



Plate 1. The low-resolution (4 arcmin) integrated hydrogen map superimposed on a red print of M81 (bottom) and M82 (top) taken from the Palomar Sky Survey Atlas. The apparent asymmetry of the H I content in M81 is caused by the low-velocity cut-off (21 km/s) of the velocity integral. The survey of M81 by Gottesman & Weliachew (1975) shows H I structure in the south of M81, including a diffuse outer "spiral" arm which on the south-eastern side reaches down to a distance of ≈ 20 arcmin from the nucleus of M81. H I in front of the nucleus of M82 is not observable, and the size of this region is shown by the hole on Fig. 1 (Section 2). The 59 K km/s contour surrounding the galaxies has been added, and the rms noise is 24 K km/s at the map centre rising to 35 K km/s at the position of M81.