Expansion of the Universe

The best theory we have at the moment, to explain our observations of the universe, is the Big Bang Theory coupled with the theory of Cosmic Inflation.

The Big Bang resulted in an expansion of space. At some point after that (approx 10-36 seconds after the Big Bang) our universe experienced Cosmic Inflation during which time it grew enormously (far faster than the speed of light).

This lasted until approx. 10-32 seconds after the Big Bang, at which time the expansion slowed down.

Then about 5 billion years ago, dark energy began to dominate gravity and the expansion of the universe began speeding up again. Currently, it is expanding faster than the speed of light.

So let's recap:

Big Bang occurs (slower than inflation)

Cosmic Inflation occurs (faster than the speed of light)

The Dark Ages last for billions of years (slower than light speed)

Dark Energy dominates gravity (faster than light speed)

Based on the history of our universe, the expansion is anything but consistent. On what basis do some astronomers conclude that the universe will continue to expand faster than light speed?

Certainly not based on the history of our universe.

Regarding the geometry of our universe, it is generally accepted (a consensus?) that our universe is flat. Based on that agreement, scientists at space.com have stated:

"*If the density of the universe exactly equals the critical density, then the geometry of the universe is "flat" with zero curvature like a sheet of paper, according to NASA. If so, the universe has no bounds and will expand forever, but the rate of expansion will gradually approach zero after an infinite amount of time. Recent measurements suggest that the universe is flat with only a 2 percent margin of error*."

<http://www.space.com/52-the-expanding-universe-from-the-big-bang-to-today.html>

So according to space.com, the expansion is projected to change again.

As if all this weren't difficult enough to grasp, some scientists had to come along and throw a huge wrench into the entire debate ...

*Scientists provide evidence that the universe may NOT be expanding after all:*

<http://www.sci-news.com/astronomy/science-universe-not-expanding-01940.html>

UPDATE

It may no longer be necessary to hypothesize dark matter to explain the rotation of galaxies:

<http://www.newswise.com/articles/in-rotating-galaxies-distribution-of-normal-matter-precisely-determines-gravitational-acceleration>

ANOTHER UPDATE

More astronomers are challenging the Dark Matter theory:

[http://phys.org/news/2016-10-universe-rateor.html](http://phys.org/news/2016-10-universe-rateor.html?utm_source=menu&utm_medium=link&utm_campaign=item-menu)