

Subject: [allemploy] BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO - 05Mar14
From: Al Wootten <awootten@nrao.edu>
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To: anasac@nrao.edu, alma-info@nrao.edu, allemploy@nrao.edu

BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
March 14, 2005 -- March 28 2005

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

There will be a meeting of the JAO and IPT leads in Garching 22-24 March.

Chris Carilli, has just been given and accepted the 2005 Max Planck Research Award by the Alexander von Humboldt Foundation and the Max Planck Society in Germany. The award carries with it a research stipend of 750,000 Euros over five years.

Crystal Brogan has accepted the NRAO Director's offer for an NRAO tenure-track Assistant Astronomer position, to be based in Charlottesville beginning March 14, 2006. Crystal's primary responsibility next spring will be to assist in the establishment and operation of the North American ALMA Science Center (NAASC) and the commissioning of ALMA into an operational facility under the supervision of the Head of NAASC, currently Paul Vanden Bout.

Jody Bolyard begins as JAO Safety Consultant pro tempore in July.

George Reiland left NRAO on 4 March after eleven years of service in Tucson. He has taken a position at Steward Observatory. Thanks and good luck George!

George H. Clark will join the NRAO staff as the Associate Director for Administration (ADA) on April 12, 2005. As ADA he will have overall responsibility for all administrative and business functions at the Observatory.

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

General Happenings

Santiago: Rebaselining activities continue.

OSF: Construction of the 30 bed extension to the ALMA camp should begin shortly, to be completed by the end of May. Release of bidding documents for Contractor's Camp extension in process, work to be completed end of August. 26 persons are working on the site.

Tucson: Preliminary tests of revised Line Length Corrector are underway. Adrian Russell will be visiting the birthplace of millimeter astronomy the week of 14 March.

ATF: Fast switching tests continue; cumulative total now well into the tens of thousands per antenna involving numerous NA personnel. Initial radiometry at 1.3mm with AEC antenna performed.

AOC: Preparations for Central Variable Reference (CVR) review 29 March. Team from AOC visiting ACC (contractor) to witness acceptance testing of first prototype IF Downconverter.

NTC: Assembly of Cartridge No. 2 for Band 6 (1.3mm) is complete. Progress has been made on understanding optics anomalies.

The first Tunable Filter Bank (TFB) card spectral test made with the Test Fixture (test No 7, in which one sub-channel is autocorrelated and the spectrum displayed) works well; a line can be moved around as predicted through the selected sub-channel.

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

11:30 AM-12:30 PM: NA DH telecon

Tue 15

9:30 AM-10:30 AM: ALMA Science IPT Telecon

10:30 AM-11:30 AM: ASAC Telecon

Wed 16

Thu 17 St. Patrick's Day!

All Day: G. Helou visiting NAASC

9:30 AM-11:00 AM: Management IPT Teleconference

4:00 PM: Helou Colloquium: Spitzer Space Telescope: Extragalactic Results

5:00 PM: SMA Deadline for call for proposals for MAY - OCT period.

Fri 18 NRAO Spring Holiday

Sat 19

Sun 20 Spring Begins 12:33 UT

Mon 21

9:30 AM-10:30 AM: NA Project Office Staff Meeting

15:30 - 17:30 IEEE ICASSP: Towards a New Generation of Radio Astronomical

Instruments: Signal processing for large distributed arrays (Phila.)

Tue 22

All Day JAO/IPT meeting, Garching

No ImCal telecon today

Wed 23 AAS Minneapolis Abstract Deadline

All Day JAO/IPT meeting, Garching

Thu 24

All Day JAO/IPT meeting, Garching

Fri 25 Good Friday

Sat 26

Sun 27 Easter Sunday

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

ALMA Calendar--see also <https://wiki.nrao.edu/bin/view/ALMA/NAASC>

- * 18-23 Mar 2005 -- Philadelphia ICASSP/IEEE meeting, Philadelphia
- * 22-24 March 2005 -- JAO/IPT Meeting, Garching
- * 29 March 2005 -- Central Variable Reference 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.
- * 9 April 2005 -- Bilateral project meeting
- * 4-5 May 2005 -- WVR PDR, OSO, Gothenburg, Sweden

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

ALMA Memo # 515 Calculation of Integration Times for WVR

by Alison Stirling, Mark Holdaway, Richard Hills, John Richer

2005-03-02

Abstract:In this memo we address the issue of how to apply water vapour radiometer estimates of atmospheric phase to visibility data. We consider the impact of smoothing the radiometer data over a period of time to reduce the noise in the w.v.r. estimate, and applying a multiplicative factor to decrease the impact of the w.v.r. estimate when the phase fluctuation amplitude is small compared with the radiometer noise.

We find that when fast-switching is taken into account, for fully three-dimensional

turbulence, and r.m.s. path length fluctuations of order 75 micros', the optimal smoothing timescale is 11 seconds. This timescale decreases to around 3 seconds as the thickness of the turbulence layer becomes small compared with the baseline length. These values are found to decrease as the r.m.s. fluctuations increase. A multiplicative factor is required to modify the w.v.r. correction term for fluctuations less than ~ 50 microns', where the noise in the radiometer becomes comparable to fluctuations at the site.

View a pdf version of ALMA Memo #515:

<http://www.alma.nrao.edu/memos/html-memos/alma515/memo515.pdf>

Long baseline (Y+) 64 antenna array configuration: Specification and requirements; (ALMA-90.02.00.00-002-A-SPE) by M. Holdaway was approved.

Summary:

Beyond the inner 78 antenna stations that are arranged in a compact configuration, Conway's stations are governed by a three-armed logarithmic spiral. The resolution is increased in increments of about 15% as four antennas are moved from one configuration to the next. The Chajnantor site permits this spiral configuration out to baselines of 4500 m. The outer 44 stations continue this general philosophy of incremental reconfiguration, but the three arms cannot continue in a spiral due to the mountains, so the three arms straighten out in a rough Y shape. A Y shaped array with straight arms and regular antenna placement produces poor snapshot (u,v) coverage and high side lobes in the point spread function (PSF), so our Y arms are actually 5 or 6 km wide at their ends. To maximize the resolution, antennas are placed as far apart as the land concession permits.

View a pdf version of ALMA-90.02.00.00-002-A-SPE:

<http://www.cv.nrao.edu/~awootten/mmailcal/2003-06-30ALMA-90.02.00.00-002-A-SPE.pdf>

Status of the Atacama Large Millimeter Array, contribution to the conference:

The Cool Universe: Observing Cosmic Beginnings held 2004 October 4-8 at Universidad Tecnica Federico Santa Maria, Valparaiso, Chile
by Wilson, Beasley and Wootten

Abstract: The Atacama Large Millimeter Array is a large international telescope project which will be built over the next decade in northern Chile on a site at 5 km elevation. The site provides excellent atmospheric transmission in the millimeter and submillimeter wavelength ranges. The project consists of two parts: (1) the "12m Array", composed of sixty-four 12-meter antennas that can be placed on 216 different stations for baselines up to 18 km (see Table 1) and (2) the "Atacama Compact Array", or ACA, that consists of twelve 7 meter telescopes placed in compact configurations and four 12 meter telescopes for measuring total source power. In addition to high sensitivity, frequency coverage and dynamic range, ALMA will record both interferometric and the complete source flux density. At the shortest planned wavelength, $\lambda=0.3\text{mm}$, and longest baseline, the angular resolution will be $0.005''$. The receivers use superconducting (SIS) mixers, to provide the lowest possible receiver noise contribution. At first light, the ALMA project's 6 highest priority receiver bands will be installed (see Table 2), each observing both polarizations with a bandwidth of 8 GHz. In the following, we present the status of the ALMA project as of late 2004.

View a pdf version of ALMA-90.02.00.00-002-A-SPE:

<http://www.cv.nrao.edu/~awootten/mmailcal/CoolUniverseOct04.pdf>

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

In testimony to the House Science Committee on March 9, NSF Director Arden Bement highlighted ALMA among the five highest priorities for advancing science and engineering. Dr. Bement said: "The Atacama Large

Millimeter Array (ALMA), in Chile, is a model of international collaboration. It will be the world's largest, most sensitive, radio telescope." See:

<http://www.house.gov/science/hearings/research05/Mar09/Bement.pdf>

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>