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Targeted Search for Milky Way Satellites Using HSC BETHLEE LINDOR[1], ADRIAN PRICE-WHELAN[2], Princeton University — We present the results from a targeted search for new Milky Way (MW) satellites based on survey data from the Hyper-Suprime Cam (HSC) Subaru Strategic Program. HSC has deep photometry which enables the discovery of ultra faint dwarf galaxies in the galactic halo. We choose this region because the galactic halo contains stars that are tracers of old metal-poor stellar populations similar to those seen in the known dwarf galaxies around the MW: RR Lyrae, K Giants, and Blue Horizontal Branch stars. We locate these types of stars in the HSC footprint, and use their accurate heliodistances to determine whether they are satellite galaxies. This is done by discovering spatial overdensities of resolved stellar sources against foreground stars and background galaxies around our tracer star. Our method has yet to yield detections of MW satellites, but remains promising for the upcoming LSST survey. Knowing where the MW dwarf might be and knowing its distance from target stars will allow LSST to provide a great wealth of information for the open question of Dark Matter and Dark Energy. Still, future work on this project would be to analyze more HSC data upon release or to quantify at what limits we can say that there are no galaxies around the searched regions.

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