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**FOR IMMEDIATE RELEASE**

**NOVA “ULTIMATE SPACE TELESCOPE” CHRONICLES THE DRAMATIC STORY OF THE JAMES WEBB SPACE TELESCOPE, THE MOST COMPLEX MACHINE**

**EVER LAUNCHED INTO SPACE**

*-- New one-hour special shows how NASA engineers built and launched the most ambitious telescope of all time, and the transformational discoveries this new eye on the universe has the power to uncover --*

**Premieres Wednesday, July 13 at 9pm ET/8C on PBS**

**Also Available for Streaming Online at** [**PBS.org/nova**](https://www.pbs.org/wgbh/nova/video/ultimate-space-telescope/)**,** [**NOVA on YouTube**](https://www.youtube.com/user/NOVAonline)**, and on the** [**PBS Video App**](https://www.pbs.org/pbs-video-app/)

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**Boston, MA; July 1, 2022—**The **PBS science series NOVA**, a production of **GBH** will premiere a one-hour special, **ULTIMATE SPACE TELESCOPE**, **Wednesday, July 13 at 9pm ET/8C on PBS**. The film, which will also be available for streaming online at [**PBS.org/nova**](https://www.pbs.org/wgbh/nova/video/ultimate-space-telescope/), on [**NOVA’s YouTube**](https://www.youtube.com/user/NOVAonline) channel, and on the [**PBS video app**](https://www.pbs.org/pbs-video-app/), tells the dramatic story of NASA’s James Webb Space Telescope (JWST), the largest and most innovative space telescope ever built, designed to peer deeper back in time and space than humans ever have before. The special takes viewers behind the scenes through the eyes of the engineers and scientists who have dedicated years—some even decades—of their lives to getting Webb off the ground. And, the film will feature some of the telescope’s highly anticipated first images—the day after NASA releases them to the world—along with reactions from some of the team.

“Working with NASA to document this mission has been incredibly exhilarating,” said **Producer Terri Randall** of Randall Productions. “Like any great endeavor, there were many setbacks in creating this revolutionary telescope, so it was important that we show how challenging the two decades leading up to the launch and deployment were for the JWST team. I am thrilled to tell their story and to now have the opportunity to be alongside them on July 12, capturing the moment NASA reveals the mission’s first images.”

Launched in December 2021, the seven-ton JWST has traveled to its permanent vantage point a million miles from Earth—3,000 times farther than the Hubble Space Telescope—aiming to capture groundbreaking first images of the farthest galaxies. The daunting mission poses a number of risks, with 344 possible points of failure at the time of launch. Should something go wrong, the telescope will be too far away to fix, so there’s no room for error. The most ambitious telescope ever built needs to work perfectly. If it does, scientists believe this new eye on the universe will look deeper back in time and space than ever before to the birth of galaxies and may even be able to “sniff” the atmospheres of exoplanets as we search for signs of life beyond Earth.

“We’re excited to present another groundbreaking moment in space exploration to NOVA’s audiences—giving them a special look inside the mission that could ultimately transform what we know about the universe,”said **NOVA Co-Executive Producer Julia Cort**. “We’re thrilled to be able to share Webb’s first images and look forward to continuing to follow the telescope’s discoveries in the months ahead.”

Measuring 28-feet tall, JWST pushes the limits of engineering. Its mirror is a massive 21 feet in diameter, almost three times larger than that of its famous predecessor, Hubble. This gold-covered mirror, made up of 18 segments that unfold and adjust to shape after launch, sits on top of a first-of-its-kind sunshield the size of a tennis court. As Webb follows Earth’s orbit, this five-layer sunshield protects the telescope from the light of the sun, the Earth, and the moon, keeping it a frigid minus 394 degrees F. Its state-of-the-art cameras and spectrometers are designed to capture stunning images and spectroscopic data. Despite its mammoth size, it’s fragile.

Why undertake such a risky mission? What secrets could this powerful new telescope reveal? To answer these questions, the film looks back on the early major findings of Hubble. Back in the 1990s, Hubble peered into an empty patch of the night sky. After 10 days, what it detected shocked the world: Out of the darkness appeared thousands upon thousands of galaxies. As astronomers scoured the Hubble deep field, they noticed strange, red amorphous galaxies. These ancient galaxies were detected in infrared light. It was a groundbreaking discovery, but Hubble just scratched the surface. To see further back in time, the next generation space telescope, now known as JWST, would need to peer deeper into the infrared spectrum. The feat of engineering required to do that was spectacularly ambitious, and building such a complex machine proved to be much harder than anyone anticipated—and far more expensive.

Originally scheduled to launch in 2007, JWST was met with a number of delays. By 2011, Congress threatened to cancel the mission, citing cost overruns. In 2017, Hurricane Harvey devastated the city of Houston, severely impairing the scientists’ access to power and electricity just as they were putting the telescope through a crucial set of tests–yet, they were able to persevere. Ultimately, it took more than two decades for the $10 billion telescope to make it to the launch pad.

“We’ve been following this dramatic story for many years, even though the fate of the telescope was often in doubt,” said **NOVA Co-Executive Producer Chris Schmidt**. “**ULTIMATE SPACE TELESCOPE** places you in the middle of the action, as an incredible team of scientists and engineers embark on this high-stakes mission to build the most complex telescope the world has ever seen. We’re excited to tell their inspirational story.”

**ULTIMATE SPACE TELESCOPE** introduces viewers to the engineers responsible for building, launching, and deploying the most ambitious telescope of all time, chronicling the ups and downs of the events leading to its launch. The film gives viewers a behind-the-scenes look at the nerve-wracking, step-by-step process of each critical deployment, leading up to a thrilling success: JWST’s first image: A picture of a single star that turned out to be much more—an image revealing never-before-seen galaxies.

The film willinclude the latest developments from the JWST mission, right up until the moment it airs on PBS. NASA is set to release the first full-color images and spectroscopic data from the telescope on July 12, some of which NOVA will add to the special just hours before its broadcast. It will also feature footage of reactions to JWST’s findings from the scientists and engineers who worked on the mission. A second NOVA film about the JWST, currently in production, is set to premiere on PBS in early 2023. That film will delve even deeper into Webb’s discoveries—following its developments in the upcoming months—and reveal what they could mean for our understanding of the universe.

**ULTIMATE SPACE TELESCOPE** premieres Wednesday, July 13, 2022 at 9pm ET/8C. The film will also be available for streaming online at [PBS.org/nova](https://www.pbs.org/wgbh/nova/video/ultimate-space-telescope/), on [NOVA’s YouTube](https://www.youtube.com/user/NOVAonline) channel, and on the [PBS video app](https://www.pbs.org/pbs-video-app/), and available on iOS, Android, Roku streaming devices, Apple TV, Android TV, Amazon Fire TV, Samsung Smart TV, Chromecast, and VIZIO. PBS station members can view many series, documentaries, and specials via [PBS Passport](https://www.pbs.org/passport/videos/). For more information about PBS Passport, visit the [PBS Passport FAQ](https://help.pbs.org/support/solutions/5000121793) website.

**ULTIMATE SPACE TELESCOPE** is a NOVA Production by Terri Randall Productions for GBH in association with ARTE France. Written, Produced, and Directed by Terri Randall. Co-Produced and Edited by Jedd Ehrmann. Executive Producers for NOVA are Julia Cort and Chris Schmidt. NOVA is a production of GBH. **ULTIMATE SPACE TELESCOPE** is distributed internationally by [PBS International](https://pbsinternational.org/).

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**About NOVA**

NOVA is the most popular primetime science series on American television, demystifying the scientific and technological concepts that shape and define our lives, our planet, and our universe. The PBS series is also one of the most widely distributed science programs around the world, and is a multimedia, multiplatform brand reaching more than 55 million Americans every year on TV and online. NOVA’s important and inspiring stories of human ingenuity, exploration, and the quest for knowledge are regularly recognized with the industry’s most prestigious awards. As part of its mission to make the scientific enterprise accessible to all, NOVA is committed to diversity and inclusiveness in all its work, from the production process to the range of stories we tell and the voices we amplify. In addition, science educators across the country rely on NOVA for resources used in the classroom as well as in museums, libraries, and after-school programs. NOVA is a production of GBH Boston; more information can be found at pbs.org/nova, or by following NOVA on Facebook, Twitter, or Instagram.

**About PBS**

PBS, with nearly 350 member stations, offers all Americans the opportunity to explore new ideas and new worlds through television and digital content. Each month, PBS reaches nearly 100 million people through television and nearly 28 million people online, inviting them to experience the worlds of science, history, nature and public affairs; to hear diverse viewpoints; and to take front row seats to world-class drama and performances. PBS’ broad array of programs has been consistently honored by the industry’s most coveted award competitions. Teachers of children from pre-K through 12th grade turn to PBS for digital content and services that help bring classroom lessons to life. Decades of research confirms that PBS’ premier children’s media service, PBS KIDS, helps children build critical literacy, math and social-emotional skills, enabling them to find success in school and life. Delivered through member stations, PBS KIDS offers high-quality educational content on TV – including a new 24/7 channel, online at pbskids.org, via an array of mobile apps and in communities across America. More information about PBS is available at www.pbs.org, one of the leading dot-org websites on the internet, or by following PBS on Twitter, Facebook or through our apps for mobile and connected devices. Specific program information and updates for press are available at pbs.org/pressroom or by following PBS Pressroom on Twitter.

**About GBH**

GBH is the leading multiplatform creator for public media in America. As the largest producer of content for PBS and partner to NPR and PRX, GBH delivers compelling experiences, stories and information to audiences wherever they are. GBH produces digital and broadcast programming that engages, illuminates and inspires, through drama and science, history, arts, culture and journalism. It is the creator of such signature programs as MASTERPIECE, ANTIQUES ROADSHOW, FRONTLINE, NOVA, AMERICAN EXPERIENCE, *Arthur* and *Molly of Denali,* as well as WORLD Channel and a catalog of streaming series, podcasts and on-demand video. With studios and a newsroom headquartered in Boston, GBH reaches across New England with GBH 89.7, Boston’s Local NPR®; CRB Classical 99.5; and CAI, the Cape and Islands NPR® station. Dedicated to making media accessible to and inclusive of our diverse culture, GBH is a pioneer in delivering media to those who are deaf, hard of hearing, blind and visually impaired. GBH creates curriculum-based digital content for educators nationwide with PBS LearningMedia and has been recognized with hundreds of the nation’s premier broadcast, digital and journalism awards. Find more information at wgbh.org.

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