

ALMA archive TOol for Molecular Investigations in Space

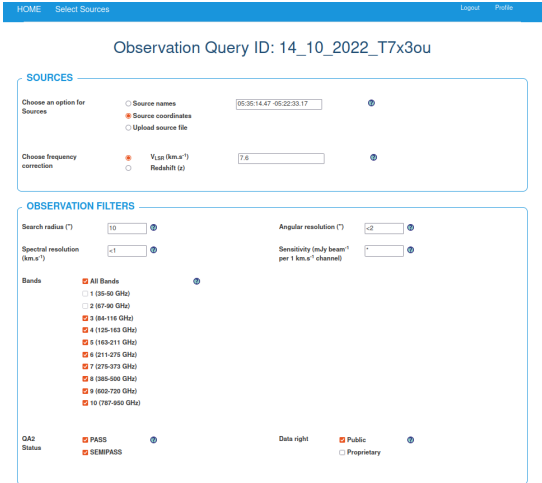
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ATOMIS is a web application that aims to search for observations in the ALMA archive for a given list of sources and species. The users can specify different filters on observations (angular and spectral resolutions, sensitivity, ...) and on species (minimum and maximum Eup, Aij, maximum frequency uncertainty). The user can either choose species on the CASSIS spectroscopic database (JPL[1], CDMS[2] and VASTEL) or upload spectroscopic files. It also allows the users to download the corresponding ALMA data products such as fits files and to visualize them with ALADIN[3] and CASSIS[4].

The ATOMIS tool uses Flask framework. It is written in Python, JavaScript and HTML. In order to search for ALMA observations, ATOMIS uses the Astropy package[5] and some features of the Alminer tool[6] (ALMA Archive Mining & Visualization Toolkit).

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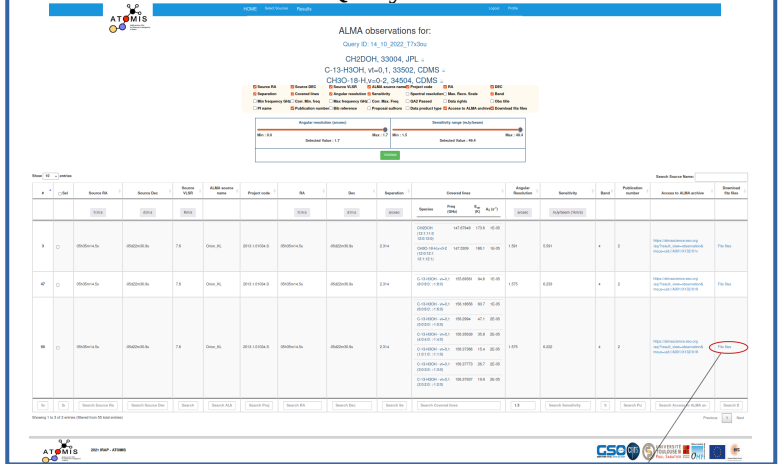
1. Source and observation form



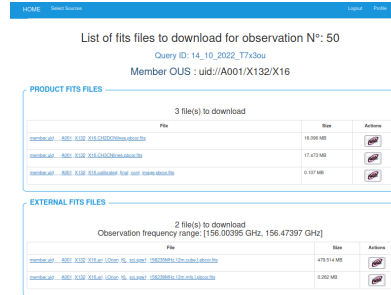
Download a .csv file containing the ALMA observations after applying filters.

Download the list of the Alma Observations Next To Select Species

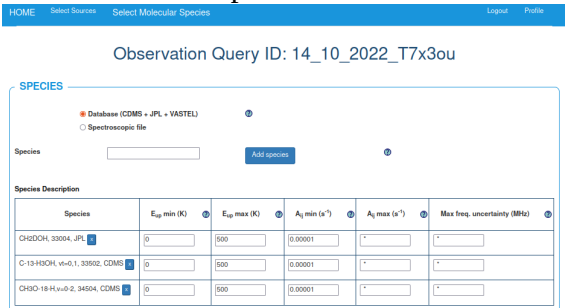
3. Query results



4. Download and visualize the spectral cube using Aladin + CASSIS



2. Species Form



Search for covered transitions in the selected ALMA observations.

REFERENCES :

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4. Vastel, C., Bottinelli, S., et al. (2015). CASSIS: A tool to visualize and analyse instrumental and synthetic spectra. In SF2A-2015: Proceedings of the Annual meeting of the French Society of Astronomy and Astrophysics (pp. 313-316). (<http://cassiss.irap.omp.eu/>)
5. Robitaille, T. P., Tollerud, et al. (2013). Astropy: A community Python package for astronomy. Astronomy & Astrophysics, 558, A33.
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