



Some Conclusions from the MMA Computing Group

Steve Scott



The Group

- Members
 - Darrel Emerson (NRAO)
 - Rick Fisher (NRAO)
 - Mark Holdaway (NRAO)
 - Jill Knapp (Princeton)
 - Lee Mundy (BIMA - Univ Maryland)
 - Chair: Steve Scott (OVRO – Caltech)
 - Remo Tilanus (JCMT)
 - Mel Wright (BIMA – Berkeley)
- Report – MMA Memo 164 Nov, 1996



Images

- The instrument should produce images
 - Final images for most projects
 - Realtime images on subset of data
 - UV data is always saved for reanalysis
- Pipeline
 - Would require 40 processors in 2005 for MMA
 - Current reassessment is an 8 processor machine in 2005 for ALMA



Online Calibration

- Irreversible
 - Atmospheric phase calibration (record both corrected and uncorrected?)
 - Passband calibration
 - Elimination of end channels from spectrum
 - Channel averaging to meet science specifications
 - Fast (shorter than recording time) phase reference calibration
- Reversible
 - Phase reference calibration with recording of the applied correction



Observational Scheduling

- Fixed queue
- Flexible scheduling (see Mel Wright's talk later)
- Interactive control



Conditional Flow Control

- Based on science goals
 - Measurable quantities defined over a sets of 3-dimensional boxes in the image cube
 - Flux – average, minimum, maximum
 - SNR – average, minimum, maximum
 - Noise in map
- Comparators are GT and LT
- Checkpoint
 - Stops project until data are checked to see if continue with object or go to new object
 - Next project runs until check is completed, then original put back into queue



Interactive Control

- Supports traditions of millimeter single dish and optical communities
- Ultimate flexibility, creativity
- Very useful for engineering and maintenance
- Remote access a requirement
- Remote interactive use may be difficult to schedule dynamically, but will work easily with fixed queue



Automated Routines

- Measure flux of nearby potential calibrators – choose brightest
- Dynamically select calibration interval based on seeing
- Pointing peak-up
- Focus peak-up
- Delay optimization