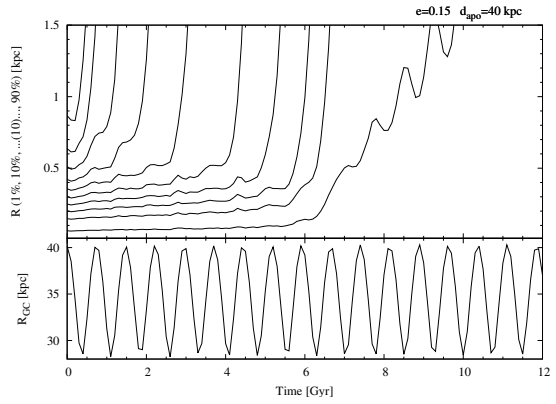

Fig. 1. Lagrange radii containing (bottom to top) 1%, 10%, 20%,..., 90% of the initial mass of a satellite with 10^7 $M_\odot$. Bottom panel: galactocentric distance of the density maximum. The parameters of the orbit are given in the upper right corner.

3. SATELLITE EVOLUTION

Satellites in very eccentric orbits are completely depopulated in a very short time interval, usually in a single perigalactic passage. On the other hand, satellites on orbits with very low eccentricity can retain more than 90% of their initial mass over a Hubble time. These kind of orbits lead to an object that does not reach an out-of-equibrium state. The intermediate case corresponds to satellites that loose more than 90% of their initial mass but retain more than 1% of the mass for about 1 Gyr or more (see Figure 1). These satellites present an out-of-equilibrium phase and are the objects we are more interested in.

4. MASS-TO-LIGHT RATIOS

In Figure 2 we plot the evolution of the M/L ratio for two out-of-equilibrium satellites obtained using the core fitting formula (Richstone & Tremaine 1986, and references therein). The M/L ratio remains relatively constant as the satellite is being smoothly depopulated. After the satellite enters the disrupted phase the M/L ratio rises considerably, reaching values of hundred and more. The values of the M/L ratios of the satellites during the disrupted phase show large oscillations. Thus, depending on the time of observation a satellite might show very different values of the M/L ratio. Values much larger than the intrinsic M/L ratio of the satellites can only be obtained during the disrupted phase.

5. CONCLUDING REMARKS

It is possible to obtain disrupted remnants of initially spherical bound objects, that survive as out-of-equilibrium systems for times longer than 1 Gyr,

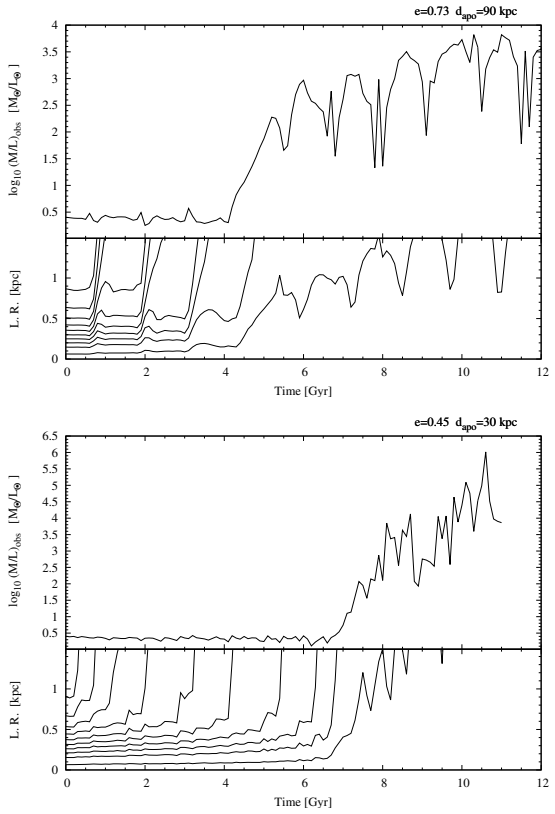

Fig. 2. Mass-to-light ratios for satellites with initial mass of 10^7 $M_\odot$ (top) and 10^8 $M_\odot$ (bottom). For both satellites the Lagrange radii, as in Figure 1, have been included to locate start of disrupted phase.

confirming and extending the results from Kroupa (1997). The disrupted satellites show a high M/L ratio, similar to that of some dSph galaxies. Those remnants are candidates to be interpreted by an observer on earth as dSph-like galaxies. Hence, it is possible that some dSph galaxies of the Milky Way with large M/L ratios might not be dark matter dominated and that their high M/L ratios are observed because they are out of equilibrium systems.

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