

3C 57, A REJUVENATED QSO

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We present new optical/UV spectroscopic measurements and radio data for the atypical Radio Loud (RL) quasar 3C 57. It is unambiguously RL ($\log L_{1415MHz} = 34.4$ erg s⁻¹ Hz⁻¹ and $\log R_K = 3.0$) but falls in the region of the 4DE1 optical plane where almost all the sources are radio quiet (RQ). Our studies confirm that 3C 57 shows extreme population A optical properties: strong optical FeII emission ($R_{FeII} = 1$) and large CIV λ 1549 blueshift (-1500 km s⁻¹). It shows an estimated Eddington ratio ($\log L/L_{Edd} = -0.26$) typical of population A quasars and higher than the majority of RL quasars. New radio measures show no evidence for flux change and are consistent with the observed compact steep-spectrum (CSS) SED with a young Lobe-dominated morphology. We suggest that 3C 57 is an evolved RL quasar (i.e. large Black Hole mass) undergoing a rejuvenation likely reflecting a major accretion event. This causes it to show properties typical of the opposite end of the 4DE1 main sequence (higher BLR density, metallicity and accretion disk wind) where younger quasars are found. The CIV wind is either too strong to be disrupted or the new radio outburst is so recent that this disruption has not yet occurred.