

Peebles: If you want to assume the mass is mainly in the two brightest galaxies near the centre of the Coma cluster then the potential varies as r^{-2} , and to match the observed counts of galaxies as a function of distance from the centre of the cluster, number density $N(r) \propto r^{-\alpha}$, you must assume the velocity dispersion varies as $v^2 \propto r^{-1}$, which seems not to be observed.

Reinhardt: I think you have misunderstood me. We assume that in the central pair of galaxies there is concentrated only a small part of the total mass of the system, but a large part of the binding energy. Of course, this is not the same and our assumption does not require any change of the velocity distribution.

MORPHOLOGICAL INVESTIGATION OF PAIRS CONTAINING MARKARIAN GALAXIES*

C. Casini and J. Heidmann

We have obtained large scale photographs or electronographs for 40 pairs containing Markarian galaxies: 6 Markarian-Markarian pairs and 34 Markarian-normal pairs, most of which are physical close pairs with two similar components (here "normal" means with no UV excess).

We have studied the distribution of types for the Markarian and for the normal components; the most frequent type is spiral, with more ordinary spirals than barred ones; next are compact for the Markarian and elliptical for the normal galaxies; the only one irregular is of clumpy type.

A comparison was made between isolated Markarian galaxies and those in pairs; for both, spirals are dominant with ordinary ones more frequent than barred ones. There are more compacts, fewer irregulars and much fewer lenticulars among pairs of Markarian galaxies than among isolated ones.

Morphological peculiarities have been investigated. In the Markarian-normal pairs, the Markarian is more often peculiar; thus peculiarity is associated with UV excess; there is no tendency for peculiar Markarian galaxies to pair with peculiar normal galaxies; peculiar Markarians have more often a diffuse spectrum but it cannot be said that morphological peculiarities are located at the same positions as the UV excess.

Six noteworthy peculiar galaxies are described which contain double strings of condensations, double or triple nuclei, clumpy structure or whorl shape.

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DISCUSSION

Tinsley: On the correlation of morphological peculiarity with ultraviolet excess, I would like to mention a study that R. B. Larson and I made earlier this year. We studied the distribution of galaxies in Arp's "Atlas of Peculiar Galaxies" in the (U-B, B-V) two-colour plane. Interacting galaxies have an unusual colour distribution, in the sense that many have a strong ultraviolet excess. We interpreted the colour in terms of unusually high star formation rates, which are presumably a consequence of the interaction. Maybe Dr Heidmann is seeing a similar effect.

CLUSTER MEMBERSHIP OF SEYFERT GALAXIES

K.-H. Schmidt

I would like to comment on very preliminary results concerning the cluster membership of Seyfert galaxies. Two years ago van den Bergh stated in a discussion of the bright classical Seyfert galaxies that these objects were mainly field galaxies. We extend this discussion to about seventy objects in the list of Drs Khachikian and Weedman (*Astrophys. J.*, 192, 581, 1974). By a cross correlation of this list with Dr Abell's catalogue of rich clusters taking account both of the positions in the sky and the distances of the objects, we find only two certain cluster members - the well-known case NGC 1275 in the Perseus cluster and Markarian 298 in the Hercules cluster - and three probable or possible other cluster members. Taking into account the fact that only some fifty objects of Khachikian and Weedman fall within the distance range of the Abell catalogue, we find that only a few per cent of the Seyfert galaxies are members of Abell clusters. Within a factor of two, this percentage is the same as the percentage of cluster galaxies relative to all galaxies. Therefore, this result does not point to a pronounced field membership of the Seyfert galaxies.

Further, there seems to be a hint that Seyfert galaxies are found in clusters. Four out of five certain or probable members of Abell clusters are class 2 Seyferts. Although the statistics are as yet poor, this result is unexpected if one takes into account the fact that 53 of the 70 Seyferts in the list of Khachikian and Weedman belong to class 1 and only 17 to type 2.

DISCUSSION

Abell: David Jenner and I found a Seyfert galaxy in the Virgo cluster. It is a normal-appearing spiral, whose NGC number I have forgotten (off hand). We shall publish a note on it.

Huchra: When you compute probabilities from the cluster and Seyfert catalogue cross correlation, do you correct for the very different sky coverage of the catalogues? The majority of the Seyferts come from Markarian's first lists which cover only a small region of the sky.