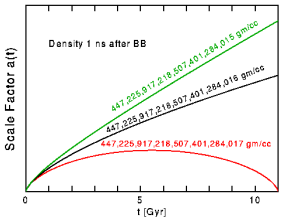
Old Gravity

The start of the Universe is not stable, it should ball up.
There is no reason matter should move at the same speed.

Flatness problem:
initial conditions
are unstable

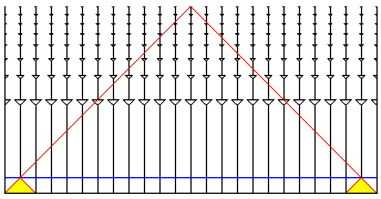


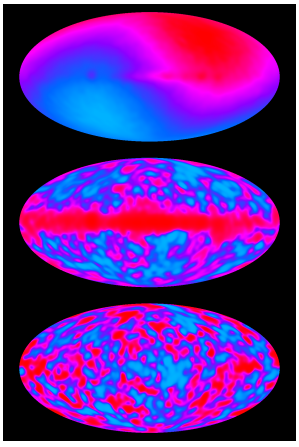
$$\left(\frac{\rho_c}{\rho} - 1\right) \rho a^2 = -\frac{3}{8\pi G} k c^2$$

$$\frac{\rho}{\rho_{c\ \text{now}}} \approx 1.01$$

$$\frac{\rho}{\rho_{c\ \text{Big Bang}}} \approx 1.00..(\text{lots of } 0'\text{s})..001$$

Horizon problem:
velocities have no
way to agree to
1 part in 100,000





History

1969 Dicke, the Universe is flat now, but had to be far more flat at the start

Current Efforts

Inflation - magic! Universe briefly grows like crazy

My Efforts

Don't use Newton out-of-the-box, things are moving
Need a stable, constant velocity solution for gravity.
Product rule may come into play
Use BOTH terms, not just the first one

$$dq^2 = \left(\left(1 - 2\frac{GM}{c^2 R}\right)dt^2 - \left(1 + 2\frac{GM}{c^2 R} + O(2)\right)dR^2/c^2,\ 2\ \ dt\ \ dR/c\right)$$