

**Subject:** [allemploy] BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO  
**From:** "Al Wootten" <awootten@cv.nrao.edu>  
**Date:** 6/5/2004, 5:37 PM  
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BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO  
June 7 - June 21, 2004

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

The Board has reopened the search for the ALMA JAO Project Scientist.

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Denis Urbain, Christian Holmstedt and Wes Grammer arrive at the NTC in Charlottesville from their former post in Tucson.

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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            A request for bids for the AOS building foundation has been issued;  
                 excavation is expected to commence in the fall. Space on the 18th floor of an office building in Santiago has been secured for offices to open there in the Fall. Board, lodging and cleaning services at the ALMA Camp at the OSF site started on 01-Jun-2004. The camp currently houses approximately 10 ALMA persons. Both EU and NA personnel now maintain a presence at the ALMA Camp. About 69 people now work at this site.

ATF            Tests of the prototype antennas have concluded and the Antenna Evaluation Group has filed a report on the results. Systems Engineering now assigns ATF tasks.

NAASC           Paul vanden Bout will return from his sabbatical to assume duties as NAASC Head.  
                 A new ALMA promotional video is available from EPO.

NTC            Tucson group arriving. Tests of the 1.3mm Band cartridge third tuning structure on the new (50mm) wafer have yielded good results with noise temperatures within the ALMA specifications. The first station card/filter card test fixture was completed and checked out at the University of Bordeaux for testing of

the Tunable Filter Bank  
cards and digitizers. A second such test fixture was  
completed and is now working in  
Charlottesville.

AOC CDR2 document set submitted for internal review (June 10-12).  
SE & I IPT meeting  
with Project Engineer Rick Murowinski held last week in  
Socorro. Three engineers  
from Bordeaux will be in Socorro this week to assess  
Digitizer-Correlator interface  
performance.

TUC Prototype System Integration Planning effort is continuing in  
both Tucson and Socorro.  
Construction of the RF Simulator is proceeding. The central  
LO reference modules are  
being integrated into the Central LO Rack.

DAILY CALENDAR (Times EDT)

Mon 07

All Day ALMA Band 7 (275-373 GHz) Preliminary Design Review, Grenoble  
10:30 AM-12:00 PM: JAO/IPT Teleconference

Tue 08

All Day ALMA Band 7 (275-373 GHz) PDR, Grenoble  
11:00 AM: ALMA Science Software Requirements telecon (members)

Agenda:

<http://almasw.hq.eso.org/almasw/bin/view/SSR/2004-06-09>

4:00 PM-5:00 PM: NAScienceIPT teleconference will not be held this week.

Wed 09

11:00 AM-12:00 PM: Software Science Req. Group Teleconference

Thu 10

All day event: ESO Holiday  
8:30 AM-10:00 AM: JAO Teleconference

Fri 11

Mon 14

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

Tue 15

10:30 AM-11:00 AM: Science IPT Telecon  
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 16

Thu 17

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

Fri 18 Sat

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

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#ALMA Calendar

- \* 7-8 June -- ALMA Band 7 (275-373 GHz) PDR, Grenoble
- \* 22-23 June -- ALMA Board Meeting, Garching
- \* 8-10 July -- Software IPT CDR II, Denver, Colorado.
- \* 24 September -- ALMA/EU Meeting, Garching
- \* 11-12 Oct -- AMAC Meeting, Florence, Italy

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

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ALMA MEMO #493 Finding Fast Switching Calibrators for ALMA

M.A. Holdaway, C. Carilli, R. Laing 2004-04-29

In order to perform fast switching phase calibration effectively, we need to have a database of bright point-like sources at millimeter wavelengths.

Optimally, this would include flux measurements at 86 GHz and spectral information at higher frequencies. We present a sample of 31145 compact flat spectrum radio sources with  $-40 < \text{dec} < +60$ , presumed extragalactic, which will be likely

candidates for calibrator sources. A sample of variable steep spectrum source (ie, sources that could harbor a flat spectrum core even though they appear to be steep spectrum) adds another 1767 sources. And a sample of weak but highly inverted sources adds another 5296 potential sources to observe. Hence, we have

as many as 38208 sources which are likely to be detected at millimeter wavelengths, though some of the steep spectrum variable sources and highly inverted source candidates may be abandoned based on detection rate. The Prototype Interferometer (PI) at the ALMA Test Facility (ATF) may be available to verify if these sources

are indeed bright at 86 GHz. The sensitivity of the prototype receivers should permit a noise level of about 3.5 mJy at 86 GHz and about 10 mJy at 250 GHz.

We expect about a third of the sources will be brighter than 20 mJy at 86 GHz,

and these detections will be reobserved at 86, 106, 215, and 263 GHz to determine the spectrum at higher frequencies and to have some data on variability. These observations should take about 80-90 days of time on the Prototype Interferometer, and it is suggested that these observations could be done at night in the spring and fall of 2005, subject to availability of equipment and manpower.

View a pdf version of ALMA Memo #493.

<http://www.alma.nrao.edu/memos/html-memos/alma493/memo493.pdf>

ALMA MEMO #497 ANALYSIS OF WIND DATA GATHERED AT CHAJNANTOR

Juan Pablo Pérez Beaupuits (ESO), Angel Otárola (ESO),

Fredrik T. Rantakyrö (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  $22.5^\circ$  (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 # 499 An Approach Detecting the Event Horizon of SgrA\*

Makoto Miyoshi, Seiji Kamenno, Jose K. Ishitsuka, Zhi-Qiang Shen, Rohta Takahashi,

Shinji Horiuchi 2004-05-20 00:00

Imaging the vicinity of a black hole is one of the ultimate goals of VLBI astronomy.

The closest massive black hole, SgrA\*, located at the Galactic center is the leading candidate

for such observations. Combined with recent VLBI recording technique and submillimeter radio

engineering, we now have the sufficient sensitivity for the observations.

Here we show

performance simulations of submillimeter VLBI arrays for imaging SgrA\*.

Good images are

obtained from submillimeter VLBI arrays in the southern hemisphere

composed of more than

10 stations. We also note that even with a small array, we can estimate

the shadow size and

then the mass of black hole from visibility analysis. Now, all we need is

to construct a

submillimeter VLBI array in the southern hemisphere if we wish to unveil

the black hole

environment of SgrA\*.

View a pdf version of ALMA Memo #499.

<http://www.alma.nrao.edu/memos/html-memos/alma499/memo499.pdf>

ALMA MEMO #500 Wind power spectrum near Chajnantor

S. Sakamoto (NAOJ), H. Ishizaki (NAOJ), K. Kohno (IoA, U. Tokyo)

2004-05-20

We present wind power spectral density up to  $\sim 1$  Hz measured near Cerro Chajnantor. The

power spectral density of variable component is represented by its value around 0.1 Hz.

Median values of the wind power spectral density are smaller than those predicted by

the Simiu model with a roughness length of 0.05 m in most cases. The

90-percentile

values of the wind power spectral density are approximately three times

larger than

the corresponding median values. The wind power spectral density is not a

simple

function of mean wind velocity, and sometimes shows significant

suppression after

sunset. There exists no significant change of the wind power spectral

density and

roughness length that depend on the wind direction. Agreement of wind

velocity measured  
at 8.0 m and 3.0 m above the surface within a few 10% difference supports  
small  
roughness length ( $\ll 0.5$ ). The van der Hoven spectrum extracted from  
long-term weather  
station data implies that the weather system in this area is very stable  
and change of  
mean wind velocity (i.e., duration of gusty conditions) is dominated by  
the diurnal cycle.

View a pdf version of ALMA Memo #500.

<http://www.alma.nrao.edu/memos/html-memos/alma500/memo500.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, alma-info, has been created for anyone wishing to receive  
it. Past issues  
are now available at  
<http://www.cv.nrao.edu/~awootten/mmailcal/ALMACalendars.html>

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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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