

8 PRODUCTION OF EDUCATIONAL MATERIALS

Marco Arosio

8.1 Aims and Objectives

The aim was to produce educational materials, such as posters, that could visualize key points about the origin and composition of cosmic rays and the evolution of detection techniques.

8.2 Poster Design

The posters were designed with PowerPoint, which is a good software package for creating image-based designs. The first thing to do was to set up a blank slide for each of the posters. The posters were to be printed in A1 format, which is 584 by 841 mm, or roughly 23 by 33 inches. It was found that it is easier to work at full size to make sure that the text sizes chosen are suitable and that better quality is obtained for the images.

On Page Setup the option Custom was selected and the size values corresponding to A1 format inserted. It was decided that the poster about detection techniques should include some history i.e. the experiments and devices that led to the discovery of cosmic rays. It was therefore decided to divide the poster into two sections. The first 1/3 of its size, starting from the top, was to include a block diagram. Three blocks containing information about the electroscope, as the most important instrument that led to the detection of cosmic rays, and the description of two experiments: the one conducted at the top of the Eiffel Tower by Wulf, using an electroscope, and the balloon flight of Victor Hess were added. Relevant images were then inserted on the side of each block to make the content easier to understand and also eye-catching. The rest of the poster was dedicated to brief descriptions of different types of techniques that are used nowadays in the study of cosmic rays. This was designed as a main introductory box with arrows pointing to three minor boxes containing information and images on the techniques of Cherenkov radiation detectors, scintillators, and spark chambers.

The poster about the origin and composition of cosmic rays includes an introductory distinction between Primary and Secondary Cosmic Rays and a shower diagram showing the decay of particles as they travel through the atmosphere. It was then decided to focus the main body of the poster on different types of potential sources of cosmic rays. Again text boxes were accompanied by figures.

The choice of a suitable background turned out to be a problem. It was difficult to find a image with a good enough resolution that could be stretched out to A1 format without losing quality. The size of text and figures throughout the posters were designed in order to be able to produce readable A4 handouts out of them to be given out to students in school demonstrations.

See Appendix XII for designs