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Accretion Power and the Broad Line Region in Real-time: Finding Galaxies Turning Into Quasars

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Rare changing-look quasars (CLQs) have been found that dim or brighten substantially, together with near or complete dis/appearance of their broad Balmer line emission. The CLQ phenomenon has attracted a great deal of attention, due to their impact on our understanding of AGN in general. The vast majority of CLQs have been found as turn-off CLQs because most selection methods start from spectroscopically-confirmed quasars. We present here the largest sample yet (>50) of spectroscopically confirmed turn-on CLQs; these are, effectively, galaxies turning into quasars. Turn-off CLQs were found most commonly associated with low Eddington accretion rate sources, and we found turn-on CLQs are at even lower accretion rate compared to turn-off CLQs. The unique nature of CLQs provides unparalleled opportunities to investigate the correlation between the host galaxies and the central black holes beyond the nearby Universe, with enhanced sensitivity for measurements of the host galaxies in the dim state and of the central black hole masses in the bright state.