This Week at NASA...

Orbital Sciences Corporation’s Antares rocket was rolled out to the Mid-Atlantic Regional Spaceport's Pad-0A at Wallops Flight Facility in preparation for a test flight targeted for later this month.

Antares is designed to propel a Cygnus cargo spacecraft laden with experiments and supplies to the International Space Station.

This test won’t include the spacecraft or a rendezvous with the space station.

That full-up demonstration flight is planned for later this year.

One of the International Space Station’s most prominent scientific experiments has produced its first results.

The Alpha Magnetic Spectrometer is a state-of-the-art cosmic ray particle physics detector located on the exterior of the orbiting laboratory.
MIT’s Sam Ting, AMS principal investigator, spoke from a science conference in Switzerland where the results were announced.

"Are you reporting today that you think you’ve seen the first evidence of dark matter?"

“Our evidence supports that this is a dark matter, but cannot rule out that the origin comes from pulsars but because we will be on the space station for the lifetime of the space station, we should be able to solve this problem.”

Scientists hope that by measuring cosmic rays, AMS will provide new data about the formation of the Universe, antimatter, and evidence of the mysterious dark matter believed to make up most of the Universe.

"Space Station is a really nice platform, well suited for this instrument.

It allows for a long, long duration of observation time, which is important to this instrument.

This is a good indication of some of the results that are going to come from Space."
The Materials on International Space Station Experiment, or MISSE, is a multi-generational study conducted on station. A suitcase-like structure filled with various coin-shaped samples of materials is mounted, like the AMS, outside the station – exposing the materials to space and the Sun's unfiltered ultraviolet radiation. Examination of the returned samples has helped qualify a variety of materials for space flight – including the white protective thermal control coating used on the SpaceX Dragon spacecraft and the coating used to protect the cooling fins of the Curiosity Mars rover's power unit. And, at the Langley Research Center, scientists and engineers are preparing the Stratospheric Aerosol and Gas Experiment, or SAGE-3 Earth observing science instrument for its trip.
to the International Space Station.

Due for delivery to the ISS by SpaceX late next year or early 2015, SAGE-3 will help scientists better understand the Earth's atmosphere by gathering long-term measurements of ozone, aerosols and other gases.

The International Space Station, the world's only laboratory in microgravity, is home to more than 150 scientific experiments and studies.

NASA's Hubble Space Telescope has found the farthest supernova of the Ia type used by scientists to measure cosmic distances.

Supernova UDS10Wil, nicknamed SN Wilson after American President Woodrow Wilson, exploded more than 10 billion years ago.

SN Wilson and its consistent level of brightness will serve as a reference point by which astronomers can measure the expansion of the Universe and better understand the dark energy accelerating that expansion.
This animated series of still images captured by NASA's Mars Reconnaissance Orbiter shows the parachute that helped safely land the Curiosity Mars rover last August changing shape in response to wind on the Martian surface.

Still attached to the Mars Science Laboratory spacecraft's back shell, the parachute is about 165 feet long.

The images were captured by MRO's High Resolution Imaging Science Experiment, or HiRISE camera.

The month of April is all about Earth here at NASA.

The 'Earth Month' section of nasa.gov is full of the latest news, events, and interactive material -- including a Google Plus Hangout on sea level rise, classic images of Earth, and feature stories about NASA's ongoing mission to help understand and sustain our home planet.

NASA's Lunar Atmosphere and Dust Environment Explorer or LADEE spacecraft is undergoing...
final checks and testing in preparation for its scheduled launch late this year.

Built at the Ames Research Center, the spacecraft will be the first to collect extensive amounts of data about the Moon's extremely thin atmosphere.

“We're pretty excited. There's a lot of work that went into this for the team. It's really nice to see the spacecraft operate as you expect it to in the environmental testing, so I can tell the team is all excited about getting it to the range and getting a chance to launch it.”

The data collected by LADEE will help prepare future robotic and human missions to the lunar surface.

Members of the media were invited inside the Johnson Space Center's Chamber A, the world's largest thermal-vacuum chamber, to check out upgrades being made to prepare the 400,000
cubic foot facility for testing of the agency's James Webb Space Telescope.

Scheduled for launch in 2018, JWST, the successor to the Hubble Space Telescope is designed to enable scientists to see farther back into history than ever before.

Forty years ago on April 5, 1973, the Pioneer 11 spacecraft launched from Cape Canaveral to study the asteroid belt, the environment around Jupiter and Saturn and eventually, the far reaches of the solar system and heliosphere.

It was the first probe to encounter and take close-up pictures of Saturn and the second to fly through the asteroid belt and past Jupiter.

During its flyby of the gas giant on December 2nd, 1974, Pioneer 11 obtained dramatic images of the Great Red Spot and made the first observation of the planet's immense polar regions. Its 22-and-a-half year mission officially ended when communication with Pioneer 11 was lost in the fall of 1995.
And that’s This Week @NASA.

For more on these and other stories, or to follow us on YouTube, UStream and other social media, log on to www.nasa.gov.