

KINEMATICS OF CLUSTERS IN M33

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We have obtained 9.5 Å resolution spectrophotometry of 10 clusters in M33 (Cf. Christian and Schommer 1982) with the KPNO 4m telescope. Velocities were derived by comparing the cluster spectra to data for template stars, using the "Fourier quotient" technique described by Sargent et al (1977). The positions and velocities of the clusters are shown schematically in Figure 1, where the HI velocity map (Rogstad, et al 1976) is also indicated. We find that the velocities of younger, bluer clusters are more closely matched to the disk-like motion of the gas, while the older redder clusters have more discrepant values (Table I). As shown in Figure 2, Velocity difference, $Vel(HI - cluster)$, varies smoothly with the integrated (B-V), suggesting a slow smooth collapse of M33 to a disk galaxy. This fall, we intend to increase our sample of measured cluster velocities to probe more completely the history of the cluster and disk formation in M33.

REFERENCES

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Sargent, W., Schechter, P., Bokserberg, A. and Shortridge, K. 1977, *Ap. J.* 212, pp. 326-334.

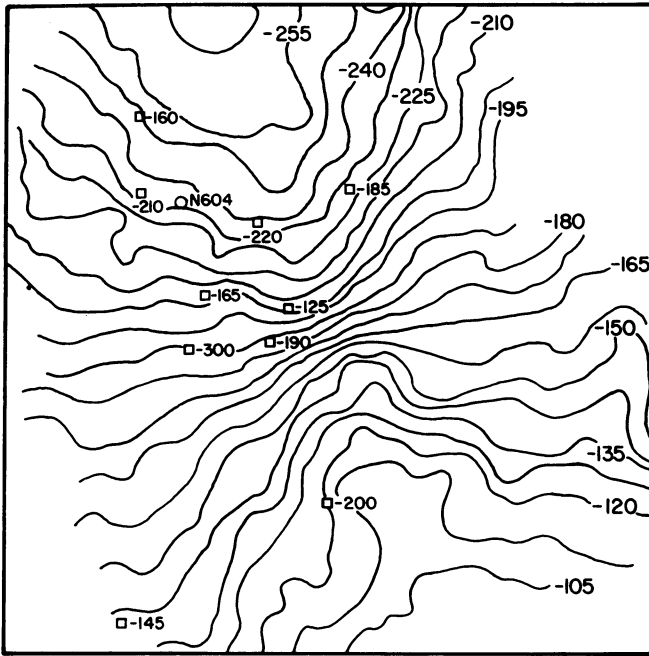


Figure 1: Schematic representation of cluster positions and velocities relative to HI gas.

Figure 2: ΔVel (HI - cluster) vs. integrated (B-V).

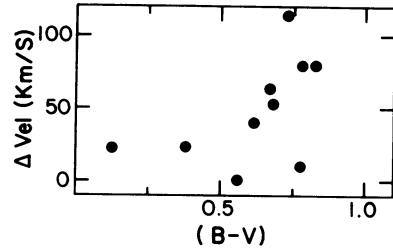


Table I

Cluster	Spt	B-V	Velocity	ΔVel
CL20	G1	0.77	-160	85
CL27	A5	0.37	-210	24
CL39	F5	0.56	-145	0
HII121	F5	0.61	-165	40
HII138	G2	0.83	-200	80
U49	G0	0.68	-185	55
U62	A	0.12	-220	20
M9	F8	0.72	-300	115
R12	G3	0.77	-190	12
R14	G3	0.68	-125	62