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(doconnel@haverford.edu), 161 Waban Hill Road North, Newton, MA 02467. *A New Look at Apollonian Circle Packings*. Preliminary report.

Apollonian gaskets are circle packings that are the subject of significant current research. We first extend previous results about Ford circles to the Apollonian gasket that contains them. We then create a new labeling that provides a variety of advantages when examining the gasket and use the properties of this labeling to describe a more general circle arrangement, termed a "super-packing". We consider the sets of curvatures that can occur within our arrangement and discuss the relationship between circle inversion and our construction. We then generalize our results to the case of an Apollonian sphere packing. This research was conducted at the REU program at Central Michigan University. (Received August 19, 2014)