

● MIRIAD in the ALMA era

[the rumors of my death have been greatly exaggerated]

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No Code Example

No Figures and Plots

Take Home Points

- MIRIAD is a niche package, good for rapid development
- Annual release, around summerschool (#7: **school13**)
 - (enriched) Binary and Source releases
- Lots of new “borrow” software extending MIRIAD
 - carmafiller (MIRIAD to CASA)
 - MIS/EGN pipelines (derived from drPACS)
 - NEMO, ZENO, WCSLIB
 - GUI tkrun for annotated shell scripts
 - Too much missing user contributed
- Collaborations with ATNF, SMA, WSRT

A Brief History of Time

- AIPS, RALINT, SDE + Bob Sault → MIRIAD (1986)
 - BIMA needed calibration and mapping; Image Analysis later
- V2 – 1990: Sault left for ATNF
1995: MIRIAD in RCS (Roberts)
- V3 – 2001: CVS based, at UMD (Teuben)
- V4 – 2003: Large Files (2GB, 8GB) & CARMA
- V4.2 – 2011: WCSLIB + ATNF re-integration
- V4.3.6: “school13” release

MIRIAD

- Library (uvio, xyio, and then some) + pgplot
- About 400 programs
- About 40 developers (over 25 years)
- Shell scripts (lots and lots) as glue
 - No good repository of existing ones
- Lots of ancillary:
 - MIS & EGN to pipeline large projects
 - ds9, karma (kpvslice, kvis, ...)
- Missing: user contributed software

Pros

- Easy to use suite of Unix programs
- Super easy to program (don't mind fortran)
 - Recompile & debug cycle is < 1 second / task
 - programming myriad in C ? **hkmyriad !**

Cons

- Weak in parallel (OpenMP, intel compiler)
- Lots of static memory (MAXANT, MAXCHAN, etc.)
- Weak on interactive visualization
- Installation (old-style vs. new style)

MIRIAD products/spinoff

- WIP: interactive mongo-like pgplot
- RAD, LVG:
- ClumpFind: finding clumps (also in IDL)
- MirFlag/PlotVis:
- CADRE: CARMA pipeline (w/ python)
- miriad-python:
- drPACS/MIS/EGN pipeline tools
- Lot's of un-accounted for codes (cf. ASCL)
 - MIR::contrib?

Mythbusters:

- SSD is bad for read **and** write, but ok if it's just read **or** write → SSD has limited use
- RAID0 is excellent (+ OS caching)

CARMA

- at CARMA: MonitorPoints + visbrick → miriad file
 - Happens on the fly + **rsync** in /sciencedata
 - Data reduction can be done on the fly! (cf. ALMA)
- at Archive: MP + visbrick → miriad file
 - Pipeline runs here and products made available with visibility data

ALMA

- At ALMA: **ASDM** files
- At Pipeline: **ASDM** → **MS** → **IM** → **FITS**
- At Archive: **ASDM** + **FITS** + logs,scripts,.....
- Users: CASA (python)
 - **carmafiller** creates MS files for clean()
 - **casaview** understands MIRIAD images!

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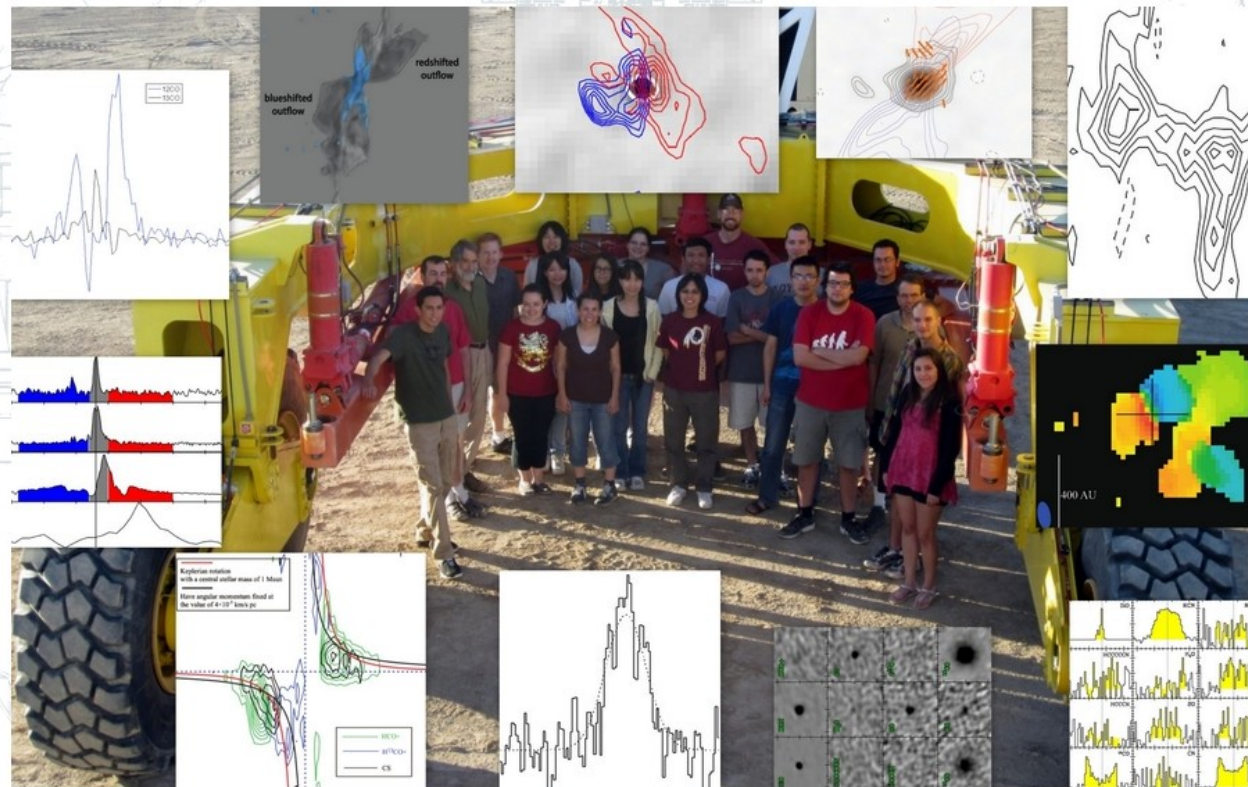
cpom

CPOM: CARMA Picture of the Month

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CARMA Picture of the Month: July 2012

Caption: 2012 CARMA Summer School



The CARMA Summer Schools have been held at Cedar Flat since 2007, continuing the successful tradition of the BIMA Summer Schools, which began in 1989. During this week-long summer school, students have complete use of the array. They learn how to select appropriate science targets, design and carry out the observations, schedule the array effectively, troubleshoot problems, calibrate, image and analyze their data. Lectures and demonstrations cover the theory and techniques used for millimeter wavelength aperture synthesis and the CARMA array. This year, 8 instructors and 17 students occupied CARMA from June 17th until June 23rd, some of them camping at the nearby Ferguson campground.