

Canadian VLBI Technology Development Center

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Abstract

The Canadian VLBI Technology Development Center (TDC) is involved in activities related to the realization of VLBI2010.

1. Introduction

The Canadian TDC is a collaborative effort of the National partners interested in the advancement of VLBI technology, namely the Geodetic Survey Division of Natural Resources Canada (GSD/NRCan) and the Dominion Radio Astrophysical Observatory (DRAO) of the Herzberg Institute for Astrophysics of the National Research Council of Canada, (DRAO/HIA/NRC).

2. VLBI2010 Committee (V2C)

The Canadian TDC is primarily focused on encouraging the realization of VLBI2010. This is done by Bill Petrachenko, who is chairman of the V2C, with added contributions by Toni Searle, both of NRCan. In collaboration with others, this year's activity focused on the following areas.

- Completion and final editing of "Design Aspects of the VLBI2010 System: Progress Report of the IVS VLBI2010 Committee"
- Refinement of recommendations for VLBI2010 subsystems with particular attention to the Digital Back End
- Development of strategies for handling systematic errors due to electronics, antenna deformations, and source structure
- Development of algorithms for processing broadband data
- Execution of studies into the nature, impact, and mitigation of Radio Frequency Interference
- Participation in the VLBI2010 Project Executive Group.

3. DRAO Activities

Two prototype 10-m composite antennas that are light, stiff, and cost effective have been developed and tested. Under the leadership of Gordon Lacy, design studies for more efficient designs are under way.

Under the leadership of Brent Carlson and Dave Fort, DRAO is completing the production of the correlator for the EVLA project. It is one of the most ambitious radio interferometry correlators ever designed. Correlator expertise at DRAO is now being directed toward novel designs for the SKA.