WEBB
SPACE TELESCOPE

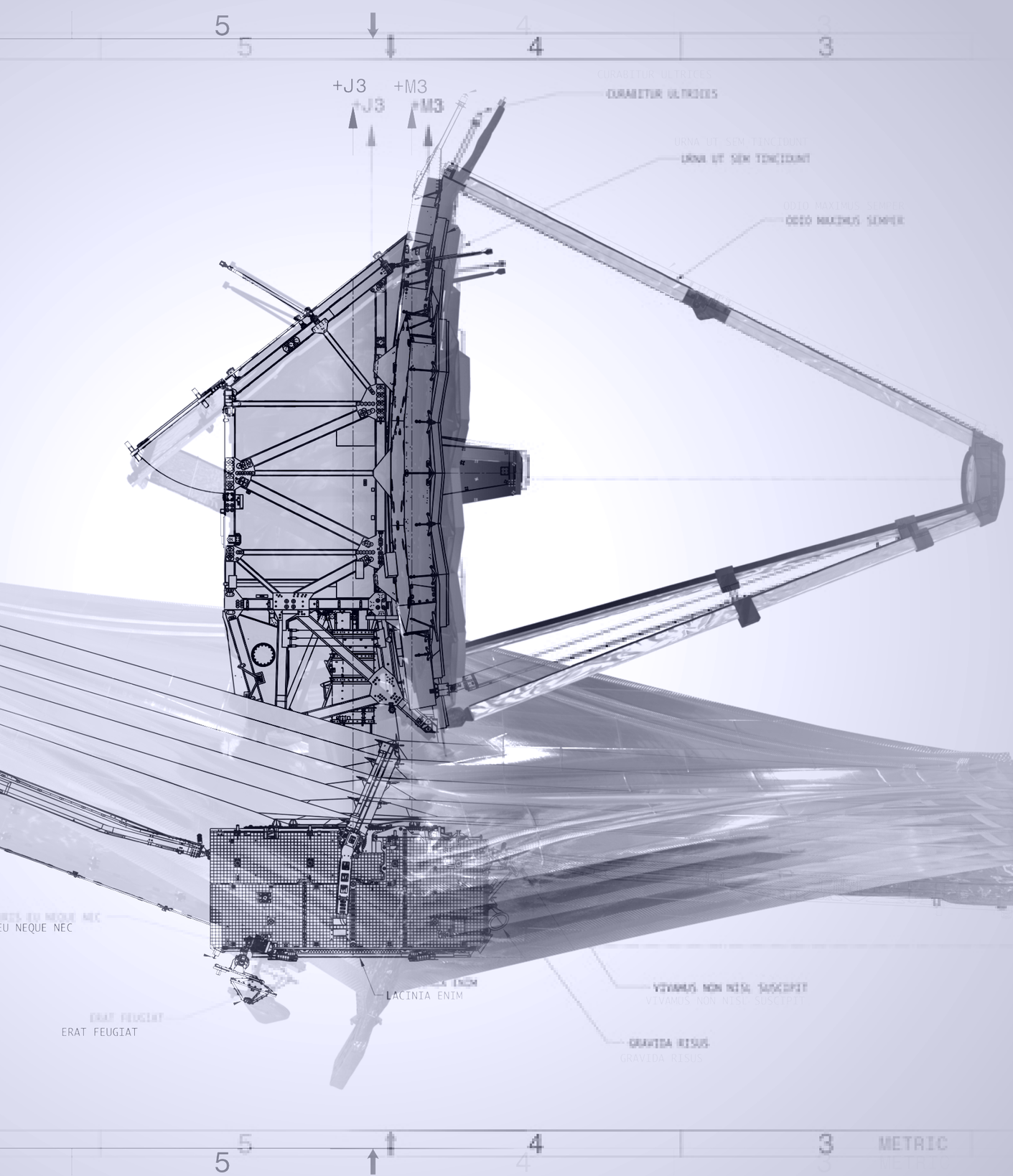
VIRTUAL PACKET

NASA

EXPLORES

NASA's James Webb Space Telescope is the largest and most complex space science observatory ever built to transform our view of the universe and deliver world-class science.

Led by NASA, in partnership with the European and Canadian space agencies, Webb is an international collaboration involving hundreds of scientists and thousands of engineers.



About the

WEBB MISSION

Webb will study every phase of 13.5 billion years of cosmic history – from within our solar system to the most distant observable galaxies in the early universe, and everything in between.

Download this poster for your home mission control.

Join Us

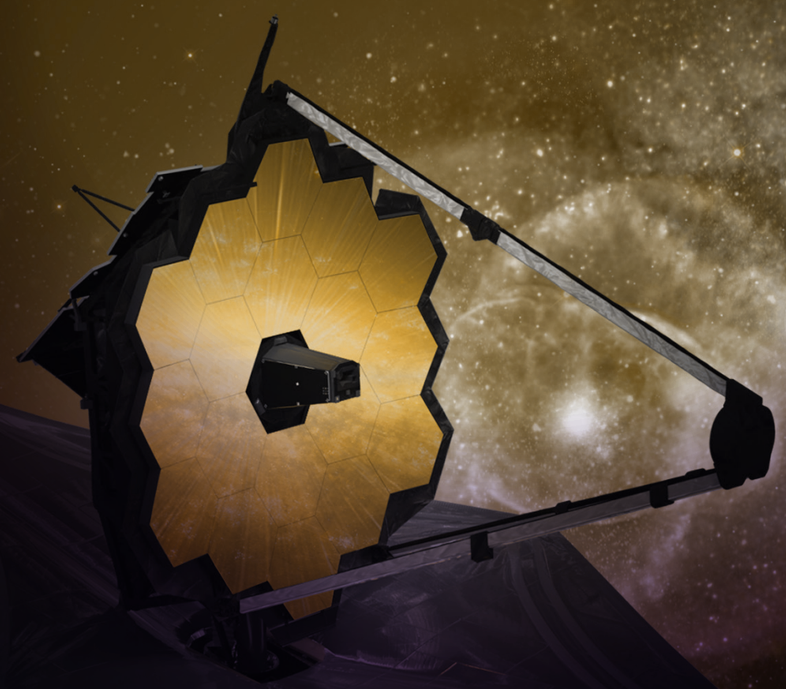
ONLINE!

First images on
12 July 2022
10:30 a.m. ET

NASA Channels:

- NASA TV
- NASA.gov/live
- YouTube.com/NASA
- ustream.tv/NASAWebb
- Community Events
- Virtual Platform

See the Webb Blog



Webb

SCIENCE GOALS

Webb will seek light from the first galaxies in the early universe, and it will explore our own solar system, as well as nearby planets orbiting other stars.

Themes highlighted in the first images and spectra include cutting-edge explorations of the early universe, the evolution of galaxies through time, the lifecycle of stars, and other worlds outside our solar system.

Follow us @NASAWebb

@NASAWebbTelescope

- Webb's unprecedented sensitivity to infrared light will help astronomers understand how galaxies assemble over billions of years.
- Webb will see through dust clouds, where stars and planetary systems are born.
- In addition to learning about our own solar system, Webb will study atmospheres of planets orbiting other stars ,called exoplanets.
- Webb will reveal new and unexpected discoveries to help us understand our cosmic origins, seeking to answer age-old questions: *How did the universe begin? How do galaxies form and evolve? How do we fit in the cosmos?*

Where is Webb Tracker

Mission

QUICK FACTS

FIRST IMAGES
12 July 2022

LAUNCH
December 25, 2021
(7:20 am Eastern Time)

LAUNCH LOCATION
French Guiana

ORBIT
Second Lagrange point, or L2

MISSION DURATION
10+ years

TRAVEL DISTANCE
1 million miles
(1.5 million kilometers)
from Earth

NUMBER OF PRIMARY MIRROR SEGMENTS
18

PRIMARY MIRROR SIZE
Over 21 feet (6.5 meters) in diameter

SUNSHIELD SIZE
About 69.5 feet by 46.5 feet
(21 meters by 14 meters)

WAVELENGTH COVERAGE
0.6 – 28.5 microns

OPERATING TEMPERATURE
-370 degrees Fahrenheit
(below 60 kelvins)

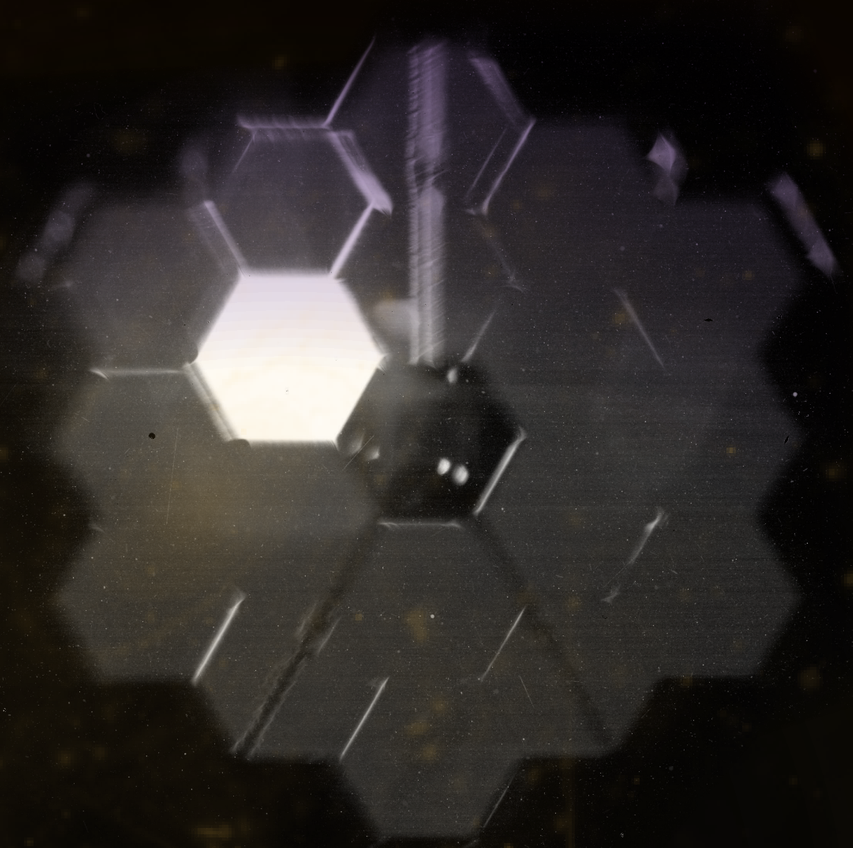
Download Mission Fact Sheet

Webb will orbit the Sun at the second Lagrange point, called L2, which is located one million miles from Earth.

Webb's sunshield is the size of a tennis court. It protects the sensitive equipment by creating a difference in temperature between the hot and cold sides of the spacecraft of almost 600 degrees Fahrenheit!

Science Instruments:

- Near-Infrared Camera (NIRCam)
- Near-Infrared Spectrograph (NIRSpec)
- Near-Infrared Slitless Spectrograph/Fine Guidance Sensor (NIRISS/FGS)
- Mid-Infrared Instrument (MIRI)



WEBB

Unfold the Universe

“Webb can detect the heat of a bumblebee as far away as the Moon.”

– JOHN MATHER
Webb Senior Project Scientist

Public Submitted Art

NASA

INSPIRES

Webb inspires the world through discovery. The telescope will capture the highest-resolution science images of the infrared universe on an unprecedented scale.

NASA, NASAWebb, ESA, CSA, STScI

NASA, NASAWebb, ESA, CSA, STScI

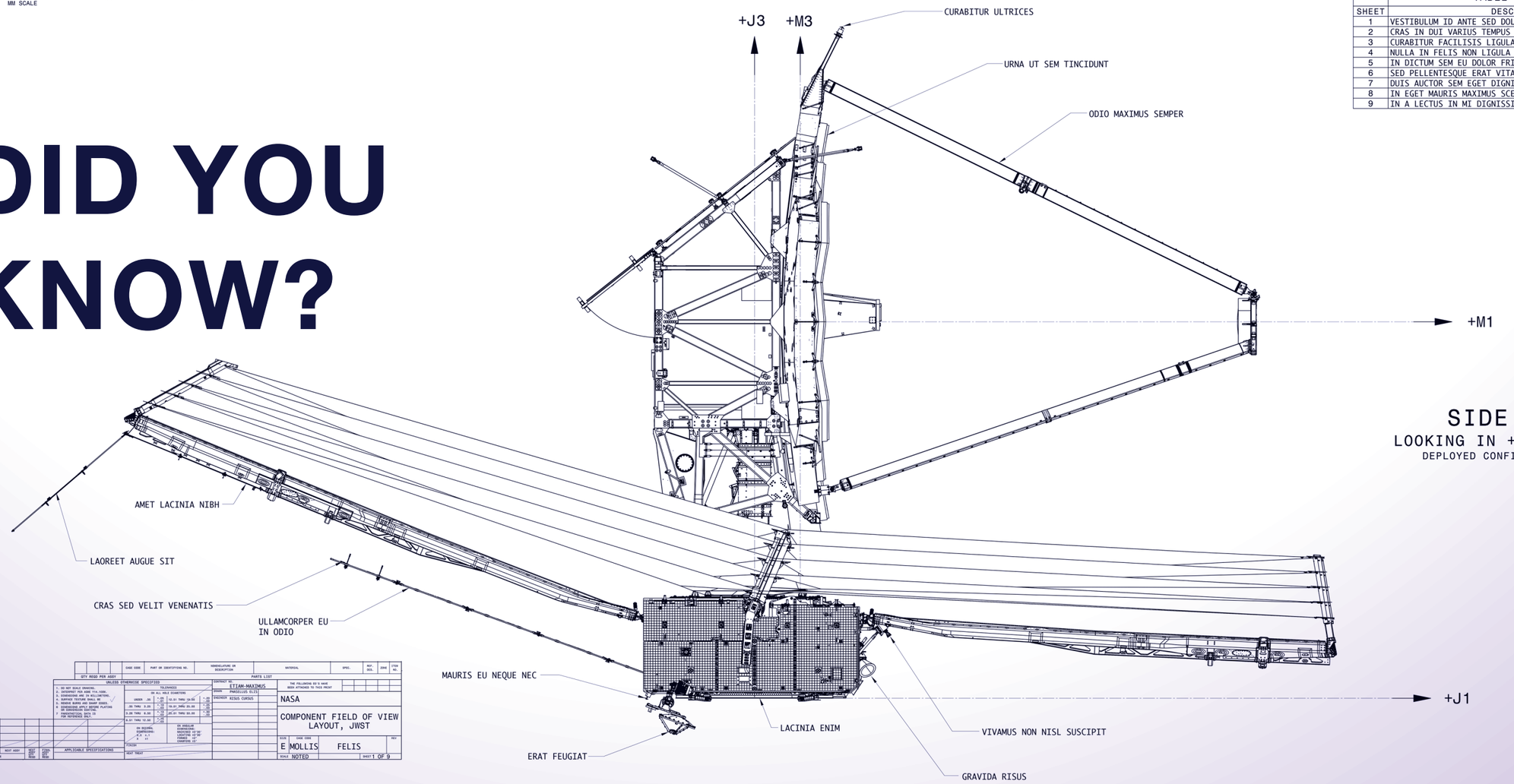
NASA, ESA, CSA, STScI

nasa.gov/webb
webb.nasa.gov
webbtelescope.org

#UnfoldTheUniverse
#NASAWebb
#NASASocial

DID YOU KNOW?

	TABLE OF CONTENTS
SHEET	DESCRIPTION
1	VESTIBULUM ID ANTE SED DOLOR DICTUM IMPERDIET COMMODO
2	CRAS IN DUI VARIUS TEMPUS ERAT IN VESTIBULUM EST
3	CURABITUR FACILISIS LIGULA QUIS PELLENTESQUE
4	NULLA IN FELIS NON LIGULA TEMPOR BLANDIT A EU EX
5	IN DICTUM SEM EU DOLOR FRINGILLA ET EGESTAS LACUS
6	SED PELLENTESQUE ERAT VITAE DOLOR VULPUTATE ULTRICES
7	DUIS AUCTOR SEM EGET DIGNISSIM SODALES
8	IN EGET MAURIS MAXIMUS SCELERISQUE URNA AT TINCIDUNT
9	IN A LECTUS IN MI DIGNISSIM SEMPER EU NON SEM



SIDE VIEW
LOOKING IN +J2 DIRECTION
DEPLOYED CONFIGURATION SHOWN

THIRD ANGLE PROJECTION

TOLERANCES - MILLIMETERS
SURFACE ROUGHNESS ON ALL MACHINE SURFACES 3.2 MICROMETERS (125 MICROINCHES)
ON ALL HOLE DIAMETERS

UNDER 0.35	±0.10	10.01 THRU 18.00	±0.20
0.36 THRU 3.00	±0.08	18.01 THRU 30.00	±0.25
3.01 THRU 6.00	±0.08	30.01 THRU 50.0	±0.30
6.01 THRU 10.00	±0.15	OVER 50.01	±0.40

ON DECIMAL DIMENSIONS
X.XX ± .25
X.X ± 0.5
X ± 1.0

ON ANGULAR DIMENSIONS
MACHINED ±0°30'
FORMED ±2°
CHAMFERS ±2

QTY REQD PER ASSY | CAGE CODE | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | MATERIAL | SPEC. | NOT. DES. | ZONE | ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED

1. DO NOT SCALE DRAWING.
2. INTERPRET PER ASME Y14.100M.
3. DIMENSIONS ARE IN MILLIMETERS.
4. INTERPRET GEOMETRIC TOLERANCING PER ASME Y14.5M.
5. REMOVE BURRS AND SHARP EDGES.
6. DIMENSIONS APPLY BEFORE PLATING AND PAINTING.
7. INFORMATIONAL DATA ONLY. FOR REFERENCE ONLY.

TOLERANCES
ON ALL HOLE DIAMETERS

UNDER .35	+.10 -.00	10.01 THRU 19.00	+.20 -.00
.35 THRU 3.35	+.08 -.00	19.01 THRU 35.00	+.25 -.00
3.36 THRU 6.00	+.10 -.00	35.01 THRU 50.00	+.30 -.00
6.01 THRU 12.00	+.15 -.00		

ON DECIMAL DIMENSIONS
X.XX ± .25
X.X ± 0.5
X ± 1.0

ON ANGULAR DIMENSIONS
MACHINED ±0°30'
FORMED ±2°
CHAMFERS ±2°

FINISH
HEAT TREAT

CONTRACT NO. ETIAM-MAXIMUS
DRAWN PHASELLUS ELIT
ENGINEER RISUS CURSUS

THE FOLLOWING ED'S HAVE BEEN ATTACHED TO THIS PRINT

NASA

COMPONENT FIELD OF VIEW LAYOUT, JWST

SIZE E | CAGE CODE MOLLIS | FELIS | REV

SCALE NOTED | SHEET 1 OF 9

JWST

USED ON	CS NO.	NEXT ASSY	NEXT ASSY REQD	ITEM NEXT REQD
APPLICATION				

APPLICABLE SPECIFICATIONS

The Webb telescope is able to view stars, galaxies, and planets in the infrared light spectrum. Its cameras and spectrographs are built to operate at extremely cold temperatures to conduct infrared science.

Mission FAQs

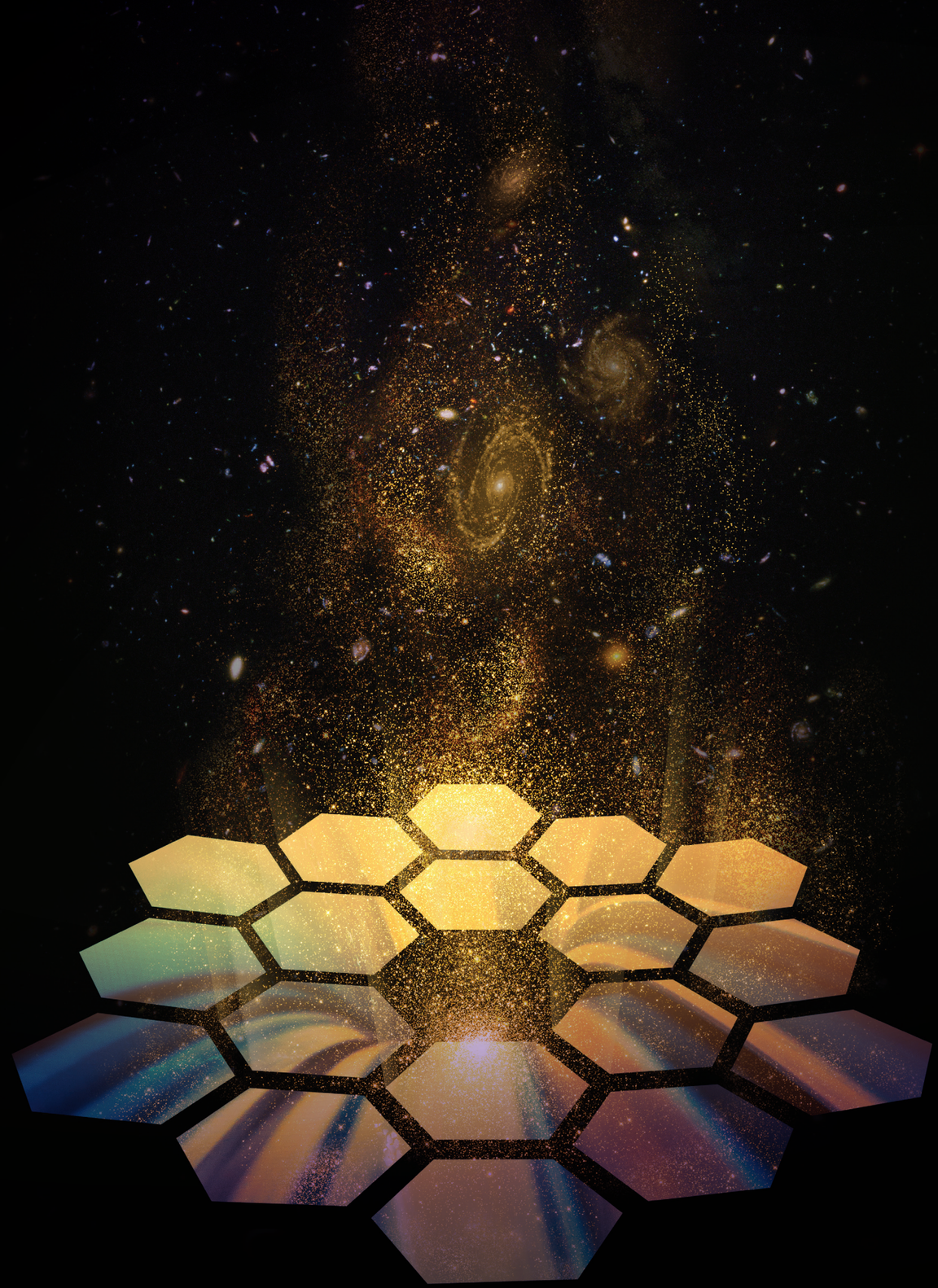
NASA

INNOVATES

NASA innovates for the benefit of humanity: Webb is one of the great engineering feats of humanity.

Engineers invented 10 new technologies to detect infrared light of distant astronomical objects that benefit us here on Earth – with applications in medicine, aerospace, and other fields.

Innovative spinoff technology has produced advances in eye surgery and better diagnoses of eye diseases.



Additional Resources

- First Images
- Media Kit
- Webb Photos
- Webb Videos
- Podcast
- STEM Toolkit
- Teachable Moment
- Lesson Guides
- Project Pages
- NASA STEM YouTube