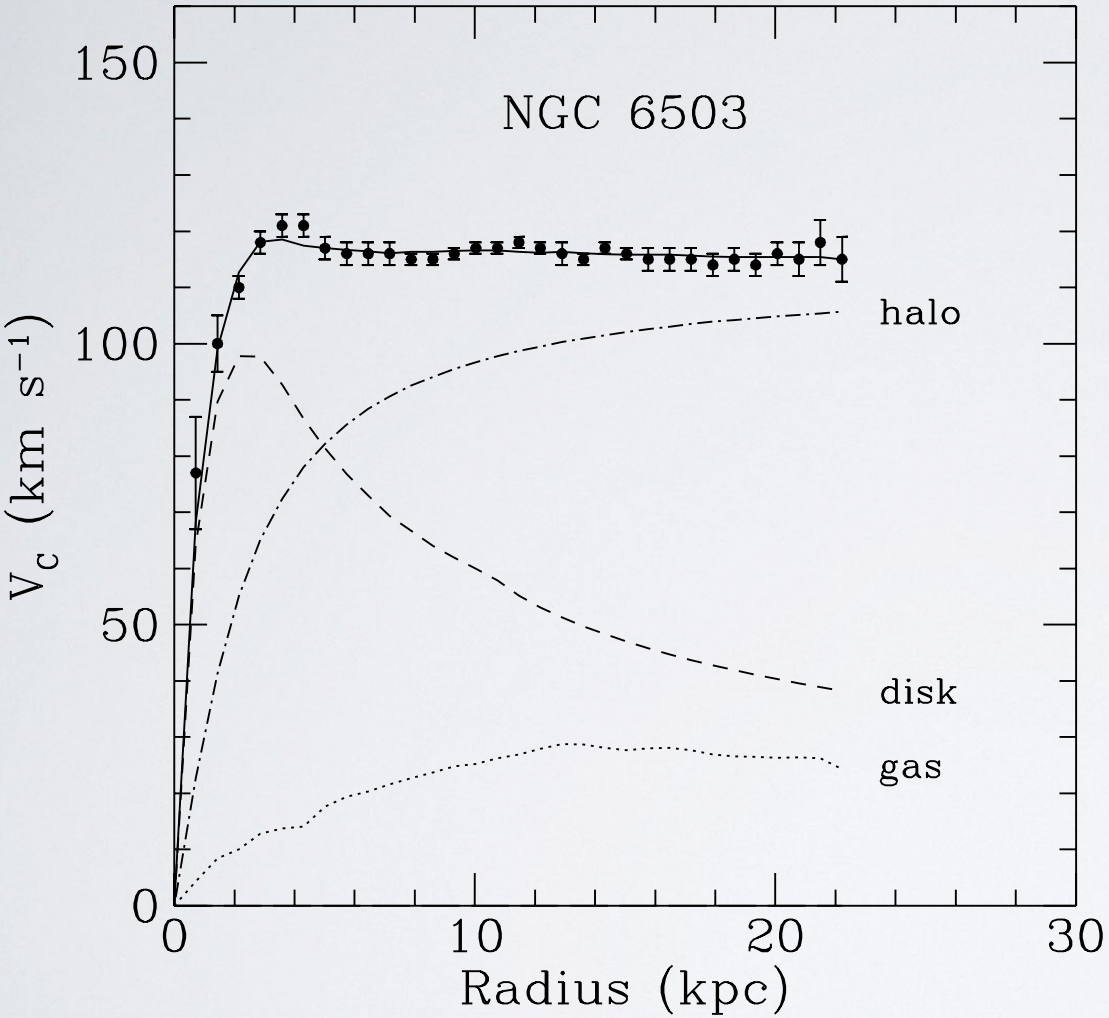
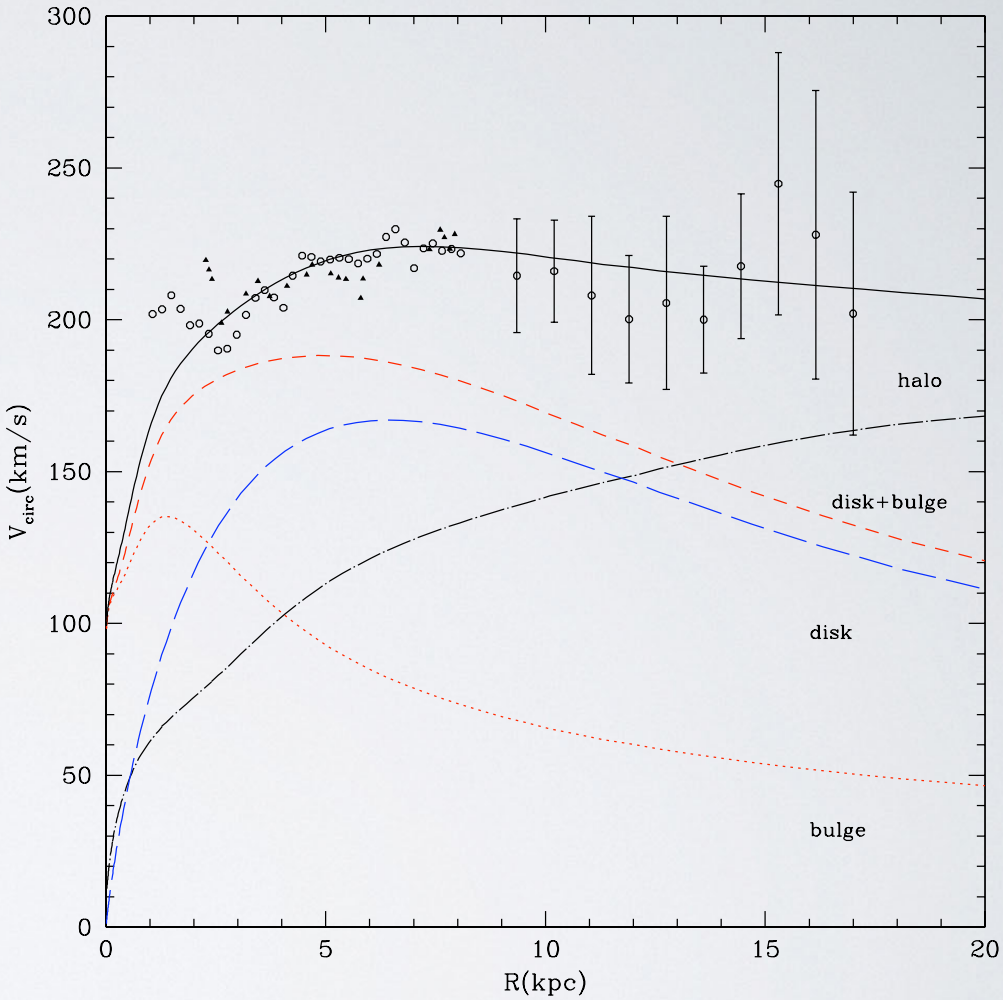
spiral galaxy example:



from Begemann, Broeils & Sanders, MNRAS 249, 523 (1991)

Milky Way:

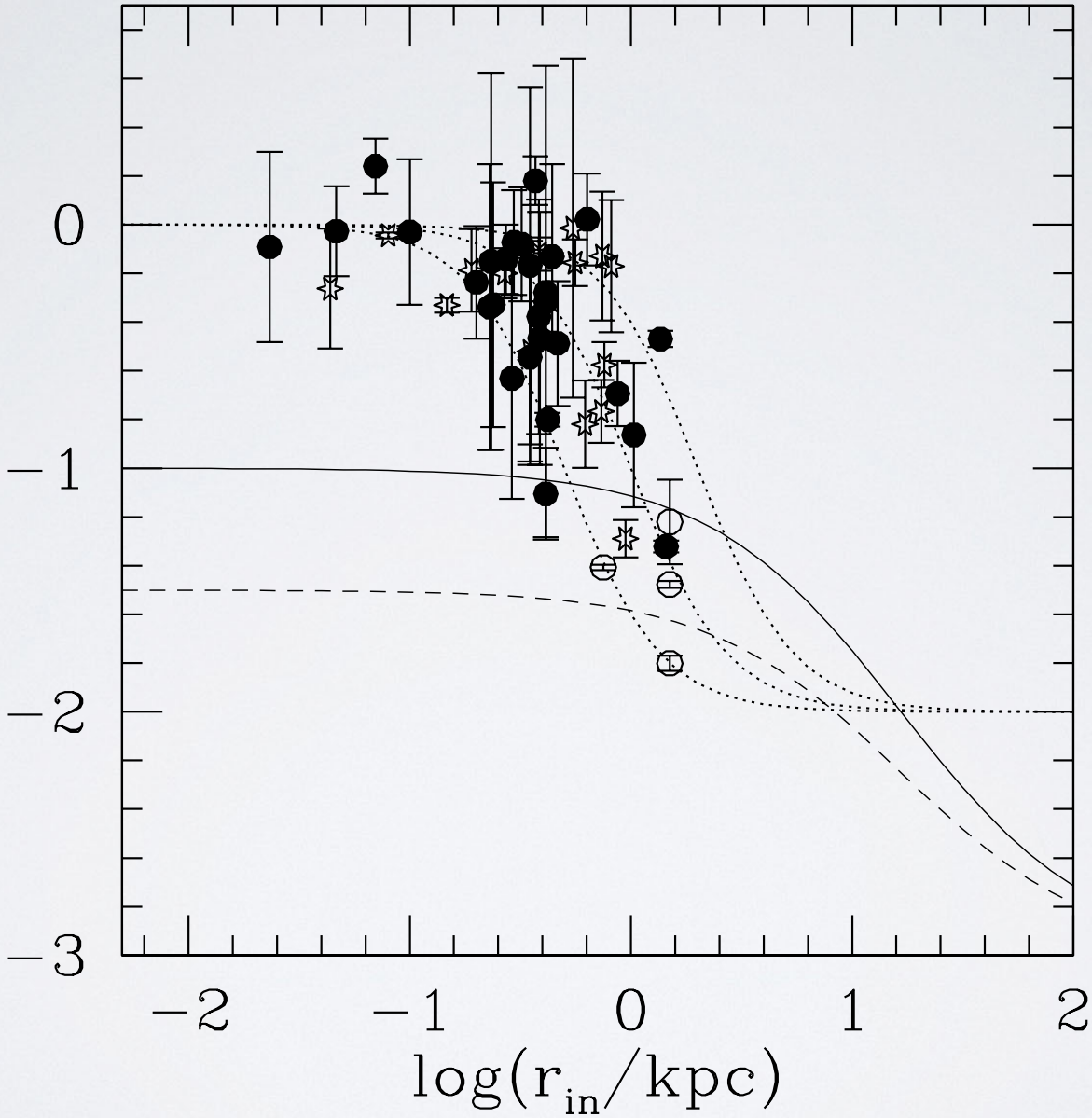


from Klypin, Zhao & Sommerville, ApJ 573, 597 (2002)

Inner slope for sample of LSB galaxies:

constant density core →

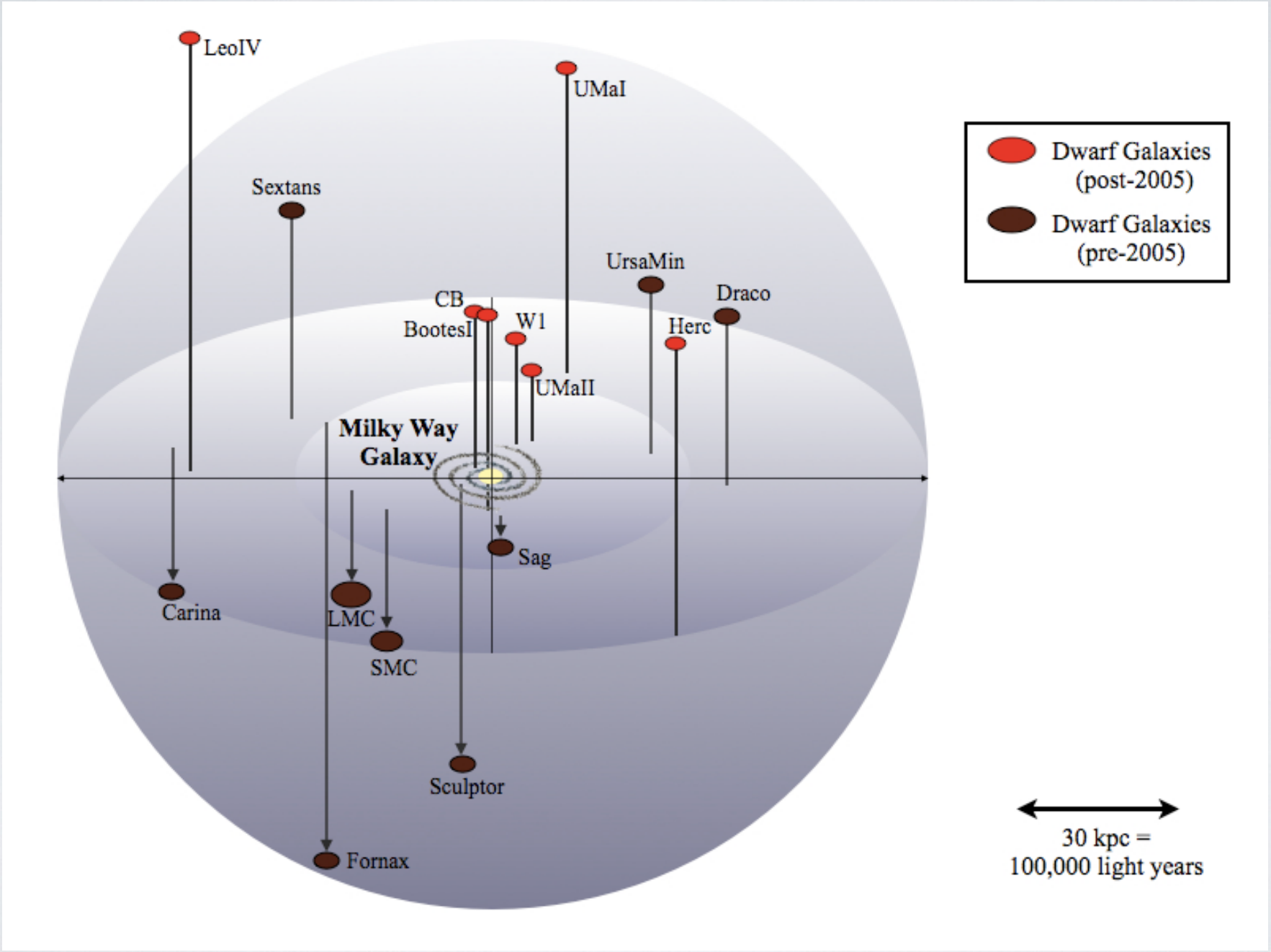
"NFW" profile, supported by numerical simulations →



$$\rho \propto r^{\alpha}$$

from Blok et al., ApJ 552, L23 (2001)

"Missing" dwarf galaxies found?



J.~D.~Simon, M.~Geha, ApJ 670, 313 (2007) [arXiv:0706.0516].

High mass-to-light ratios for dwarf galaxies:

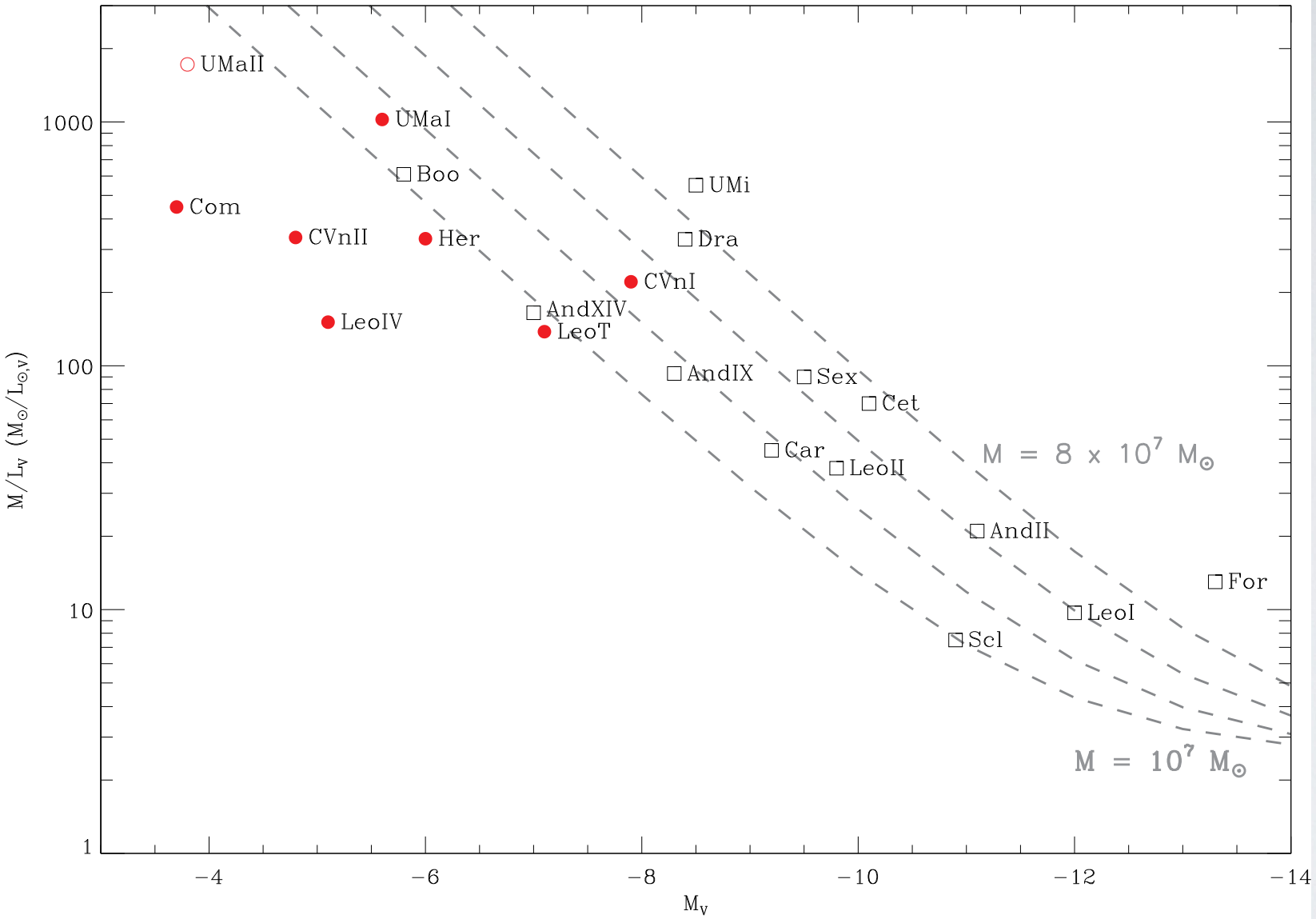
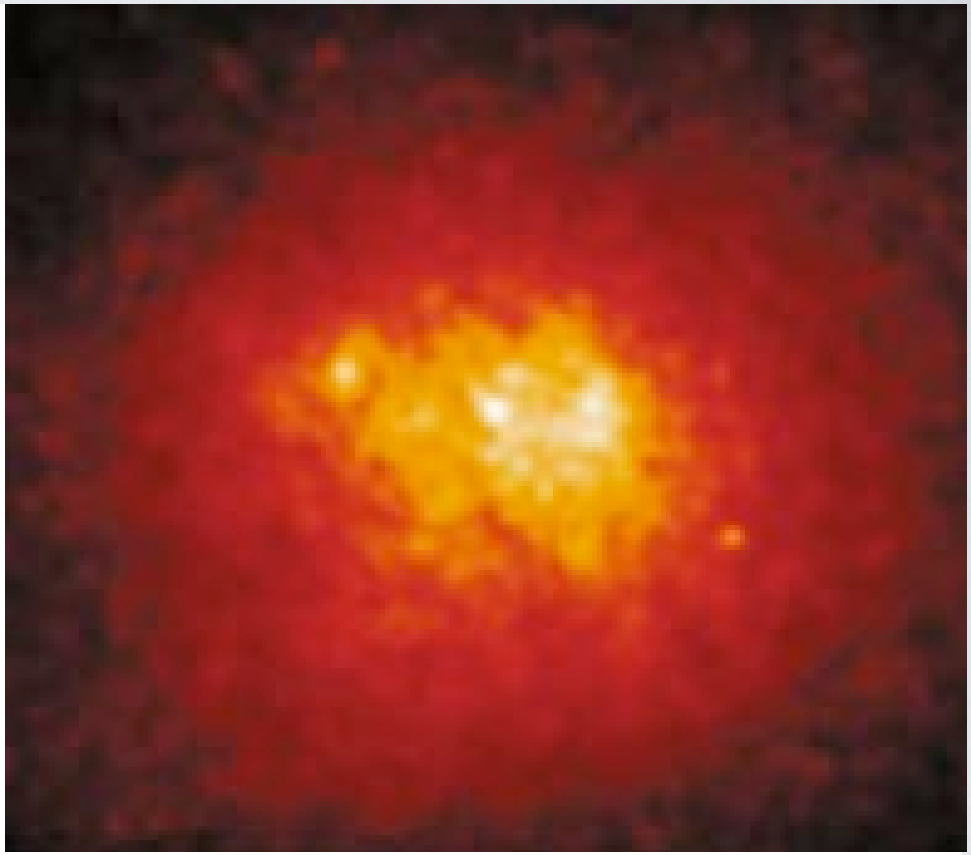


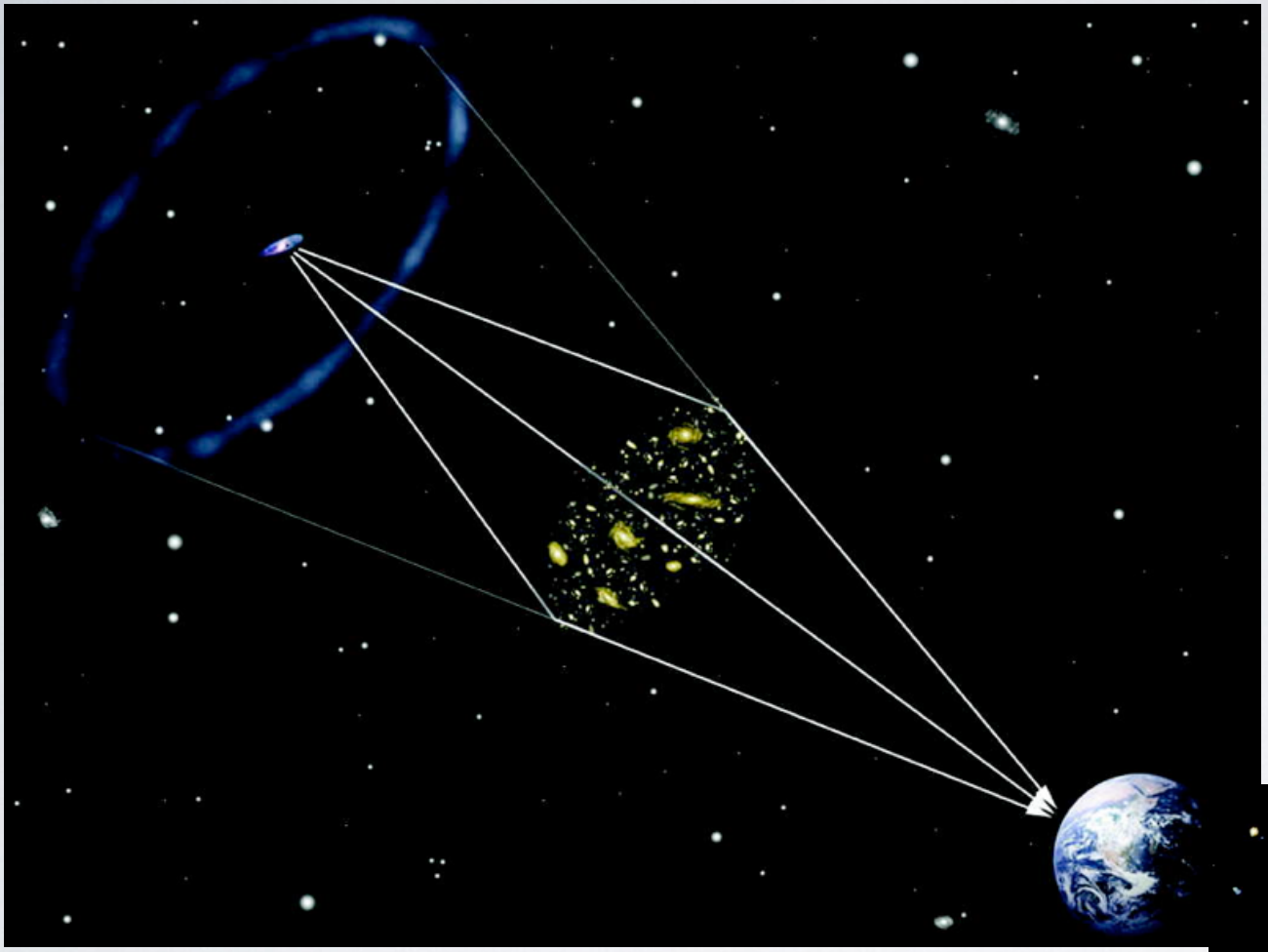
FIG. 15.— Total mass-to-light ratios (in solar units) as a function of absolute magnitude for Local Group dwarf spheroidals. The red symbols represent the ultra-faint dwarfs from this paper (including Leo T, which is not really a dSph, and UMa II, which may be tidally disrupted, as an open red circle in the upper left). The open black squares represent all of the dSphs with previously-published kinematic data, including satellites of M31 as well as the Milky Way. The dashed gray lines are curves of constant dark matter halo mass ($1, 2, 4, 8 \times 10^7$ $M_\odot$ from bottom to top), assuming a stellar mass-to-light ratio of 2.5 $M_\odot/L_{\odot,V}$. For the previously-known Milky Way dwarfs, we recomputed



COMA CLUSTER looks different in visible light (*left*) and in x-rays (*right*). In visible light, it appears to be just an assemblage of galaxies. But in x-rays, it is a gargantuan ball of hot gas some five million light-years across.

from Scientific American, 12/1998

Gravitational lensing



Hubble view of CL0024+1654

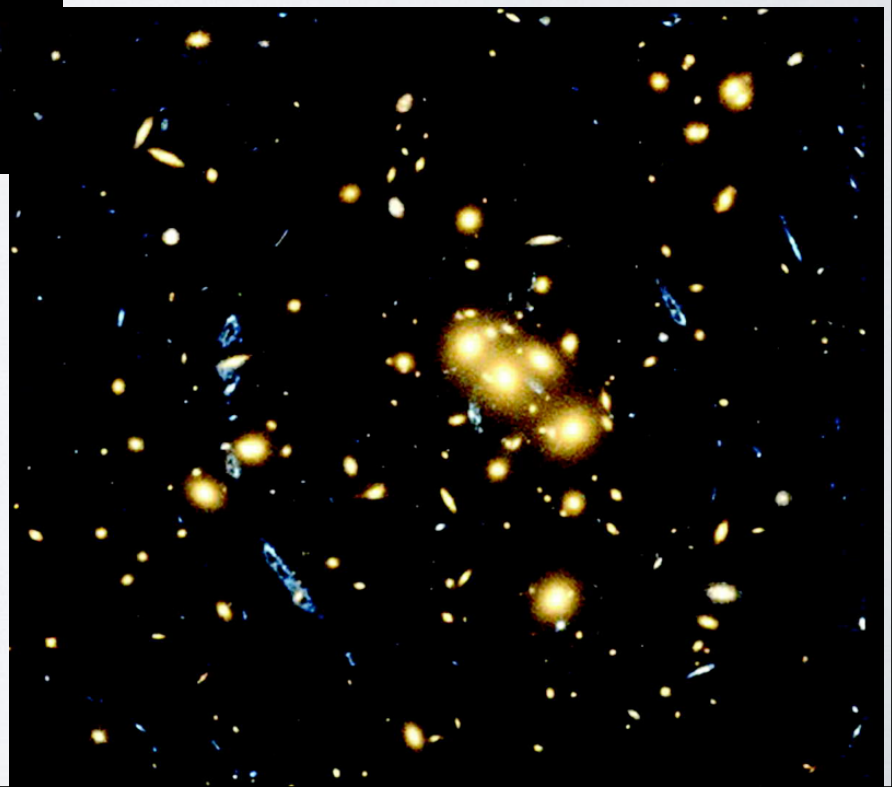
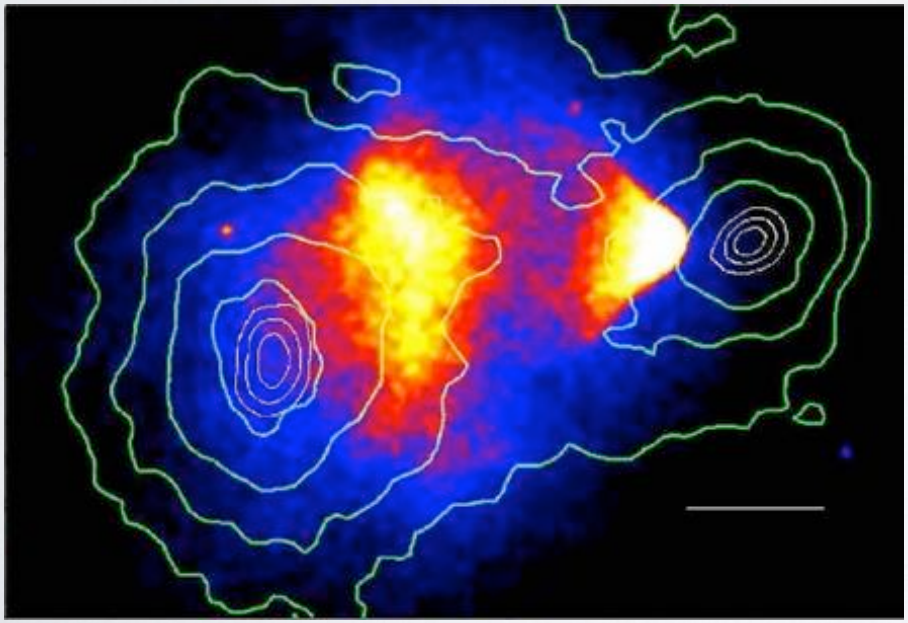


Image courtes: NASM, NASA (from LSST webpage)

The bullet cluster in visible light and in X-ray(red):



X-ray image along with gravitational potential (determined by gravitational lensing)

Clowe et al., ApJ Lett. 648, L109 (2006)