

The *IRAS* Very Faint Source Survey Catalog & Redshift Survey

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Following the completion of the *ifAS* Faint Source Survey (FSS), the data were examined for regions having high spacecraft coverage, low cirrus contamination at $60\mu\text{m}$ and $100\mu\text{m}$. These regions were further narrowed down to those which had a low surface density of known nearby galaxies. This resulted in the selection of 11 *IRAS* FSS plates with a total solid angle of 414 deg^2 in both the northern and southern hemispheres. These areas were re-processed through the source extraction and bandmerging pipelines at lower detection thresholds to obtain a catalog of sources with higher sensitivity than the corresponding data in the FSS. The typical $60\mu\text{m}$ 90% completeness level of these reprocessed data is at 110 mJy; the catalog contains many sources as faint as 70-80 mJy at $60\mu\text{m}$. This catalog of sources has been named the *IRAS* Very Faint Source Survey (VFSS).

We are finishing a redshift survey of three fields from the VFSS catalog. Two fields in the south were observed with the Dupont 2.5 m at Las Campanas using both Shectman's wide-field multi-fiber system coupled to the Modular Spectrograph, and with the Modular Spectrograph in long-slit mode. A further field in the north has been observed with the Double Spectrograph on the Palomar 5 m. Redshifts have been determined for over 400 *IRAS* VFSS galaxies down to $F_{60} = 110\text{ mJy}$. The distribution peaks at $Z \sim 0.07$ and extends to $Z \sim 0.45$. The large scale structure within these fields, as well as the evolution of these *IRAS* galaxies, is presented. This sample is especially useful for testing *IRAS* galaxy evolution, as it samples not just ultra-luminous galaxies but more "normal" *IRAS* galaxies out to $Z \sim 0.2$. This survey has considerable overlap in redshift range with deep optical redshift surveys. This presents an alternative to the $W([\text{OII}]\lambda 3727)$ measure of starburst fraction with lookback time.

Two of these fields are scheduled to be observed by the *MSX* satellite in 1995 at bands centered on $\sim 8, 12, 15, 22\mu\text{m}$ at much higher spatial resolution than *IRAS* and at the highest sensitivity attainable by *MSX*.

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