

**The accelerating expansion of the Universe is an observational error in the measurement of the Co-moving distant, as well as the measurement of the velocity of recession.**

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**Abstract**

The observation of the Universe at the present epoch will only give the rate of the expansion of the Universe at present era and produce one value of the Hubble constant by any observer in any galaxy in the cosmos.

The expansion rate of the Universe is not obtainable for the past or the future of the Universe by observation; it can only be calculated by the fact that the inverse of the Hubble constant is the age of the Universe at any period.

One of the fundamental pillars of the cosmology is the Hubble constant and the inverse of it is the age of the Universe:  $H_0 = \frac{1}{T_0}$ , this relationship will be violated by observation that the Universe's expansion is accelerating.

This is fundamental that any epoch any observer on any galaxy in the Universe by looking at all the distant galaxies will measure the velocity of recession divided by Co-moving distant will obtain the value of the Hubble constant precisely the same exact value. The value of the Hubble constant is only constant at a particular epoch by all the observers in the Universe and decays as the passage of time according to the relationship:  $H_0 = \frac{1}{T_0}$ .

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**Text**

The age of the Universe being the inverse of the Hubble constant has been well established<sup>[1]</sup> throughout the evolution of the Universe as:

$$H_{0m} = \frac{V_{0m}}{CMD} = \frac{\frac{2Zc}{3(Z+1)}}{\frac{2ZcT_0}{3(Z+1)}} = \frac{1}{T_0}$$

Where  $H_{0m}$  is the Hubble constant for matter in the Universe at the present epoch.

$V_{0m}$  is the velocity of the recession of the galaxies.

CMD is the Co-moving or the proper distant of the galaxies.

$T_0$  is the present age of the Universe  $c$  the speed of light and  $Z$  the red-shift.

The accelerating expansion of the Universe (*Riess et al*)<sup>[2]</sup> will increase the value of the Hubble constant and causes the decrease in the age of the Universe rather than Universe getting older.

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The table 1 is the values of the Hubble constant at different epoch of the universes evolution verses the age of the Universe and the plots in figs 1&2.

	X	Y	+
1	1	978	+
2	2	480	+
3	3	320	+
4	4	240	+
5	5	192	+
6	6	160	+
7	7	137	+
8	8	120	+
9	9	107	+
10	10	96	+
11	11	87.2	+
12	12	79.9	+
13	13	73.8	+
14	14	68.5	+
15	15	64	+
16	16	60	+
17	17	56.4	+
18	18	53.3	+
19	19	50.5	+
20	20	48	+
21	21	45.7	+
22	22	43.6	+
23	23	41.7	+
24	24	40	+
25	25	38.37	+
26	25.3425	38.565	+
27	26	36.9	+
28	27	35.53	+
29	28	34.26	+
30	29	33.08	+
31	30	32	+

Table 1

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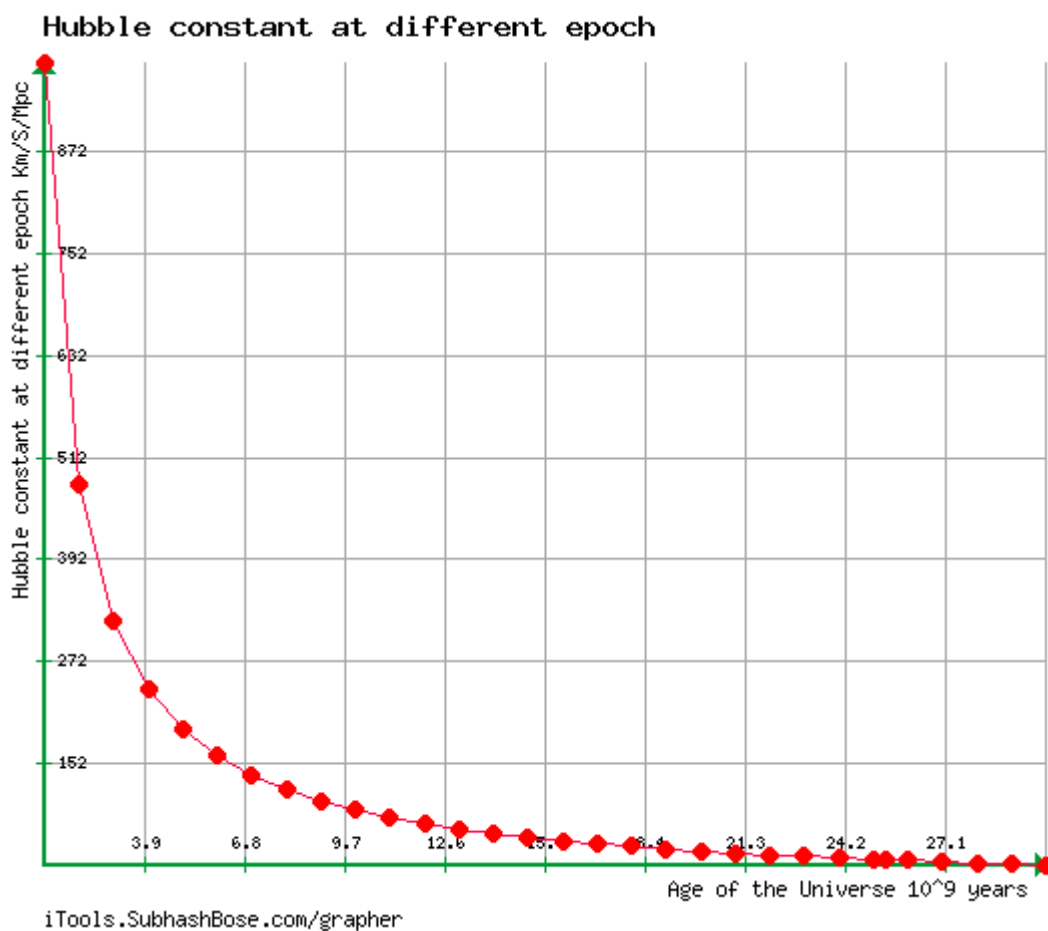
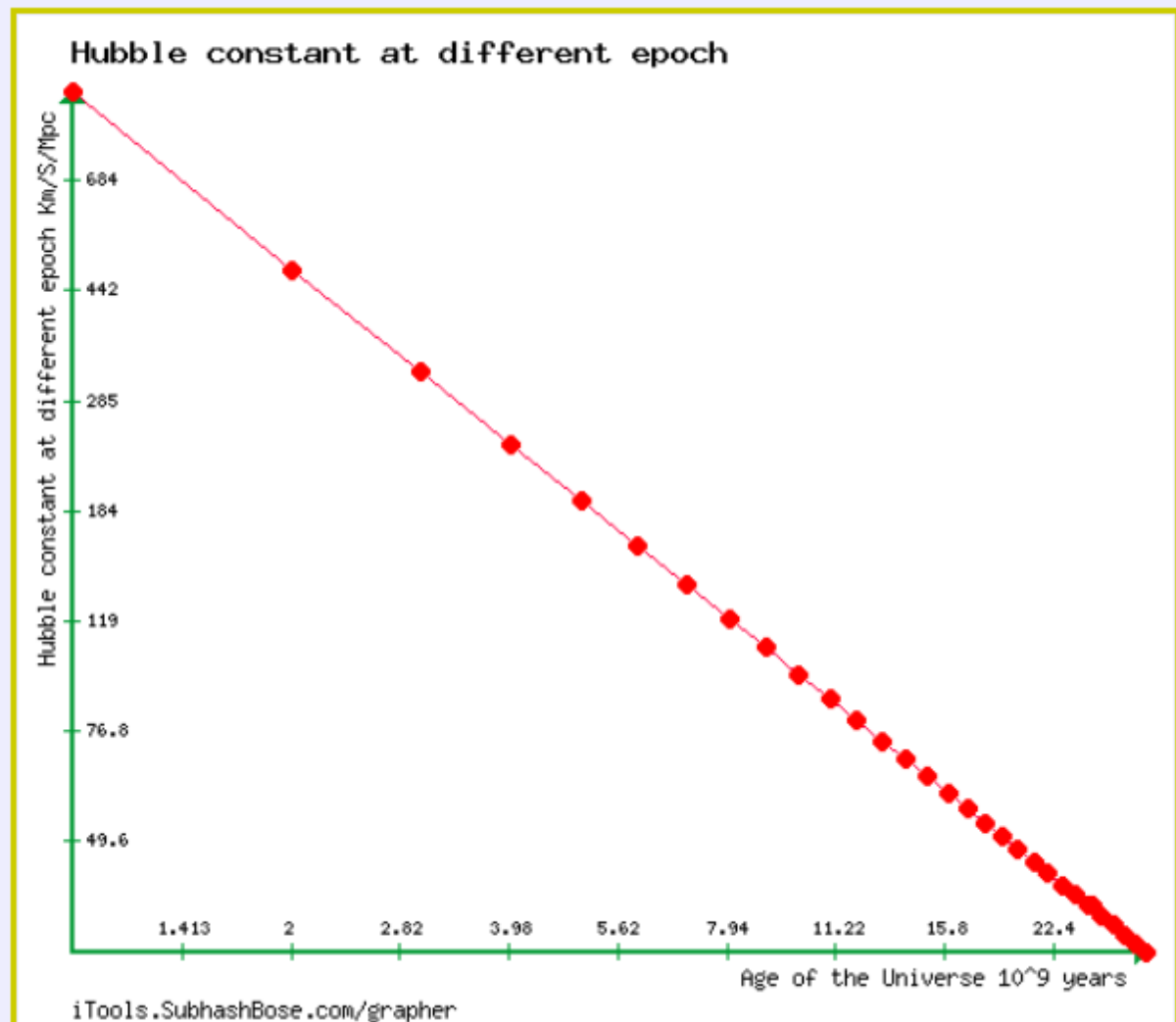



Fig 1

The accelerating expansion of the Universe is an observational error in the measurement of the Co-moving distant, as well as the measurement of the velocity of recession.



Logarithmic X scale  

Logarithmic Y scale

Fig 2

**The accelerating expansion of the Universe is an observational error in the measurement of the Co-moving distant, as well as the measurement of the velocity of recession.**

To see how the values for accelerating expansion would affect the age of the Universe.

We will consider a galaxy a distant of about 1 MPC away moving away with the velocity of  $V = 60\text{KmS}^{-1}$  will result in a Hubble constant of.  $H_0 = 60\text{KmS}^{-1}\text{Mpc}^{-1}$

If after a time period of 1 billion years ( $1 \times 10^9$  Years), the expansion of the Universe accelerate to a velocity of  $V = 70\text{KmS}^{-1}$ , the galaxy would have moved a further distance of  $d = 0.06646216769\text{Mpc}$  taking the average velocity at  $v = 65\text{KmS}^{-1}$ .

This would make the Hubble constant from

$$H_0 = 60\text{KmS}^{-1}\text{Mpc}^{-1} \text{ to } H_0 = 65.63758\text{KmS}^{-1}\text{Mpc}^{-1}$$


The inverse of the Hubble constant will give the age of the Universe and at the start prior to the acceleration  $T_0 = 16.3 \times 10^9 \text{Years}$  to  $T_0 = 14.9 \times 10^9 \text{Years}$  in which by adding 1 billion years the age of the Universe after the acceleration should be about  $T_0 = 17.3 \times 10^9 \text{Years}$ . This implies that the Universe is 2.4 billion years younger than it should be.

**Conclusion**

The calculation and the argument above shows that the expansion of the Universe cannot be accelerating and as the Hubble constant is the inverse of the age of the Universe throughout the evolution of the Universe, has been well established, this proofs the inconsistency of the accelerating expansion of the Universe.

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**References**

1. <http://vixra.org/abs/1704.0041?ref=9321691> (Hubble Constant and the Age of the Universe)
2. *Riess, Adam G.; Filippenko, Alexei V.; Challis, Peter; Clocchiatti, Alejandro; Diercks, Alan; Garnavich, Peter M.; Gilliland, Ron L.; Hogan, Craig J.; Jha, Saurabh; Kirshner, Robert P.; Leibundgut, B.; Phillips, M. M.; Reiss, David; Schmidt, Brian P.; Schommer, Robert A.; Smith, R. Chris; Spyromilio, J.; Stubbs, Christopher; Suntzeff, Nicholas B.; Tonry, John (Sep 1998). "Observational Evidence from Supernovae for an Accelerating Universe and a Cosmological Constant". *The Astronomical Journal*. **116** (3): 1009–1038. [arXiv:astro-ph/9805201](https://arxiv.org/abs/astro-ph/9805201) . [Bibcode:1998AJ....116.1009R](https://ui.adsabs.harvard.edu/abs/1998AJ....116.1009R). [doi:10.1086/300499](https://doi.org/10.1086/300499).*