

# THE EXPERIMENTALIST

Encyclopedia of Science and Technology for Young People

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## Conteúdo:

**Thermometers - Part 2**

**Bernoulli's Principle**

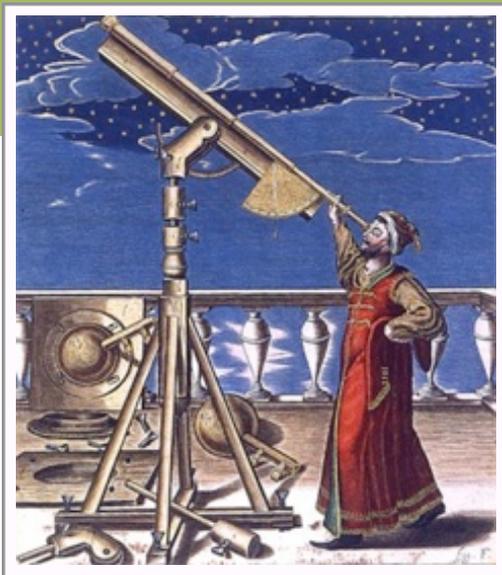
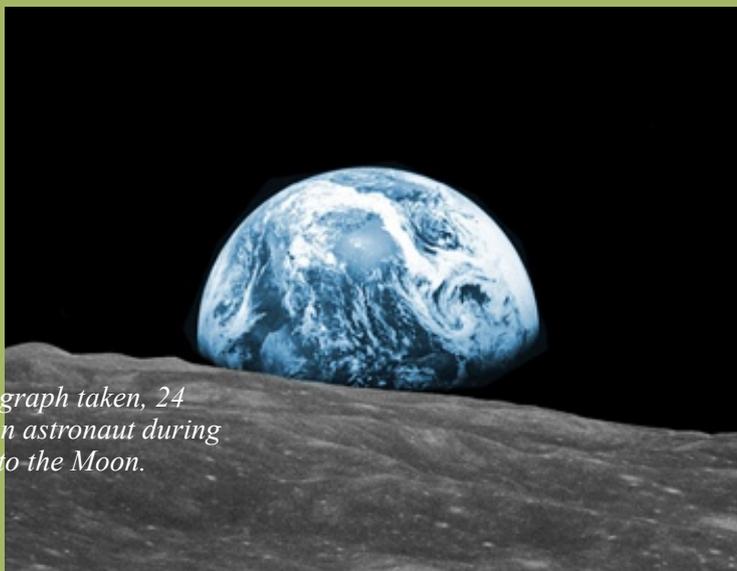
**The Small Submarine**

**How to make Carbon dioxide**

**How batteries work**

**Astronomy**

*"Earthrise". A photograph taken, 24 December 1968, by an astronaut during the Apollo 8 mission to the Moon.*



## Editorial

A defect of many of our schools is that they have no equipment to teach science. Many high schools do not have a thermometer or a voltmeter or even a lens. How to teach physics without physical apparatus? It is not possible - not real physics.

The few schools that have apparatus often do not have competent teachers to demonstrate practical experiments because they were trained in training centres that have no equipment, nor trainers trained in practical work. It is a vicious circle.

This problem has long been recognized but not yet solved; science apparatus is very expensive; there are many schools in the country, and the process of teaching teachers to teach science is long and expensive. To help with this situation, our *Experimentalist* publishes articles to show how to use cheap and locally available materials to do many of the experiments.

Our articles have many illustrations, and so are almost a video film. There are also real films on Spark Group's Web Site on the Internet: <[experimentalista.org](http://experimentalista.org)>.

Of course, few schools have Internet access. However, the Provincial Directorates of Education (which do have access) can print the articles to distribute to schools and schools can put them on the board for students to read.

An example of such articles is "Thermometers" in this edition.

