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Abstract

The Arecibo Pisces-Perseus Supercluster Survey is a targeted HI survey of galaxies that began its second observing season in October 2016. The survey is conducted by members of the Undergraduate ALFALFA Team (UAT) and extensively involves undergraduates in observations, data reduction, and analysis. It aims to complement the HI sources identified by the ALFALFA extragalactic HI line survey by probing deeper in HI mass (to lower masses) than the legacy survey itself. Measurements of the HI line velocity widths will be combined with uniform processing of images obtained in the SDSS and GALEX public databases to localize the sample within the baryonic Tully Fisher relation, allowing estimates of their redshift-independent distances and thus their peculiar velocities. The survey is designed to constrain Pisces-Perseus Supercluster infall models by producing 5-σ detections of infall velocities to a precision of about 500 km/s. By targeting galaxies based on SDSS and GALEX photometry, we have achieved detection rates of 68% of the galaxies in our sample. We will discuss the target selection process, HI velocities and mass estimates from the 2015 fall observing season, preliminary results from 2016 observations, and preliminary comparisons with inflow models predicted by numerical simulations. This work has been supported by NSF grants AST-1211005, AST-1637339, AST-1637262.

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