About 1.8 Meters Tall

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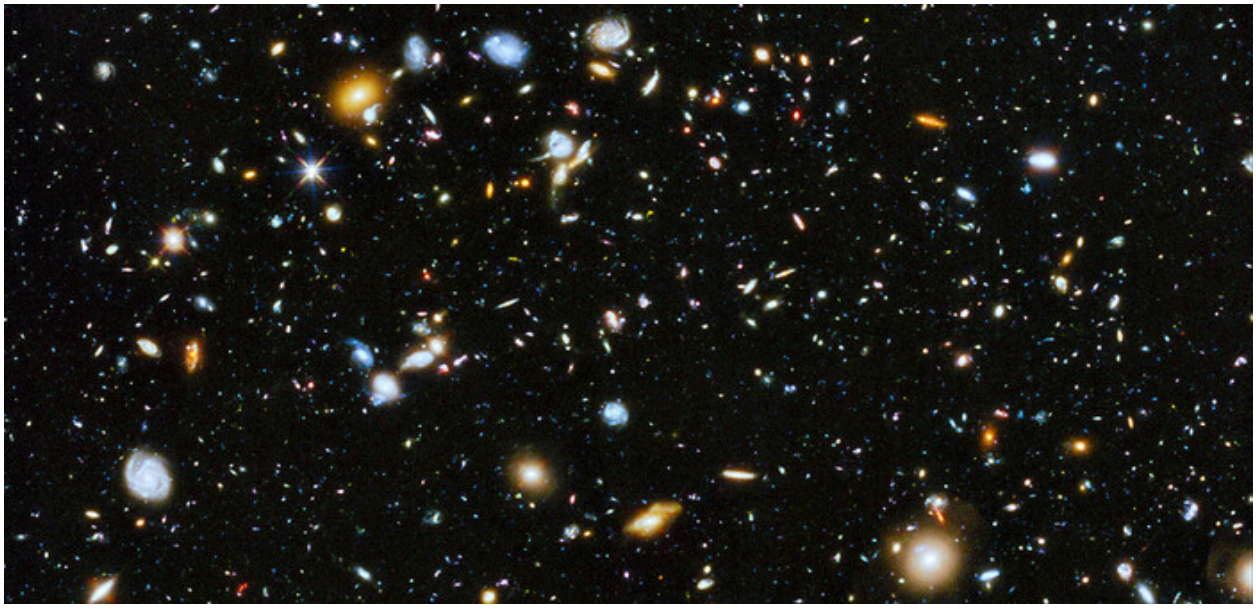
Here are a few simple calculations. They are simple. And yet I am utterly unable to grasp them intuitively. Look at this picture:



(Source: `https://www.nasa.gov/sites/default/files/styles/full_width_feature/public/thumbnails/image/hudf_big.jpg`)

A light signal propagates at about 300 000 000 m/s. Our home the Milky Way is about 100 000 light years wide. That means a light signal takes about 100 000 years to propagate from side to side. So in 100 000 years that light signal has travelled $60\text{s/min} \times 60\text{min/h} \times 24\text{h/d} \times 365\text{d/y} \times 100000\text{y} \times 300000000\text{m/s}$ or 946 080 000 000 000 meters. And that's the size in meters of only one galaxy—our own!

Each one of the smudges in the above picture is another galaxy, similar to our own. Those smudges are about 500 million light years away. That means, in meters, they are about

$$60\text{s/min} \times 60\text{min/h} \times 24\text{h/d} \times 365\text{d/y} \times 500000000\text{y} \times 300000000\text{m/s},$$

or about 4730 400 000 000 000 000 000 000 meters distant from us.

Carl Sagan once proclaimed, "Astronomy is a humbling and character-building experience." In each one of those distant galaxies there are billions and billions of stars, with each star having its own local gravitational, thermodynamic, nuclear and probably chemical processess, sometimes probably with complex process interplays, much like in our solar system. Much like on Earth. I am drawn to the same conclusion as Sagan's.

Telescopes reveal a reality of breathtaking magnitude and richness beyond our Earth-bound. Big-ness exists, unimaginably bigger than me. So how is it then that we still embrace anthropocentric beliefs and what is real and about how we must behave on Earth without our first looking out at the cosmic context? Our sense of sublime self-importance seems arguably misplaced and tawdry.

I'm about 1.8 meters tall.