

Washington Correlator

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Abstract

This report summarizes the activities of the Washington Correlator from the establishment of IVS to the end of 2000. The Washington Correlator provides 136 hours of processing per week, primarily supporting Earth orientation and astrometric observations.

1. Introduction

The Washington Correlator (WACO) is located at and staffed by the U. S. Naval Observatory (USNO) in Washington, DC, USA. The correlator is sponsored and funded by the National Earth Orientation Service (NEOS) which is a joint effort of the USNO and NASA. Dedicated to processing geodetic and astrometric VLBI observations, the facility spends more than 90 percent of its time on these experiments. All of the weekly NEOS-A sessions, all of the daily intensives, and most of the CORE-A sessions are processed at WACO. The remaining time is spent on reference frame and astrometry sessions. From March, 1999 until the end of December, 1999 the facility utilized a Mark IIIA correlator. Beginning in January, 2000 processing switched to the Mark IV correlator. The first data from the new correlator was published in the IERS Bulletin A for January 11, 2000.

2. Correlator Operations

During the reporting period, the remaining two Mark IIIA playbacks were upgraded to Mark IV. For all of the calendar year 2000, the correlator operated with 6 Mark IV, thin tape capable, playback tape drives. All are capable of processing high density recordings and all are equipped with dryer units to prolong head life.

The correlator facility operates 136 hours per week, and is fully loaded at this level. During the first part of the reporting period, the Mark IIIA correlator was used at its normal efficiency. By the end of 1999, some degradation of processing throughput occurred due to the installation and checkout of the Mark IV processor.

After the introduction of the Mark IV correlator, correlator efficiency decreased due to training on the new correlator and also due to the primitive state of the whole operational system. Efficiency slowly improved, and by the end of 2000, the efficiency was beginning to approach Mark IIIA standards, although much more work needs to be done to fully realize the promise of the new correlator.

Due to the Mark IV startup period, NEOS-A and the Daily Intensives were the only sessions processed during the first few months of operations. As the correlator efficiency improved, more non-NEOS sessions, and some of the backlog were processed.

3. Staff

The Washington Correlator is under the management and scientific direction of the Earth Orientation Department of the U.S. Naval Observatory. USNO personnel continue to be responsible

for overseeing the scheduling and processing. During the period covered by this report, a private contractor, AMSC, continued to supply a contract manager and correlator operators.

Dr. Kerry Kingham (USNO) VLBI Correlator Project Scientist, responsible for the scientific integrity of correlated data, hardware and software maintenance and upgrades.

James O. Martin (USNO) VLBI Correlator Project Manager, responsible for process scheduling and evaluation of correlated data. Oversees session setups and prepases. Evaluates station performance.

Bruce Thornton (AMSC) Operations Manager, responsible for correlator operator scheduling, daily operations, and tape shipping.

Harvis Macon (AMSC) Correlator operator, NEOS-A setups.

Valerie Bockarie (AMSC) Correlator Operator

Steven Springer (AMSC) Correlator Operator

Lawrence Dorsey (AMSC) Correlator Operator

Joseph Granderson (AMSC) Correlator Operator

Roxanne Watkins (AMSC) Tape Librarian

4. Outlook

The Washington Correlator, at present, is able to process 6-station geodetic VLBI sessions in a single pass. As the Mark IV development continues, and at least two additional tape drives are added, the Correlator facility will be able to handle 8-station sessions in a single pass, or subdivide into as many as 4 simultaneous sessions. More of the Mark IV capabilities will become operational allowing new observation formats.