

“Astro à l’Ecole” equipment plan

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Abstract

“Astro à l’Ecole” is one of the equipment plans organized by the French ministerial plan “Sciences à l’Ecole” in partnership with Paris Observatory. This equipment plan is dedicated to the promotion of Sciences in French school system for upper and lower secondary school pupils based on the discovery of the Astronomy. It started with the transit of Venus in 2004 and is now composed of 31 teams equipped with telescope in all France.

1. Introduction

“Sciences à l’Ecole” is a French ministerial plan created in March 2004 by the National Education Ministry and the Higher Education Ministry to promote the Sciences in the French school system for upper and lower secondary school pupils. “Sciences à l’Ecole” coordinates various educational projects:

- organization of the national scientific contest C.Génial and of the french participation to european and international contests (EUCYS, Science on Stage...)
- organization of the French participation to International Olympiads (Physics, Earth Sciences, Chemistry,...)
- financial support to productions and teaching activities made by associations and research institutes
- attribution of educational equipments to schools

2. Venus transit in 2004

In 2004, a financial support was given by “Sciences à l’Ecole” to schools to support 15 educational projects

on the Venus transit. This was used mainly to buy some observation equipment or pay transport fees. Teacher received support from the association called CLEA (composed of teachers and astronomers) which proposed a protocol to follow: picture of the Sun were made every thirty minutes from different places and the distance to the Sun was calculated by a parallax method.



Figure 1: Superimposed photos at 08h00 UT from Dijon and La Réunion.

The 8th of June, day of the transit, 16 French laboratories were open to the public: 6000 persons were received in Paris. After this event, the financial support allows the creation of a data bank of pictures and activities on the IMCCE website: http://www.imcce.fr/hosted_sites/vt2004/fr/index.html

3. The equipment plan

3.1 Presentation

From 2006, “Sciences à l’Ecole” lends astronomical equipment to upper and lower secondary schools in collaboration with the Paris Observatory. The plan is directed by a national committee composed of researchers, educational inspectors and secondary teachers. They propose to “Sciences à l’Ecole” president the evolution of the plan and the attribution of the equipments (based on pedagogical and scientific quality of the project).

To help the teacher to use the equipment, they have all followed a training course of several days and they can have the support of an astronomer. We also provide examples of activities on our website and we develop a teacher forum to allow them to interact to exchange their experience.

3.2 Experimental activities

The experimental activities fit to pupils level : subjects are various and in agreement with the curriculum. It goes from Moon or planets observation to more complicated activities such as detection of

the transit of an extrasolar planet. These scientific and pedagogical activities allow the pupils to understand the way the researchers are working by developing a real scientific approach. They can even lead to real collaboration with researchers. One goal for the most developed projects is to produce data that can be used by researchers. This kind of projects need a deep understanding of the informatic treatment of the picture which is rich on the pedagogical point of view.

3.3 Evolution of the plan

Venus transit in 2012 will offer a way of doing a common observation project for all team of “Astro à l’Ecole”. This kind of common project could be generalized to other astronomical event to create group dynamics. One of our goals is to develop for the most effective teams some “Research in schools” activities. For less experimented teams, filmed experiments could be also a way of supporting them in their use of the equipment and to develop more ambitious projects.

6. Summary

“Astro à l’Ecole” is an equipment plan which started with the Venus transit in 2004 and which is now composed of 31 teams equipped with telescopes in all France. To keep a group dynamic and to satisfy all the teachers needs, we need to develop different activities (themes and level): filmed experiment for starters, Venus transit in 2012, explanation of the use of automatic telescopes for more ambitious projects...

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