NOTE 245 – AIPS++ Tutorial at UIUC

Anuj Sarma, Hélène Dickel, David Fong, David Mehringer, Raymond Plante

16 May 2001

Abstract

The LAI Users Group & Help (LAUGH[1]) organized a tutorial on Friday, April 13, 2001 to introduce potential users from the Astronomy Department at the University of Illinois at Urbana-Champaign (UIUC) to aips++. The tutorial was divided into two sessions: a demo by Ray Plante, and a hands-on session where participants were encouraged to bring their own (calibrated) data to read into, and image in aips++.

Contents

[1]LAUGH members (in alphabetical order): Lanie Dickel, Dave Fong, Dave Mehringer, Ray Plante, and Anuj Sarma.

1 Goals

- To introduce BIMA astronomers to aips++.
- To allow BIMA astronomers to try out the multiscale clean algorithm, an unique feature of aips++ that is not present in other existing radio astronomy packages.
- To allow BIMA astronomers to get a feel for aips++ data reduction. Participants were encouraged to bring their own datasets.

2 Lectures, demo, and hands-on session

Over the course of two months preceding the April 13 tutorial, Ray Plante presented four brief (5-minute) lectures on various aspects of aips++ at the BIMA meetings.

During the demo session on April 13, Ray Plante started up aips++ and ran through the various steps that the participants would carry out in the hands-on session. A hand-out (§ 5) that described these steps was also given to the attendees.

The participants then moved to the computer room of the Astronomy Department, where each group loaded their data into aips++. The data were then imaged and cleaned using the Clark and multiscale clean. The LAUGH members stood around to answer questions and help with problems. As is usual in such sessions, different groups reached different levels of complexity and completeness (see § 3 for a full report). The hands-on session started at 4:30 PM, and the last participant left at 6:00 PM.

3 Extended report on the hands-on session

There were 5 groups at the hands-on session. All of these groups used their own data. (The LAUGH group had a practice dataset ready in case a particular group was unable to load their own data, or did not have their own data). Three of the five groups had one person each, the other two groups had two and three persons respectively.

The following stages were attempted and/or completed by four of the five groups. The fifth group had a segmentation fault that is still under investigation.

- Loading of data: by all groups
- Made dirty image of data: 4 groups
- Made Clark cleaned image: 4 groups
- Made multiscale clean image: 3 groups
- Used viewer to look at images: 4 groups
- Other: One group used the viewer to plot a spectral line profile

4 User Survey

The participants were asked to evaluate the tutorial and aips++ in a short survey (estimated time: 10−15 minutes). Five of the eight people present at the hands-on session returned the survey. The following is a summary of their opinions.

4.1 Survey of the tutorial

In general, everyone liked the hand-out. One person specifically remarked that the instructions in it were clear and precise. A few specific suggestions for improving it were made. They are:

- "Use a different font to distinguish tutorial and information boxes."
- "Include images of aips++ windows to make things easier."
- "There was too much information to read in the allotted time."

The participants were asked to choose one of 2 options: (a) they would keep the hand-out as a valuable future reference, (b) they just found out they had run out of toilet paper. Four persons chose option (a), only one person chose (b).

Overall ratings on a 5-point scale (where 5/5 was excellent, etc.) were:

- for the demo: 3.8
- for the hands-on session: 4.8
- for the BIMA meeting tutorials: 4.0

Apart from statistics, we gathered from follow-up conversations that the hands-on session was the most popular and successful part of the tutorial. Furthermore, the act of taking their own data successfully through the imaging and cleaning steps scored the highest with the participants.

4.2 Survey of aips++

The aips++ portion of the survey was presented as a series of four questions that related to the different aspects of aips++ that the participants used during the hands-on session. These questions and the comments of the participants are given below.

I. Start up (e.g., starting up aips++, locating tools in the gui, concept of tool-based approach):

- "Groupings and naming of tools leave a lot to be desired; too many windows."
- "Still not very obvious which tools are in which buckets – will there be a BIMA package that will show only the tools I need?"
- "Still learning where to find what; it will take time (estimate $\sim 1-2$ months) to get used to tool-based approach."

II. Importing data into aips++ (e.g., setting up a tool to load data into aips++, monitoring the progress of the tool as data is loaded, knowing when data loading is complete):

- "Clear and uniform feedback on completion is absolute necessity – for every command. Progress meter is fine, but no substitute since not all commands use it. Need something akin to the return of a prompt in a shell environment."
- "Overall seems quite slow – lots of latency time."
- "like the catalog."

III. Imaging (e.g., setting imaging parameters for dirty and clean images, setting parameters for multiscale clean, monitoring the progress of the imaging tool):

- "Expected aips++ to run the image making task after the setup (as in miriad). Someone had to prompt me to move on it."
- "Is there a concept of a working directory – so that one can change working directory, use relative pathnames."
- "It was difficult knowing exactly what the gui was executing."
- Repeat: "Overall seems quite slow – lots of latency time." Repeat comment above about feedback on completion.

IV. Image Display (e.g., starting up the display, changing the colormap in the display, obtaining statistics in the image, and drawing contours in the image):

- "Organization and naming of tools particularly poor here (e.g., within the viewer)."
- "make greyscale the default, not that horrible red and yellow."

4.3 Follow-up Survey

A follow-up oral survey was also carried out on May 4, 2001. Anuj Sarma walked around to the offices of the participants and requested 5–10 minutes of their time. The questions and results of this survey can be found in the ancillary document, "Follow-up Survey of AIPS++ April 13 tutorial."[2]

5 Hand-out

Participants were given a hard copy tutorial guide[3] for use during the hands-on portion of the session.

[2] http://aips2.nrao.edu/daily/docs/notes/UIUCsurvey.txt
[3] http://aips2.nrao.edu/daily/docs/notes/UIUCtutorial.txt