

## V129a 分散クラスター対応の FITS WebQL SE v5 の試験運用開始

ザパート クリストファー、白崎 裕治、大石 雅寿、水本 好彦、川崎 渉、小杉 城治、森田 英輔、吉野 彰、林 洋平

After a somewhat convoluted development process marred by several programming language changes, the distributed computing C / FORTRAN version of FITSWEBQLSE (**S**upercomputer **E**dition) has finally moved out of **ALPHA** to achieve the **BETA** status. Beginning with the Subaru and AKARI data, at the Japanese Virtual Observatory we have started a gradual experimental roll-out of the new version 5.

The main differentiator between the Rust-based v4 and C / FORTRAN-based v5 is the support for custom distributed computing. When a large ALMA FITS 3D cube file is opened the data from 2D frequency channels are distributed evenly across a small cluster of commodity PCs (5 desktops in the live production cluster and 4 slower desktops in the development / test cluster). Not only is the RAM distributed across the cluster, upon opening a new FITS data cube file for the first time, we compress it and save the 2D planes in a distributed manner across the cluster as well. Hence each cluster node saves its own 2D planes locally within its own SSD / HDD disk cache. This way the 2nd-time FITS file loading is greatly accelerated as each cluster node only reads a subset of the original FITS data cube. For example, opening a 100GB FITS file only takes a few seconds using a cluster of five commodity desktop computers.

Apart from improved loading times, from the user perspective we have also developed vital new functionality such as a near-realtime Position-Velocity (PV) Diagram for radio-astronomy FITS data cubes. In this talk we make a brief demonstration of improved loading times and the new realtime PV Diagram.