Ole Rømer

1644-1710

Before the time of Rømer the propagation of light was thought to be instantantaneous. The time of propagation is indeed very very small compared with the human response time! Nevertheless, the Danish astronomer, Ole Rømer, obtained the first value of the light speed. It happened in 1675, when he noticed the discrepancy in the predicted time of eclipse of ***Jupiter's*** satellites, such as ***Io*** (which is like our moon).

His idea was that the prediction depends on whether the Earth is close to or far from Jupiter. The result is that the path for the light from ***Io*** is longer or shorter and the eclipse happens somewhat earlier than predicted or later. Knowing the distance between the Earth and Jupiter and the diameter of the Earth's orbit he calculated the speed of light. He obtained the value of 225000 km per second; this value was used for more than two centuries. Nowadays, precise measurements give the value c = 299792.457 km per second.

Ole Rømer, a brilliant astronomer, was born in Aarhus, Denmark. He came to Copenhagen as a young student. He worked on Tycho Brahe's observation notes with a view to publication. In 1672 Rømer went to Paris and became a member of the Academy and a tutor to the Crown Prince. In 1681 he was recalled to Copenhagen by the Danish King. He worked there until his death.

His instruments were destroyed in the Great Fire of Copenhagen in 1728

He installed a Transit Instrument

Apart from being a professor of astronomy, he was City Engineer, City Clerk of Works, Judge of the Supreme Court, Chancellor of the University, Chief Constable, Chief of the Fire Brigade, etc.! At heart he was interested in astronomy**.** Rømer renovated the construction of an old observatory on the top of the Round Tower. He wanted to definitely prove that the Sun revolves around the Earth. To achieve this aim he invented and installed a Meridian Circle, the so-called Transit Instrument- the world`s first. It consisted of a telescope moving along the meridian.

Rømer married twice. Both wives came from the great Bartholin family, many of whom were distinguished scientists. His father-in-law, Erathmus Bartholin, with his brother Hans Bartholin, owned land where they built a summer residence and named it 'Pilenborg' ('pil` means willow in Danish). Near it Rømer built his private observatory and named it Observatory ***Tusculanum***. There Rømer carried out some of his observations. After Rømer's death the building was apparently demolished. The instruments in the Round Tower were destroyed by the Fire of Copenhagen in 1728 when more than one third of the city went up in flames. At the same time all Rømer's notes were lost except for the famous ***Triduum*** data from three days of observations at ***Tusculanum***.

In 1967 the National Museum tried to establish the location of the observatory ***Tusculanum*** by air photography. The excavation of the first place found by this method was not a success but eventually the site was found by a private person. The Ole Rømer Museum was established there in the neighbourhood of Tåstoup, some 20 km north of Copenhagen, in 1979.

S.E.