angular positions along the slit for a sample of southern PNe. Results allowed us to derive velocity profiles for the nebulae, and, for some of them, parameters such as distance and kinematic age. For NGC6302 we estimate a distance of 805 ± 143pc, in good agreement with other results from the literature. For NGC3918, the velocity profiles were used to estimate its kinematic age, assuming expansion with uniform velocity; the result was 3111 years for the external shell. Hereafter we intend to use the kinematic profiles to model these planetary nebulae with the SHAPE code, and apply this technique for a large number of southern planetary nebulae.

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3MDB: THE MEXICAN MILLION MODELS DATABASE

C. Morisset[1] and G. Delgado-Inglada[1]

The 3MdB is an original effort to construct a large multipurpose database of photoionization models. This is a more modern version of a previous attempt based on Cloudy3D and IDL tools. It is accessed by MySQL requests. The models are obtained using the well known and widely used Cloudy photoionization code (Ferland et al, 2013). The database is aimed to host grids of models with different references to identify each project and to facilitate the extraction of the desired data. We present here a description of the way the database is managed and some of the projects that use 3MdB. Anybody can ask for a grid to be run and stored in 3MdB, to increase the visibility of the grid and the potential side applications of it.

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STRUCTURE OF BUBBLES IN THE SOUTH-EAST REGION OF THE LARGE MAGELLANIC CLOUD

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In this work we report the kinematical results of the structure located in the South-East region of the Large Magellanic Cloud, the Supershell LMC 9. The observations have been carried out in the frame of a Hα survey of the Magellanic Clouds and the Milky Way, carried out at ESO with a 36cm diameter telescope, equipped with a focal reducer, a scanning Fabry-Perot interferometer and a photon counting camera. The Supershell LMC 9 is composed of four giant shells DEM L 164 and DEM L 165, DEM L 208, DEM L 221, and several HII regions being the most notorious DEM L 202, DEM L206 and DEM L 207. By means of energy balance we determine the characteristics parameters of these structures (superficial brightness, electronic density, emission measure, mass, luminosity, ambient density, age), that would allow us to distinguish which is the origin (stellar wind, supernova explosion or other mechanism) of the different bubbles that compose the Supershell LMC 9. In this way we try to discern if the studied objects have kinematically some identity as an ensemble, or if they are relatively isolated objects over the diffuse general background to which they belong.

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SPECTROSCOPIC STUDIES OF TWO SUPERNOVA REMNANTS IN THE LARGE MAGELLANIC CLOUD

D. Pauletti[1] and M. V. F. Copetti[1]

This work presents a study of two supernova remnants belonging to the Large Magellanic Cloud, N49 and N11L, based on the spectroscopic mapping of their physical properties. Long slit spectroscopy was used to collect data from a grid of different positions covering the whole nebula by positioning the slit on different and equally spaced declinations. The data were obtained with the 4.1 m SOAR telescope (Southern Astrophysical Research Telescope), in Chile. The spectral coverage was about 3500-8000 Å. For each object, about 50 emission lines were measured on the spectra, allowing

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to build maps of many interesting line intensity ratios. The maps of electron density and temperature were obtained using the [S II] λ6717/λ6731 and [O III] (λ5007+λ4959)/λ4363 line ratio sensors, respectively. N49 presents a strong density gradient with the density varying from 600 cm^{-3} at the North-West to more than 3000 cm^{-3} at the South-East. The electron temperature distribution shows a rough spherical symmetry with the higher values found at the centre. In N11L the electron density varies from less than 100 cm^{-3} to about 400 cm^{-3}, with the higher values found on the bright filaments. These maps were used to build a picture of the structure of these two supernova remnants.

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DENSITIES, TEMPERATURES, PRESSURES, AND ABUNDANCES DERIVED FROM O II RECOMBINATION LINES IN H II REGIONS AND THEIR IMPLICATIONS

M. Peimbert[1] and A. Peimbert[1]

Based on high-quality observations of multiplet V1 of O II and the NLTE atomic computations of O II, we study the density and temperature of a sample of H II regions. We find that the signature for oxygen-rich clumps of high density and low temperature is absent in all objects of our sample: one extragalactic and eight Galactic H II regions. The temperatures derived from (1) recombination lines (RLs) of O II, and (2) RLs of H I together with Balmer continua are lower than those derived from forbidden lines, while the densities derived from RLs of O II are similar or smaller than densities derived from forbidden lines. Electron pressures derived from collisionally excited lines are about two times larger than those derived from RLs. These results imply that the proper abundances are those derived from RLs and suggest that other processes in addition to direct photoionization, such as dissipation of turbulent energy in shocks, magnetic reconnection, and shadowed regions, might be responsible for the large abundance discrepancy factor and t^2 values observed in H II regions.

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SPATIAL VARIATIONS OF PHYSICAL AND CHEMICAL PROPERTIES OF THE PLANETARY NEBULAE NGC 6302 AND NGC 2440

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We present an analysis of the physical and chemical conditions of the planetary nebulae NGC 6302 and NGC 2440 through spatially resolved spectroscopy. Long slit spectrophotometric data were obtained with the Goodman spectrograph attached to the 4.1 m SOAR telescope in several different declinations with the slit on the East-West direction. From them, maps and spatial profiles were constructed. Electron densities were calculated from the [S II] and [Ar IV] sensors, and electron temperatures from the [N II] and [O III] sensors. Small temperature fluctuations on the plane of the sky were obtained. Abundances of N^+, O^+, S^+, S^2+, O^{2+}, Ne^{2+}, Ar^{3+}, Ar^{4+} relative to H^+ were determined from collisionally excited lines, and relative abundances of He^+ and He^{2+} from recombination lines.

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THE MAGNETIC FIELD STRUCTURE OF MUSCA DARK CLOUD

N. L. Ribeiro[1], A. M. Magalhães[1], A. Pereyra[2], and L. Cambresy[3]

Our goal is the study of the magnetic field (MF) structure of a pre-collapse structure of the interstellar medium - the Musca Dark Cloud (MDC), a nearby (200-250 pc), large (0.25° x 3°) filamentary cloud. A description of the MF, together with knowledge on turbulence and gravitational forces, is key to understanding the evolution of interstellar clouds.

We have obtained linear polarization measurements in the H band (1.65μm) with the Brazilian's 60 cm and 160 cm telescopes located at the OPD observatory. By combining these with our earlier optical observations (Pereyra & Magalhaes 2004), we were able to probe regions denser than what was possible in the optical.