1021-44-65   **Eric Todd Quinto*** (`todd.quinto@tufts.edu`), Department of Mathematics, Tufts University, 503 Boston Ave., Medford, MA 02155. *Support Theorems for the Spherical Radon Transform on Manifolds.*

Let M be a real-analytic manifold and let S be a real-analytic hypersurface. We prove local support theorems for the spherical Radon transform that integrates over spheres centered at points on S. Our theorems are valid for distributions supported on one side of "tangent surfaces" to S. The proofs involve the microlocal analysis of the sphere transform and a microlocal Holmgren theorem of Kawai, Kashiwara, and Hörmander. If time, applications to sonar and the wave equation will be outlined. (Received August 18, 2006)