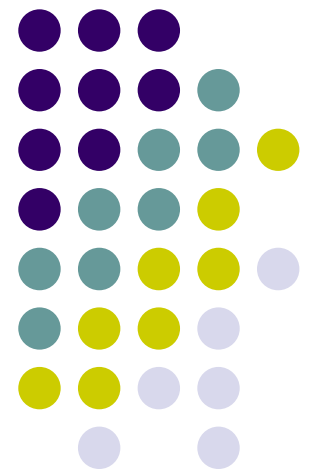
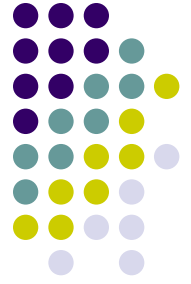


HII Regions in the Magellanic Clouds

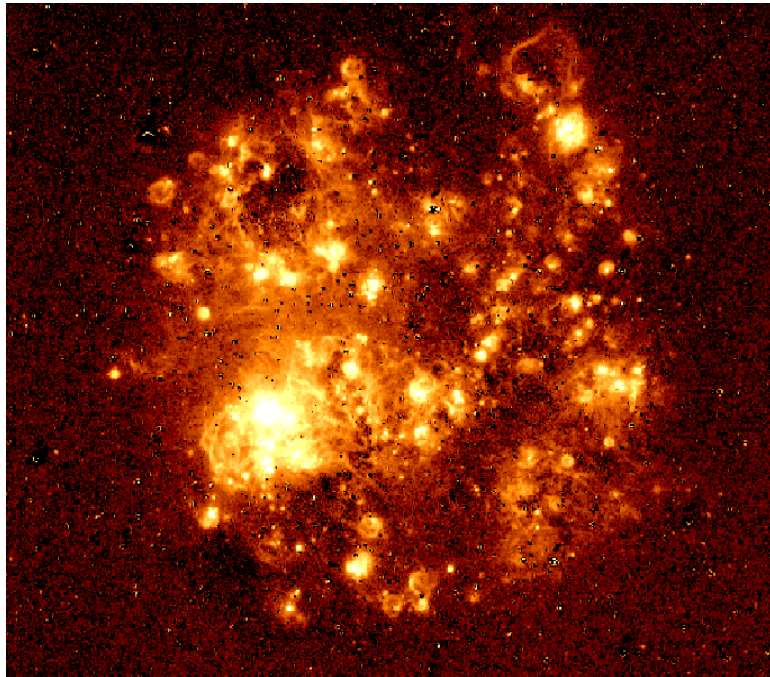
Erica Voges
New Mexico Space Grant
Colloquium
Oct. 29, 2004



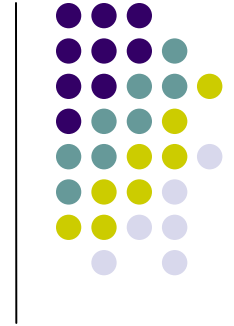
The Magellanic Clouds



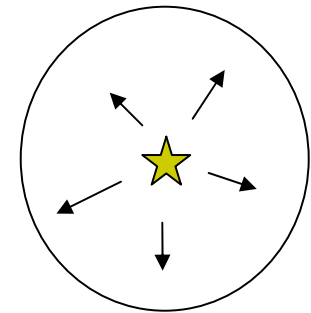
- Satellites of the Milky Way
 - About 50 kpc away
 - Irregular galaxies
 - Recent star formation



Star Formation



- Young, Massive O and B stars
 - UV radiation creates HII regions
 - Influences phase balance of the ISM
 - Influences future star formation
- Do the HII regions leak?
 - Might be responsible for the ionization of the DIG
- How do we explore whether HII regions leak?
 - Compare observed and predicted ionizing fluxes



Observed Fluxes - LMC



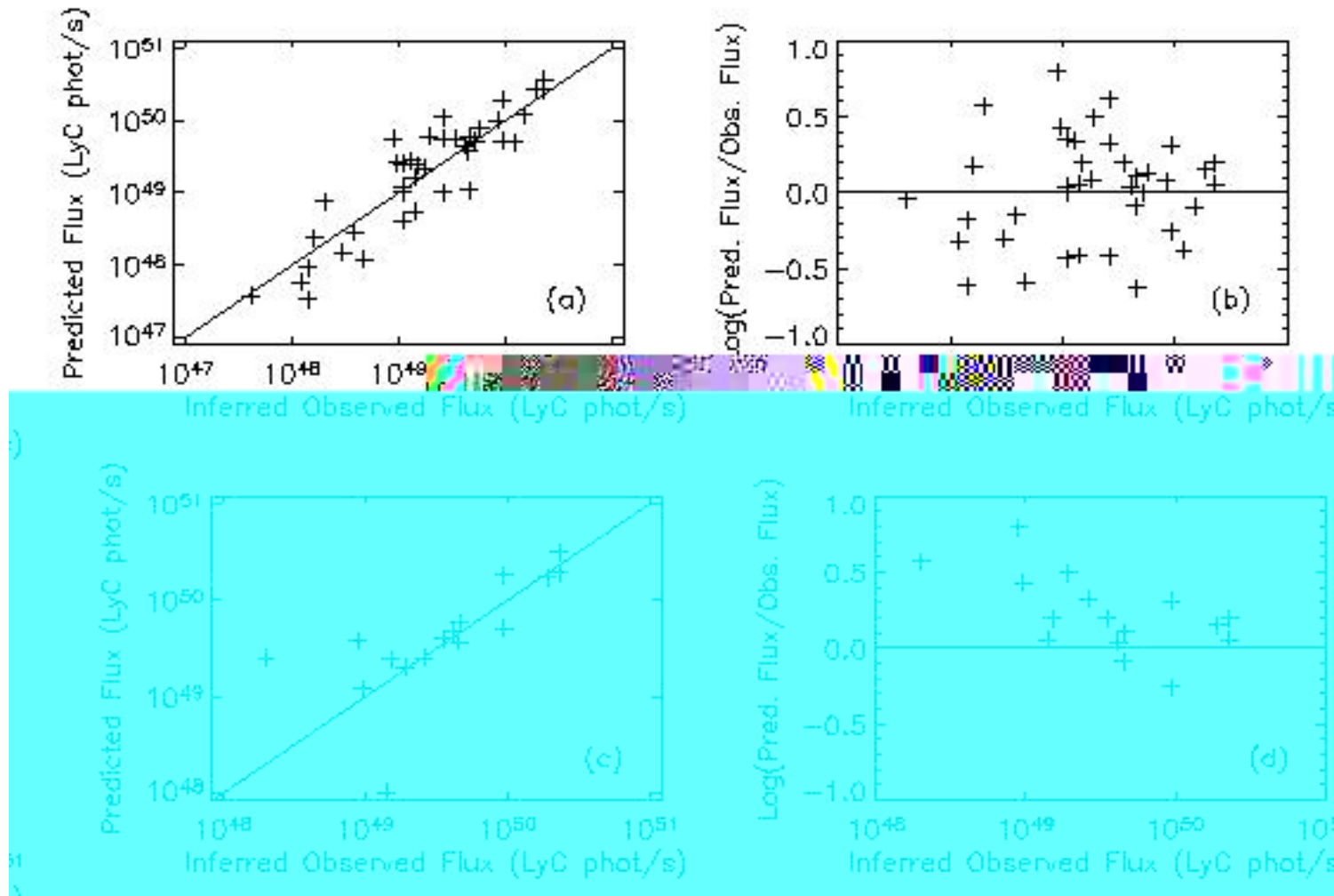
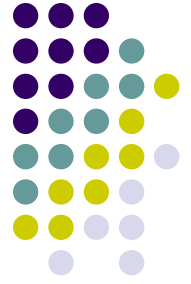
- Photometry of flux-calibrated image from the Southern H α Sky Survey Atlas (Gaustad et al. 2001)
- Correct for extinction
- Conversion to LyC photons



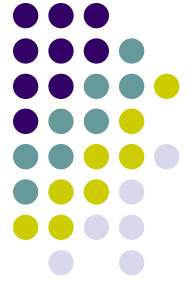
Predicted Fluxes - LMC

- Cross correlate UBVR and UIT catalogs with DEM regions
- Find candidate massive stars from CMDs
 - Verify with spectral types
 - Cataloged spectroscopic observations
 - Broadband photometry estimations
- Assign fluxes from Smith et al. models and sum them up

Preliminary Results



- May indicate a net excess of LyC photons available to ionize the DIG, however we need to do a good quantitative error analysis to be sure.



UV to the rescue?

- Rather unsuccessful using UIT data
 - Relatively incomplete photometry with high uncertainties
- Will use HST far ultraviolet photometry of two clusters in the SMC for similar study
 - Time granted for Cycle 13 and the first data have been obtained

Thank you to the New Mexico Space Grant for generously funding this project!