

THE SOFIA AIRBORNE INFRARED  
OBSERVATORY - FIRST SCIENCE  
HIGHLIGHTS AND FUTURE SCIENCE  
POTENTIAL  
H. Zinnecker<sup>1</sup>

SOFIA, short for Stratospheric Observatory for Infrared Astronomy, is a Boeing 747SP aircraft with a 2.7m telescope flying as high as 45000 ft in the stratosphere above 99 percent of the precipitable water vapor. SOFIA normally operates from its base in Palmdale, California, and a typical observing flight lasts for 10 hours before returning to base.

SOFIA has started astronomical observations in Dec 2010 and has completed some 30 early science flights in 2011, delivering a number of exciting results and discoveries, both in mid-infrared imaging (5-40 $\mu$ m) and in far-infrared (THz) heterodyne high-resolution spectroscopy which were published in mid-2012 in special issues of ApJ Letters and A & A, respectively. Meanwhile, in July 2013, as part of Cycle 1, SOFIA has deployed to New Zealand for a total of 9 flights (all of them successful) and has observed key targets in the southern hemisphere at THz frequencies, including star forming regions in the Large and Small Magellanic Clouds.

In this talk, I will present a few highlights of SOFIA early science and its future potential, when the full suite of 7 instruments will be implemented by the time of full operations in 2015. As Herschel ran out of cryogenics in April 2013, SOFIA will be the premier FIR-astronomical facility for many years to come. Synergies with ALMA and CCAT must be explored.

SOFIA is a major bilateral project between NASA and the German Space Agency (DLR), however as an international observatory it offers observing time to the whole astronomical community world-wide, not only to the US and German primary partners.

<sup>1</sup> SOFIA Science Center at NASA-Ames, USA and DSI at Univ. of Stuttgart, Germany.

IC, for use in the design of a spectrometer built by students. The program was built in C++, a language in wide use today. The origin of spectra used is a simplified model of rustic spectroscopy. This equipment basically consists of a box that does not allow light to enter, except through a slit made in the side of it, a diffraction media and a camera for data acquisition. After the image acquisition, one executes the data processing, followed by the usual steps of reduction and analysis of this type of tool. We have implemented a method for calibrating the spectroscopy, through which one can compare the incidence of the photons with characteristic of each monochromatic wave. The final result is a one-dimensional spectrum that can be subsequently analyzed.

<sup>1</sup> Universidade Federal do ABC, CECS, Brazil (cbsalmeida@aluno.ufabc.edu.br).

THE LATIN AMERICAN JOURNAL OF  
ASTRONOMY EDUCATION (RELEA):  
CONTRIBUTIONS AND PERSPECTIVES  
P. S. Bretones<sup>1</sup>, L. C. Jafelice<sup>2</sup>, and J. E. Horvath<sup>3</sup>

The goal of this work is to present an analysis of articles published by the Latin American Journal of Astronomy Education (RELEA) since its beginning (2004) to the present. We analyzed the 59 articles available on the website of the journal (<http://www.relea.ufscar.br>), published in 15 issues. The articles were classified by: year of publication, issue, author's institutions, grade level, focus of the study and content. The results show that the number of articles is still small - although the journal has been initially qualified as B3 within the Journal Ranking scheme Qualis CAPES and in the latest ranking (current) advanced to the concept B1 in the Qualis, it is too early to expect an increase in the number of articles submitted. Among the main factors for the relatively low number of articles we can mention that the initially nominated Editorial Board did not succeed in a proper dissemination of the journal and call for papers, the ongoing absence of a "critical mass" of astronomy education researchers and the lack of publishing tradition in the area. Important aspects of the writing of articles submitted are also discussed, such as refereeing, acceptance rate of articles, participation of authors from countries other than Brazil and theoretical and methodological frameworks, as well as the recent editorial restructuring of the international Editorial

TEACHING & OUTREACH

DATA ACQUISITION SYSTEM FOR  
INSTRUCTIONAL SPECTROSCOPES  
C. B. S. B. Almeida<sup>1</sup> and A. Hetem<sup>1</sup>

This article aims to present the software for data acquisition developed in scientific initiation program -