

THE ALL-SKY 408 MHz SURVEY

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The 408 MHz All-sky Survey has been made from four radio continuum surveys observed between 1965 and 1978, using the Jodrell Bank MKI telescope (Haslam et al., 1970), the Effelsberg 100 metre telescope (Haslam et al., 1974) and the Parkes 64 metre telescope (Haslam et al., 1975). A detailed description of the survey data reduction and calibration methods, with preliminary astronomical results will soon be published (Haslam et al., 1980a) and a second paper will give an atlas of maps at the full survey resolution of 51' arc between half power points (Haslam et al., 1980b).

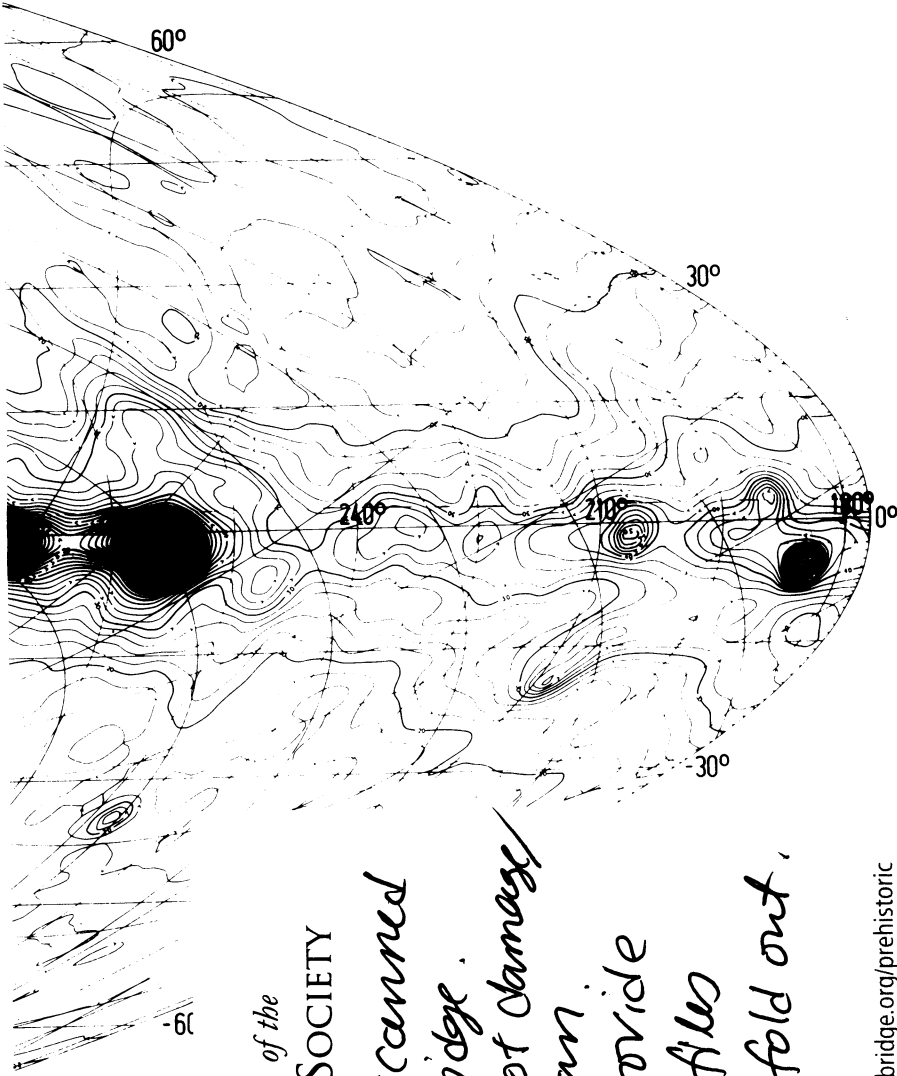
The original 408 MHz survey has a brightness sensitivity which is limited to some 1^oK by the expected confusion at 408 MHz for a 51' arc beam. The temperature scale has been calibrated by smoothing and comparing the four component 408 MHz surveys in the regions where they overlap the absolutely calibrated 404 MHz survey of Pauliny-Toth and Shakeshaft (1962). Details of this comparison are given in Haslam et al. (1980a) and it is estimated that the absolute temperature scale is accurate to within 10% and the zero level known to within 3^oK.

With the advent of new satellite observations at X- and γ -ray wavelengths (e.g. Simpson, 1979; Mayer-Hasselwander et al., 1979), which have instrumental angular resolutions of around 3^o, it is felt useful to present a radio continuum map of the whole sky, smoothed to 3^o resolution, which has been made from the 408 MHz radio continuum data. This map will allow direct comparison of the large-scale Galactic structure as seen in the radio continuum, with the X- and γ -ray observations.

The map, smoothed to a gaussian beam with resolution between half power points of 3^o, is presented in Figure 1. Cooperative work, using unfolding of the 408 MHz data to study the distribution of continuum emission within our Galaxy, has already begun (Kearsey et al., *ibid*). In addition, a first comparison with the 1420 MHz continuum survey of Reich (1978) and with the Parkes 5000 MHz survey (Haynes et al., 1978) to study spectral index variations at low and intermediate Galactic latitudes is already producing interesting results.

References

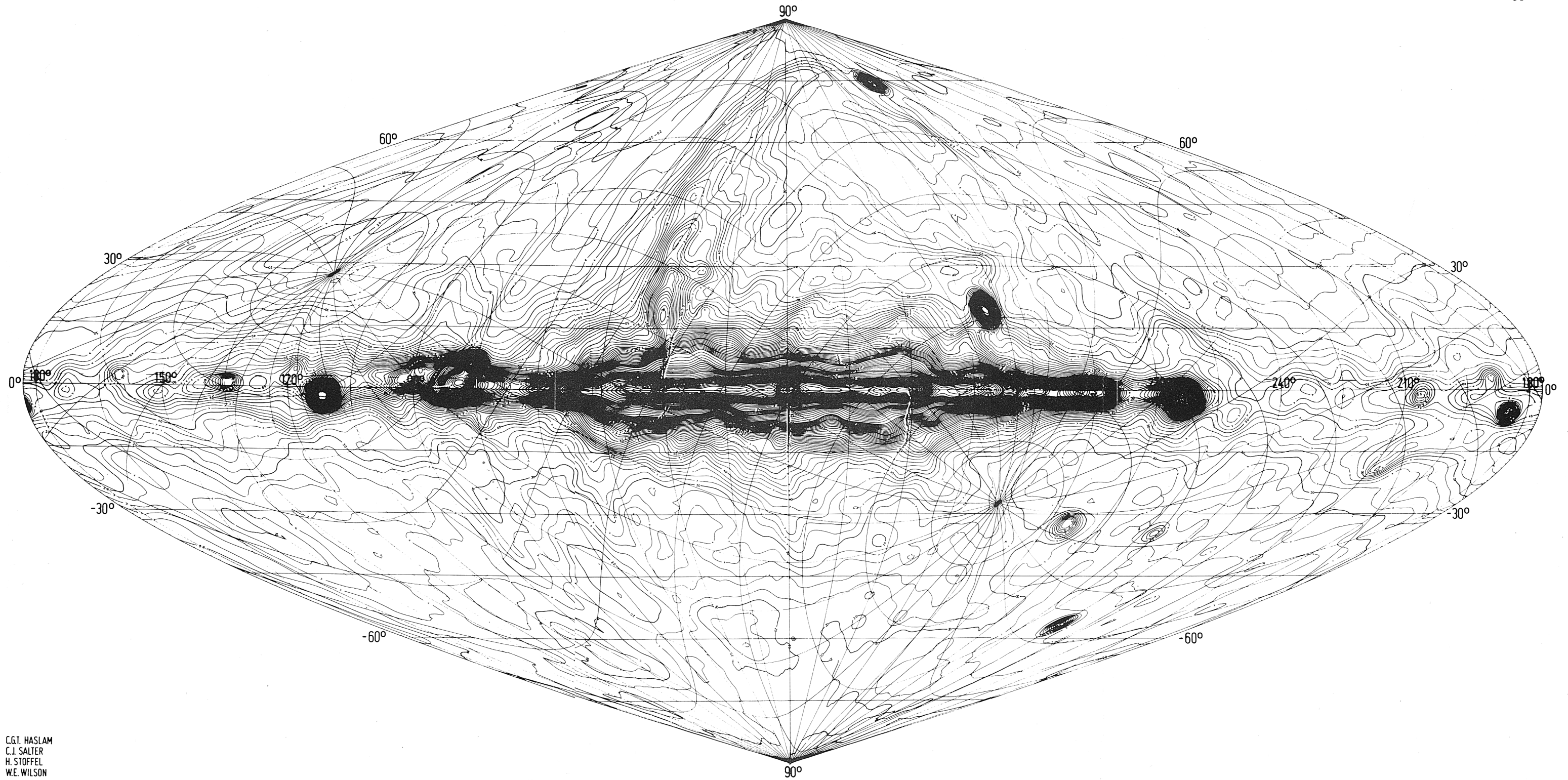
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