The International Galactic Plane Survey

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The Dominion Radio Astrophysical Observatory is nearing completion of an observing project to image the radio emission from the Northern Galactic Plane as part of the Canadian Galactic Plane Survey (CGPS). The DRAO observations provide simultaneous radio continuum images at two wavelengths, 74 cm and 21 cm, and spectral line images of the 21-cm line of neutral atomic hydrogen. This survey forms part of an international collaboration to create a database, within the CGPS region, of arcminute scale resolution, high spatial dynamic range images of all major components of the interstellar medium (ISM). The data have reveal wide-spread features and process in the interstellar medium that are not readily visible by other means, including, for example, unusual atomic hydrogen structures related to the vertical transfer of matter and radiation between the disk and halo of the Galaxy, Faraday rotation structures that allow study of the magnetic field and diffuse ionized component in the plane of the Galaxy, and a highly-structured, cold atomic phase of the neutral medium that may provide a link between global shock phenomena in the Galaxy and the formation of molecular clouds.

A global alliance has now been forged to secure a high resolution 3-D image of the atomic hydrogen emission from the disk of the Milky Way Galaxy. This project, the International Galactic Plane Survey, will combine the CGPS for the northern Plane, with the Australia Telescope, Southern Galactic Plane Survey (SGPS) for the southern Galaxy and the VLA Galactic Plane Survey (VGPS) for the equatorial region. These surveys combined provide arcminute-scale atomic hydrogen images over 90% of the stellar disk of the Milky Way. Complementary surveys of CO(1-0) in the northern plane will be carried out using focal plane array receivers on the Five Colleges Radio Astronomy Observatory and the Onsala Space Observatory. I will review the specifications and scientific highlights of the project.