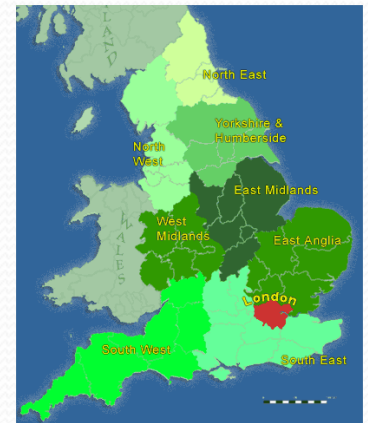


# Space as a Career

Susan Pope  
spope@swri.edu

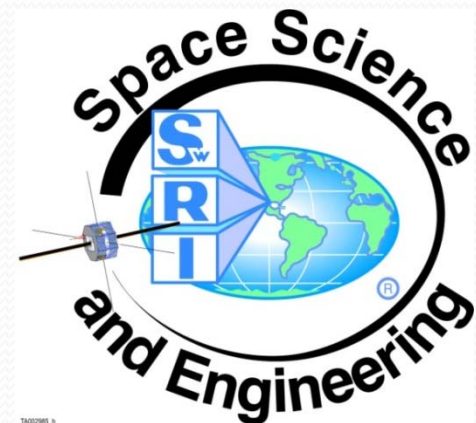
# About Me

- 1974: Born in England
- 1979: Moved to Houston, TX
- 1992: Graduated from Jersey Village High School in Houston
- 1996: Graduated with a Bachelors in Mechanical Engineering from UT Austin
- 1997: Started work at Southwest Research Institute (SwRI) as an instrument Mechanical Engineer
- 2002: Graduated with a Masters in Engineering Management from UT Austin
- 2010: Promoted to Assistant Director over the Space Science Department (>100 employees)
- 2011: Honored to be selected one of San Antonio's 40 under 40
- 2012: Passed Project Management Professional Exam
- 2014: Promoted to Director of Space Instrumentation

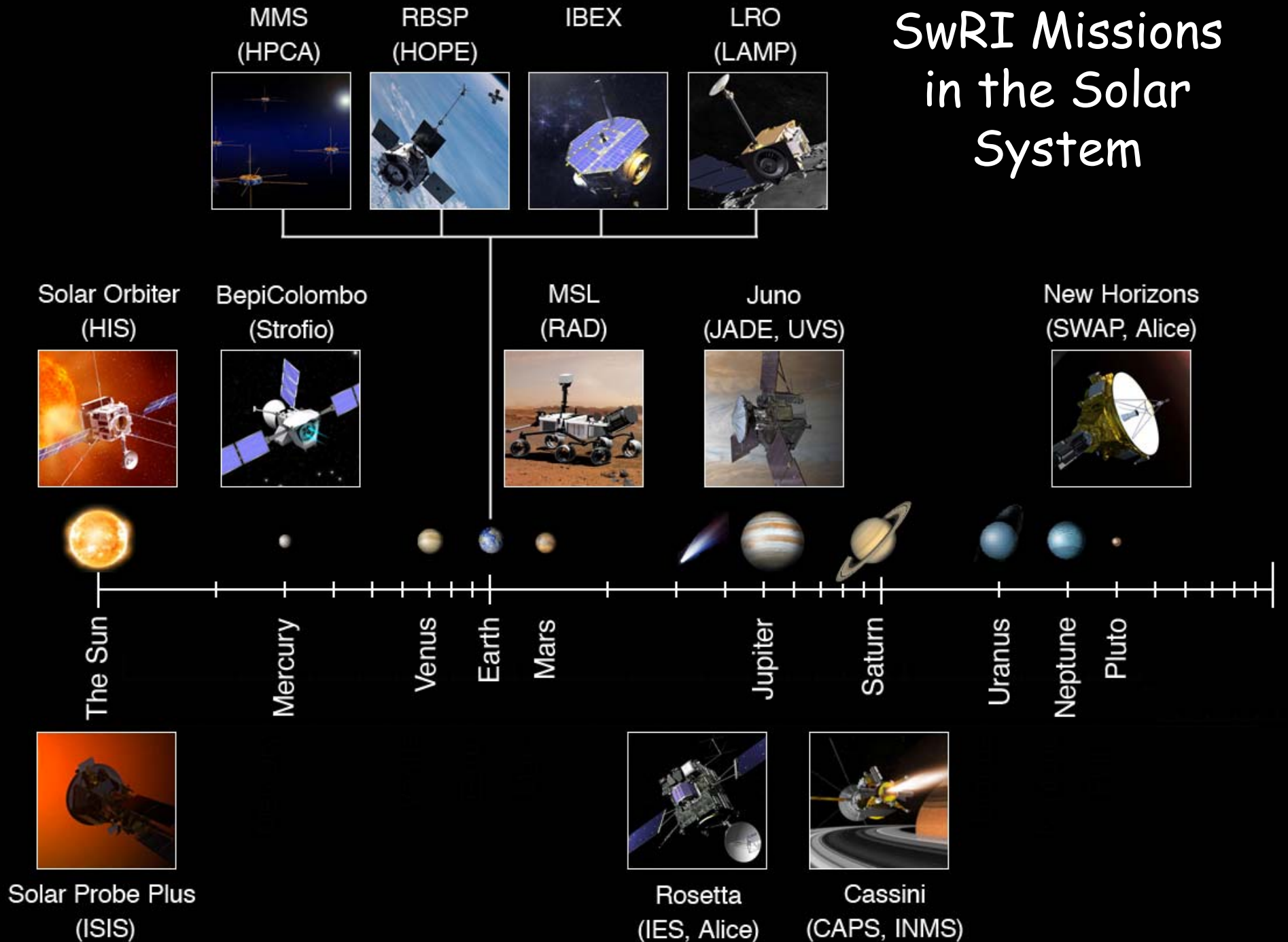


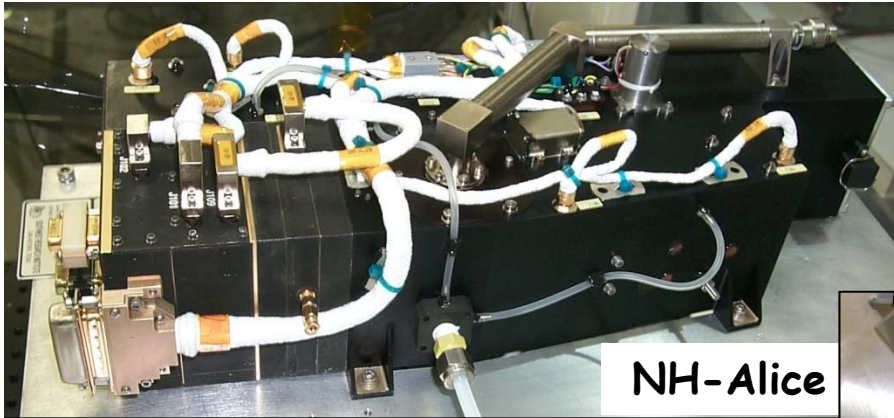
# My Career

- SwRI Space Science and Engineering Division
- Work with great Scientists and Engineers to design instrumentation for space research
- Apply everything I learned in school
  - Inter-personal skills
  - Writing
  - Public speaking
  - Reading
  - Math/Science
- Designed and built many instruments that will explore the solar system and beyond:
  - Mars
  - Earth
  - Jupiter
  - Pluto
  - Comets

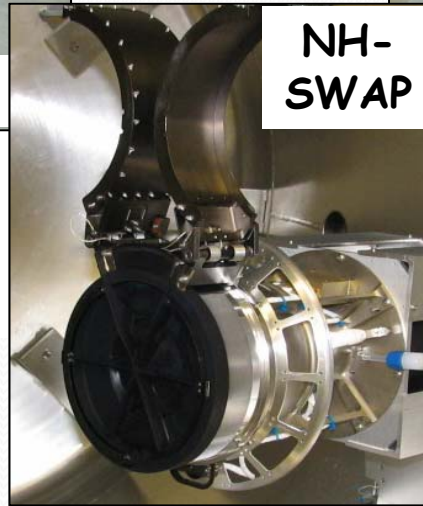


# SwRI Missions in the Solar System





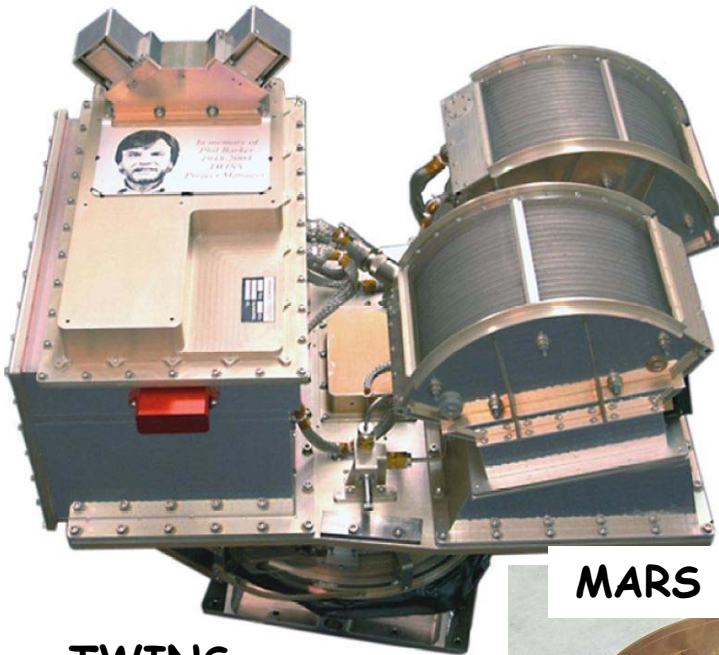
NH-Alice



NH-SWAP



Rosetta-IES



TWINS

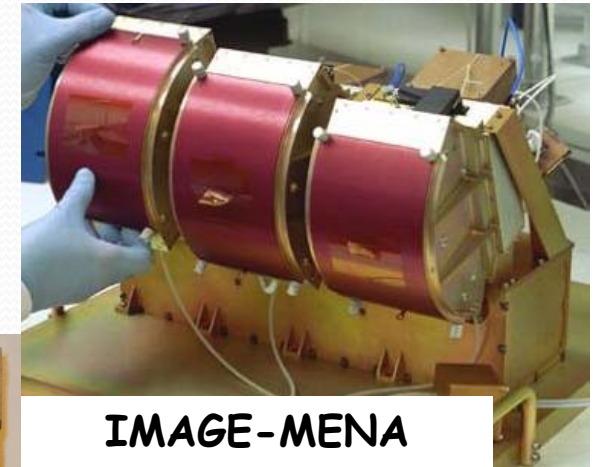
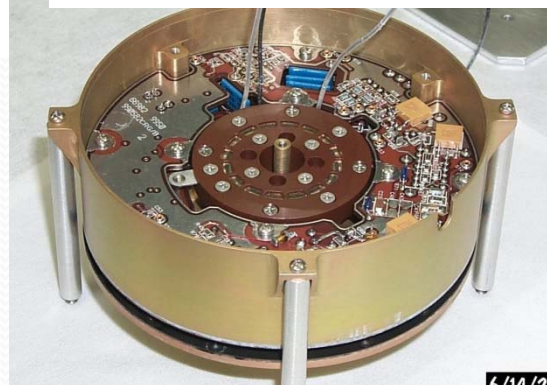


IMAGE-MENA

IBEX



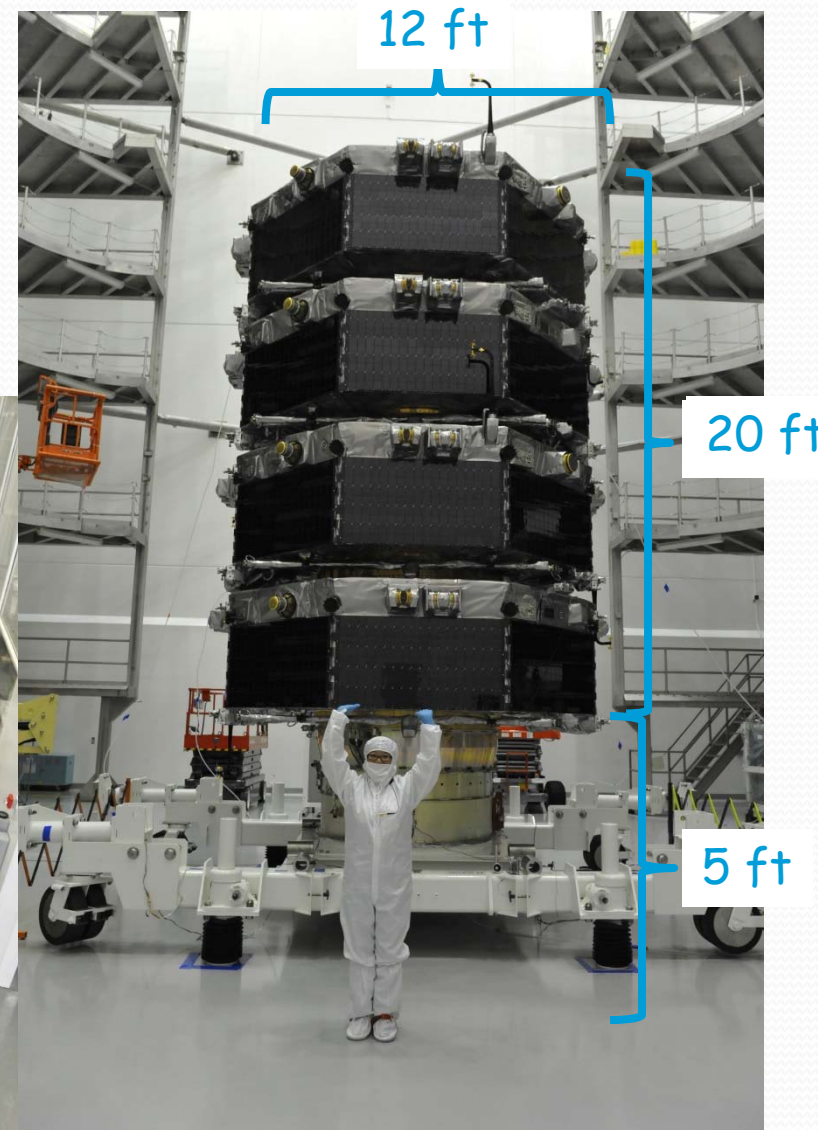
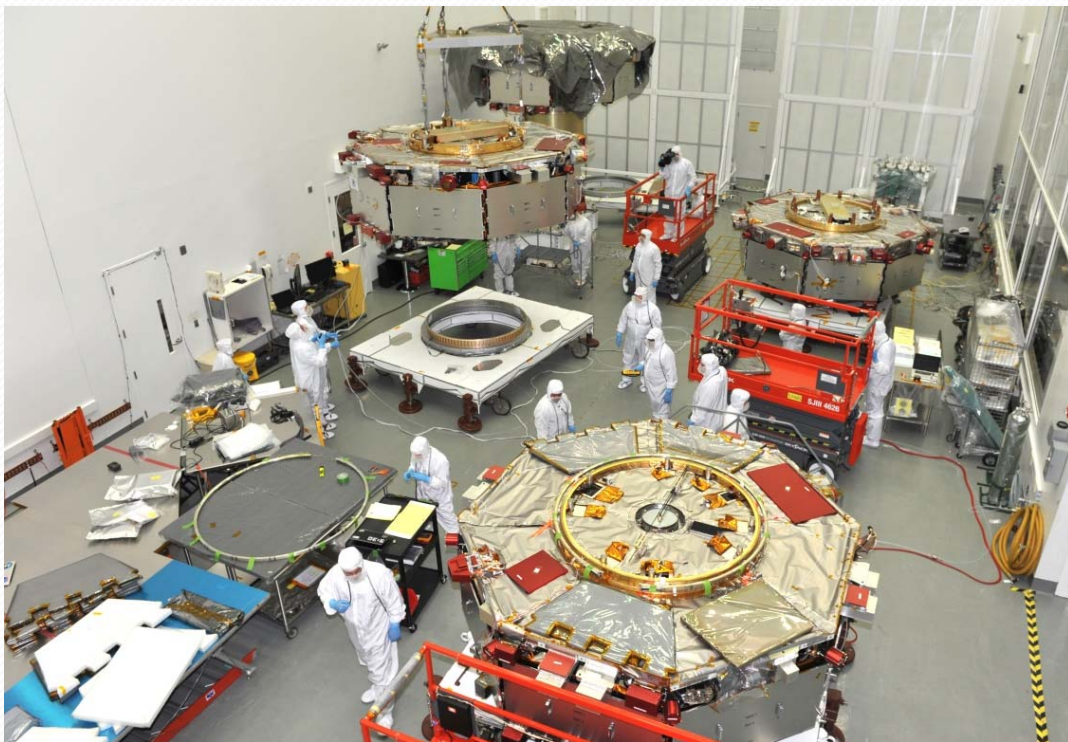
MARS EXPRESS- ELS



1997-2008:  
Instruments  
and Missions

# MMS (Magnetospheric Multiscale)

- Started work: Early 2008
- Launch: March 2014
- 20 feet tall, 12 feet wide,
- 5,000 kg total mass



- <http://mms.gsfc.nasa.gov/education.html>



Original composition by Academy Award winner Vangelis and SwRI Director Scott Bolton



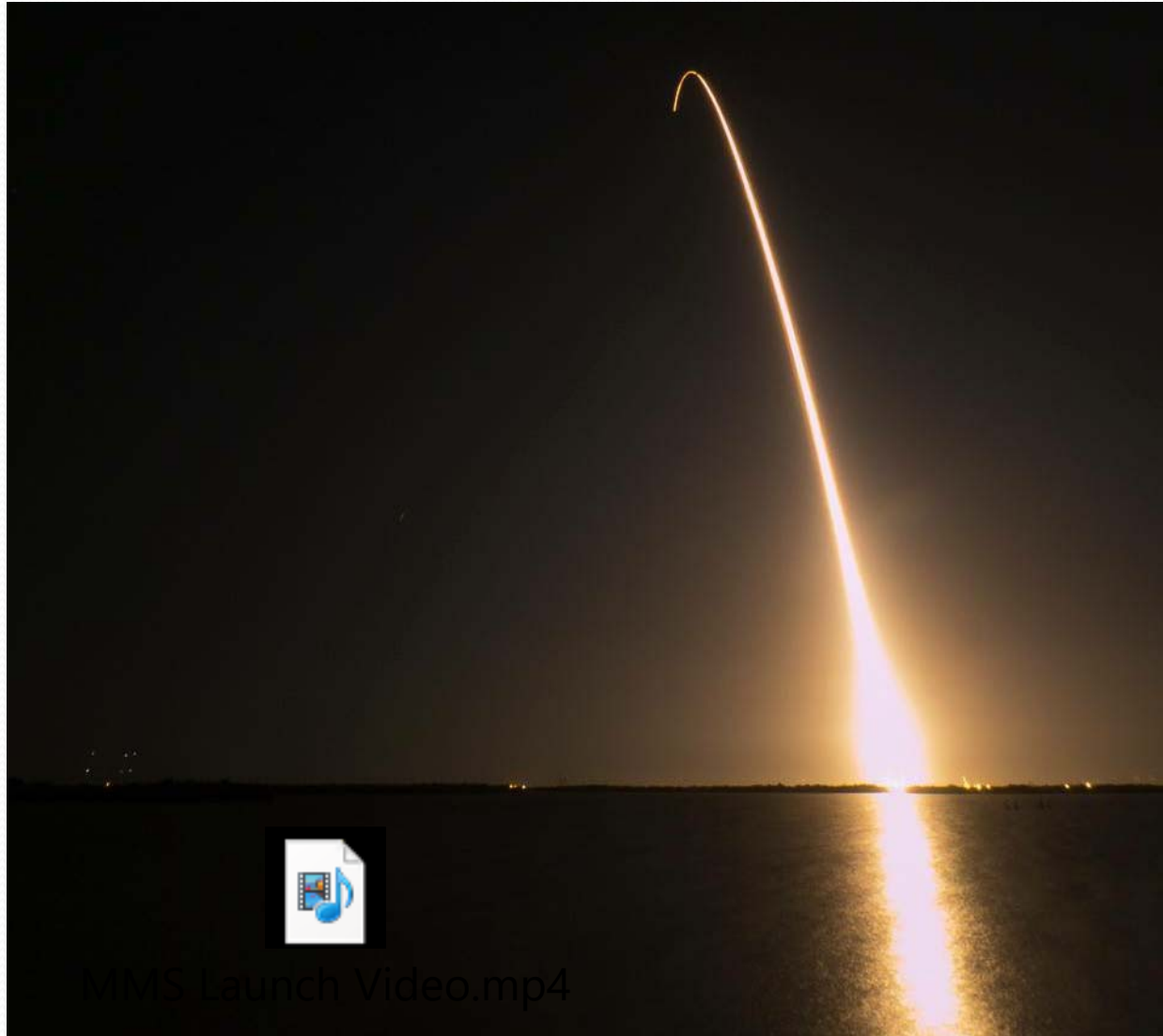
# CLUSTER II AND MAGNETOSPHERIC MULTISCALE



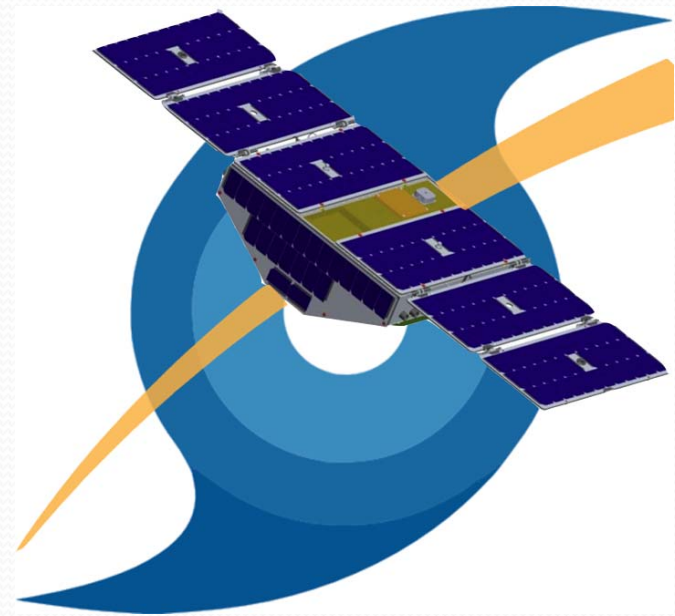
## EDUCATION & PUBLIC OUTREACH

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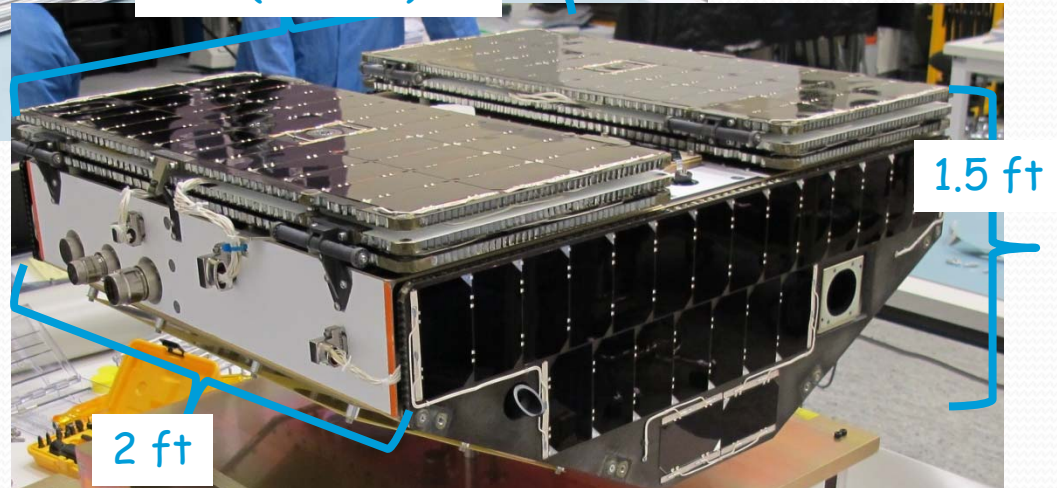
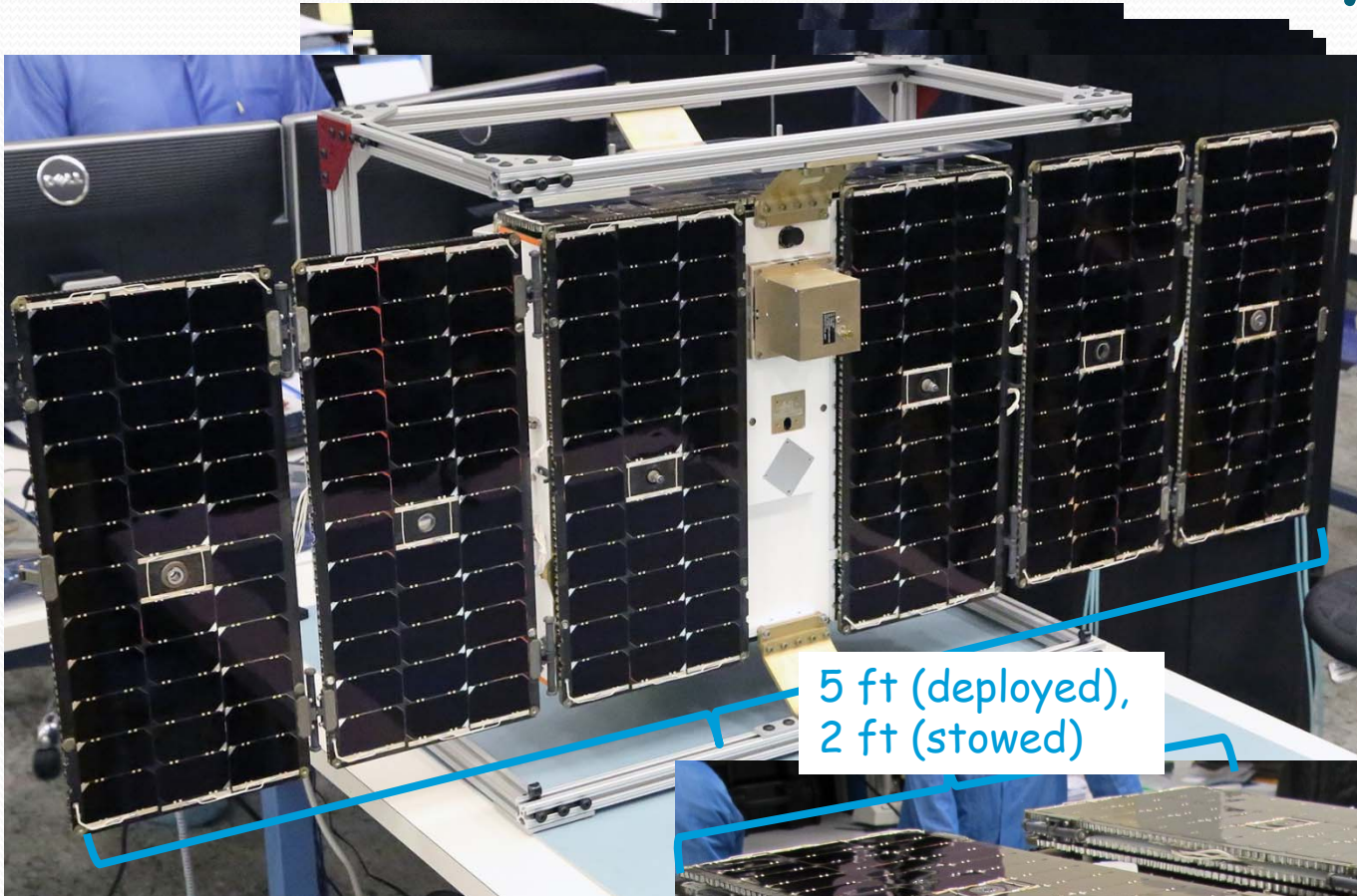
# MMS Launch: March 12, 2015



# Cyclone Navigation Global Satellite System (CYGNSS)

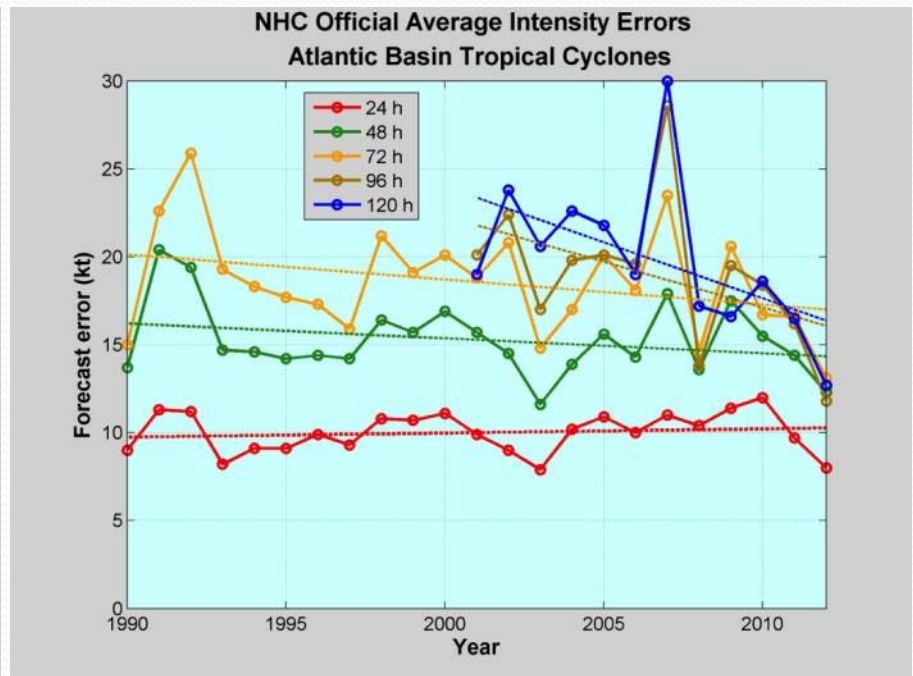
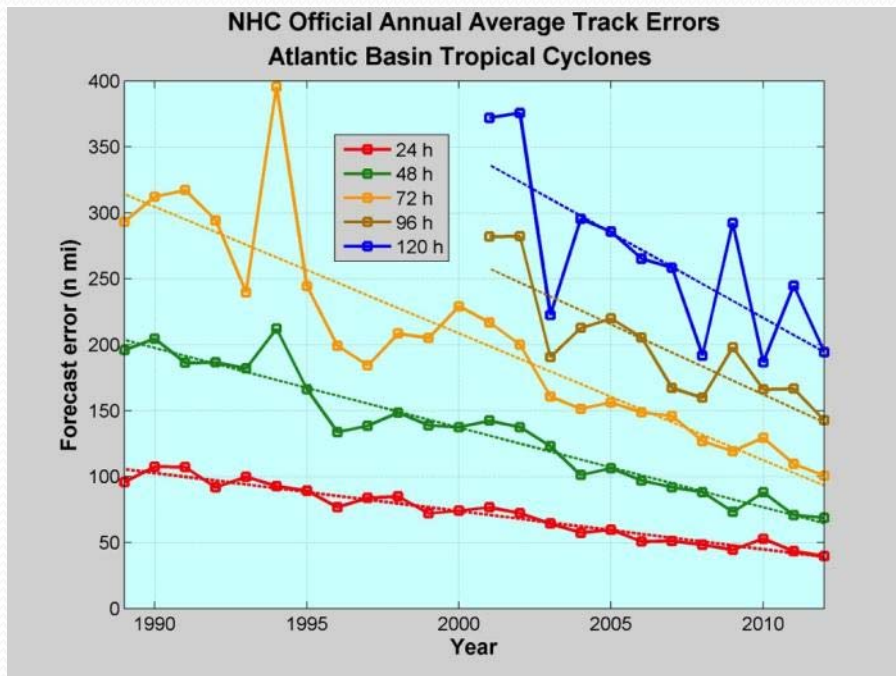


# CYGNSS Observatory



# CYGNSS Science Motivation

- Tropical cyclone track forecasts have improved in accuracy by ~50% since 1990, largely as a result of improved mesoscale and synoptic modeling and data assimilation. In that same period, there has been very little improvement in the accuracy of intensity forecasts.

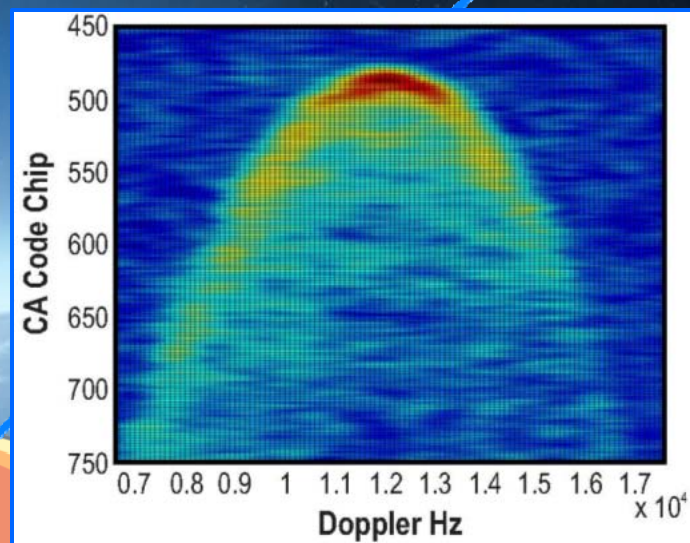


National Hurricane Center, <http://www.nhc.noaa.gov/verification/verify5.shtml>

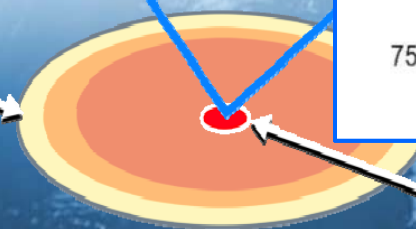


Direct  
Signal

CYGNSS  
Observatory

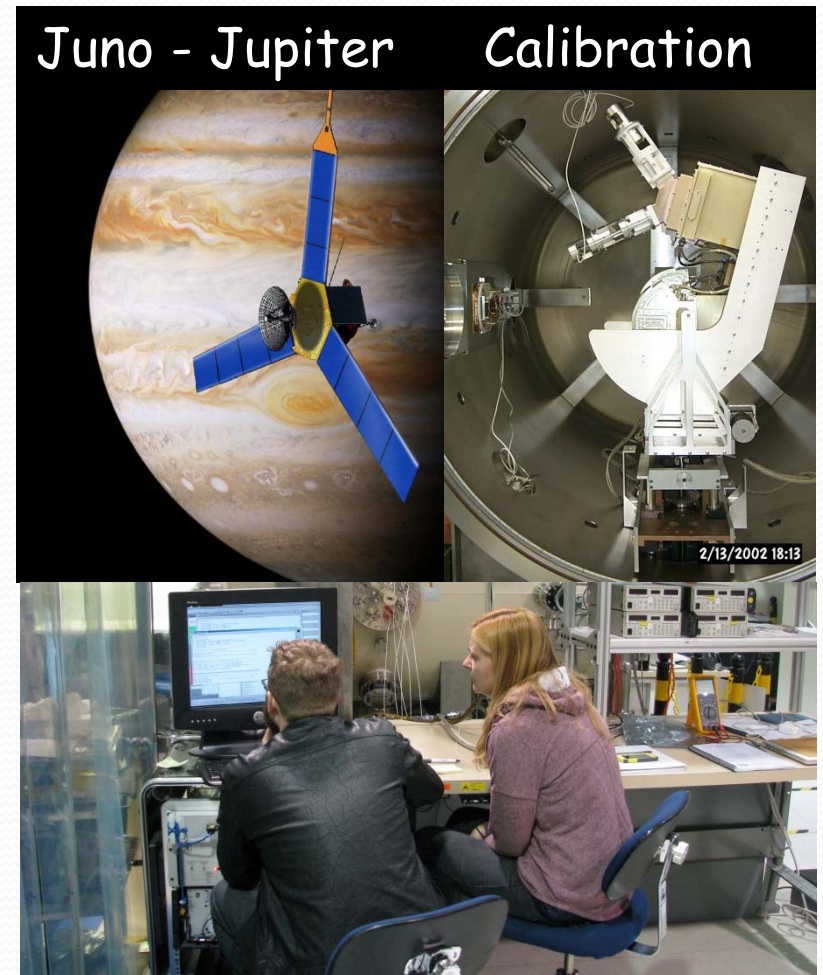


Specular  
Point



# Graduate Studies at SwRI in Space Sciences

- 14 SwRI Adjoint Professors support UTSA PhD and Master's students to work on externally-funded (NASA, NSF etc.) research programs since 2005
- Featured Areas of Space Physics, Planetary Science & Astrophysics
  - Instrumentation
  - Mission planning & Design
  - Data Analysis
  - Theory & simulations



# My Favorite Quote

"You gain strength, courage and confidence by every experience in which you really stop to look fear in the face. You are able to say to yourself, 'I have lived through this horror. I can take the next thing that comes along.' You must do the thing you think you cannot do."

Eleanor Roosevelt, *You Learn by Living:  
Eleven Keys for a More Fulfilling Life*