Subject: [allemploy] April 25, 2005 BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
From: Al Wootten <awootten@nrao.edu>
Date: 4/28/2005, 5:53 PM
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BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
April 25, 2005 -- May 9, 2005

********** THIS FORTNIGHT**********
Changes to the management structure of the ALMA project have been effected.
These changes have been jointly developed by the Executives and the JAO, and
were discussed and adopted at the April 2005 ALMA Board meeting.
* Site IPT: Effective immediately, all site activities are placed under JAO
management control, with the Site IPT lead/deputy reporting directly to the
ALMA Project Manager. All site-related purchases, contracting and hiring
require the authorization of the ALMA Project Manager (with specific areas
and activities directly delegated to the Site IPT lead and deputy by the ALMAPM)
* System Engineering & Integration IPT: The transfer of SE&I to JAO management
control (begun in 2004) will be completed immediately; all SE&I purchases,
contracts and hiring require the authorization of the ALMA Project Engineer
(with specific areas and activities directly delegated to the SE&I IPT lead
and deputy by the ALMA PE).

In Feb. 2005, the EU informed ESO that a contract for the proposal
'ALMA Enhancement, submitted in March 2004, could be negotiated. The
ALMA Board is considering this proposition for an ALMA enhancement.
The EU funding will provide funds for the receivers and necessary software.
This proposal involves building a prototype and 8 production receivers for ALMA
Band 5 (163-211 GHz) on ALMA antennas and providing software needed to make
use of the Band 5 receivers to map the extended 183 GHz water vapor emission
for comparison to lower spatial resolution data in other water emission lines
expected from Herschel.

At its Pasadena meeting, the ALMA Board encouraged 'the continued negotiations
between ESO and the EU to obtain support for the implementation of 8 Band 5
cartridges on ALMA, the development and implementation of advanced radiometric
phase calibration techniques, and of software for on-the-fly mosaicing.
The Board notes that the process of integration and commissioning of the
receivers into ALMA will be scheduled and managed solely by the JAO with
no extra costs or delay to the Project.'

Past issues of this Calendar may be viewed at
http://www.cv.nrao.edu/~awootten/mmaimcal/ALMACalendars.html
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General Happenings
Santiago: Interviews for Safety Manager position occurring. Version A of
Operations Plan is being prepared.

OSF: Call for Tender for the OSF construction was issued; closing date July '05.
The first large snowfall of the season hindered access to the site at the
beginning of the period. 26 persons working at the site. Radford visiting.

Tucson: Work on simulations for the Board on Physics and Astronomy's Review of
the Science Requirements for the Atacama Large Millimeter Array finishes.
LAMA Memo Series moving to ALMA Memo Series.

ATF: JATG Testing and report completed.

NTC: First Band6 (1.3mm) cartridge installed in first ALMA cryostat; mating

went well and testing is commencing.

NAASC: Moves into new quarters to be completed this period; planning for ANASAC meeting and for meeting on Z-machines for extragalactic CO continues.

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DAILY CALENDAR (Times EDT)
 Mon 25 April
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
 1:00 PM- 2:00 PM: NA Telecaucus
 Tue 26
11:00 AM-1:00 PM: ALMA Board Telecon
 4:00 PM-5:00PM: NAScienceIPT teleconference (open to all interested parties) (434)296-7082
Agenda: http://www.cv.nrao.edu/~awootten/mmaimcal/
 Wed 27
 Thu 28
9:30 AM-11:00 AM: Management IPT Teleconference
: Y. Shirley Colloquium, U. Az.
 Fri 29
3:00 PM-5:00 PM: ANASAC Teleconference
 Sat 30
 Sun 01 Happy May Day!
 Mon 02
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 03
10:30 AM-11:30 AM: ASAC Teleconference
 Wed 04
 Thu 05
9:30 AM-11:00 AM: Management IPT Teleconference
 Fri 06
 Sat 07
 Sun 08

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

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

* 2-3 May - Understanding the Universe through IR and Submillimeter Astrophysics, Lexington, KY
* 4-5 May 2005 -- WVR PDR, OSO, Gothenburg, Sweden
* May 10-11 -- ESO Finance Committee meeting
* May 17 -- 14:30UT Science IPT Telecon
* May 26 -- 1500UT ALMA Board telecon
* May 29-Jun 2 -- AAS Minneapolis
* May 29-Jun 2--Band 4 (2mm), Band 8 (.6 mm), ACA Correlator reviews, Tokyo
* June 5-6 -- ESO Council
* June 12 -- 1-5pm ANASAC Face-to-Face CfA, Cambridge
* JUN 13 - 16 Workshop on submillimeter wavelength astronomy in Cambridge. Registration deadline is APR 30. For more information, log onto the event website: http://cfa-www.harvard.edu/smast05.
* June 21-22 -- ALMA Board Meeting, The Hague, Netherlands
* 6-7 Jul - Front End IPT delta PDR, Garching

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

ALMA Memo # 517: Turbulence simulations of dry and wet phase fluctuations at Chajnantor. Part I: The daytime convective boundary layer.
Authors: Alison Stirling, John Richer, Richard Hills, Adrian Lock

Abstract: We have performed numerical simulations of the atmosphere for

typical daytime convective conditions at Chajnantor, and derived the resulting wet and dry contributions to the atmospheric phase fluctuations. The simulations show that:

- Dry phase fluctuations are concentrated in two layers -- near to the ground, and at the temperature inversion. The wet fluctuations are concentrated at the inversion, while the total phase fluctuations are more uniformly distributed within the convective layer. This is because of significant positive and negative correlations between the dry and wet refractive index fluctuations.

- The phase structure function is well described by a Kolmogorov turbulence spectrum on small scales, with a turn over on a scale of order the depth of the boundary layer.

- The variation of total r.m.s. phase with elevation shows a dependence on the square root of air mass for the total phase, but the dry component shows a linear variation with air mass, and the wet component varies as air mass to the power 0.75. A scaling analysis has been used to relate the r.m.s. wet and dry phase fluctuations to the vertical profiles of temperature and water vapour so that an estimate of the phase fluctuations at Chajnantor can be obtained from radiosonde data.

- Using this approach, the r.m.s. dry fluctuations along a single line of sight are found to be 100-200 microns at the 25-75 percentiles respectively, and the equivalent wet fluctuations are found to lie in the range 180-530 microns. The total r.m.s. path fluctuations were estimated to be 240-525 microns, and we have compared these estimates with independent measurements of the total r.m.s. phase obtained from interferometric measurements (Evans et al., 2003), and these show excellent agreement.

- The correlation coefficient between total and wet phase fluctuations is estimated, and this is found to lie in the range 0.75-0.97 at the 25-75 percentiles. This suggests that, even under conditions where the dry phase fluctuations are expected to be at their highest, water vapour radiometry is expected to be able to remove a high percentage of phase fluctuations at Chajnantor.

View a pdf version of ALMA Memo #517:
http://www.alma.nrao.edu/memos/html-memos/alma517/memo517.pdf

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