



## **Exospheric H-densities up to 15 Re at the Earth's dayside using TWINS/CASSINI Lyman-alpha data**

Jochen Zoennchen, Uwe Nass, and Hans Fahr

Argelander Institut für Astronomie, Universität Bonn, Bonn, Germany (zoenn@astro.uni-bonn.de)

We use Lyman-alpha data observed by TWINS-LAD (2012) and CASSINI-UVIS/HDAC (during its Earth fly-by in Aug. 1999) to derive the ecliptic exospheric H-densities on the Earth's dayside. Since the solar Lyman-alpha radiation at 121.5 nm is resonantly backscattered from geocoronal neutral hydrogen (H), the line of sight (LOS) backscattered Lyman-alpha intensity is proportional to the H-column density (within optically thin conditions).

When CASSINI passed the Earth in 1999, the UVIS/HDAC-instrument started to observe on the Earth's dayside at a distance of 15 Earth radii (Re). For comparable solar activity conditions the combination of CASSINI-UVIS/HDAC and TWINS-LAD data allow to unfold from the column information the ecliptic H-density distribution between 3-15 Re for LOS's close to the upsun direction.

In the presented analysis we discuss the method, the cross calibration of both instruments and the resulted H-density distribution.