Construction of Antipodal Points on a Sphere by Compass and Straightedge

Abstract:

Suppose we have a sphere (a globe) and a plane, on which we can draw circles by compass, and straight lines by straightedge (only in the plane). How to construct a segment in the plane congruent to the diameter of the sphere? How to construct antipodal points on the sphere? How to draw a dense set of points on the meridian passing through the North Pole N and a given point A on the northern hemisphere?

The speaker will solve these problems both for Euclidean and Lobachevskian (hyperbolic) space.