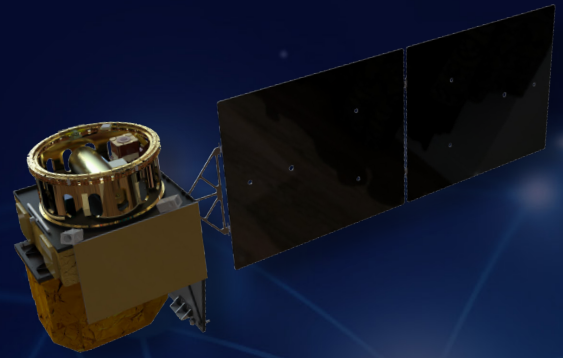




NEAR EARTH ORBIT NETWORK

# NEON



## Global Data, Local Weather

Low Earth Orbit (LEO) satellites are the backbone of global long-range weather forecasting models, supplying more than 80% of the numerical weather prediction model data used for 3-7 day forecasts. LEO observations are critical for weather forecasting, environmental observation, and public safety.



## NEON

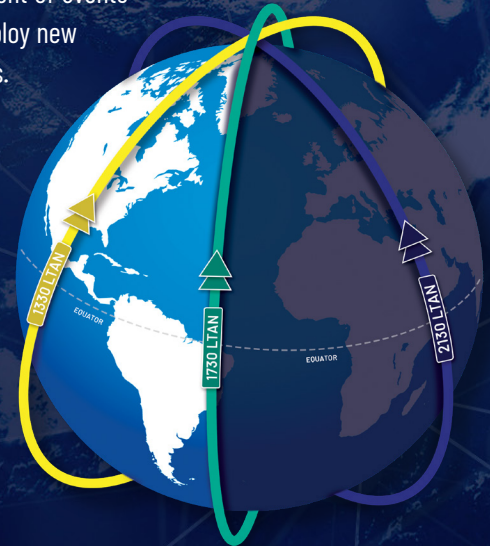
NOAA's Near Earth Orbit Network (NEON) will provide a new approach to developing the next generation global environmental satellite system by launching small to medium-sized satellites with Earth-observing instruments more frequently. NEON will be a resilient constellation of LEO satellites that can be deployed quickly to enhance weather forecasting and disaster management of events like floods and wildfires. NEON's disaggregated approach will evolve the LEO architecture to deploy new observational capabilities through partnerships and commercial or NOAA-developed approaches.

## QuickSounder

NEON's first project, QuickSounder, serves as a prototype for NOAA's next generation of LEO environmental satellites. QuickSounder demonstrates that operational observations can be obtained with a small, commercial-based satellite on a compressed schedule.



QUICKSOUNDER



Most NEON satellites will operate in a polar sun-synchronous orbit to ensure global coverage.

## BUY AND PARTNER WHERE WE CAN. BUILD WHAT WE MUST.

Together with its partners and commercial industry, NEON will expand the data and modeling capabilities that are vitally important for ongoing weather prediction and environmental monitoring.

Maintaining relationships with domestic and international partners will enable NEON to leverage existing and planned capabilities from other research and operational satellite programs to deliver more key observations to service areas and stakeholders.

# Why NEON?

NEON will provide data continuity while addressing new observational requirements more quickly than previous NOAA programs. As a first step, NEON will leverage and advance commercial investment, expertise, and innovation to develop the next generation microwave and infrared sounders that profile atmospheric temperature and moisture and are critical to generating accurate weather forecasts. The global refresh of microwave sounding observations available to the United States will degrade without the NEON program.



Ensures continuous coverage that is critical for a Weather-Ready Nation



Builds partnerships and explores advanced data applications with global user engagement



Provides enhanced remote sensing observations of Earth and its environment for modeling, monitoring, and prediction



Develops cutting-edge technology to more efficiently launch essential new instruments



Supports innovation and continues the data lifeline of preceding LEO satellite programs

## NEON Benefits



- Higher resolution data/next generation sensors improve short and long-term weather prediction for National Weather Service forecasts.
- Improved data on phytoplankton and harmful algal blooms aid the Blue Economy and coastal communities.
- Enhanced atmospheric chemistry sensors enable timely and accurate forecasts of air quality hazards.

## LEO Observations

Current LEO applications provide invaluable data for a wide variety of scientific and real-life implementations. New instruments, such as the Sounder for Microwave-Based Applications (SMBA) and a next generation infrared sounding instrument, will maintain critical data continuity while beginning to expand our capabilities.

Multipurpose Imagery  
Soundings  
UV Measurements  
LiDAR  
Microwave Imagery  
Altimetry  
Scatterometry  
Synthetic Aperture Radar



A collaborative effort between NOAA and NASA, NEON will build and launch small to medium-sized satellites with Earth-observing instruments for weather forecasting and disaster management. NOAA and NASA will work with commercial partners to design, build, and fly the network's spacecraft and instruments.

NOAA's NEON program will supplement and eventually replace NOAA's Joint Polar Satellite System (JPSS), laying the groundwork for the next generation of LEO satellites before the final JPSS launch in 2032.

[nesdis.noaa.gov/neon](https://nesdis.noaa.gov/neon)