

### **STEM in the News**

Many satellites are in space to take photos. But a vibrating satellite, like a camera in shaky hands, can't get a sharp image. Pointing it at a precise location to take a photo or perform another task, is another important function that requires accuracy. Vedant, an aerospace engineering doctoral student at the University of Illinois at Urbana-Champaign was working on a way to eliminate vibrations on a satellite when he discovered his invention could also rotate the satellite. Vedant said U of I has obtained a patent on his invention. Since it went public in early February, there has been a surge of interest in it from companies that design, build, and launch satellites. Vedant plans to continue to develop the technology and eventually license it to companies. He received a master's degree in aerospace engineering in 2018.

Source: <https://www.sciencedaily.com/releases/2020/02/200226130529.htm>

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### **STEM Career Spotlight**

Aeronautical engineers are actual rocket scientists. Their jobs are fascinating and critically important. Their focus is to create and design rockets as well as smaller space objects. They are constantly working to make improvements. They work with the theory of flight among many other areas. Their median annual wage is 116,500 dollars.

Education required: Bachelor's Degree.

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*"When something is important enough, you do it even if the odds are not in your favor." - Elon Musk*

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### **STEM in History**

Aerospace engineering is similar to aeronautical engineering; aerospace's critical difference involves the edge of our atmosphere and everything beyond. This form of engineering became possible with the creation of rocket engines. In 1947 a rocket engine powered the very first supersonic jet, the Bell X-1. This successful test opened up a whole new realm of possibilities, including the invention of the Lockheed U-2. This jet, built-in 1957, was the first plane to reach atmospheric altitudes. Along with some aircraft, various spacecraft became possible thanks to the rocket engine. The first crewed spacecraft, the Vostok 1, was launched before even Lockheed.

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### **STEM Across the Curriculum**

The following film allows ELA students to write essays and reflect on aerospace engineering careers. Ben Truman explains his passion for aviation and engineering. He talks through the whole design process, including the parts he designed, stress concentrations, testing for loadmanufacture.

Source: <https://www.stem.org.uk/elibrary/resource/35060>

## STEM Movies

*Apollo 13* (1995) is based on the true story of the ill-fated 13th Apollo mission bound for the moon. Astronauts Lovell, Haise and Swigert were scheduled to fly Apollo 14, but had to be moved up to 13. It's 1970, and The US has already achieved their lunar landing goal, so there's little interest in this "routine" flight, until that is, things go very wrong, and prospects of a safe return fade. NASA must devise a strategy to return Apollo 13 to Earth safely after the spacecraft undergoes massive internal damage putting the lives of the three astronauts on board in jeopardy.

Source: [https://www.imdb.com/title/tt0112384/?ref\\_=fn\\_al\\_tt\\_1](https://www.imdb.com/title/tt0112384/?ref_=fn_al_tt_1)

*"That's one small step for a man, one giant leap for mankind." - Neil Armstrong*

## #STEM@ADM Spotlight

Project Lead The Way (PLTW) Flight and Space is an elective class at Alice Drive Middle School that introduces students to the field of aeronautical science. In aeronautics, students can expand and use their knowledge in engineering to understand the science behind the field. The use of aerospace engineering is challenged upon students when they are made to design, create, and test an airfoil. The history and science of aeronautics are explored throughout the many standards of PLTW Flight and Space.

## Famous STEM Person

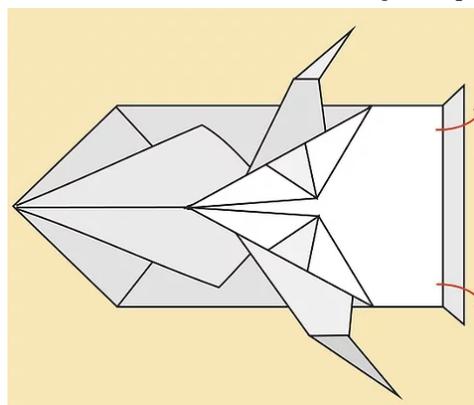
Neil Armstrong is a world-renowned aerospace engineer. He was the first human in history to set foot on the moon, and is known for his famous quote, "One small step for man, one giant leap for mankind."

## STEM Challenge

How to Make an Origami Spaceship

Follow this link for instructions and pictures:

<https://www.wikihow.com/Make-an-Origami-Spaceship>



## STEM Puzzle

Help the rocket get back to Earth.

