ATLANTIC OCEANOGRAPHIC & METEOROLOGICAL LABORATORY

Technologies Advancing Oceanographic Research

NOAA's Atlantic Oceanographic and Meteorological Laboratory (AOML) uses state-of-the-art technologies to conduct research in ocean, coastal, and atmospheric science. The Physical Oceanography Division includes scientists, engineers, and support staff who maintain long-term oceanographic datasets and track how ocean changes impact weather, ecosystems, and communities. Innovative instruments are at the heart of this research.
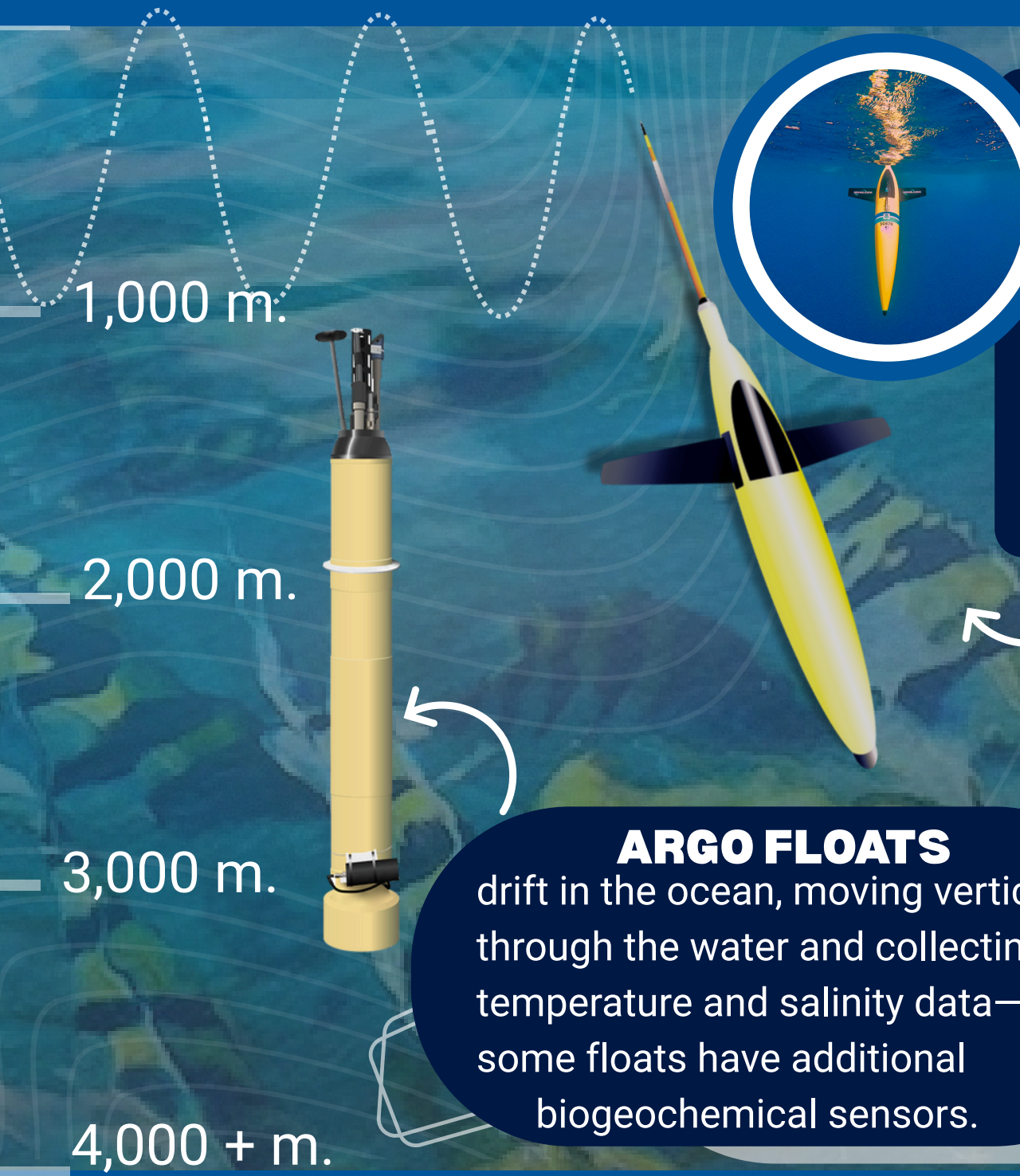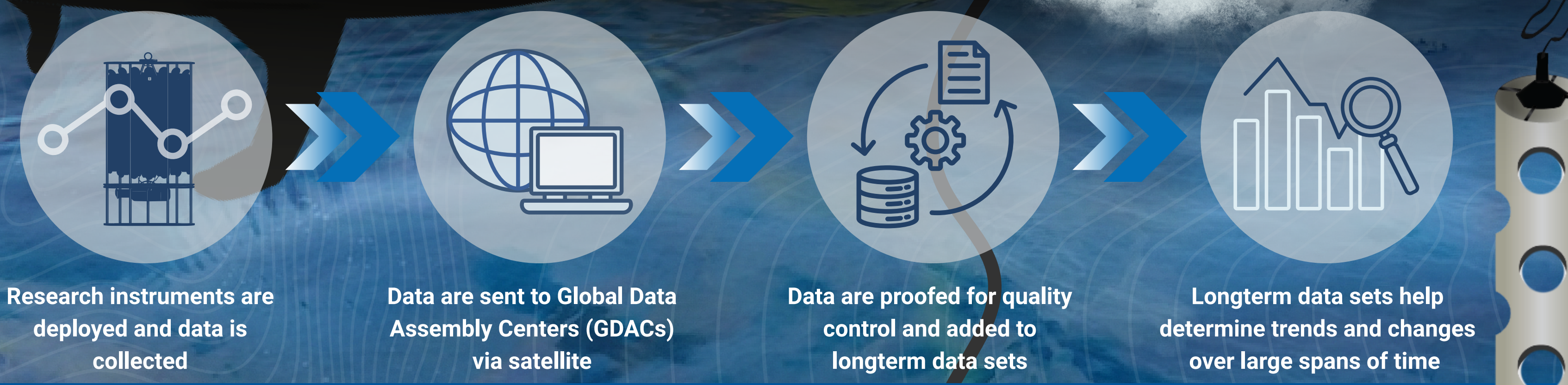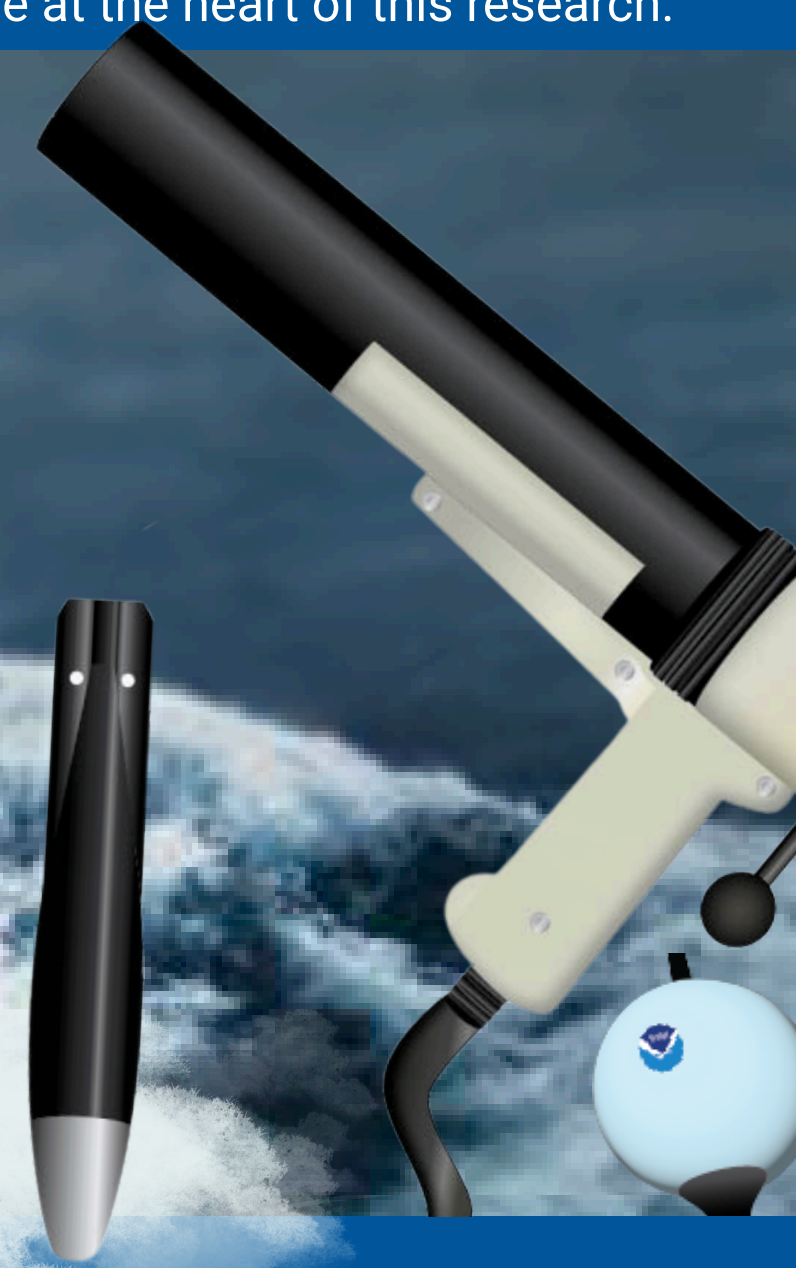
UNCREWED SURFACE VEHICLES

(USVs) are autonomous drones that collect marine and atmospheric measurements at the sea surface and transmit them to scientists, even in the middle of hurricanes.

DID YOU KNOW ...

AOML is the site of **2** Global Data Assembly Centers

- Drifter Data Assembly Center
- US Argo Data Assembly Center

EXPENDABLE BATHYTHERMOGRAPHS

(XBTs) are torpedo-shaped probes that fall at a set rate through the water and have helped scientists measure ocean temperature since the 1960's.

Research instruments are deployed and data is collected

Data are sent to Global Data Assembly Centers (GDACs) via satellite

Data are proofed for quality control and added to longterm data sets

Longterm data sets help determine trends and changes over large spans of time
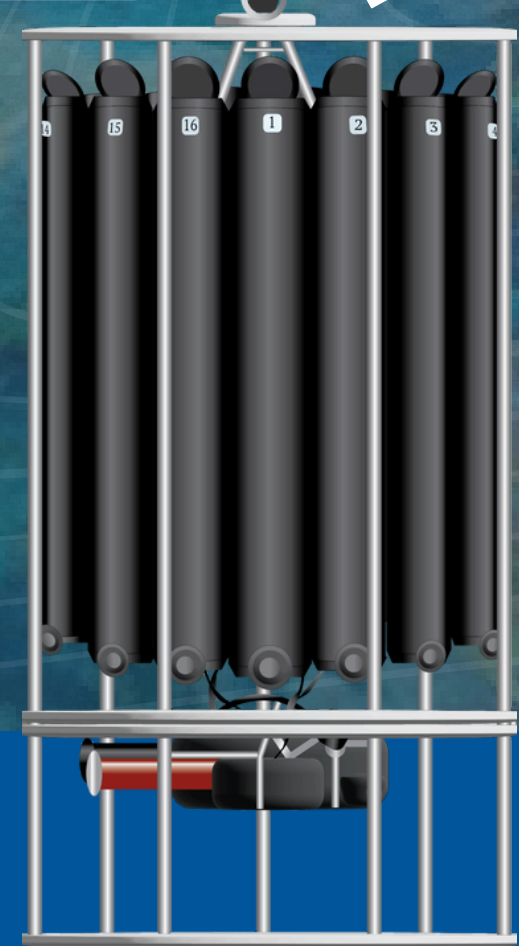

1,000 m.

2,000 m.

3,000 m.

4,000 + m.

OCEAN GLIDERS

are launched before hurricane season and traverse the upper 1,000 meters of the ocean to collect temperature and salinity data that improves hurricane forecasts.

OCEAN DRIFTERS

float with currents measuring and transmitting ocean temperature, salinity, atmospheric pressure, wind, and wave height.

CTDs

are a package of instruments lowered from a boat to depths as great as several thousand meters, measuring conductivity, temperature, and depth (CTD) as it moves. Many CTDs also capture water samples.

ARGO FLOATS

drift in the ocean, moving vertically through the water and collecting temperature and salinity data—some floats have additional biogeochemical sensors.

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