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Traditionally, since films and television have to cater to a wider audience, their scientific basis is often watered down or not even present at all - take, for example, Star Trek in all its incarnations - terms such as 'positronic matrix' and 'rotating shield phase variances' hold no place in science. However, there are a few notable films and television shows that deserve to be credited for their scientific content

2001: A Space Odyssey

The film adaptation of the novel by Arthur C Clarke stays true to the original story and offers some excellent visual moments, along with some plausible science such as human hibernation and artificial gravity on space stations. Read about what 2001 got right - and what it got wrong - in our in-depth analysis in the **Arthur C. Clarke** section..

Contact

In Contact, we witness the detection of a signal from an alien civilization around the star Vega via the SETI Project - the Search for Extra-Terrestrial Intelligence. This signal is quickly analysed and decoded into a series of graphics, then decoded even further into construction plans for a mysterious machine.

SETI is not in such a bad situation as depicted by Contact - indeed, there are several high-profile SETI projects taking place right now, the largest of which is run by the highly reputable SETI Institute. Under construction currently is the One Hectare Telescope, a large array of small telescopes that will be networked together to end up with a telescope that has the effective diameter of one hectare - and this revolutionary telescope will be dedicated to SETI. Its precursor, the Rapid Prototype Array, has already been constructed and proved its worth.

We cover the science of SETI in two different pages - **SETI** and **an interview with Prof. Dan Werthimer**, the project director of the University of California, Berkeley's SERENDIP project and SETI@Home scientific director.

While Contact does cover the basics of SETI quite well, it does (understandably) oversimplify some concepts such as the difference between detecting a signal, understanding a signal and decoding a signal - all of which are completely different problems. In addition, it does not mention the formal SETI detection protocols which are completely ignored in the movie (probably for the sake of dramatics).

All of these issues are discussed in **What if we find life: What happens if we find ET Life: SETI Success**, and we also discuss the problems involved in communicating with aliens in **our interview with Dr. Yvan Dutil** about his artificial language Lincos.



Science Fiction *Films and Television*

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Babylon 5

One of the more popular science fiction shows that has been on television in recent years, Babylon 5 has been praised by numerous scientists (the least of which is Dr. Scott Sandford, NASA Stardust co-investigator - interviewed by Astrobiology) for its realistic portrayal of a self-sufficient space station.

Babylon 5 is centred around the exploits of the crew of a 8592 metres (5 miles) long, 840 metre diameter space station. Inside the space station, the vast majority of the volume is given over to farms and vegetation to regenerate the atmosphere and grow food (thus allowing for a basic level of self-sufficiency) - the principle of life support in space stations is covered in our section, Life Support in Space. Composed of several different rotating sections - all rotating at the same speed but with different diameters, the station creates a number of gravities ranging from 1.42G to zero-G in the centre.

A particularly accurate depiction of how gravity works in a rotating space station is shown in the episode 'The Fall of Night'. In this episode, a person is travelling along a monorail in the centre of the space station, right along the axis of rotation. Since he is in the centre and not standing against a rotating surface, no centripetal forces are acting upon him and thus he is weightless. He quickly discovers a bomb on the monorail and jumps out seconds before it detonates. While he is still weightless, the force of the explosion causes him to fly away from the centre of the station - and now, centripetal forces begin to act on him, pushing him towards the 'ground.'

Needless to say, he is rescued, albeit in a rather surprising (and not as scientific) way.

Recommended Reading: Space Stations