

Wind from star and planet

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Observations of star and planet by Hubble Space Telescope, satellite, etc revealed radio waves from black hole and pulsar, jet stream from young star, interstellar wind, high speed plasma flow (solar wind) from coronal hole, plasma flow (polar wind) from Earth polar plasmasphere and neutral polar wind, and Jovian plasma flow. Basic mechanisms of those winds are understood by use of magnetohydrodynamic equation, but the detailed observations demand other acceleration mechanisms. For example, plasma flow from Earth polar plasmasphere shows that the acceleration by not only pressure gradient and polarization electric field but also plasma wave is important. Neutral polar wind is suggested by the interaction of plasma with neutral atmosphere. Escape of atmosphere of star and planet affects the environment of other planet and satellite as well as the evolution of star and planet. In this presentation, observation of wind in space is reviewed, and the physical processes are discussed.