

Subject: [allemploy] ALMA BIWEEKLY CALENDAR January 31, 2005

From: "Al Wootten" <awootten@nrao.edu>

Date: 1/31/2005, 5:55 PM

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BIWEEKLY CALENDAR OF THE ALMA PROJECT at NRAO
January 31, 2005 -- February 14, 2005

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

Budget worksheets for the ALMA rebaselining effort are due in the managers' offices tonight. Statements of Work have already been delivered, along with other items including risk assessments.

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The ASAC will meet in a face-to-face meeting in Garching 24-25 February to discuss Charges expected to be delivered to them by the Board late today.

There will be a face-to-face meeting of IPT leads and managers in Garching 22-24 March to discuss the rebaselining options.

A fiber management design review is scheduled to occur in Garching.

Ed Fomalont from NRAO (Charlottesville) will now be the Science Software Requirements (SSR) subsystem scientist for the correlator subsystem; Steve Scott will also continue to serve on the SSR as his time allows while CARMA is assembled.

Andrew Blain of Caltech has joined the ASAC; Phil Myers has left.

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

General Happenings

Santiago: Intensive meetings between the JAO and Japanese project management occurred in Santiago last week.

OSF: Completion of 22 bed facility at the Contractors Camp is the only current construction activity at the site except for emergency road repair as a result of torrential rainfall. 25 people are currently working at this site.

ATF: Photogrammetry produced excellent results and is completed. A further round of holography has been completed on the AEC antenna and will proceed on the Vertex antenna. Out-of-focus holography has begun. Eric Pangole (ESO) participating in antenna tests.

AOC: ATF support during antenna tests. Verification tests continue on prototype modules for the prototype system integration. Antenna cable wrap designs were studied. ALMA Computing IPT completed 3 software tests involving external users: Offline, Pipeline heuristics, and Observing Preparation. All tests were successful. Full test reports are available at:
<http://almasw.hq.eso.org/almasw/bin/view/Userstests>

NAASC: A preliminary study was assembled on ALMA solar observations.

NTC: Beam measurement analysis of 1.3mm cartridge continues. Delay model firmware completed for prototype correlator to enable ATF interferometry.

Tucson: ATF support during antenna tests. Redesign of LO line length corrector 75% complete. Verification tests continue on prototype modules for the prototype system integration. Tests are underway to study phase drift with temperature.

HIA: Ongoing tests of B3 preproduction unit No. 1 show noise temperatures 38-45K with good image rejection.

DAILY CALENDAR (Times EST)

Mon 31

10:30 AM-11:30 AM: JAO IPT Telecon

Tue 01

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

3:30 PM-5:00 PM: ALMA: Imaging Cosmic Dawn presentation at Johns Hopkins

Wed 02

Thu 03

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

Fri 04

Sat 05

Sun 06

Mon 07

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 08

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 09

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

Thu 10

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

11:00 AM-12:00PM: ALMA Science IPT Calibration Group Telecon

Fri 11

Sat 12 Happy Abraham Lincoln's Birthday!

Sun 13

Mon 14 Happy Valentine's Day!

***** UPCOMING EVENTS

ALMA Calendar

- * 27 Jan 2005 -- ALMA Board Telecon
- * early Feb 2005 -- Fiber Management CDR, Garching
- * 24-25 Feb 2005 -- ASAC face-to-face meeting, Garching
- * 24 Feb 2005 -- ALMA Board Telecon.
- * 20 Mar 2005 -- Philadelphia ICASSP/IEEE meeting, Philadelphia
- * 22-24 March 2005 -- JAO/IPT Meeting, Garching
- * 5-6 April 2005 -- ALMA Board Face-to-face meeting, Pasadena, CA.

***** TECHNICAL NEWS

(Memos# 507, 509, 512, 514 are available on almaedm and will be featured in the next calendar.)

ALMA Memo # 510 The ALMA Digitizer (DG) Demultiplexer : Design, Performances in DG Assembly and Production Acceptance Tests

by Cyril Recoquillon, Alain Baudry, Jean-Baptiste Begueret, Stephane Gauffre
Guy Montignac

Abstract: A high frequency, low power 1:16 deserializer has been developed using the 0.25um BiCMOS SiGe technology from ST Microelectronics to meet the ALMA project requirements. The input shift register is clocked at 4 GHz and the output data are transferred at 250 MHz. Nominal operation has been observed up to 8 GHz. With 2.5 V supply, the circuit dissipates around 650 mW an especially low value compared to existing similar circuits. The chip is available in an industrial package and exhibits low thermal resistance (about 25 uC/W) thus implying long lifetime as required for the ALMA project. Functional tests including those performed with a self-test block embedded in the deserializer are briefly described. Our deserializer is integrated in a prototype ALMA Digitizer assembly which includes a 3-bit (8-level), 4 GS/s sampler developed with the same SiGe process. Based on Digitizer state counts measurements, Allan variance tests and long term operation in the laboratory environment, we conclude that the prototype Digitizer assembly is operational. The deserializer chip has reached the final production stage after static and dynamic qualification tests have been performed on a first restricted number of production chips.

View a pdf version of ALMA Memo #510.

<http://www.alma.nrao.edu/memos/html-memos/alma510/memo510.pdf>

ALMA Memo # 511 Cycle-Slip-Free Fiber Length Stabilization System
Using a Digital Phase and Frequency Discriminator

by Yohei Sato, Mitsuru Musha, Ken'ichi Nakagawa, Ken-ichi Ueda, Akitoshi Ueda, Masato Ishiguro

Abstract: We have developed a fiber length stabilization system (FLSS) for the photonic distribution of LO signals by using a digital phase and frequency discriminator (DPFD). Compared with a conventional analog double-balanced mixer (DBM) or a phase sensitive detector with an XOR gate (PSD), the DPFD has wider linear discrimination range by more than 1000 times, which enables cycle-slip-free FLSS. Moreover, it makes possible to stabilize the length of the fiber that is longer than the coherent length of the light source used in FLSS.

View a pdf version of ALMA Memo #511.

<http://www.alma.nrao.edu/memos/html-memos/alma511/memo511.pdf>

ALMA Memo # 513 Design and Simulation of a Waveguide Load for ALMA-band 9
by F. P. Mena, A. M. Baryshev

Abstract: An important element of any waveguide-based dispositive is the termination or load. At relatively large wavelengths the idea is to make them as compact as possible and usually contained inside of the waveguide. However, as the working frequency increases, the involved dimensions make more difficult such approach. In this memo, we describe a relatively simple waveguide load which is appropriate when the waveguide dimensions are prohibitory small. The load described here is rather large compared with the waveguide making it relatively easy to realize at small dimensions. Moreover, from the results of a simulation it is shown that besides its simplicity it can have a reflectivity as low as -40 dB if the appropriate material is used.

View a pdf version of ALMA Memo #513.

<http://www.alma.nrao.edu/memos/html-memos/alma513/memo513.pdf>

EVLA Memo #88 Quantization Noise
by A. R. Thompson and D. T. Emerson

Abstract:

In receiving systems in which the analog signal voltage is sampled and quantized to allow further processing in digital form, the difference between the analog samples and their digital representation gives rise to a component of random quantization noise. The power spectrum of the quantization noise is close to being uniformly level across the receiver passband, even for large variation in the shape of the input spectrum. Thus in cases where the gain of the analog system varies across the passband, the addition of the quantization noise causes a variation in signal-to-noise ratio (SNR). This effect limits the allowable variation of analog gain and is particularly important in wideband receiving systems. The memorandum examines the definition of quantization noise and its relationship to quantization efficiency. Numerical simulation is used to determine the spectrum of quantization noise for a number of commonly used quantization schemes, with Nyquist and higher sampling rates. Examples are given of the limiting values of gain variation within the passband. These are modeled as slopes and sinusoidal ripples and are applicable to the EVLA and ALMA systems. Equations for precise calculation of quantization efficiency based on evaluation of the quantization noise are derived in Appendix A.

View a pdf version of EVLA Memo #88 at:

<http://www.aoc.nrao.edu/evla/memolist.shtml>

An ALMA-specific version will be forthcoming.

*****ALSO OF

INTEREST*****

SMA NEWS FLASH: First dual frequency observations - a big step for the SMA!

Simultaneous observations were made on Monday morning, JAN 24, of the

J = 5-4 transition of SiO at 215 GHz and the 1(10) - 1(01) vibrationally

excited bending mode of H2O at 658 GHz.

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/mmailcal/ALMAcalendars.html>

Allemploy mailing list

Allemploy@listmgr.cv.nrao.edu

<http://listmgr.cv.nrao.edu/mailman/listinfo/allemploy>

— Attachments: —

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