

News and Announcement

- [SATC]: 2014 SATC Best Paper Award [announced](#).
- [SATC]: [Minutes](#) for the Dec 5 SATC tele-conference is now available.
- [AIAA SPACE]: **31 Aug–2 Sep**: [SPACE 2015](#) at Pasadena Convention Center, Pasadena, California, USA.
- [ICES]: **2 Mar**: draft paper submission deadline for the [45th ICES](#).
- [ICES]: **30 Apr**: final paper submission deadline for the [45th ICES](#).
- [ICES]: **12–16 Jul**: the [45th ICES](#) at [Hilton Bellevue](#), Bellevue, Washington, USA.
- [IAC]: **12–16 Oct**: the [66th IAC](#) at Jerusalem, Israel.

Mailing list highlights:

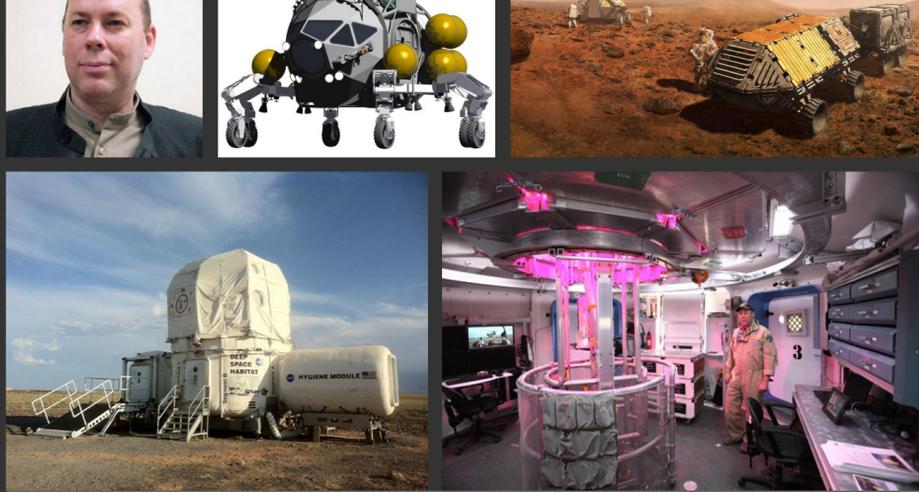
[What is the total cost of the ISS?](#)

Other items of interests:

- [Upcoming space architecture book "International Space Station: Architecture beyond Earth"](#)
- [Declaration from the Pioneering Space National Summit in Washington D.C.](#)

If you would like to discuss or comment on any of the news items You can start a discussion thread [here](#).

The Orbit Interview - A. Scott Howe



Top L-R: A. Scott Howe, "ATHLETE" hopper, "TRIGON" system. Above: NASA Deep Space Habitat project. Photo credit: A. Scott Howe, James W. Young

A. Scott Howe is a licensed architect and robotics engineer at NASA's Jet Propulsion Laboratory. He earned PhDs in industrial and manufacturing systems engineering from Hong Kong University and in architecture from University of Michigan. Dr. Howe spent 13 years of practice in Tokyo, Japan, and taught for 6 years at Hong Kong University. He specializes in robotic construction and currently is on the NASA development team building long-duration human habitats for deep space and permanent outposts for the moon and Mars. Dr. Howe is also a member of the JPL All-Terrain Hex-Limbed Extra-Terrestrial Explorer (ATHLETE) robotic mobility system development team, Asteroid Redirect Mission (ARM) capture mechanism team, and Mars Sample Return (MSR) Orbiter design team. Beside of working on real space projects, Dr. Howe is also a science fiction author, with three novels ([Waterball](#), [Blister](#), and [Chronosphere](#)) published so far.

The interview was conducted by SATC vice chair David Wong.

- The Orbit:** [When did you start to be interested in space and architecture?](#)
- The Orbit:** [Who or what would you consider as your key influence in your pursuit of advanced modular & "kits-of-parts" applications for space architecture?](#)
- The Orbit:** [With the advance in researches such as artificial intelligence and autonomous robotics, these emerging technologies are getting close to shift from theoretical to practical applications, how would they affect the development of space architecture in the future?](#)
- The Orbit:** [In recent years, there seems to be an increase number of people who hold a critical view of how space explorations \(with human spaceflights in particular\) could benefit the general public. What is your view on this topic? Do you think human spaceflights \(and more specifically, development in space architecture\) could add values to the ordinary life of humankind on Earth?](#)
- The Orbit:** [Besides of working on real space projects, you are also an established author of science fictions. How does your passion for writing Sci-Fi stories influence your research works, or does it go the other way round?](#)
- The Orbit:** [What is your realistic vision for space architecture in 20-50 years?](#)

[The full transcript of the interview can be found here.](#)

Poll of the Orbit

2014/4th Poll Results

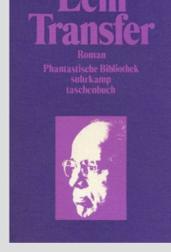
Poll: What is your favourite space architecture related book(s), and why?

Shortlisted below in the order of published date, are the books or series that have received multiple nominations in the poll, along with a brief summary about them.

**Transfer, 1961 by Stanisław Lem.**

One of the earlier science fiction novels by Polish writer [Stanisław Lem](#), who is best known for his 1961 film-adapted novel *Solaris*. *Transfer* is about an astronaut who had returned to Earth after a very long space mission due to time dilation, and came back to a futuristic society in which all people have given up by treatment at the birth of their aggressive instincts.

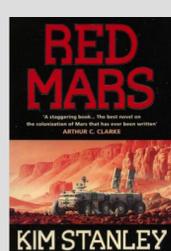
Many innovative ideas of responsive, adjustable, deployable and transformable architectural features described in the novel are still futuristic in relation to our current age, but are now deemed to be achievable in a foreseeable future.



**The Mars Trilogy (Red/Green/Blue Mars), 1993-1999, by Kim Stanley Robinson.**

The Mars trilogy is a series of award-winning science fiction novels by Kim Stanley Robinson that chronicles the settlement and terraforming of the planet Mars through the intensely personal and detailed viewpoints of a wide variety of characters spanning almost two centuries.

Comments received noted of the well depicted evolution of the many architectural elements such as city and building designs, public space, vehicles and space elevator that are set within a scenario of terraforming of Mars, and how their sociological and political consequences played out.



**Human Spaceflight: Mission Analysis and Design, 1999, by Wiley J. Larson & Linda K**

An excellent technical textbook/manual which gives a comprehensive overview to many aspects of human spaceflight mission design.



**Out of This World: The New Field of Space Architecture, 2009, edited by A. Scott Howe and Brent Sherwood**

An unsurprising winner to the title of **"SATC's most favourite space architecture book"**, having received the most nominations in the poll. *Out of this World* is a milestone and the fruitful product of the space architecture development over the previous decade. A must read for anyone who is interested in space architecture.



A full list of book nominations and associated comments could be found [here](#).

If you would like to discuss or comment on this topic, you can start an email discussion thread [here](#).

2015/1st Question:

For many if not all architectural designs, one of the first and foremost considerations is the characteristics of the site. From a narrow garage plot in a highly urban character, to the remote floating in arctic regions in the polar regions, each site provides its specific challenges and unique opportunities. A well conceived architectural design would always respond to the site and be creative on how to utilise its unique setting to the betterment of its performance.

In the context of Space Architecture, there are an even wider variety of sites present in Earth's immediate cosmic surroundings. From the crater rims around the Lunar poles where there are regions of perpetual light and darkness, to the cliff faces of up to eleven kilometres high within the Valley Mariner on Mars, from the jagged landscape featured on asteroids and comets to the surreal coastlines of hydrocarbon lakes and weather system on Titan. The extreme varieties of physical geographical features and environmental settings (such as gravity, temperature, atmospheric pressure, etc.) means that the design of space architecture could differ significantly even on the same planet due to the different characteristics of their respective sites.

**In an hypothetical scenario, where would you be most interested to build on the Solar System, and why?**

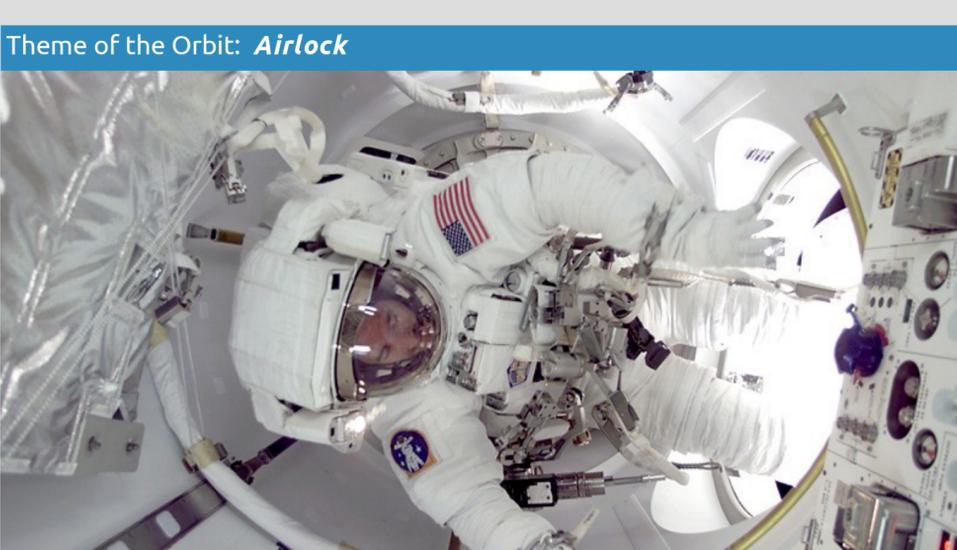
[Please answer the poll question here.](#)

You can also start a discussion thread on this topic [here](#).



First Color View of Titan's Surface from the Cassini-Huygen mission in 2005. Photo credit: ESA/NASA/JPL/University of Arizona

Theme of the Orbit: **Airlock**



Astronaut James F. Reilly preparing for the first spacewalk through the Quest airlock. . Picture: NASA

5 articles can be found within the [spacearchitect.org publication archive](#) by searching under the keyword: **"airlock\*\*"**.

- Campbell, Anthony; Barido, Richard; Knudsen, Jeff; MacKnight, Allen; Lerner, Robert; Heppel, Peter; Dalland, Todd; Jarvis, Christine; Raines, Tom; Trevino, Luis (2002 July). [Advanced Inflatable Airlock System for EVA](#) (SAE 2002-01-2314).
- Cohen, Marc M. (2000 July). [Pressurized Rover Airlocks](#) (SAE 2000-01-2389).
- Cohen, Marc M. (2001). [Airlocks for Pressurized Rovers](#) (NASA TSP-ARC-14557).
- Dalton, Maynard (1974 June). [Skylab Experience Bulletin No. 2: Architectural Evaluation for Airlock](#) (NASA JSC-09536).

Griffin, Brand Norman (2009). [Lunar Surface Airlocks](#). In A. S. Howe, B. Sherwood (Eds.), *Out of This World: The New Field of Space Architecture* (Chapter 17, p. 229-240).