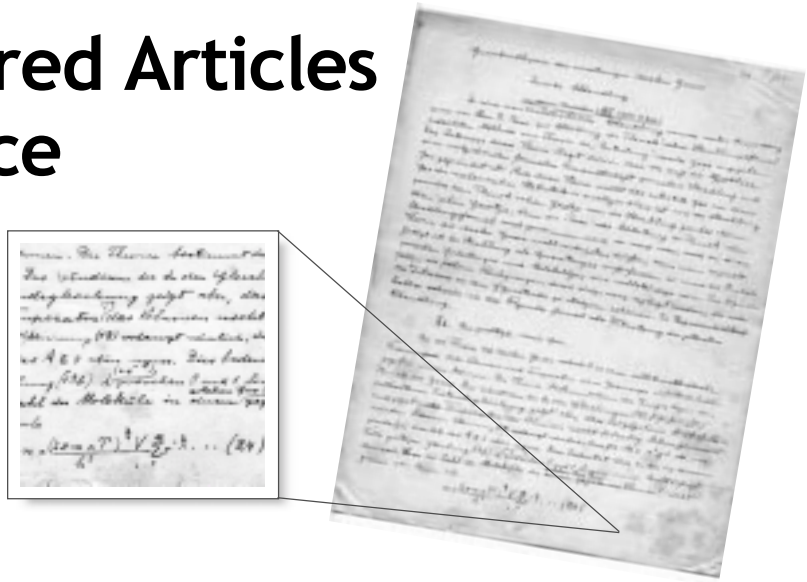
Einstein's Discovered Articles and Today's Science

This year it has been a century ago that Albert Einstein published his theory of relativity. It would be the beginning of modern science. This year, the World Year of Physics, marks this revolution in science with many activities in Singapore and the rest of the world. One of them was certainly not planned: the recent discovery of several original papers of Albert Einstein.



Last month I received my Master's degree in physics after having done eight months of research. This research dealt with the origins of quantum theory and brought me to many places. One of these places was the professional library of Paul Ehrenfest, who was professor in theoretical physics in Leiden between 1912 and 1933. He was a good friend of men like Albert Einstein and the Danish physicist Niels Bohr. No one before me studied his library, that is located in the Lorentz Instute for Theoretical Physics in Leiden since 1984.

Between the magazines and journals I have found more than sixty letters and articles, from which three of Einstein. Together with Dirk van Delft, chief science editor of the NRC Handelsblad, I have written a page long article (at least in the expat edition) about the discovery of these articles and their importance for the history of science. More than eight hundred newspapers would write about the days after its publication on the 20th of August. On the Monday morning after I even saw a small article in the Straits Times. Apparently, Einstein is still an icon of modern science.

Manuscript Einstein uit 1924 gevonden

The 2001 Physics Nobel Prize went to three scientists that based their research on one of Einstein's theories. They realized an additional state of matter: under extreme cold conditions atoms do not line up anymore as in a solids, but they merge and form one big superatom under the laws of quantum physics. Later it would be called the Bose-Einstein Condensate and considered Einstein's last great discovery. He predicted this exotic state in an 1924 article, based on the statistic methods of Indian physicist Satyendra Nath Bose. It is the handwritten 16-pages long version of this article that I found last July in Leiden. Einstein probably gave his handwritings to his friend Paul Ehrenfest as a souvenir in February 1925, when he visited Leiden to give lectures.

Einstein's work is still alive in today's scientific research. The 2005 Physics Nobel Prize was awarded recently to one German and two American physicists for their work in Quantumoptics. This field in physics develops rapidly and has a promising future in its applications in accurate clocks and ultrafast computing. Albert Einstein was the first to describe the strange Quantum behaviour of light in 1905. He was awarded the Physics Nobel Prize in 1921 for this explanation of the photo-electric effect.

I created a special website dedicated to my research to provide more information to the Leiden Physics Faculty and the Utrecht Physics Faculty, where I graduated in September. It turned out to be a useful source for journalists; I am still giving interviews for Singaporean radiostations and British magazines. For me personally this was a great experience and an unforgettable start in Singapore.

Rowdy Boeyink

http://www.phys.uu.nl/~boeyink