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Abstract: From far-UV to visible integrated photometry of the Magellanic Clouds we give an estimate of the past star formation parameters. Most of our results can be applied to Irregular galaxies.

1. PAST STAR FORMATION PARAMETERS

1.1 Observational data

Visible data and UV data from the D2B-satellite are available from Maucherat-Joubert et al. (1980), the reddening for gas and stars was derived by Vangioni-Flam et al. (1980), and the gas content and total mass are taken from Lequeux et al. (1979). All data are given in Table 1.

Table 1. Collected Observational Parameters for LMC and SMC

	$m_{1690}-V$	$m_{2200}-V$	$m_{3100}-V$	B-V	V-R	E(B-V)	M_{gas}	M_{tot}
LMC	−0.69	−0.18	0.12	0.39	0.10	0.18	0.9	6.1
	−0.95	−0.41	−0.04	0.30	0.006	0.37	$(10^9 M_\odot)$	
SMC	−0.75	−0.17	0.23	0.37	0.10	0.08	0.8	1.5

1.2 Model Results

From our synthetic population model evolving with time, any UV or visible color gives a good estimate of the R parameter (defined as the ratio of the present over the time integrated star formation rate) as long as the initial mass function and the metallicity are given. A good fit of the luminosities, colors and gas content (Fig. 1), taking into account the respective metallicities of the clouds Z(LMC) = 8 10^{-3} and Z(SMC)= 3 10^{-3} , leads to the star formation parameters given in Table 2.

From our results: a) The MCs are not presently undergoing a global burst of star formation. b) The global star formation rate stays about constant in the LMC, is lower and lightly decreasing with time in the SMC.   c) Their   age is about 9-10 Gyr and the IMF is standard (Rocca-Volmerange et al. 1981).

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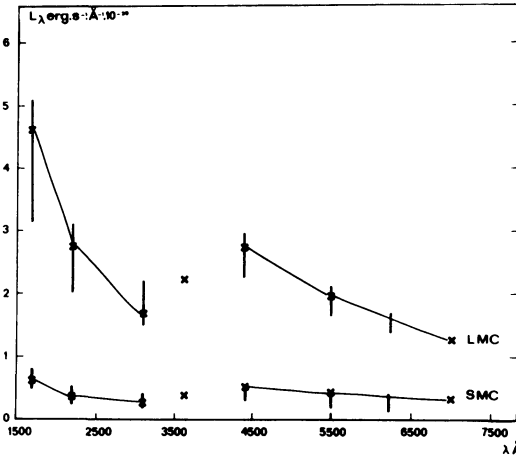
| Mgas/Mtot		
	Observ.	Calculat.
LMC	0.13	0.15
SMC	0.42	0.38

Fig.1. Calculated luminosities for 1690, 2200, and 3100 Å, and for U, B, V, and 6250 Å, compared to observational values with error bars.

2. EXTENSION TO IRREGULAR MAGELLANIC GALAXIES

From integrated photometry of Im and Sd galaxies in far-UV (Code and Welch 1982) and visible (de Vaucouleurs et al. 1976) bands, such irregular galaxies show similar colors (with very low dispersion) and similar metallicities ($Z = 10^{-3}$ to 10^{-2}). Our fit of the Magellanic Cloud photometry can be applied to such irregular galaxies. These colors may be interpreted in terms of a model in which the reddening is not too high and a similar history of star formation (Rocca-Volmerange 1983), see Fig. 2.

Tab. 2		R(T) Gyr^{-1}	Present[1] Past SFR	Present Age T Gyr	Present[1] SFR M$_\odot$ Gyr^{-1}	Average[1] Past SFR M$_\odot$ Gyr^{-1}
Irregular Galaxies	SMC	0.04 - 0.11	0.4-1	9	0.04	∼ 0.07
	LMC	0.10 - 0.14	0.9-1.2	9	0.12	∼ 0.11
Our Galaxy Disk	Solar Neighbourhood (10 kpc)	0.018	0.18	10	0.05	0.29
	Ring 5 kpc	0.02	0.2	10	0.046	0.26

1 Relative to 1M$_\odot$ of galaxies.
Results from : Rocca et al.,1981 ; Guiderdoni and Rocca, 1982, divided by the ξ parameter
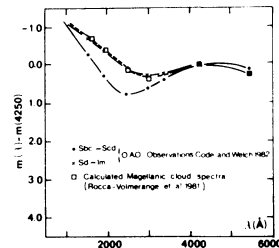
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