All-Carbon Carbodicarbene

Significance: The authors present the first carbodicarbene stabilized by two cyclopropenylidenes. Compound 3 is made by deprotonation of the corresponding triafulvene cyclopropenium salt and is characterized by NMR at -60 °C. The divalent electron-donating property of the center carbon on 3 is confirmed by generating main-group and transition-metal complexes.

Comment: A carbenoid carbon is usually stabilized by amino groups through charge delocalization. Herein the authors use a phenyl group to serve a similar purpose and the carbodicarbene, which is based solely on carbon without any heteroatom, is very impressive. The stable complexes 4–6 are all characterized by single-crystal X-ray diffraction.