per night for the 10 dark nights per lunation (4 hours per night) and one field for the 10 grey nights per lunation (1·5–2 hours per night) and two-thirds clear weather. Although the survey could proceed with the existing semi-manual fibre positioning, it is labour-intensive, messy and time consuming. Major FLAIR upgrades to give more fibres and automatic fibre-positioning would substantially improve the efficiency of the survey, perhaps by a factor of 4. A major push for a more automatic system is under way. Various options are being studied, though a fully automated, off-telescope, pick-place fibre positioning system is the ideal solution.

By the anticipated 1998/99 start date for the FLAIR–DENIS survey, all the major photographic surveys (ER, EJ, SES, I) undertaken at the UKST should be complete. Very considerable amounts of FLAIR time may become available for the FLAIR–DENIS survey, which would constitute a new UKST survey, going on the telescope whenever the conditions are too poor for photography, as well a getting other substantial amounts of allocated time.

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An Obscured Galaxy Redshift Survey with FLAIR

K. Wakamatsu

Gifu University, Gifu 501–11, Japan.

M. Malkan

UCLA, Los Angeles, CA 90024, USA.

Q. A. Parker

AAO, Coonabarabran, NSW, Australia.

H. Karoji

NOA, Mitaka 181, Tokyo, Japan.

A problem for studies of large scale structures in nearby space ($cz < 10,000\ \mathrm{km\,s^{-1}}$) is the presence of the Zone of Avoidance which is so large and wide on the sky that potentially important clusters and voids remain undetected. A prime example was the Ophiuchus cluster discovered by Wakamatsu and Malkan (1981) as a heavily obscured cD cluster close to the Galactic centre region ($l = 0{\cdot}5°$, $b = +9{\cdot}5°$). It is the second brightest X-ray cluster after Perseus. A hidden galaxy survey was performed by visually searching ESO/SERC Sky Survey (R and J) copy films of the region centred at $l = 355°$, $b = +10°$ finding more than 4000 galaxies in six fields. Several irregular clusters adjacent to Ophiuchus were found forming a supercluster which may be connected to the Hercules supercluster by a wall structure parallel to the local supergalactic plane (Wakamatsu et al. 1994). In front of this supercluster, an 'Ophiuchus Void' is suggested ($cz = 4,500\ \mathrm{km\,s^{-1}}$). The Ophiuchus supercluster at $cz = 8,500\ \mathrm{km\,s^{-1}}$ is similar to the Hercules supercluster ($cz = 11,000\ \mathrm{km\,s^{-1}}$), and extends north toward the latter supercluster.

We have used FLAIR, the fibre-spectroscopy system on the UKST (Parker 1996) to study the bridge region between the two superclusters which covers ($16{:}00 \leq \alpha \leq 17{:}20$, $-25° \leq \delta \leq +2{\cdot}5°$) and a void region, 1·5 hour west of a declination zone $-30° \leq \delta \leq -15°$. FLAIR is well matched to the number density (~3/sq. deg.) and magnitude limit ($B \leq 17{\cdot}0$) of the survey galaxies. The region, mostly above $b \sim 15°$, has star densities low enough for FLAIR use without severe crowding or contamination problems. So far 1500 redshifts for obscured galaxies have been obtained. The Ophiuchus supercluster extends at least one field north towards the Hercules supercluster and is surrounded by a diffuse, extended halo $\sim 20° = 30h^{-1}$ Mpc across. A new sparse 'Libra' supercluster candidate is also detected at $cz = 9000\ \mathrm{km\,s^{-1}}$, one field south of the southern edge of the Hercules supercluster. A wall structure is clearly suggested between this and the Ophiuchus supercluster. The proposed 'Ophiuchus–Hercules Wall' formed by a local void in front of, and another behind the Ophiuchus and Libra superclusters, may form a structure as large as the Great Wall both in apparent size ($> 70°$) and physically ($100h^{-1}$ Mpc). These two walls cross perpendicularly near Abell 2199–the northern edge of Hercules supercluster. Any 'true' 3-D orthogonality between the Ophiuchus–Hercules Wall and the Great Wall may be crucial for understanding $0{\cdot}1c$ scale structure whilst this local contrast of galaxy distributions may strongly affect our estimation of the Local Group motion relative to the microwave background.

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An HI Selected Sample of Galaxies: The HI Mass Function and the Surface Brightness Distribution

Martin Zwaan, Frank Briggs and David Sprayberry

Kapteyn Astronomical Institute, PO Box 800, NL-9700 AV Groningen, The Netherlands.
zwaan@astro.rug.nl, fbriggsastro.rug.nl, dspray@astro.rug.nl

Abstract: Results from the Arecibo HI Strip Survey, an unbiased extragalactic HI survey, combined with optical