Subject: [allemploy] BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
From: "Al Wootten" <awootten@nrao.edu>
Date: 11/22/2004, 5:22 PM
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BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
November 22 -- December 6, 2004

********** THIS FORTNIGHT**********
Both Houses have passed the omnibus budget bill containing ALMA funding.

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: The JAO address is Santiago is: Joint ALMA Office; El Golf 40 18th floor
Las Condes 7550107 Santiago Chile. Videocon IP: 200.7.18.100

SPdA: A Board Change Request confirming the scope and cost of the ALMA Camp and
the ALMA Contractor's Camp was approved. An invitation for bid for the completion
of the Contractor痴 Camp and enlargement of the ALMA Camp will be released during
this month. Road construction progresses between km 26 and km 28. The BBC

visited the site on 19-Nov-2004.

Tucson: Testing of prototype modules for Prototype System Integration continues.
Phase noise tests underway of LO reference signals.

AOC: Studies of fiber optic polarization mode dispersion (UK) and design of
antenna cable wraps (Socorro). Allan variance tests on Vega 1 digitizer show
satisfactory performance for testing and even 1st science. DTS link stability
tests underway by backend group. reliability analysis interim report for computing subsustem completed and distributed for review.

NTC: Two more correlator racks have been completed and are ready to be populated.

93% of the cards needed for the first quadrant have been received and checked out.
For the second quadrant, we have 26% received and checked out.
All 1321 signal cables for the first quadrant were received and preliminary tests
show no problems. A New engineer from Chile, Alejandro Saez, expected to start
late January 2005
Tests of Band 6 (1.3mm) cartridge beam sidelobe and prototype bias continue.

NAASC: An ALMA Update and report on the ALMA/Herschel meeting 'Dusty04' will be
given at Tuesday lunch.

DAILY CALENDAR (Times EDT)
Mon 22
9:30 AM-10:30 AM: NA Project Office Staff Meeting
10:30 AM-11:30 PM: JAO/IPT Teleconference
11:30 AM-12:00 PM: NA Div Heads Teleconference
Management meeting at NSF.
Tue 23
NAScienceIPT teleconference (open to all interested parties) (434)296-7082
Agenda: http://www.cv.nrao.edu/~awootten/mmaimcal/
Wed 24
Thu 25
All day event: NRAO Holiday -- Happy Thanksgiving!
8:30 AM-10:00 AM: JAO Teleconference
Fri 26
All day event: NRAO Holiday
Sat 27
Sun 28
Mon 29
10:30 AM-11:30 PM: JAO/IPT Teleconference
11:30 AM-12:00 PM: NA Div Heads Teleconference
Tue 30
NAScienceIPT teleconference (open to all interested parties) (434)296-7082
Agenda: http://www.cv.nrao.edu/~awootten/mmaimcal/
Wed 01
Thu 02
8:30 AM-10:00 AM: JAO Teleconference
12:00 PM-01:30 PM: ALMA Board Teleconference
Fri 03
Sat 04
Sun 05

********** UPCOMING EVENTS
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ALMA Calendar

* 2 December -- ALMA Board Telecon
* 14 December -- ASAC Telecon
* 5-7 Jan 2005 -- UNSC URSI Boulder meeting Commission J
* 6 Jan 2005 -- ANASAC Telecon
* 11 Jan 2005 - ALMA Town Meeting, AAS San Diego
* 27 Jan 2005 -- ALMA Board Telecon

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

One prototype, after retrofitting, will proceed to Chajnantor. A report on it:

Design and performance of the ALMA-J prototype antenna
Nobuharu Ukita, Masao Saito, Hajime Ezawa, Bungo Ikenoue, Hideharu Ishizaki,
Hiroyuki Iwashita, Nobuyuki Yamaguchi, Takahiro Hayakawa, and the ATF-J team

The National Astronomical Observatory of Japan has constructed a prototype 12-m antenna of the Atacama Compact Array to evaluate its performance at the ALMA Test Facility in the NRAO VLA observatory in New Mexico, the United States. The antenna has a CFRP tube backup structure (BUS) with CFRP boards to support 205 machined Aluminum surface panels. Their accuracies were measured to be 5.9 才m rms on average. A chemical treatment technique of the surface panels has successfully applied to scatter the solar radiation, which resulted in a subreflector temperature increase of about 25 degrees relative to ambient temperature during direct solar observations. Holography measurements and panel adjustments led to a final surface accuracy of 20 才m rms, (weighted by 12dB edge taper), after three rounds of the panel adjustments. Based on a long term temperature monitoring of the BUS and thermal deformation FEM calculation, the BUS thermal deformation was estimated to be less than 3.1 才m rms. We have employed gear drive mechanism both for a fast position switching capability and for smooth drive at low velocities. Servo errors measured with angle encoders were found to be less than 0.1 arcseconds rms at rotational velocities below 0.1 degrees s-1 and to increase to 0.7 arcseconds rms at

the
maximum speed of the ?n-the-fly?scan as a single dish, 0.5 deg s-1
induced by
the irregularity of individual gear tooth profiles. Simultaneous
measurements of
the antenna motion with the angle encoders and seismic accelerometers
mounted at
the primary reflector mirror edges and at the subreflector showed the same
amplitude
and phase of oscillation, indicating that they are rigid, suggesting that
it is
possible to estimate where the antenna is actually pointing from the
encoder readout.
Continuous tracking measurements of Polaris during day and night have
revealed
a large pointing drift due to thermal distortion of the yoke structure. We
have
applied retrospective thermal corrections to tracking data for two hours,
with a
preliminary thermal deformation model of the yoke, and have found the
tracking
accuracy improved to be 0.1-0.3 arcseconds rms for a 15-munites period.
The
whole sky absolute pointing error under no wind and during night was
measured
to be 1.17 arcseconds rms. We need to make both an elaborated modeling of
thermal
deformation of the structure and systematic searches for significant
correlation
among pointing errors and metrology sensor outputs to achieve the stable
tracking
performance requested by ALMA.

View a pdf version of Proc. SPIE 5489, pp. 1085-1093:
http://www.cv.nrao.edu/~awootten/mmaimcal/SPIE_5489-73c.pdf

**********ALSO OF
INTEREST**********
 Congratulations to the SMA on completing its first year of Operations.
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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 now available at
http://www.cv.nrao.edu/~awootten/mmaimcal/ALMACalendars.html

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Allemploy mailing list
Allemploy@listmgr.cv.nrao.edu
http://listmgr.cv.nrao.edu/mailman/listinfo/allemploy

Attachments:

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