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NOVIDAS and UVPROC II—Data Archive and Reduction System for Nobeyama Millimeter Array

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Abstract. A workstation-based data archive and reduction software system is developed for the Nobeyama Millimeter Array (NMA). NOVIDAS is used for archiving the output data from the interferometer onto 8 mm tapes. It also provides a search utility for the archived database. The calibration and reduction of the data are handled by UVPROC II. It uses the $\mathcal{AIPS}$ file system via a set of interface modules called *vif library* developed by us in order to make an easier transition from the calibration processing to further imaging and analysis using $\mathcal{AIPS}$. Basic functions of the UVPROC II are: correcting bandpass characteristics and time variations of complex gains, correction of variations in system temperature due to atmosphere, subtraction of continuum from spectral data, data flagging, and flux scaling.

A key concept for designing the software is that the system should be user-friendly. We adopted a GUI based on X-windows system with a menu-button feature for execution of commands and PGPLOT for graphical display. This allows users to examine the data quality visually and edit the data interactively. The *vif library* consists of simple FORTRAN programs to open/close and read/write the $\mathcal{AIPS}$ files. Therefore it can also be used by users to develop their own codes for manipulating the $\mathcal{AIPS}$ data without calling the $\mathcal{AIPS}$ routines directly.

The system currently runs on SUN-Solaris and will be ported to SGI-Irix with a disk array.

1. Introduction

Nobeyama Millimeter Array (NMA) is an interferometer consisting of six transportable 10 m antennas operated in the frequency bands of 100 GHz, 150 GHz, and 230 GHz by Nobeyama Radio Observatory (NRO). We recently upgraded the correlator system which consists of two types of digital spectroscopic correlators, FX (with 1024 channels, bandwidth of 32 MHz) and XF (128 channels, bandwidth of 1 GHz) correlators. The cross correlated signals from each pair of the array elements need to be calibrated to correct for instrumental and atmo-

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