

**Subject:** [allemploy] FYI: 27 March 2006 BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO  
**From:** Al Wootten <awootten@nrao.edu>  
**Date:** 4/3/2006, 11:07 AM  
**To:** anasac@nrao.edu, allemploy@nrao.edu, alma-info@nrao.edu, mmaimcal@nrao.edu

BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO  
27 March 2006 -- 10 April 2006

\*\*\*\*\* THIS FORTNIGHT\*\*\*\*\*

On 2 March, at the US House Committee on Appropriations Subcommittee on Science, the Departments of State, Justice, and Commerce, and Related Agencies there was a hearing on the NSF budget, at which there was testimony from Arden Bement, Director and Dr. Warren Washington, Chairman, National Science Board.

On March 2, NSF Director Arden Bement testified in a public hearing before the House Appropriations Subcommittee on Science, State, Justice and Commerce on the NSF budget request for FY 2007. Rep. Culberson (R-TX), referring to a recent piece about ALMA in Nature Magazine, asked Dr. Bement about the status of ALMA.

Dr. Bement called ALMA "very transformational". He noted the increased costs associated with ALMA, referring to a number of factors including: increasing commodity prices, changes in the Chilean economy, and the difficulty in anticipating the myriad of issues that arise with individual international partners. Dr. Bement went on to talk about the re-scoping of ALMA to 50 telescopes, a stepped up monthly reporting process, detailed reviews every 6 months and a variety of other NSF management actions taken to address the increasing cost of ALMA. Dr. Bement suggested that the cost increase could be between 30 and 40% by the time all the dust settles.

When Rep. Culberson asked whether this cost increase could adversely affect other future astronomy projects, Dr. Bement pointed out that increasing commodity prices for steel and other materials, being driven in part by growth in the economies of China and India, was the major issue and it could impact not just telescopes but other major research projects such as ones currently being funded by NSF including an arctic research vessel, the ocean drilling ship and other current and future projects funded by NSF.

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The AMAC and the ALMA Board both met in Kyoto. Thijs de Graauw presented a summary of findings and recommendations from the 20-21 March meeting to the ALMA Board late on 21 March. The ALMA Board concurred in the appointment of Ian Robson as a European member of AMAC.

The Board as constituted for this meeting had some changes. J. Sunley, of NSF, attended the meeting as an alternate for R. Dickman, who could not attend. R. Wade functioned as Chair for this meeting, with A. Sargent functioning as Vice Chair. E. van Dishoeck, who has replaced P. van der Kruit on the Board attended her first face-to-face meeting. Roy Booth attended but in his new role as Assessor. Agreed to consider a request by NAOJ that a Taiwanese observer be invited to subsequent Board meetings, and reply in time for the April telecon.

The Board noted the Executive's decision to enlarge the Director's Council to include the Director-General of NAOJ. The Board expressed its deepest gratitude to N. Kaifu for his service on the ALMA Board and for his vision of how the ALMA-J program makes ALMA a truly global international collaboration.

The Board approves selection of the ESO's Vitacura site as the location for the ALMA Headquarters building in Santiago. The Board thanked the ASAC for its response to charges given it, delivered by Chris Wilson, and it concurred in the appointment of John Richer as the next ASAC Chair (Lee Mundy is the new Vice Chair).

The Board also approved the following revised standard ALMA description to be effective July 1, 2006:

"The Atacama Large Millimeter/submillimeter Array (ALMA), an international astronomy facility, is a partnership between Europe, Japan and North America in cooperation with the Republic of Chile. ALMA is funded in Europe by the European Southern Observatory (ESO), in Japan by the National Institutes of Natural Sciences (NINS) in cooperation with the Academia Sinica in Taiwan and in North America by the U.S. National Science Foundation (NSF) in cooperation with the National Research Council of Canada (NRC). ALMA construction and operations are led on behalf of Europe by ESO, on behalf of Japan by the National Astronomical Observatory of Japan (NAOJ) and on behalf of North America by the National Radio Astronomy Observatory (NRAO), which is managed by Associated Universities, Inc. (AUI)."

Board members expressed their deepest gratitude and appreciation of Bob Dickman's contribution to the ALMA project.

The ASAC Report may be viewed at:

[http://www.alma.nrao.edu/committees/ASAC/asacreport\\_2006jan.pdf](http://www.alma.nrao.edu/committees/ASAC/asacreport_2006jan.pdf)

Past issues of this Calendar may be viewed at

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

See also the JAO ALMA Calendar overview at:

[http://www.alma.cl/alma\\_project](http://www.alma.cl/alma_project)

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General Happenings

OSF (Ops Support Facility, 9600ft altitude): The Vertex site is levelled and awaits Vertex occupancy. There are approximately 134 persons on the ALMA site, 65 of them workers at the AOS site.

AOS (Array Ops Site, 16000ft altitude): The AOS Technical Building Foundation and Shell is near completion. The ALMA Board approved the finish work, which awaits NSF approval.

TUC: An ALMA Band 6 (1.3mm) mixer was successfully tested on the SMT on Mt. Graham.

AOC: Various problems in the DTS and DTS systems are under investigation. The group will finish end-to-end LO phase drift tests. The move from the lab to the ATF is envisaged to occur in August.

ATF (ALMA Test Facility, VLA site): Control Software upgrade installation specific for the AEM antenna had been delayed for a week when ACU/drive problems at the antenna prevented checking out the COMP IPT software. The problem was traced to a failed servo amplifier; the amplifier was replaced. Software upgrade was then largely completed. LO & DTS problems mentioned above will be addressed. This week, the computing IPT will continue testing control software at the ATF. AEM staff will visit the ATF starting in mid April to work on the antenna metrology system.

NAASC (North American ALMA Science Center: Many members were involved in software tests in Socorro.

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DAILY CALENDAR (Times EDT ) see

<https://wikio.nrao.edu/bin/view/ALMA/AlmaCalendar>

Sun 26 Mar Change to Summer Time, Europe  
 Mon 27 Mar  
 Tue 28 Mar  
 10:30 AM-11:30 AM: JAO IPT Telecon  
 Wed 29 Mar  
 Total Solar Eclipse, parts of Africa, Europe and Asia  
 3:30 pm: Astrochemistry Group Meeting, U. Va.  
 Thu 30 Mar  
 10:30 AM-11:30 AM: Management IPT Telecon  
 Fri 31 Mar  
 11:45 AM: Update on ALMA Lo System by B. Shillue, NTC Penthouse  
 Sat 1 Apr  
 Sun 2 Apr Change to Daylight Savings Time, most parts of NA.  
 Mon 3 Apr  
 Tue 4 Apr  
 10:30 AM-11:30 AM: JAO IPT Telecon  
                   NA IPT Leads Telecon  
 4:00 PM-5:00 PM: NAScienceIPT teleconference (open to all interested parties) (434)296-7082  
 Wed 5 Apr  
 11:00 EDT ASAC Telecon  
 1:30 EDT NAASC Telecon  
 Thu 6 Apr  
 Fri 7 Apr  
 Sat 8 Apr  
 Sun 9 Apr

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

April 5	1500 UT	ASAC Telecon	
April 5	1:30 EST	NAASC Telecon	
April 24-25	All day	SRR followup meeting	Garching
April 27		ALMA Board Telecon	
April 28	1900 UT	ANASAC Telecon	
June 13-14	all day	ALMA Board Meeting	OSF
Sept 22-23	evening	Dave Matthews Band	CV JPJ Arena opening
November 9-10	all day	ALMA Board Meeting	Madrid TBD
Nov 13-16	all day	Science with ALMA: a new era for Astrophysics	Madrid

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

ALMA Memo #541: Horizontal Temperature variations at Chajnantor  
by: Alison Stirling, Angel Otarola, Roberto Rivera, Juan Bravo

Abstract:

In August 2005 an observing campaign was conducted to measure the horizontal variability in the temperature profile above the Chajnantor site. The temperature profile is known to affect pointing and phase corrections, as well as amplitude calibrations, and so knowledge of the likely variation in temperature is essential for planning ancillary meteorological equipment for the site.

The campaign concentrated on analysing the atmosphere in two locations of the extended array configuration. In these two sites, radiosonde balloons were launched at regular intervals and high frequency surface measurements were taken using a meteorological mast. The results of the study have shown that the temperature profile in the first 100m above the ground is strongly controlled by surface heating and cooling, and that variation in the altitude of the terrain can introduce horizontal temperature variations of up to 5 K over the site.

We have analysed the likely impact of these temperature variations on pointing and phase corrections, looking at the errors introduced by assuming that the temperature profile from one location can be used to estimate the pointing and phase corrections at the second location. We find that pointing errors introduced by using a temperature profile from

a different part of the Chajnantor site are of order 0.3" at an elevation of 60 degrees. Path errors introduced as a result of using the distant temperature profile are of order 2%. These errors are similar in magnitude if an idealised temperature profile is used, in which a constant lapse rate is assumed, in conjunction with the measured surface temperature at that location.

In addition we have measured the parameters required for future atmospheric modelling studies of the site, for example the net radiation (incoming minus outgoing, shortwave and longwave) in August peaks at 460-495 W m at midday, and the surface albedo is 0.6. The surface sensible and latent heat fluxes peak at ~ 300 W m<sup>-2</sup> 40 W m<sup>-2</sup>, respectively, and the roughness length is measured to be ~1 cm. In the presence of antennas, this is expected to increase to 10 cm in the extended configuration, and 160 cm in the compact configuration, increasing the mechanically induced turbulence at the site.

View a pdf version of ALMA Memo #541 at:

<http://www.alma.nrao.edu/memos/html-memos/alma541/memo541.pdf>

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

CONGRATULATIONS!!! To our friends at CARMA, who achieved fringes with 15 antennas on Saturday.

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Post Doctoral Research Associate Studies of high-mass star formation  
Salary up to £26,401 per annum (Ref: EPS/108/06)

THE UNIVERSITY OF MANCHESTER FACULTY OF ENGINEERING AND PHYSICAL SCIENCES  
SCHOOL OF PHYSICS AND ASTRONOMY JODRELL BANK OBSERVATORY

A postdoctoral position is available to work on a new VLA high resolution radio continuum survey of the Galactic Plane. This Large VLA Project has been awarded ~400 hours of observing time and will begin in June 2006; it will cover the same area as the northern GLIMPSE survey made by the SPITZER satellite. The postdoctoral fellow will take charge of the observations, reduction and exploitation of the survey, aimed principally at the study of high-mass star formation. Collaboration with other members of the international team is envisaged.

The position is available immediately for a period of two years in the first instance, with the possibility of extension beyond this date. The appointment will be as a Research Associate, with a starting salary in the range of £24,886 to £26,401 per annum.

Application forms and further particulars are available at <http://www.manchester.ac.uk/vacancies> or from EPS HR Office, The University of Manchester, Sackville Street Building, Manchester M60 1QD, Tel: 0161 275 8837; Fax: 0161 306 5037 or email: [eps-hr@manchester.ac.uk](mailto:eps-hr@manchester.ac.uk).

Quote ref: EPS/108/06

Closing date: Monday 1 May 2006

Informal inquiries may be made to Philip Diamond, tel: 01477 571321, email [pdiamond@jb.man.ac.uk](mailto:pdiamond@jb.man.ac.uk)

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2nd pan-ALMA Conference : 2nd Announcement

Dear Colleague,

The 2nd pan-ALMA conference on "Science with ALMA: a new era for Astrophysics" will be held 13-16 November 2006 in Madrid, Spain. The venue will be the campus of the CSIC (Consejo Superior de

Investigaciones Cientificas), in the centre of town.

Information on the 2nd pan-ALMA meeting is available via

<http://www.oan.es/alma2006/> (final slash is mandatory)

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ALMA presentations at the January Zmachine meeting are available on line through links at [www.zmachines.net](http://www.zmachines.net)

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Anne Dutrey informs us of a CNRS post-doctoral position at the Observatory of Bordeaux. The position is opened for two years and will start on september 2006 at the Observatory of Bordeaux. The application deadline is June 2006.

The position is dedicated to the modelling of chemistry in proto-planetary disks in order to interpret observational data obtained with the IRAM array.

Interested people can read the dedicated CNRS web page

[http://www.k-projects.com/cnrs\\_postdocs/public/departement\\_details.php?IdDpt=9&Dep=SDU&NumOffre=2&Langue=en](http://www.k-projects.com/cnrs_postdocs/public/departement_details.php?IdDpt=9&Dep=SDU&NumOffre=2&Langue=en)

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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](mailto:jneighbo@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 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>