HOW MANY ULIRGS ARE MERGERS?

D.L. CLEMENTS
ESO, Karl-Schwarzschild-Strasse 2, D-85748 Garching b. Munchen
R.G. MCMAHON
IoA, Madingley Road, Cambridge, UK
AND
W.J. SUTHERLAND AND W. SAUNDERS
Physics Dept., Oxford University, Keble Road, Oxford, UK

Ultraluminous IRAS Galaxies (ULIRGs) are unusual galaxies with luminosities $> 10^{12} L_{\odot}$ ($H_0 = 75$ kms^{-1}Mpc^{-1}), comparable to optically selected quasars, with up to 90% of this emitted in the 8-1000 μm region. Initial work on nearby ULIRGs suggested that all of these objects were in interacting or merging systems. Larger samples (e.g. Leech et al 1994) suggested that this might only be true for 2/3 of the objects. The triggering of ULIRG-type activity in the non-merging galaxies would then be difficult to understand.

We have recently completed a survey aimed at finding a large number of ULIRGs (Clements et al, 1995). This contains 91 ULIRGs. We here report R band imaging of the 56 ULIRGs in this sample brighter then Bj=19.5 using the ESO 2.2m telescope. These images show that 51 of the 56 ULIRGs are clearly disturbed systems. Four of the remaining five objects have nearby (in angular separation) companions. Only one object is isolated and undisturbed. Thus 91 % of the ULIRGs in this complete subsample are interactions/mergers, compared to 67 % in Leech et al (1994) or 61% in Zhenglong et al (1991). The origin of the discrepancy is unclear, but we believe that this is mainly due to faint signs of merging being missed in the earlier work.

References

Clements, D.L., et al., (1995), MNRAS, in press
Leech, K., et al, (1994), MNRAS, 267, 253
Zhenglong, Z., et al, (1991), MNRAS, 252, 593