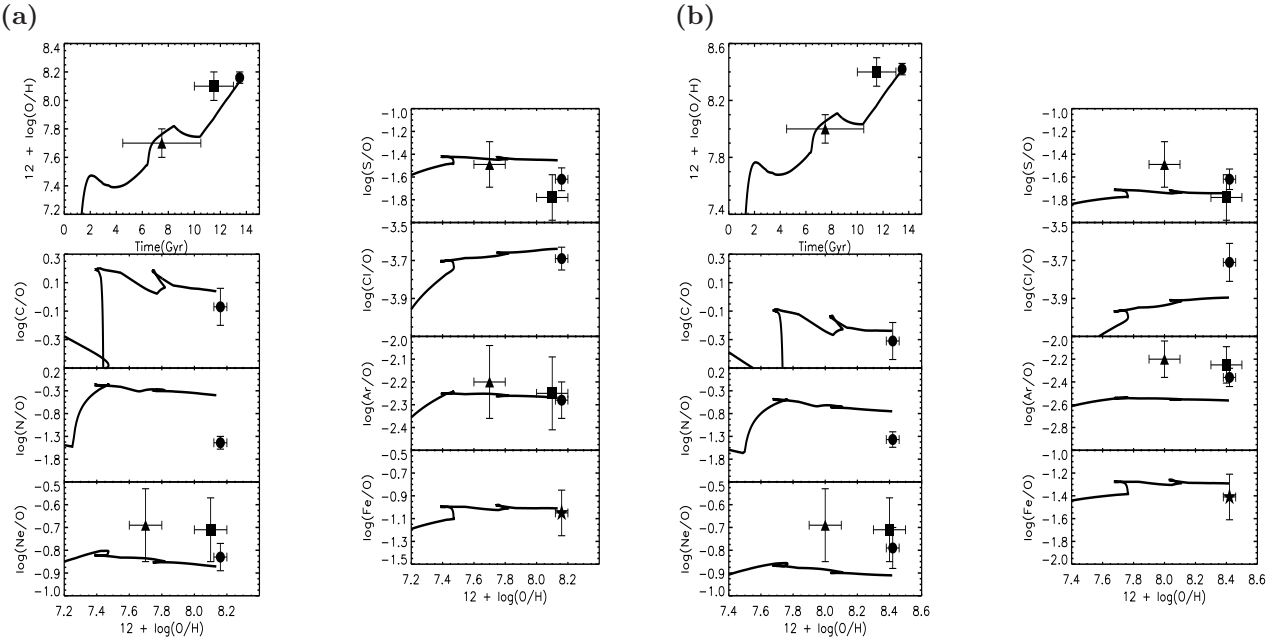


Fig. 1. Chemical evolution of NGC 6822 as predicted by the CELs model (a) and the RLs model (b). Filled circles, filled squares, and filled triangles represent the observational values for HII regions, young, and old PN populations, respectively. The filled star in the Fe/O panels show the ratio of Fe/H value from A-type stars by Venn et al. (2001) and our own O/H values.

lines (CELs) and recombination lines (left and right panels, respectively). The two models fit the same number of observational constraints, in particular both reproduce the evolution of the O/H abundance, as given by the present and past components of the ISM, HII regions, and young and old PNe and also some abundance ratios as log(C/O), log(Ne/O), log(S/O), log(Fe/O). Both models fail in reproducing the N/O ratio, the CELs model predicts 1.0 dex higher, while RLs model 0.6 dex higher than the observed values. The RLs model adopted a more traditional $M_{\rm up}$ of 80 $M_{\odot}$ (similar to the value derived for the solar vicinity), while the CELs model required an $M_{\rm up}$ of 40 $M_{\odot}$.

## 3. CONCLUSIONS

We present chemical evolution models for the Local Group galaxy NGC 6822 using as observational constraints chemical abundances of planetary nebulae and HII regions. These abundance were derived from collisionally excited lines and recombination lines. Our aim was to determine which set of abundances provided a better fit to the models, the set based on CELs or the set based on RLs. Both models produce a fair agreement with observations, but the predicted $\Delta Y/\Delta Z$ value for the RLs model is in better agreement with the $\Delta Y/\Delta Z$ ratios presented in the literature for irregular galaxies. The main characteristics of the models for NGC 6822 are presented in Hernández-Martínez et al. (2009) and Hernández-Martínez et al. (2011).

## REFERENCES

Carigi, L., Colín, P., & Peimbert, M. 2006, ApJ644, 924
Franco, I., & Carigi, L. 2008, RevMexAA, 44, 311
Hernández-Martínez, L., Peña, M., Carigi, L., & García-Rojas, J. 2009, A&A, 505, 1027
Kroupa, P., Tout, C. A., & Gilmore, G. 1993, MNRAS, 262, 545
Venn, K. A., et al. 2001, ApJ, 547, 765