# Are Star Clusters in the Bar and Nuclear Rings of Disk Galaxies Special?

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Bars in disk galaxies are a unique place in the sense that they connect spiral arms and the nucleus of a galaxy. They appear to play as a channel for gas to flow from outer arms to the galaxy nucleus. Therefore there may be strong shock and density enhancements in two regions of a disk galaxy: 1) the ansae (the region linking the arms and the outer ends of a bar) where tangential motions of bas and stars change into radial motions, and 2) the circumnuclear rings which are often seen in nearby spiral galaxies. It is expected that star clusters may form vigorously in these two regions. Are they special, compared with the star clusters in other regions of a galaxy? To address this question, we have been doing a photometric study of star clusters in the nearby barred spiral galaxies. In this poster, we present a result for NGC 1672 hosting AGN based on the multi-band images in the *Hubble Space Telescope* archive. We have selected about 1430 star clusters with V $\leq$ 24 ($M_V \leq -6.8$) mag, using morphological parameters and visual inspection. Star clusters are found mostly in the bar & spiral arms and come in the nuclear ring. Especially the nuclear ring and ansae (bar ends) show a strong concentration of young star clusters. Young star clusters are found also along the leading side of the western curved dust-lane in the bar. The nuclear ring host dozens of bright ($M_V \leq -10$) and massive ($M_{SC} \geq 10^5 M_\odot$) star clusters at the radial range of 400 $\sim$ 700 pc, which are much brighter than those in outer regions. We estimated the ages of the star clusters in the nuclear region from the comparison of the multi-band photometry (UBVIH) with simple stellar population models for Z = 0.019, finding that they have a large range from log(age) $\approx$ 6.3 to 9. Radial gradients of the cluster age is found in the nuclear ring. From these results, we suggest a scenario that gas inflow along the bar formed a nuclear ring and started forming star clusters about one Gyr ago, forming episodically star clusters until recently. Due to high gas densities and pressures associated with the interaction of gas inflow with the ring, much more massive star clusters are formed in the nuclear ring, compared with other regions in the galaxy. The existence of spiral arms inside the nuclear ring indicates that gas inflow reaches the galaxy center, triggering activity in the galaxy nucleus.