

A recent issue of NewsWeek magazine has on the front cover a

① picture of Astrophysicist Fred Hoyle. The article on various theories of the origin and nature of the universe lists three ~~present~~ ^{present} views of cosmology which

are at present held by various scientists. One of these is the big bang theory.

According to this theory all the matter in the universe ~~is~~ ^{was} once concentrated in a ~~small state of a small~~ ^{condensed mass of energy, perhaps only the} size of a football. Then suddenly, perhaps 10 billion years ago, there came a great explosion which caused this matter to begin to shoot out at a ~~rapid~~ ^{tremendous} rate into all directions. It has kept on moving from that time to this, so that we now have an expanding universe.

Within the first half hour or so, according to this theory, ~~all the~~ ^{chemical} elements or most of the elements ~~are found~~ ^{which that are now} in the universe could have been

formed. As time ~~went~~ ^{went} on, the various particles of matter gathered together, ~~formed~~ ^{forming} the ~~suns and galaxies~~ ^{planets} that we see in the sky. These are constantly moving ~~apart~~ ^{apart} further and further from ~~each other~~ ^{one another}, by determining the rate at which they are moving, we can make an intelligent guess as to the time when the explosion occurred.

This view, which was widely held a few years ago, is called the big-bang theory.

The ^{of} second view, which Fred Hoyle is one of the three co-founders, is the ~~so-called~~ ^{so-called} steady-state theory. According to this theory the universe remains ~~has~~ ^{has} constantly in just about the same time, approximately the same density as it ~~is~~ ^{is} now.

It is constantly... ~~all the~~ ~~xxxxxx~~ all the suns and galaxies are constantly moving apart from each other, but in the ~~space~~ ^{existence} between them new ones are gradually coming into ~~being~~ ^{being}. So, the comparative density remains about the same. According to this and theory, there is a constant change, ~~yet~~ ^{yet} the constant graduation is approximately the same density ~~of~~ ⁱⁿ the matter in the universe.

The third theory, ~~which~~ ^{which} is not so much held in this country, but ~~perhaps~~ ^{perhaps}

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[see ① on p 9, returns here for ②]