

Abstract
Substorms and Aurora

Substorm Activity seen in Aurora

Author: Maya Vaidya

Auroras occur when charged particles from solar activity strike Earth's magnetosphere. The charged particles are transported to the magnetic poles of the Earth's magnetic field. When the electrons from these particles drop to a lower energy state, they release photons which are seen in the form of what we call auroras. These charged particles reach the magnetic poles from solar wind and substorms. Substorms are brief fluctuations in the magnetosphere caused by the energy released from magnetic reconnection at the tail. Substorms occur as often as every couple of hours. The natural phenomenon called auroral beads are seen when these substorms from magnetic reconnection at the magnetotail occur. By studying the substorms, we can better understand the different types of auroras seen in the atmosphere.

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