

# The Size Distributions of Stellar Groupings in Nearby Galaxies: Clues to Formation and Disruption



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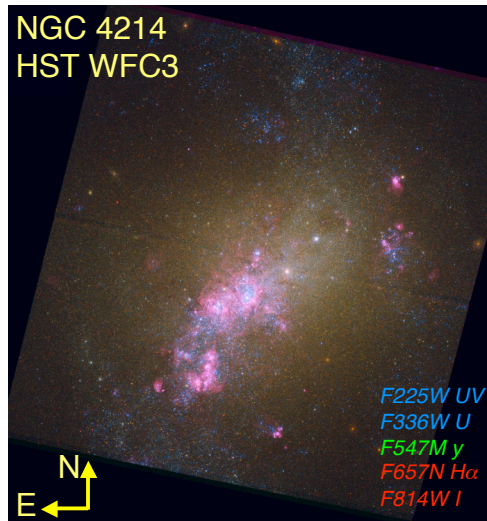
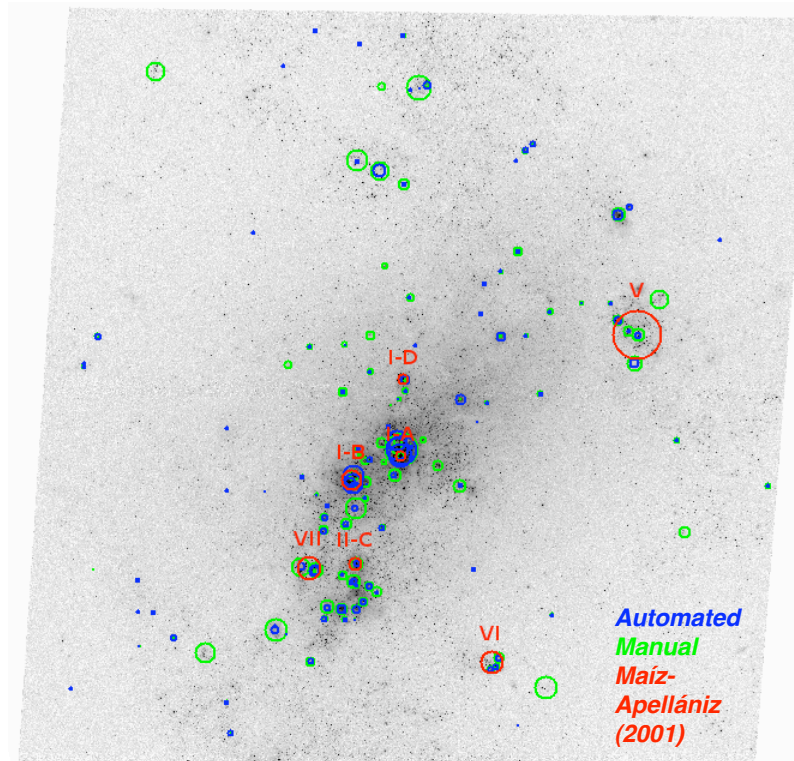
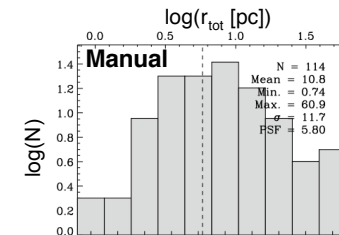
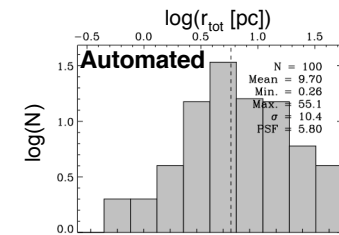


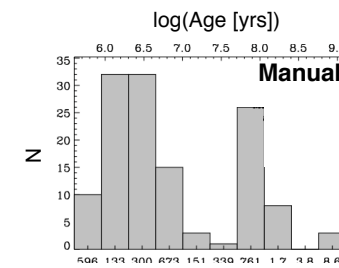
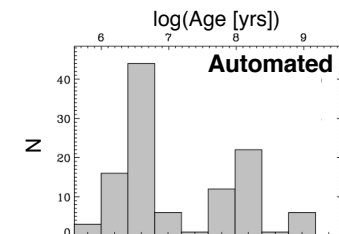
Image Credit: NASA, ESA, R. O'Connell, WFC3 SOC, ESO.



Stellar Groupings selected in the HST WFC3 *F336W* image of NGC 4214.



NGC 4214 Log-Log Size Histograms



NGC 4214 Log-Linear Age Histograms  
Number vs. log(Age [yrs])

## MAIN CONCLUSIONS

### Size histograms:

- continuous size distributions between ~3-80 pc.
- good match between automated and manual lists (detection ~70%, size 80%)

### Age histograms:

- Infant mortality—most stellar groupings detected in NGC 4214 are  $\leq 10$  Myr.
- ~1/20th of the compact clusters survive to have  $>200$  Myr stars diffuse into the field