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Michael A Brilleslyper* (mike.brilleslyper@usafa.edu), Department of Mathematical Sciences, 2354 Fairchild Drive Suite 6D-124, USAF Academy, CO 80921, and **Mark Staley**. *Maps based on Max Elevation Angles to the Horizon*. Preliminary report.

Topographic maps display 3-dimensional terrain by plotting curves of constant elevation. Often, colors are assigned to different elevation ranges to create vivid 2-dimensional representations of a region. An alternative to measuring elevation at each location is to instead measure the maximum elevation angle to the horizon. By assigning colors to different ranges of elevation angles we obtain maps that have a striking similarity to standard topographic maps. The resulting maps based on elevation angles have important applications to the performance of various satellite systems (particularly GPS), where a receiver on the ground must have direct line-of-sight to a satellite in the sky. This talk is based on a year-long project conducted by Air Force Space Command that used terrain data obtained during the 10-day Space Shuttle Tomography Mission conducted in February, 2000. We will discuss the methodology used to calculate the maximum elevation angles and show various images contrasting elevation angle maps with topographic maps of the same region. (Received September 10, 2014)