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Pulsar Timing for Undergraduates: Research Meets Outreach

STEVEN STETZLER, University of Virginia, KEVIN STOVALL, National Radio Astronomy Observatory, NICK CLIFFORD, MEGAN KENNY, COLE LATVIS, SHELBY LAYCHAK, ROBIN LEICHTNAM, RAYMUNDO MORA, DIRK PITTS, LEVI SCHULT, JONATHAN SELBY, RYAN TAYLOR, MORGAN WADDY, IAN WALK, LIAM WALTERS, DEMETRI WORKMAN, YARA YOUSEF, University of Virginia — The Pulsar Observers at UVa, consisting of 16 undergraduate students, uses the Long Wavelength Array to observe and construct a timing solution for 10 pulsars over the course of a year. Our work parallels the No Pulsar Left Behind project (Brinkman et al. 2018), which published timing solutions for 12 pulsars that had been discovered 15-20 years prior, but had never had timing solutions published. Each of the pulsars we observed has either not had a pulsar timing solution published before, or its timing solution was published longer than 30 years ago. Since many of our members have no prior research experience, we are able to use our group as a platform for outreach among the undergraduate community, providing students with valuable research experience while giving them the opportunity to perform non-trivial scientific activities. We will outline our approach to running a large, undergraduate focused research group, introduce our observation and timing techniques, and provide preliminary timing solutions for the 10 observed pulsars.

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