

ASTRONOMY PROJECT DETECTING AN EXOPLANET

Objectifs :

- With the use of the 50cm telescope of the Observatoire de Haute-Provence, controlled from the school, the project aims at detecting an exoplanet by the transit method.

Production :

- Create a website to describe every step of the project

Planning :

Session 1	Understanding : What is a transit? When to observe? Analysis: How? Which star?	Keyconcepts : Reference frames Movements (explanation of transit) Luminosity (photometry) and the magnitude of a star
Session 2	Execution (observation) : Timing: At night (first half of the night) Equipment: Use of the Haute-Provence Telescope Task: Taking photographs	Skills: Use of a digital platform
Session 3	Validation : Task: Exploiting the photographs Output: Plotting the graph $Luminosity = f(Time)$	Skills: Spreadsheet and graphing software Photometric analysis Collaborative work: Common definitions of photometric parameters Sharing results (each group processes a maximum of about fifteen images)
Session 4	Communication of Results Task: Writing an article (communication to the general public) and creating a website Submission: Uploading the observation to the TRESCA website (peer communication)	Key Concepts: Gravity: What is the gravity on the surface of the planet? Use of the mass and radius of the exoplanet derived from observations