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The Last Half Century of Solar Wind Plasma EUGENE PARKER, University of Chicago — Over the last half century the solar wind has developed from the theoretical gross features of the expanding corona and heliosphere to recognition of a new world of plasma dynamics. It is curious, then, that along side this gratifying progress there is an ongoing and obdurate field of misunderstanding that flourishes around the periphery of the main stream. For instance, it is sometimes remarked, and seldom contradicted, that (a) hydrodynamics does not apply to the large-scale bulk motion of a collisionless plasma, (b) MHD applies to neither a collisionless plasma nor to a partially ionized gas, (c) the electric polarization field, $\mathbf{E}=-\mathbf{v}\times\mathbf{B}/c$, plays an active role in the dynamics, (d) an electric circuit analog can be constructed to represent an active MHD system, (e) laboratory plasmas driven by application of electric fields actually model some of the remarkable activity observed on the Sun. It is shown that Newton and Maxwell would have it otherwise.

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