



Humans in Space *Space Culture*

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All too often in science fiction we hear of Galactic Empires, or United Federations, or Interstellar Alliances (or even Foundations). But will we really have such centralized power-systems when we go into space?

Governments are centralized bureaucracies that control countries are concerned with the distribution and control of resources. On Earth, with a two-dimensional surface, it is relatively easy to control resources - you can just place a castle, or an army barracks, or a port beside the valued resource and ensure it isn't attacked. You can control your population by simply defending your borders. On the two-dimensional surface of a planet, resources can be controlled and guarded relatively easily.

The Gate is Down!

However, in space, you have to open your mind to the three-dimensional nature of your surroundings. Instead of having to defend your borders from north, south, east and west, you have to watch out for above and below. The areas you have to defend are vastly increased to such an extent that it is almost impossible to hold onto an area in space. For example, if you wanted to defend an area on Earth, you could simply lay mines in a circle around it. In space, you'd have to lay them in a sphere, increasing the number of mines by untold amounts.

Control and coercion of populations is a much more difficult affair in space. Galactic Empires would have a hard time defending their borders and strongholds against rebels.

The traditional dogma of centralized governments wouldn't simply fall due to military means though. In space, every single ship must necessarily be self-sufficient or near-self-sufficient. It needs to be able to generate its own atmosphere and produce its own food for long periods of time. Entire sections of a population under the control of an Empire could simply turn their engines on and fly away out of any

“*Galactic Empires would have a hard time defending their borders against rebels*”

outside influence. It's almost as if a town picked itself up and flew off to another country on Earth. Even asteroid habitats could conceivably be fitted with fusion engines to go and break away.

Speaking of which - asteroid habitats at the moment are the most likely habitats for humans in space. Many asteroids hold large amounts of water, organic chemicals and metals which can be easily mined by robots. Asteroids could be hollowed out and spun up to produce artificial gravity. These asteroids would essentially be independent states; they might trade with other habitats for advanced manufactured goods, but due to their very nature, they would have to be able to manufacture all their own systems-critical components.

True, a particularly ruthless Empire could attempt to take over asteroid habitats or simply destroy them outright to enforce their rule. But as has been shown innumerable times in history, this practice just never works and will work even less well in space. Habitats could simply break away and the life-support systems of any 'Empire' controlled bases would be just as vulnerable as non-combatants.

And finally, exactly why would an 'Empire' want to attack anyone? For resources? The economic orthodoxy of countries and governments being based on the concept of scarcity will have less weight behind it when it becomes feasible to mine any one of the millions of asteroids in the asteroid belt. Why bother attacking a habitat for its resources when you could simply go and mine your own for less trouble?



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This, of course, is simple speculation. While it is clear that the three-dimensional and 'mobile' nature of space will drastically change the way we live, even more drastic changes could come from any one of the technologies that are expected to come to maturation in this century - artificial intelligence, fusion power, nanotechnology and advanced biotechnology could produce as different a universe as the one we just painted above.

Much of the concepts in this essay were inspired by the fictional Culture universe written by acclaimed author Iain M Banks. To read more about the Culture universe, please check the links in the Astrobiology webpage.