IMPLICATIONS

1 – The correlations tell us the normal dark matter properties in dwarf and giant galaxies. In particular, high dark matter densities of 0.01 solar masses per cubic light year are normal for the smallest dwarfs.

Note: The fainter they are, the more gossamer they look. But they are cannonballs: the density of dark matter is 100 times higher in them than in giant galaxies.

2 – These are real galaxies, not tidal fragments. Astronomers have suggested that dwarf galaxies are produced when large galaxies collide. Tides pull long tails of gas and stars out of the parent galaxies. If small lumps in the tails are dense enough, gravity can hold them together. They can survive the collision and look like little galaxies afterward.

Reason:

Tides can only stretch what is already there.

Tidal fragments should have lower dark matter densities than their parent galaxies. Instead, the smallest dwarfs have higher dark matter densities than possible parent galaxies.

Therefore they are real galaxies.

Note: Tidal fragments may exist, too.