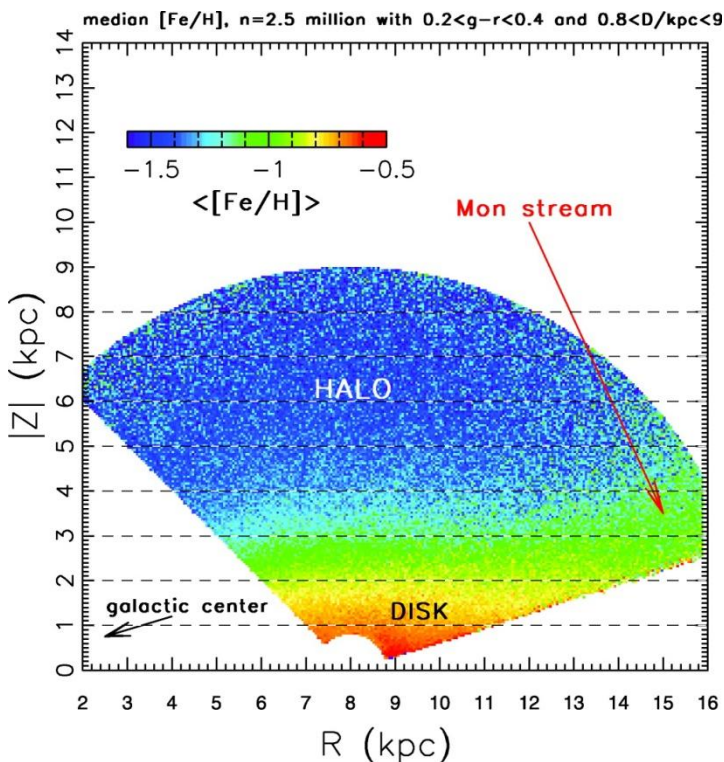
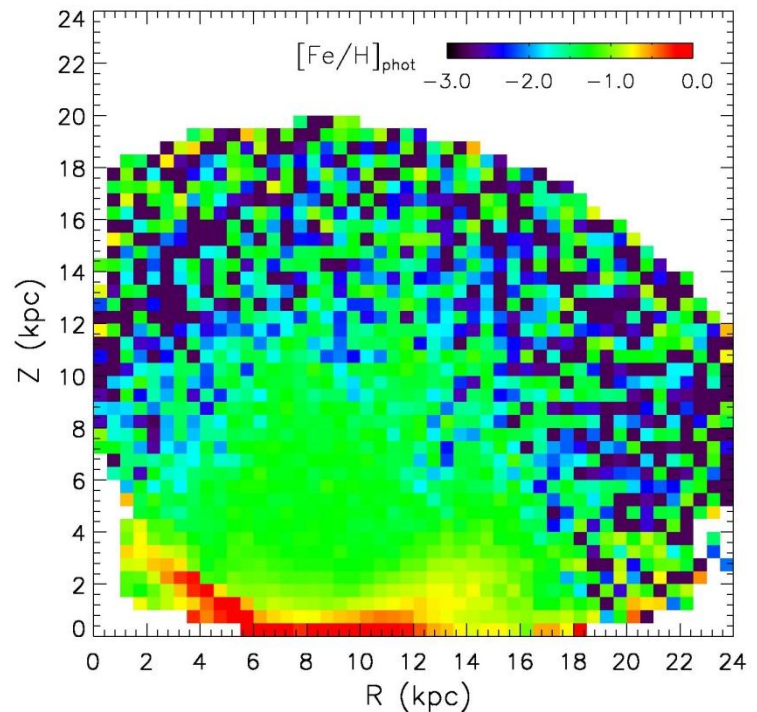


SDSS Imaging Enables Metallicity Maps of the Disks and Halos of the Milky Way



Photometric metallicity map of the Milky Way as derived from **ugr** fluxes for main-sequence stars from SDSS. This map extends out to **9 kpc** from the Sun, where the errors in *u*-band photometry eventually become too large. At these distances, the map is dominated by the presence of the **inner halo**, with a mean metallicity of $[Fe/H] = -1.6$. More details can be found in Ivezic et al. (2008).



An alternative photometric metallicity map of the Milky Way as derived from **gri** fluxes for main-sequence stars from SDSS. This map extends out to **20 kpc** from the Sun, where the errors in the *g*-band photometry eventually become too large. At these distances, the map is dominated by the presence of the **outer halo**, with a mean metallicity of $[Fe/H] = -2.2$. More details can be found in An et al. (2009).

The SDSS/SEGUE surveys, in which JINA has played a fundamental role, have obtained spectroscopic metallicity estimates for several hundred thousand stars. Based on a calibration of the variation of observed colors with the spectroscopic determinations, researchers can now obtain metallicity estimates for many millions of stars, in a complete and unbiased fashion. This is the first time this has become possible, and it is already inspiring detailed studies of the structure of the disk and halo populations of the Milky Way. Two alternative maps, reaching out to different distances, are shown above.

Contact: Timothy Beers (Michigan State University) 517-884-5616 beers@pa.msu.edu

Researchers:

Zeljko Ivezic (Univ. of Washington)
Deokkeun An (Caltech)
Timothy C. Beers, Young Sun Lee (MSU)

See the published works: Ivezic, Z., et al. (2008), *ApJ* 684, 287 and An, D., et al. (2009), *ApJ* 707, L64