

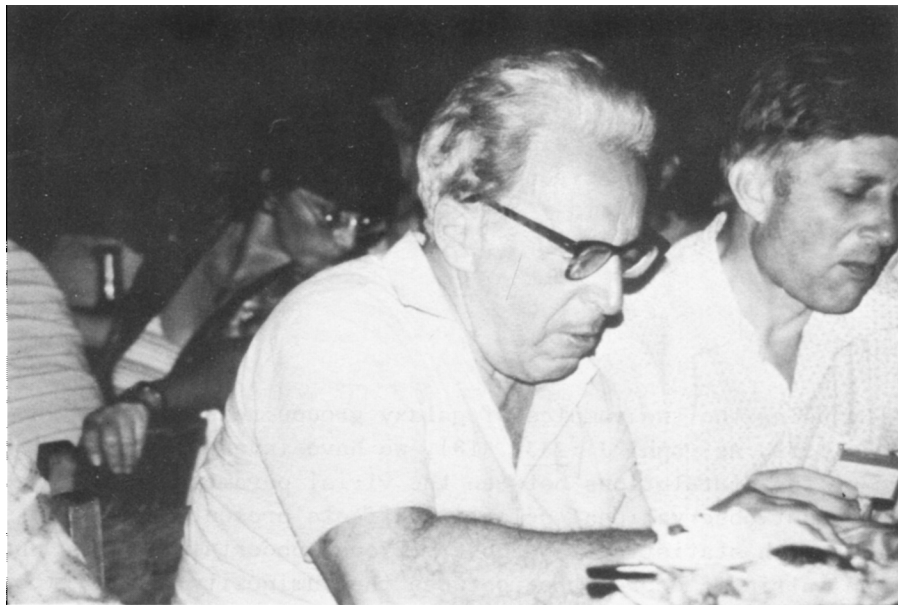
EVIDENCE OF INTRINSIC CORRELATION BETWEEN THE LUMINOSITY AND THE
VELOCITY DISPERSION IN GALAXY GROUPS

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ABSTRACT

By using the two samples of galaxy groups reselected by Rood and Dickel (1979, *Astroph. J.* 233, 418), we have investigated the significance of the correlations between the virial parameters of groups. Taking into account observational selection effects present in the two samples, together with statistical and observational uncertainties, we show that only an intrinsic correlation between the luminosity L and velocity dispersion V is necessarily required in order to explain all the observed correlations. There is no serious ground to state that the virial radius correlates with both velocity dispersion and luminosity. We also show that the observed slope of the $\text{Log } L - \text{Log } V$ relation is considerably smaller than the true slope, while the contrary holds for the $\text{Log } M/L - \text{Log } V$ relation.

An analysis similar to that described above, carried on the recent catalogue of nearby groups of galaxies prepared by Huchra and Geller (1982, *Astroph. J.* 257, 423), seems to reveal that also the intrinsic correlations between L and R , and R and V are significant for this new sample.



I. S. Shklovsky (left) during a scientific session. (*Courtesy, K. Brecher*)