Exploring large catalogues with HiPS & MOCs

"I have a set of images, I would like to select regions in my observations that are above a given threshold in another survey (e.g. at low extinction), retrieve objects from very large catalogues (e.g. Gaia + WISE) in these non-trivial shapes and not-necessarily-connected regions and combine them to visualise some quantities (e.g. colour-colour diagram)."

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1. Required packages
2. Find images associated with the MASH catalogue of planetary nebulae
3. Create a MOC of the MASH images
4. Create a MOC of low extinction regions from an archival extinction map
5. Find which regions are covered by the MASH images and in the low extinction regions
6. Query MOC maps for the 2MASS and Gaia Catalogue
7. Cross-match Gaia and WISE sources in all fields
8. Build a colour-colour diagram

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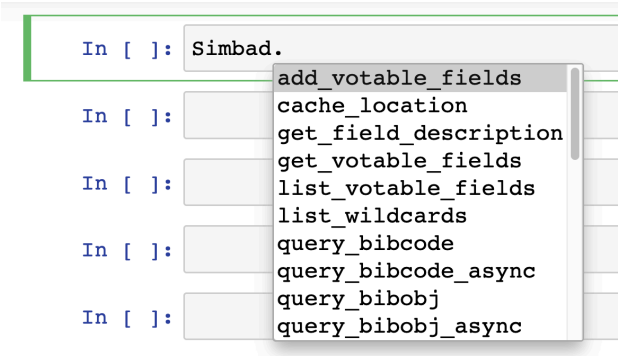
Find the notebook on Binder (no installation required):
https://mybinder.org/v2/gh/cds-astro/tutorials/master?filepath=Notebooks
wait a moment for everything to load, then click on the link to HiPS_and_MOC.ipynb

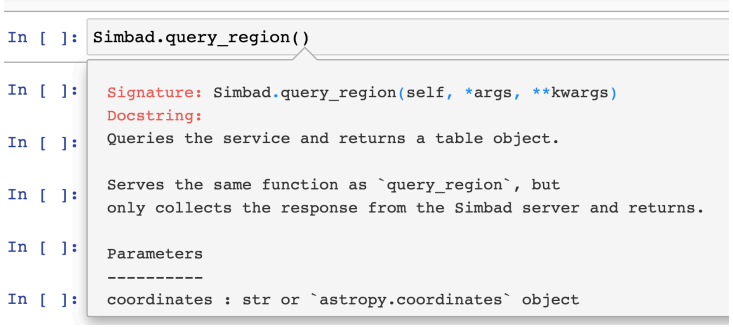
Or download the CDS tutorials repository Github https://github.com/cds-astro/tutorials
and run the notebook in HiPS_and_MOC.ipynb on your machine:

More on Python and Notebooks:
Enrique Garcia, LAPP/CNRS
https://escape2020.github.io/school2021/posts/clase03/

Tips for Jupyter Notebooks



Type the name of a module followed by a dot in a code cell; then press 'tab' to see and select the available functions for that module.



Once selected a function, click inside the parenthesis and press 'shift' + 'tab' to see the related documentation, the required/optional input parameters, what the function returns etc.

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