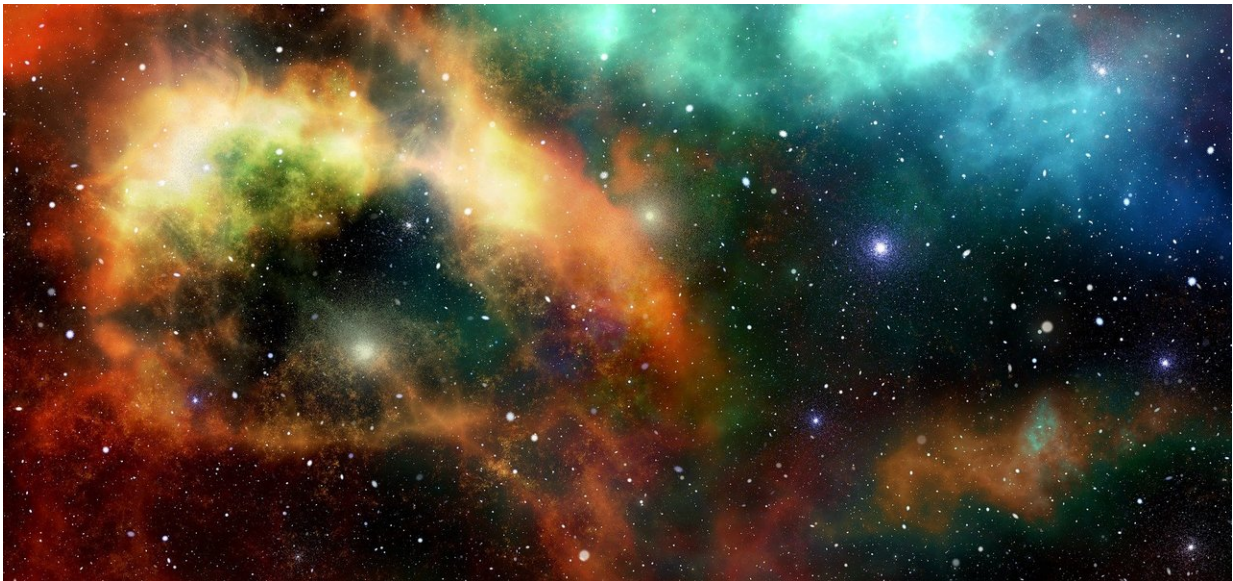


Space subjects that will get the world's attention in 2019 and beyond

January 14 2019, by Keith Gottschalk



Credit: CC0 Public Domain

The first few days of 2019 brought remarkable news from outer space. On January 1 NASA's New Horizons space probe made the most distant planetary flyby ever, and [captured images](#) of a small object 4 billion miles away from earth. The following day, China landed its Chang'e 4 rover, named Jade Rabbit 2, on the far side of the moon – another first.

This suggests that 2019 will be a big year for all things related to space; a suggestion borne out by developments at the International Astronautical

Federation's [International Astronautical Congress](#) which I attended. The event is held each year during the first week of October to commemorate the launch of Sputnik on 4 October 1957, which started the space age.

The 2018 congress was held in Bremen, Germany, and attended by the world's space agencies, private space companies, engineers, and spaceflight fans. In the past decade, a number of interesting trends have emerged at this congress.

These include which countries are emerging as space powers; what topics get people talking; and what concerns experts have about humanity's ongoing attempts to become a "multi-planet species" that can live on other planets.

Here are the [space subjects](#) that are likely to capture the world's attention in the coming years.

Wider reach, new players

First, it's clear from attendance figures at the congress that the space industry and countries' interest in all matters inter-planetary is growing. About 2000 people attended the 2011 congress in Cape Town, South Africa; there were more than 6000 delegates at the 2018 event.

Second, the proportion of delegates and presenters who are women has increased significantly. Women now comprise about one-fifth of all who attend, reflecting their breakthrough into the engineering disciplines.

Third, Chinese researchers are prominent in their numbers compared to a decade ago. These are not only from China's national space agency. They also come from private Chinese space companies that are offering to launch satellites. The Chang'e launch and landing is an indication, too,

that China is now among the leading space powers.

Interestingly, the United Arab Emirates' space agency's 2018 exhibition stand was bigger than that of the USA's NASA. This suggests that oil-rich Middle Eastern states today show space growth and interest.

Hot topics

There were a number of hot topics up for discussion at the congress. These included space tourism – panels on the subject were well attended. Part of the attraction is probably simply that Elon Musk is an expert at grabbing headlines. His [company website](#) includes paintings of a future Martian town. But he's not the only one pushing for humans to travel in space; Jeff Bezos' [Blue Origin](#) is also a major player.

Musk takes things a step further by suggesting that humans will, in the next decades, start living on other planets. He [advocates that](#), at 26 month intervals, 100 000 people should emigrate to Mars and construct pressurised towns on that planet.

His hope is that they will fly to Mars on SpaceX's proposed Big Falcon Rocket. Building a fleet of such rockets will certainly provide plenty of business for his company. It won't be cheap transport: Musk [plans](#) to offer tickets at around US\$200 000 each.

Another perennial topic, [astrobiology](#) – finding life on another planet – was also on the agenda. This idea comes with many potential pitfalls. Contamination is among them.

All space agencies adhere to the international protocols against "[forward contamination](#)". That is, inadvertently spreading earth germs to another planet or moon. This would prevent subsequent explorers from knowing if the presence of earth bacteria was due to contamination, or if earth's

bacteria are naturally spread through the solar system as suggested by a theory called [panspermia](#).

The reverse problem is "backward contamination": inadvertently returning to earth carrying some extra-terrestrial microbes. We would have no natural antibodies or resistance to defend ourselves from even fatal illnesses. The fate of entire Khoikhoi clans who were [wiped out](#) by smallpox infections, to which they had no natural resistance, is merely one historical example warning us, out of many.

Astrobiology discussions threw up another topic that's engaged intellectuals and science fiction writers for over a century: finding intelligent life on another planet or moon.

The International Institute of Space Law and the International Academy for Astronautics have already proposed a [set of protocols](#) to guide our responses after the detection of extra-terrestrial intelligent life but, so far, no state has passed those into law.

Space junk and asteroids

"Planetary protection" was also a big issue. That is, how can we protect the Earth from another hit by an asteroid such as the one which led to the extinction of the dinosaurs? Proposed solutions range from knocking an earth-bound asteroid off-course by a nuclear explosion, to nudging it away by utilising long-term thrust forces.

And there is growing concern over [space debris](#): the thousands of fragments of spacecraft, rockets, and defunct satellites orbiting around us. Due to their high speeds – up to eight kilometres per second – a piece of debris the size of a bullet would have more than the impact of a grenade.

This has led to calls for space traffic management, modelled on current air traffic management. Already the International Space station, and some other satellites, carry the propellants needed to enable them to take evasive manoeuvres whenever needed to avoid head-on collisions with some other orbiting object.

This article is republished from [The Conversation](#) under a Creative Commons license. Read the [original article](#).

Provided by The Conversation

Citation: Space subjects that will get the world's attention in 2019 and beyond (2019, January 14) retrieved 10 April 2024 from <https://phys.org/news/2019-01-space-subjects-world-attention.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--