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THERMOSPHERIC WINDS ABOVE DAVIS, ANTARCTICA, DERIVED FROM FABRY-PEROT SPECTROMETER FRINGES

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Results are presented of an initial survey of Fabry-Perot spectrometer observations of the 630.0 nm airglow line of atomic oxygen, which is emitted from an altitude of around 240 km. These data were recorded at Davis, Antarctica, during 2004. Analysis software was developed to derive horizontal and vertical wind speeds from two-dimensional fringe images. A_p and $F_{10.7}$ indices were used to group the resulting wind data according to geomagnetic and solar activity. Average winds throughout the year were then calculated for active (Ap $\geq$ 20, F10.7

$\geq$ 100) and quiet (Ap $\leq$ 10, F10.7 $\leq$ 100) conditions. In cases where averages were derived from sufficient wind observations, generally good agreement was found between the winds derived from the Davis data and those produced by the empirical 1993 Horizontal Wind Model. The Davis winds were also consistent with those derived previously from similar observations from the nearby station of Mawson, Antarctica. With the construction of a new all-sky imaging Fabry-Perot spectrometer to be installed at Mawson in 2007, opportunities will exist for bistatic common-volume observations using the Davis and Mawson spectrometers. The technique and scientific motivation for these bistatic observations will be discussed.