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# Paired and Interacting Galaxies

*International Astronomical Union Colloquium No. 124*



*Proceedings of a conference held at  
the University of Alabama at Tuscaloosa  
Tuscaloosa, Alabama  
December 4-7, 1989*



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*International Astronomical  
Union Colloquium No. 124*

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## PREFACE

The subject labeled “interacting galaxies” is an unusual research area in the sense that many people work in it but rather few focus all of their effort in that area. The study of galaxies in pairs and groups is undeniably attractive. They represent some of the most beautiful and flamboyant examples of classical physics in action. Few can forget their first view of the “Cartwheel system” on the negatives of the ESO Sky Survey. The pairs and groups command our attention at other wavelengths, as well, because their enhanced emission frequently places an abundance of them in flux-limited samples. Ultimately, however, we study interacting systems because we hope that investigations of galaxies in nonequilibrium states will provide fundamental insights into their physical properties. As Chip Arp pointed out in the introduction to the *Atlas of Peculiar Galaxies* (1966) “if we could analyze a galaxy in the laboratory, we would deform it, shock it, probe it in order to discover its properties”.

The motivation for IAU Colloquium #124 was to bring together theorists and observers, from a diverse array of specializations and wavebands, to summarize the current state of our knowledge of galaxies in pairs. The hope was to stimulate a confrontation between theorists and observers so that each group could fully understand the needs of the other. The conference attempted to cover both classical problems associated with the study of pairs such as sample selection, classification and dynamical modeling. Much time was also devoted to problems connected with understanding the effects of interaction upon individual galaxies in such systems. This topic embraces most of extragalactic astronomy, from ideas about star formation to the origin of the AGN phenomenon. We decided to include studies of compact groups of galaxies in the program since many of the observational and theoretical ideas about them relate to pairs as well. Much recent work has been done on these  $n \geq 4$  systems and they represent a special challenge to dynamical theory.

The Astronomy group in the Department of Physics and Astronomy at the University of Alabama was pleased to host this conference. Astronomical activity began very early at this University (1844), cut short by political upheaval, but only within the last ten years has a significant research program emerged. A considerable fraction of this activity involves studies of pairs and groups, hence the decision to organize a conference on that topic at this place and time.

We thank the many individuals who assisted with the organization and success of this conference. We especially thank the scientists who attended the conference and who contributed such an impressive array of ideas and observations.

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