

## Modelling asteroid spectra: few examples

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### Abstract

Asteroidal population comprises now more than 500,000 objects. Several observational techniques (spectroscopy, adaptive optics, photometry, polarimetry, radar,...) are used in order to obtain a mature understanding of an overall knowledge of this population.

Spectroscopy can play a key role in determining the chemical composition and physical process that took place and modified the surface of asteroids. The development of telescopic instruments and the possibility to access them remotely allowed an increasing number of asteroid spectral measurements. The exploitation of spectral measurements is one of the important items to enlarge our science of surfaces of atmosphereless bodies.

Spectral data of asteroids are in continuing growth. To exploit these spectral data we must account the global science of this population as well as the knowledge derived by studies of comparative planetology.

The project M4AST (Modeling for Asteroids) consists in a database containing the results of these telescopic measurements and a set of applications for spectral analysis (Fig. 1). M4AST cover several aspects related to statistics of asteroids (taxonomy), mineralogical solutions using laboratory spectra from RELAB, and mineralogical modeling using space weathering effects corroborated with radiative transfer laws. M4AST was conceived to be available via a web interface and will be available for the scientific community.

The abilities of these routines will be highlighted by few examples. Science derived via M4AST obtained for (222) Lucia, (809) Lundia, (810) Atossa, (1005) Arago, (1220) Crocus, and (4486) Mithra will be presented.

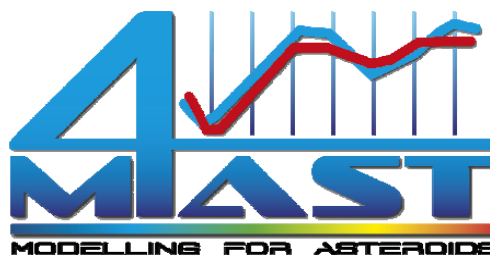


Figure 1: Logo of the online tool for modelling asteroid spectra (<http://cardamine.imcce.fr/m4ast/>).