

Washington Correlator

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Abstract

This report summarizes the activities of the Washington Correlator for the year 2008. The Washington Correlator provides up to 80 hours of processing per week, primarily supporting Earth Orientation and astrometric observations. An additional 40 hours per week of unattended processing is also provided routinely. In 2008 the major programs supported include the IVS-R4, IVS-INT, IVS-R1, CONT08, APSG, and CRF (CRF, CRMS, CRDS, and CRFS) observing sessions.

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 spent 100 percent of its time on these experiments. All of the weekly IVS-R4 sessions, all of the daily Intensives, several IVS-R1 sessions, and the entire CONT08 were processed at WACO. The remaining time was spent on terrestrial reference frame and astrometry sessions. The facility houses a Mark IV Correlator.

2. Correlator Operations

- The Washington Correlator continues to operate 80 hours per week with an operator on duty. The correlator has continued to function well unattended, allowing another 40 hours per week, on average, of extra processing. This has also decreased the time it takes to process an R4 or R1 by one day, and allowed more rapid processing of CONT08 sessions.
- The correlator staff continues the testing and repair of Mark 5 modules. Not only were failed disks replaced, but some modules were upgraded by the replacement of small disks with larger ones.
- The Intensive observations from Wettzell continue to be electronically transferred to the Washington area and transported to the correlator. This operation saves 1 to 2 days of shipping time.
- A new control computer was brought online in 2008, and the entire Correlator was moved behind an internal firewall to isolate it from the rest of the USNO computer network.
- A Mark 5B playback unit was added to the correlator complement of Mark 5's, which now allows the correlator to process 10 stations (8 Mark 5As and 2 Mark 5Bs) simultaneously. In addition, a Mark 5B+ was acquired, although it is not yet online.
- Table 1 lists the experiments processed during 2008.

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



Figure 1. The WACO Mark IV Correlator, showing the Mark 5B units (right), legacy tape drives (no longer used), the central processing rack and beyond it one of two station unit racks. The far left rack contains four Mark 5A units and the broadband Internet terminal.

Table 1. Experiments processed during 2008

52	IVS-R4 experiments
19	CRF (Celestial Reference Frame)
4	IVS-R1
15	CONT08
1	Station Test
212	Intensives
24	Kk-Sv-Wz Intensives

for overseeing scheduling and processing. During the period covered by this report, a private contractor, NVI, Inc., supplied a contract manager and correlator operators.

Table 2 lists staff and their duties.



Figure 2. Kenneth Potts keeps an eye on the correlator.

Table 2. Staff

Staff	Duties
Dr. Kerry Kingham (USNO)	Head VLBI Operations Division and Correlator Project Scientist
David Hall (USNO)	VLBI Correlator Project Manager
Bruce Thornton (NVI)	Operations Manager
Harvis Macon (NVI)	Lead Correlator Operator
Roxanne Inniss (NVI)	Media Librarian
Kenneth Potts (NVI)	Correlator Operator

4. Outlook

The Washington Correlator plans to upgrade the Mark 5A playbacks to Mark 5B, in coordination with the installation of Mark 5Bs at the Network Stations. It is expected that the number of playbacks available will increase to 12 (8 Mark 5As and 4 Mark 5Bs) with the addition of 1 Mark 5B and 1 Mark 5B+ before the existing Mark 5A units are converted to Mark 5B.

At the end of 2008 a broadband Internet connection was in the process of being installed at the Correlator.