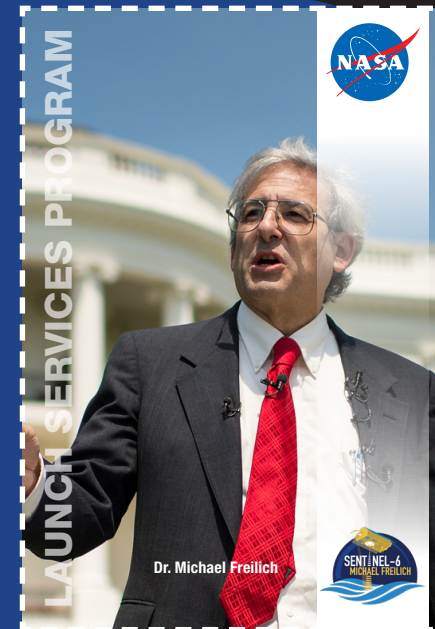
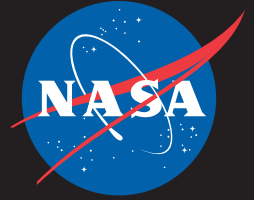


Collectible Card

CUTOUTS

National Aeronautics and
Space Administration



SENTINEL-6 MICHAEL FREILICH

LAUNCH SERVICES PROGRAM





Collectible Card

CUTOUTS

Dr. Michael H. Freilich
Former Director of NASA Earth Science

Earth Science Visionary Leader

- Led NASA's Earth science activities, including research and analysis, applied sciences, flight operations, and Earth-focused technology development
- More than 3 decades as an Earth scientist
- A pioneer in the field of ocean wind vector measurement
- Oversaw 16 successful major mission and instrument launches and 8 CubeSat/SmallSat launches
- Driving force for building international partnerships to advance Earth Science

www.nasa.gov

SP-2020-09-850-KSC



**SPACEX FALCON 9
LAUNCH VEHICLE**

Launch Date:
November 2020

Launch Location:
Vandenberg Air Force Base, California

Height with payload:
229.6 feet (70 meters)

Diameter:
12 feet (3.7 meters)

Engine:
1st Stage: 9 Merlin Engines
2nd Stage: 1 MVac-D Engine

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SP-2020-09-829-KSC



**SENTINEL-6 MICHAEL FREILICH
SPACECRAFT**

Mission: To further understand how the earth's climate is changing by measuring the height of the ocean.

SCIENTIFIC INSTRUMENTS

Poseidon-4 Radar Altimeter (Provided by ESA):
Measures the distance between the satellite and the sea surface

AMR-C (Advanced Microwave Radiometer for Climate):
Provides corrections for water vapor path delay

GNSS-RO (Global Navigation Satellite System – Radio Occultation):
Measures high-res vertical soundings of the atmosphere for improved weather models

DORIS (Doppler Orbitography and Radiopositioning Integrated by Satellite; Provided by ESA):
Precise Orbit Determination (POD) that uses an Earth-based beacon system

LRA (Laser Retroreflector Array):
Supports orbit determination by using ground-based laser tracking

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SP-2020-09-828-KSC



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SP-2020-10-945-KSC