> 30° there are several faint extensions and clouds with a large predominance of negative V.

For both the WNM and the CNM there is a notorious asymmetry between both galactic hemispheres. We suggest a scenario for the formation and evolution of the Gould belt system of stars and gas on the basis of an explosive event. The scenario is consistent with several observational facts like Danly's (1989) optical and *UV* observations of interstellar cool gas.

SOME REFINEMENTS IN CHEMICAL EVOLUTION MODELS. II. A ONE-ZONE MODEL WITH REFUSES

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We present, for the one-zone chemical evolution model of the solar neighborhood, a formalism which takes into consideration a classification of galactic objects into three families, according to their condensation state: stars, *refuses* and gas. We define star as every condensed object with mass greater or equal to the minimum mass which ignites hydrogen and which will give rise to a track in the HR diagram on the left side of Hayashi's limit; the refuses can be separated in two subclasses: the remnants (compact objects resulting from stellar death) and the residues (objects whose mass is not large enough to ignite hydrogen); we define gas as the mass which can be condensed to form stars or residues. Under the sudden mass loss approximation, we developed equations for the mass evolution of each family. We have studied the metallicity distribution of our model, for the instantaneous recycling approximation, adopting several initial conditions. In order to constrain the model parameters we have also used preliminary evaluations of comet cloud masses based on Tinsley & Cameron (1974, Ap&SS, 31, 31) and Vanýsek (1987, 10^{th} IAU European Regional Meeting, 279).

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KINEMATICS OF THE IONIZED HYDROGEN IN THE SMALL MAGELLANIC CLOUD

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By means of a scanning Fabry-Pérot interferometer we have completed an Hα kinematical survey of the Small Magellanic Cloud (SMC). This survey has allowed us the elaboration of a catalogue of H II regions in the SMC. This catalogue reports radial velocities, velocity dispersions and Hα fluxes of the totality of emission nebulae catalogued by Davies, Elliott, & Meaburn (1976, MNRAS, 81, 89) in the SMC. Furthermore, we have detected nebulosities much fainter than those catalogued by these authors. We present the mean radial velocity field of this galaxy which allows the study of the kinematics of the ionized hydrogen and will help in the comprehension of the complicated structure of the SMC. On the other hand, the use of scanning Fabry-Pérot interferometers reveals to be an interesting tool for the detection of shocks in the interstellar medium of nearby galaxies. We discuss briefly this method of detection for the case of the SMC.

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MOLECULAR CLOUDS IN THE SMC

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Observations of the ^{12}CO(1–0) emission line from the Small Magellanic Cloud (SMC) have been done during the last four years with the 15-m SEST telescope as part of the ESO-Swedish SEST Key Programme: CO in the Magellanic Clouds. Two areas in the SW region of the SMC have been fully mapped with half-beam (20″ = 6.1 pc) sampling. These areas correspond to the SW-1 and SW-2 regions of Rubio et al. (1991) and the observations cover about 5×8 and 5×10 arcmin^2, respectively. The CO emission has been detected only in the lower (i.e., nearer) velocity component of this galaxy. The CO clouds appear associated to dark clouds: some are associated with H II regions and with far-infrared sources. The spatial and velocity distribution of the CO is complex showing structures in all scales and large-scale velocity gradients. In

addition, ^{12}CO(2–1), ^{13}CO(1–0) and ^{13}CO(2–1) lines at a number of positions have also been observed.

The SMC CO clouds show that the ^{12}CO(1–0) line width ΔV is proportional to $R^{1/2}$ for a large range of radii R as for galactic molecular clouds. However, the relation between the CO luminosity and ΔV or the virial mass M_{vir} are different in the SMC and in the Galaxy. The SMC CO clouds at the smallest scales that we can resolve are less luminous in CO than galactic molecular clouds of the same size by a factor of a few, while at larger scales they are less luminous by a factor of 20. For two CO clouds in which the four lines were observed, we have derived their physical properties. These clouds are associated to H II regions and they show a clumpy nature and a higher kinetic temperature than the CO clouds associated to the Orion nebula in our Galaxy.

The results obtained can be explained by a higher photodissociation of CO in the SMC due to the higher *UV* radiation field and the lower abundance of carbon. In the SMC, contrary to the Galaxy, CO is concentrated in localized dense regions, which at larger structure sizes, contain a smaller fraction of the gas mass. On the largest scales, most of the interstellar hydrogen associated to the CO emitting complexes could be atomic rather than molecular. Assuming virial equilibrium for the CO structures we derive a preliminary estimate of the calibration coefficient for calculatiang the total column density of gas N(H_2+2H) from the ^{12}CO(1–0) line intensity I(CO). This coefficient X_{SMC} is larger than the canonical galactic value and depends lon the scale R.

VLBI OBSERVATIONS OF 3C273 AND 3C279

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We present the time evolution of the superluminal sources in 3C273 and 3C279 at 10.7 GHz. In each case new components are associated with bursts in the total flux density observed at higher frequencies.

OPTICAL SPECTRAL CHARACTERISTICS OF THREE AGN CANDIDATES

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Observations in the optical range of the warm *IRAS* galaxies I 0230+0012, I 0323–6054 and I 2032–5022 are reported. Using emission line intensity ratios in three different diagnostic diagrams these objects have been classified here, according to their principal excitation mechanisms, as Seyfert 2 type, eventhough for I 2032-5022 there could also be an appreciable contribution of photoionization by hot stars.

For I 0323–6054 and I 2032-5022 a typical density $N_e = 10^4$ cm^{-3} was adopted and the mean temperatures of the gas were estimated from the [O III] lines: T $\simeq$ 15850 °K and 15525 °K. The oxygen and nitrogen abundances were estimated from the corresponding ionic abundances: N(O)/N(H) $\simeq 0.8 \times 10^{-4}$ and 0.5×10^{-4} and N(N)/N(H) $\simeq 5.5 \times 10^{-5}$ and 1.2×10^{-5} respectively. The nitrogen abundance of I 0323–6054 is close to the values found in many AGN, therefore the ratio N(N)/N(O) = 0.68 (5.3 times the solar value) would reflect an underabundance of oxygen with respect to the nitrogen. The oxygen and nitrogen abundances found for I 2032–5022 are low, about 0.1 of solar values, but the ratio N(N)/N(O) = 0.22 (1.7 times the solar ratio) suggests a ratio of these elements near to the normal for these type of objects.

On the other hand the heliocentric radial velocities of I 0230+0012, I 0323–6054 and I 2032–5022 were derived from the centroids of the gaussians fitted to the profiles of the strongest emission lines: (6734 ± 16) km s^{-1}, (5602 ± 14) km s^{-1} and (2646 ± 9) km s^{-1} respectively.

PHOTOMETRY AND INCLINATION STUDY OF THE SEYFERT GALAXIES OF THE CALAN-TOLOLO SURVEY (CTS)

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In the *Calán-Tololo Survey of Emission Line Objects* (CTS), there have been found over 100 Seyfert 1 galaxies, 70 of which have been already published (1989, ApJS, 69, 349; 1992, RevMexAA, 24, 147). *UBVRI* CCD photometry for 64 of these 70 galaxies has been obtained at Las Campanas Observatory, using the 1-m telescope. The *U-B* versus *B-V* diagram for these galaxies shows that CTS Seyferts are located in the region corresponding to the mix, in different proportions, of a galaxy and a miniquasar. Galaxies observed two or more times, and showing some variability sign, travel in the same mixing region of the diagram.

The semi-major and semi-minor axis for all objects were measured using contour diagrams in *V* images of the Seyfert galaxies, finding the well known result of a lack of galaxies edge-on (b/a $\simeq$ 0).