SEARCH FOR YOUNG STELLAR OBJECTS IN THE LARGE MAGELLANIC CLOUD (LMC)

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One of the key questions about star formation is how it varies, if at all, with parameters like metallicity, gas density, rotation velocity, shear and the interstellar radiation field. Observations of Star Forming Regions (SFR) in the Magellanic Clouds (MC) present a unique opportunity to study in details the process of star formation in an external galaxy and to test the influence of the local environment in the process. Although young massive stellar objects have been revealed thanks to radio continuum observations, OH and H_2O maser emission and *IRAS* mission, only a few regions (N105, N157A, N159, N159A and N160) in the LMC have been studied with enough spatial resolution in the infrared to select possible individual compact IR objects. High spatial resolution images of criteriously selected regions may offer an excellent opportunity to search for these objects in SFR.

Based on *tracers* (CO, Hα, radio, OH and H_2O maser emissions) of star formation and *IRAS* data, it was possible to select (Schwering & Israel 1990) candidates SFR in the LMC. Only those sources classified as "cold point sources" were selected. Parameters like "variability" and "confusion" were checked with IPSC. Finally, these candidates sources were classified according to their possible associations with SFR or Ultra-Compact H II regions (Palla et al. 1993; Pallagi et al. 1993). Now, these candidates SFR are being associated with the *IRAS* Pointed Observations to be processed with GIPSY (Groningen Image Processing System) in order to get higher sensibility and/or spatial resolution.

Palla, F. et al. 1993, A&A 280, 599
Pallagi, F. et al. 1993, A&AS 101, 153
Schwering, P.B.W., & Israel, F.P. 1990, Atlas and Catalog of Infrared Sources in the Magellanic Clouds (Kluwer Acad. Publ.)

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Th/Eu RATIO AND THE GALACTIC DISK AGE

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We determinated Th/Eu abundance ratios in a sample of 27 disk stars to estimate the galactic disk age. The idea to use nucleocosmochronology methods to derive stellar ages belongs to Butcher (1987) who proposed the use of Th/Nd ratio (^{232}Th has a half-life $\simeq$ 14 Gyr). Some positive aspects of our work are: 1) we chose elements that have the same nucleosynthetic origin (Th is a 100% and Eu a 90% r-process element); 2) we utilized high resolution and high signal to noise ratio spectra; 3) we adopted recent wavelengths for some basic lines of the Th region at 4019 Å (Learner et al. 1991); 4) we considered the hyperfine structure of the Co I lines at 4019.13 and 4019.29 Å from the data given by Pickering & Semeniuk (1995), and 5) we considered also the V I line blended with the ^{232}Th line by adopting the gf value given by these last authors. Our results show an almost flat Th/Eu ratio distribution as a function of age and a large scatter in a similar way as the results of Butcher (1987) and Morell et al. (1992) obtained with the Th/Nd ratio. We believe that it is still necessary to solve some problems like the determination of stellar parameters of our stars in order to have a homogeneous sample. Lastly, we call attention to the fact that the age derived from long-lived radionuclides depends strongly on galactic chemical evolution models and consequently it should be taken as an estimate subject to uncertainties.

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Learner, R.C.M., Davies, J., & Thorne, A.P. 1991, MNRAS 248, 414.
Morell, O., Källender, D., & Butcher, H.R. 1992, A&A 259, 543.
Pickering, J.C., & Semeniuk, J.I. 1995, MNRAS 274, L37.

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