

Washington Correlator

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Abstract

This report summarizes the activities of the Washington Correlator for the year 2001. 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 several of the CORE-B sessions for 2001 were processed at WACO. The remaining time was spent on reference frame and astrometry sessions. The facility houses a Mark 4 Correlator.

2. Correlator Operations

During the year 2001, the Washington Correlator Facility expanded its capabilities from 6 to 7 tape drives. The eighth tape drive was delivered, but not installed. The correlator facility operates 136 hours per week, and is fully loaded at this level. During 2001, the efficiency of the Mark 4 correlator improved and is now about equal to that of the Mark IIIA. The Mark 4 has the additional capability to do 7 (and, in 2002, 8) stations simultaneously. As with the other Mark 4 correlators, the ability to run more than one scan/session/experiment at a time was added to the correlator capabilities. This ability is very important in increasing the efficiency of the correlator particularly for geodetic observations which are heavily subnetted. All of the subnets can be processed simultaneously which reduces the time needed for processing.

During 2001 the following experiments were processed:

- 52 NEOS-A experiments
- 5 CONT
- 5 CRF (Celestial Reference Frame)
- 4 Core B
- 2 APSG (Asia Pacific)
- 1 SURVEY
- 206 Intensives

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, NVI, Inc., supplied a contract manager and correlator operators.

In February, James Martin, who has been the Correlator Project Manager since 1987, retired. Jim was the person primarily responsible for the quality of the processing. He is much missed and his position has not been filled.

Arno Müskens of the University of Bonn and the Bonn Correlator, visited for two 6 week periods extending from February through mid-July. Arno assisted the remaining staff to continue operations after Martin's retirement. His help was much appreciated.

Since Jim Martin's retirement, Kerry Kingham has assumed most of Jim's responsibilities as well as continuing to perform the duties of Project Scientist. Bruce Thornton has taken responsibility for Intensive processing and review.

Staff	Duties
Dr. Kerry Kingham (USNO)	VLBI Correlator Project Scientist, responsible for the scientific integrity of correlated data, hardware and software maintenance and upgrades, and computer system administration. Also responsible for process scheduling and evaluation of correlated data. Oversees session setups and prepasses and evaluates station performance.
Bruce Thornton (NVI)	Operations Manager, responsible for correlator operator scheduling, daily operations, and tape shipping. Intensive processing and review.
Harvis Macon (NVI)	Lead Correlator operator, NEOS-A and Intensive setups.
Roxanne Watkins (NVI)	Tape Librarian
Keven Reynolds (NVI)	Correlator Operator
Dwayne Sneed (NVI)	Correlator Operator
Joseph Granderson (NVI)	Correlator Operator
Steven Springer (NVI)	Part-time Correlator Operator
Lawrence Dorsey (NVI)	Part-time Correlator Operator
Valerie Bockarie (NVI)	Part-time Correlator Operator

4. Outlook

The Washington Correlator, at present, is able to process 7-station geodetic VLBI sessions in a single pass. It can also subdivide into as many as 4 simultaneous sessions. This capability makes geodetic processing much more efficient, and allows more experiments to be processed. However, staffing levels may not allow much expansion in processing.

We expect full Mark 4 capability to be slowly brought on line in the next year allowing new observing modes and capabilities. An eighth tape drive will be integrated into the system allowing 8-station experiments to be processed in a single pass.