too. Thus, imposing the condition of equilibrium between the internal and external pressure, one can find the distance to the cloud.

We applied the model to a set of eighteen individual clouds located in the southern galactic hemisphere, and we found one to three solutions, or distances, (for each cloud) at which the internal pressure equals the external pressure. They represent the distances at which the clouds can be confined by the external pressure.

We used the condition that the observed velocity must be smaller (or equal, at most) than the free-fall velocity at the distance obtained, to choose the right one among the different solutions.

We showed also, that they can remain in pressure equilibrium during their trajectories.

GAS AND STARS IN TWO BCD: II ZW 33 AND MKN 314

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We present preliminary results of deep broad band CCD images and long slit low resolution spectroscopy of the two BCD galaxies II Zw 33 and Mkn 314. The evolutionary status and their probable origin are discussed. Mkn 314 is suggested to be an isolated compact young burst with metal poor gas content. On the other hand, II Zw 33 appears to have an old stellar population with some localized burst possibly due to the interaction with other extended objects around it.

EXTENDED EMISSION AND STAR FORMATION IN I Zw 18

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We report the results of deep emission-line and line-free continuum imagery of the super-metal-poor blue compact galaxy I Zw 18, which has the lowest metallicity of any star forming galaxy known. The observations were made with the Wide-Field PFUEI CCD system on the Palomar 60-inch telescope operated at an effective f/ratio of f/1.66, and reached an emission measure of approximately 20 in Hα and surface brightness of about 25th magnitude arcsec^{-2} at 6450 A. Comparison the *VLA* 21-cm H I maps reveal that the star formation in the main body of I Zw 18 occurs on the NE side of the largest H I cloud and a faint Hα halo with embedded clumps extends out to distances of about 30 arc seconds in both the NE and SW directions (~ 1.5 kpc). Hα emission is also found in the stellar system noted by Zwicky to the NW of the main body, which is coincident with a H I cloud and linked to the main body by a very faint emission bridge. Red continuum images reveal three distinct elongated stellar regions in a line at PA = 312° extending as far out as 1 arcmin (~ 3 kpc) from the main body of the galaxy. Possible scenarios regarding the nature of the gas and history or star formation in I Zw 18 are discussed, as well as some implications which these imagery results have regarding the chemical composition and evolution of I Zw 18.

NEW LIST OF BLUE GALAXIES

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We present a new list of blue galaxies obtained on Eastman Kodak spectroscopic plate emulsion 103aD with *UBV* filters. The plate is centered at $2^h\ 30^m$, and −6.5° (1950). These plates were originally taken for the observational program of faint blue stars in regions the South Galactic Pole by Haro and Luyten (1962).

NONLINEAR EVOLUTION OF GALAXIES WITH INCREASING DENSITIES

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Some bursts of star formation are thought to be associated with situations in which a galaxy density is increasing. Examples include protogalaxy collapse, mergers, inflow of gas into a galactic nucleus, or accretion of intergalactic gas. We have examined a model for the evolution of the star formation rate (SFR) and other properties of galaxies with increasing density using one-zone cloud fluid equations describing an extension of the Oort cycle, for which the equilibrium state would give a SFR which increases monotonically with density. However, the calculations show that the energy input associated with the density increase generally dominates the evolution, and forces the system far from its normal equilibrium to a state in which cloud collisions are disruptive rather than coalescent. This results in a large decrease in the SFR that persists throughout the period of density