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The WHAM survey of ionized gas in the galaxy

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Abstract. The Wisconsin H-Alpha Mapper (WHAM) is a high-resolution Fabry-Peròt spectrograph optimized for studying optical emission from faint, diffuse sources. It features full remote operability and an unprecedented combination of high sensitivity (0.01 Rayleigh; emission measure of 0.03 cm^{-6} pc) and high spectral resolution ($R = 25,000$). As its primary mission, WHAM has produced the first kinematically resolved survey of diffuse ionized gas in the northern sky comparable to all-sky surveys of neutral gas. The Hα survey work has been extended to other diagnostic emission lines that are used to characterize the physical conditions of this poorly understood phase of the interstellar medium. The unique capabilities of WHAM have been used to study a range of other phenomena including the Earth's geocorona, the motion of zodiacal dust, large planetary nebulae, high-velocity clouds, and dwarf spheroidal galaxies. The instrument is currently in the process of being relocated from Kitt Peak to the southern hemisphere where it will complete the all-sky Hα survey and continue to explore ionized gas in the southern skies. More details and the current status of the WHAM project can be found at http:www.astro.wisc.edu/wham/.

Key words. Galaxy: halo – H II regions - ISM: atoms - ISM: structure

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