In this talk, I will present the theory of Kan’s combinatorial spectra and their sheaves. I show that the category of Kan spectral sheaves has co-localization, which allows constructions analogous to those in abelian sheaf theory, from sheafification to the six-functor formalism, on the levels of both the strict and derived categories. I will also explore the notions of $E_\infty$-ring spectra and $E_\infty$-ring spectral sheaves in the context of simplicial Kan spectral sheaves. Some of this is joint work with Igor Kriz and Aleš Pultr. (Received June 12, 2018)