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Implications of Triangular Features in the GAIA Sky Map for the Caustic Ring Model of the Milky Way Halo[1] YAQI HAN, SANKHA CHARKRABARTY, PIERRE SIKIVIE, ANTHONY GONZALEZ, University of Florida — We interpret two triangular features in the GAIA map of the Milky Way as manifestations of the fifth caustic ring of dark matter in the Milky Way halo. The existence of a series of such rings was predicted by the Caustic Ring Model. The locations of the features imply that we on Earth are very close to the fifth caustic ring, much closer than thought on the basis of pre-GAIA observations. We are either just outside the tricusp structure associated with the 5th caustic ring, or inside. In the first case the dark matter density on Earth is dominated by a single cold flow, called the Big Flow. In the second case, there are two additional Big Flows, three altogether. We use the triangular features in the GAIA map and a matching feature in IRAS map to estimate the velocity vectors and densities of the Big Flows.

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