

How is the Universe Actually Expanding?

Thomas Görnitz*

Fachbereich Physik, J.W. Goethe-Universität Frankfurt/Main

Received: 28 September 2011. Accepted: 29 September 2011.

To know how the Universe is expanding might be of little practical interest, though it is of utmost importance for our understanding of all cosmological interrelations. The Hubble parameter H_0 is the term that determines expansion. Usually, Einstein's equations are taken as a starting point, which is not to be questioned at all. Then considerations start in order to see which model of matter is appropriate, e.g. light or cosmic dust without any pressure, and then attempts are being made to adapt the model to the pack of data being observed. In dire need, further ad hoc assumptions are introduced like inflation and dark energy. And although they are in contradiction to the known physical phenomena, after being used many a time they come so natural to us after some time, that no second thought is lost on their validity any more. An alternative view on H_0 is proposed.

Keywords: Hubble constant, age of the universe, expansion of the universe, Einstein's equations, horizon problem, cosmological term, dark energy, protyposis.

* Correspondence address: goernitz@em.uni-frankfurt.de; Karl-Mangold-Str. 13, D-81245 München, Germany