

EVLA Data Post-processing

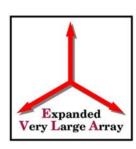
Overview

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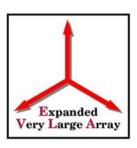
Goals



- Fulfill project requirements
 - post-processing requirements (Butler, Myers)
- Meet delivery schedule
 - management plan (McMullin, Greisen)
- Functionality, Robustness, Usability
 - integrated development & testing plan
- Efficient use of resources
 - maximize co-development with ALMA



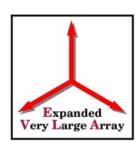
AIPS



- extensively developed & well-tested
- will be used in commissioning
 - avoid commissioning both telescope & software!
- plan: continued support + targeted development
 - support current VLA users
 - develop new functionality (e.g. auto-flagging, RFI)
 - support as much of EVLA processing as is practical



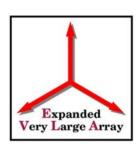
aips++/casa



- primary support for full EVLA processing
- maximize co-development with ALMA
 - most core functions are in common
 - share development team & management
- merge EVLA and ALMA development plans
 - EVLA focus on "Delta" problems
- EVLA testing during development cycles
 - ALMA tests already use VLA data!



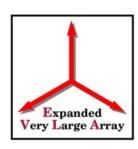
Usability & Interface



- Interface
 - current focus on CLI and scripting for functionality
 - necessary special purpose "GUI"s (e.g. viewer) only
- General GUI development
 - defer to new Framework development(s)
 - scheduled for 2007
- Usability is key for EVLA user acceptance
 - rely on scientist input (e.g. NAUG)



Problems



Difficult EVLA problems

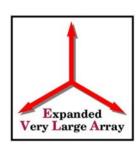
- wide-band wide-field full polarization imaging
- high dynamic range high-fidelity imaging
- also: RFI, pipelines

Data rates

- 2008 spec 25 MB/s max (cf. VLA 0.1 MB/s)
- WIDAR can produce much higher rates!
- data volumes also (TB datasets)



Algorithms



Algorithms group

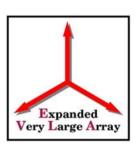
- led by Bhatnagar & Myers (formerly Cornwell)
- includes AIPS & aips++/casa developers, students
- NRAO-wide staff participation (e.g. NAWG)

Progress

- w-projection, pointing corrections (TC, SB, KG);
- autoflagging, RFI (EG, BC); pol. beam (TC,SG,KG);
- RFI (TC,RP,SB,KG); MS-clean (TC,SB,KG,EG)



Risks & Issues



- difficult problems (e.g. wide-band MFS)
- schedule (tight given current resources)
- data rates & size → cluster computing?
- user interface ("green hole")
- aips++ support for VLA? or EVLA only in 2007?
- pipelines: afford development & ops support?
- new frameworks (ACS? general? developer?)



Appendix: Groups



- NAUG = NRAO Aips++ User Group
 - aips++/casa programmers and scientific staff
 - currently ~1 FTE of testers (AOC & CV)
 - pre-testing for ALMA and EVLA
 - use cases and development guidance
- NAWG = NRAO Algorithms Working Group
 - started Nov 2005, scientific staff NRAO wide
 - regular forum to discuss algorithm issues