



## *The Struve geodetic arc*

*John Davies*

Readers of *Sheetlines* will be aware of the great feats of military surveying at the end of the eighteenth and the early years of the nineteenth century. The principal triangulation of Britain, instigated by the spiritual father of the Ordnance Survey General William Roy; George Everest's Great trigonometrical survey of India and the triangulation of France were completed at that time. These were all carried out by the military for the purpose of map-making.

A quite different motivation however, inspired the work of German astronomer Friedrich George Wilhelm Struve (1793-1864). He was interested in the question of the exact shape and size of the earth. Isaac Newton had suggested that the earth is flattened at the poles; if this was so, then the distance between lines of latitude along a meridian would not be constant. Struve set out to prove it.

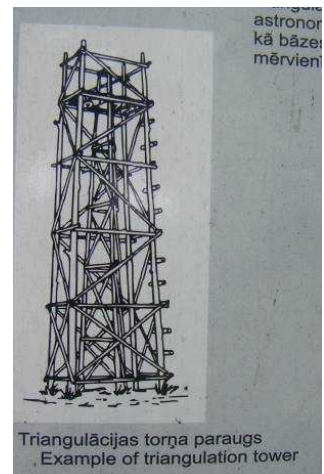
From 1816 to 1855 he achieved the astonishing feat of carrying out a triangulation of almost 1800 miles in length, approximately along the line of longitude 26 degrees east, from Fuglenes near Hammerfest in northern Norway to Stara Nekrasivka, near Odessa on the Black Sea coast.

Struve's Arc passes through ten modern countries (only two at the time): Norway, Sweden, Finland, Russia, Estonia, Latvia, Lithuania, Belarus, Moldova and Ukraine. In recent years the Arc has been declared a UNESCO World heritage site<sup>1</sup> and these countries have co-operated in the recovery, verification and commemoration of the survey sites.



*Above. Commemorative monument on the site of one of Struve's survey points in a public park, now known as Struve Park, at Jakobpils (formerly Jacobstadt), Latvia*

*Right. Drawing of the triangulation tower which stood on the site, from the information board at the site*



*Photos by the author*

<sup>1</sup> <http://wbc.unesco.org/en/list/1187>