

TOWARDS AN INTERACTION MODEL OF M81, M82 AND NGC 3077

R.C. THOMSON, S. LAINE AND A. TURNBULL
*Department of Physical Sciences, University of Hertfordshire,
Hatfield, Herts AL10 9AB, UK*

1. Introduction

Thomson (1992) suggested that the Cen A group of galaxies may be the result of one interaction. Here we report full N-body simulations made to study this proposal in the M81-M82-NGC 3077 group.

2. Numerical Techniques and Initial Conditions

The mass of the companion was 0.1 of the main galaxy mass. The initial orbits of the companion were either prograde or retrograde, and mildly hyperbolic. The simulations were made with a tree-SPH code.

3. Results and Discussion

The companion always loses a large fraction of its mass near the closest approach. However, the satellite morphology is not as strongly distorted as in the test particle simulations of Thomson (1992). All our experiments resulted in a merger.

4. Conclusion

The interaction scenario, where M82 is a shredded disk remnant and NGC 3077 the bulge of the companion, is not reproduced in a mildly hyperbolic full N-body simulation.

References

Thomson, R.C. 1992, *MNRAS*, **257**, 689