

A Subatomic Replica of Our Solar System Macrocosmos and Microcosmos As Above! So Below!

Espen Gaarder Haug*
Norwegian University of Life Sciences

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Abstract

In this paper we show that each planet and sun (star) has a mathematical subatomic twin. Each planetary twin particle has exactly the same mathematical properties as its substantially larger twin planet or Sun. From a planet's twin particle we get the planet's escape velocity, its solar deflection, and its red shift. If we arrange these solar system twin particles with their relative distances as our real solar system then they will, based on Newton's law of gravitation, have the same orbital velocities as the true solar system. In other words, we have created a subatomic world that in many respects is a replica of the Macrocosmos.

Ancient Hermetic teaching claimed that the Macrocosmos was reflected in the Microcosmos and the Microcosmos was reflected in the Macrocosmos. In addition to working on his theory of gravitation, it is well documented that Sir Isaac Newton spent a considerable amount of time studying the texts of Hermes Trismegistus, as well as related alchemical texts¹.

Newton even made his own translation of the Emerald Tablet (Tabula Smaragdina)². The Emerald Tablet is assumed to contain key information about nature (written in a Hermetic writing style) by Hermes Trismegistus. Some historians claim that Hermes Trismegistus was a factitious character, while others claim that he was possibly the father of philosophy. One of the famous sayings from the Emerald Tablet is: “*That which is below is like that which is above & that which is above is like that which is below...*”.

Max Planck [1] has shown that some of the smallest entities possible, such as the Planck length, l_p , can be found by combining mathematical constants from the Macrocosmos such as Big G [2] with the reduced Planck constant, \hbar , and the speed of light c . Here we will show that we can replicate the solar system inside a grain of sand, or more precisely we can at least simulate the solar system's main properties mathematically from a collection of unique subatomic particles. Whether these suggested particles only exist hypothetically or virtually is not our main concern; what is important is that they are defined and consistent with the “laws” of mathematical physics.

Key words: Solar system, planetary twin particles, subatomic replica, escape velocity, orbital velocity, light deflection, red-shift, super heavy particles, reduced Compton wavelength, gravity.

How to “Construct” a Replica of Our Solar System from a Grain of Sand!

The upper part of Table 1 lists the Sun and the planets in our solar system, their mass, radius, surface escape velocity, orbital speed around the Sun (and for the Moon, around the Earth), light bending for a beam passing just outside the surface, and the red-shift from photons emitted at the surface. The lower part of the table lists the twin particle of the Sun and the planets. These particles seem to have a very unique mass and reduced Compton wavelength that makes each particle have the same properties as its twin planet (or Sun).

*e-mail espenhaug@mac.com. Thanks to Victoria Terces for helping me edit this manuscript and thanks to H. T. for useful comments.

¹Anyone that has studied a large number of ancient Alchemical texts knows they address much more than making gold out of lead; it is a long-standing and popular misconception about Alchemy that focuses on that aspect alone.

²See for example https://en.wikipedia.org/wiki/Emerald_Tablet#Newton.27s_translation

Table 1:: Macrocosmos and Microcosmos. The Macrocosmos particle system is set up with the same relative distances to each other as the relative distances shown in the Macrocosmos (our solar system)

Solar System									
	Mass in kg	Radius in meters	Distance to Sun in meters	$v_e = \sqrt{\frac{2Gm}{r}}$ Escape velocity meters/second	$v_o = \sqrt{\frac{Gm}{r}}$ Orbital velocity meters/second	$\delta = \frac{4Gm}{c^2 r}$ Light bending Arc seconds	$z(r) \approx \frac{Gm}{c^2 r}$ Redshift		
Sun	1.9886E+30	696,342,000		617,401		1.7496	2.12E-06		
Mercury	3.302E+23	2439700	57,910,000,000	4,250	47,873	0.000083	1.01E-10		
Venus	4.8685E+24	6051800	108,200,000,000	10,363	35,023	0.000493	5.97E-10		
Earth	5.9736E+24	6371000	149,600,000,000	11,187	29,785	0.000574	6.96E-10		
Moon	7.3477E+22	1737000	384,400,000	2,376	1,018	0.000026	3.14E-11		
Mars	6.4185E+23	3389500	227,940,000,000	5,028	24,130	0.000116	1.41E-10		
Jupiter	1.8986E+27	69911000	778,330,000,000	60,208	13,058	0.016639	2.02E-08		
Saturn	5.6846E+26	58232000	1,424,600,000,000	36,098	9,652	0.005981	7.25E-09		
Uranus	8.6832E+25	25362000	2,873,550,000,000	21,378	6,796	0.002098	2.54E-09		
Neptune	1.0243E+26	24622000	4,501,000,000,000	23,565	5,430	0.002549	3.09E-09		
Pluto	1.303E+22	1187000	4,440,000,000,000	1,210	5,467	0.000007	8.15E-12		
Miniature Solar System from Hypothetical Subatomic Particles									
Hypothetical particle name :	$m = \frac{h}{\lambda c} = \frac{h^2}{\lambda} \sqrt{\frac{hc}{G}}$ Mass in kg	$\bar{\lambda} = \frac{h}{mc}$ Reduced Compton wavelength in meters	Distance to Solarus in meters	$v_e = \sqrt{\frac{2Gm}{r}}$ Escape velocity meters/second	$v_o = \sqrt{\frac{Gm}{r}}$ Orbital velocity meters/second	$\delta = \frac{4Gm}{c^2 r}$ Light bending Arc seconds	$z(r) \approx \frac{Gm}{c^2 r}$ Redshift		
Solarus	3.1695E-11	1.1099E-32		617,401		1.7496	2.12E-06		
Mercurium	2.1820E-13	1.6122E-30	9,2300.E-31	4,250	47,873	0.000083	1.01E-10		
Venusium	5.3196E-13	6.6126E-31	1.7245.E-30	10,363	35,023	0.000493	5.97E-10		
Gaiarum	5.7430E-13	6.1251E-31	2.3844.E-30	11,187	29,785	0.000574	6.96E-10		
Moronium	1.2198E-13	2.8837E-30	3.6956.E-29	2,376	1,018	0.000026	3.14E-11		
Marson	2.5809E-13	1.3629E-30	3.6330.E-30	5,028	24,130	0.000116	1.41E-10		
Jupiton	3.0908E-12	1.1381E-31	1.2405.E-29	60,208	13,058	0.016639	2.02E-08		
Saturon	1.8531E-12	1.8983E-31	2.2706.E-29	36,098	9,652	0.005981	7.25E-09		
Uranon	1.0974E-12	3.2054E-31	4.5800.E-29	21,378	6,796	0.002098	2.54E-09		
Nepton	1.2097E-12	2.9079E-31	7.1739.E-29	23,565	5,430	0.002549	3.09E-09		
Plutonirum	6.2140E-14	5.6608E-30	7.0767.E-29	1,210	5,467	0.000007	8.15E-12		

For these particles, similar calculations for the escape velocity, orbital speed, light deflection, and redshift as those previously applied to the Sun and the planets have been done, but here we have used the reduced Compton wavelength of the particles as the “radius” in the well-known formulas.

The reduced Compton wavelength of these twin particles can be found from the surface escape velocity, v_e , of their planet (celestial twin) by the following formula

$$\bar{\lambda} = \sqrt{2} l_p \frac{c}{v_e} \quad (1)$$

This can also be rewritten as

$$\bar{\lambda} = l_p \sqrt{2 \frac{r}{r_s}} \quad (2)$$

where r is the radius and r_s is the Schwarzschild radius³ of the celestial objects of question. And if we have the reduced Compton wavelength of a particle, we know its mass. The mass of any subatomic particle is given by

$$m = \frac{l_p}{\bar{\lambda}} \sqrt{\frac{\hbar c}{G}} = \frac{\hbar}{\bar{\lambda}} \frac{1}{c} \quad (3)$$

For the orbital velocity of the other particles around Solarus (the Sun’s twin particle), I have used a distance that is the same as the planet’s distance to the Sun relative to the radius of the Sun. In other words, the distance between the particles and Solarus is ordered just as the solar system is. And this gives exactly the same orbital velocity in the particle system as we observe in the solar system. We could theoretically create an entire subatomic Milky Way galaxy in this manner.

The sum of the masses of all the particles making up the miniature solar system is 4.0712×10^{-11} kg, so it would not be incorrect to say

Give me 4.0712×10^{-8} gram of sand and I will create a fully working replica of the solar system. As Above! So Below! – Espen Gaarder Haug

This puts the saying: *To see a world in a grain of sand*, in a new perspective.

Well there is even more to it. If you take the mass of a planet and divide by the mass of its twin particle and multiply by the reduced Compton wavelength of that particle, then you get the radius of the planet. This holds true for all of the planets. So we could consider (coin) these hypothetical (virtual) particles as *radius planet particles*.

Do I think they exist? I do not think such particles play any central role. However, I cannot exclude the idea that such super heavy particles exist. It is unlikely they exist at the surface of any planet or sun. These particles are super heavy compared to any known subatomic particle, including the Higgs particle, but still lighter than the Planck particle. The so-called Planck particle (that is also a hypothetical particle at this stage) is often assumed to have mass of $\sqrt{\pi}$ times the Planck mass, that is $\sqrt{\pi} \sqrt{\frac{\hbar c}{G}}$. For example, one needs 1217 Solarus particles to get the mass of a Planck particle. Actually the Planck particle would be the twin particle of a so-called “black hole”, although I am critical of the interpretation of black holes; see [3].

If these super heavy particles should exist anywhere in relation to their planets and suns, then it would likely be in the very depth of the core; in other words, hermetically sealed. Alternatively, they could exist for very short time periods; if this is the case, then we could at least hypothetically create a subatomic replica of our solar system that lasted a fraction of a second.

Is this anything more than “playing around” with known physics formulas? Well I would say yes and no. Even if these particles potentially do not exist, there is “nothing” theoretically wrong with them, and this paper, at a minimum, shows some interesting scalability of gravitational theory and theoretical particle physics. However, this also illustrates how we have to be careful with using mathematical physics. The fact that we can mathematically describe a subatomic particle with the “same” properties as the Sun does not mean that such a particle exists. It is even questionable if Newton and Einstein’s theories of gravitation work at the very short distances that we are playing with here. Modern physics still lacks an in-depth understanding of what subatomic particles truly consist of and therefore our cosmological and particle theories are still not complete. See [4] for an alternative. It is too early to tell if this short paper has brought any useful insight to the table or not; only Mother Time can tell. Eureka, in addition, the gravitational time dilation on the “surface” of these new planetary twin particles is exactly the same as the gravitational time dilation on the surface of their “mother/twin” planets. With this in mind, I end on a light note with another quote from Newton’s translation of the Emerald Tablet:

³The Schwarzschild radius is given by $r_s = \frac{2Gm}{c^2}$.

By this means you shall have the glory of the whole world – Hermes Trismegistus, translation
by Isaac Newton.
in a grain of sand?

References

- [1] M. Planck. *The Theory of Radiation*. Dover 1959 translation, 1906.
- [2] I. Newton. *Philosophiae Naturalis Principia Mathematica*. London, 1686.
- [3] E. G. Haug. Is the Schwarzschild Radius Truly a Radius? <http://vixra.org/abs/1607.0071>, 2016.
- [4] E. G. Haug. The Planck Mass Particle Finally Discovered! The True God Particle! Goodbye to the Point Particle Hypothesis! <http://vixra.org/abs/1607.0496>, 2016.