

Subject: [allemploy] 2005 Feb 14 BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
From: Al Wootten <awootten@nrao.edu>
Date: 2/18/2005, 4:14 PM
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BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
February 14 -- February 28, 2005

***** THIS FORTNIGHT*****

Adrian Russell arrives in Charlottesville 20 February. Welcome, Adrian!

Marc Rafal will serve as Interim North American Antenna IPT lead. Victor Gasho, who has held this post, left the Observatory effective 11 February 2005 to join the Steward Observatory, as previously reported.

The ALMA Project Scientist job has now been advertised on the NRAO website.

The ALMA Scientific Advisory Committee will meet in Garching 24-25 February.

Tony Kerr, a pioneer of the use of SIS junctions in receivers from the 12m to ALMA and beyond, is a recipient of one of the Observatory's Distinguished Performance Awards for 2004.

Springer Verlag has just published a history of Tucson Operations. Entitled " 'Recollections of Tucson Operations', The Millimeter-Wave Observatory of the National Radio Astronomy Observatory," it was written by Mark Gordon, one of the ALMA pioneers.

Lee Shapiro will be resigning his position as Head of Education and Public Outreach (EPO) at the NRAO effective March 1, 2005. We wish you well, Lee!

Past issues of this Calendar may be viewed at
<http://www.cv.nrao.edu/~awootten/mmailcal/ALMACalendars.html>

General Happenings

Santiago: Kevin Long has begun work in Santiago.

OSF: Completion of 22 bed facility at the Contractors Camp and emergency road repair continue. 25 people are currently working at this site.

Tucson: ATF support during antenna tests. Redesign of LO line length corrector 80% complete. Verification tests continue on prototype modules for the prototype system integration. Tests are underway to study phase drift with temperature.

ATF: Holography completed on readjusted surfaces; out of focus beam maps with Vertex antenna are under analysis.

AOC: ATF support during antenna tests. C. Janes at Fiber Management CDR in Garching last week.

NAASC: Discussions on ALMA calibrators and other topics were held; see wiki page for minutes.

NTC: Alejandro Saez has assumed the role of correlator engineer and is testing correlator cards while learning the system. DTS Simulator cards have arrived.

Work is ongoing on the evaluation receivers to allow phase locking using the photonic LO reference for ATF interferometry. Integrated Front End testing has commenced with the Band 6 cartridge. Prototype cold multipliers for Band 9 were delivered to ESO which produce adequate power over most of the band. WVR PDR will be 4 May in Onsala. Central Variable Reference design review March 29 in CV.

DAILY CALENDAR (Times EST)

Mon 14
9:30 AM-10:30 AM: NA Project Office Staff Meeting
10:30 AM-11:30 AM: JAO IPT Telecon
Tue 15
10:30 AM-11:00 AM: Science IPT Telecon
Wed 16
Thu 17
9:30 AM-11:00 AM: Management IPT Teleconference
Fri 18
2:00 PM-3:00 PM: NA ALMA Telecaucus
2:00 PM-3:00 PM: ANASAC Teleconference
Sat 19
Sun 20
Mon 21

NRAO Holiday: President's Day, celebrating the birthdays of President Abraham Lincoln (12 Feb) and George Washington (22 Feb)

Tue 22
No Science IPT telecon; some folks are on planes to the ASAC meeting.

Wed 23
Thu 24
All Day: ASAC face-to-face meeting, Garching
9:30 AM-11:00 AM: Management IPT Teleconference

11:00 AM: ALMA Board Telecon
Fri 25
All Day: ASAC face-to-face meeting, Garching

Sat 26
Sun 27

***** UPCOMING EVENTS *****

ALMA Calendar

- * 24-25 Feb 2005 -- ASAC face-to-face meeting, Garching
- * 24 Feb 2005 -- ALMA Board Telecon.
- * 20 Mar 2005 -- Philadelphia ICASSP/IEEE meeting, Philadelphia
- * 22-24 March 2005 -- JAO/IPT Meeting, Garching
- * 29 March 2005 -- CVR review, Charlottesville
- * 4 April -- Executive meeting, Pasadena
- * 5-6 April 2005 -- AMAC Face-to-face meeting, Pasadena, CA.
- * 7-8 April 2005 -- ALMA Board Face-to-face meeting, Pasadena, CA.
- * 4 May 2005 -- WVR PDR, Gothenburg, Sweden

***** TECHNICAL NEWS *****

ALMA Memo # 507 ALMA First LO Reference : Elimination of Large Phase Fluctuations due to lightwave polarization effects
Authors: Bill Shillue, S. Albanna

Abstract: The ALMA 1st LO reference is sent from the central Array Operations Site Technical Building to each of 64 antennas over optical fiber. Two high-coherence and phase-locked lightwaves are transmitted that are separated by a variable frequency ranging from 27-142 GHz. The round-trip stabilized fiber optic distribution system has been previously described in this memo series [1-3,13]. In August of 2003, a first generation version of the line length correction system was tested on a prototype ALMA antenna. These were the first systematic measurements of

the system on the moving structure. During these measurements we noticed an undesirable and unexpected phase fluctuation which was correlated with the antenna azimuth and elevation position. Those tests are described in an internal test report [4]. Further tests and meetings took place in an effort to resolve this issue [5-8]. In addition, an ALMA memo was written describing a theoretical treatment of the measured phase fluctuation [9], supporting the measurement results which showed that the phase fluctuation was due to the absolute polarization change (caused by the fiber movement) of the two lightwaves, and that the phase fluctuation magnitude was inversely proportional to the degree of polarization alignment of the two lightwaves. To put it another way, if the state-of-polarizations (SOPs) of the two lightwaves were different at the receiver end, then any movement of the fiber would cause a phase change. The purpose of this memo is to summarize the main points from the references listed above, and additionally to describe more recent measurements that utilize improvements to the 1st LO reference baseline design. This is mainly an experimental report, there is a related theoretical study as well [14].

View a pdf version of ALMA Memo #507 at:
<http://www.alma.nrao.edu/memos/html-memos/alma509/memo507.pdf>

ALMA Memo # 509 G/T at 243 GHz for the ALMA Telescope
G. A. Ediss (NRAO/CV) 2004-11-23 00:00
A (limited) student version of GRASP [1] was used to analyze the gain/system temperature (G/T) at 243 GHz for the ALMA telescope. It shows an optimum edge taper of between -12 dB and -14 dB at the secondary mirror, with the telescope pointing at the zenith, for the Band 6 receiver.

View a pdf version of ALMA Memo #509 at:
<http://www.alma.nrao.edu/memos/html-memos/alma509/memo509.pdf>

ALMA Memo # 512 ATMOSPHERIC TRANSPARENCY AT CHAJNANTOR: 1973-2003
Angel C. Otarola, Mark Holdaway, Lars-Ake Nyman, Simon J. E. Radford,
Brian L. Butler 2005-01-14 00:00

Abstract: Atmospheric conditions at Chajnantor have been monitored since April 1995. Starting then, the National Radio Astronomy Observatory (NRAO), joined by the European Southern Observatory (ESO), Onsala Space Observatory (OSO), and the Nobeyama Radio Observatory (NRO), have operated atmospheric and weather monitoring equipment to characterize the observing conditions for a large radio interferometer for astronomy at millimeter and sub-millimeter wavelengths. The data have demonstrated Chajnantor is an exceptionally good site.

In this work, we examine the atmospheric transparency at Chajnantor before direct measurements begun. We first show the surface water vapor pressure at Chajnantor is a good estimator of the daily-average atmospheric transparency by direct correlation with measurements of optical depth at 225 GHz. Next, we show the surface water vapor pressure at the Calama airport correlates reasonably well with the surface weather conditions at Chajnantor. These findings then allow us to examine the transparency at Chajnantor since 1973 through the analysis of the Calama surface weather data.

Besides, we also include here a determination of the strength of the so-called Bolivian winter (regional monsoon) based on a normalized index calculated out of surface water vapour pressure. This index helps us to get the annual regional humidity trend, and in turn can be useful to compare the atmospheric observing conditions from year to year.

View a pdf version of ALMA Memo #512 at:
<http://www.alma.nrao.edu/memos/html-memos/alma512/memo512.pdf>

Alma memo # 514 Saturation correction with atmospheric fluctuations A. Bacmann & S.

Guilloteau 2005-01-20 00:00

*****ALSO OF INTEREST*****

SMA proposal deadline for next semester (MAY 1 - OCT 31) is MAR 17, 2005

Please send information for upcoming calendars by Friday evening of the preceding biweekly period to Jennifer Neighbours or Al Wootten via e-mail (jneighbo@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 available at

<http://www.cv.nrao.edu/~awootten/mmaimcal/ALMACalendars.html>

Allemploy mailing list

Allemploy@listmgr.cv.nrao.edu

<http://listmgr.cv.nrao.edu/mailman/listinfo/allemploy>