

Wilson Chamber Images: The Aesthetic of the Sub-Atomic

presented by Murdo Macdonald

Digital images from early glass plate photographs by CTR Wilson FRS, Nobel Prize in Physics, 1927

5 July - 9 August, 2015

The exhibition *Wilson Chamber Images: The Aesthetic of the Sub-Atomic* will open at the Highland Institute for Contemporary Art on Sunday 5 July, 2-5pm.

Scottish physicist CTR Wilson's invention of the Cloud Chamber led to the production of photographic plates that made visible for the first time the tracks of individual subatomic particles. Of major scientific significance, these images from 1911 and 1912 are also very beautiful, and furthermore reflect Wilson's skill as a photographer.

The traces, formed by condensing clouds of water droplets, demonstrated the existence of entities that until then had only been hypothesized. The Cloud Chamber provided a means for the direct experimental observation of the behaviours of these particles, initiating an enormously significant period of investigation, and resulting in the award to Wilson of the Nobel Prize in 1927.

Wilson's colleague and fellow Nobel Laureate, Ernest Rutherford, called the Cloud Chamber 'the most original and wonderful instrument in scientific history.' By noting the degree to which the condensation tracks of different elementary particles were altered by magnetic fields, it was possible to distinguish the fundamental constituents of matter, and precisely measure their behaviour. Cloud Chambers became the key visualization tool for particle physics for the first half of the twentieth century. They have now been superseded by sensors such as those at CERN, but Wilson's work is the true precursor to such sensors. With the current interest in the Higgs' Boson this is a particularly interesting time to revisit the visual-aesthetic aspect of Wilson's work.

For this exhibition at HICA, artist and academic Murdo Macdonald will present a series of digital prints of these momentous images, and give a talk on Wilson at a special exhibition preview, to be held on 4 July, from 7-9pm.

Murdo Macdonald trained originally as an artist but has spent most of his career as a historian of art and ideas, since 1997 as Professor of History of Scottish Art at the University of Dundee. He has an enduring interest in photography, and his images are published frequently in catalogue essays and books. His interest in CTR Wilson's photographic achievement is of long standing.

Macdonald's photographic installation makes connection, through HICA's geographical location, to the now ruined weather observatory on the summit of Ben Nevis, at which Wilson was stationed in 1894, studying atmospheric effects such as haloes and glories. That experience was crucial to his understanding of cloud formation and his desire to emulate such cloud formation conditions at the Cavendish Laboratory in Cambridge.

The presenting of these images at HICA allows their interpretation as a form of contemporary art, enabling the implications of the dynamic natures they reveal to be considered in relation to notions such as the abstract and concrete. It is also a powerful reminder of Wilson's technical ability as a pioneer of scientific photography, who at the same time had a real awareness of the aesthetic quality of his images.

Wilson Chamber Images: The Aesthetic of the Sub-Atomic has been supported by Creative Scotland. Murdo Macdonald wishes to thank in particular CTR Wilson's grandson Andrew Wilson for making available unique glass plate negatives. Thanks are also due to the Royal Scottish Academy, which has now taken those negatives into its collection, and to the Royal Society of Edinburgh for providing invaluable assistance with research travel. Thanks also to Paul Harrison and Gair Dunlop of Duncan of Jordanstone College of Art and Design, to Joanna McManus, image librarian of the Royal Society in London, and to Alan Watson FRS.

The exhibition runs from 5 July - 9 August 2015, and will be open on Sundays 2-5pm, or by appointment.

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