

Teledyne Surpasses 1,000 Scientific Imaging Sensors in Space with the Launch of NASA's Nancy Grace Roman Space Telescope

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Teledyne detector technologies aboard
NASA's flagship astrophysics mission
will support investigations into dark
energy, exoplanets, and the evolution
of the Universe

Teledyne Space Imaging, a leading supplier of space-qualified imaging sensors, focal plane arrays, and integrated camera systems, part of Teledyne Technologies Incorporated (NYSE: TDY), celebrated a major milestone following the successful launch of NASA's Nancy Grace Roman Space Telescope, which lifted off on August 30 aboard a SpaceX Falcon Heavy rocket from Kennedy Space Center in Florida.

With the launch of Roman, there are now more than 1,000 Teledyne scientific imaging sensors in space, including those aboard the Hubble and James Webb missions. The detector technologies supplied by Teledyne support both of Roman's primary scientific instruments, enabling investigations into dark energy, exoplanets, and a broad range of astrophysical phenomena. This latest achievement reinforces the company's position as a leading supplier of advanced detector technologies for scientific, commercial, and governmental space missions.

In 2018, Teledyne was awarded a \$23 million (USD) contract by NASA to provide 24 flight quality sensor chip assemblies for the Roman mission, later expanded to 28. Each delivered detector surpassed performance specifications for quantum efficiency, low noise and image persistence, while also enabling a 20 percent increase in the instrument's spectral bandwidth.

For the mission's Wide Field Instrument (WFI), Teledyne supplied the H4RG-10 infrared detector arrays that form Roman's distinctive focal plane, the largest infrared focal plane ever flown in space. Each detector contains more than 16 million pixels arranged in a 4096 × 4096 format.



Photo of team members at Teledyne who worked on the CCD311-20 imaging sensor

Together, 18 H4RG-10 detectors create a mosaic of more than 300 million pixels, with a unique shape that inspired the iconic Roman mission logo selected by NASA.

Teledyne also supplied three CCD311-20 detectors for Roman's Coronagraph Instrument, one of the most advanced high-contrast imaging systems ever flown in space. The Coronagraph Instrument combines precision coronagraph masks, deformable mirrors, wavefront sensing and control systems, and electron-multiplying CCD technology to suppress starlight and directly observe much fainter planetary systems. The technology demonstration is expected to help pave the way for future missions capable of directly imaging Earth-like planets around nearby stars.

"Reaching more than 1,000 scientific, space-qualified imaging sensors in orbit is a proud achievement for everyone at Teledyne," said Megan Tremmer, President of Teledyne Space Imaging. "It reflects our long-standing commitment to advancing imaging technology and supporting the world's most ambitious space missions. Roman is another important chapter in that story, and we are excited to see how it expands our understanding of the Universe."

Roman is NASA's latest flagship astrophysics observatory, designed to survey billions of galaxies and observe distant stellar explosions to help scientists investigate dark energy, the mysterious force driving the accelerating expansion of the Universe. The mission will also identify thousands of exoplanets beyond our solar system, including planetary systems that have never previously been studied on such a scale. It combines a field of view around 200 times larger than the Hubble Space Telescope's infrared observations.

Beyond these primary objectives, Roman will support a broad range of astronomical research, from studying star formation in neighboring galaxies and supermassive black holes in the distant Universe, to investigating the environments where stars and planetary systems are born. The observatory will also contribute to our understanding of objects within our own solar system.

Roman builds on more than four decades of Teledyne innovation in detector technology. Today, Teledyne's imaging sensors support many of the world's leading scientific and Earth observation missions, including the Hubble Space Telescope, James Webb Space Telescope, Euclid Space Telescope, ESA's Sentinel missions, and NOAA's and NASA's GOES program.

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Note to Editors

About Teledyne Space Imaging

Teledyne Space Imaging of Teledyne Technologies Incorporated (NYSE: TDY) has a distinguished legacy in developing space-qualified imaging sensors, focal plane arrays, and integrated camera systems for leading space agencies and observatories, including NASA, ESA, JAXA, and KASA. Its heritage spans more than 250 space projects, along with a wide range of commercial space applications. Teledyne Space Imaging designs, tests, and manufactures a range of CCD, CMOS,

and IR detectors with optical filters and package options to meet every performance requirement.

About Teledyne

Teledyne is a leading provider of sophisticated digital imaging products and software, instrumentation, aerospace and defense electronics, and engineered systems. Teledyne's operations are primarily located in the United States, Canada, the United Kingdom, and Western and Northern Europe. For more information, visit Teledyne's website at www.teledyne.com

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