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The strong chromatic index of a multigraph is the minimum k such that the edge set can be k -colored requiring that each color class induces a matching. We verify a conjecture of Faudree, Gyárfás, Schelp, and Tuza, showing that every planar multigraph with maximum degree at most three has strong chromatic index at most 9, which is sharp. (Received January 26, 2015)