



ALMA Calibration Group

Teleconference 2004-07-30

Connection Details

- Call date: 2004-07-30 (Friday)
- Call time: 15:00 UT
- Duration: 1.0 hr
- USA Toll Free Number: 1-877-919-7148
- International: +1-203-566-1039
- Passcode: 5 1 0 4 6 8
- Leader: Jeff Mangum

Action Items

Assigned	Task	Opened	Due/Completed
Holdaway/Wilson	Produce a first-cut at a "Primary Beam" calibration section.	2004-07-30	2004-08-12
Calibration Subgroup Leads	Coordinate review and revision of their assigned sections by 2004-08-12 telecon. Note that target date for completion of the <u>Calibration Plan</u> is 2004-10-01.	2004-07-30	2004-08-12
Mangum	Works with NRAO Computing to implement an externally-accessible Wiki. If this option will not develop within the next month or so, explore use of the existing ESO Wiki. Richer suggests building Calibration Wiki within an ALMA Science IPT Wiki.	2004-07-15	2004-08-12
Mangum	Will seek guidance from ALMA Management on the question of ACA operation. In the meantime, group discussions should consider ACA-related issues within the context of specific calibration categories.	2004-07-15	2004-08-12
All	Consider whether "Total Power" calibration can be incorporated within other calibration categories (use the current content of the <u>Calibration Plan</u> as a guide).	2004-07-15	2004-08-12
All	Consider whether "Primary Beam" calibration should be added to the list of calibration categories and <u>Calibration Plan</u> sections.	2004-07-15	2004-08-12
All	Review/update <u>Calibration Plan</u> sections.	2004-07-15	2004-08-12
Gibson/Welch	<i>Send preprint of Icarus paper on 28.5 GHz absolute calibration to the group.</i>	2004-07-15	2004-07-30

Attendance

Conway Gibson Hills Holdaway Mangum Morita Mundy Richer Saito Welch Wilson Woody Wootten

Agenda and Minutes

NOTE:

- Items in blue are notes/comments from the telecon,
- Items in red are action items, and
- Items in green are completed action items.

1. Calibration Plan

The Calibration Plan needs to be finished. In order to accomplish this, it will be necessary to have small groups concentrate on specific sections of the plan. The group agreed to the following breakdown. "Volunteers" for review and update of each section, with a suggested "lead volunteer" denoted in bold, are indicated:

- ◆ Amplitude and Flux Calibration (**Welch**, Butler, Carter, Gibson, Holdaway, Mangum, Martin–Pintado, Kawabe, **Wilson**)
- ◆ Phase Calibration (**Hills**, Holdaway, Mundy, Richer, Stirling, Wootten)
- ◆ Bandpass Calibration (**Guilloteau**, Bacmann)
- ◆ Polarization Calibration (**Myers**, Holdaway, Laing)
- ◆ Pointing Calibration (**Mangum**, Lucas, Holdaway)
- ◆ Antenna Location Calibration (**Conway**, Wright)
- ◆ Antenna and Electronic Delay Calibration (**Lucas**)
- ◆ Optics Calibration (**Butler**, Kawabe, Saito)
- ◆ Total Power Calibration (**Holdaway**, Mangum, Mundy, Kawabe)
- ◆ Primary Beam Calibration (**Holdaway**, Wilson)
- ◆ Archiving and Accessing Calibration Quantities (**Lucas**, Mangum)

Discussion...

- ◆ *Hills*: What is the purpose of the Calibration Plan?
- ◆ *Wootten*: The Calibration Plan basically informs other IPTs how calibration is done. It is not designed to augment calibration specifications.
- ◆ *Hills*: Then it is a descriptive/narrative document with examples.
- ◆ When should this document be completed?
- ◆ *Wootten*: Perhaps a good target would be the next AMAC report, which is due 2004–10–01. All agreed.
- ◆ **ACTION**: *Calibration Subgroup Leads*, indicated in **bold** above, will coordinate review and revision of their assigned sections by 2004–08–12 telecon. Note that target date for completion of the Calibration Plan is 2004–10–01.

The need for a Total Power calibration section?

- ◆ *Mangum*: Pointed out that the current content of the "Total Power" section in the Calibration Plan is composed of calibration categories which exist on their own elsewhere (like pointing, amplitude, focus, etc.). Therefore, perhaps the issues pertinent to "Total Power" calibration should be incorporated into other calibration categories.

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- ◆ *Holdaway*: Need to consider all TP calibration issues. Pervasiveness of TP calibration issues might require an overarching section which brings these issues together.
- ◆ ACTION: *All* will consider:
 - ◇ whether "Total Power" calibration can be incorporated within other calibration categories (use the current content of the Calibration Plan as a guide).
- 2. *Holdaway*: Suggests that "Primary Beam" calibration should be its own calibration category and section in the Calibration Plan. General agreement ensued.
- 3. *Hills*: Need to think about what real requirements are for PB calibration. How much does one need to know?
- 4. ACTION: *Holdaway and Wilson* will produce a first-cut at a "Primary Beam" calibration section.

5. Amplitude Calibration Subsystem Development Reports

- ◆ Berkeley Absolute Flux Calibration System (Welch)
 - ◇ *Welch*: Doing measurements now. Doing interferometric horn+antenna measurement of Jupiter. Following with Jupiter, Venus, MWC349, and W3(OH). Follow this with Guilloteau-suggested "selfcal" test. Start with gain of one antenna and transfer flux measurements to other antennas (4 total in this experiment). This is a good scheme for going to submillimeter wavelengths. Measurements will be done within a week.
 - ◇ ACTION COMPLETED: *Gibson/Welch* Preprint of Icarus paper sent to Mangum. Posted to calibration web page at <http://www.nrao.edu/~jmangum/ALMA/Calibration/Amplitude>.
- ◆ Semi-Transparent Vane (STV) Calibration System (Martin-Pintado/Wilson)
 - ◇ *Wilson*: Tan has sent a report to Wilson describing semi-transparent vane material tests to be performed at Madrid Polytech. These will be lab measurements up to 80 GHz of the STV. Measure in absorbing chamber. ESO will approve soon. Measurements will hopefully proceed quickly. Measurement error is about 0.2%.
 - ◇ *Hills*: Will this measurement be able to separate scattering and absorption losses?
 - ◇ *Wilson*: Yes.
 - ◇ *Mundy*: What about high-frequency properties of vane material?
 - ◇ *Wilson/Wooten*: We are all concerned about this. These experiments won't directly measure the high-frequency properties of this material. The hope that that these measurements can be extrapolated to high frequency.
- ◆ Multi-Load (ML) Calibration System (Wilson)
 - ◇ *Wilson*: This is a development designed to implement the system described in ALMA Memo 461 (Guilloteau and Bacmann). See Multi-Load Calibration System Kickoff Meeting Minutes for background and schedule for this development.

◆ Date of next phone meeting

The next ALMA Calibration Group telecon will be 2004, August 12th 15:00 UT.

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