

Mergers

Presentation Formation and Evolution
of Galaxies

by

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Introduction

- Research on Mergers
- Importance of Mergers
- What happens during mergers?
- Simulations
- Conclusions

Research on Mergers

- Holmberg 1941
- Toomre & Toomre 1972
- Arp Atlas

What happens during a merger?

- Head-on mergers (sphericals)
- Off-center mergers (sphericals)
- Disk/Halo galaxy mergers

Importance of mergers

- Hierarchical structure formation
- Merger rate: $N = 0.5 * n(z) * N(z) * C/T$

Simulations

- Holmberg 1941
- Toomre & Toomre 1972
- Steinmetz & Navarro 2002
- Robertson et al. 2005

Holmberg 1941

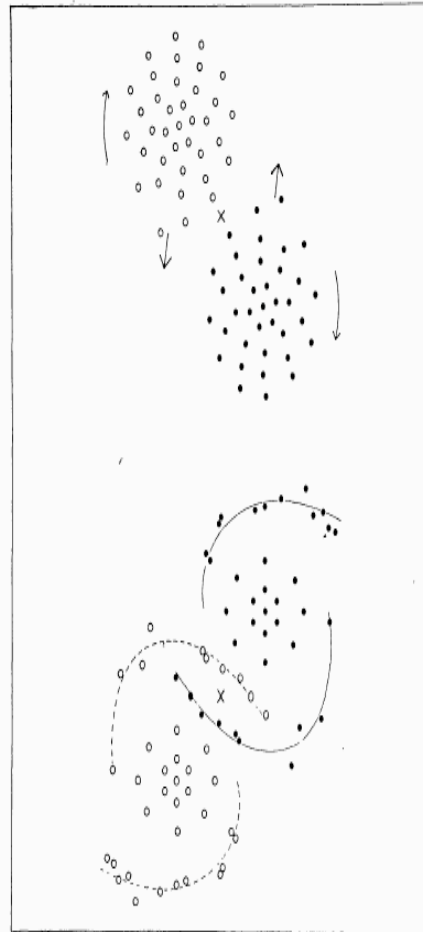


FIG. 4a

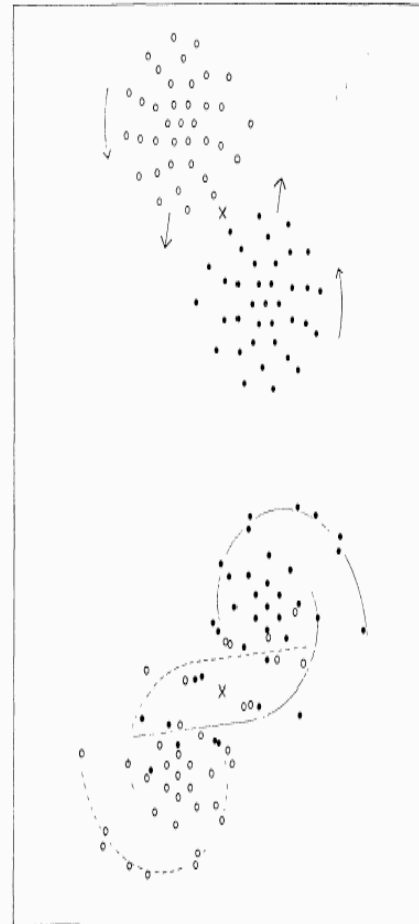


FIG. 4b

FIG. 4a.—Tidal deformations corresponding to parabolic motions, clockwise rotations, and a distance of closest approach equal to the diameters of the nebulae. The spiral arms point in the direction of the rotation.

FIG. 4b.—Same as above, with the exception of counterclockwise rotations. The spiral arms point in the direction opposite to the rotation.

Toomre & Toomre 1972

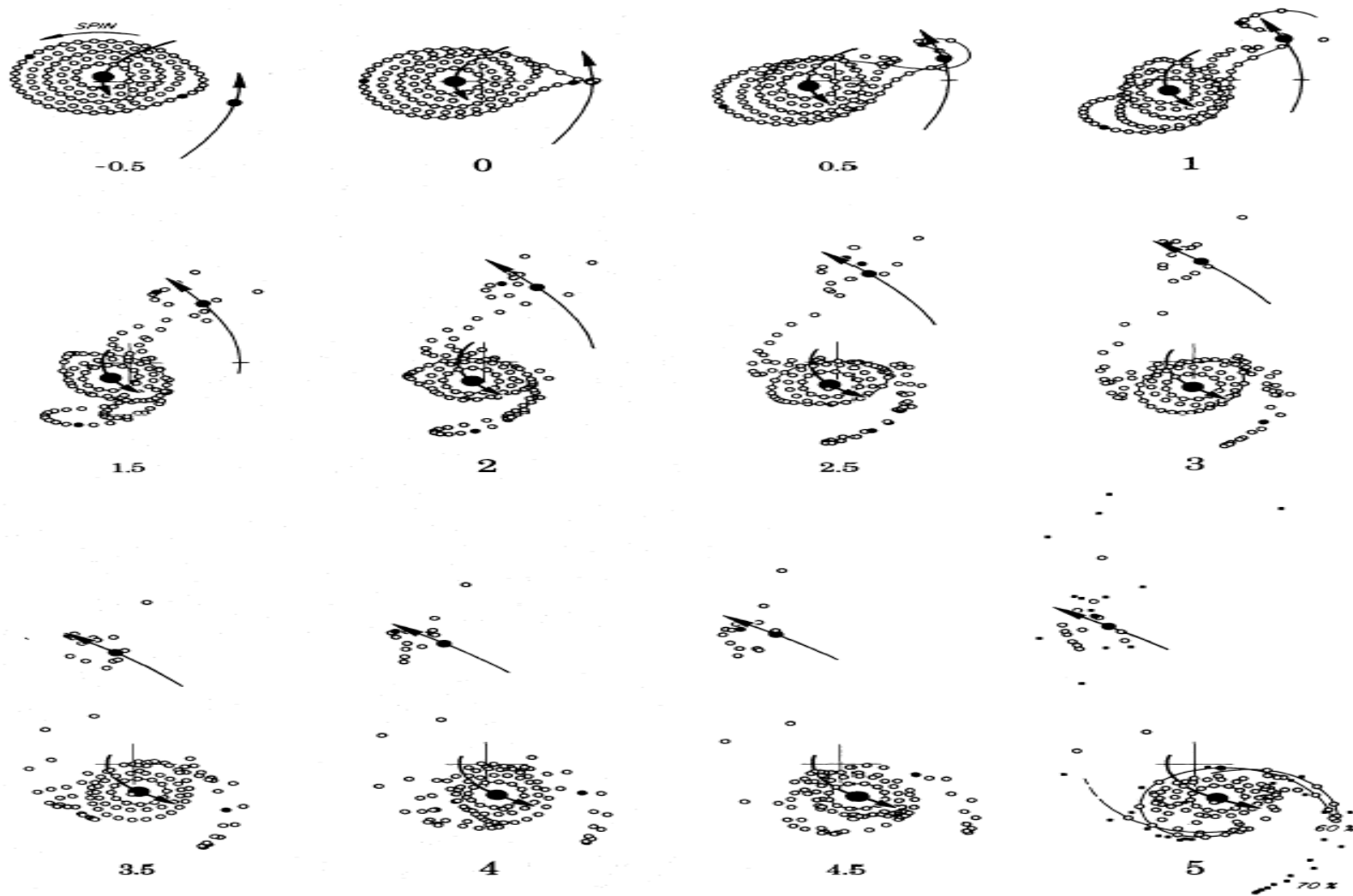


FIG. 4.—A flat direct ($i = 0^\circ$) parabolic passage of a quarter-mass companion

Barnes & Hernquist 1992

Steinmetz & Navarro 2002

Robertson et al. 2005