

WFF: VERY LARGE MICROWAVE ARRAYS FOR RADIO ASTRONOMY AND SPACE COMMUNICATIONS

Date & Time: Friday, June 17; 8:00 AM to 12:00 PM

Location: Long Beach Convention Center, Room 203AB

Topics & Speakers

Introduction and Overview, S. Weinreb, Caltech/JPL

Expansion of the Very Large Array (VLA) P. Napier, NRAO

Allen Telescope Array (ATA), D. DeBoer, SETI Institute

Atacama Large Millimeter Array (ALMA), L. Daddario, NRAO (now at JPL)

An Array Based Deep Space Network (DSN), M. Gatti, JPL

Large Array with Focal-Plane Array Feeds for the SKA, J. Kot, CSIRO

Phased-Array with All-Sky Imaging Capability, J. Bi deVaate, Astron

Very Low Noise Amplifiers for Very Large Arrays, N. Wadefalk, Caltech

Organizer:

S. Weinreb, Caltech/JPL

Sponsors:

MTT-14: Microwave Low-Noise Techniques

MTT-16: Microwave Systems

Much greater sensitivity for reception of microwave signals from space is needed to support the growth of the space exploration program and for astronomical observations concerning fundamental questions concerning the formation of the universe. During the past decade the paradigm for increasing the microwave sensitivity has shifted from the construction of increasingly larger parabolic reflectors to large arrays of smaller antennas. In effect electronics is replacing steel. The arrays have advantages of lower cost per unit collecting area, higher angular resolution, multiple beaming or imaging, and soft failure.

There are several new large arrays either under construction or in design. This workshop is intended as a forum for the engineers working on these arrays to interact with each other and with the suppliers of microwave components. It is anticipated that of the order of \$1B to \$2B in antennas, microwave receivers, digital processing equipment, and software will be purchased in the next decade for these arrays