

**Polar Gateways Arctic Circle Sunrise 2008 Conference**  
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**Abstract**

**The Mystic Twins: Aurora Borealis and Australis**

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The solar wind is constantly interacting with the Earth's magnetosphere. Although the Earth's magnetic field acts as a shield against charged particles, a tiny part of the solar wind can penetrate and thus, energy and momentum are transferred from the solar wind to the magnetosphere. This process can be observed as an auroral spot on the dayside at high latitudes, both in South and North. When sufficient energy has been stored in the magnetosphere, this energy will be released through processes called substorms where bright aurora shaped as an oval around the magnetic pole are seen in both hemispheres for hours. For even more 'stormy space weather' disturbances can last for days and are called magnetic storms. Studying the aurora in the two hemispheres simultaneously is one of the main science objectives of the Norwegian IPY-ICESTAR program and this talk will give some of the latest results from this study.