



Atmospheric gravity waves

Mention “gravity waves” to physicists and most will probably think of ripples in spacetime. Such waves, predicted by general relativity to be produced by mergers between black holes and neutron stars, are the objects for which the Laser Interferometer Gravitational-Wave Observatory (LIGO) and other experimental efforts are searching. Atmospheric gravity waves, in contrast, arise from vertical oscillations created in stable, stratified air as it passes over large topographical features such as mountains or islands.

This true-color image of the Indian Ocean off the coast of Eighty Mile Beach in northwestern Australia was taken on 11 November 2003 by the Moderate Resolution Imaging Spectroradiometer (MODIS) aboard NASA’s *Terra* satellite. (The image has been rotated so that north is to the right.) Overlapping arcs of so-called wave clouds, which can result from atmospheric gravity waves, appear in the right side of the image. Along the bottom, where the Sun glints brightly off the ocean’s surface, atmospheric gravity waves left a lone, curving wave cloud. On the ocean surface, dark lines that parallel the wave cloud show where the atmospheric gravity waves have impressed their pattern onto the water surface. Smaller wave patterns that appear in the sunglint may be internal ocean waves, watery analogues to atmospheric gravity waves. (Image courtesy of NASA/Goddard Space Flight Center, MODIS Rapid Response Team.)

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