

All Sky Imager

The All Sky Imager is an instrument to capture the atmospheric state by taking pictures. The camera set up was designed in the working group clouds and radiation of Prof. Andreas Macke at IFM-GEOMAR. Dr. John Kalisch was in charge for the development, support, and the data evaluation. Different All Sky Imagers are set up at various locations, at land and on research ships. Due to the hardware set up the image is not contaminated by a ring or ball that shadows the sun.



Figure 1: All Sky Imager pictured by Dr. John Kalisch

WHERE was the All Sky Imager mounted?

On board R/V Polarstern the All Sky Imager was mounted on the starboard monkey deck. It was fixed on a top of a measurement container. For the hemispheric view this place had the lowest contamination by the ships superstructure.

WHY did we used this instrument on board?

Two main advantages of the TSI are ,first, the direct information of the atmospheric state by simply imaging the sky. This is a useful tool to interpret parameters observed by different instruments such as global radiation, liquid water path, etc. Second, cloud fraction and cloud type can be calculated from these images, which is a substitute for synoptical observations.

WHAT did we exactly measure?

Our All Sky Imager is based on a standard digital camera with an additional fish eye lens. Automatically it takes images every 15 seconds of the whole hemisphere and stores them as JPEG files.