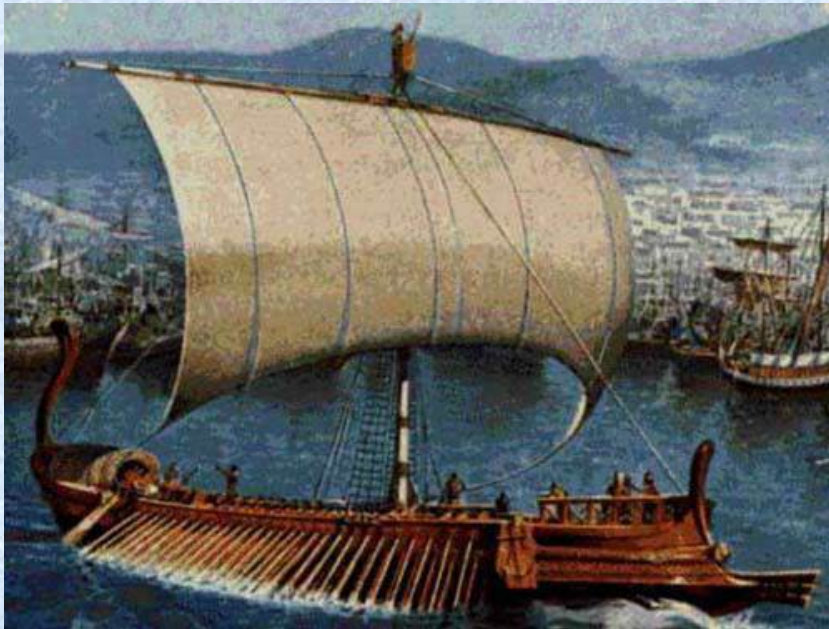


# History of Oceanography



Davis '03

Oceans have had an important role in human life prehistorically. Shells in anthropological sites show this.

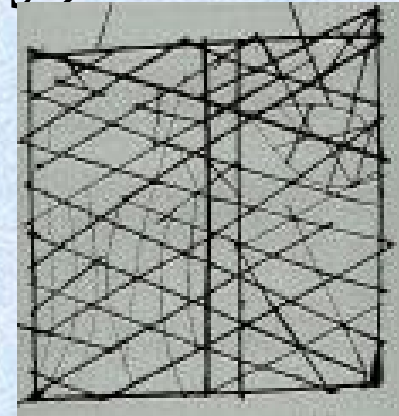


A Phoenician ship from the Mediterranean.

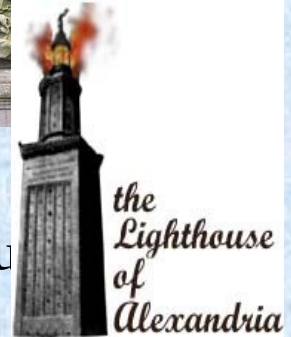
- Transportation is one of the key uses of the ocean.
- Vikings, Egyptians, Phoenicians, Cretans, and Greeks were adept at sailing as far back as 5000 years ago.
- The Greeks believed the water around them was a great river and they called it *okeanos* which gives rise to the word OCEAN.

# Maps and Navigational charts were developed by these early voyagers (independently).

- Micronesians made stick charts with shells for islands and bamboo strips for wave patterns.
- Polynesians traveled in double-hulled canoes to 10,000 islands across 26 million square kilometers of the South Pacific.



Alexander the Great established the great Library of Alexandria in Egypt in the 3rd century BC and when any ship came to Alexandria, all written information was taken and copied for placement in the library...but sadly the library was burned in 415 AD and all its contents were lost in the fire.

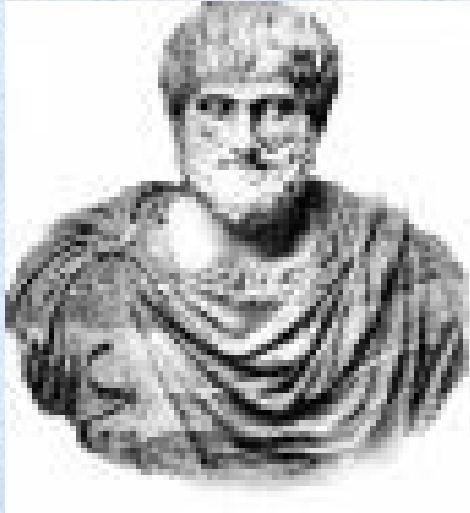


One of the librarians was Eratosthenes, the first man to accurately calculate the circumference of the Earth.

Another librarian Hipparchus divided the Earth into 360 degrees and devised the regular grid of longitude and latitude.

Claudius Ptolemy created maps of the world that were copied for centuries.





Aristotle 342-322 BC



Venerable Bede 673-735 AD

Great thinkers have added to the oceanographic knowledge.

Aristotle noted that the sea never dries up nor overflows.

Venerable Bede noted that the moon controls tides and made very accurate tide charts.



While Europe was plunged in the Dark Ages, the Vikings sailed all over...including the colonization of Iceland in 700 AD, Greenland in 995 AD and North America as early as 986.

The Chinese also developed the compass and increased their navigational skills on great 9- masted ships giving away treasure and exploring the Indian Ocean.

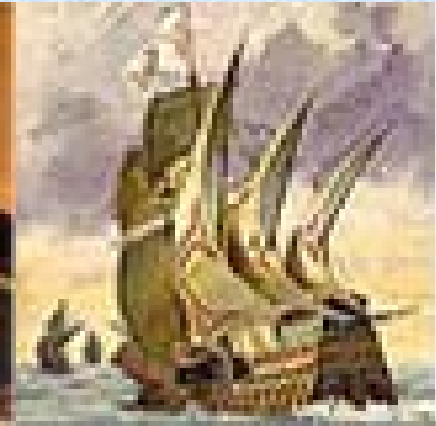


# The “Age of Discovery”



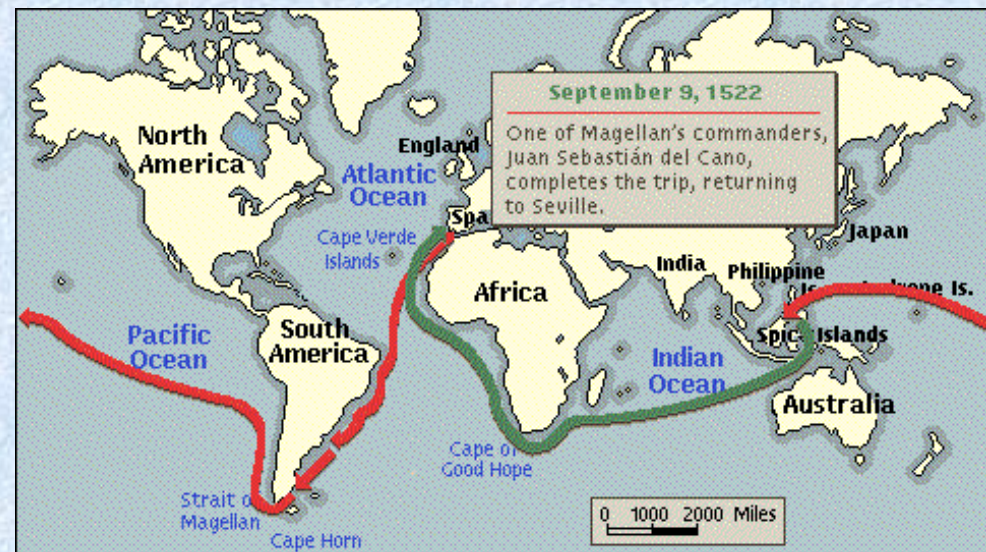
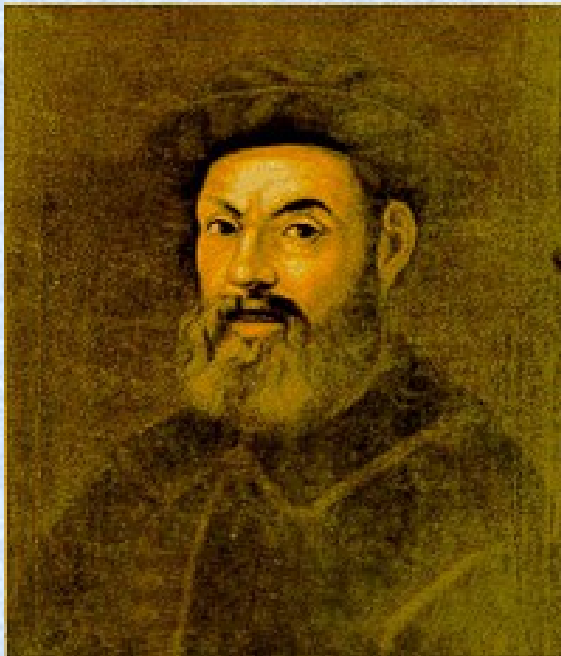
- After the Renaissance, Europeans began exploration with a fervor.
- Prince Henry the Navigator of Portugal established a school for teaching navigation and opened up the west coast of Africa to trade. He was one of the first to incorporate the compass into his teachings.

- Vasco da Gamma opened up the sea trade routes from Africa to India. (Remember, Columbus was trying to do it but “discovered” the Americas instead).





- Ferdinand Magellan, a Portuguese sailor sailing for Spain, was the first to circumnavigate the globe in 1522 (...well, not quite...he was killed in the Philippines, but his crew finished the journey sealing the fame for the Magellan expedition).

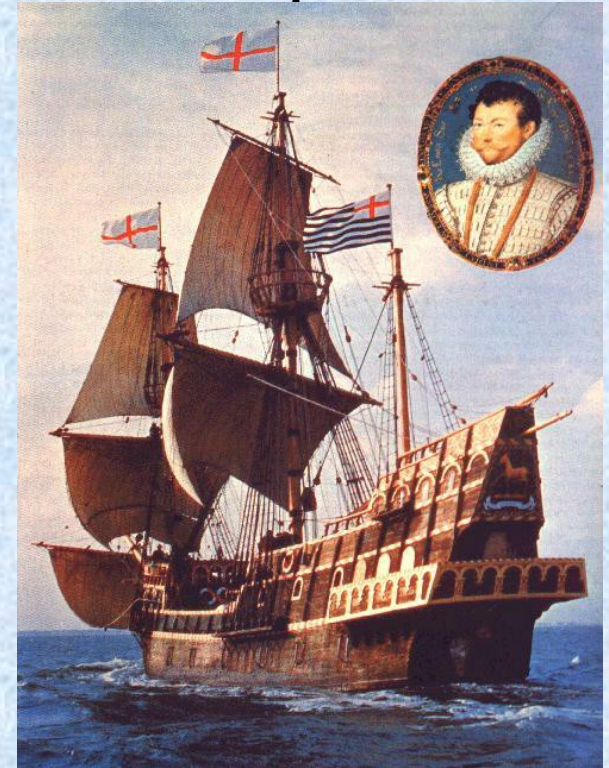


English navigation was established after the Age of Discovery to protect British interests as France & Spain began an age of conquest.



*A young Henry Hudson - 1609*

- Henry Hudson explored North America and navigated the Hudson Bay.
- Sir Francis Drake explored the west coast of North America & fought the Spanish Armada.

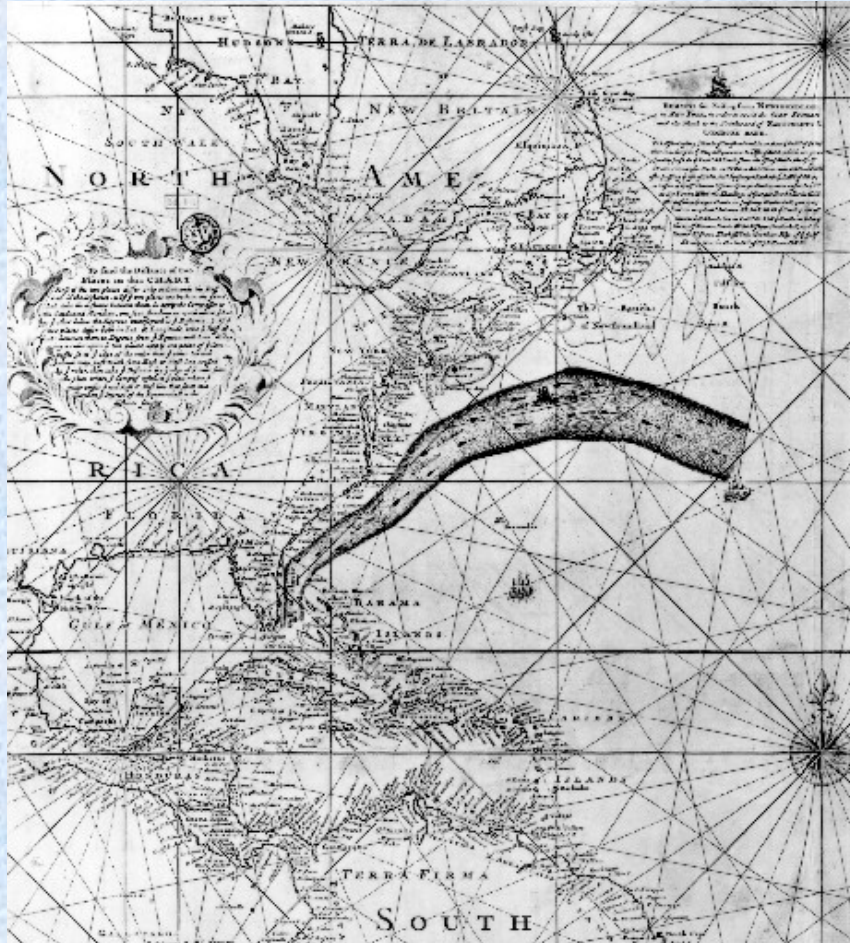


# Captain James Cook (1728-99)



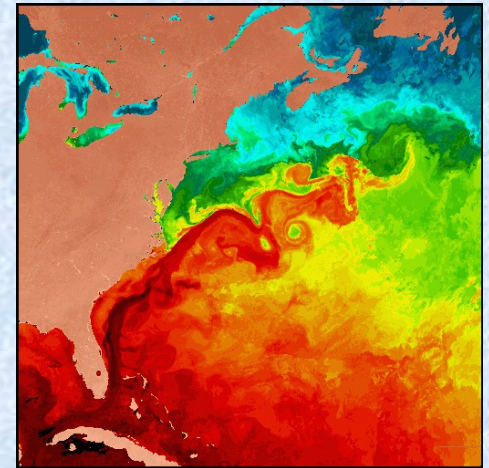
- Mapped the Pacific islands (“discovered New Zealand & Hawaii)
- Collected marine samples and recorded scientific data
- Was the first to prevent scurvy by having his crew eat vitamin C (limeys)
- Was first to use the chronometer to help with accurate navigation & longitude.

# Early American Oceanography

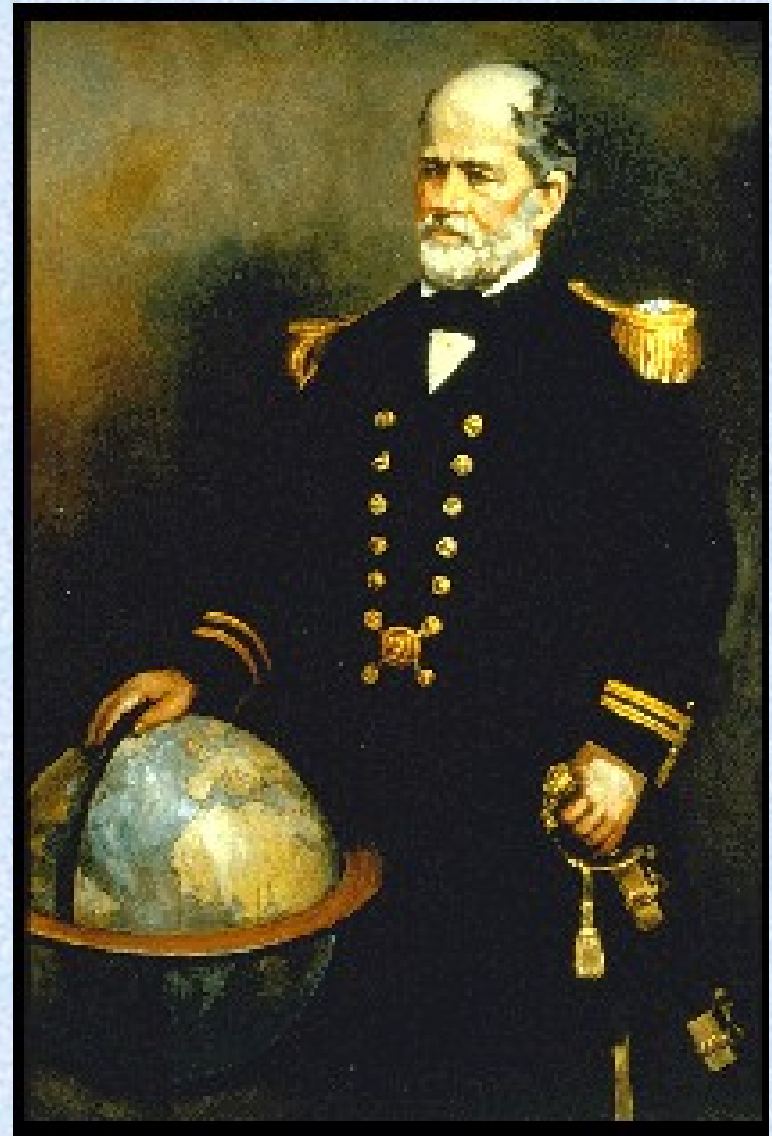


Currents and wind patterns were observed and recorded by a few Americans.

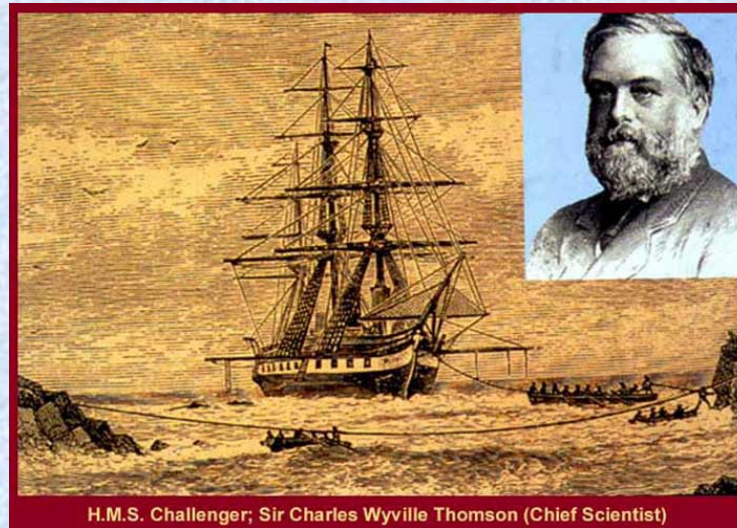
Benjamin Franklin studied the Gulf of Mexico with help of his cousin Thomas Folger and was the first to accurately draw the Gulf Stream.



- Matthew Fontaine Maury was perhaps the first person to devote his entire life to oceanography and his book *The Physical Geography of the Sea* (1855) is perhaps the first oceanography text.

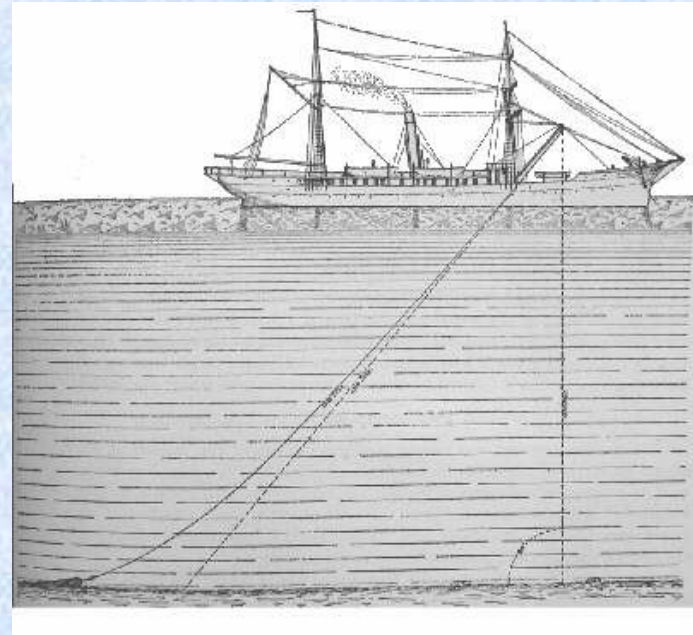


# The First Marine Science Vessel



The British ship *HMS Challenger* was the first voyage solely designed for “oceanography” - a term invented by trip creators, Charles W. Thomson and John Murray. The ship sailed for 4 years (1872-76), found 4717 new species of life, and produced a 50 volume record of data.

After the *Challenger*, other boats like *The U.S.S. Albatross* which was one of the first to take samples from the sea floor and have an operating lab on board the ship, corroborated the findings of the *Challenger*. Moreover, many students of oceanography were trained aboard the *Albatross*.



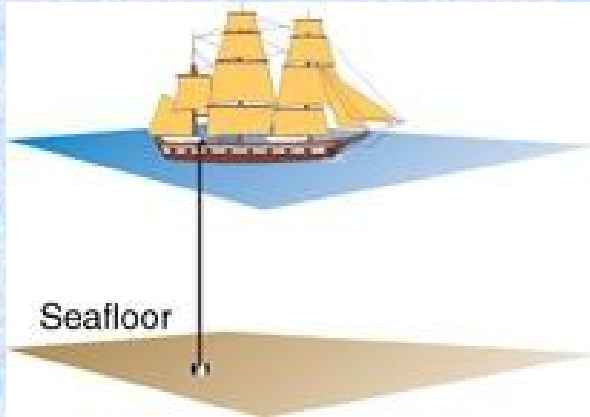
# 20th Century Work



- Fridtjof Nansen stranded himself for science in polar ice, showing that ice moved...he also took samples from the arctic seas.



# Soundings



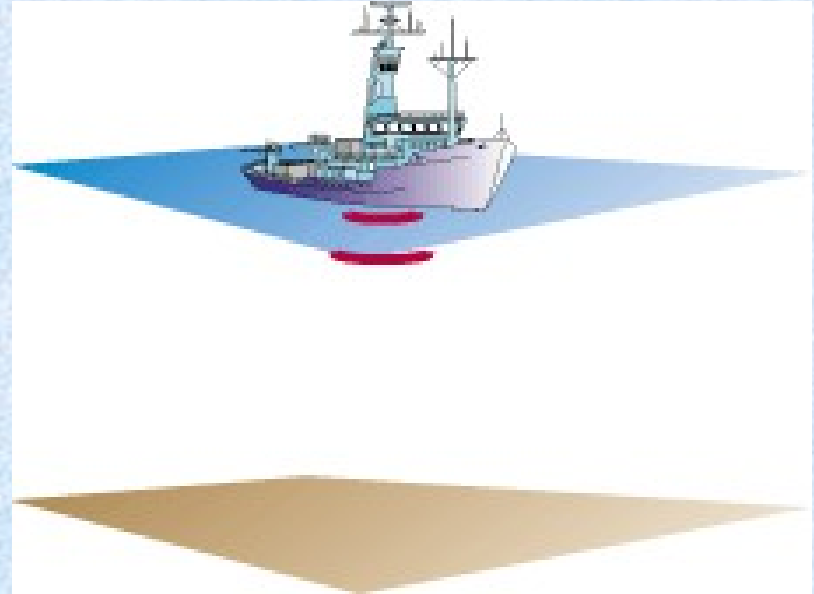
Early mapping of the sea floor was done by dropping a weighted rope to the bottom & taking a measurement.

Some of the maps were created in the mid-1800s when laying cables for the trans-Atlantic communication cables



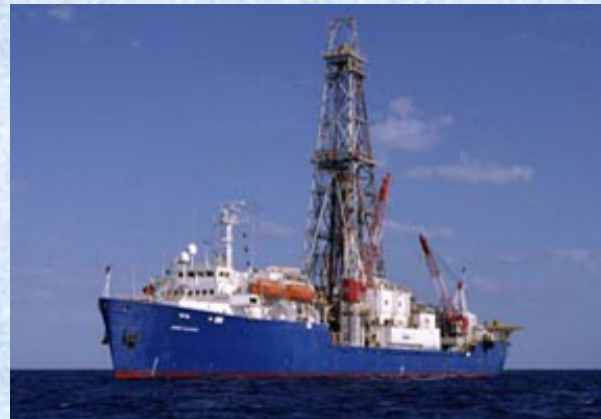
# Echo Soundings

- Echo sounding is a technique developed for WWI detection of submarines used sound waves bouncing off the sea floor to determine the distance...and therefore map the sea floor. The 1925 German ship *Meteor* was the first to successfully use echo sounding for mapping.
- Maurice Ewing led echo sounding expeditions in the 50s - 60s which mapped the sea floor.

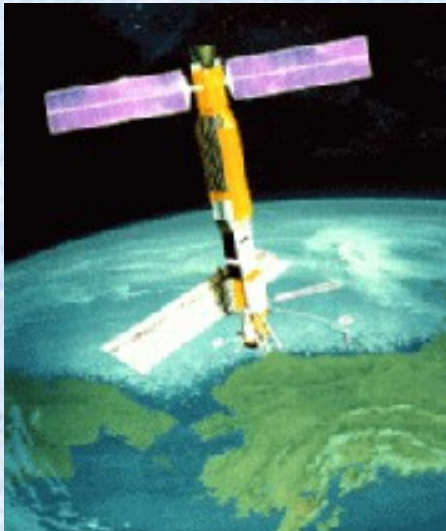


# Drill Ships Obtain Rock Samples From the Sea Floor

- The *Glomar Challenger* was the 1st drill ship...1967... which helped shed the light on sea floor spreading.
- Today, the *Joides Resolution* continues the drilling processes.



# Space Age Ocean Science



## How it works

Satellites are reference points for locations on earth



- In 1978 NASA launched the SEASAT satellite to study the oceans from space. It beams information back to Earth daily.
- GPS has replaced “traditional” methods of navigation.

# The End for now...

