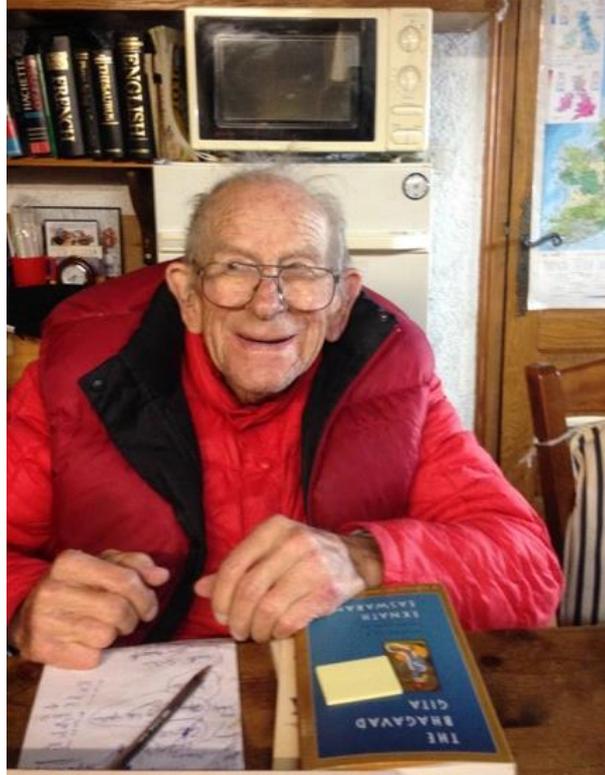


## Obituary: Professor Martin Aitken (1922 – 2017)

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**Martin Aitken**

11 March 1922 – 15 June 2017

### Remembering Martin Aitken

Several obituaries have been written for Martin Aitken, but here we focus on his key contributions to the field of luminescence, his influence on the community and the ‘Aitkenesque’ quirks which all who worked with him will remember well.

Martin inherited a very practical disposition, born into a line of fen farmers with his father and elder brother taking up careers in engineering. At school he thrived in the Boy Scouts and became a Home Guard in the early days of the war. He won a bursary to the University of Oxford to study physics-with-radio but before completion became a ground Radar Officer in the RAFVR, serving in Ceylon, India and Burma. Anyone who visited the Research Laboratory for Archaeology and the History of Art (RLAHA), 6 Keble Road, will remember the incessant morse-code buzzing: each lab member had their own personalised buzz-code and so could

be called to the phone wherever they were in the rabbit-warren of a building. This was one of Martin’s very practical implementations.

After the war Martin moved back to Oxford to complete his studies and in 1947 married Joan, who he had met at one of the radar stations. He went on to complete a DPhil. based on the development of a 120-MeV electron synchrotron in the Clarendon Laboratory. However, in 1957 he joined the newly-formed RLAHA - Martin’s desire to work in an area where ‘individual effort could still be effective’ will resonate with many in the luminescence community.

When Martin first joined the RLAHA the areas of research were limited to radiocarbon dating and resistivity surveying. By the time he retired in 1989 the Laboratory was the recognised world-centre for ‘archaeometry’, embracing many branches of science. Martin, together with the Laboratory’s first Director, the late Teddy Hall, supplied the key

impetus for this success. Martin could be a hard task master, and many of his 11 MSc. and 12 DPhil. students will attest to the expectation that their dissertations would stand up to the highest level of scientific scrutiny. The depth of knowledge he expected from his students was evidenced by his comment that “PhD students are no use until after three years”.

Martin’s first projects involved successful use of a proton magnetometer, pulsed induction detector and fluxgate gradiometer for archaeological magnetic prospection. After a few years he moved on to laboratory archaeomagnetic measurements of field direction, and later field intensity. Martin worked on the development of the first cryogenic SQUID magnetometer in Britain, and his interest in this field continued until his retirement.

In the early 1960’s a member of the Laboratory’s governing committee returned from a visit to California where at UCLA he had been greatly enthused by the use of TL for ceramic authentication. TL was chosen as thesis topics for two students (Mike Tite and Jeanette Waine) and an abstract submitted for a conference in Rome. It was somewhat embarrassing when Martin heard shortly afterwards that TL authenticity testing had been abandoned at UCLA due to frequent false positives from unidentified causes! However, Martin and his team persisted, implementing a suggestion from a visiting geologist to suppress the non-radiation-induced TL by use of an inert atmosphere and ‘the rest is history’.

Martin and his growing team of researchers then designed and constructed the first practical TL glow oven (the “Alldred set”), subsequently commercialised as the well-known “Littlemore TL glow oven”, and used these advances to pioneer TL dating techniques for burnt flint, calcite and windblown sediment. This enabled the dates to reach back beyond the range of radiocarbon to the lower palaeolithic period, greatly raising the profile of TL dating. The range of datable materials was extended to volcanic products and Martin’s interest in magnetic reversals and the Laschamp Geomagnetic Event led him to the Chane des Puys in the Auvergne region of central France. This was also the region of the infamous Glosel archaeological site which initially gave TL a bad rap, but was later resolved as a complicated mix of Gallo-Roman, medieval and modern-era objects. It was here that Martin and Joan fell in love with the countryside (and wine!), subsequently settling in a small hamlet in the Monts de Forez in retirement.

Martin and Joan lived for forty years in the picturesque White Cottage in Islip, just north of Oxford. Staff and students will remember many excellent lunches there on the banks of the River Cherwell, and the obligatory visit to see the pet goat. They may also remember the tour conveniently ending at the cloak closet where coats had been left on arrival!

In 1985 Martin began his last major research thrust. Enthused by the landmark optical dating paper by Huntley et al. in *Nature*, Martin immediately set up a team to investigate and apply the new technique. For the four years until his retirement the RLAHA led the development of the tech-

nique, investigating applications to feldspar and zircon, and developing the core quartz dating protocols which remain until this day. The optical dating research was centred in the “Laser Hut” out in the car park at the back of the RLAHA. The Laser Hut was heavily used during that period, starting with a recurring 7:00 am booking by Martin during which he would eat a garlic sandwich for breakfast. Martin’s car was to be avoided in France as he had the penchant to stop and buy fresh garlic from local farmers. Martin had a pretty good appreciation of food and always tried to plan or attend field-work which was within convenient lunchtime travel distance of a good restaurant, particularly when in France.

Martin was always very open and generous towards other researchers and genuinely desired to propagate his research around the world. For example, he had a standing purchase arrangement with EMI for about 20 years to ensure that RLAHA got any 9635Q PMT produced which was “A” standard with very low background counts. Whilst most of these were used within his lab, over time many were donated to other laboratories. The ‘Aitken academic tree’ has been published elsewhere and shows just some of the links to current luminescence research across the world.

China held a warm place in Martin’s heart. He had received an invitation out of the blue through the Royal Society and visited only a few years after the downfall of the Gang of Four. Yielding to marital pressure, Martin requested that Joan accompany him and the request was granted on condition that she gave a course of lectures on the use of English. He recounted that she was in the room next to him and he was repeatedly distracted by the bursts of laughter from next door. Martin and Joan visited China several times over the years, and Martin’s favourite outfit was a Chinese suit. He wore it once when visiting his first Chinese student in Oxford (Li Sheng Hua). He was greeted by ‘Ah, very fashionable’ and his face lit up until after a pause Sheng Hua added ‘30 years ago’.

Martin published over 150 papers, but is best known for his textbooks. *Physics and Archaeology* (1961, second edition 1974) was followed by the TL dating ‘bible’, *Thermoluminescence Dating*, in 1985. His book on *Science-Based Dating in Archaeology* (1990) immediately became a standard undergraduate text, and he followed up with *Introduction to Optical Dating* in 1998. Martin was quietly proud of his books, in particular that *Physics and Archaeology* had given him access to the inner circles of the Chinese elite. He was due to visit China again at the time of release of his seminal TL dating book in 1985 and he badgered the publishers to courier an advance copy to him so he could take it on his travels. On its arrival he was so keen to read it that it accompanied him even to the loo, but unfortunately the book slid from under his arm and the lab staff spent the rest of the day drying it out. In subsequent years students visited that same loo to ceremoniously christen theses immediately before their viva.

Martin also instigated two enduring conferences. He preferred the term ‘symposia’ as this implied an opportunity for informal discussion over refreshments. The first of these

evolved into the International Symposium on Archaeometry and the second was the Specialist Seminars on TL at Oxford which morphed into the current International Conference on Luminescence and ESR Dating. He also started the journal *Archaeometry* which began as a cyclostyle duplicated Laboratory Bulletin in 1958, and remained editor for many years.

In 1983 Martin was elected a Fellow of the Royal Society, and in 1985 made the ad hominem Chair of Archaeometry at Oxford. He won the Gemant Award from the American Institute of Physics and the Pomerance Award of the Archaeological Institute of America for scientific contributions to archaeology. These accolades attest to the breadth of his research endeavour and his success in applying hard science to often complex problems. He sometimes called himself 'the 10% man', emphasising the need to forget about the majority of the complications and to concentrate on the priorities. This meant that he could take an analytical approach to find solutions which worked even when he didn't fully understand the physical processes, and so move forward while leaving later researchers to tease out the detail. Many of us who follow his footsteps in luminescence research will appreciate his vision, achievements and impact on our lives.

Barnaby Smith, Nigel Spooner and Danielle Questiaux

## Martin Aitken's contributions to *Ancient TL*

Several obituaries for Martin Aitken list his complete bibliography. Here I want to focus on his contributions to *Ancient TL*. Martin Aitken briefly served as the Editorial Caretaker after Steve Sutton moved on to other research. Martin Aitken and Ian Bailiff worked together on Volume 2, Issue 2 (September 1984), before Ian Bailiff took over production. He reviewed numerous manuscripts and authored or co-authored 13 articles. Many of these articles were landmark papers for luminescence dating and were later integrated in his books. The most notable among them is his work with G. Adamiec on dose rate conversion factors, which has been cited more than 600 times since its publication.

Regina DeWitt

## Bibliography

- A.K. Singhvi and M.J. Aitken. *Americium - 241 for Alpha Irradiations*; *Ancient TL*, 1978, No.3.
- M.J. Aitken. *The alpha particle response of fluorite*; *Ancient TL*, 1979, No.9.
- M.J. Aitken, G.D. Bussell and H.S.T. Driver. *Zero-glow Monitoring (ZGM)*; *Ancient TL*. 1979, No.9.

M.J. Aitken. *TL dating in China*; *Ancient TL*, 1980, No.13.

M.J. Aitken. *Non-linear growth: allowance for alpha particle contribution*; *Ancient TL*, 1984, Vol. 2, No.1.

M.J. Aitken. *Alpha particle effectiveness: numerical relationship between systems*; *Ancient TL*, 1985, Vol. 3, No.3.

M.J. Aitken. *Alpha dose to a thin layer*; *Ancient TL*, 1987, Vol. 5, No.3.

M.J. Aitken. *Pairs precision required in alpha counting*; *Ancient TL*, 1990, Vol. 8, No.2.

M.J. Aitken and J. Xie. *Moisture correction for annual gamma dose*; *Ancient TL*, 1990, Vol. 8, No.2.

J. Xie and M.J. Aitken. *The hypothesis of mid-term fading and its trial on Chinese loess*; *Ancient TL*, 1991, Vol. 9, No.2.

M.J. Aitken. *Symbols in TL and optical dating: provisional list*; *Ancient TL*, 1992, Vol. 10, No.1.

G. Adamiec and M. Aitken. *Dose rate conversion factors: update*; *Ancient TL*, 1998, Vol. 16, No.2.

N.A. Spooner, D.G. Questiaux, and M.J. Aitken. *The use of sodium lamps for low-intensity laboratory safelighting for optical dating*; *Ancient TL*, 2000, Vol. 18, No.2.