

# Washington Correlator

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**Abstract** This report summarizes the activities of the Washington Correlator for the years 2021 and 2022. The Washington Correlator provides up to 60 hours of attended processing per week plus up to 60 hours of unattended operation, primarily supporting Earth Orientation and astrometric observations.

## 1 General Information

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 sessions. All of the weekly IVS-R4 sessions, all of the IVS-INT1, and VGOS V2 Intensives, and a subset of the R&D, CRDS (southern hemisphere Celestial Reference Frame), and VGOS VO sessions were processed at WACO. The facility houses the WACO DiFX correlator.

## 2 Activities during the Past Years

- The Washington Correlator made the transition from the DiFX V1 correlator to the DiFX V2 software correlator, with plans in place to acquire

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and deploy the DiFX V3 (or VGOS) correlator. Work to achieve the final configuration of the correlator, its associated servers, and its network is ongoing.

- The correlator staff continues to support transfers by high-speed networks but was hampered by the long-delayed upgrade to the existing 2 Gb/s line.
- The VLBI division has taken on the task of studying the possibility of correlating in the cloud.
- The continued effort to upgrade and replace aged hardware and servers with newer, more capable ones with hot spares was largely completed, with virtually all single points of failure eliminated from the processing chain.
- Table 1 lists the IVS sessions processed during 2021–2022.

**Table 1** 2021–2022 sessions processed.

Type	Mode	Number processed
INT1	Legacy	483
R4	Legacy	102
CRDS	Legacy	9
V2	VGOS	294
VO	VGOS	16

## 3 Staff

The Washington Correlator is under the management and scientific direction of the Earth Orientation Department of the U. S. Naval Observatory. Staffing issues were persistent at WACO. In 2022 Andrew Sargent left

**Table 2** Staff.

<b>Staff</b>	<b>Duties</b>
David Hall	Chief, VLBI Division
Mike Dutka	Programmer
Phillip Haftings	Astronomer
Sara Hardin	Astronomer
Bruce Thornton	Physical Science Technician
Roxanne Inniss	Media Librarian
<b>Contractors</b>	<b>Company</b>
Tim Dorman	CPI

the VLBI division for another position at USNO. Expedited efforts to hire a replacement and fill an additional position that has been approved are underway. An additional contractor, Tim Dorman, was added in 2021 to assist with the study and potential deployment of a cloud correlator.

## 4 Future Plans

A hardware refresh is planned for the next year and for the expansion of file storage space. Upgrading the high-speed Internet connection from 2 Gb/s to 10 Gb/s is also planned for the future.