



SBND Operations Report

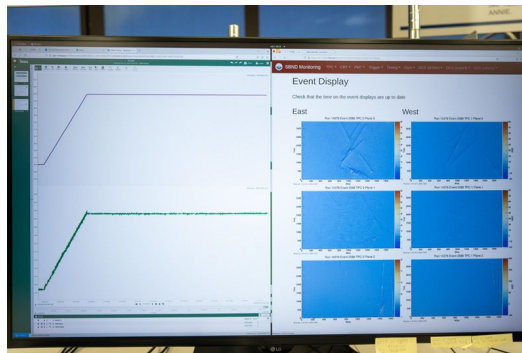
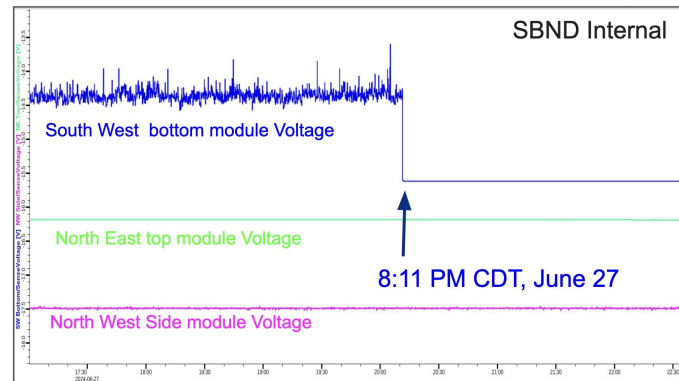
August 1, 2024

SBND Operations: Monica Nunes, Thomas Wester, Erin Yandel, Lauren Yates

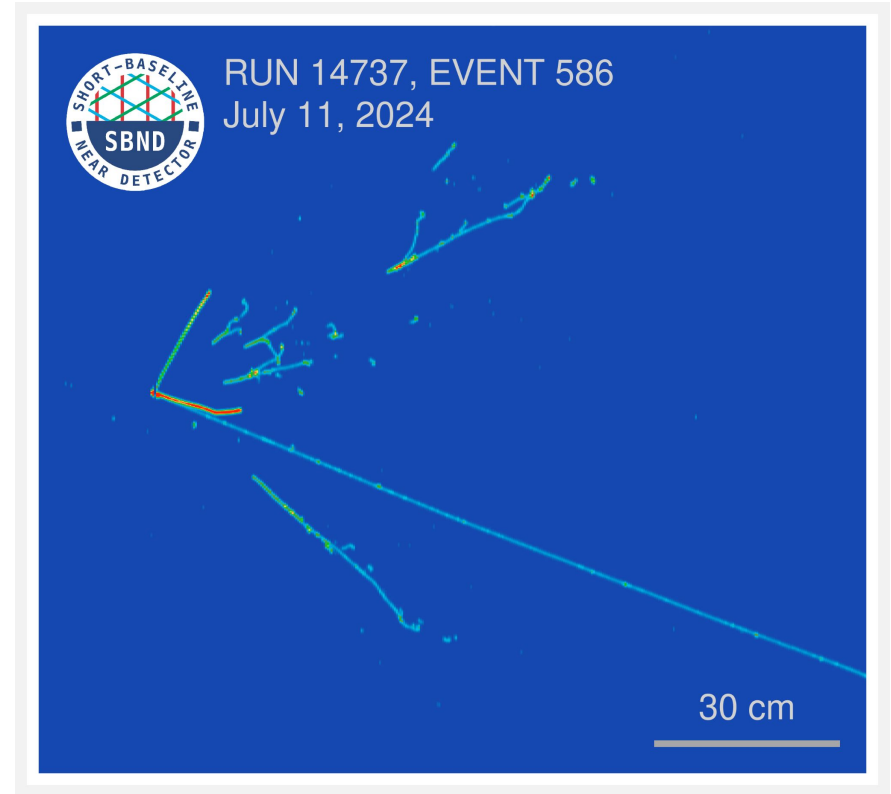
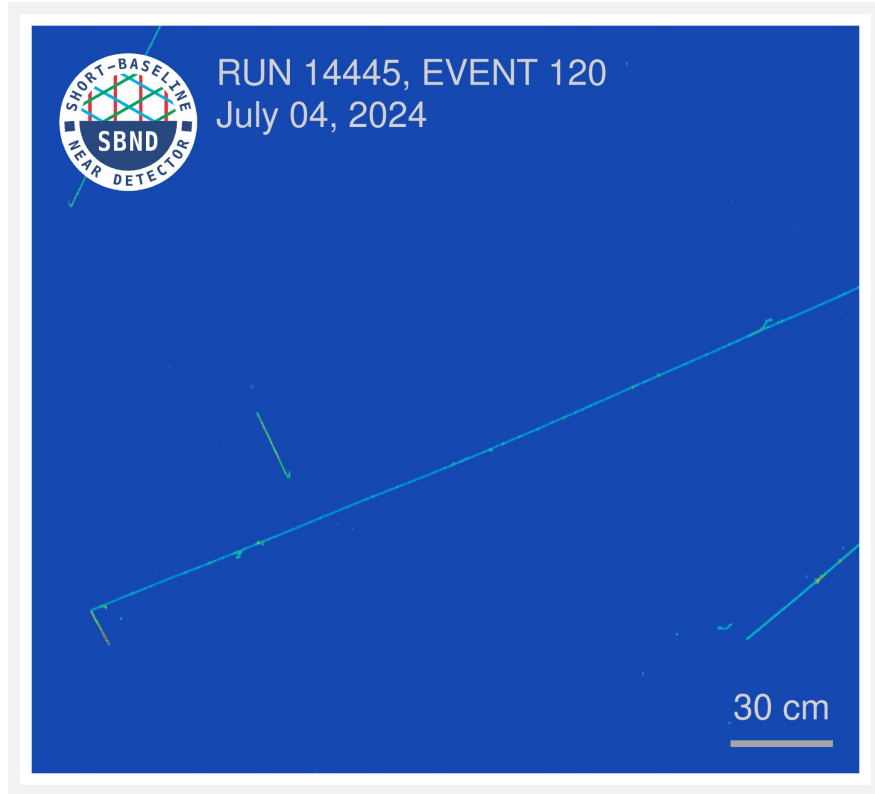
Stable operation at 100 kV

- SBND observed HV instabilities during its first ramp in March, investigations until late June when HV instabilities went away. Successfully ramped to nominal 100 kV by July 3.
- We collected BNB data with TPC, PDS, and CRT systems online, triggering on every spill until shutdown, 4 AM July 12
- Detector has been running stably at 100 kV, no further HV instabilities observed

Monitoring of the the field cage modules voltage [3 displayed]

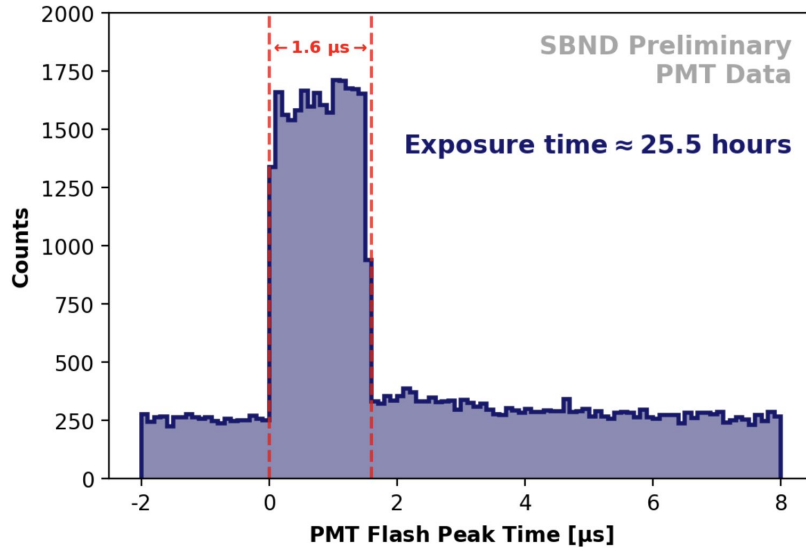


First SBND Neutrino Candidates @ 100 kV

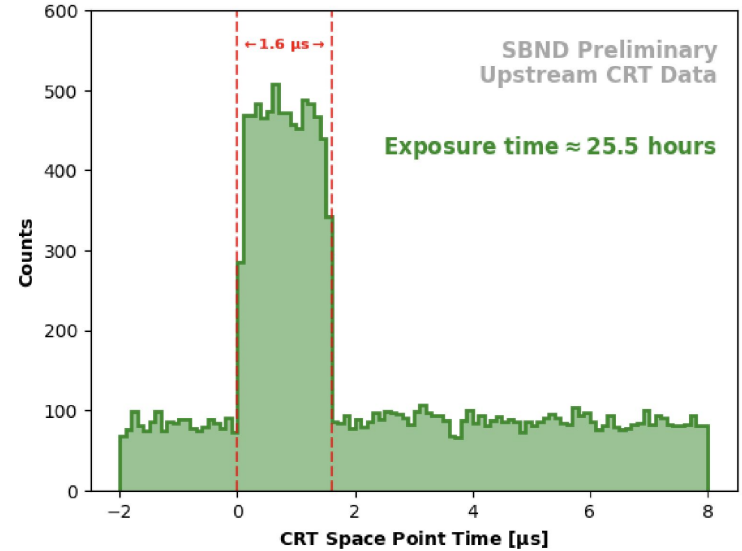


Beam in the CRT and PMT

PMT subsystem ramped up smoothly and saw the BNB

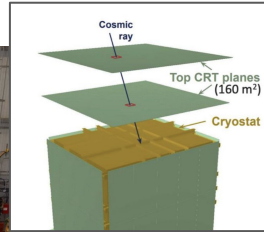


The CRT walls that are installed have also run smoothly and saw the BNB



CRT Installation

- 5/7 CRT Walls installed, tested, and running smoothly
- Support structure for remaining 2 layers (lower and upper top) are now in place



- Modules for lower-top layer moved to the SBN-ND building last week
- Modules and front end boards tested and working ✓
- Module installation starting today

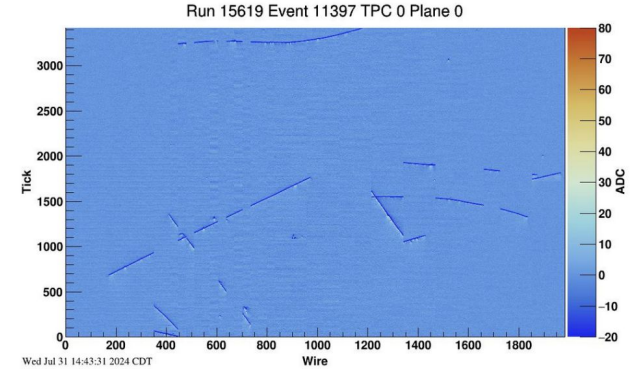


DAQ Troubles

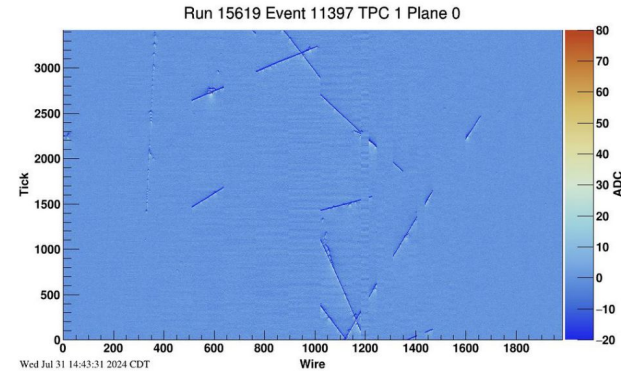
Primary source of downtime has been DAQ-related: Synchronization issue between fragments causes mixed-up “choppy” events

- Problem is understood to be fragments from different events being included in the same event, fixed temporarily by restarting the run
- Can filter these events in offline using fragment timestamps
- DAQ experts have identified likely sources of the issue and work is ongoing to resolve it

East



West



“Choppy” event example

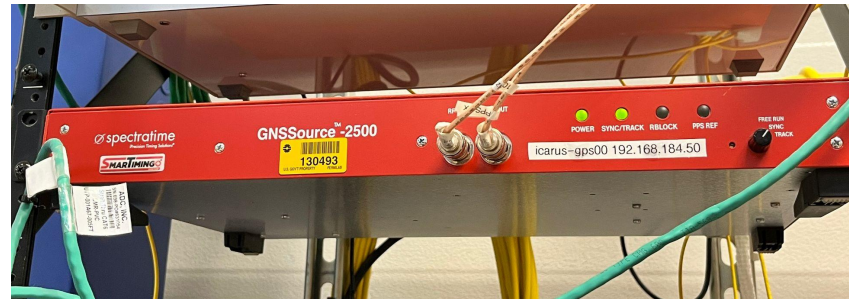
GPS Receiver

We began monitoring the GPS status bit in our slow controls, noticed periodic loss of connection, issue indicated by red “RBLOCK” status light

- Tested our GPS at SBN-FD building using ICARUS’s antenna, same behavior
- Manual recommends sending back to manufacturer
- No spare available of the same model, currently using older model from D0 without remote monitoring



SBND receiver red “RBLOCK” light switches on periodically



ICARUS receiver (same model as SBND)
Functioning normally

Summer Plans

- Top CRT panel: Structural supports in place; installation this week & next
- DAQ and trigger commissioning continues
- Collection & analysis of cosmic data for calibrations is ongoing
- Large-scale SBND MC production & keep-up processing for SBND data expected to start in the next ~month
 - Also will re-process 100 kV data with updated decoders and software bug fixes