

Triggered Star Formation from HST/ACS Imaging in IC 2574

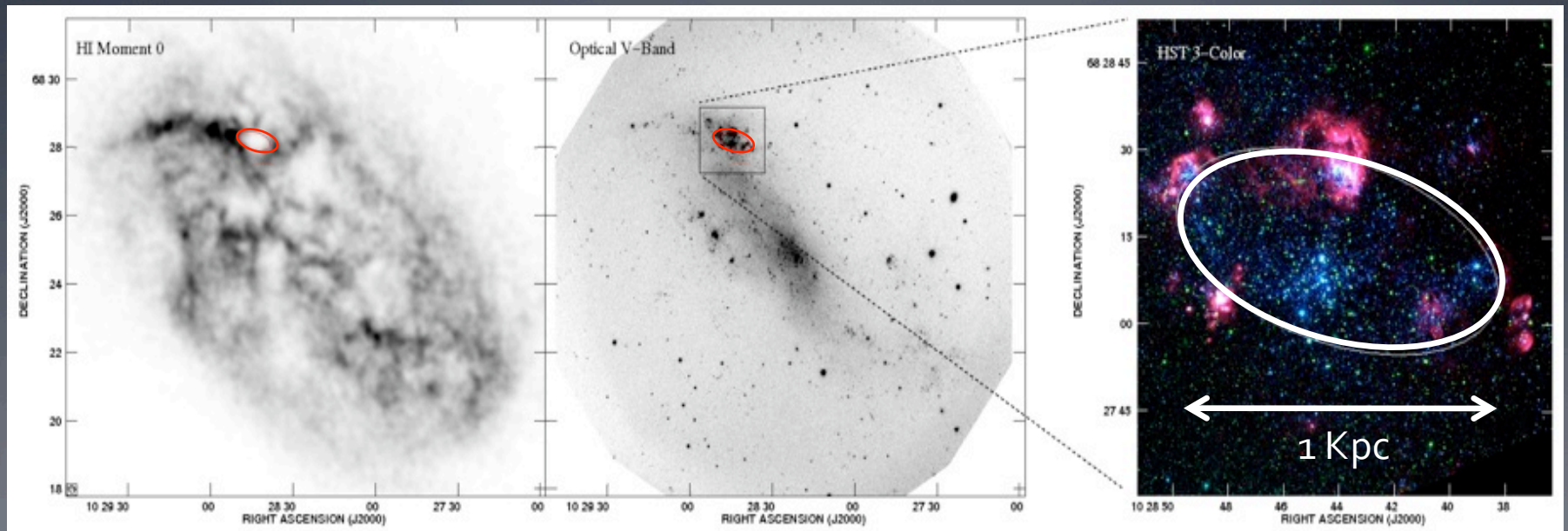
Dan Weisz

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NRAO ALMA Massive Stars Workshop

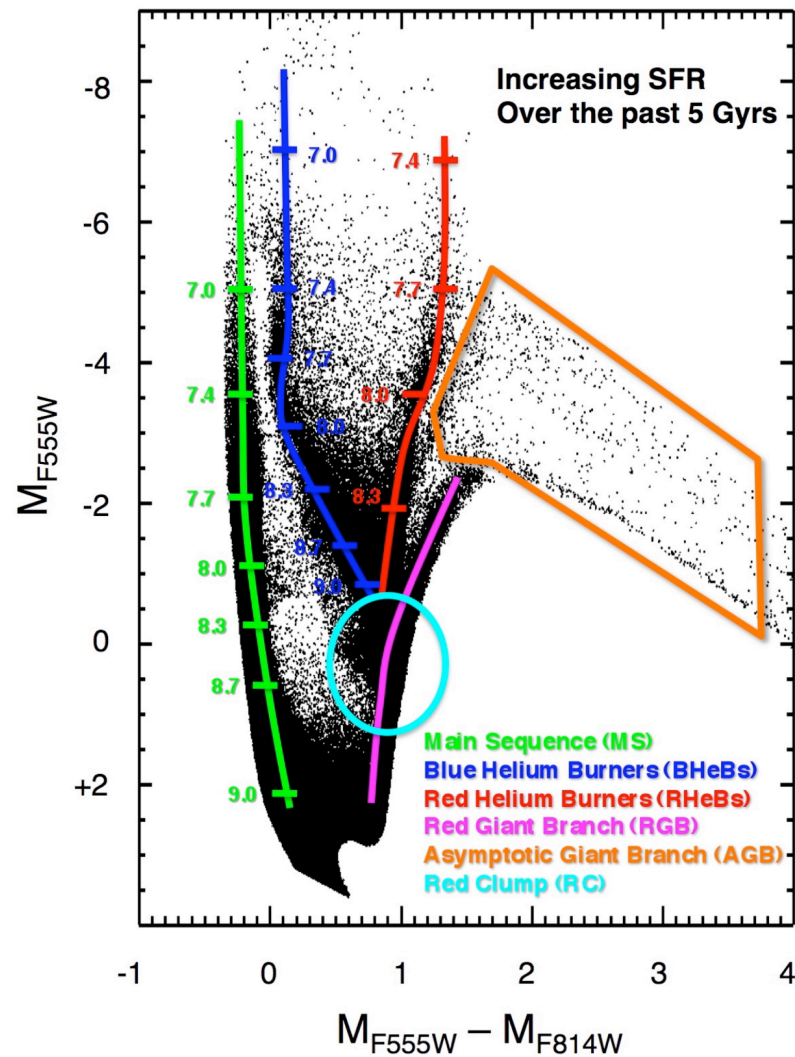
Wednesday, October 1, 2008

IC 2574 Super Giant Shell (SGS)

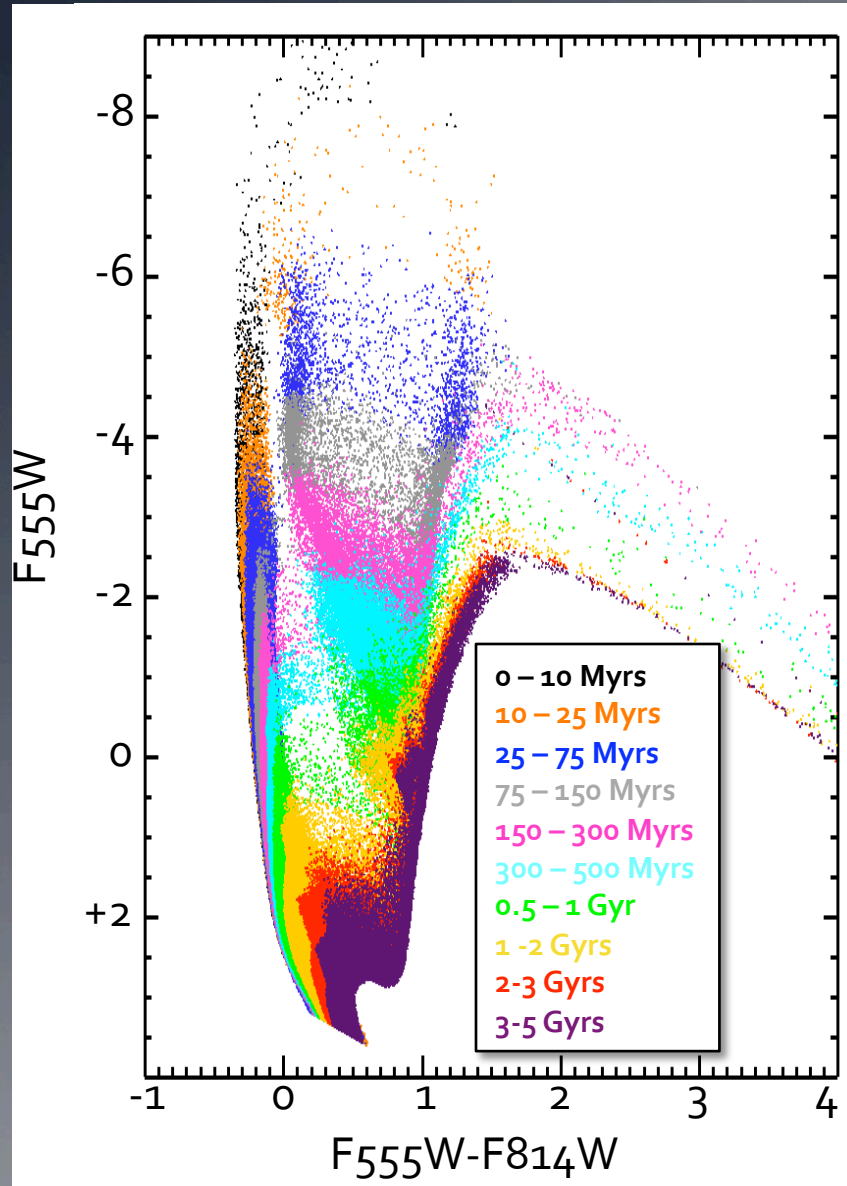


Walter and Brinks 1999, Cannon et al. 2005, Weisz et al. in prep

Simulated Color Magnitude Diagram



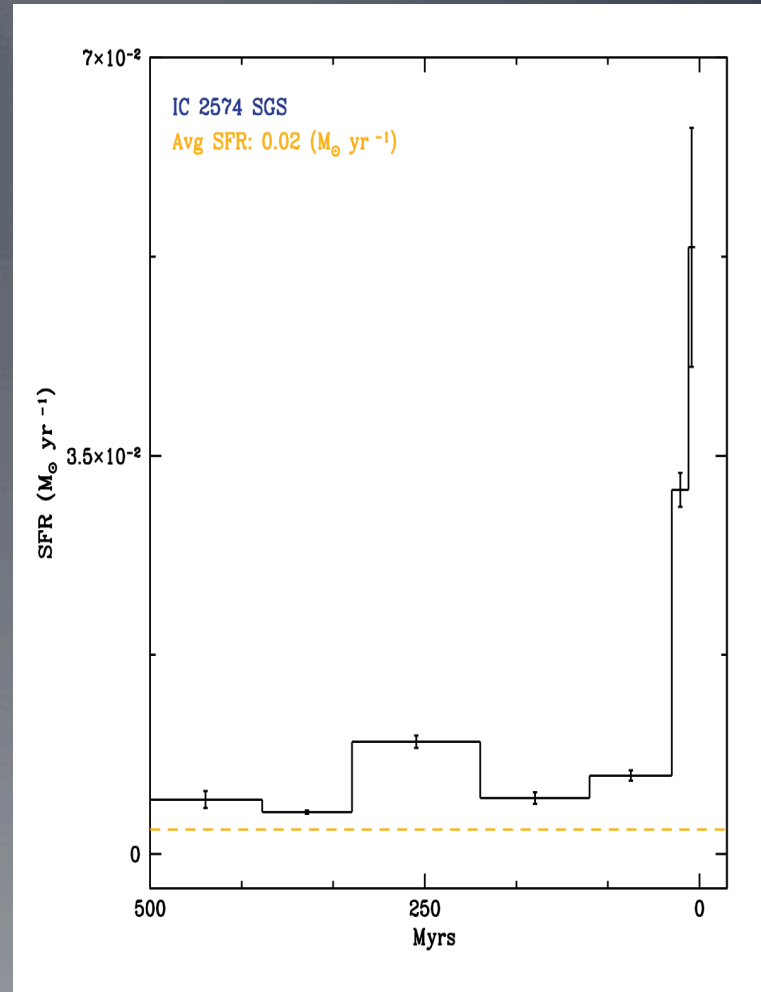
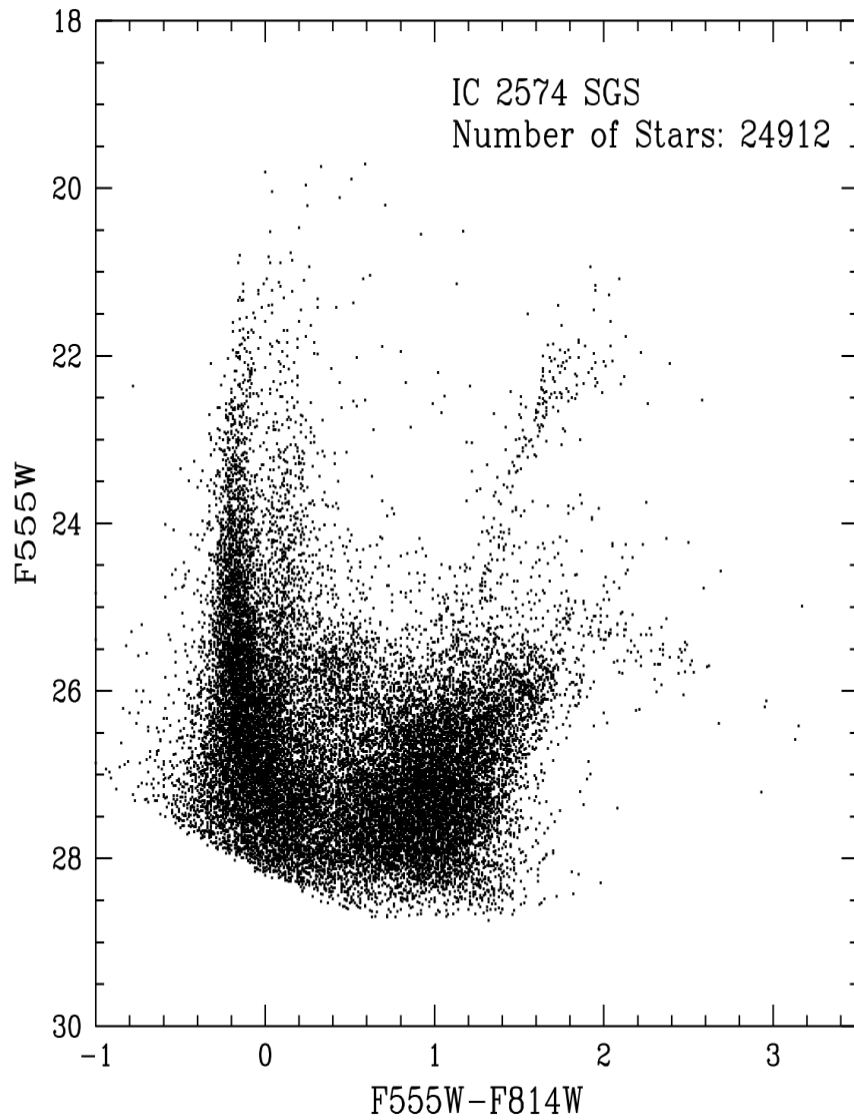
- MS reaches an age of 1 Gyr at $M_V \sim +2$
- BHeBs reach an age of 1 Gyr at $M_V \sim 0$



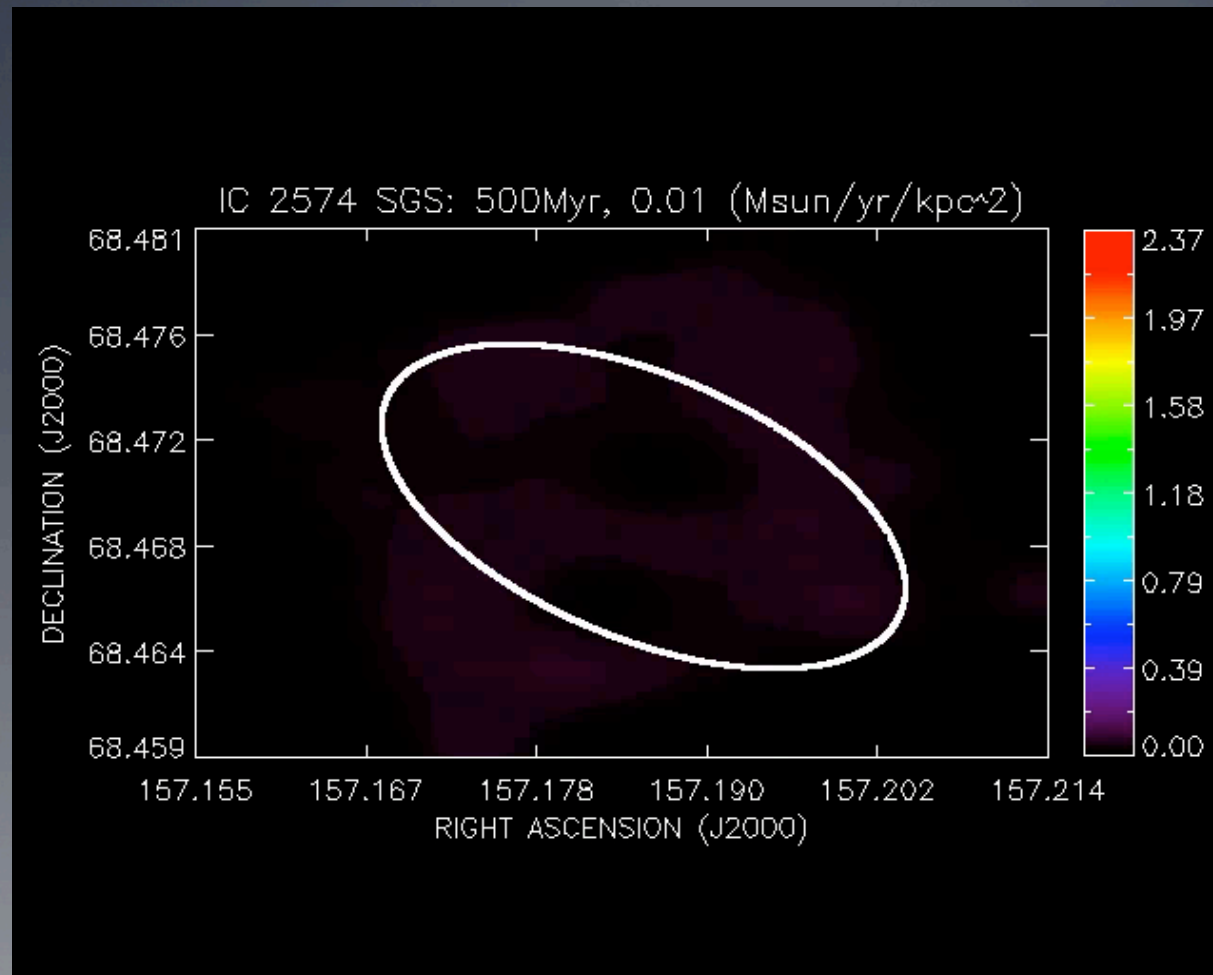
SFHs from CMDs

- SFH in past ~ 1 Gyr comes from MS and HeBs
- Generations overlap on MS
- Generations distinct for BHeBs
- SFHs measured by matching synthetic CMD to observed CMD (code of Dolphin 2002)
- Spatial information from BHeBs (Dohm-Palmer et al. 1998)

SFH and CMD of IC 2574 SGS

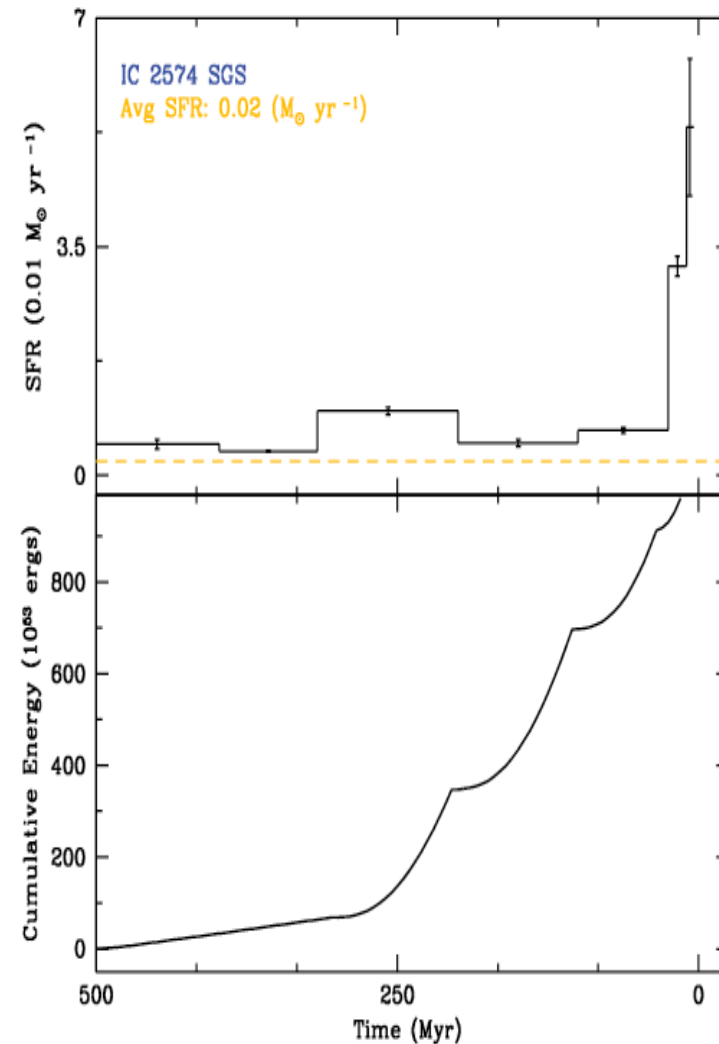


SF in IC 2574 SGS



SGS Formation and Triggering Scenarios

- SGS formed recently:
 - dynamic age from HI ~ 16 Myr
 - Coincides with SF event at 25 Myr
- Alternate Scenario
 - Event at 250 Myr started SGS?
 - Recent event triggered SF on rim
 - Could explain other hole/shell observations

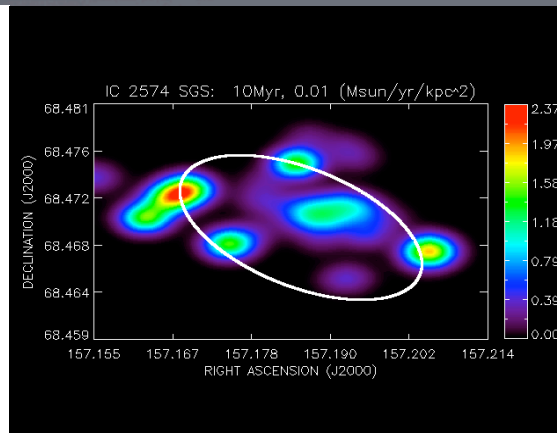
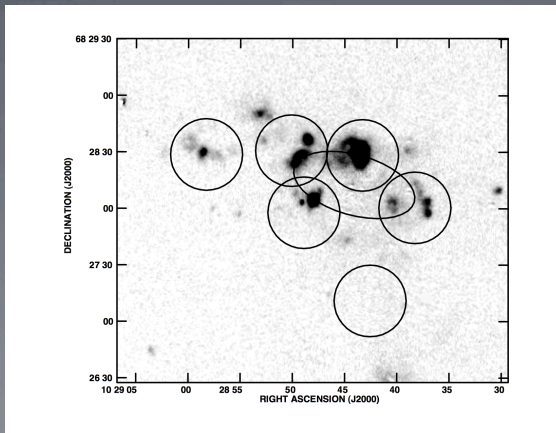


STARBURST99 (Leitherer et al. 1999)

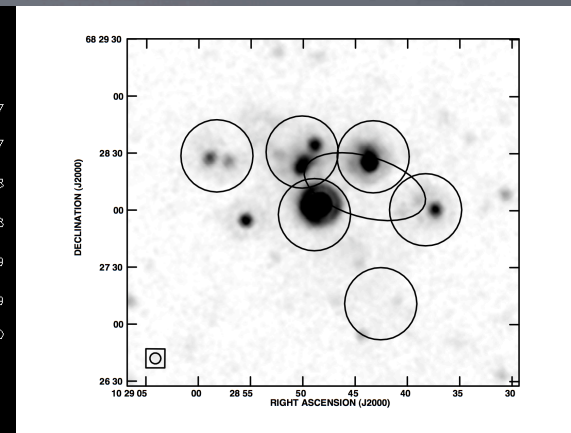
Multiple Wavelengths and ALMA

- Where is the molecular gas? What is it doing?
- Mixed results with molecular gas and dwarfs in the past
- Higher resolution and better sensitivity give us to best chance to find it in lower metallicity environments

H α (Cannon et al. 2005)



24 μ m MIPS (Cannon et al. 2005)



Summary/Conclusions

- Using resolved stellar populations we can extend the time axis of SF events and also quantify feedback in a wide variety of galaxies
- ANGST/ANGRR have ACS imaging of ~ 100 dwarf galaxies and several large galaxies in the nearby universe (p. 13, S. Gogarten)
- With ALMA we can see where we have been blind