ULTRAVIOLET ENERGY DISTRIBUTIONS OF (32) EARLY–TYPE GALAXIES

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New, self–consistent energy distribution have been generated from 52 short – wavelength and 40 long–wavelength IUE spectra of 31 early–type galaxies, plus the bulge of M31. All galaxies in this sample have measurements of the absorption–line index Mg_2 and central velocity dispersion, and a (1550–V) color is determined by combing the IUE data with photoelectrically–measured V magnitudes.

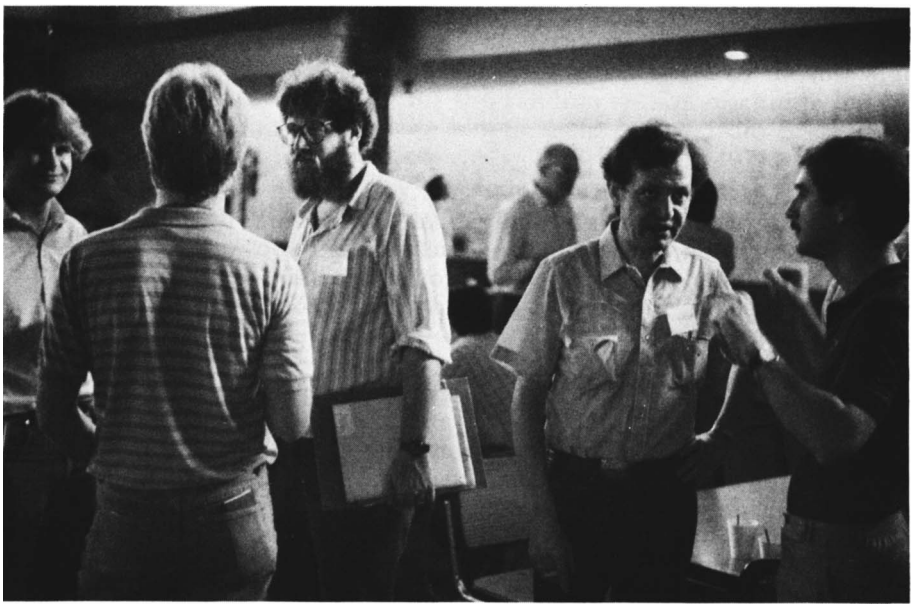
The galaxies in the sample can be a priori divided into a) star–forming; b) active and c) quiescent galaxies. There exists a well–defined, non–linear relationship between Mg_2 and the (1550–V) color for the 24 quiescent galaxies, with the (1550–V) color becoming bluer with increasing line strength, as originally suggested by Faber. The Mg_2, (1550–V) data for the 4 star–forming galaxies and the 4 active galaxies lie off this relationship.

IUE energy distributions for galaxies with similar Mg_2, (1550–V) values are remarkably similar, and are different in form between quiescent, active and star–forming galaxies. The level of flux at 1550 A is due to essentially the same form of 'contaminating' blue energy distribution for both the quiescent and active galaxies, but not for the star–forming galaxies.

Simple models of continuing star formation and post–asymptotic giant branch (PAGB) evolution show that their energy distributions are similar in the wavelength region covered by IUE. Moreover, both forms of energy distribution are closer matches to that of the 'contaminating' blue energy distribution seen in these galaxies, and both contribute very little at optical wavelengths.

This ambiguity means one cannot yet distinguish between the two main competing models –young stars or old stars– for the source of this blue 'contaminating' stellar population in early–type galaxies.

T. de Zeeuw (ed.), Structure and Dynamics of Elliptical Galaxies, 439.



Lauer, Levison, Bland (seen from behind), Capaccioli and Mamon during a poster session.

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