In this talk, we study the functorial descent from self-contragredient cuspidal automorphic representations $\pi$ of $GL_7(A)$ with $L^S(s, \pi, \wedge^3)$ having a pole at $s = 1$ to the split exceptional group $G_2(A)$, using Fourier coefficients associated to two nilpotent orbits of $E_7$. We show that one descent module is generic, and under mild assumptions on the unramified components of $\pi$, it is cuspidal and $\pi$ is a weak functorial lift of each of its irreducible summands. However, we show that the other descent module supports not only the non-degenerate Whittaker-Fourier integral on $G_2(A)$ but also every degenerate Whittaker-Fourier integral. Thus it is generic, but not cuspidal. This is a new phenomenon, compared to the theory of functorial descent for classical and $GSpin$ groups. This work is joint with Joseph Hundley. (Received July 09, 2019)