National Aeronautics and Space Administration
Goddard Space Flight Center
Flight Projects Directorate

NASA's Modern Figures: Lessons From My Journey

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125 years of Engineering
Bucknell University
March 19, 2019

Best Place to Work in the Federal Government 2018

NASA Centers and Facilities

Centers and Facilities	
★ Ames Research Center	★ Marshall Space Flight Center
★ Armstrong Flight Research Center	★ Michoud Assemble Facility
★ Glenn Research Center	★ NASA Engineering and Safety Center
★ Goddard Space Flight Center	★ NASA Headquarters
★ Goddard Institute for Space Studies	★ NASA Safety Center
★ Independent Verification and Validation Facility	★ NASA Shared Services Center
★ Jet Propulsion Laboratory	★ Plum Brook Station
★ Johnson Space Center	★ Stennis Space Center
★ Kennedy Space Center	★ Wallops Flight Facility
★ Langley Research Center	★ White Sands Test Facility

Goddard Space Flight Center

ONE World-Class Science and Engineering Organization

SIX Distinctive Facilities & Installations

Greenbelt Main Campus *1,270 Acres*	Wallops Flight Facility *6,188 Acres*	Goddard Institute for Space Studies	Independent Validation & Verification Facility	White Sands Test Facility Ground Stations	Columbia Balloon Facility
Executing NASA's most complex science missions Est. 1959	Launching Payloads for NASA & the Nation Est. 1945	Understanding our Planet Est. 1961	Providing Software Assurance Est. 1993	Communicating with Assets in Earth's Orbit Est. 1963	Directing High Altitude Investigations Est. 1982
					
MARYLAND	VIRGINIA	NEW YORK	WEST VIRGINIA	NEW MEXICO	TEXAS

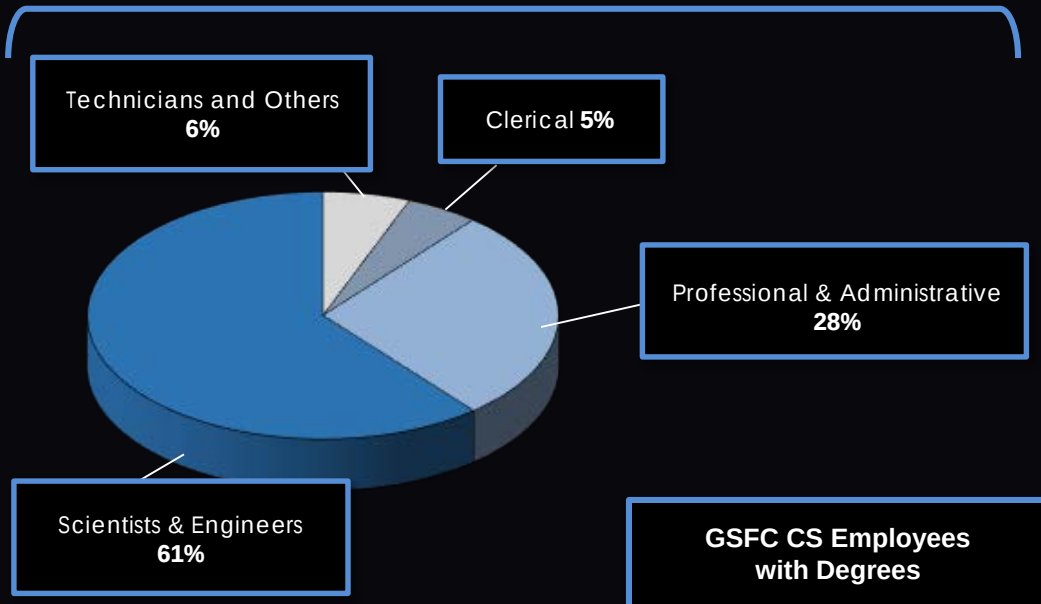
Goddard Space Flight Center

Who We Are

A diverse community of scientists, engineers, technologists, and administrative personnel dedicated to the exploration of space

**Including off-site contractors, interns, and Emeritus*

THE GODDARD COMMUNITY



Number of Employees
~3,000 Civil Service
~6,000 Contractor
~1,000 Other*
Total - ~10,000

GSFC CS Employees with Degrees

Bachelors – 37%
Advanced Degrees – 48%
Associate/Technical – 2%
High School – 13%

The Nation's largest community of scientists, engineers, and technologists

Key Science Themes

What We Strive to Do

Lead in Science and Technology

Goddard's end-to-end capabilities, world-class scientific expertise, top-tier engineering talent, and facilities enable it to develop & manage NASA's most complex science missions

Enable Exploration

Goddard's science missions, launch facilities, and space communications/navigation capabilities help us understand the universe and explore deeper within it

Improve Lives & Protect the Nation

Goddard enables improvements in our understanding and forecasting of extreme weather, the spread of water-borne diseases, crop yields, etc. to inform national security objectives

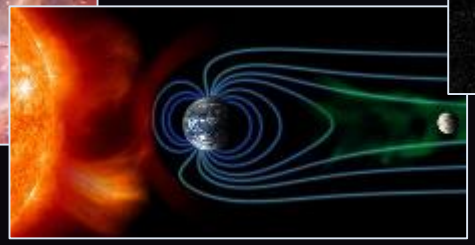
Invest in America

Goddard is committed to strengthening the US economy by seeding new technologies, creating business opportunities, and inspiring young innovators and engineers

Goddard's Lines of Business

Astrophysics

Heliophysics



Earth Science

Planetary & Lunar Science

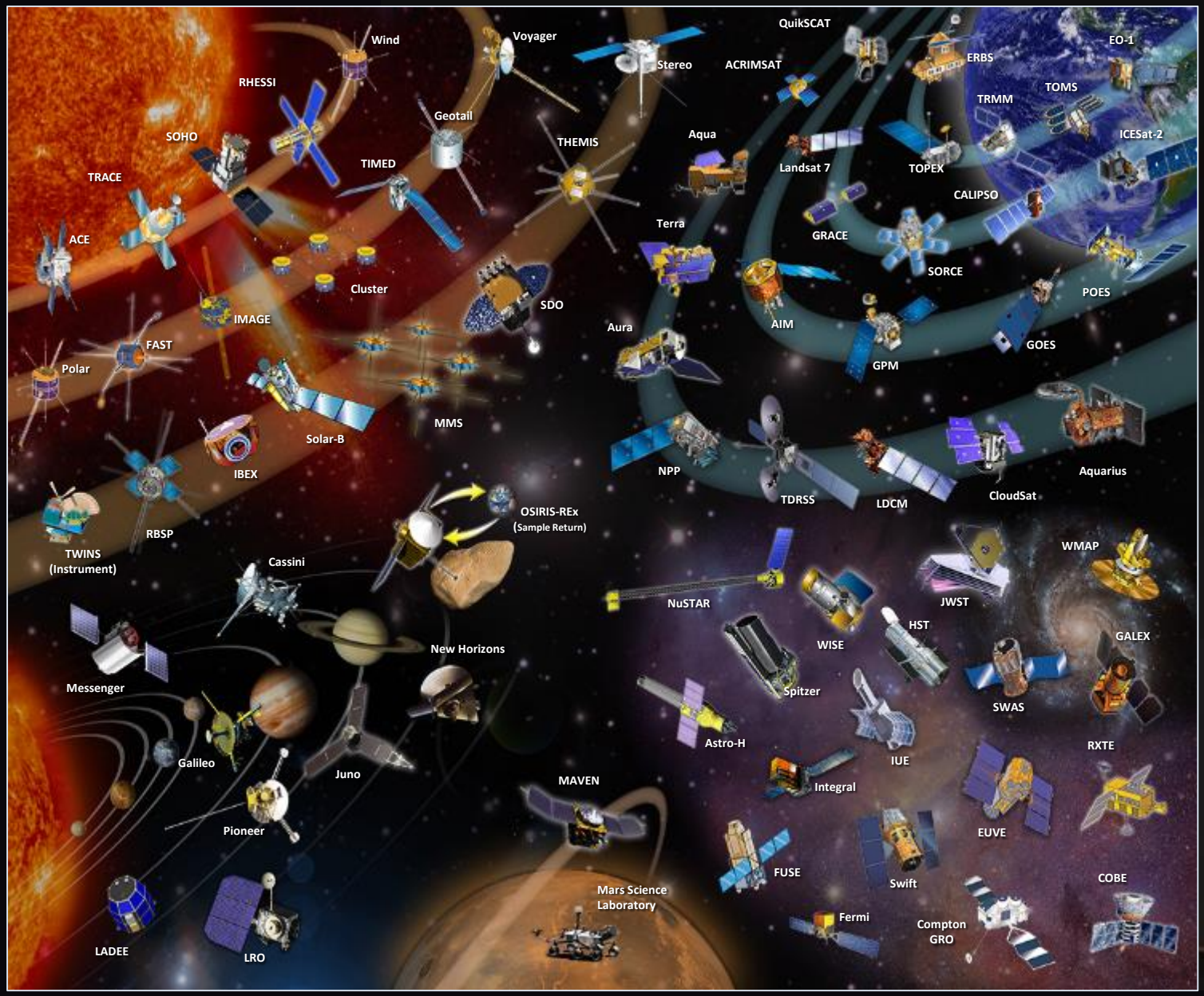
Human Exploration & Operations

Suborbital Platforms

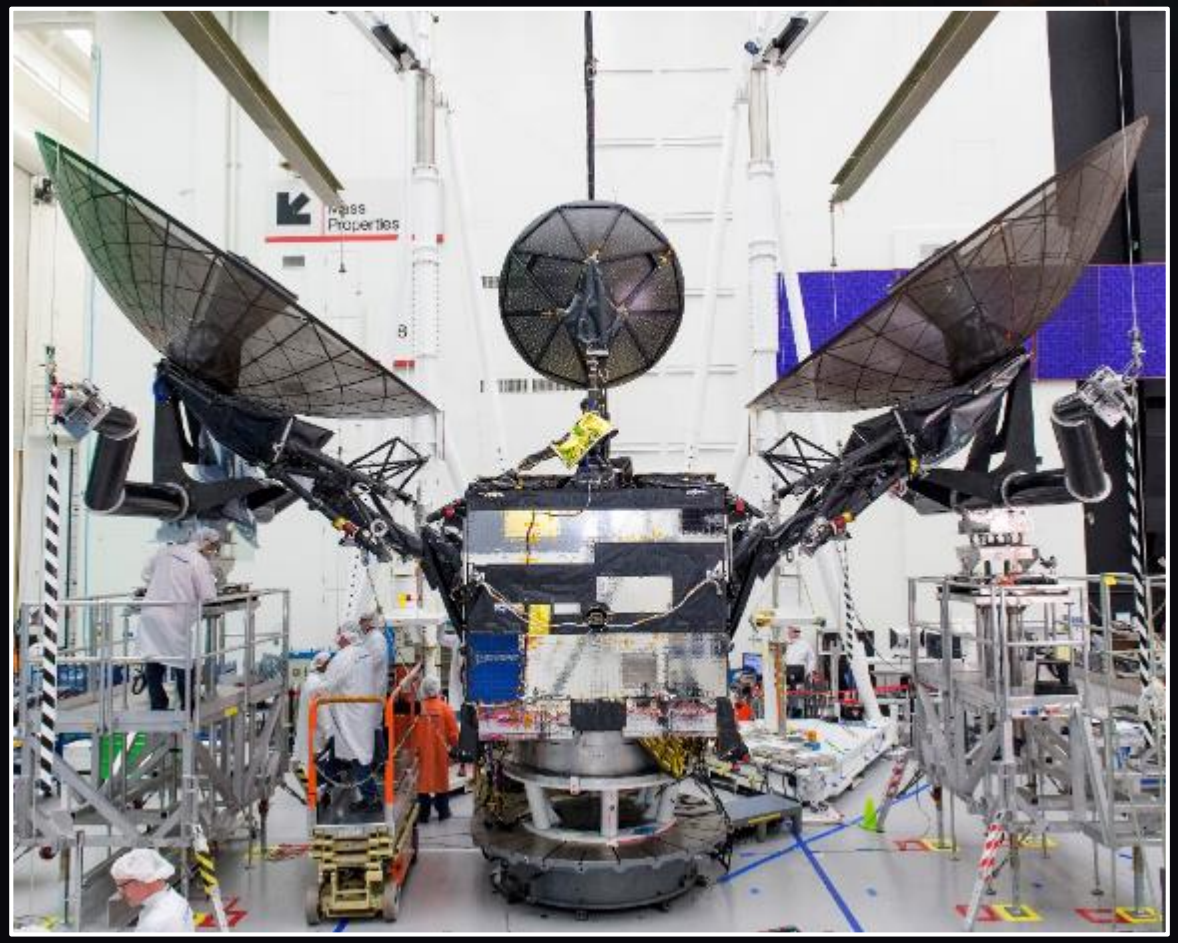
Cross Cutting Technology And Capabilities

Communications & Navigation

GSFC: A Diverse Mission Portfolio



Recent Launches: Communications



Tracking and Data Relay Satellite (TDRS) M is third satellite in a series that will ensure the Space Network's continuation of around-the-clock, high throughput communications services to NASA's missions.

Launched **August 18, 2017**

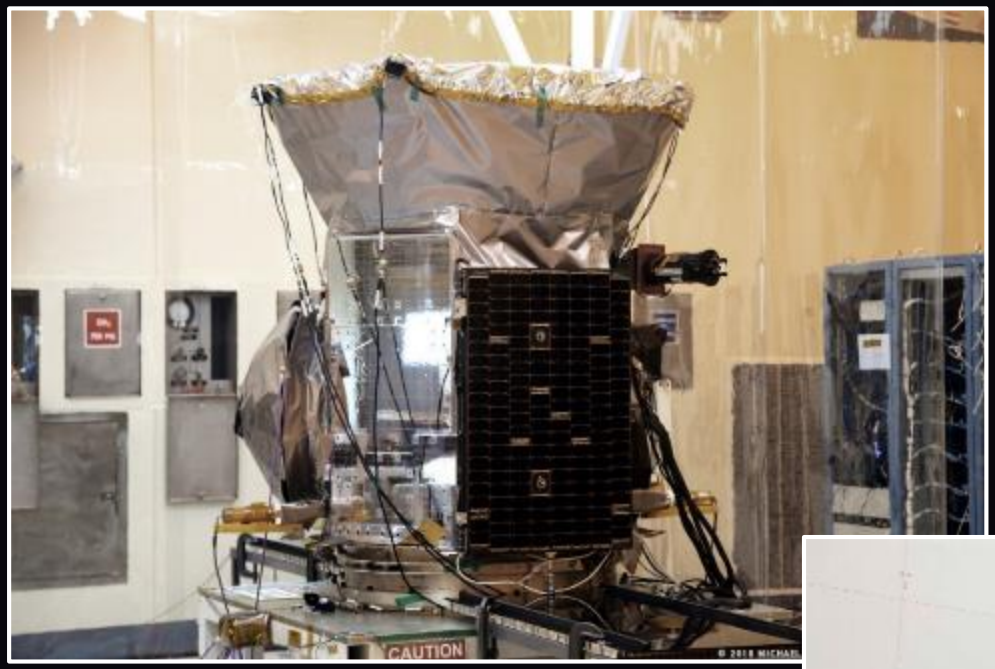
Recent Launches: Weather Satellites

Joint Polar Satellite System 1 (JPSS 1) spacecraft will sustain continuity of and enhance NOAA's Earth observation analysis and forecasting capabilities from global polar-orbiting observations.
Launched **November 18, 2017**

Geostationary Operational Environmental Satellite R (GOES-S) is a collaborative program between NOAA & NASA to develop the next generation GOES environmental satellites.
Launched **March 1, 2018**

Meteorological Operational Satellite-C (MetOp-C) is the next (and last) in a series of three weather satellites from the ESA and EUMETSAT. Under Interagency agreements with NOAA, NASA (GSFC) is providing four POES heritage instruments AMSU-1, AMSU-2, AVHRR/3, and SEM.
Launched: **November 7, 2018**

Recent Launches: Astrophysics & Heliophysics



Transiting Exoplanet Survey Satellite (TESS) will discover Transiting Exoplanets around the brightest stars and search for Earth like planets.
Launched **April 18, 2018**

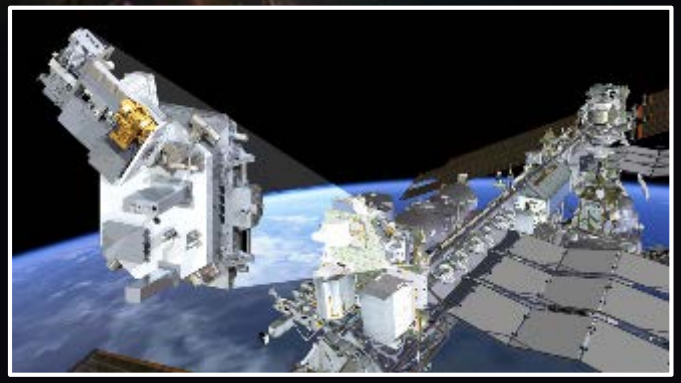
Parker Solar Probe (PSP) will determine the structure and dynamics of the Sun's coronal magnetic field, understand how the solar corona and wind are heated and accelerated, and determine what mechanisms accelerate and transport energetic particles.
Launched **August 12, 2018**

Recent Launches: Earth Sciences

Ice, Cloud, and Land Elevation Satellite (ICESat-2)

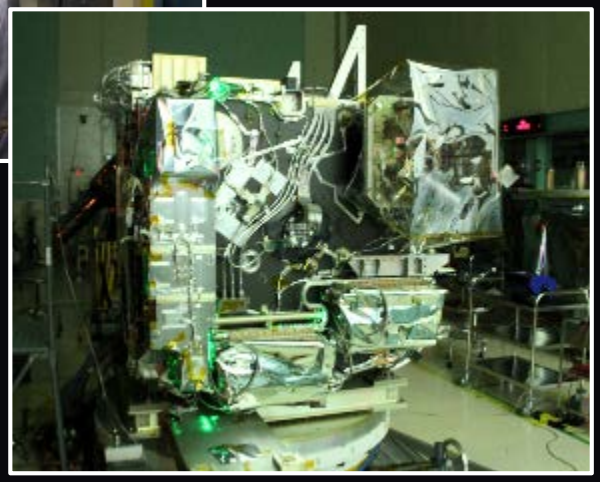
ICESat-2 is designed to collect altimetric measurements of the Earth's surface, optimized to measure the heights and freeboard of polar ice and global vegetation canopy.

Launched **September 15, 2018**



Total and Spectral Solar Irradiance Sensor (TSIS-1) mission will provide absolute measurements of the total solar irradiance (TSI) and spectral solar irradiance (SSI), important for accurate scientific models of climate change and solar variability.

Launched **December 15, 2017**



Advanced Topographic Laser Altimeter System (ATLAS) Instrument on ICESat-2

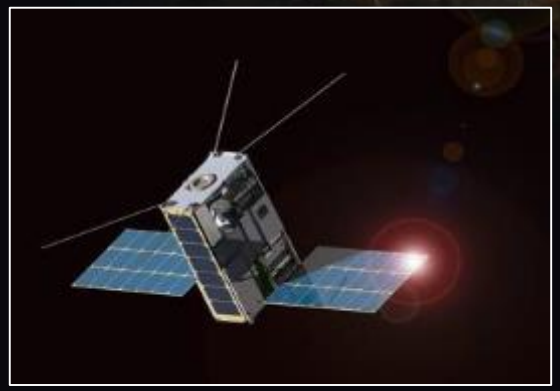
Recent Launches to Space Station

Global Ecosystem Dynamics Investigation Lidar (GEDI) will characterize the effects of changing climate and land use on ecosystem structure and dynamics to enable radically improved quantification and understanding of the Earth's carbon cycle and biodiversity.
Launched **December 5, 2018**

Robotic Refueling Mission (RRM) Phase 3 is a multi-phased International Space Station technology demonstration that is testing tools, technologies and techniques to refuel and repair satellites in orbit - especially satellites not designed to be serviced. Phase 3 demonstrates final tasks required to replenish cryogens in existing satellites not designed for servicing.
Launched **December 5, 2018**

Other Capabilities

Sounding Rocket Program



CubeSats and SmallSats

Antares Launch Vehicle

Aircraft

Balloon Program

Space and Near Earth Communications Networks

Laser Communications Relay Demonstration

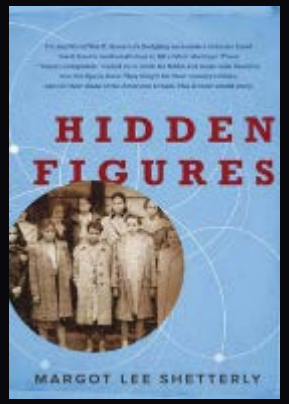
NASA's Hidden Figures

Dorothy Vaughan

Katherine Johnson

Mary Jackson

Dr. Christine Darden



Lessons From My Journey…

Be a voice for the voiceless and a door for those who need one

- Wanda Peters

Some of My Favorite Quotes...

If you can imagine it, you can achieve it, if you can dream it, you can become it

- William Arthur Ward

You will face many defeats in life, but never let yourself be defeated

- Maya Angelou

There is nothing permanent except change

- Heraclitus

Life is not a dress rehearsal

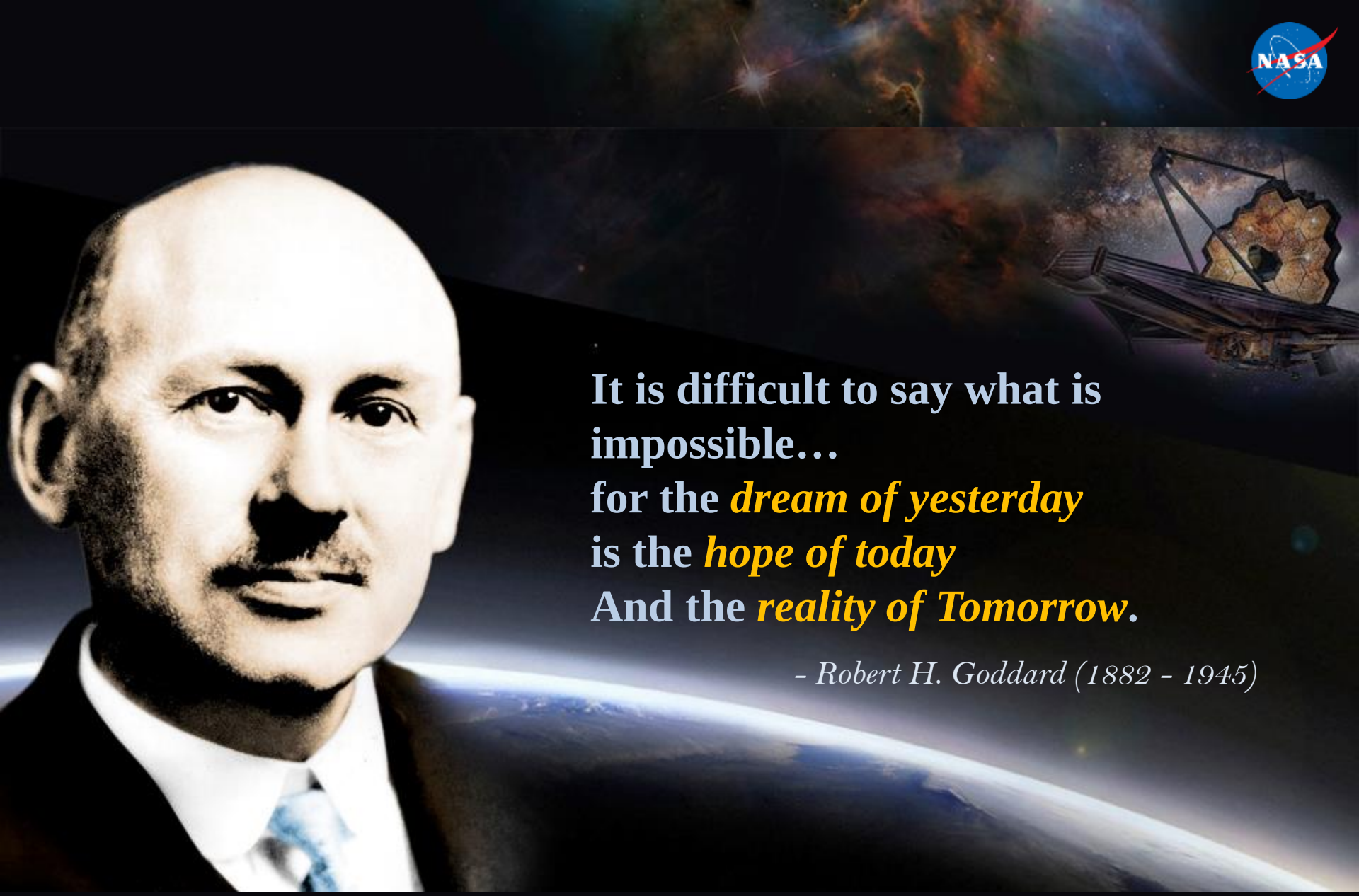
- Rose Tremain

Success is not final, failure is not fatal: it is the courage to continue that counts

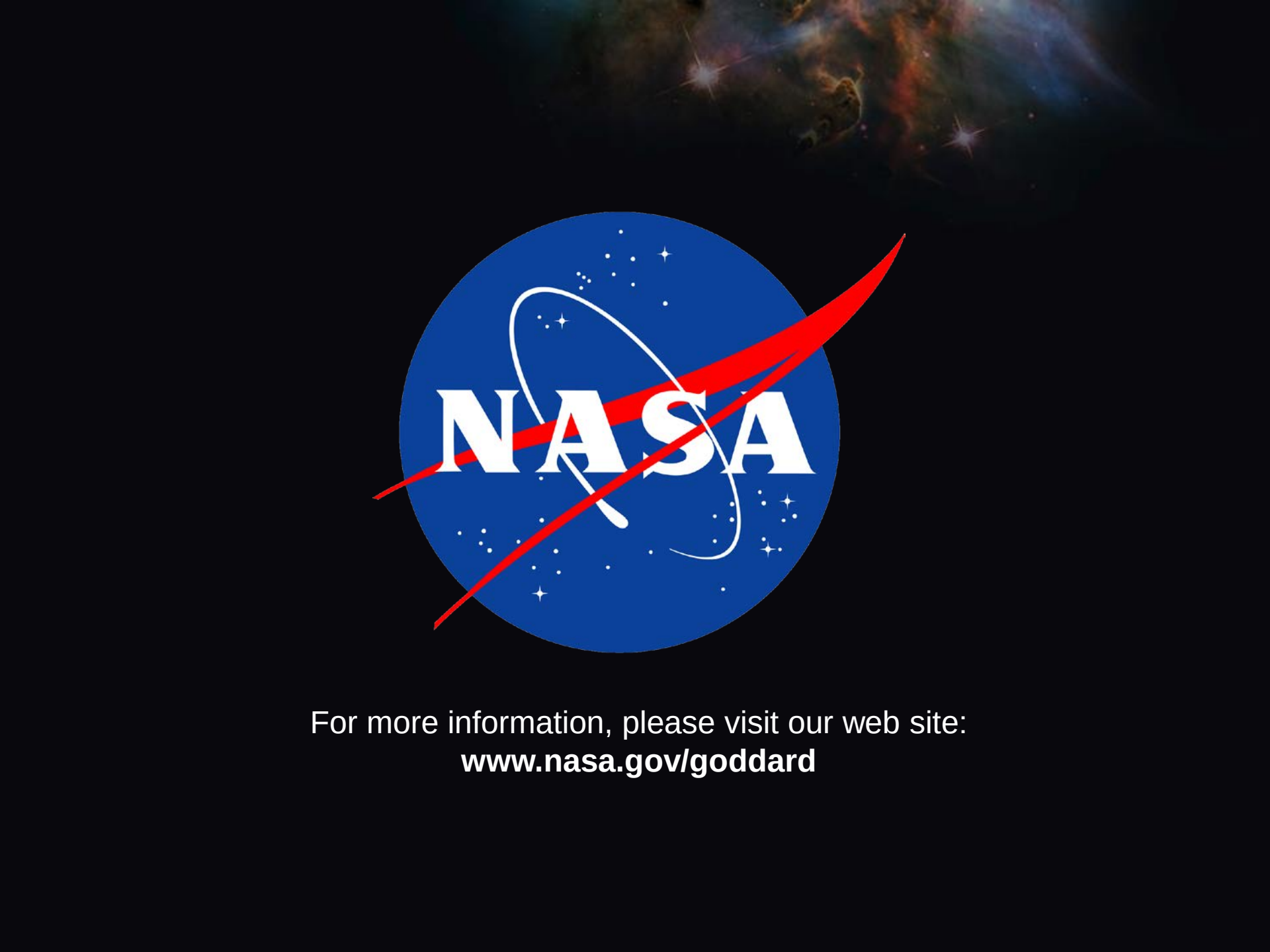
- Winston Churchill

Every great dream begins with a dreamer. Always remember, you have within you the strength, the patience, and the passion to reach for the stars to change the world

- Harriet Tubman


It is difficult to say what is
impossible…
for the dream of yesterday
is the hope of today
And the reality of Tomorrow.
- Robert H. Goddard (1882 - 1945)

Thank You!



For more information, please visit our web site:
www.nasa.gov/goddard