A SYNOPTIC VIEW OF THE MAGELLANIC CLOUDS:
VMC, GAIA AND BEYOND

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Galactic Mass and Radiation Feedback of the Magellanic Clouds

Barger Kat, Texas Christian University

The environment that galaxies live in strongly influences their shape, overall structure, and how they grow. The properties and fates of the circumgalactic gas surrounding galaxies is strongly influenced by its interaction with the surrounding galactic radiation field and any gaseous medium that it is traveling through. The gas flows associated with the Magellanic Cloud galaxies provided us with an advantageous opportunity to study mass and radiation feedback in detail. Using the Wisconsin H-alpha Mapper (WHAM) telescope, we have completed the highest sensitivity emission-line survey of the ionized gas surrounding the Magellanic Clouds. From this census, we find that the tidal debris surrounding these galaxies is substantially ionized and place constrains on the amount of ionizing radiation that is expelling from these galaxies. Using UV Hubble Space Telescope (HST) absorption-line observations, we present compelling evidence that the LMC is driving a large-scale wind that permeates from its entire disk and estimate the mass outflow rate and mass loading factor of the outflows. These results provide insight into the effects that influence galaxy evolution in less resolved galaxies.