

Ship tracks

Since the 1960s it's been known that the aerosol particles emitted in the engine exhaust of large ships can seed the formation of clouds: The particles form the nuclei around which water vapor condenses into cloud droplets. Aerosols' effect on cloud physics doesn't stop there—they influence clouds' size, density, lifetime, altitude, albedo, dynamics, and more. The report on page 20 highlights one consequence: a near doubling of lightning frequency in the sky above two of the world's busiest shipping lanes.

Clouds produced by ship emissions are also observable from above. Back in 2002, the MODIS (Moderate-Resolution Imaging Spectroradiometer) instrument aboard NASA's *Terra* satellite captured this image (color enhanced) of a stretch of the northern Pacific Ocean just below the Gulf of Alaska. Amid the large clouds are several bright, narrow streaks—ship tracks. The tracks become undulated in the wind yet they maintain their brightness due to their small droplet sizes.

—RJF

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