

New IMAX movie offers a unique view of Earth from space

By Scientific American, adapted by Newsela staff on 05.08.16

Word Count **794**



A night time photograph made by an International Space Station crewmember shows a view of Sicily and the "boot" of Italy, with the Mediterranean Sea representing most of the visible water in the view. Photo: REUTERS/NASA

Astronauts — not cinematographers — captured the stunning visuals in the new IMAX movie, "A Beautiful Planet." It features views of Earth shot from the International Space Station (ISS), often with parts of the station visible in the frame. There are sweeping vistas of continents at night — with lights revealing a human presence almost impossible to detect during the day. The vistas contrast with inside scenes of an ISS crammed with equipment, but somehow looks almost homey, as described by the narrating astronauts. Both threads come together in the 45-minute film, which depicts life in space to make a powerful point about taking care of Earth.

"It was originally going to be a look at the Earth," explains the film's cinematographer, James Neihouse. "But one of the things NASA always needs is a reason to be. So we could make the film from that point of view, using the space station as this platform to observe the Earth."

Astronauts Are Responsible For The Filming

Highlighting the ISS also helped to further one of the film's core messages: Just as the craft enables astronauts to live in space in exchange for continual maintenance and care, Earth is humanity's version of a space station. It needs to be treated in the same manner. The ISS is a closed system that needs to be maintained in a very careful way because resources are very limited, says producer-director Toni Myers. "I wanted to convey to the audience that Earth is basically the same — although Earth doesn't get any resupply ships."

Myers is no stranger to space-based movies. This is her seventh full IMAX movie set in space. Her projects span the U.S. space shuttle program and Hubble Space Telescope, along with the ISS and the now-deorbited Russian space station Mir. Going into this one, she had a list of shots she wanted, and three astronauts were responsible for capturing as many of them as possible.

The filming was done by U.S. astronauts Butch Wilmore, member of Expedition 41, who excelled at capturing shots of Earth; Terry Vrits, of Expedition 42, who captured life on the ISS itself; and Kjell Lindgren, of Expedition 44, who came through with some of the trickier shots, such as the aurora borealis and the now-famous space-grown lettuce. Their fellow space travelers include Samantha Cristoforetti, of Italy, Japan's Kimiya Yui and Russian cosmonaut Yelena Serova, who appear in the footage.

Working With Weightless Equipment

On Earth, it can be easy to forget that everything in the Universe is continuously in motion. But it is impossible to forget when one is trying to film the spinning Earth from the hurtling ISS. "If you see it, it's too late," says astronaut Vrits, a longtime amateur photographer who has taken somewhere between 350,000 and 500,000 shots in space. "Obviously, I'm a camera guy, so it's good I was on this mission."

Shooting a film on the ISS involves some of the everyday concerns also presented on the ground, such as properly framing a shot and making sure the microphone is turned on. But filming in weightlessness brings its own slew of challenges. "The zero-g experience is a big difference. You think it's going to be so much easier to move the camera around, but it's also a bad thing," cinematographer Neihouse explains. When cameras are suddenly weightless it can be easy to accidentally capture jerky, difficult-to-watch footage. The astronauts started training for the task at least a year before they began filming.

"A Beautiful Planet" also had to be filmed with digital cameras rather than those used in previous space-based IMAX movies due to ISS cargo weight and size restrictions. This came with an added benefit, however: Footage could be transferred back to the production team on Earth overnight, so astronauts could see the results of their filming with very little wait time.

A New Perspective

All the astronauts on the ISS have full-time day jobs in taking care of the spacecraft, monitoring scientific experiments and attending to their own bodies, so filming became an after-hours task. "We basically filmed the whole movie on our spare time," Vrits says.

The astronauts involved know that watching a film like "A Beautiful Planet" will be the closest most people will come to life in orbit. They all agreed that the power of the medium to bring that viewpoint to Earth is of utmost importance. The astronauts were eager to share their experience, Lindgren says. "It makes you want to be a better steward of our planet, and movies like this are another way to share that experience and help people change their perspectives."

"I think this is my favorite, most important accomplishment," Vrits says, adding, "Unless one of the others solves cancer. In the absence of that, I'll say this is."

Quiz

- 1 Which selection from the article would be MOST important to include in a summary of the article?
- (A) There are sweeping vistas of continents at night — with lights revealing a human presence almost impossible to detect during the day. The vistas contrast with inside scenes of an ISS crammed with equipment, but somehow looks almost homey, as described by the narrating astronauts.
 - (B) It needs to be treated in the same manner. The ISS is a closed system that needs to be maintained in a very careful way because resources are very limited, says producer-director Toni Myers.
 - (C) On Earth, it can be easy to forget that everything in the Universe is continuously in motion. But it is impossible to forget when one is trying to film the spinning Earth from the hurtling ISS.
 - (D) They all agreed that the power of the medium to bring that viewpoint to Earth is of utmost importance. The astronauts were eager to share their experience, Lindgren says.
- 2 Select the sentence from the section "Working With Weightless Equipment" that BEST supports the idea that making a movie in space is more difficult than on Earth.
- (A) On Earth, it can be easy to forget that everything in the Universe is continuously in motion.
 - (B) Shooting a film on the ISS involves some of the everyday concerns also presented on the ground, such as properly framing a shot and making sure the microphone is turned on.
 - (C) When cameras are suddenly weightless it can be easy to accidentally capture jerky, difficult-to-watch footage.
 - (D) Footage could be transferred back to the production team on Earth overnight, so astronauts could see the results of their filming with very little wait time.

3 Which central idea of the article is BEST supported by the following quote?

"It makes you want to be better steward of our planet, and movies like this are another way to share that experience and help people change their perspectives."

- (A) Astronauts overcame many different challenges in order to film Earth from the International Space Station.
- (B) Astronauts hope that the movie will encourage people to appreciate and protect Earth's beauty.
- (C) Since many people will never get to go to space, this movie is the closest they will ever get to seeing Earth from such a great distance.
- (D) The movie will show people what can be accomplished from within the limited resources of the space station.

4 Which section of the article MOST suggests that the astronauts are proud of their work making the movie?

- (A) The introduction [paragraphs 1 and 2]
- (B) "Astronauts Are Responsible For The Filming"
- (C) "Working With Weightless Equipment"
- (D) "A New Perspective"