Subject: [allemploy] BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
From: "Al Wootten" <awootten@nrao.edu>
Date: 9/17/2004, 11:16 AM
To: "allemploy" <allemploy@nrao.edu>, "ALMA Calendar List" <alma-info@nrao.edu>, "ALMA North America Science Advisory Committee" <anasac@nrao.edu>

BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
September 13 - September 27, 2004

********** THIS BIWEEK **********
The Japan Negotiating Team, a committee of the ALMA Board, and representatives of the Japanese National Institutes of Natural Science (NINS) have reached a draft agreement with ESO and the National Science Foundation concerning the construction of the Enhanced ALMA.

The week of 27 September will bring the ALMA Science Advisory Committee to Charlottesville for their biannual face-to-face meeting on Monday and Tuesday at the NTC. Wednesday through Friday ALMA IPT leaders will meet in Charlottesville.

Past issues of this Calendar may be viewed at
http://www.cv.nrao.edu/~awootten/mmaimcal/ALMACalendars.html
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General Happenings

Chile: SPdA:The ALMA camp has been completed with some door closers pending. Kitchen equipment has been installed. Work on the permanent access road continues. A contractor has been selected for the initial construction of the ALMA Array Operations Site (AOS) technical building. The foundation package includes the necessary excavation and the construction of the building foundation.
Santiago: A contract was negotiated for outfitting of the temporary ALMA office in Santiago, Chile which will house the JAO and Executive staff.

TUC: A successful review of the Local Oscillator (LO) was held 8 September in Tucson. The review focussed on the first LO synthesizer.

NAASC: NTSC versions of the ALMA DVD will arrive soon. A new ALMA display was created for the DUSTY04 and AAS conferences. A brochure for the AAS meeting is under development. Updating of the ALMA and NAASC websites continues.

NTC: Shipment of Cryostat No 1 from RAL to NTC is planned for 22nd Sep; compressor and lines arrived 7th Sep. Pre-production cartridge #1 for Band 6 (1.3mm) has been assembled and RF tests will commence next week. Windows and filters received from IRAM will be installed in the 1.3mm cartridge test cryostat this week.

ATF: The latest schedule information about the ATF test interferometer shows that it is unlikely WVR tests can be preformed in the winter period ‘04/’05. Tests will focus on integration rather than demonstration.
Tests continue on the Vertex Prototype antenna. Tests on the AEC antenna await repairs. It must be expected that the AEC antenna will

not be operational before the end of October.

AOC: Second Vega 1 digitizer assembly received in Socorro.

DAILY CALENDAR (Times EDT) beginning last Monday...
Mon 13 September
9:30 AM-10:30 AM: NA Project Office Staff Meeting
10:30 AM-12:00 PM: JAO/IPT Teleconference
Tue 14
Wed 15
Thu 16
8:30 AM-10:00 AM: JAO Teleconference
Fri 17
Mon 20
9:30 AM-10:30 AM: NA Project Office Staff Meeting
Tue 21
10:30 AM-11:00 AM: Science IPT Telecon
2:00 PM-3:00 PM ALMA Board/NA Telecaucus
4:00 PM-5:00 PM: NAScienceIPT teleconference (open to all interested
parties) (434)296-7082
Agenda: http://www.cv.nrao.edu/~awootten/mmaimcal/
Wed 22
Thu 23
8:00 AM-9:00 AM: ALMA Board Teleconference
8:30 AM-10:00 AM: JAO Teleconference
Fri 24
All day event: ALMA EU Meeting
Sat 25
Sun 26
********** UPCOMING EVENTS **********
ALMA Calendar

* 21 September -- ALMA/NA Telecaucus
* 23 September -- ALMA Board Telecon
* 24 September -- ALMA/EU Meeting, Garching
* 27-28 September -- ASAC face-to-face meeting, Charlottesville
* 29 Sept - 1 October -- face-to-face IPT Leads Meeting, CVille
* 4-8 October -- The Cool Universe: Observing Cosmic Beginnings
Universidad Tecnica Federico Santa Maria,
Valparaiso, Chile
* 11-12 Oct -- AMAC Meeting, Florence, Italy
* 11-13 Oct -- New Windows on Star Formation in the Cosmos
University of Maryland, College Park, Maryland
* 18-19 Oct -- PDR for the Tunable Filter Bank card; Bordeaux
* 27-29 Oct -- Dusty and Molecular Universe Paris
* 29 Oct -- ANASAC Telecon
* 1 Nov -- ALMA JAO and Executives Face-to-face Meeting, Santiago
* 2-3 Nov -- ALMA Board Face-to-face Meeting, OSF, near San Pedro
de Atacama
* 2 December -- ALMA Board Telecon
* 5-7 Jan 2005 -- UNSC URSI Boulder meeting Commission J
* 6 Jan 2005 -- ANASAC Telecon
* 11 Jan 2005 - ALMA Town Meeting, AAS San Diego
* 27 Jan 2005 -- ALMA Board Telecon

********** TECHNICAL NEWS **********
ALMA Memo No. 503 Antenna Position Determination: Observational Methods
and Atmospheric Limits John Conway (Onsala Space Observatory,
Sweden)

We discuss the accuracy to which ALMA antenna relative positions can be
determined via astronomical observations of phase and delay toward

multiple strong calibrators. We show that delay induced phase gradients
across the bandpass can be used to resolve turn ambiguities so that
accurate delays can estimated from the phase. At low frequencies this
demands only modest stability of the bandpass phase. For this and other
reasons we argue that 90GHz is the best frequency for position
calibration observations. The proposed specification for short time
instrumental phase stability is adequate for antenna position
determination. We discuss in detail the effect of the wet troposphere
and derive how position errors scale with baseline length in the case of
single-baseline calibration. We then generalise to a full calibration of
the whole array. It is found that the resulting position errors between
two antennas is the same as if these two antennas participated in there
own single baseline calibration. We find that because of the geometry
and the need to solve for instrumental phase that even on short
baselines the rms error on the vertical or z-component is twice as large
as for the x and y components. In addition for >1km baselines while the
x and y rms errors rapidly saturate the z components rms errors continue
to increase. Some uncertainly in estimating errors on long baselines
comes from our lack of knowledge of the outer scale of turbulence at the
site. The effects of systematic gradients in the zenith wet or dry delay
and methods of calibration are briefly considered. We propose that when
in the intermediate 'zoom' array configurations an initial calibration
of the moved antennas is made in late afternoon lasting 30minutes. Later
in the early hours of the morning, when phase stability is best, we
propose a 30 - 60 minute calibration of the whole array. Because
of the need to apply phase corrections for antenna positions
retro-actively even continuum data should always be stored in spectral
line mode with channel widths <1 GHz. Final pipelining for the highest
dynamic range imaging may have to wait for up to 12 hours until good
antenna positions are obtained. With good 'a priori' positioning of
antennas on pads and/or the acceptance of delayed pipelining as the norm
after reconfiguration the first late-afternoon calibration might be
avoided. For the smallest configurations we expect that the troposphere
will not be a limitation on achieving the proposed goal of 100 microns
relative positioning on all baselines. For larger configurations we
estimate that while most baselines will achieve the target accuracy
those baselines to recently moved antennas will have much
larger errors. Further work is required to understand the effects of
this on imaging and astrometry.

View a pdf version of ALMA Memo #503.
http://www.alma.nrao.edu/memos/html-memos/alma503/memo503.pdf
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LAMA Memo No. 808 How To Tune ALMA: An Example
Larry R. D'Addario   Dated: 2004-Sep-07

This note describes the process of setting up the LO system of the
ALMA telescope so as to obtain a desired sky frequency and bandwidth.
It does this by way of a specific example for which the calculation
and control steps are given in detail. One example cannot cover all
possible cases, but comments are included about how some steps might
be different. This description is based on the system design that is
now current, but some details are subject to change.

LAMA Memo index page, with general information and links to all memos:
http://www.tuc.nrao.edu/lamaMemos
This memo, PDF format:
http://www.tuc.nrao.edu/lamaMemos/lamaMemo808.pdf (56 KB)
**********ALSO OF INTEREST**********

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Please send information for upcoming calendars by Friday evening of the preceding biweekly period to Janet Bauer or Al Wootten via e-mail (jbauer@nrao.edu or awootten@nrao.edu).

The calendar will be issued between late Friday and sometime on Monday by e-mail to all NRAO scientific staff members and anyone else interested. A specific mailing list, alma-info, has been created for anyone wishing to receive it. Past issues are now available at http://www.cv.nrao.edu/~awootten/mmaimcal/ALMACalendars.html

Attachments:

winmail.dat 6.3 KB