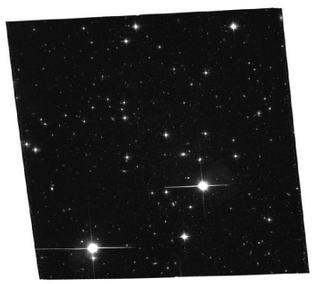
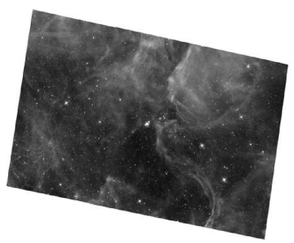
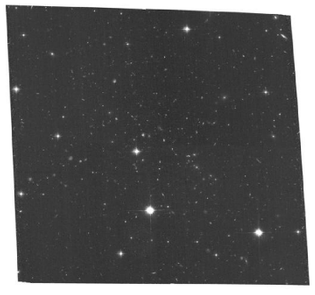
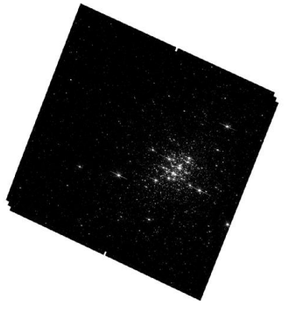
Image-to-Text Retrieval

Image	Top classes (fine-tuned)	Top classes (base)	Abstract
	1. dwarf galaxies 2. RR Lyrae variables 3. stellar populations 4. primordial black holes	1. high-redshift quasars 2. stellar abundances 3. trans-Neptunian objects 4. Kuiper Belt objects	NGC 253, NGC 5128, substructures, stellar streams, stellar halos; confirm distances and group membership of substructures, derive luminosities and star formation histories of substructures, compare properties of substructures to those of the smooth halo in NGC 253 and NGC 5128, contrast substructures in NGC 253 and NGC 5128 with those in the Milky Way and M31
	1. supernova remnants 2. galactic structure 3. interstellar chemistry 4. stellar nurseries	1. interstellar medium 2. cosmic dust 3. compact stellar remnants 4. stellar abundances	SN1987A supernova, Large Magellanic Cloud satellite galaxy; study supernova remnant evolution, explore blast wave physics, measure light echoes, investigate circumstellar dust properties
	1. galaxy clusters 2. cosmic web structure 3. reionization epoch 4. intracluster medium	1. high-redshift quasars 2. dwarf galaxies 3. low surface brightness galaxies 4. Cepheid variables	massive clusters, South Pole Telescope, Sunyaev-Zel'dovich effect, Hubble Space Telescope Advanced Camera for Surveys, weak lensing; calibrate mass proxies for future cluster surveys, robustly derive constraints on cosmology and dark energy, study formation and evolution of massive clusters, test for deviations from self-similar evolution, investigate the frequency of giant arcs behind high-redshift clusters, study star formation in high-redshift cluster galaxies
	1. star clusters 2. stellar populations 3. primordial black holes 4. globular clusters	1. star clusters 2. globular clusters 3. open clusters 4. stellar populations	pre-main sequence stars, Large Magellanic Cloud, young clusters, color-magnitude diagrams, main-sequence turn offs; disentangle between age and rotation in pre-MS stars, assess multiple bursts of star formation in young clusters, understand the eMSTO phenomenon, investigate the multiple stellar populations phenomenon, analyze the luminosity function of young clusters's Turn-On region