



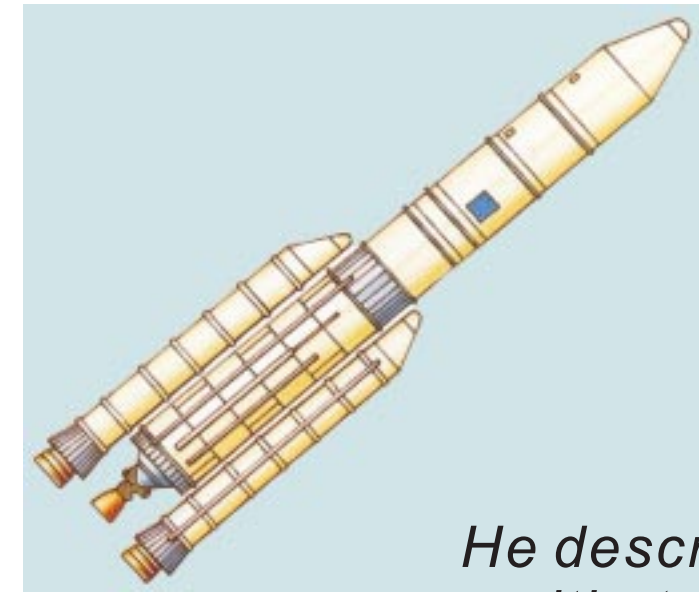
Kazimieras Simonavicius

1600 ?-1651 ?

Kazimieras Simonavicius was born in about 1600 and died after 1651. He graduated from Vilnius University and was the famous military engineer of the Grand Duchy of Lithuania. He had published a monograph "Great Art of Artillery" ("*Arts magnae artilleriae*" in Latin) in 1650, in Amsterdam.

The book consists of 6 parts, has 305 pages of large format and 206 engravings in the author's own hand. The first broad generalization of the achievements in military technique was made in the book, **the most up-to-date data on artillery and technology of explosives was presented**. But what is of most importance, the engineering solutions are based there on the laws of *physics*, mathematical calculations, and observations and experiments by the author.

Simonavicius even described the usage of 'proportional'- the precursor of calculation equipment. The book was topical for its theoretical as well as practical nature, therefore it was translated into the main European languages, French (1651), German (1676), English (1729), and for a long time it was considered to be the best textbook for artillery officers.



*He described
multi-stage
rockets*



*He applied
Physics
to gunnery*

The part of the book describing rockets is of particular value: the idea of solid fuel jet propulsion is popularized there, and for the first time in history the multi-stage rockets with delta type and other stabilizers together with jet nozzles are described and illustrated. They differ from modern rockets only in scale. The author established the important regularity in the ratio of a rocket's height and nozzle width.

The tables of comparison of measures used in different countries are interesting to the history of science; the design of standard measuring instruments is described, as well. The author had planned to write a second part of the work, and the intended sketches survived.

He devoted his life to military science and skills, and participated in the wars with Moscow, the Tartars and the Cossacks.

Simonavicius was a man of humanist views. The lines of his work speak for that: 'the rockets rather are not the tools of bloody Mars... they should be used amongst other artificial fires to entertain people during festivities, when people celebrate the defeat of enemies and the liberation of their towns; to glorify and divert the members of the weddings and other friendly feasts.'