



Defining and cataloging exoplanets: The exoplanet.eu database

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Abstract

We describe an online database for extra-solar planetary-mass candidates, updated regularly as new data are available. We first discuss criteria for the inclusion of objects in the catalog: "definition" of a planet and several aspects of the confidence level of planet candidates. We then describe the different tables of extrasolar planetary systems, including unconfirmed candidates (which will ultimately be confirmed, or not, by direct imaging). It also provides online tools: histogrammes of planet and host star data, cross-correlations between these parameters and some VO services. Future evolutions of the database are presented.

1. Introduction

The study of extrasolar planetary systems has become a very active field which will grow continuously in the coming years and decades. This new field of astronomy leads to two types of activities: the detection of new planets and new observations of known planets and on the other hand the understanding of physical and dynamical processes of individual planets, planetary systems and interactions of planets with their host stars.

These activities require a precise knowledge of the characteristics of planets and of their parent stars, i.e. a well documented catalogue.

Exoplanetology is developing so rapidly (and this evolution will even accelerate in the coming years) that any static catalogue¹ is obsolete on time scales of a few months. An evolutionary online catalogue through the Internet is better adapted to that situation. It has the advantage of updating permanently the data and of making possible online tools for their pretreatments.

Here we describe a freely accessible database consisting in a catalogue and associated online services, the purpose and philosophy of the database. We then discuss criteria for the inclusion of objects in the catalogue and describe its detailed content, located at the URL exoplanet.eu

The database has different online statistical tools. We show, based on a correlation diagramme that physical conclusions can be drawn from these statistical tools.

