STELLAR PARAMETERS IN THE BASEL FIELD SA 141

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A grid of 200 synthetic spectra was built in the wavelength region $\lambda\lambda$ 478-530 nm, and a method was developed for deriving the stellar parameters temperature, gravity and metallicity from low-resolution stellar spectra. The parameters of the observed spectra are derived by dividing the observed spectrum by that of a reference star. The resulting $\delta f(\lambda) = \log F_*/F_{ref}$ is then used, in conjunction with the grid of synthetic spectra, to derive the final parameters, through a perturbation method. The method was applied to a sample of 41 stars in the Basel field SA 141 ($l = 245^o$, $b = -85.8^o$). Since this direction points closely to the south galactic pole, the binning of stars into appropriate distance intervals provides a coarse view of the metallicity distributions associated with the major galactic populations: we find the thin disk, thick disk and halo components near the current best estimates of their scale heights above the galactic plane. The first results were presented in Cayrel et al. (1991a, A&A, 247, 108; 1991b, A&A, 247, 122). Further observations are in progress, with the aim of having a sample of about 1000 stars.

NEAR INFRARED IMAGING OF A GIANT RED ENVELOPE GALAXY

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Recently Maccagni et al. (ApJ, 334, L1, 1989) obtained g, r and i images of an X-ray luminous galaxy at the center of a poor cluster of galaxies (1E1111.9-3754). The images showed that the central galaxy was surrounded by a remarkable spatially extended red envelope, visible as a kink in the $r^{1/4}$ surface brightness profile at a radius of 100 kpc. Johnstone & Fabian (MNRAS, 237, 27p, 1989) suggested that the red envelope is composed of low mass stars formed in a cooling flow. This observation sparked considerable interest as the first direct detection of low mass star formation in cooling flows. We have obtained near infrared H-band (1.65 μ images of 1E1111.9-3754 from the Infrared Imaging Spectrometer on the 4-m Anglo-Australian Telescope. Even though low mass stars should be more prominent in the near infrared than at optical wavelengths, the 1.65 μ surface brightness profile shows no deviation from the $r^{1/4}$ profile out to a radius of 100 kpc. This observation argues against the hypothesis that the envelope is composed of low mass stars formed from cooled X-ray gas.