

# **In Struve's Footsteps - Reconstructing A 19<sup>th</sup> Century Surveying Masterpiece**

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## **ABSTRACT**

In June 2005, an extraordinary site was added to the UNESCO World Heritage List. This site, the Struve Geodetic Arc, stretches across ten different countries and over 2,820 km, breaking all UNESCO records in terms of geographical extent and number of countries involved.

The Struve Geodetic Arc is a chain of survey triangulations between Northern Norway and the Black Sea. This immense survey was carried out between 1816 and 1855 by the German astronomer Friedrich Georg Wilhelm Struve. It represented the first accurate measuring of a long segment of a meridian, helping to establish the exact size and shape of the earth and marking an important step in the development of earth sciences and topographic mapping.

The original Arc consisted of 265 main station points. Today, 34 of those have been uncovered and marked. It is those 34 stations that were placed on the UNESCO World Heritage List in 2005.

Science journalist Nienke Beintema became intrigued by UNESCO's press release on the listing. Who was this Struve, why did he embark on this extraordinary project, how did it work scientifically, and why did it qualify for UNESCO listing? To find the answers to these questions, she travelled to Finland, Estonia and Latvia in 2006, visiting seven Arc points and interviewing two prominent Struve experts. Her aim was to write an article about this trip and the story behind it, to be published in Science&Technology magazine, the Netherlands' main popular-scientific magazine. She was accompanied on this trip by Albert Beintema, a published Dutch photographer and author, and also Nienke's father.

Nienke's article was published that same year. In 2007, the article was awarded the most significant award for Dutch science journalism. In the mean time, however, Nienke and Albert had continued their travels. It was Albert who had decided that this project – travelling in Struve's footsteps and discovering the historic and scientific background through interviews, literature and archive research – was worth writing a book about. They now faced the challenge of visiting all 34 points. In June 2007, they travelled to Northern Scandinavia, and in September 2007 to Moldova and Ukraine. Lithuania and Belarus are planned for May 2008, and Russia for July 2008.

Each Arc point, as they discover, has its own specific story. Even with GPS, reaching the points is not always easy: some are located in dense forests, others on the vast Scandinavian

tundra, three days' walking from the nearest road, and one is an almost inaccessible Russian military island in the Gulf of Finland. Visiting all of them, travelling through different and often desolate landscapes, and speaking to local experts in all countries, is a vital part of the reconstruction of Struve's immense effort. It also makes for a colourful book genre, hovering between travel, adventure, history, science and culture.

Father and daughter are planning to finish their book early 2009.

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