

A COMMENT ON THE SEYFERT ENVIRONMENT

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The study on the Seyfert environment has been of considerable interest lately, since it is believed that the tidal force of a close companion may drive gas into the inner region and either fuel nuclear activity directly or lead to starbursts (Toomre et al., 1972, Byrd, 1987). Many authors noticed an excess of Seyfert among close pairs of galaxies (Adams, 1977, Kennicutt et al., 1984, Keel et al., 1984, Dahari, 1984, 1985 a, b). In a recent paper of ours (Chen and Zou, 1986), a neighborhood statistical study has been done for the galaxies in CfA sample (Huchra et al., 1983), and it is found that the fraction of Seyferts is 3 times higher than the average one, if the distances between them and its nearest neighbors are less than 20 kpc. The result would strengthen the opinion that the existence of close companion is a favourable environment to trigger Seyfert activities.

REFERENCES

- Adams, T.F., 1977, Astrophys. J. Suppl., 33, 19.
Byrd, G.G., 1987, this Symposium.
Chen, J.S. and Zou, Z.L., 1986, Acta Astrophysica Sinica, 6, 169.
Dahari, O., 1984, Astron. J., 89, 966.
Dahari, O., 1985, Astrophys. J. Suppl., 57, 643.
Dahari, O., 1985, Astron. J., 90, 1772.
Huchra, J. et al., 1983, Astrophys. J. Suppl., 52, 89.
Keel, W.C. et al., 1985, Astron. J., 90, 708.
Kennicutt, R.C. et al., 1984, Astrophys. J., 279, L5.
Toomre, A. et al., 1972, Astrophys. J., 178, 623.

DISCUSSION

R.L. DAVIES: Seyferts tend to occur in earlier type spirals; we know from the morphology-density relation, found by Dressler, that these

galaxies are more clustered than average. Have you taken this into account in your analysis? Are there other selection effects that might change your result?

ZOU: In our sample, the number of early type spirals ($0 < T < 5$) with $d < 20$ kpc is 38, and the fraction of Seyferts in all of this type of galaxies is 4.2%. The observed Seyferts (6) are much more than expected (1.6), so the selection effect could be ignored.