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Observing noctilucent clouds from space and ground

Noctilucent clouds, which form from ice particles at high altitudes (about 83 kilometers) and enhance sky brightness after sunset, can be used to trace processes in the atmosphere—the wavy forms of the clouds can give clues about the dynamical processes in the area. *Baumgarten et al.* report the first observations of such clouds obtained simultaneously from the ground and from space.

They measured the brightness and particle size distributions of noctilucent clouds above a research station in northern Norway on 5 August 2008 using ground-based lidar (light detection and ranging) to observe the evolution of the clouds over time and satellite-based instruments to observe the horizontal structure of the clouds. They demonstrate that coincident



Noctilucent cloud observed from northern Germany at about 83-kilometer altitude showing waves on scales of a few kilometers to more than 100 kilometers.

observations from lidar and satellite, combined with wind information, provide a useful way to study the evolution of noctilucent clouds on scales of minutes to hours and from 5 to 100 kilometers. (*Geophysical Research Letters*, doi:10.1029/2011GL049935, 2012) —EB