

IAF SPACE EXPLORATION SYMPOSIUM (A3)  
Interactive Presentations - IAF SPACE EXPLORATION SYMPOSIUM (IP)

Author: Mr. Xi Chen  
International Space University (ISU), France, xi.chen@community.isunet.edu

Ms. Danijela Ignjatovic Stupar  
International Space University (ISU), France, danijela.stupar@isunet.edu

HIGH-ACCURACY DETERMINATION OF THE UPPER ATMOSPHERE TEMPERATURES OF THE  
SUN**Abstract**

The activities of the Sun are always attracting our eyes, especially in summit years. The ESA-Dresden telescope which works at 10GHz or more has become quite an indispensable fixture at the International Space University (ISU) with which we can measure in absolute terms the temperature of the Sun at the heights above the photosphere and chromosphere. This temperature which has been measured by many observations and researches indicated that the 11000K refers to the upper chromosphere.

In this report, the procedure of Sun observation and temperature determination by using this telescope or antenna is illustrated in detail. Some important calculations are involved and are crucial for the final temperature results. Due to the inaccuracy of the antenna control and antenna itself, also of some background noise and noise from other object on ground, the temperature results are always not of good quality and not convincing. The improvement of the accuracy is of great importance to this entire research.

We found an efficient way for optimizing the observation procedures, consider and determine all the sources of error that could creep into our observational procedures and the interpretation. A useful algorithm of reducing the impact of sources of errors to the results is finally developed and proved to be of great contribution to the accuracy.