1030-05-383   **André Kündgen***, Department of Mathematics, Cal State San Marcos, 333 S Twin Oaks Valley
Road, San Marcos, CA 92096. *Constrained coloring problems for planar graphs.*

A *star coloring* of a graph is a proper vertex-coloring having no 2-colored path on four vertices; equivalently, any two color classes induce a star forest. The number of colors needed in a star coloring is bounded for planar graphs, but the optimal bound remains elusive.

We survey recent results on star colorings of families of graphs, such as planar graphs of high girth. We also describe methods for tackling such problems and present a number of challenging open problems on star coloring and related coloring concepts. (Received August 07, 2007)