

OVLBI EARTH STATION MEMO SERIES

L. R. D'Addario

27 May 1990

I propose to establish an informal series of numbered memoranda on the subject of earth station design for the support of Orbiting Very Long Baseline Interferometry. The series is motivated by the existence of projects at several places, including the NRAO, to develop such stations in support of the upcoming RADIOASTRON and VSOP missions. The present document is the first of the series.

Topics to be covered include: radio communication links to OVLBI spacecraft; phase transfer methods and performance; wideband data encoding and decoding; data recording; earth station antennas; measurements for orbit determination; interfaces to other parts of an OVLBI system, including correlators; and any related matters.

Memo series of this type have been used in many other projects at the NRAO, and have been very successful in providing a way to organize information and allow for its rapid and widespread dissemination. For those who are not familiar with the concept, the basic ideas are as follows. Any interested person may write and submit a technical memo on a subject relevant to the series. A central distribution point is established to receive contributions, assign each a sequence number, enter it into an index, and send copies to those who have asked to be on a mailing list. The contributions are not reviewed by anyone, and therefore have no official status whatsoever; they can, and often do, contain preliminary ideas and opinions. The numbered memos can then be referred to in future work, and since most people actively working on a given project will have copies, there is a common, written basis for discussions. Of course, this is no substitute for formal documentation of actual design decisions.

For the present series, the distribution point will be at the NRAO in Charlottesville. Contributions and requests to be on the mailing list should be sent to:

Ms. Cathy Burgess

NRAO

2015 Ivy Road

Charlottesville, VA 22903

phone: 804/296-0334 fax: 804/296-0324

email: CBURGESS@NRAO.EDU, 6654::CBURGESS

Two mailing lists will be maintained: the first will receive the full text of each memo as soon as it is released, and the second will receive only periodic printouts of the index (monthly or quarterly, depending on the volume of contributions). The index will include title, author, date, a one-sentence summary (if provided by the author), and some status codes (e.g., we will attempt to flag obsolete memos). With each distribution of the index, a form will be provided for ordering the full text of

individual memos. To keep the paper and postage costs reasonable, we strongly urge that requests to be on the first list be limited to those who are actively involved in earth station development.

Contributions and requests to be on a mailing list will be accepted from anyone, at any institution, worldwide. The only guidelines are that the memos should be closely related to the subject of the series, and should be kept reasonably brief. Copies of papers or data published elsewhere should not be included, but references should be given. Voluminous information (like long listings) that might be of value to only a few readers should be omitted, but instructions for finding that information should be given.

Submission of contributions in machine-readable form is encouraged. Files should be ASCII only, but might be TeX input files if only standard macro packages are invoked. Transmission on floppy disk or via network transfer is possible. We will attempt to arrange for these memos to be available on-line through the networks.