Personal Copy
Enantioselective Desymmetrization of Cyclopropenes

**Significance:** Substituted cyclopropanes are important substructures of considerably high interest in many research fields, for instance, in medicinal or physical organic chemistry. As a result, considerable effort has been made to prepare these compounds in an enantiomerically pure fashion. This communication describes a rhodium-catalyzed enantioselective desymmetrization of achiral cyclopropenes 1 to the corresponding ketones 3 using a hydroacylation protocol. The target compounds could be synthesized in excellent yields, enantio- and diastereoselectivities using the JosiPhos ligand 4.

**Comment:** Competing reaction pathways, such as decarbonylation, often make the intermolecular hydroacylation of olefins difficult to achieve. The methodology described herein utilizes the release of strain energy during the hydroacylation of cyclopropenes 1 leading to cyclopronanes 3. The predominant formation of the \textit{trans} diastereomers suggests that the insertion reaction occurs from the cyclopropene face with the smaller substituent. The methodology seems to be limited to salicylaldehydes 2 since the phenol group is required as a coordinating group in the reaction.