

Seeing Double in the Local Group: Extragalactic Binaries

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Photographic surveys of the Magellanic Clouds and the M31 carried decades ago discovered ~ 200 close binaries. In most cases the photographic light curves are good enough only to identify the stars as close (mostly eclipsing) binaries and to estimate orbital periods and binary type. Except for a few cases, little useful information may be obtained from these stars except to be reassured that eclipsing binary (EB) systems are present in other galaxies. However a major advance occurred with the advent of high quantum efficient CCDs. Because of this an explosion in the number of known extragalactic binaries occurred during the 1990s as offshoots of photometric microlensing surveys such as EROS, MACHO, and OGLE. Now over 10 000 extragalactic EBs have been identified. Also, photometric surveys of M31 and M33 (e.g. DIRECT) are discovering many more 19–20th mag eclipsing/close binaries. Over the next decade it is expected that ~ 1 million new binary systems will be identified in these galaxies. In this overview I will discuss recent advances and future expectations in the studies of extragalactic binaries