

**V106b      New ALMA WebQL: a modern interactive client-server architecture for fast previewing of large ALMA datasets**

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We demonstrate a completely re-designed ALMA WebQL web service — available through the JVO ALMA science portal — which allows users to preview ALMA FITS files of any size without having to download large amounts of data to user PCs. Large FITS datasets (i.e. > 6GB) can be previewed smoothly in a web browser running on a relatively low-spec client PC. Users can interactively zoom-in to selected areas of interest with the corresponding frequency spectrum being re-calculated on the server in near real-time (after a deliberate 100 ms delay since the last movement of the mouse). At a glance users gain access to large easy-to-see images as well as the corresponding frequency spectra that are visible both at the same time.

The ALMA WebQL service adheres to a modern client-server architecture. A fast FITS processing web application server runs a custom C/C++ HTTP daemon developed in-house on top of the open-source GNU libmicrohttpd C library. The client (a web browser) is a rich interactive internet application built on AJAX, HTML5 and SVG standards. In order to facilitate fast on-demand viewing of large ALMA datasets, FITS files are cached locally using NVMe PCI Express Solid State Drives housed in the ALMA WebQL server. Large FITS files can therefore be loaded by the ALMA WebQL application at speeds over several gigabytes per second.