

A review of magnetopause and boundary layer studies in 2011-2013

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Half a century ago, significant discoveries were made, such as unambiguous observations by spacecraft of Earth's magnetopause (e.g., Cahill and Amazeen, 1963) and proposal of a conceptual model of magnetopause reconnection poleward of the cusp under northward interplanetary magnetic field conditions (Dungey, 1963). These discoveries have profound impacts on our current understanding of the magnetosphere and its boundary layers. On this 50th anniversary, I give a digest version of a review talk that I have presented at the IAGA meeting in August 2013. Presented are advances made during the last couple of years in our understanding of the magnetopause, its boundary layers, their roles, and the processes occurring there. Observational, modeling, and theoretical works mostly on, but not limited to, the Earth's magnetopause are reviewed.

References:

- Cahill, L. J., and P. G. Amazeen (1963), The boundary of the geomagnetic field, *J. Geophys. Res.*, 68(7), 1835-1843.
Dungey, J. W. (1963), The structure of the exosphere or adventures in velocity space, in *Geophysics: The Earth's Environment*, edited by C. DeWitt, J. Hieblot, and A. Lebeau, pp. 505-550, Gordon and Breach, New York.