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**Edward Souder Newkirk\***, 1519 Paresky Center, Williamstown, MA 01267. *The Soap Bubble Problem on the Sphere*. Preliminary report.

What is the least-perimeter way to partition the surface of a sphere into  $n$  prescribed areas? For  $n=2$ , the solution is known. The problem has also been solved for  $n=3$  (Masters, 1994) and for  $n=12$  in the case of equal areas (Hales, 2002). We show simulations of equal-area partitions for  $n>3$  and discuss progress on a general solution for  $n=4$ . (Received September 11, 2008)