

**Subject:** [allemploy] BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO  
**From:** "Al Wootten" <awootten@cv.nrao.edu>  
**Date:** 5/23/2004, 8:43 PM  
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BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO

May 24 - June 7, 2004

\*\*\*\*\* THIS BIWEEK \*\*\*\*\*

Antonio Perfetto and Jeff Mangum move to Charlottesville this week in the lead of a group (much of it in the Front End IPT) who will be leaving Tucson in the next few weeks.

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General Happenings

Chile 62 workers on site labor on the ALMA and construction camps and the road.

ATF Radiometric testing, pointing, focus, fast switching test are underway on the AEC antenna.

NAASC J. Mangum arrives.

NTC Cryo-3 HFET's arrived from JPL; enough to produce IF amplifiers for the first eight .  
For the first time a production local oscillator chain was mated with the prototype cartridge in the cartridge test system. A. Perfetto arrives.

AOC The first Pipeline tests performed early May by C. Wilson were successful, according to a detailed informal report

DAILY CALENDAR

Mon 24 All Day: NRAO Users Committee, NTC

10:30 AM-12:00 PM: JAO/IPT Teleconference

Tue 25 All Day: NRAO Users Committee, NTC

All day event: Back End CDR, Arcachon, France

2:30 PM NA ALMA Caucus Telecon

3:00 PM-4:00 PM: Front End Group Meeting

4:00 PM-5:00 PM: NAScienceIPT teleconference (open to all interested parties)

(434)296-7082

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

Video conference today--Viewing of new ALMA

movie (14 mins).

Wed 26

All day event: Back End CDR, Arcachon, France

Thu 27

8:00 AM-9:00 AM: ALMA Board Teleconference

8:30 AM-10:00 AM: JAO Teleconference

Fri 28

Mon 31

All day event: NRAO Holiday

All day event: ESO Holiday

Tue 01

1:00 PM-2:30 PM: NA DH Teleconference

4:00 PM-5:00 PM: NAScienceIPT teleconference (open to all interested parties)

(434)296-7082

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

Go to meeting date (last of five years of

agendas)

Wed 02

10:30 AM-12:00 PM: ASAC Teleconference

Thu 03

8:30 AM-10:00 AM: JAO Teleconference

Fri 04

\*\*\*\*\* UPCOMING EVENTS

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#ALMA Calendar

- \* 25 May -- N. A. Caucus Telecon
- \* 25-26 May -- ALMA Backend Review, Arcachon, France
- \* 27 May -- ALMA Board Telecon
- \* 7-8 June -- ALMA Band 7 (275-373 GHz) PDR, Netherlands
- \* 22-23 June -- ALMA Board Meeting, Garching
- \* 8-10 July -- Software IPT CDR II, Denver, Colorado.
- \* 24 September -- ALMA/EU Meeting, Garching  
see <http://www.eso.org/gen-fac/meetings/almacd2004/>
- \* 11-12 Oct -- AMAC Meeting, Florence, Italy

\*\*\*\*\* TECHNICAL NEWS

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ALMA MEMO #494 MF-112 AND MF-116: Compact Wavguide Loads And FTS

Measurements At Room

Temperature And 5 K

A. R. Kerr (NRAO), H Moseley (GSFC), E. Wollack (GSFC), W. Grammer (NRAO), G. Reiland (NRAO), R. Henry (GSFC), K.P. Stewart (NRL)

2004-05-14

In many applications it is convenient to have a compact waveguide load which is well matched but occupies a minimum of space. In this memo we describe measurements on compact WR-10 and WR-3.7 waveguide loads of three configurations, and also Fourier transform spectrometer (FTS) measurements on samples of the Eccosorb MF-112 and MF-116 absorbing materials used for these loads. The measurements were made at room temperature and 4 K. From the FTS measurements, the attenuation constant, effective characteristic impedance and effective dielectric constant in the frequency range 400 GHz -2.5 THz are deduced.

View a pdf version of ALMA Memo #494.

<http://www.alma.nrao.edu/memos/html-memos/alma494/memo494.pdf>

ALMA MEMO #496 183 GHz water vapour radiometers for ALMA: Estimation of phase errors

under varying atmospheric conditions.

Alison Stirling, Richard Hills, John Richer, Juan Pardo  
2004-05-18

We investigate the use of water vapour radiometers as a tool for estimating phase due to atmospheric water, focusing on the impact of differing atmospheric conditions on the relationship between path length and brightness temperature. We provide a formula for converting between the two for a variety of atmospheric conditions, and outline how the radiometer channel temperatures may be combined to give an optimal estimate for the path difference. This estimate gives an error of about 2% per mm of precipitable water vapour due to atmospheric variations. The presence of hydrometeors such as ice or water droplets is also considered, and we show that radiometers possessing sideband separation could be used to detect the presence of 0.02 mm of column integrated ice for crystals of size 75 $\mu$ m, and about 10<sup>-3</sup>mm of water droplets.

View a pdf version of ALMA Memo #496.

<http://www.alma.nrao.edu/memos/html-memos/alma496/memo496.pdf>

ALMA MEMO #497 ANALYSIS OF WIND DATA GATHERED AT CHAJNANTOR

Juan Pablo Pérez Beaupuits (ESO), Angel Otárola (ESO),  
Fredrik T. Rantakyro (ESO), Roberto C. Rivera (ESO)  
Simon J. E. Radford (NRAO), Lars-Åke Nyman (ESO)  
2004-05-07

A general description and statistics of the wind speeds and directions registered at the ALMA site during 2001 and 2002 are presented. Measurements from different wind directions within 22.5° (in azimuth), topographic sectors and two markedly different daily periods were obtained. Spectra of the wind turbulence are presented for three wind speed conditions. During the diurnal period the convective turbulence and mean wind speed determine the shape and magnitude of the wind spectra, whereas in the nocturnal period the effects of the mechanical turbulence, such as the wind shear and surface roughness together with the mean wind speed, become relevant. No significant differences were found between the spectra obtained from three topographic sectors in the diurnal period, whereas in the nocturnal period a statistical test showed a significant difference for a particular topographic sector and for a given wind speed range, reflecting changes in the wind spectrum structure due to the local topography. General models of average spectra were found for three mean wind speeds, in the diurnal and nocturnal periods. Relations between the models and the mean wind speed were found. These relations makes it possible to estimate the spectral behaviour of the wind at the ALMA site for different mean wind speeds, which will be useful in the study of the wind loading on the antenna structure and pointing. Based on the results we can also conclude that the performance of the ALMA antenna regarding wind load is expected to be better for both daytime and nighttime periods.

View a pdf version of ALMA Memo #497.

<http://www.alma.nrao.edu/memos/html-memos/alma497/memo497.pdf>

ALMA MEMO #498 The ALMA Band 6 (211-275 GHz) Sideband-Separating SIS Mixer-Preamplifier

A. R. Kerr (NRAO), S.-K. Pan (NRAO), E. F. Lauria (NRAO), A. W. Lichtenberger(U. Va.),  
J. Zhang (U. Va.), M. W. Pospieszalski (NRAO), N. Horner (NRAO), G. A. Ediss (NRAO),  
J. E. Effland, (NRAO), R. L. Groves (NRAO)

2004-05-14

The ALMA Band 6 (211-275 GHz) receivers use sideband-separating SIS mixer-preamplifiers with dual 4-12 GHz IF outputs. The sideband-separating mixers are of the phasing type, with the LO driving two component mixers in-phase and the RF signal connected to the mixers through a quadrature hybrid. The IF outputs of the mixers are amplified, then combined in a quadrature hybrid which separates the upper and lower sideband signals. The RF circuit components are all in a single split waveguide block -- quadrature hybrid, LO power divider, LO couplers, cold image termination, and the two mixer chips. To achieve the wide IF bandwidth, a low-parasitic mixer is used and the preamps are bolted directly to the mixer block.

View a pdf version of ALMA Memo #498.

<http://www.alma.nrao.edu/memos/html-memos/alma498/memo498.pdf>

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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](mailto:jbauer@nrao.edu) or [awootten@nrao.edu](mailto: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 may be created for this.

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Allemploy mailing list

[Allemploy@listmgr.cv.nrao.edu](mailto:Allemploy@listmgr.cv.nrao.edu)

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

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— Attachments: —

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