Pure rotational spectra of Sc\textsuperscript{13}C\textsubscript{2} and Sc\textsuperscript{12}C\textsubscript{13}C (\tilde{X}\textsuperscript{2}A\textsubscript{1}) have been obtained using Fourier Transform Microwave methods. These molecules were created from scandium vapor in combination with \textsuperscript{13}CH\textsubscript{4} and/or \textsuperscript{12}CH\textsubscript{4}, diluted in argon, using a Discharge Assisted Laser Ablation Source (DALAS). Transitions in the frequency range of 14-30 GHz were observed for both species including hyperfine splitting due to the nuclear spin of Sc (\textit{I} = 7/2) and \textsuperscript{13}C (\textit{I} = 1/2). Rotational, spin-rotational, and hyperfine constants have been determined for Sc\textsuperscript{13}C\textsubscript{2} and Sc\textsuperscript{12}C\textsubscript{13}C, as well as a refined structure for ScC\textsubscript{2}. In agreement with theoretical calculations and previous Sc\textsuperscript{12}C\textsubscript{2} results, these data confirm a cyclic (or T-shaped) structure for this molecule.

Scandium carbides have been shown to form endohedral-doped fullerenes, which have unique electrical and magnetic properties due to electron transfer between the metal and the carbon-cage. Spectroscopy of ScC\textsubscript{2} provides data on model systems for comparison with theory.