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Oceanography from Space: Phytoplankton Abundance

United States National Aeronautics and Space Administration

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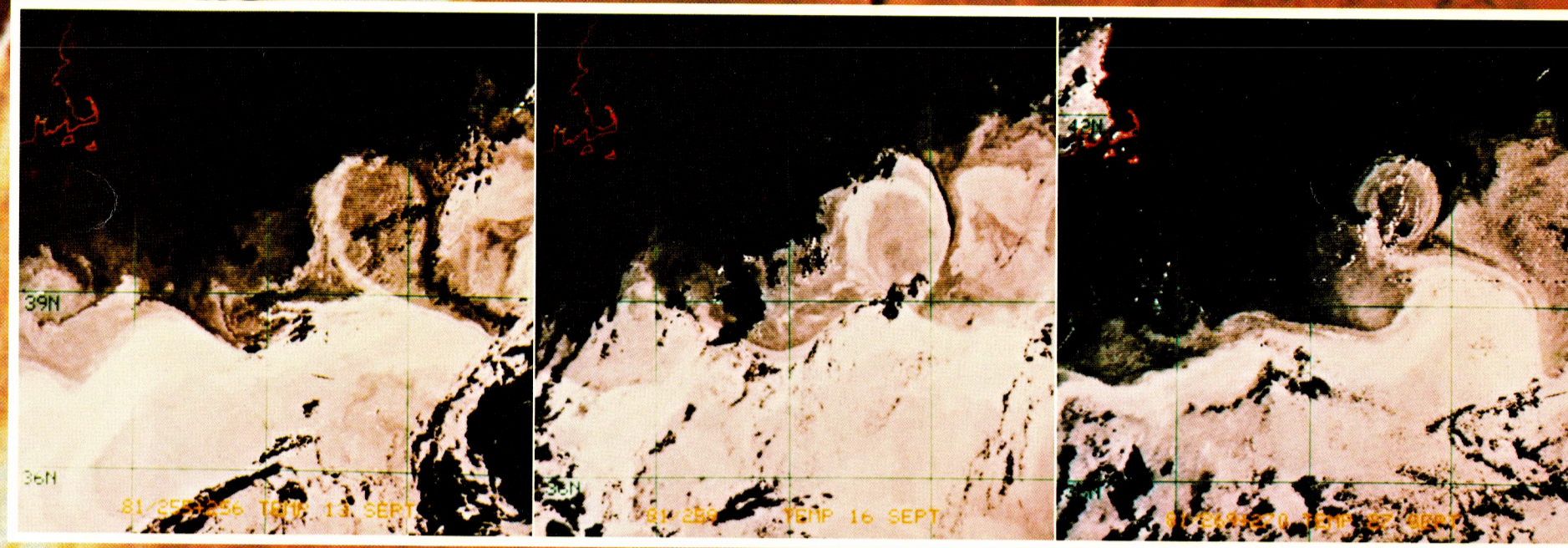
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Oceanography from Space

Phytoplankton Abundance

Phytoplankton — the single-celled drifting grasses of the sea — are the primary food for marine life. Understanding their distribution and abundance is crucial to marine ecology. The color scanner on NIMBUS-7 can measure their abundance in terms of chlorophyll concentration, as well as the sea surface temperature. The larger scene of the western North Atlantic, taken on June 14, 1979, shows highest chlorophyll concentrations (brown) on the productive continental shelf, and values 50 times lower (blue) farther off-shore in the vicinity of the Gulf Stream. The smaller inset shows the simultaneous map of surface temperature (blue = cool, red = warm). The similarities between the phytoplankton and temperature patterns are dependent on ocean currents. The circular feature south of Cape Cod, in both images, is a warm-core ring.



This temperature time series, taken on September 13, 16, 27, 1981, shows a Gulf Stream meander pinching off to form a warm-core ring, and its subsequent capture by the Stream.

