

X52a Passive spiral galaxies deeply captured by Subaru/HSC

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We report a discovery of ~ 1000 passive spiral galaxy samples at $z = 0.01\text{--}0.3$ based on a combined analysis of HSC-SSP PDR3 and the GALEX-SDSS-WISE Legacy Catalog (GSWLC-2). Among 54871 *gri* galaxy cutouts taken from the HSC-SSP PDR3 over 1072 deg^2 , we conducted a search with deep-learning morphological classification for candidates of passive spirals below the star-forming main sequence derived by UV to mid-IR SED fitting in the GSWLC-2. We then obtained ~ 1000 passive spirals through further visual inspections. The selected passive spirals have a similar distribution to the general quiescent galaxies on the $\text{EW}_{\text{H}\delta}\text{--}D_n4000$ diagram and concentration indices. Moreover, we found that passive spirals are preferentially associated with X-ray clusters, and more intriguingly, they tend to be located in the midterm or late infall phase on the phase-space diagram, supporting the ram pressure scenario, which has been widely advocated in previous studies. We also discuss future updates, including integration with a citizen science project termed GALAXY CRUISE, which will make classifications more effective and comprehensive.