From RBROWN@CVAX.CV.NRAO.EDU Thu May 16 14:29:07 1991
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From: RBROWN@CVAX.CV.NRAO.EDU
Message-Id: <910516142700.1718@CVAX.CV.NRAO.EDU>
Subject: Reminder: MMA Coordination Meeting Friday May 17th
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MMA COORDINATION MEETING

Friday May 17
1100 EDT
CONNEX 913-749-0048
ID# A99E

Agenda Items:
- -NSF Site Review
- -Presentation of the MMA proposal to the NSF Astronomy Advisory Committee
- -Status of the Proposal
- -Joint Development Group

Below is a list of the topics that the members of the Joint Development Group have suggested as things that they would like to work on in the MMA development phase. The plan, you recall, is for the NRAO to share some of the burden of the development phase of the MMA with our JDG partners and to support that work both with MMA development funds and with engineering help. I would like to discuss what we see as the ramifications of such an effort and how, specifically, we go about setting it up.

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JDG PARTNERS PARTICIPATION OVERVIEW

- -Antenna Structure
- -Receivers
- -Local Oscillator
- -Signal Transmission
- -Cryogenics
- -Correlator
- -Optics
- -Computers: Hardware

-Software: On-Line
-Software: Analysis and Archive

JDG PARTNERS PARTICIPATION

ANTENNA STRUCTURE

OVRO: Study the temperature profiles on operating antennas.

BIMA: Thermal and structural study of BIMA antennas

RECEIVERS

OVRO: Development of SIS sideband separation receivers

ILLIN: -Development of small area, single junction devices from standard materials.

-Investigation of new junction materials

LOCAL OSCILLATOR

OVRO: -Gunn oscillator with output frequencies well above 100 GHz

-Gunns with one, or no, mechanical adjustment

-Frequency multipliers using planar lead diodes, no mechanical tuning elements

ILLIN: Invesigate solid state oscillators, including quantum well devices.

SIGNAL TRANSMISSION

OVRO: Optical fiber with NRAO engineering help

MD: Erickson experimenting with optical fiber for BIMA

CRYOGENICS

UCB: investigation of 4K Gifford-McMahon refrigerators

CORRELATORS

UCB: Evaluation of new BIMA correlator to see whether it, or parts of it, could serve as a prototype for the MMA.

OPTICS

UCB: Evaluate feed horns and polarizer options

COMPUTERS: HARDWARE

ILLIN: Investigate utility of various computer architectures for MMA needs including massively parallel machines.

-Explore the usefulness and limitations of gigabit networks

MD: -Enumerate MMA CPU requirements, memory allocations

-Networking needs and possibilities

SOFTWARE: ON-LINE

OVRO: -Evaluate the use of a commercial database for hardware monitoring and control, uv data collection and calibration

-Further develop and assess the usefulness of a client/server user interface and control protocol

ILLIN: Develop interactive remote observing techniques

MD: -Real-time data calibration and processing; interactive observing

-Development of a user-friendly observer interface

-Develop remote observing techniques

SOFTWARE: ANALYSIS AND ARCHIVE

OVRO: Use of commercial database software for data archive

ILLIN: -Incorporate MIRIAD experience into AIPS2

-Develop data cube visualization and analysis tools

-Explore the use of expert systems and artificial intelligence for array processing

-Investigate the need and the potential of an on-line data archive

MD: -Design of the image reconstruction and analysis software

-Data archiving techniques