How I Got To NASA: My Journey in STEM

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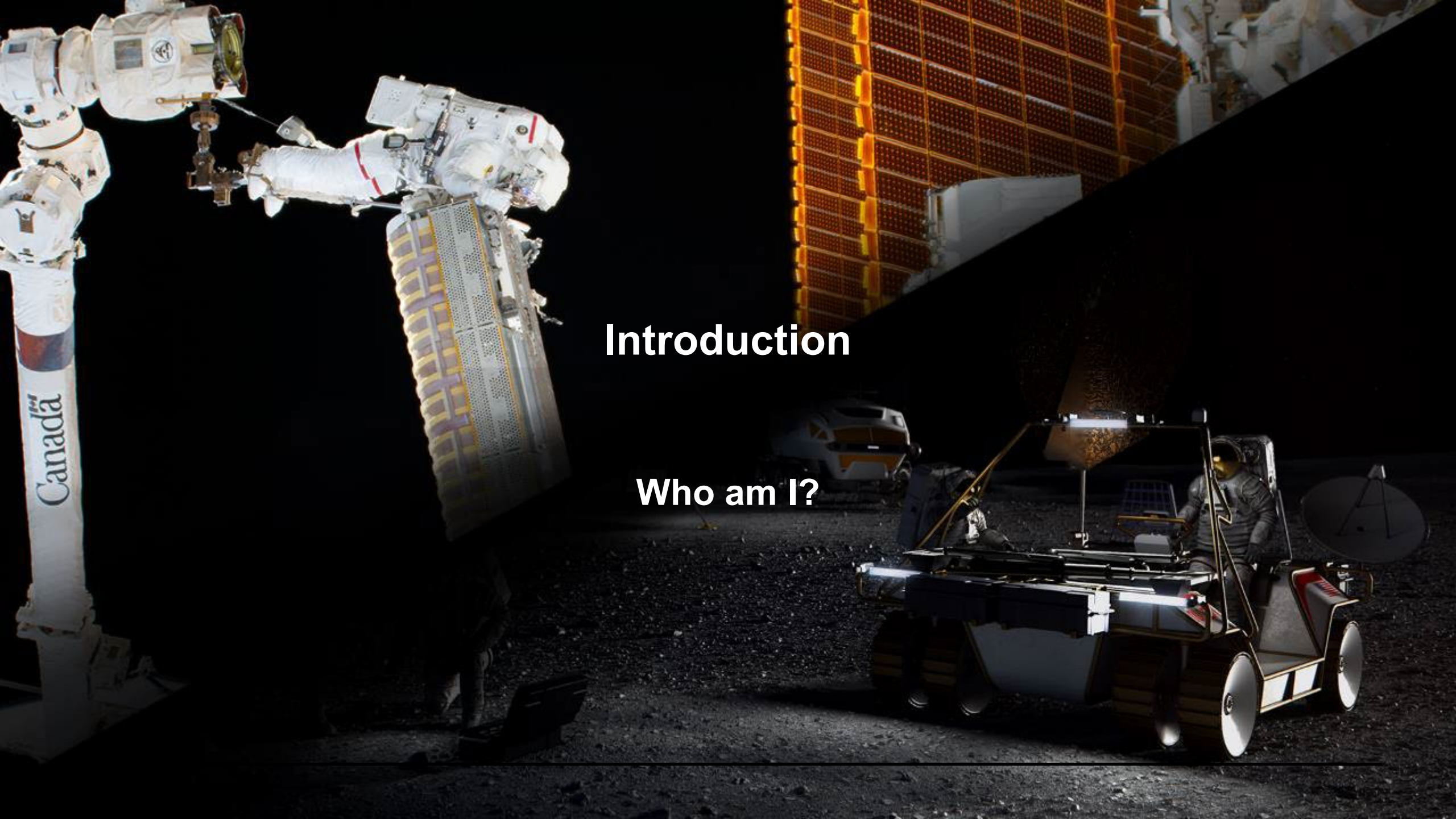

Introduction

Who am I?

Introduction

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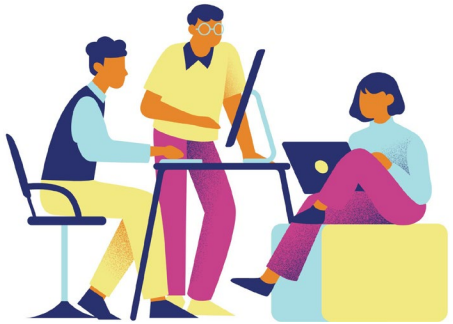
Introduction



High School → College → Internship → Career

While my path my look like a straight line on paper, in reality, it wasn't.

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My Journey

From High School to NASA

Early Technical Interests & Internships

- **FIRST Robotics and other STEM clubs led to engineering and a full-ride to college**
  - B.S. Electrical Engineering and B.S. Astronautical Engineering from Capitol College
- **Got my First Internship in 2011**
  - End of Freshman Year working ground systems for the Tropical Rainfall Measurement Mission
  - Continued working “Co-Op” for the next 3 years, ending with the Landsat 8 Launch Campaign in 2013
- **Hired before Graduating in 2013**
  - First job doing at the NOAA Satellite Operations Facility (NSOF)

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First Full Time Job at NOAA

- **Satellite Operations Engineer**
  - Managing and controlling satellites in orbit
- **What I Learned**
  - Real-time problem-solving, mission-critical operations
- **Continued Education**
  - M.M. in Piano Performance from Towson University
  - M.S. in Space Systems Engineering
  - M.B.A

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First Full Time Job at NOAA

1960s

2017

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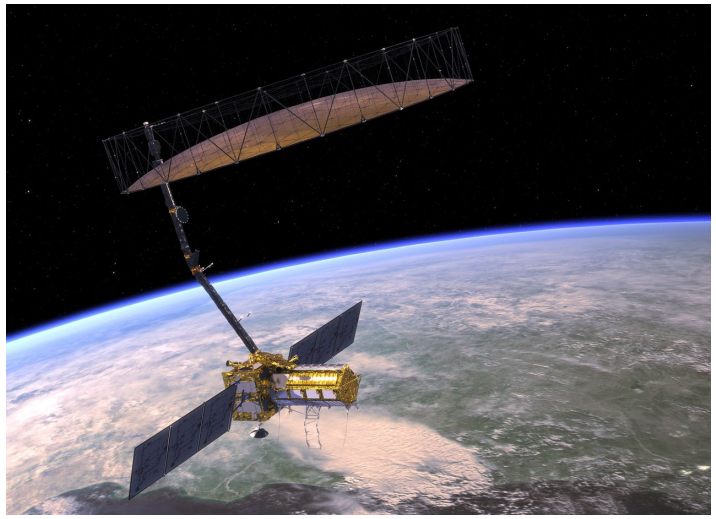
Since 2019…

- **Since 2019…**
  - Worked for “Three NASAs”
    - Goddard Space Flight Center in MD (2019-2022)
    - Jet Propulsion Lab in CA (2022-2024)
    - Johnson Space Center in TX (2024-present)
  - Executive Director of a Theatre Company
    - Led a volunteer team in the arts – because leadership happens outside work too!

Joint Polar Satellite System



NASA/ISRO Synthetic Aperture Radar

EVA Development for Artemis 3

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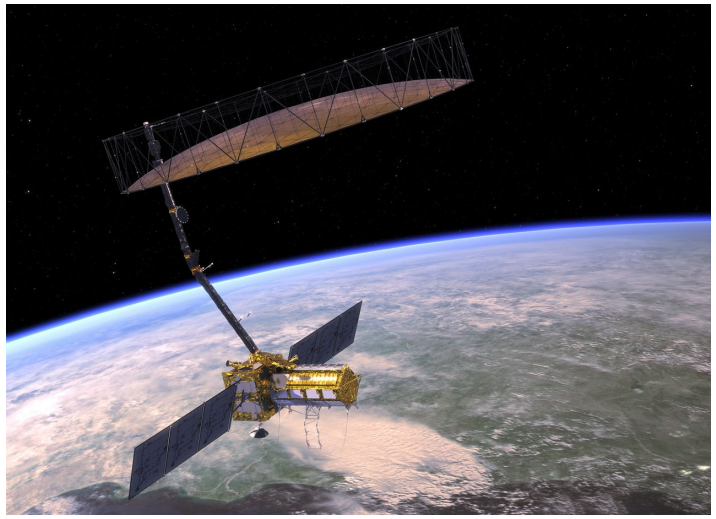
Since 2019…

- **Takeaways:**
  - Every mission required new technical skills
  - Learning different disciplines broadened opportunities
  - Finding mentors + taking stretch roles led to big jumps.

Joint Polar Satellite System



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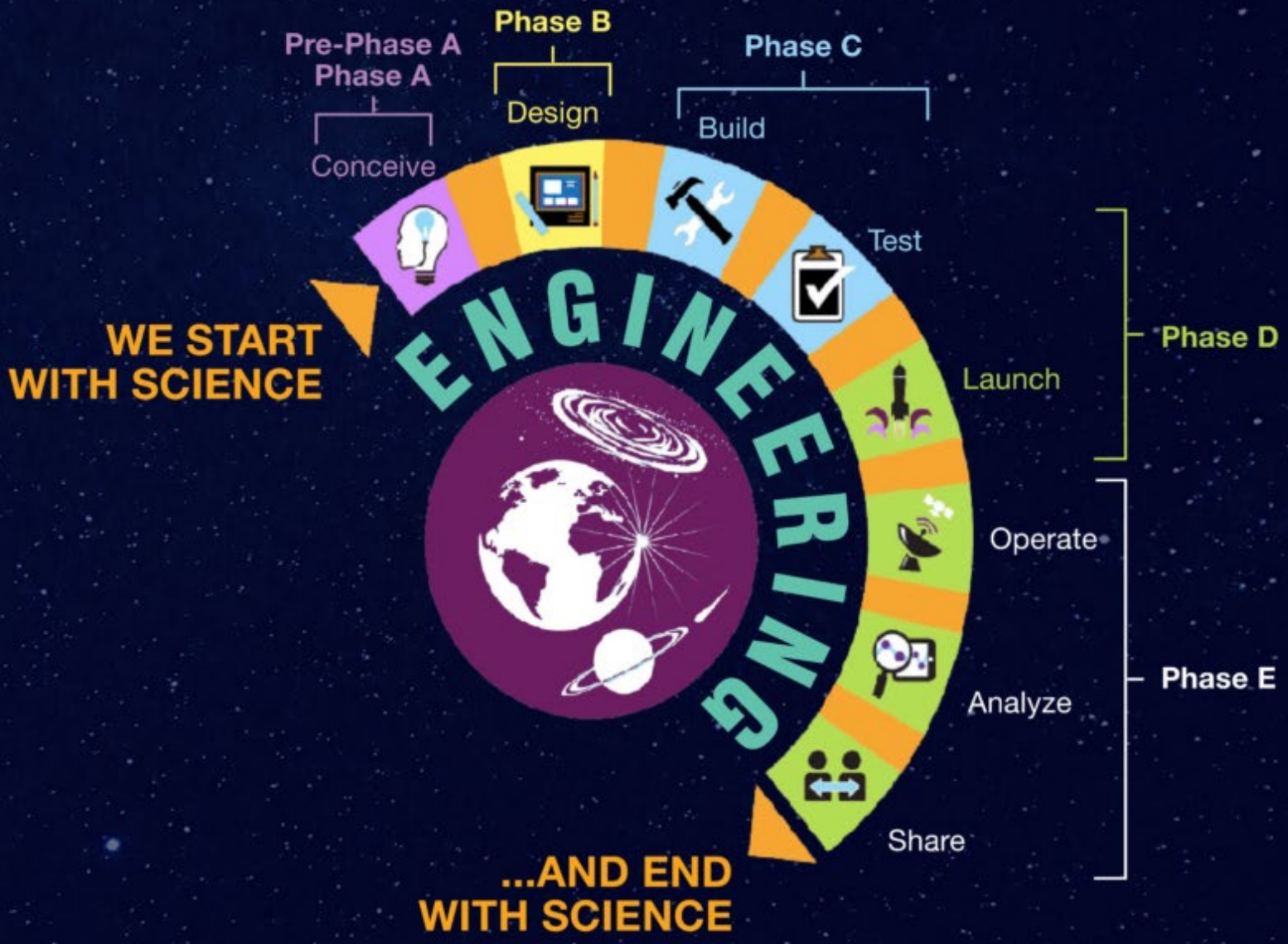
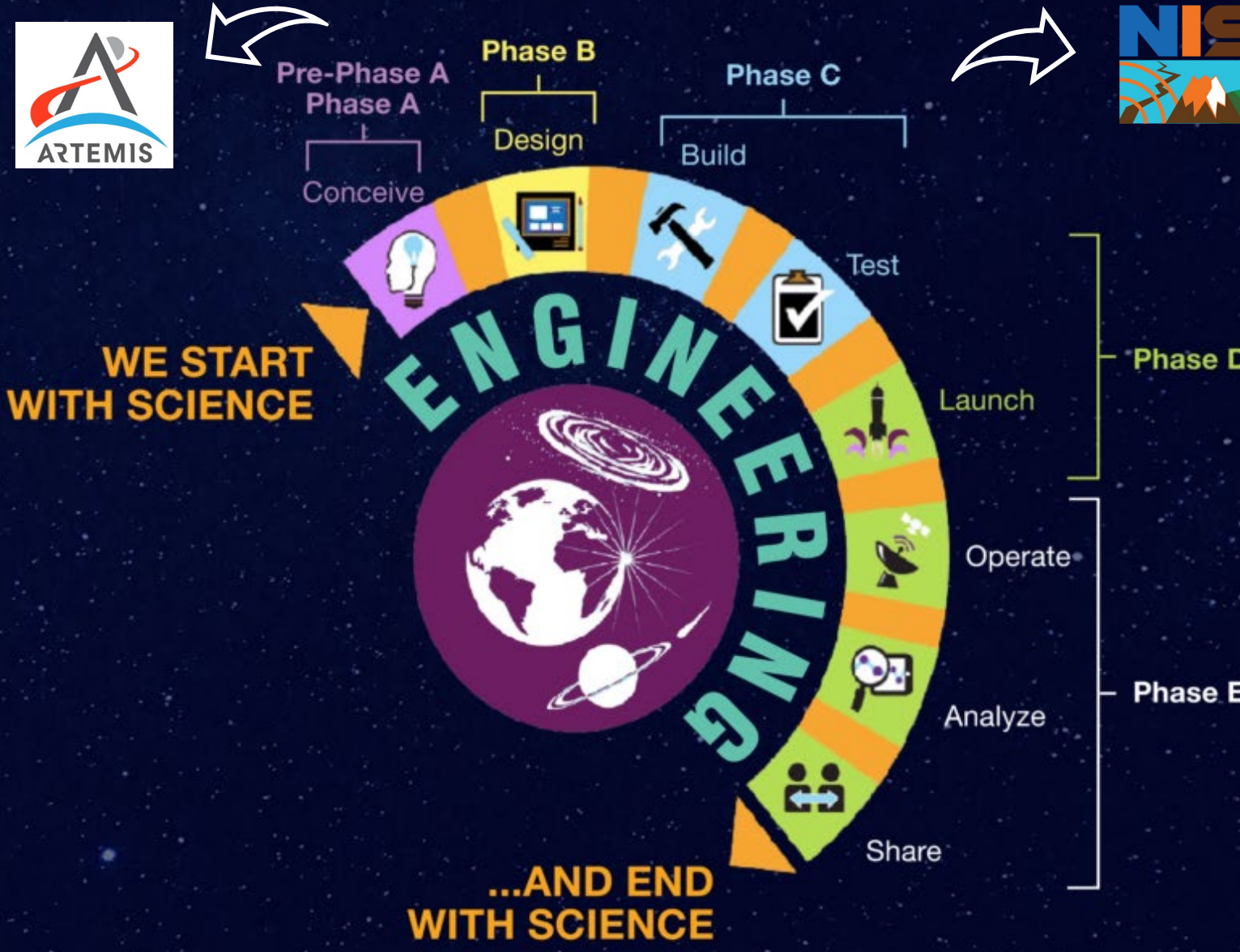
Technical Deep Dive

NASA Missions & My Work

NASA PROJECT LIFE CYCLE



NASA PROJECT LIFE CYCLE



JPSS: Polar-Orbiting Weather Satellites

- **Joint Polar Satellite System (JPSS)**
  - Provides global observations that serve as the backbone of both short- and long-term forecasts, including those that help us predict and prepare for severe weather events.
  - **Why it matters**: Weather forecasting, climate research
  - **My Role**: Liaison between government (NASA) and vendor to ensure successful design, build, integration, test, and launch of the JPSS-2 satellite

Joint Polar Satellite System

https://www.nesdis.noaa.gov/our-satellites/currently-flying/joint-polar-satellite-system

JPSS: Polar-Orbiting Weather Satellites

Phase D: Launch

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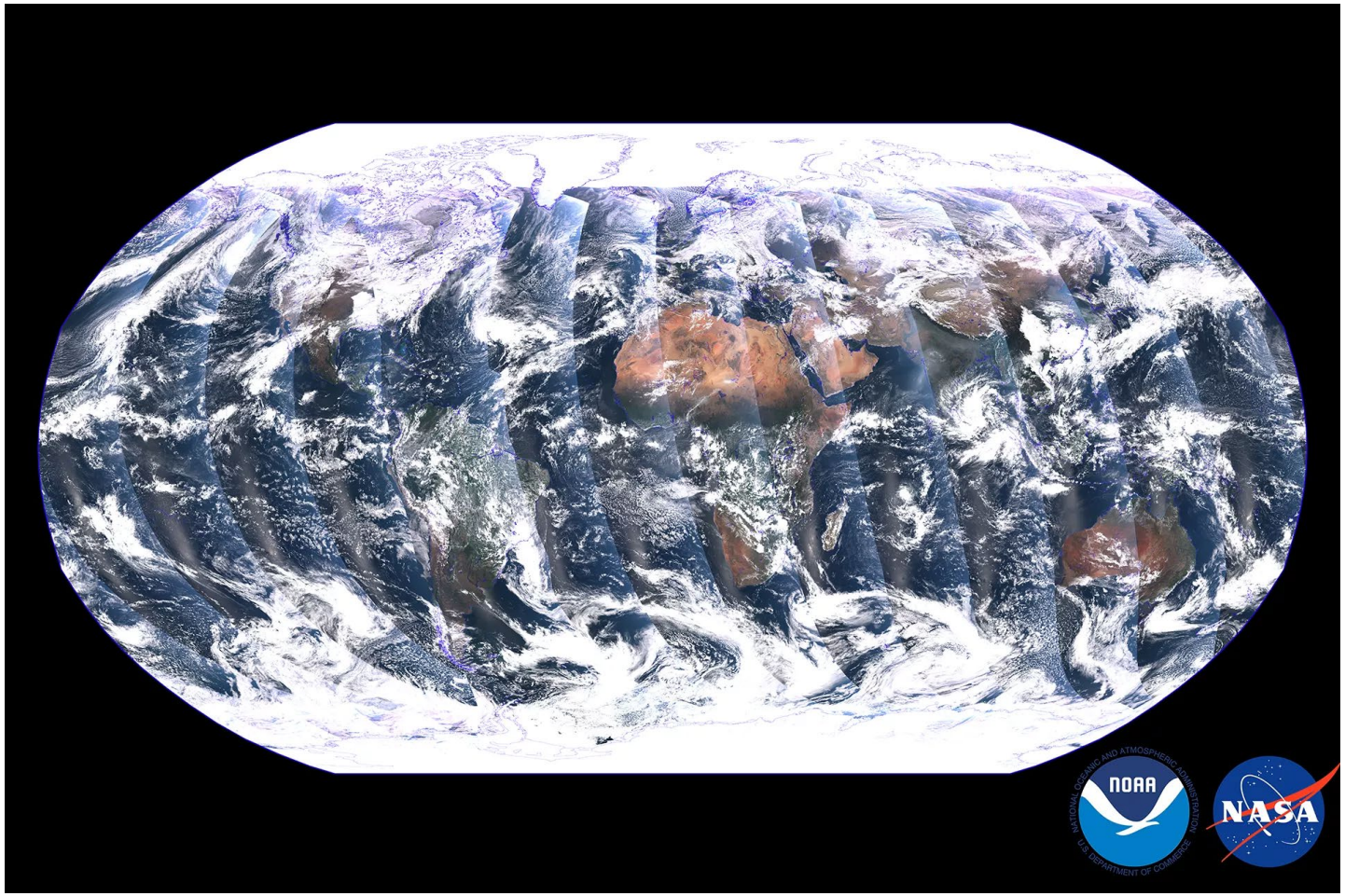
Phase E: Operations



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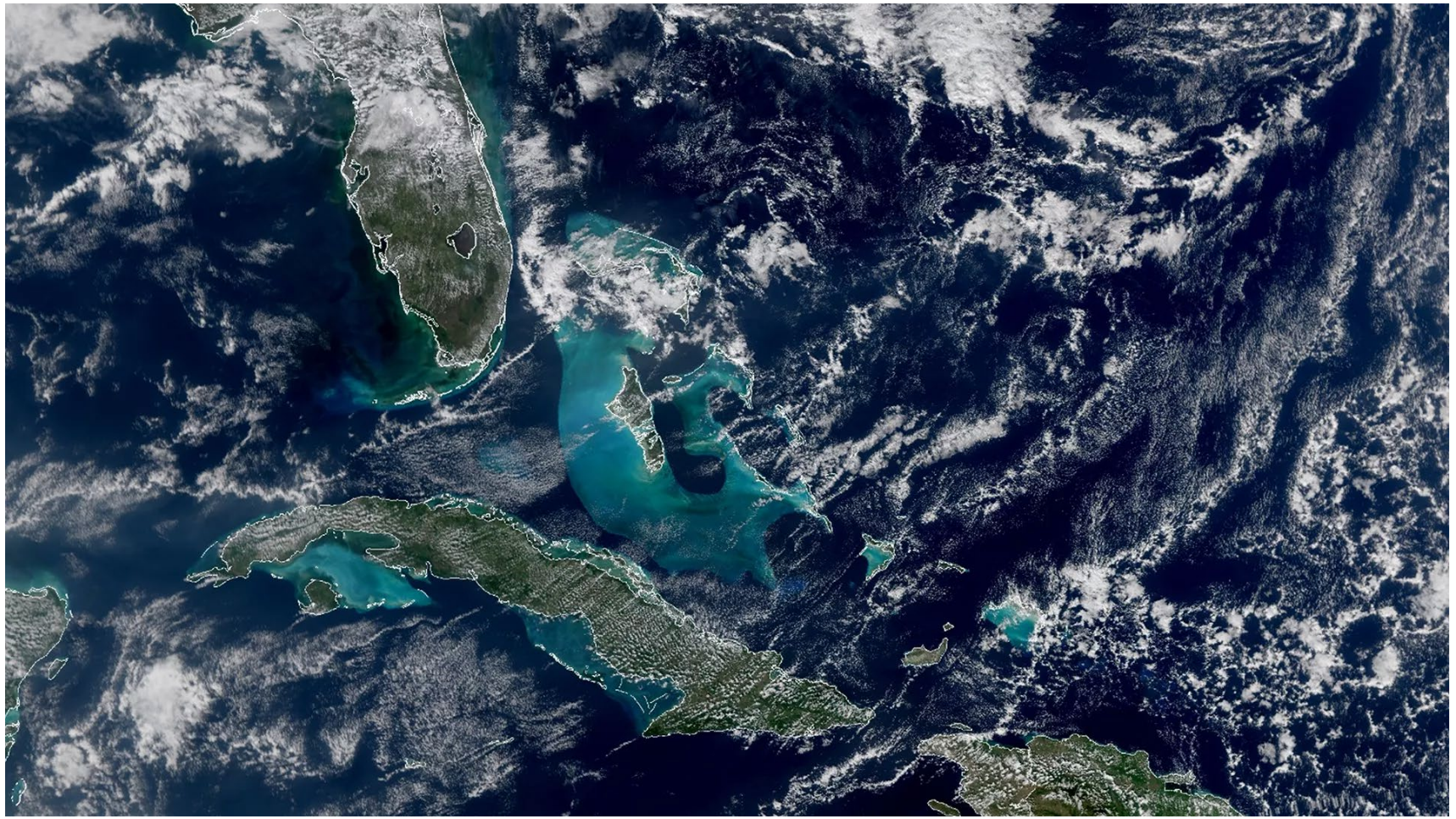
Phase E: Operations



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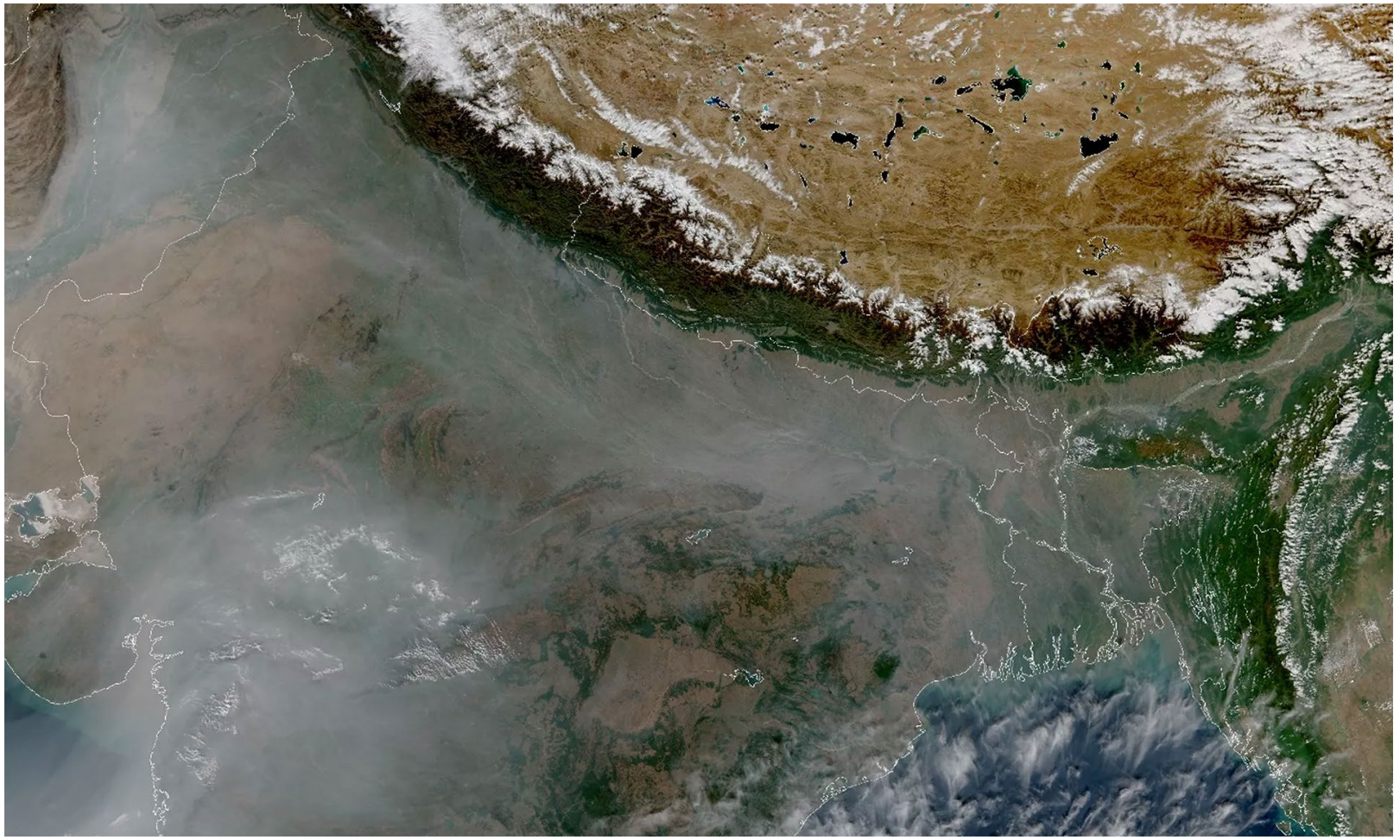
Phase E: Operations



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NISAR: Earth Observation Radar for Climate Science

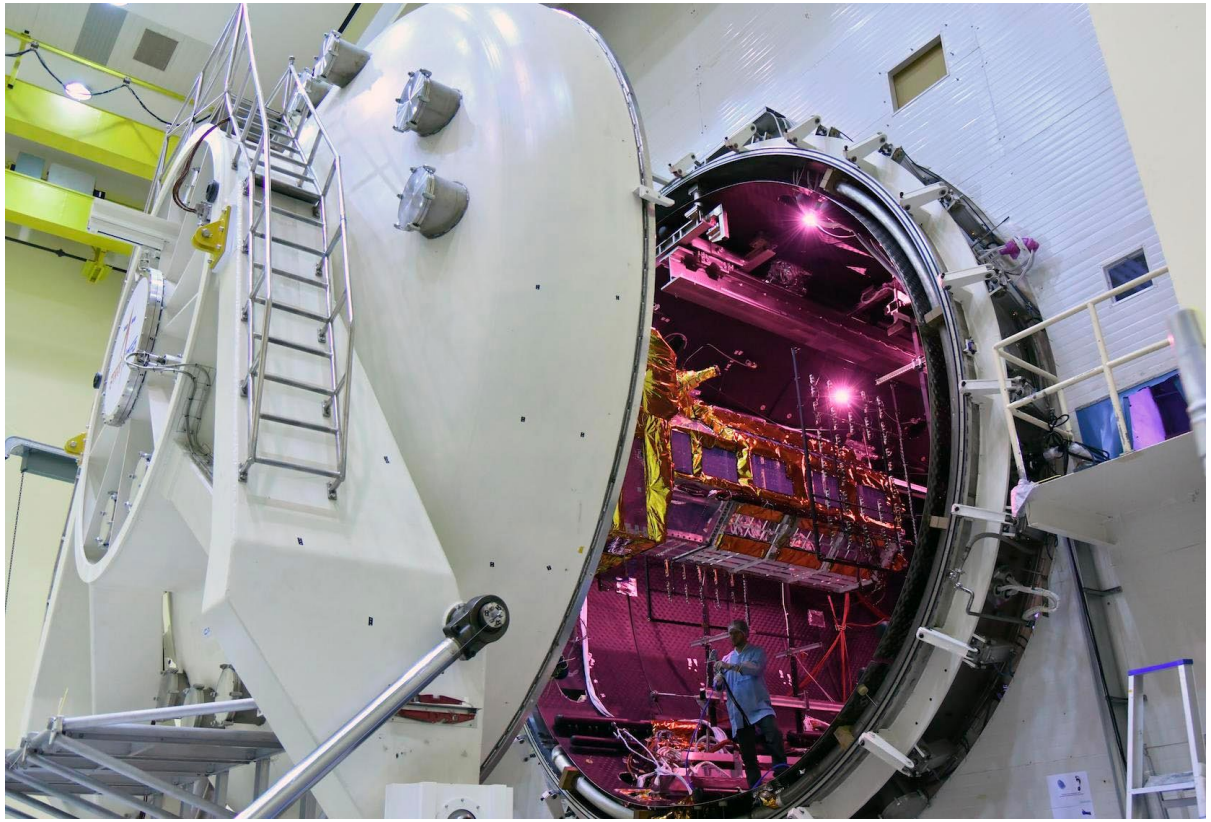
- **NASA-ISRO Synthetic Aperture Radar**
  - Helps better manage natural resources and hazards and provides information for scientists to better understand the effects and pace of climate change and add to our understanding of our planet's hard outer layer (crust).
  - **Why it matters**: Like JPSS, it helps manage natural resources and hazards, provides information to understand the effects and pace of climate change and about Earth's crust.
  - **My role**: Systems Engineering & Requirements Verification

NASA/ISRO Synthetic Aperture Radar

https://nisar.jpl.nasa.gov/

Phase C: Build…

…and Test



Artemis & Spacesuit Engineering

- **NASA Johnson Space Center (JSC) Artemis Missions**
  - Exploring the Moon for scientific discovery, technology advancement, and to learn how to live and work on another world as we prepare for human missions to Mars. We will collaborate with commercial and international partners and establish the first long-term presence on the Moon.
  - **Why it matters**: Returning to the Moon helps prepare us for Mars.
  - **My role**: Spacesuit mobility, testing, and EVA design

EVA Development for Artemis 3

https://www.nasa.gov/humans-in-space/artemis/

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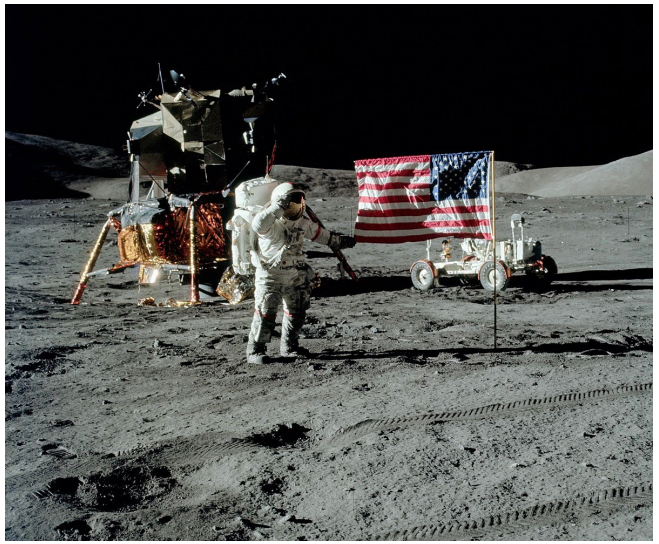
Artemis & Spacesuit Engineering

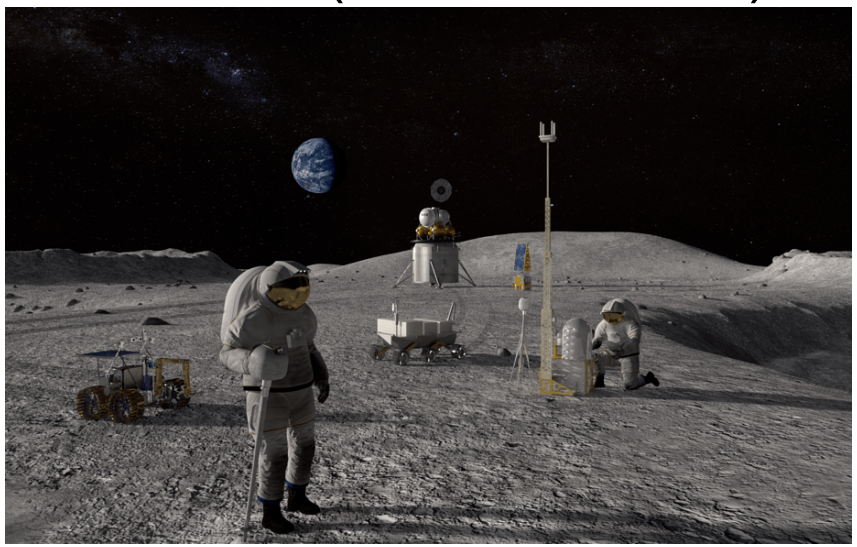
- **Extravehicular Activities (EVAs) are activities performed by space-suited astronauts outside their spacecraft in orbit above the Earth**

Apollo 17



ISS

Artemis (artist rendition)



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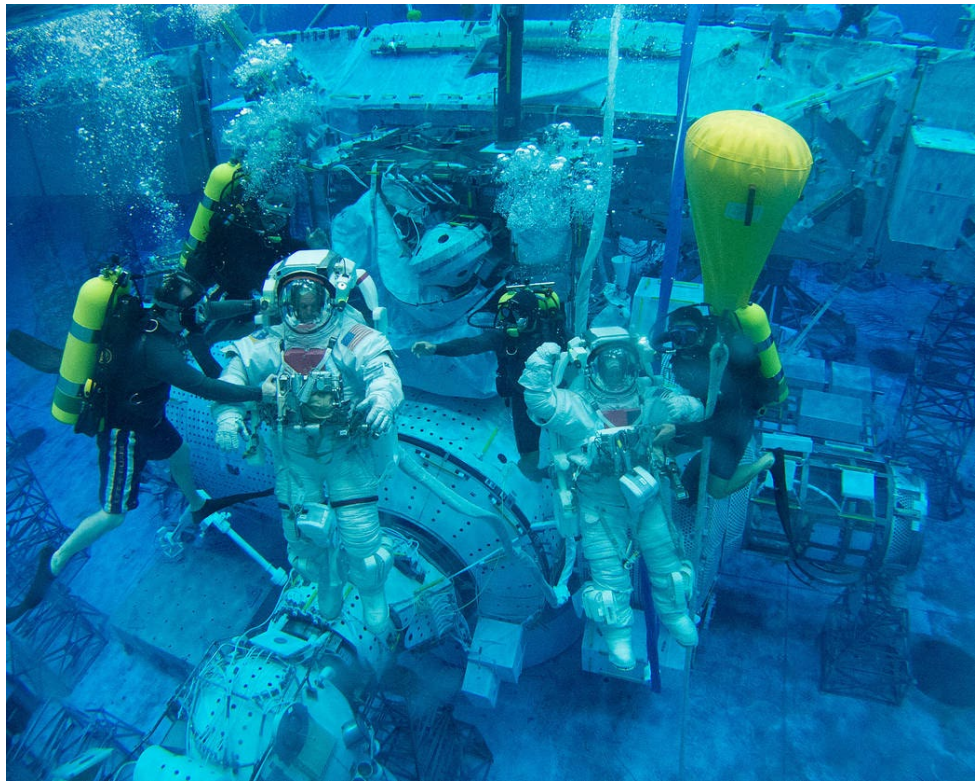
Artemis & Spacesuit Engineering

- **For A3, we're running tests with the suits to ensure they are safe, reliable, and effective**



Testing in the Neutral Buoyancy Lab (NBL)

Testing in Active Response Gravity Offload System (ARGOS)

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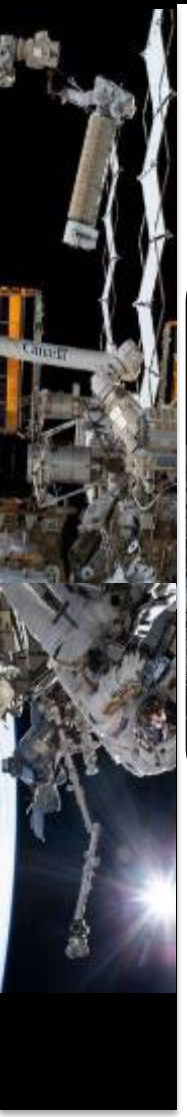
Artemis & Spacesuit Engineering



Phase C: Build & Test

Artemis 3 - 2027

https://www.nasa.gov/mission/artemis-iii/

Phase B: Design

Artemis 4 – 2028+

https://www.nasa.gov/general/nasas-artemis-iv-building-first-lunar-space-station/

Phase A: Conceive

Beyond - 2032

https://www.nasa.gov/suits-and-rovers/pressurized-rover/

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Music to Aerospace

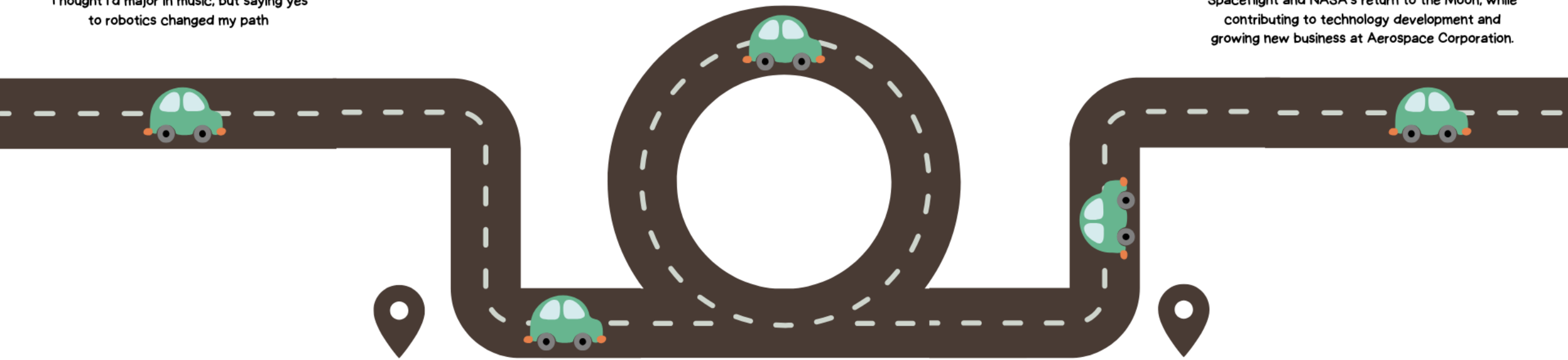
Thought I'd major in music, but saying yes to robotics changed my path

Mentorship & Unexpected Turns

The manager who hired me because of my diverse background turned into my most trusted mentor, giving me the courage to move to California, which led to me finding a theater community and ultimately running it.

Finding My Place

Now working on Artemis, supporting Human Spaceflight and NASA's return to the Moon, while contributing to technology development and growing new business at Aerospace Corporation.



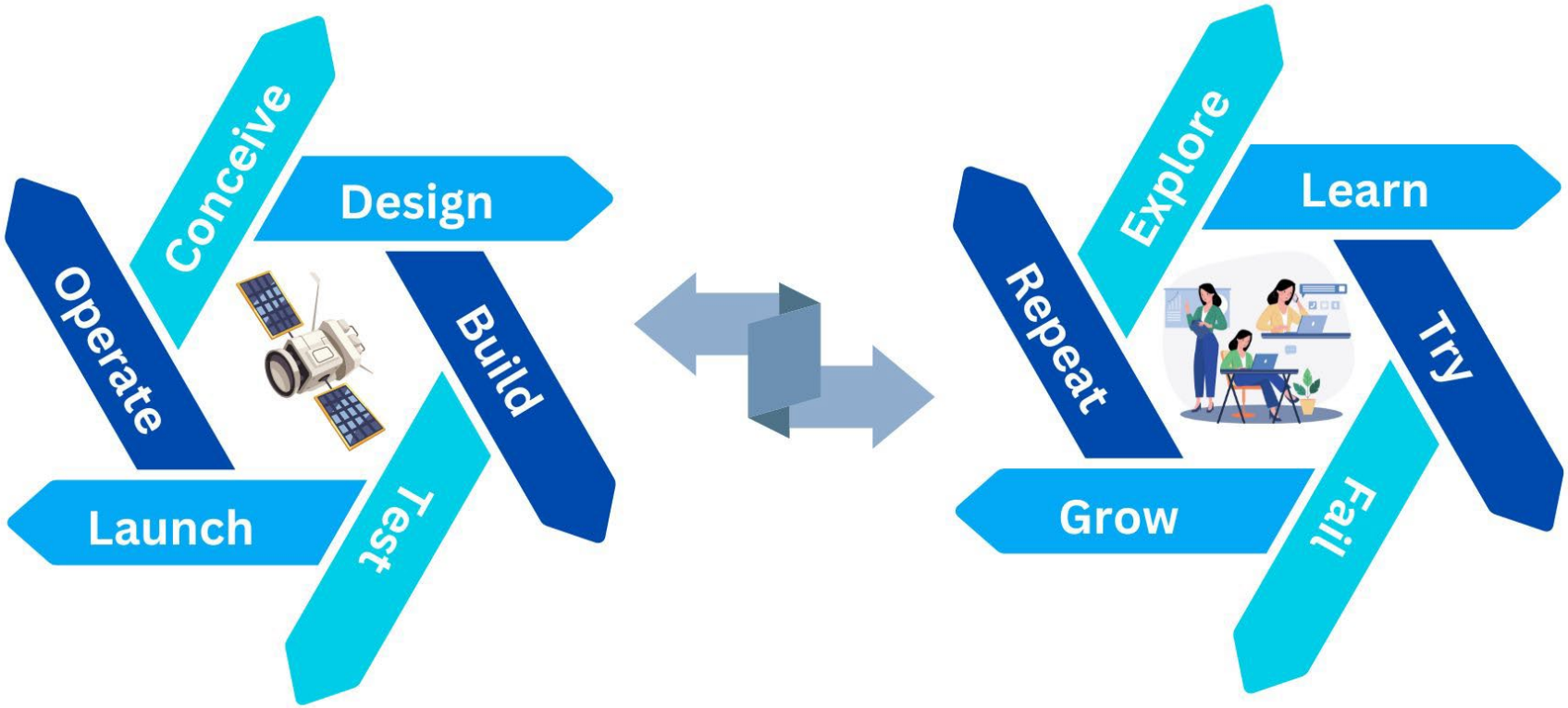
Opportunities & Rejection

A full scholarship from FIRST Robotics took me to a NASA-partnered school, but I faced job rejections before landing a role thanks to my arts background.

Pivoting & Resiliance

Discovered I was good at business, finances, operations, and strategy (thanks to the theater nonprofit!) so I got an MBA and a great job at JPL -- only to be laid off due to budget cuts.

Key Takeaways



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Key Takeaways

1. **Get Hands-On Experience:** Robotics, internships, personal projects
2. **Seek Out Mentors & Opportunities:** Ask questions, seek advice, take stretch roles
3. **Learn What You Don't Like, Too:** Every experience teaches you something
4. **Be Open To Change:** The best careers evolve in unexpected ways
5. **Get Involved In Your Community:** Volunteering or participation in extracurricular activities helps with 1-4 above!

Q&A