

Date: 2026-03-21+

Let's define:

$$r_M = \frac{GM}{c^2} = \frac{r_S}{2} \therefore M = \frac{c^2 r_M}{G}$$

Each & every ***M*** requires r_M in order to exist¹, thus making $r_S = 2r_M$ the distance (centre to centre) of closest approach of equal ***M***s without them merging unavoidably.

For point masses, r_M merely is a phantom radius, only perceived from infinity.

Newtonian gravitation:

$$F_{g,N} = \frac{-GMm}{r^2} = -\frac{c^4}{G} \frac{r_M r_m}{r r}$$

Newsteinian¹ would be:

$$F_{g,NS} = -\frac{c^4}{G} \frac{r_M r_m}{(r-r_M)(r-r_m)}$$

Max. ***Newsteinian force*** between touching equal ***M***'s ($r_M = r_m$, $r = 2r_M$):

$$\frac{c^4}{G} \approx 1.210256 \times 10^{44} \text{ N}$$

Force × speed = power:

$$\frac{c^5}{G} \approx 3.628255 \times 10^{52} \text{ W}$$

Mass of universe²:

$$M_U = \frac{c^3}{2GH} = \frac{1}{2} \frac{c^3}{G} \Delta t_H \approx 8.77 \times 10^{52} \text{ kg}$$

was found by equating:

$$c\Delta t_H = D_H = r_{S,U} = \frac{2GM_U}{c^2}$$

This equation is substantiated as follows: the Cosmological Principle says the cosmos is — disregarding local details — essentially homogeneous & isotropic. Then there cannot exist any boundary whatsoever. Would there be more than one characteristic universal distance, an entity could live beyond the smaller and within the greater, thus violating this homogeneity & lack of boundaries.

This ***cosmic mass*** seems to ***match observations***, see ref.2, p.81 (as of 2025-07-14), but this contains some ***estimates vague enough*** to give room for considering r_M more fundamental than r_S (which is the Newtonian infimum of subluminal periapsis passages³)

& instead equate:

$$c\Delta t_H = \frac{GM_U}{c^2} \quad \text{i.e. without the } 2 \text{ that exists in } r_S$$

yielding (the twice as large):

$$M_U = \frac{c^3}{G} \Delta t_H \approx 1.75 \times 10^{53} \text{ kg}$$

I actually ***dislike numerical factors*** in ***equations for fundamental quantities & constants***, so from now on, I'll consider r_M more fundamental than r_S , hence this last equation for M_U the correct one.

I will however not adjust, let alone rewrite, my earlier documents.

Or might the other half be the missing antimatter, living in a sibling cosmos, our antiverse?

Cosmic Force:

$$F_U := \frac{c^4}{G} \approx 1.210256 \times 10^{44} \text{ N}$$

& ***Cosmic Power***:

$$P_U := \frac{E_U = M_U c^2}{\Delta t_H} = \frac{c^5}{G} \approx 3.628255 \times 10^{52} \text{ W}$$

The total luminosity of the CMB source²

would be:

$$L_{\text{CMBsrc}} = 4\pi D_H^2 \cdot 4\sigma_{\text{SB}} T_{\text{CMB}}^4 \approx 2.67 \times 10^{48} \text{ W}$$

& we also have^{2,4}:

$$\text{CMB/EBL} \approx 20$$

Therefore, the CMB certainly is the ***brightest radiation in the cosmos*** and P_U is by far not exceeded by anything in the universe.

I have the audacity to consider P_U & F_U fundamental maxima.

May The F_U Be With Us & Use All Of Its P_U At The c .

¹ <https://henk-reints.nl/astro/HR-Newstein-corrected.pdf>

² <https://henk-reints.nl/astro/HR-Geometry-of-universe-slideshow.pdf>

³ <https://henk-reints.nl/astro/HR-Deflection-of-light-passing-a-mass.pdf>

⁴ Simon P. Driver et al. 2016 *ApJ* **827** 108, <https://dx.doi.org/10.3847/0004-637X/827/2/108>