

## POSTER PAPERS

## MAPPING STELLAR EVOLUTION IN THE WAKE OF DENSITY WAVES IN RING GALAXIES

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### 1. Summary of the Project

We have been conducting multi-color observations of a sample of classical ring galaxies with the aim of using them to study the formation and evolution of massive stars. We compare theoretical predictions for the expected color of the material inside the rings assuming that massive stars are created in the wake of the expanding wave. We present ground based data for VIIZw466 and HST data for IIZw28 and the Cartwheel which show strong color gradients.

Color models of star cluster evolution can be mapped onto the disk as the wave expands. For a flat rotation curve in the target, the ring expansion velocity is roughly constant with time, and features such as the supergiant phase, and later the AGB phase are expected to be seen as color changes inside the ring. For reasonable ring expansion velocities and the assumption that the star formation is triggered simultaneously along the edge of the wave, it is shown that HST has enough resolution to resolve the supergiant “flash”. Preliminary analysis suggests that a swing to the red is seen in the Cartwheel data inside the outer ring. However, the possibility that dust may complicate the picture is being explored by scheduled mid-IR observations of some of the rings with ISO. We refer the reader to the following review on ring galaxies[1].

### References

1. Appleton, P. N. and Struck-Marcell, C. (1995), Collisonal Ring Galaxies, *Fundamentals in Cosmic Physics*, In Press