A Possibility of Vanishing 'Accelerated Expansion' of the Universe when Newtonian formula for the Doppler-shift is used

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Abstract

In a paper titled: Explanation of the anomalous Doppler observations in Pioneer-10 and 11 Renshaw, C. (Aerospace Conference, 1999, Proceedings IEEE, Vol-2) finds that: "The value of the anomalous shift is shown to equal the difference between the calculated values for Newtonian and Special Relativistic Doppler expressions. The anomalous signals seem to indicate a preference for the Newtonian values." This value of anomalous acceleration (8.0×10^{-8} cm/s^2) is now known to equal $H_0 c$, the value of accelerated expansion of the universe. It implies that if we use Newtonian formula for Doppler shift, then there is a possibility of vanishing the 'accelerated expansion' of the universe.

Intraduction

Radiometric data from the Pioneer-10 and 11 spacecrafts indicated an apparent, constant skewing between the predicted and observed Doppler shifts. This offset has been attributed to a possible acceleration of 8.0×10^{-8} cm/s^2 directed towards the Sun for both the spacecrafts. The spacecrafts Galileo and Ulysses were also found to accelerate towards the Sun by the same order of magnitude. This matching of values of acceleration of the four spacecrafts, in spite of their masses, speeds and direction was a striking observation. This author added one more observation to the list (Tank, H. K. Astrophys & Space Sci. 2010), that the cosmologically red shifting photons too decelerate at the same rate of $H_0 c$. Then this author found from the literature that the self gravitational acceleration at the surface of the proton, the nucleus of atom, the globular clusters, spiral galaxies and the galactic clusters, is also of the same order of magnitude as $H_0 c$.

Yesterday, this author wrote a preliminary note titled: "A prediction of difference between the Doppler-shift-formulae for high-Frequency-light and very-low-frequency electromagnetic-waves; and a supportive observational-evidence." The paper by Renshaw C. was found to provide supportive observational evidence. While reading the abstract of the paper, it suddenly struck to this author, that: If the value of acceleration 8.0×10^{-8} cm/s^2 is equal to the difference between the calculated values for Newtonian and special relativistic Doppler expressions, then it means that the acceleration $H_0 c$ can also be the difference emerging from the use of relativistic formula for the Doppler shift of the 'cosmological red-shift'. It means that if we use Newtonian formula for Doppler shift, then there is a possibility of vanishing the 'accelerated expansion' of

the universe. The so called 'accelerated expansion' of the universe may be just an illusion arisen from the use of inappropriate formula for the Doppler shift.

Detailed paper, based on through study, will follow soon.

References

[1] Renshaw, C. "Explanation of the anomalous Doppler observations in Pioneer-10 and 11" Aerospace Conference 1999, Proceedings IEEE Vol-2 Pages 59-63

[2] Tank, H. K. Astrophysics and Space Science December 2010, Vol. 330, Issue 2, pp 203-205