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# Ancient TL

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## Ancient TL

### 40 Years of Ancient TL

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#### Abstract

The first issue of *Ancient TL* was published in September 1977, 40 years ago. The journal was started by the late David Zimmerman at Washington University in Missouri (USA) as an informal newsletter for thermoluminescence practitioners. Since then editors Steve Sutton (then Washington University; editor until 1984), Ian Bailiff (Durham, UK; 1984–1994), Didier Miallier (Clermont-Ferrand, France; 1995–2004), Geoff Duller (Aberystwyth, UK; 2004–2014) and Regina DeWitt (Greenville, NC, USA; since 2015) have continued the tradition and continually modernized the journal. Despite many changes the scope of the journal has been and still is to provide the luminescence and ESR community with ideas and essential information for laboratory work and serve as an outlet for community news.

#### Birth of the Ancient TL Newsletter and the Washington University TL Laboratory (1977–1984)

by Steve Sutton

Ancient TL began as an informal newsletter for thermoluminescence practitioners initiated in 1977 by David Zimmerman at Washington University (WU) in St. Louis, Missouri, USA (Figure 1). In the beginning, it was hand-typed (Figure 2, left; with camera-ready contributions

included), duplicated, and mailed in hand-stuffed envelopes. It contained short articles, announcements, publication lists and job openings. The mailing list contained about 30 names.

But the story began long before that. A native of Wisconsin, David attended the University of Wisconsin at Madison where he received an MS degree. David did his doctoral work at Oxford University receiving his DPhil in 1970 for his thesis entitled “The dependence of thermoluminescence on energy and type of ionizing radiation and its significance for archaeological age determination.” He met his wife Joan there who was also completing a DPhil on thermoluminescence properties. Both were working in the Research Laboratory for Archaeology and the History of Art directed by Martin Aitken.

In 1971, David and Joan moved to the Physics Department at WU and even shared an office for a time. They worked in the McDonnell Center for the Space Sciences led by Robert Walker. Prof. Walker had an interest in dating methods stemming from his groundbreaking work on fission track methods (Fleischer et al., 1975). Prof. Walker enlisted both David and Joan (and others) to develop a TL lab primarily for studying the radiation and thermal histories of lunar samples being returned by the Apollo astronauts, but also to develop an archaeological dating capability.

The TL effort was supported by NASA and NSF research grants. In 1973, the WU group received a NSF-EAR grant entitled “Study of Geological Materials by the Methods of Particle Tracks, Thermoluminescence and Rare Gases.” which together with NASA support got the TL effort going. The NSF support was ongoing through the early 80s. There was also an NSF-Anthropology grant in 1979 on “TL Dating



Figure 1. The late David W. Zimmerman (far right), senior research associate in physics and director of the Center for Archaeometry, studies a “glow” test for dating an ancient object with Charles Melcher (seated), a graduate student in physics, and Steve Sutton, space engineer, McDonnell Center for the Space Sciences. Reprinted from Washington University Record (Book 120, 1978)

in Archaeology” with Walker as the Principal Investigator. In the early 70s, there was a diverse array of TL projects ongoing, many related to PhD theses. The “extraterrestrial” component was measuring lunar rocks and cores (Phil Hoyt and Tony Plachy) as well as the radiation exposures of meteorites (Chuck Melcher). David was more interested in archaeological applications and was focusing on TL dating methods development with the help of Margie Yuhas and me.

Zimmerman’s efforts led to the establishment in 1975 of “The Center for Archaeometry” at WU which formalized the activities related to the application of scientific methods in art and archaeology. The Center involved not only the TL dating effort but also an art conservation collaboration already in progress involving a local conservator (Phoebe Weil), and WU chemists (Peter Gaspar), anthropologists (Patty Jo Watson) and physicists (Walker) (see accompanying WU Record

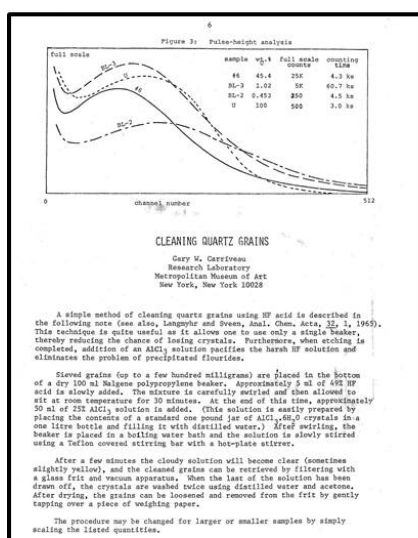


Figure 2. Example pages from the very first issue from 1977 (left), Vol. 7 no. 3 from 1989 (center) and Vol. 33 no.1 from 2015 (right)

article in Supplement 1). Other members included curators of the St. Louis Art Museum just down the road (Richard Cleveland, Lee Parsons), an association that led to rewarding TL dating/authentication applications. The Ancient TL newsletter grew out of this Center.

When David died in November of 1978 (see accompanying WU Record article in Supplement 2), I continued producing the newsletter. I worked on various TL projects including dating Midwest shards for National Park Service and completed a PhD on TL of shocked rocks from Meteor Crater including dating the crater.

Ancient TL Vol. 2 no. 1 (1984) was the last issue published by WU at which point I moved on to other research and Ian Bailiff (Univ. of Durham, UK, Figure 3) took over as editor. The TL apparatus was donated to William Cassidy at the University of Pittsburgh who was leading the ANSMET project, the US Antarctic meteorite search.

The birth of Ancient TL was an exciting time at Washington University and I will always remember it fondly.

## Ancient TL in Durham (1984–1994)

by Ian Bailiff

It was with some hesitation that I agreed to be persuaded by Ann Wintle to take over the production of Ancient TL from Martin Aitken who was acting as the Editorial Caretaker while a new home was found for the newsletter. At that time my laboratory was based in the attic room of the Fulling Mill on the banks of the River Wear in Durham and, although in an idyllic setting, it required a ca 50 m hike up the banks to reach my department and to access its resources. This was towards the end of an era where even the innovative development of “word processing” was something done on an electric typewriter where the typist often needed an array of “golf ball” type heads to type anything more sophisticated than an equals font. To produce the early issues,



Figure 3. Ian Bailiff

papers were re-typed, printed, cut blocks of text, insert headings with the now forgotten “Letraset”, and all pasted with “artwork” (figures) onto master pages that were submitted for offset lithographic printing. Fortunately 1985 was the year a Mac landed on my desk and with the availability of Word we could set about page layout resembling the word processing packages of today (Figure 2, center), and we progressively made use of the advances provided by PCs and their word processing software. In 1989 we acted on an excellent suggestion made by Ashok Singhvi to help transform the newsletter into the format of a small journal by producing it within covers as a stapled booklet. At the outset of its move to Durham, the Editorial Board agreed to set up an open reviewing system and this provided the means to rapidly publishing material sent to the newsletter (as it was at that time). We also set up a system for publishing (thermo) luminescence dating results in the form of the Ancient TL Date List. During the decade of its production in Durham, Ancient TL was sustained by valuable contributions from members of our community as authors and reviewers, and it was intended that the publication should provide a platform for work that could be subsequently submitted to one of the major journals. As well as having the opportunity to air vexed issues such as functions fitted to dose response curves and present new ideas such as the lateral thinking of the Australian slide method, the beginnings of many aspects what we now take for granted - LED light stimulation sources for example - are also seen on the pages of Ancient TL.

## Ancient TL in Clermont-Ferrand (1995 - 2004)

by Didier Miallier

Ancient TL was edited by the TL group of Clermont-Ferrand in France (Laboratoire de Physique Corpusculaire, LPC, Université Blaise Pascal) between 1995 (Vol. 13 no. 1) and 2004 (Vol. 21 no. 2). Its production was held by a staff composed of Jean Faïn, Didier Miallier, Thierry Pilleyre and Serge Sanzelle. Jean Faïn (Figure 4) was responsible for finances. He very sadly left us on July 2nd 2010, and we want to take this opportunity to commemorate him. All those who met him, appreciated both his high human qualities and deep expertise in physics. We must also mention Ann Wintle who significantly helped us by compiling comprehensive bibliographic lists which were regularly published in Ancient TL.

Ancient TL at Clermont continued the preceding edition at Durham, as well in content as in presentation. We only just dared to slightly modify the colour of the title caption so as to personalize the Clermont edition. Incidentally, the first batch of printed covers ever produced appeared to have a basis weight which was too high for being correctly assembled with the inner pages, so that we had to order lighter ones. Consequently, our stock of unused wrong covers still provides us with convenient folders. We were not specialists in page layout, and therefore the presentation of the articles was





Figure 4. Jean Faïn

often the result of a plodding fight with a word-processing program that we did not completely control.

In 1995, the number of subscribers, either institutional or individual, was 47 from about 20 different countries. At the time, all correspondence took place by post, since e-mail was only at the onset of its reign, and many subscribers kindly used to stick nice stamps on the envelopes, for the pleasure of stamp collectors among our colleagues. Also, the manuscripts were recorded on diskettes, which were sent with more than a single stamp because they were heavier than a simple letter (thanks once again to the authors on behalf of stamp collectors!).

The first issue ever published in Clermont-Ferrand (1995), was introduced by a short “tribute to Ian Bailiff on his retirement as Editor”, co-signed by Martin Aitken, Vagn Mejdahl and Ann Wintle, as members of the Editorial Board of *Ancient TL*. This tribute outlined that Ian had been Editor for a decade before passing on the torch to us, and that he had “substantially raised the publication’s profile as well as its importance as a means of communication within the luminescence and ESR community”. This tribute was concluded by a Welcome to the Clermont team “as worthy successors”. We have been deeply touched by this mark of confidence.

To some extent, by transferring the edition of *Ancient TL* to Clermont Ferrand, Martin Aitken, Vagn Mejdahl and Ann Wintle also wanted to acknowledge their attachment to our region, Auvergne. Actually, the three of them had produced important scientific contributions based on cases from Auvergne. In 1973, Ann Wintle revealed, for the first time, the existence of anomalous fading with the thermoluminescence of feldspars from the volcanoes of the Chaîne des Puys, near Clermont-Ferrand. In 1979, the first successful attempt at dating ancient volcanoes by TL was done by Joan Huxtable and Martin Aitken in the surroundings of Clermont-Ferrand. Their results were published in *Nature* (Wintle, 1973; Huxtable et al., 1979). Also Martin came several times to Auvergne, from around 1975 onwards, for trying to elucidate the controversial archaeological settlement of Glozel, in close collaboration with Doreen Stoneham. At Glozel, they could meet Vagn Mejdahl, who involved himself very eagerly in the dating of the so-called Glozelian civilization.

Finally the last issue of *Ancient TL* ever published in Clermont (Vol. 21 no. 2), included a section News of the Community, saying that Martin Aitken had been appointed Doctor Honoris Causa of the University Blaise Pascal of Clermont-Ferrand. The same issue contained an obituary for Georges Valladas (1920–2004), a pioneer of TL dating, excellent scientist and a person of great human qualities. So *Ancient TL* tried — and still tries today — to be as well a link within the community, giving good and bad news, practical information, as a medium of diffusion of the progress in our field of interest.

We do not want to highlight any article that we are particularly happy to have published, because we were happy to publish all of them. From our own experience, any article, even seemingly of secondary importance, may be, years later, with a new look, at the origin of a new scientific adventure.

## **Ancient TL in Aberystwyth (2004-2014)**

*by Geoff Duller*

Since starting as a PhD student, *Ancient TL* has been a valuable source of ideas and essential information for laboratory work. It was therefore with great pleasure that I accepted the role of editor, bringing the journal to Aberystwyth in 2004. Ann Wintle and Helen Roberts were also based at the Aberystwyth Luminescence Research Laboratory (Figure 5), and they provided invaluable support and advice in all aspects of the editing and production. Colleagues in Clermont-Ferrand who had previously edited the journal very kindly passed on an enormous amount of information, giving a sound footing for the first few issues to be published from Wales. The first major challenge was finding someone to print the journal, and fortunately the University printers agreed to undertake the short print runs at a very reasonable rate, enabling the cost of subscription to be kept as low as possible. Assessing the number of copies of each issue to print seemed very difficult (though in hindsight I cannot see why!), with the result that we normally had 30 to 50 copies left after dispatching the subscribed copies. These back is-



Figure 5. Geoff Duller (centre), Ann Wintle (left) and Helen Roberts (right) at the Aberystwyth Luminescence Research Laboratory 2009.

sues steadily built up, so that even to this day we have a large collection of boxes lining the upper shelves of one of the luminescence offices in Aberystwyth (if anyone is interested in having copies of any issues published from 2004 to 2014 they are welcome to have them for free by contacting me).

As an editor, I always found the variety of papers in *Ancient TL* stimulating. Papers about drilling systems for extracting luminescence samples from dunes (Munyikwa et al., 2011) were just as much a part of *Ancient TL* as those dealing with phosphorescence spectra from feldspars (Haidar & Huntley, 2007). However I found some of the most satisfying papers to handle were those dealing with aspects that underpin our science, such as the paper by Rhodes & Schwenninger (2007) putting down on record the data available for the radioactivity of the concrete blocks housed in Oxford that are used by many colleagues from around the world for calibration of their portable gamma spectrometers. Such papers are the foundation of our science, and *Ancient TL* plays a key role as a repository for this type of work.

In 2007 the 30th Anniversary of the journal was marked by a small editorial, but more significantly by making all the issues of *Ancient TL* freely available online. This involved scanning all the issues from 2003 back to 1977, and uploading PDFs of the issues published since 2004. Helena Rodnight and I shared the job of scanning these back issues. This was sometimes rapid, but the pace slowed when one came across an interesting paper that you had missed (or forgotten)! Ann Wintle had an excellent collection of hard copies of *Ancient TL* in her archive, though a number of key issues were missing. Fortunately Daniel Richter had copies of these missing issues, and you can still see that it is his copies of some of the earlier issues that are seen online. Making the journal freely available via the web was designed to increase accessibility and readership. In the first few years I was able to monitor the number of visits to the site and it was pleasing to see the rapid adoption of electronic access. Given the free electronic access, the number of paid sub-

scriptions inevitably declined, such that the number of paying subscribers by the end of the time that the journal was published in Aberystwyth had declined to about 20. It was therefore no surprise when the last issue of *Ancient TL* published in Aberystwyth (Volume 32, Issue 2, December 2014) turned out to be the last issue to be published in hard copy, reflecting the changing nature of academic publishing.

## **Ancient TL in Greenville, NC and future of the journal (since 2015)**

*by Regina DeWitt*

When Geoff Duller asked if I (Figure 6) would be willing to serve as editor of *Ancient TL*, I was very excited. *Ancient TL* has published some of the most-cited manuscripts in our field (e.g. Adamiec & Aitken, 1998 with more than 600 citations) and I felt very honored to be able to continue this tradition. The first issue of *Ancient TL* published in Greenville, NC was Vol. 33, Issue 1, 2015. Since then *Ancient TL* has been available online only, free of charge. Geoff Duller thankfully passed on all his files for previous issues in a very well organized manner, which tremendously helped with setting up a new webpage. We slightly modified the layout of the front page (see cover pages in Figure 7) and adopted LaTeX for typesetting of the articles (Figure 2, right). This has significantly increased the workload of the editor, since typesetting of a manuscript in LaTeX can easily take 6–10 hours, sometimes more. Volunteer help has been invaluable in this endeavour. Despite some modernizations we aimed at remaining true to the purpose of the journal: Provide the luminescence and ESR community with ideas and essential information for laboratory work and serve as an outlet for community news.

Webpages for the journal have been located on the university servers at Aberystwyth and Greenville, respectively. As a result access is limited to the editor and space restrictions apply. To remedy these issues, we have secured a permanent domain: *ancienttl.org*. We are in the process of moving the entire page to an external server that can be reached under the new address. This is a lengthy process, but once it is completed we can start to work on longtime plans. Volunteers will be able to get access to the new page to help with updating the page and establishing new online services. Future plans include: (1) get the journal indexed and included in data bases such as the Chemical Abstract Index, EBSCO, or Google Scholar; (2) add doi-numbers; (3) add online services such as a comprehensive compilation of luminescence and ESR related software packages or comparison of measurement procedures for quartz and feldspar.

At the LED 2017 in Cape Town the foundation of a trapped charge dating association has been suggested. The question arises what role *Ancient TL* will play in the society. Different possibilities can be envisioned. Over the last few years I have collected suggestions for improvements and fu-



Figure 6. Regina DeWitt



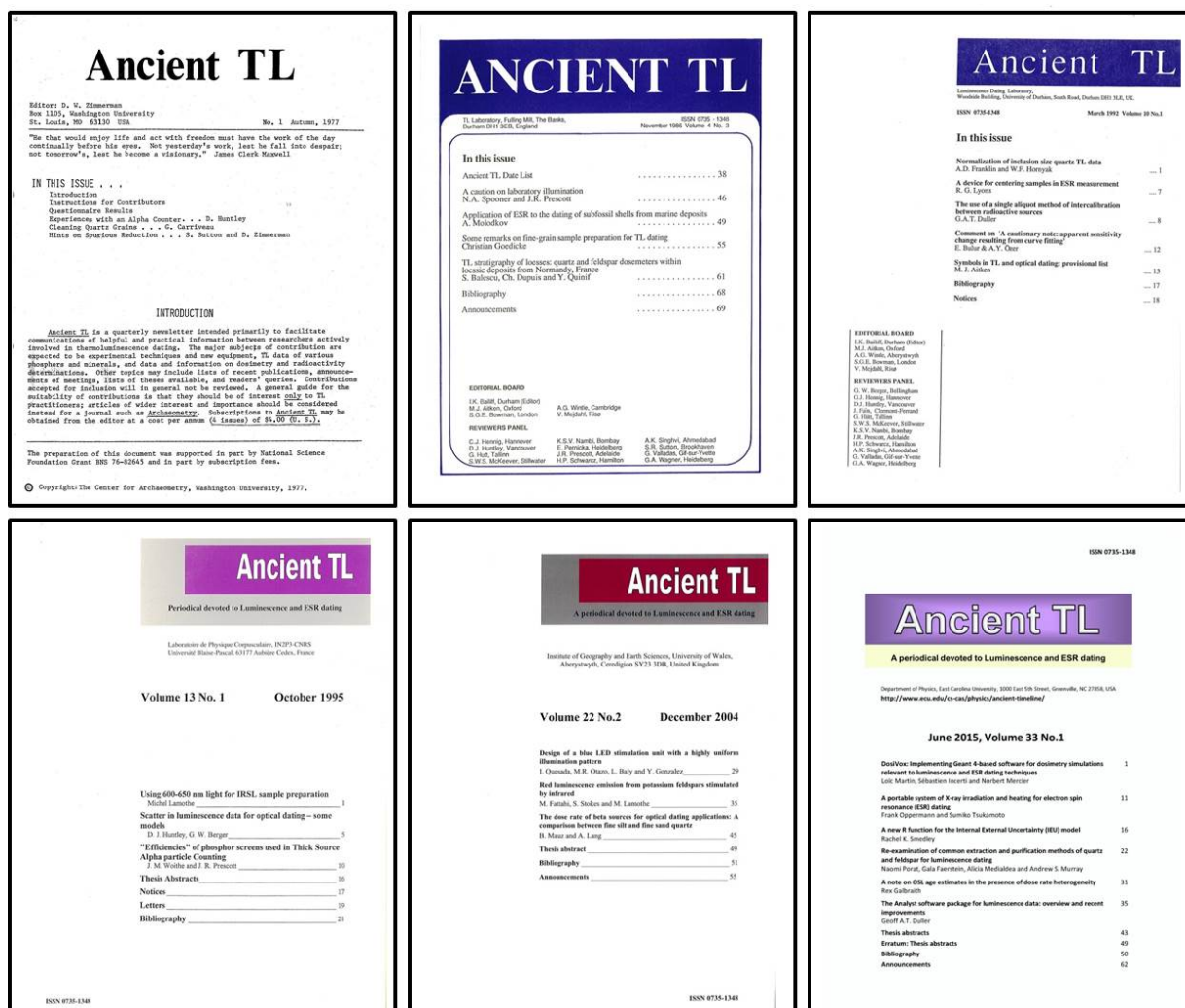


Figure 7. Evolution of the cover page of *Ancient TL*. From top left to bottom right: Issue 1, 1977; Vol. 4 no. 3, 1986; Vol. 10 no. 1, 1992; Vol. 13 no. 1, 1995; Vol. 22 no. 2, 2004; Vol. 33 no. 1, 2015

ture directions of the journal. Many comments concerned the fact that the journal does not have an impact factor and that the articles are not indexed by the Science Citation Index.

Thus, one route would be for *Ancient TL* to become an open access journal that has page charges. This could make *Ancient TL* financially viable and the journal could publish conference proceedings. An impact factor and indexing in the Science Citation Index would make the journal more attractive in a time, where productivity as a scientist is evaluated by number of peer reviewed articles in high-profile journals. This route would require *Ancient TL* being "incorporated" by some publisher, who will then take care of the actual publication process, including typesetting and web-page. It would also mean that *Ancient TL* could no longer perform the more diverse range of functions that it currently does (like thesis abstracts, conference announcements) and it would almost certainly lead to a drive by a publisher to reject a significant proportion of what is submitted in order to raise the impact factor.

A second route for *Ancient TL* is for it to become the official journal of the society, i.e. the Newsletter of the association, supported by funds from the society. *Ancient TL* would still perform all the functions that it currently does, and it would additionally be a forum for discussions/papers/proposals relating to Working Groups that the society may set up. This option would require more work for editor and volunteers, since no outside publisher would be involved, but all decisions about the content would be made by the editorial board. This option would not preclude the setting up of a new open access journal, or the continued use of existing journals. Over the last 40 years *Ancient TL* has evolved from a small newsletter to a repository for key-articles in the field of trapped charge dating. Its future role in the trapped charge dating association will have to be decided. However, *Ancient TL* has been and still is a journal by the community for the community. No matter in which direction the journal will head in the future, the goal should be to fulfill the needs of the community.

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