Quasars are among the most luminous objects in our Universe and signal the growth of the largest black holes. While variability is a characteristic of quasars, astronomers have only recently identified dramatic changes in quasars, either in the brightness or spectral characteristics of sources. In particular, a new class of ``changing-look quasars'' have recently been identified where the strong UV continuum and broad hydrogen emission lines associated with "unobscured" quasars either appear or disappear on timescales of years. The physical processes responsible for such changes are still debated, but fundamental changes in the quasar such as the black hole accretion rate, appear more likely than changes in obscuration. Here we report on three epochs of spectroscopy of SDSS~J110057.70-005304.5, an extreme mid-infrared variable quasar at $z = 0.378$ whose UV continuum and broad hydrogen emission lines have dramatically faded over the past 20 years. Uniquely, an archival spectrum of this quasar from 2010 shows an intermediate phase of the transition, when the flux below rest-frame ~ 3400~\AA\ has collapsed, suggestive of dramatic changes in the innermost regions of the accretion disk. The UV continuum is rising again in 2017, leading to a prediction of a rise in Hβ flux in the next few months. If our prediction is confirmed, the physics of changing look quasars are being driven by effects within 10 light hours of the central black hole.