficult optics for industry and science. Indeed, Jim's first task was to make three 11¼-inch plane parallel windows for the Woomera rocket testing site. The company had come about through a collaboration between three practical opticians: H. W. Cox, who had made Schmidt cameras for amateurs; F. J. Hargreaves, the famous planetary observer who had formerly made telescope optics for friends; and J. V. Thomson, who had actually helped with the finishing of the 200-inch mirror for Mount Palomar Observatory as well as making a 36-inch mirror for its spectrograph. All three had given talks and were well known at BAA meetings. Their company made numerous large mirrors, and refigured some historical ones such as the 30-inch made by Andrew Ainslie Common that was later used at the Royal Greenwich Observatory.

In 1962, together with John Mortleman and J. V. Thomson, Jim moved on to become a founder and director of Optical Surfaces (OS) Ltd., in Kenley, Surrey. OS specialised in making optical flats and, later, specialist optics such as off-axis paraboloids, expanding into the spectrographic and defence markets. In an obituary of Thomson written in 1997, Jim noted how he had stayed with the company right up to the time of his death.

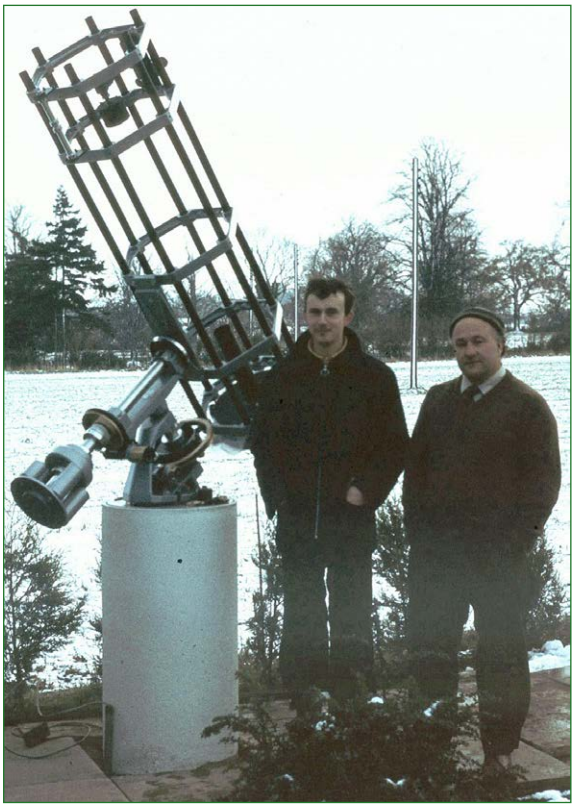
Jim had done a Higher National Diploma in chemistry at what was then Luton Technical College, but his real interest was in astronomy and telescope-building. In 1966 he was elected to Council and, in the same year, set up a new company called Astronomical Equipment (AE) Ltd., with his brother Rob. The company occupied a five-storey ex-hat-factory in Guildford Street, Luton, which was reputed to be haunted by the victims of a fire which had occurred there many years before. Rob ran the mechanical workshop, well prepared with a background in aircraft and missile work at De Havilland, while Jim became head of the optical department, making high-quality optics and acting as the 'front man', who talked to the customers.

By 1971, as business demands were too large for the original factory, operations were moved to Ox Lane in Harpenden. Telescopes and other instruments were designed by Cliff Shuttleworth, built by Rob and his team, and fitted with optics from Jim and his group of opticians. The famous 14¼-inch mirror made by Hargreaves was hung on the ceiling to act as a collimator. Following Jim's death it was acquired by the Association.

Collectors of older issues of the BAA *Handbook* will find a full-page AE advert within its pages, often accompanied by an illustration of a telescope they had provided for a major observatory. In 1977 Jim created a separate company, AE Optics, while Rob managed the other half of the business, which was later renamed AE Engineering. AE Optics moved to Cambridge in 1986. In the later AE catalogues and adverts it is mentioned that around one-third of universities and polytechnics in the UK had installed AE telescopes, and that many AE optics were also to be found in aerospace and industrial groups as well as government laboratories.

Of the authors of this piece, Reid worked with Jim professionally for years, while Mobberley and McKim both had dealings with Jim and Rob in purchasing telescopes and optics. Jim was always keen to know the results his amateur friends had obtained. Upon being shown some nice drawings or images he would say that it warmed his heart to see his optics being put to such good use.

A gathering of famous opticians in 1998: From left to right: Norman Walker, Jim Hysom, David Sinden and John Wall. ***Bob Neville***



Martin Mobberley (left) with Rob Hysom and a newly installed 14-inch AE telescope at Mobberley's home on 1980 Dec 6.

Jim had various formulae for calculating the price of non-standard optics not listed in the AE catalogue, and the principle was once disclosed to one of the authors, who wanted to buy a set of 16-inch *f*/4.5 Dall–Kirkham optics. The last available list had given the price for a 14-inch *f*/5 set six years earlier and, after a small allowance for inflation, a correction was made for the increased degree of asphericity. The factor to be applied was $(5/4.5)^3$ or 1.372; this underestimate for the greater difficulty of the job was reduced by Jim to a mere 1.05. Next, to allow for the diameter difference, Jim applied a factor of $(14/13)^{2.7}$, explaining that Dr Ira S. Bowen of Mt. Wilson and Palomar had also used this factor for such estimates. But having arrived at a final price, Jim explained that as he knew the author and approved of what he would probably do with the telescope, a 15% or even 20% reduction could immediately be applied! Many amateurs were grateful for this generous dispensation, while professionals were charged more.

In 1973 Jim became the Director of the BAA Instruments & Observing Methods Section, succeeding another well-known telescope and mirror-maker, George Hole. It was in this role that he became familiar to many BAA members, dispensing friendly advice which helped many of them to build their own telescopes, a practice far more common then than it is today. Many BAA members would either build telescopes based upon Jim's advice or buy them complete from his company.

Of course, AE Ltd. would also refigure optics; one of us took them a plate glass 12-inch mirror made by a very well-known amateur maker, which did not quite seem up to scratch. The other problem was that it had received a chromium overcoat on top of the aluminium, which was reluctant to dissolve in acid. Jim of course knew the trick for removing it, and the company refigured and re-aluminised the mirror with beautiful results, minus the unwanted turned-down edge. Indeed, Jim knew all the opticians of his day: the good ones and the few charlatans.

Jim enjoyed several more sessions on Council after handing on the directorship to Henry Hatfield; since 1981 the Section went through further changes of title, more than any other Section. However, Jim was dismayed by the highly charged atmosphere on Council during 1987, when the post of President was contested. He never stood for re-election after that. The death of his mentor Horace Dall in the previous year, a regular Council attendee, was another factor in Jim deciding to end his BAA Council presence.

But Jim happily took on one more task for the BAA, to write a comprehensive history of the Instruments & Observing Methods Section for the 'Second fifty years' *Memoir* on the occasion of our centenary in 1990. This engaging chapter demonstrates a complete mastery of the subject, its history and personnel. In listing many contributions by such figures as Dall and W. H. Steavenson, he modestly referred to only one of his own papers written for our *Journal*, 'Air currents above mirrors' [**82**, 274–278 (1972)]. There were of course numerous others: optical tolerance, telescope drives, a temperature-compensated mirror cell, astrophotography, *etc*. Another very interesting paper written for the *Journal for the History of Astronomy* [**27**, 349–352 (1997)] gave the results of Jim's tests upon some of William Herschel's original mirrors at the Old Royal Observatory. It was entirely appropriate that Jim received the BAA Horace Dall Medal in 1999.

Jim Hysom was not only a master optician and a polymath, but an endless source of entertainment. He was never short of amusing stories about Horace Dall (who had lived nearby in Luton), Patrick Moore, Frank Hyde, Colin Ronan and other BAA characters whom he had encountered from the 1950s onwards. He was also a great BAA character himself. He was an avid book collector, buying books every week and always visiting bookshops. While many were on astronomy and optics, he was also fascinated by philosophy, the mind and quantum theory. His study was filled wall to wall with books, and piles of these were two feet high on the floor as well; not only on the study floor, but on the living room and corridor floors too. In his later years, Jim was heavily involved with his local astronomical association in Cambridge. He was also a great supporter of the SPA, and his services to them have been noted elsewhere.

Jim suffered a stroke in his last few years, though he partially recovered from it. It was with very great sadness that his many friends learnt of his death, aged 83, on 2017 Oct 4. His funeral service in Cambridge was well attended by astronomer friends. It is comforting to know that Jim's work will live on at many of the world's observatories, both great and small, in the many optics and telescopes that he helped to create.

Nick James, Richard McKim, Martin Mobberley & Es Reid

Jim Hysom relaxing in the library of Cambridge University Observatory, 2005. *Martin Mobberley*