

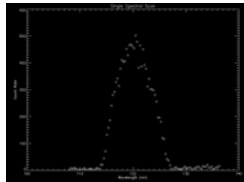
Lyman Alpha Airglow, and the Geocorona

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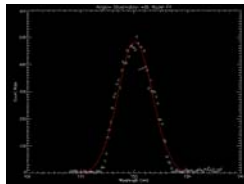
Abstract:

The geocorona is the outermost layer of the earth. It consists of neutral hydrogen atoms. These same hydrogen atoms are responsible for Lyman alpha emission. When the light is emitted, a glowing cloud of hydrogen, which is also referred to as airglow. There have been many observations and calculations of airglow, from different positions and angles taken from the SOLSTICE instrument in its orbit around the Earth, and also solar activities. In this poster, I will explain airglow is more or less dense in different angles and positions in space.

Lyman alpha and Airglow

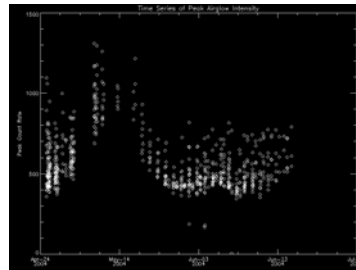


Typical Lyman alpha plot. Because the wavelength of Lyman is coming into the grating spectrometer from all angles and directions, the data shows up as a big blob of information.

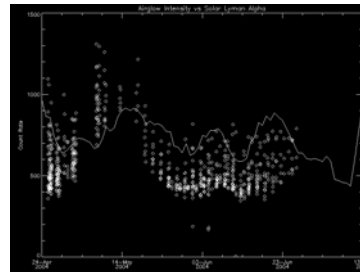


There was too much disturbance in the original plot, so I fit the data to a Gaussian function to get a precise peak value.

Lyman alpha due to solar activity

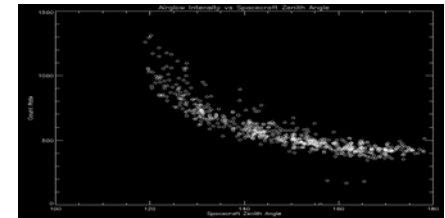
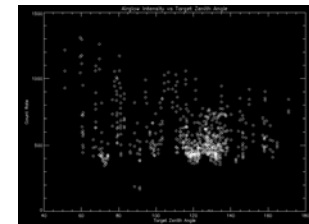


Plot of all Lyman alpha peak values. As you can see, there was an influx in the intensity of the airglow around May 14.



Plot of Lyman alpha peak values fit to a graph of solar irradiance.

Lyman alpha at zenith angles



Conclusion

Found the correlation between the spacecraft's position relative to the Sun and the zenith angle.