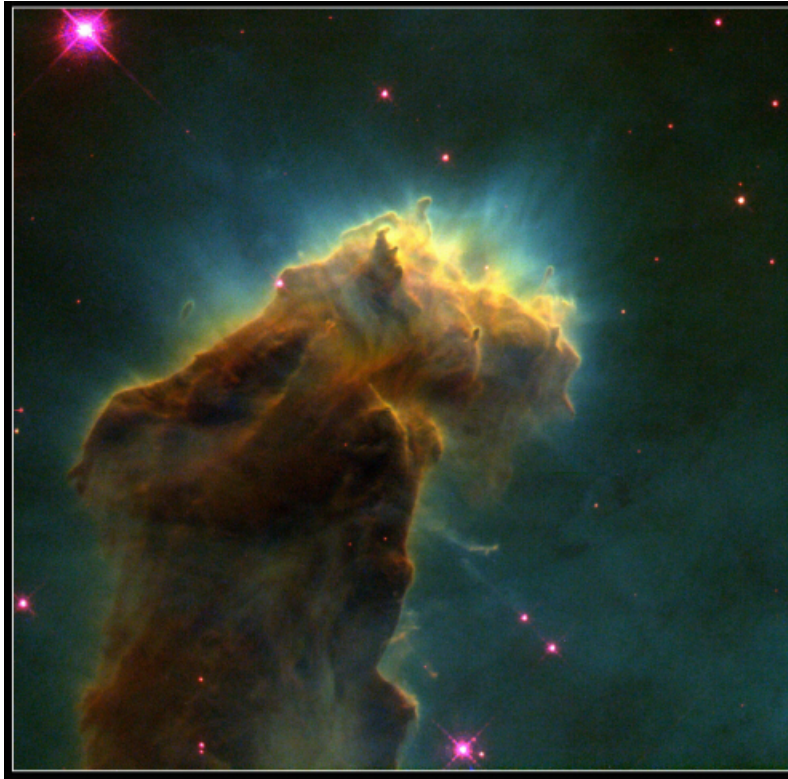# NEBULATOM 3: A SCHOOL FOR LATIN AMERICAN ASTRONOMERS ON EMISSION-LINE OBJECTS IN THE UNIVERSE

Sunday 07 May 2017 - Saturday 20 May 2017

Baia Formosa, RN, Brazil

Scientific Programme

Scientific Programme

Download the programme: nebulatom3_programme.pdf

Topics

Nebulae

Introduction to ionized nebulae and their spectra

Physical mechanisms occurring in ionized nebulae

Plasma diagnostics

Methods of abundance determinations

How to compare abundances at various redshifts

The unsolved problem of temperature fluctuations and its impact

Determination of effective temperatures and star formation rates

How to identify the excitation source (massive stars, active nuclei, shocks)

How to construct and use photoionization models

Dust in ionized nebulae

The interplay between stellar populations and emission lines

Atom

Atomic physics for ionized nebulae: a practical introduction

The importance of atomic data and how to extrapolate them

Can one estimate the reliability of atomic data?

Atomic databases and virtual data centers (VAMDC)

Practical Sessions

How to look at observational data

Introduction to the PyNeb library

Plasma diagnostics and abundance determinations

Introduction to the CLOUDY photoionization code

Introduction to the pyCloudy library

Understanding the results of a photoionization model

Construction and use of model grids with the 3MdB photoionization models database

Tailored-model fitting

Using the STARLIGHT code to derive the stellar populations of emission-line galaxies

Lecturers

Grazyna Stasinska (Paris Observatory, France)

Christophe Morisset (IA-UNAM Mexico DF, Mexico)

Claudio Mendoza (IVIC, Caracas, Venezuela)

Natalia Vale Asari (UFSC, Florianopolis, Brazil)

Scientific organization

Every day there will be about 4 hours of lectures in the morning, 3 hours of hands-on activities under the guidance of the lecturers in the late afternoon, and one after-dinner session for students to present their own work. The lectures will be given in Portuguese and Spanish. All the written material(presentations, exercises, documents) will be in English. A triligual (Portuguese, Spanish, English) compendium of the most usual words, especially for the topics of the school, will be given to each participant on the first day. Students must be prepared to have an active participation in the school. Each student is expected to come with a laptop with a text editor, Fortran and C++ compilers and Python installed. During the after-dinner sessions, students will have the opportunity to present their works and discuss them with the other students.