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Byungchul Cha* (cha@muhlenberg.edu), 2400 W. Chew st., Allentown, PA 18104, and **Dong Han Kim**. *Lagrange spectra and intrinsic Diophantine approximation of spheres*. Preliminary report.

Let S^1 be the unit circle in \mathbb{R}^2 centered at the origin and let Z be a countable dense subset of S^1 , for instance, the set $Z = S^1(\mathbb{Q})$ of all rational points in S^1 . We give a complete description of an initial discrete part of the Lagrange spectrum of S^1 , in the sense of intrinsic Diophantine approximation. This is an analogue of the classical result of Markoff, which first appeared in 1879. In addition, we present similar results for a few different choices of Z . Finally, we give some partial results of similar type for S^2 . (Received September 10, 2019)