

Editorial

This eleventh edition of the journal Latin American Astronomy Education (RELEA) comes in a special moment for Astronomy Education in Brazil.

A National Symposium on Astronomy Education (SNEA) will be held 28-30 July in the UNIRIO Campus, Rio de Janeiro, RJ.

SNEA is a subprogram of the celebrations of International Year of Astronomy and has the following objectives:

- To bring together researchers, students and teachers interested in Astronomy Education involved in all school levels and actions promoting discussions about the problems and prospects in the area;
- To present research papers and further reflections on the possibilities of astronomy teaching, as well as their cultural and interdisciplinary aspects;
- To foster the interaction of research groups working in the area of Astronomy Education in order to discuss methodologies for medium and long terms policy-making for the teaching and popularization of astronomy in the country, as well as to encourage the eventual establishment of other groups research in the area.

In order to provide a diversity of themes, the SNEA program will consist of the following thematic focuses:

- Formal Education
- Non-Formal Education
- Teacher Training
- Cultural Astronomy
- Astronomy Outreach

The program of the Symposium will consist of oral presentations, panel presentations, roundtable discussions and guest lecturers.

Due to the participation of two of us (LCJ and PSB) in the Scientific Committee, we already have information that 135 papers were submitted, which gives an indication of the success of the event and the Brazilian production in the area. Importantly, this is the first event of its content in Latin America, which reflects a maturing of the field of education in astronomy in Brazil, with advantages for the whole region.

In this issue we feature five articles:

The understanding of astronomy concepts by students from basic education of a public school, by Daniel Machado and Carlos dos Santos. This work is an investigation of conceptions of astronomical matters of 561 elementary school II and High School students from a public school in the city of Foz do Iguazu, Parana state. A 20 question test based upon the literature was applied to detect alternative conceptions of a variety of astronomical topics. The results show that comparing the eighth grade of elementary school with the fifth, and third grade of High School with the first, the prevalence of misconceptions in relation to most issues remained.

Analysis of the presence of content about astronomy in a decade of the National High School Examination (1998-2008), by Hanny Angeles Gomide and Marcos Daniel Longhini. This paper presents an analysis of the presence of Astronomy contents in the National High

School Examination (ENEM), from 1998 to 2008. A number of issues are raised and recurrent themes identified. The results are discussed in view of the official programs proposed and considerations are made about future expectations.

A diagnostic assessment for the teaching of astronomy, by Felipa Pacifico Ribeiro de Assis Silveira, Marco Antonio Moreira and Célia Maria Soares Gomes de Sousa. This article presents results of a diagnostic evaluation, based on the theory of Meaningful Learning, on *a priori* knowledge about the concepts of the Earth and Universe. A group of 47 students from the 6th grade of elementary school was investigated using a test of 25 questions. The responses were analyzed to understand the meanings attributed by the students to these concepts. It was found that most students had difficulty in exposing the concepts starting at the sixth grade. However, the evaluation results serve as reference for the organization of the syllabus, enabling the process of learning and adapting the sequence of studies to the characteristics of the students.

University students' conception about the Moon phases, by Maria de Fatima Oliveira Saraiva, Fernando Lang da Silveira and Maria Helena Steffani. This article discusses the development of a multiple choice test about the phases of the moon and analyzes the results of its application to groups of ten students of Physics at the UFRGS. It was noted that there was a significant increase in the percentage of positive hits on some concepts when questions were properly reformulated. This points to the existence of wrong answers induced by unclear questions. The results of similar studies are confirmed, namely that the greatest difficulties of the students are to relate the phase of the moon with its position in the sky at a certain given time.

Astrophysics in schools: playing with observational data, by Hugo D. Navone, Miriam Scancich and Ruben A. Vázquez. This paper presents a proposal for the teaching of problem addressed by Hubble - the relation between redshift and distance of galaxies - exploring various dimensions of education. To this end, it proposes unusual strategies in high school such as the use of the observational records, the discussion of the nature of science and use of computers in class. The proposal is directed to students in their last year of high school, first years of college teachers and students, and Teacher Training Institutes. The activities show that the proposal is feasible, and also stresses its playful and collaborative content of Astrophysics.

More information about the Journal and instructions for the authors may be found at the address: <<http://www.relea.ufscar.br>>. We remind that the articles may be written in Portuguese, Spanish or English.

Editors

Paulo S. Bretones

Luiz C. Jafelice

Jorge E. Horvath