

Exo-MerCat: a merged exoplanet catalog with Virtual Observatory connection

Wednesday 19 June 2019 11:40 (15 minutes)

The heterogeneity of observational papers makes every attempt to write a uniform catalog almost impossible. Our aim is to build a new catalog selecting the best targets whose datasets were included in one or more of the four major exoplanets online databases: NASA Exoplanet Archive [1,A], Exoplanet Orbit Database [2,B], Exoplanet Encyclopaedia [3,C] and Open Exoplanet Catalogue [4,D].

We wrote a Python code that collects and selects the most precise measurement for all interesting planetary and orbital parameters, taking into account the presence of multiple aliases for the same target. For each parameter, the code stores the corresponding reference paper link. For this reason, when the merging process is completed it could be possible to have a final dataset for each target which is not necessarily composed of consistent measurements. It is however not essential for our statistical purposes.

The code is able to download the source files from the three catalogs by use of VO ConeSearch connections to the major stellar catalogs such as SIMBAD [5] and those available in VizieR [6]. It also retrieves the compulsory user preferences through a Graphic User Interface, which allows choosing all sorts of parameter range selection. It is able to generate automatic plots that are commonly used in the exoplanetary community, but the user can retrieve and manipulate data at will. Exo-MerCat is ingested into a proper database with TAP service and can be queried by all the VO-aware TAP-enabled applications.

Author: ALEI, Eleonora (Istituto Nazionale di Astrofisica (INAF))

Presenter: ALEI, Eleonora (Istituto Nazionale di Astrofisica (INAF))

Session Classification: Session 4b: After Science: Interoperability - Chair: R. Smareglia