

Fig. 1.— Number distribution of the active galaxy sample selected by (?) (unfilled histogram) and the inactive control sample selected here (hatched histogram) in morphological type (upper panel), corrected absolute B-band magnitude (second panel from top,  $M_B$ ), optical size (second panel from bottom), and inclination (bottom panel). The morphological type,  $M_B$ , optical size and inclination angle are retrieved from the HYPERLEDA database. Note that there are 27 active samples included in the  $M_B$  plot. The  $M_B$  of MS 04595+0327 is not available in the HYPERLEDA database. The rest of the plots include all the sample.

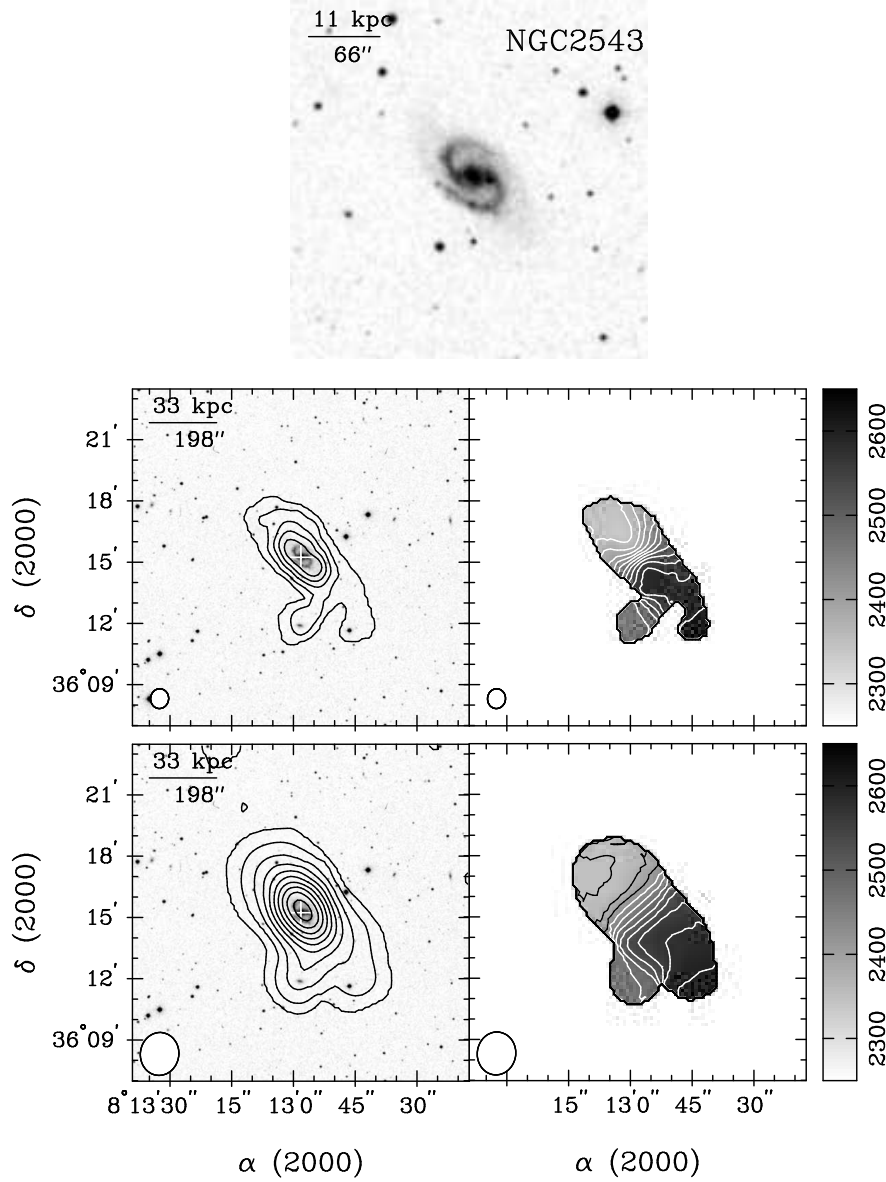


Fig. 2.— Upper panel: Optical image of NGC 2543 (Control sample) from the Second Digitized Sky Survey (DSS2). Middle panels: (*Left*) Contours of integrated HI intensity (zeroth moment) overlaid on the DSS2 image, and (*Right*) map of intensity-weighted HI mean velocity (first moment) with full resolution. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image and (*Right*) first moment map with the same spatial resolution as the Seyfert sample. In the zeroth moment maps with full resolution, contours are plotted at 3, 20, 40, 60, 80  $\times$  20.0 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $1.0 \times 10^{19}$  cm<sup>-2</sup>). In the zeroth moment maps with the same spatial resolution as the Seyfert sample, contours are plotted at 3, 20, 40, 60, 80  $\times$  28.3 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $3.2 \times 10^{18}$  cm<sup>-2</sup>). In the first moment map, heliocentric velocities are indicated by the scale wedge (in km/s), and contours plotted at intervals of 25 km s<sup>-1</sup>. The ellipse at the lower left corner of the lower panels is the half-power width of the synthesized beam, and has a size of 58''  $\times$  53'' (full resolution) and 126''  $\times$  113'' (the same spatial resolution as the Seyfert sample).

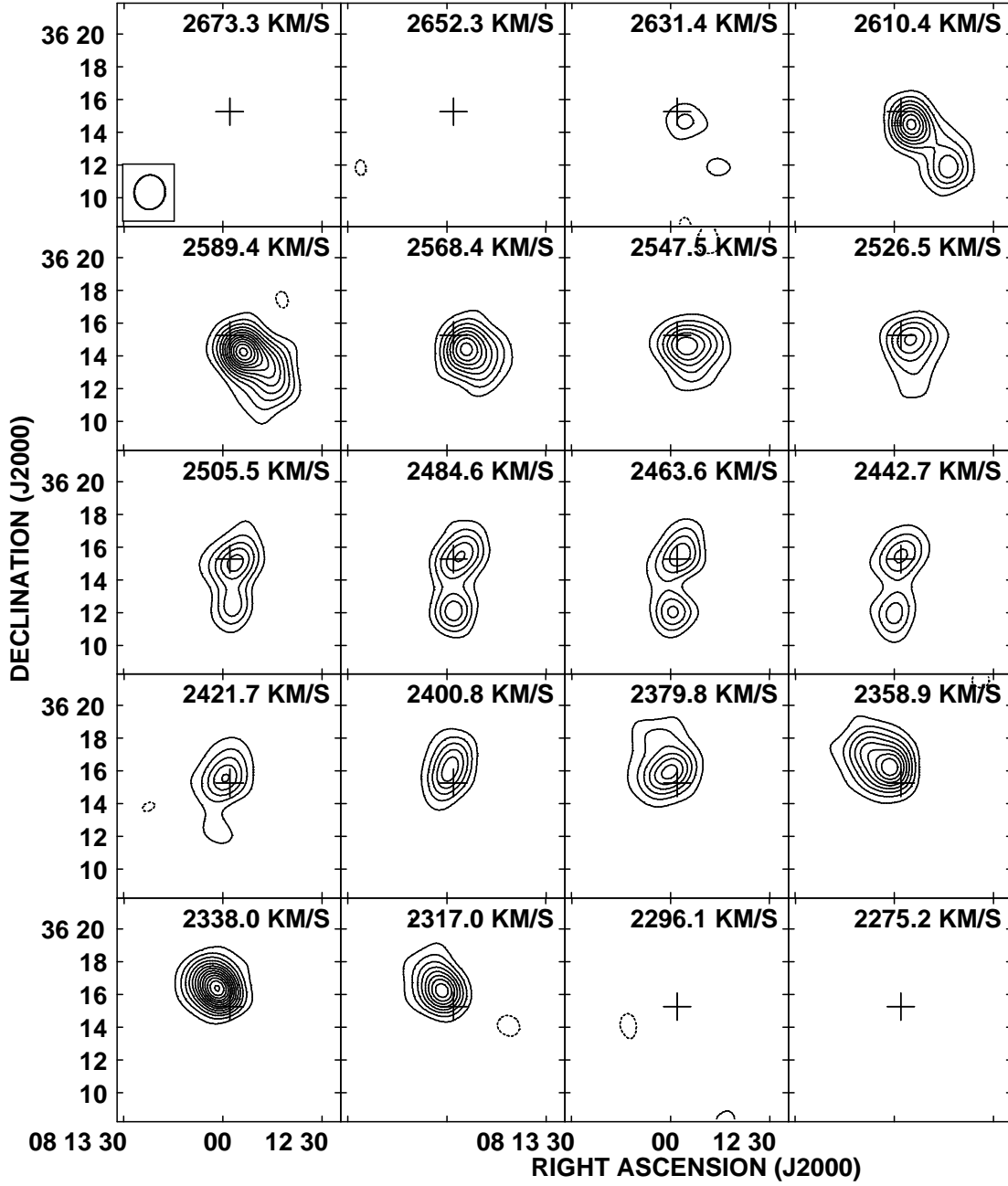


Fig. 3.— HI channel maps of NGC 2543 with spatial resolution the same as the Seyfert sample. Contour levels are plotted at  $-3, 3, 6, 9, 12, 15, 18 \times 0.18 \text{ mJy beam}^{-1}$  ( $1\sigma$ ), which corresponds to a HI column density of  $2.0 \times 10^{16} \text{ cm}^{-2}$ . The central heliocentric velocity is shown for each channel. The cross marks the position of NGC 2543. The synthesized beam is shown by the ellipse at the lower left corner of the top left panel.

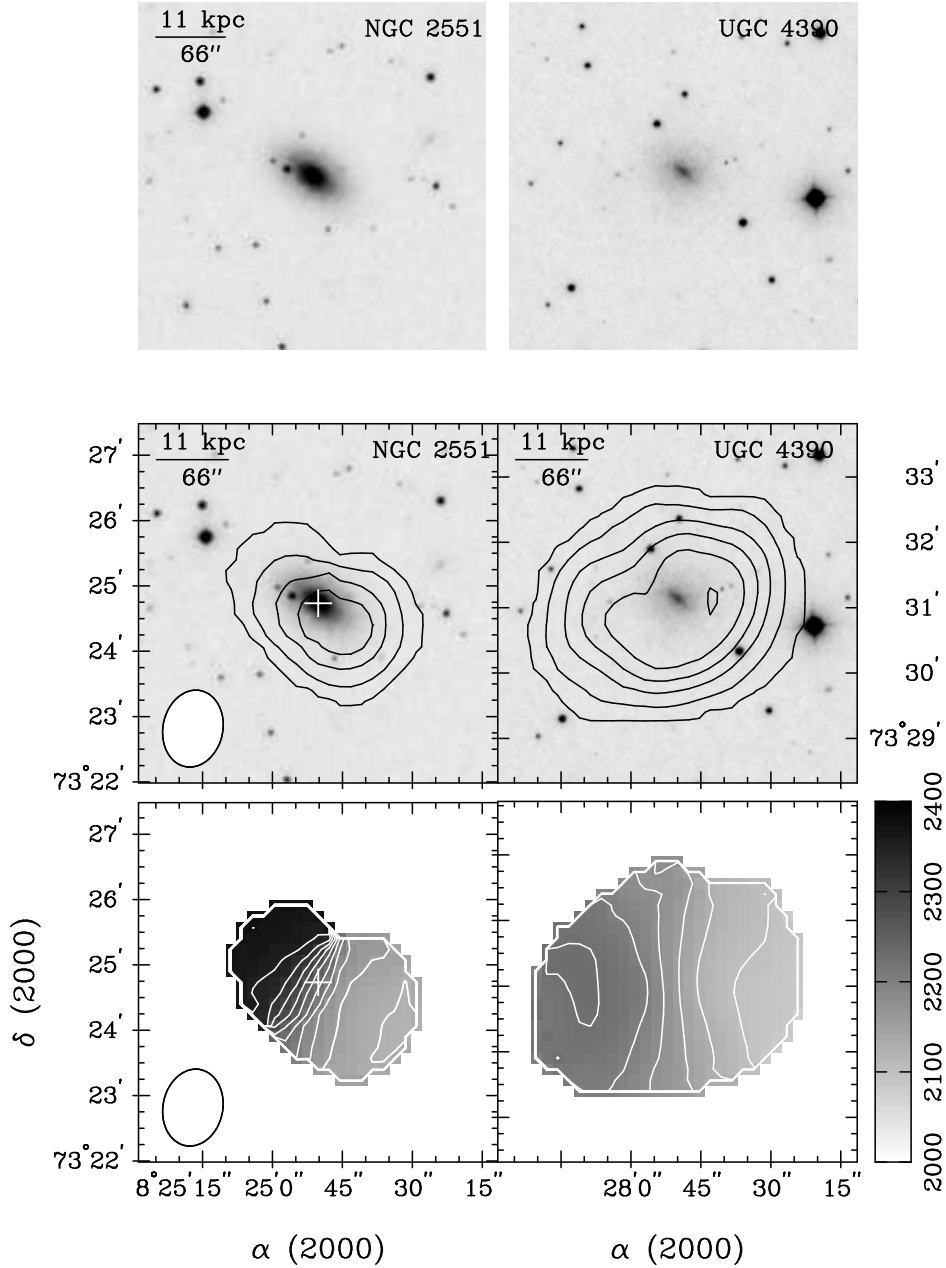


Fig. 4.— Upper panels: Optical images of (*Left*) NGC 2551 (Control sample) and (*Right*) UGC 4390 from DSS2. Middle panels: Contours of zeroth moment overlaid on the DSS2 images. Lower panels: First moment maps. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40 (NGC 2551) and 3, 6, 9, 12, 15, 18 (UGC 4390)  $\times 24.0 \text{ mJy beam}^{-1} \text{ km s}^{-1}$  ( $9.8 \times 10^{18} \text{ cm}^{-2}$ ). The half-power width of the synthesized beam has a size of  $72'' \times 55''$ .

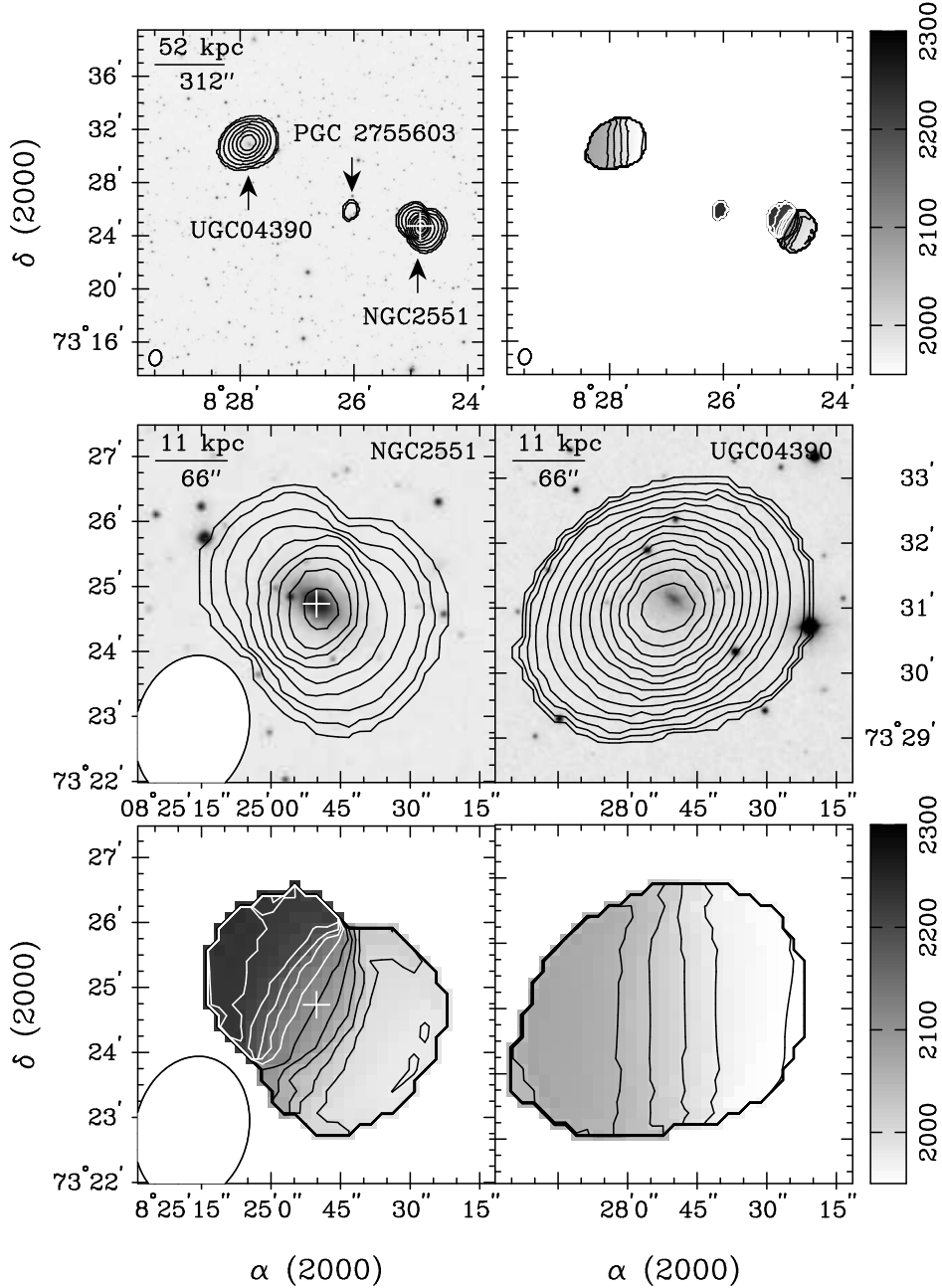


Fig. 5.— Upper panels: (*Left*) Contours of zeroth moment of NGC 2551 and UGC 4390 overlaid on the DSS2 image and (*Right*) first moment map with larger field. Middle panels: Contours of zeroth moment with the same spatial resolution as the Seyfert sample overlaid on the DSS2 images. Lower panels: First moment maps with the same spatial resolution as the Seyfert sample. In the zeroth moment maps, contours are plotted at 3, 20, 40, 60,  $80 \times 24.0 \text{ mJy beam}^{-1} \text{ km s}^{-1} (9.8 \times 10^{18} \text{ cm}^{-2})$ . The half-power width of the synthesized beam has a size of  $136'' \times 105''$ .

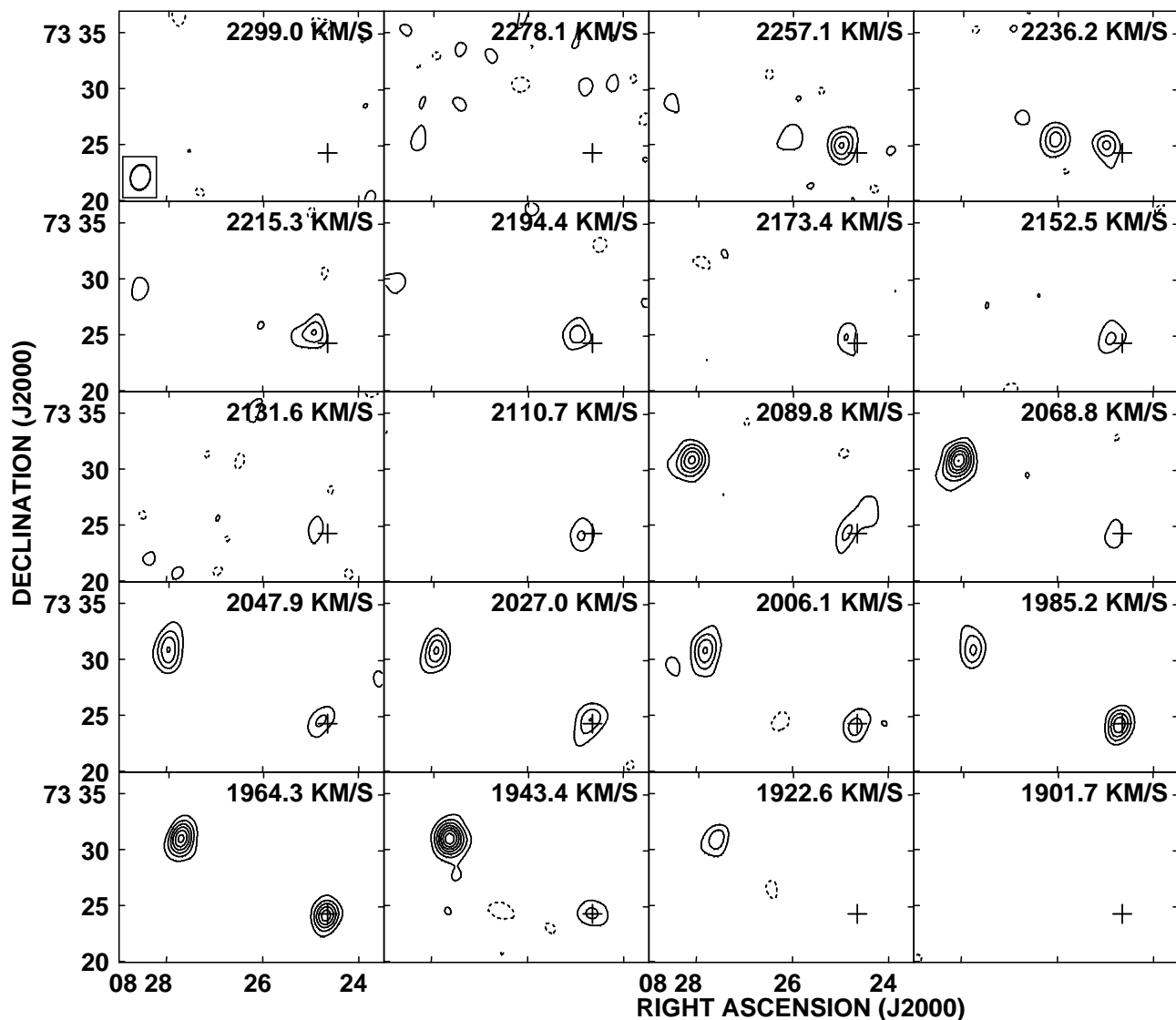


Fig. 6.— HI channel maps of NGC 2551 with spatial resolution the same as the Seyfert sample. Contour levels are plotted at  $-3, 3, 6, 9, 12, 15, 18 \times 0.18 \text{ mJy beam}^{-1}$  ( $1\sigma$ ), which corresponds to a HI column density of  $2.0 \times 10^{16} \text{ cm}^{-2}$ . The cross marks the position of NGC 2551.

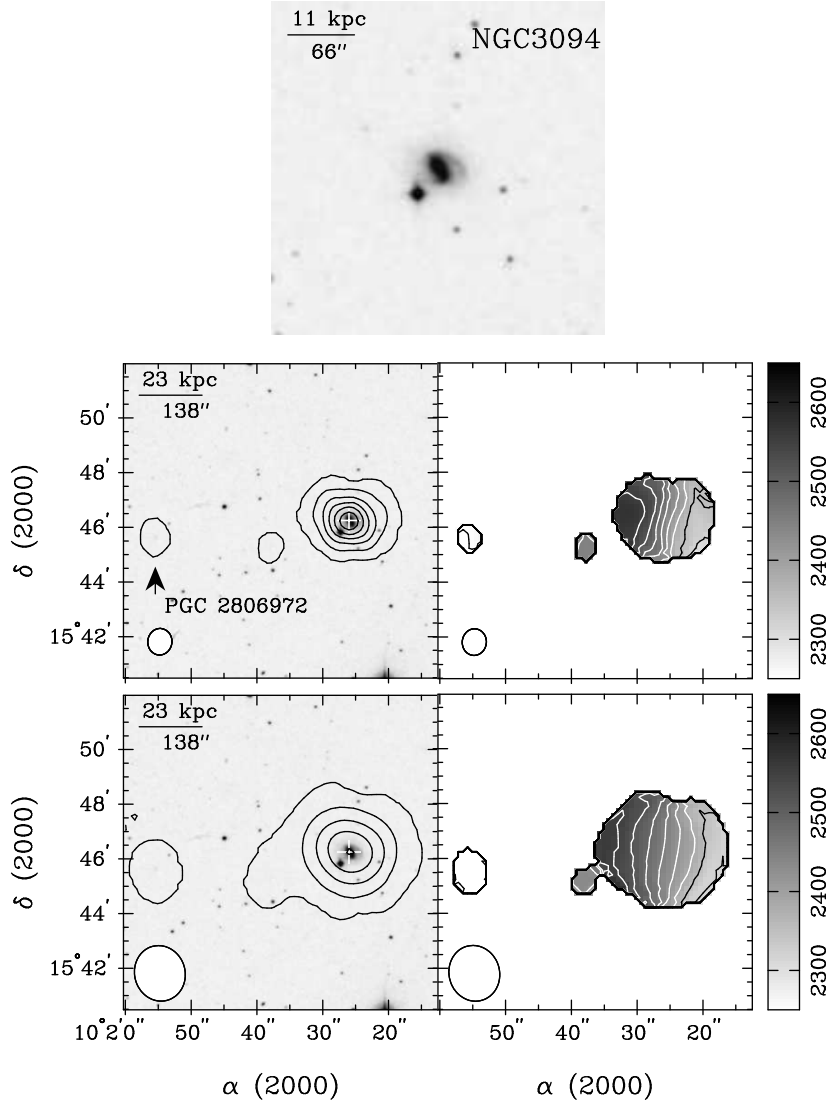


Fig. 7.— Upper panel: Optical images of NGC 3094 (Control sample) from DSS2. Middle panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image and (*Right*) first moment map with full resolution. Lower panels: (*Left*) Contours of zeroth moment and (*Right*) first moment map with the same spatial resolution as the Seyfert sample. In the zeroth moment maps with full resolution, contours are plotted at 3, 20, 40, 60, 80  $\times$  28.2 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $1.5 \times 10^{19}$  cm<sup>-2</sup>). In the zeroth moment maps with the same spatial resolution as the Seyfert sample, contours are plotted at 3, 20, 40, 60, 80  $\times$  71.7 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $8.5 \times 10^{18}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 59"  $\times$  52" (full resolution) and 123"  $\times$  111" (the same spatial resolution as the Seyfert sample).

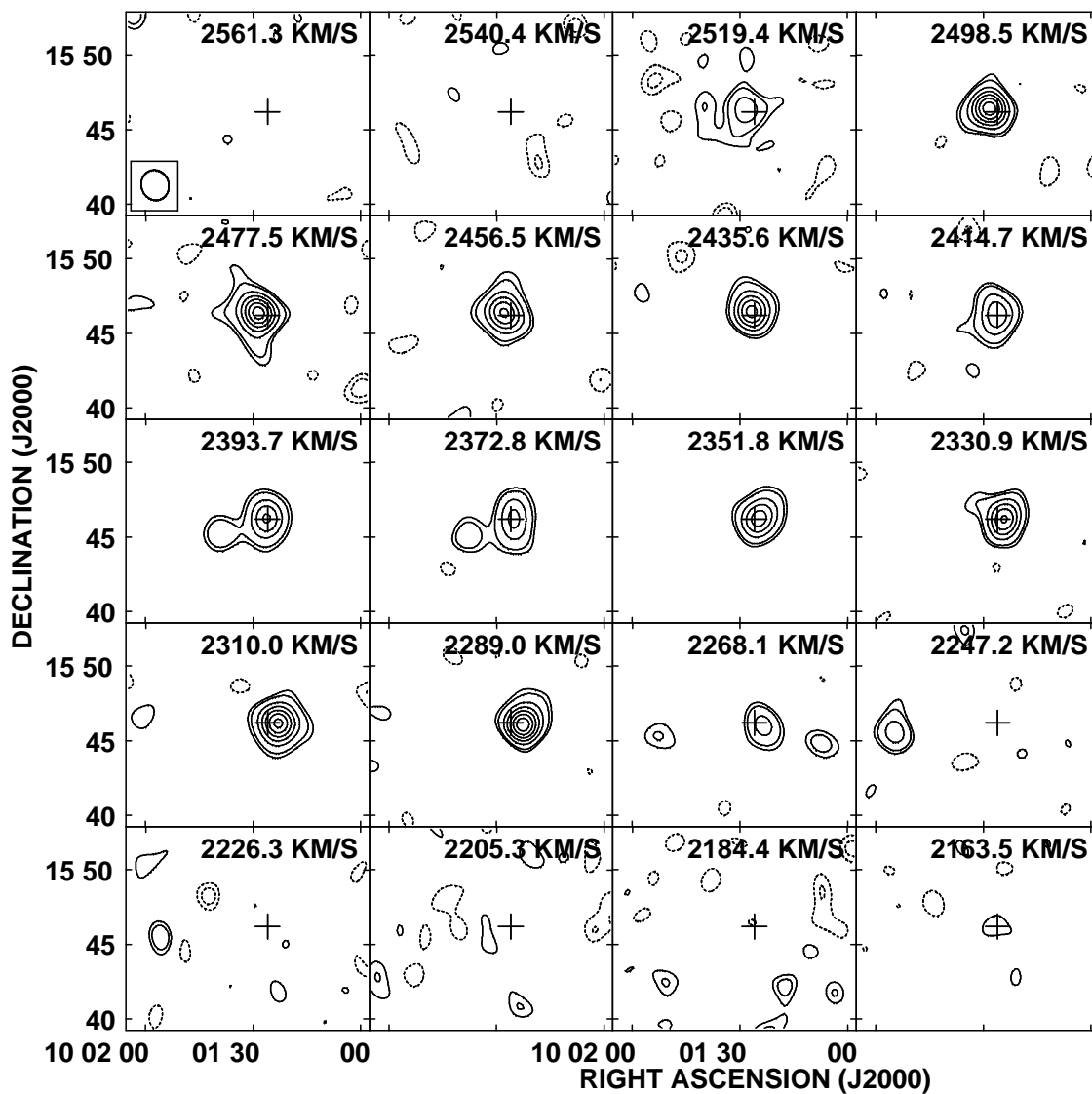


Fig. 8.— HI channel maps of NGC 3094 with spatial resolution the same as the Seyfert sample. Contour levels are plotted at  $-3, -2, 2, 3, 6, 9, 12, 15 \times 0.18 \text{ mJy beam}^{-1}$  ( $1\sigma$ ), which corresponds to a HI column density of  $2.0 \times 10^{16} \text{ cm}^{-2}$ . The cross marks the position of NGC 3094.

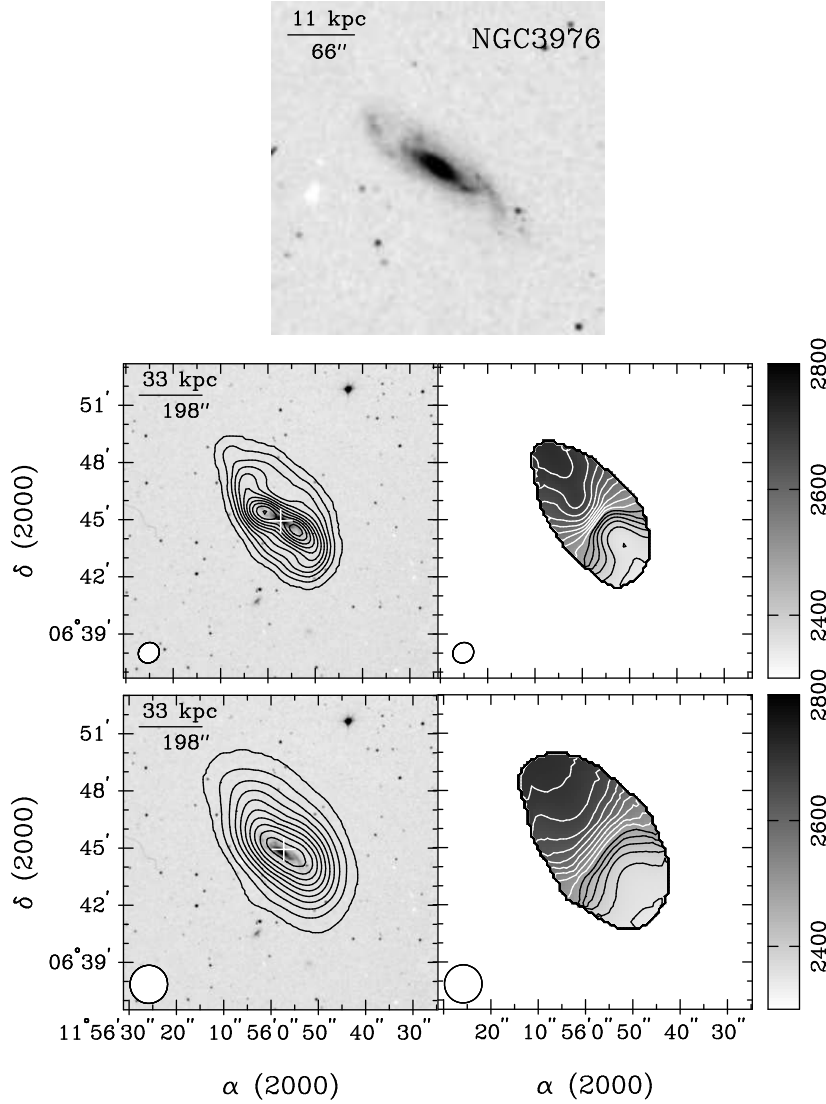


Fig. 9.— Upper panel: Optical images of NGC 3976 (Control sample) from DSS2. Middle panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image and (*Right*) first moment map with full resolution. Lower panels: (*Left*) Contours of zeroth moment and (*Right*) first moment map with the same spatial resolution as the Seyfert sample. In the zeroth moment maps with full resolution, contours are plotted at 3, 20, 40, 60, 80  $\times$  28.2 mJy beam $^{-1}$  km s $^{-1}$  ( $1.1 \times 10^{19}$  cm $^{-2}$ ). In the zeroth moment maps with the same spatial resolution as the Seyfert sample, contours are plotted at 3, 20, 40, 60, 80  $\times$  71.2 mJy beam $^{-1}$  km s $^{-1}$  ( $8.1 \times 10^{18}$  cm $^{-2}$ ). The half-power width of the synthesized beam has a size of 68''  $\times$  62'' (full resolution) and 120''  $\times$  118'' (the same spatial resolution as the Seyfert sample).

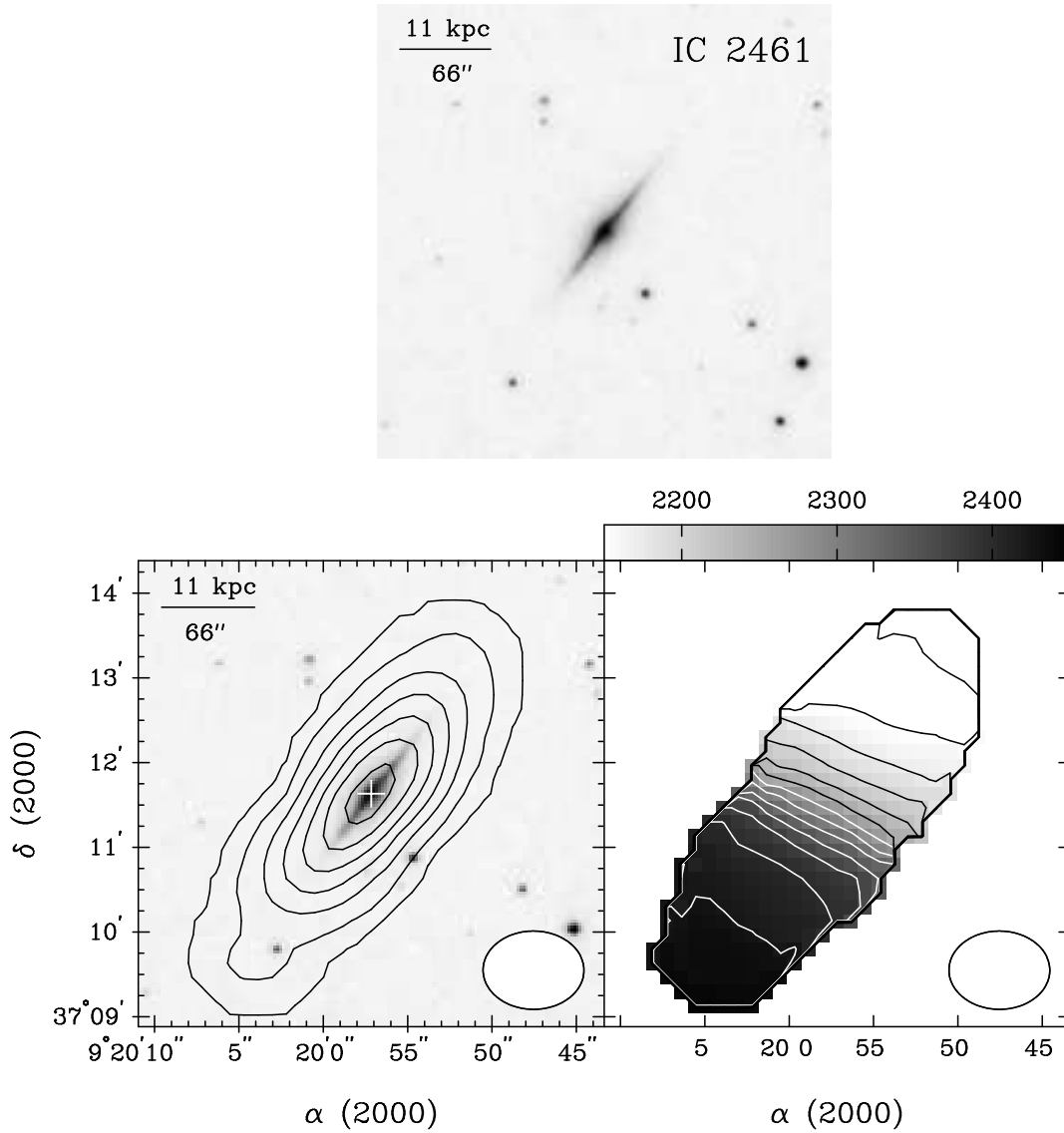


Fig. 10.— Upper panel: Optical image of IC 2461 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 20, 40, 60, 80  $\times$  26.8 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $1.1 \times 10^{19}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 72"  $\times$  55".

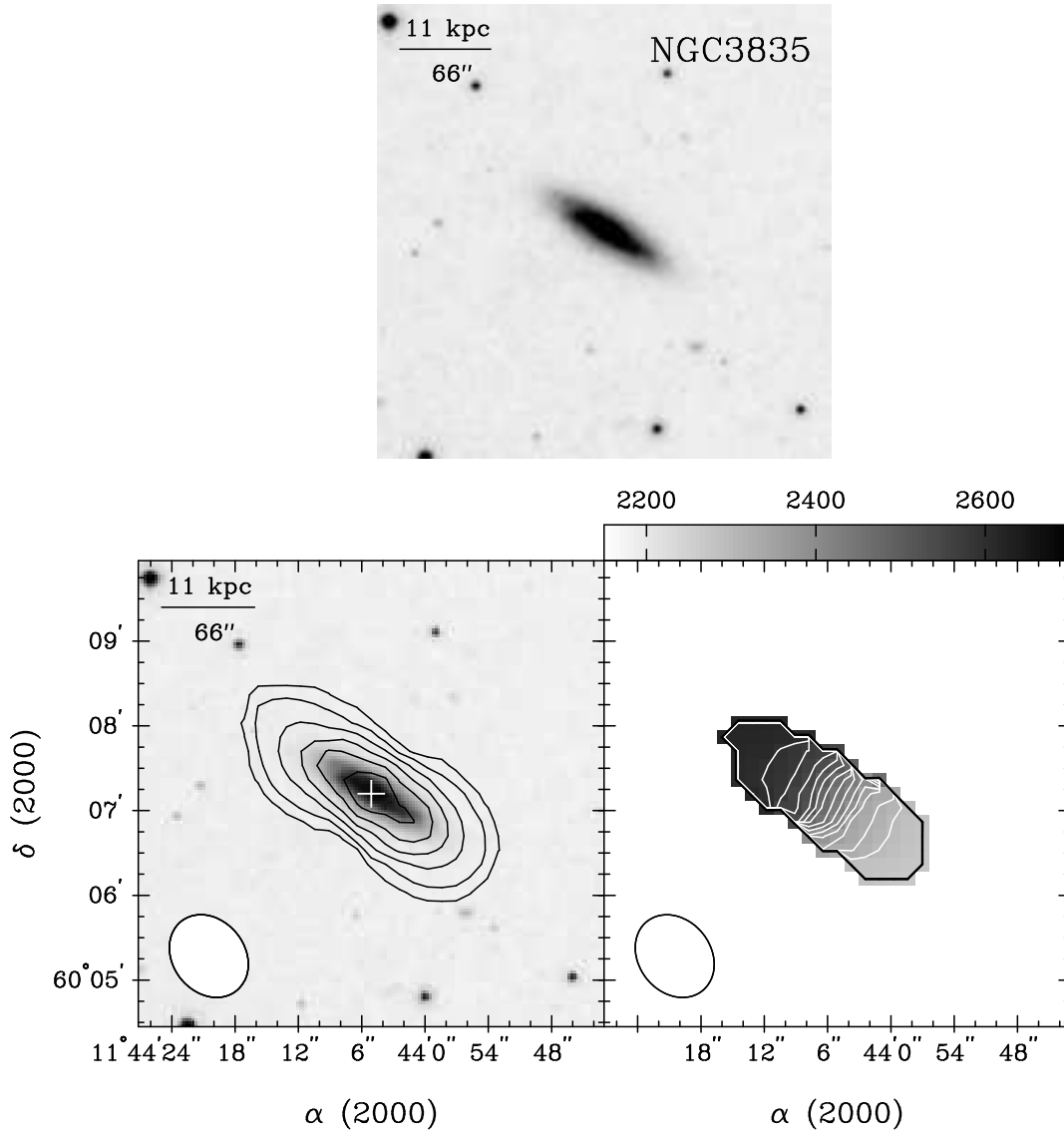


Fig. 11.— Upper panel: Optical image of NGC 3835 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  31.2 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $1.6 \times 10^{19}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 63"  $\times$  51".

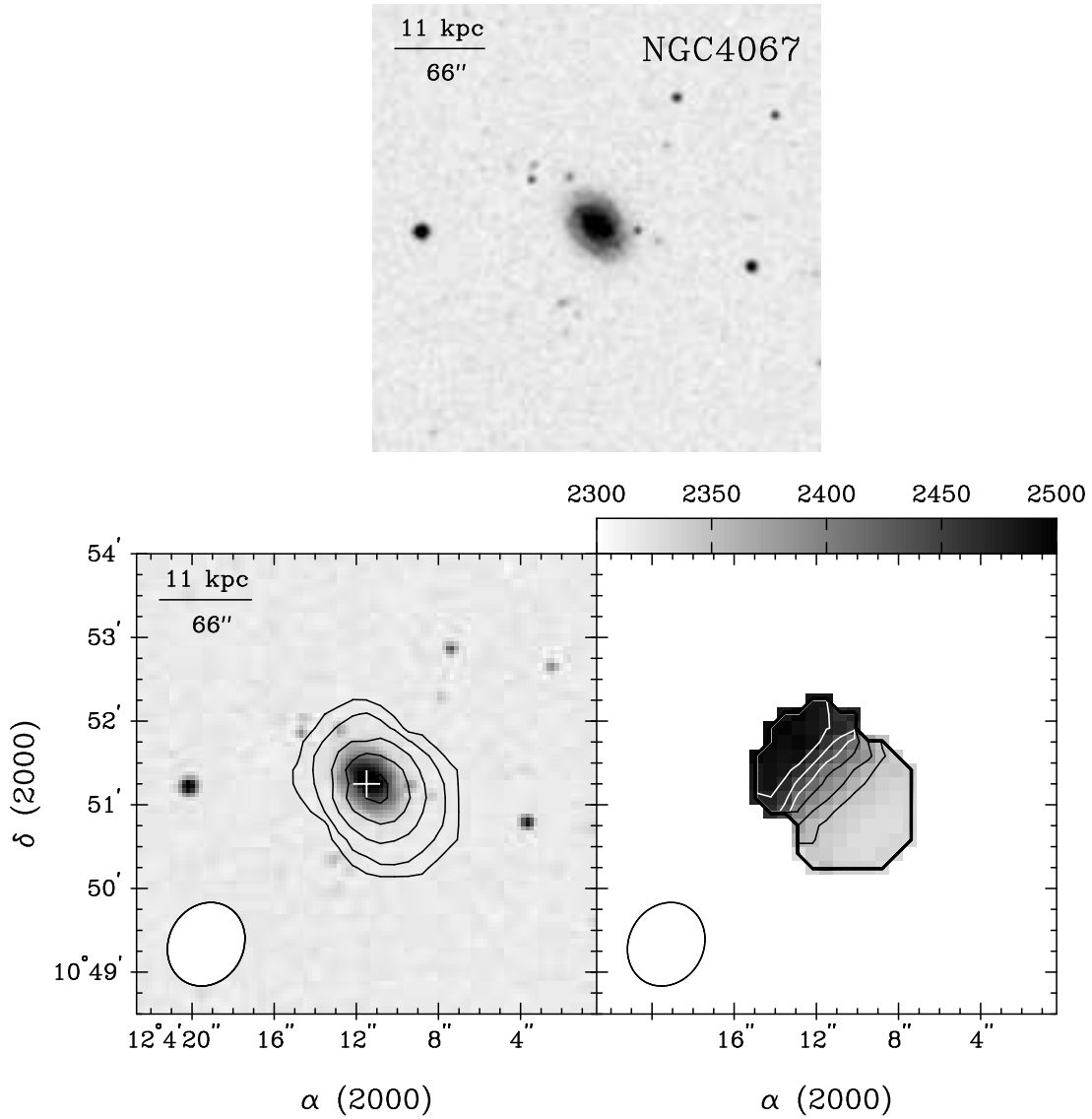


Fig. 12.— Upper panel: Optical image of NGC 4067 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  31.2 mJy beam $^{-1}$  km s $^{-1}$  ( $1.5 \times 10^{19}$  cm $^{-2}$ ). The half-power width of the synthesized beam has a size of 62''  $\times$  54''.

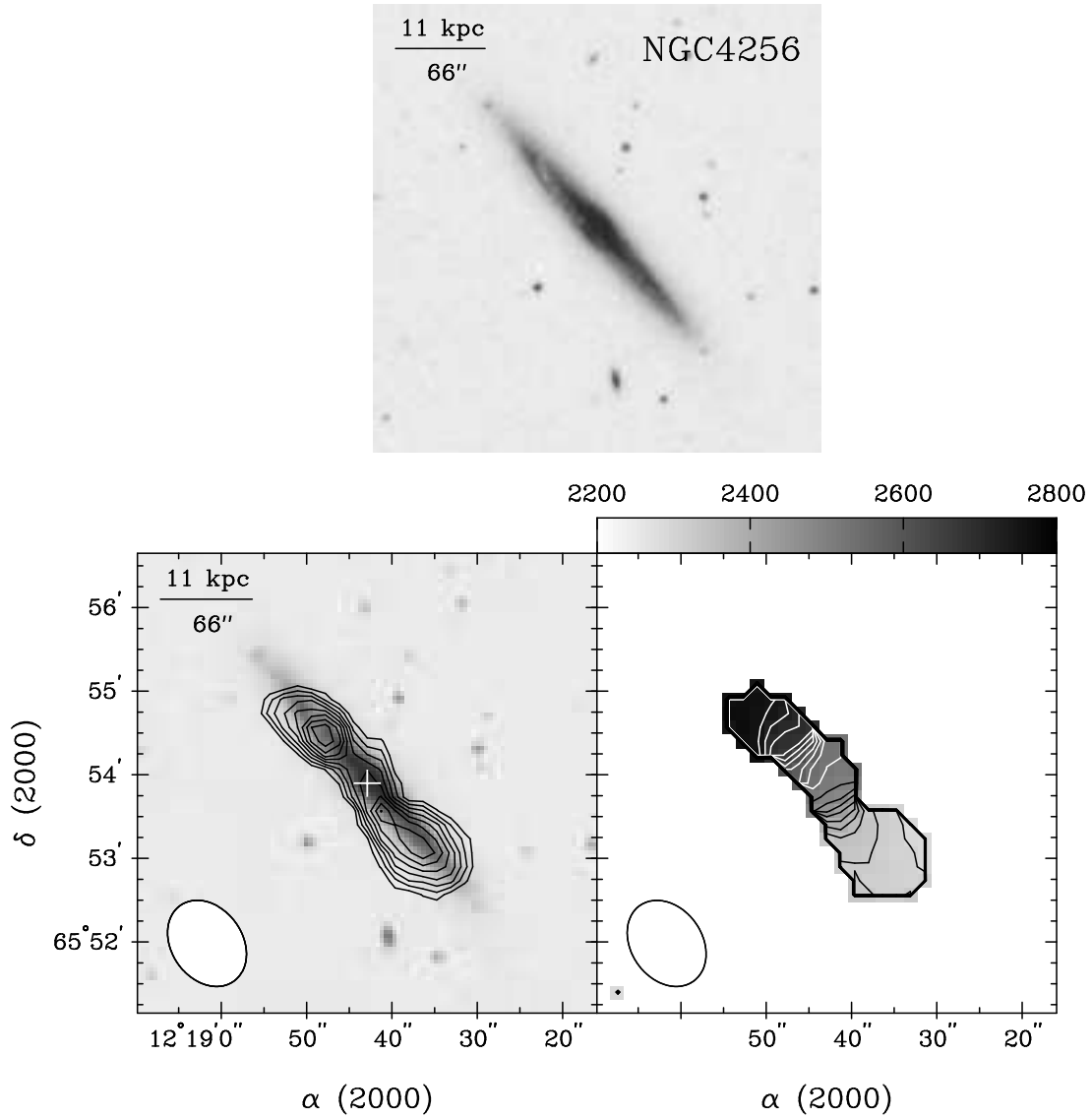


Fig. 13.— Upper panel: Optical image of NGC 4256 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 6, 9, 12, 15  $\times$  38.0 mJy beam $^{-1}$  km s $^{-1}$  ( $1.8 \times 10^{19}$  cm $^{-2}$ ). The half-power width of the synthesized beam has a size of 67''  $\times$  51''.

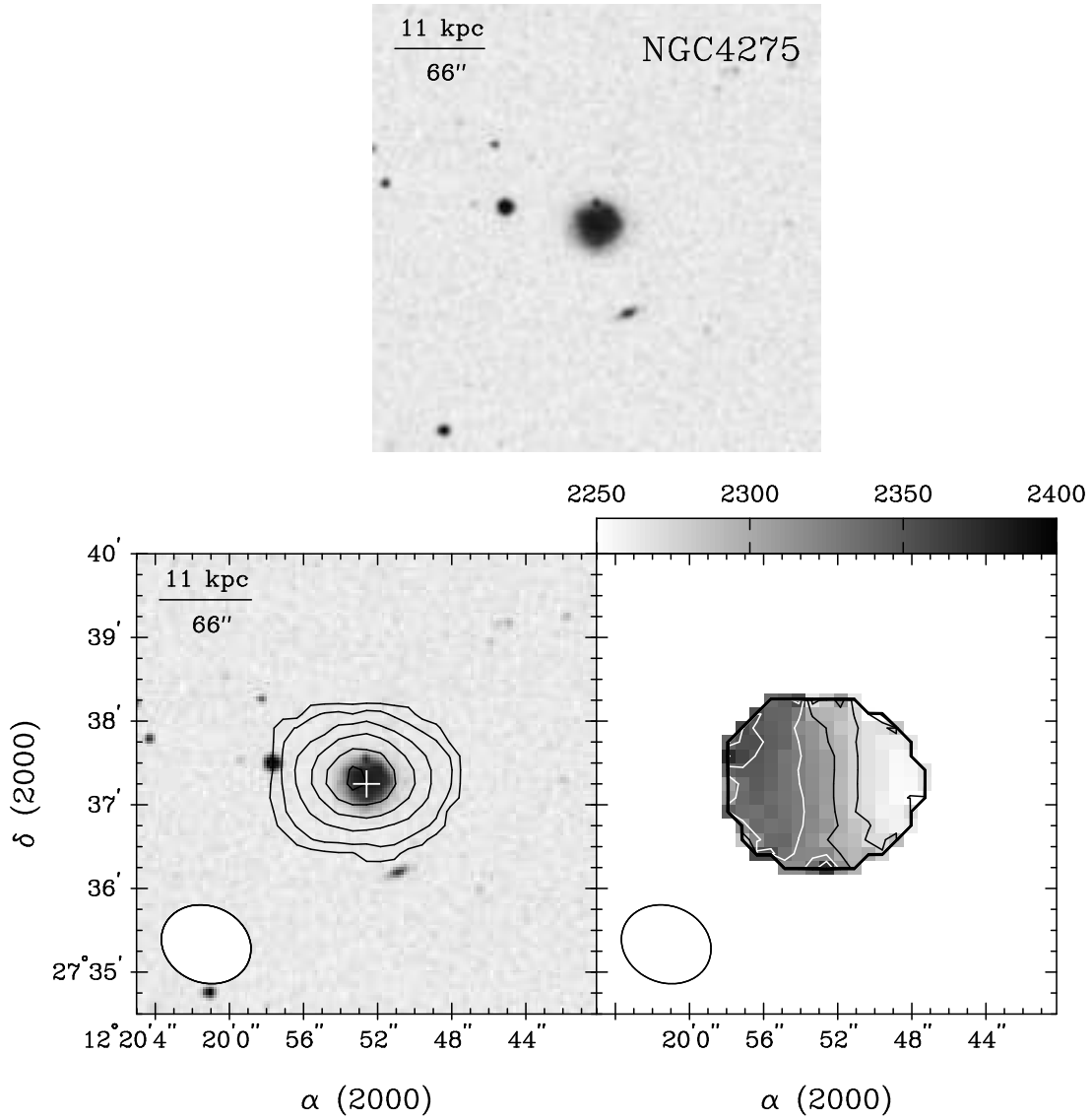


Fig. 14.— Upper panel: Optical image of NGC 4275 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  23.2 mJy beam $^{-1}$  km s $^{-1}$  ( $1.1 \times 10^{19}$  cm $^{-2}$ ). The half-power width of the synthesized beam has a size of 63''  $\times$  55''.

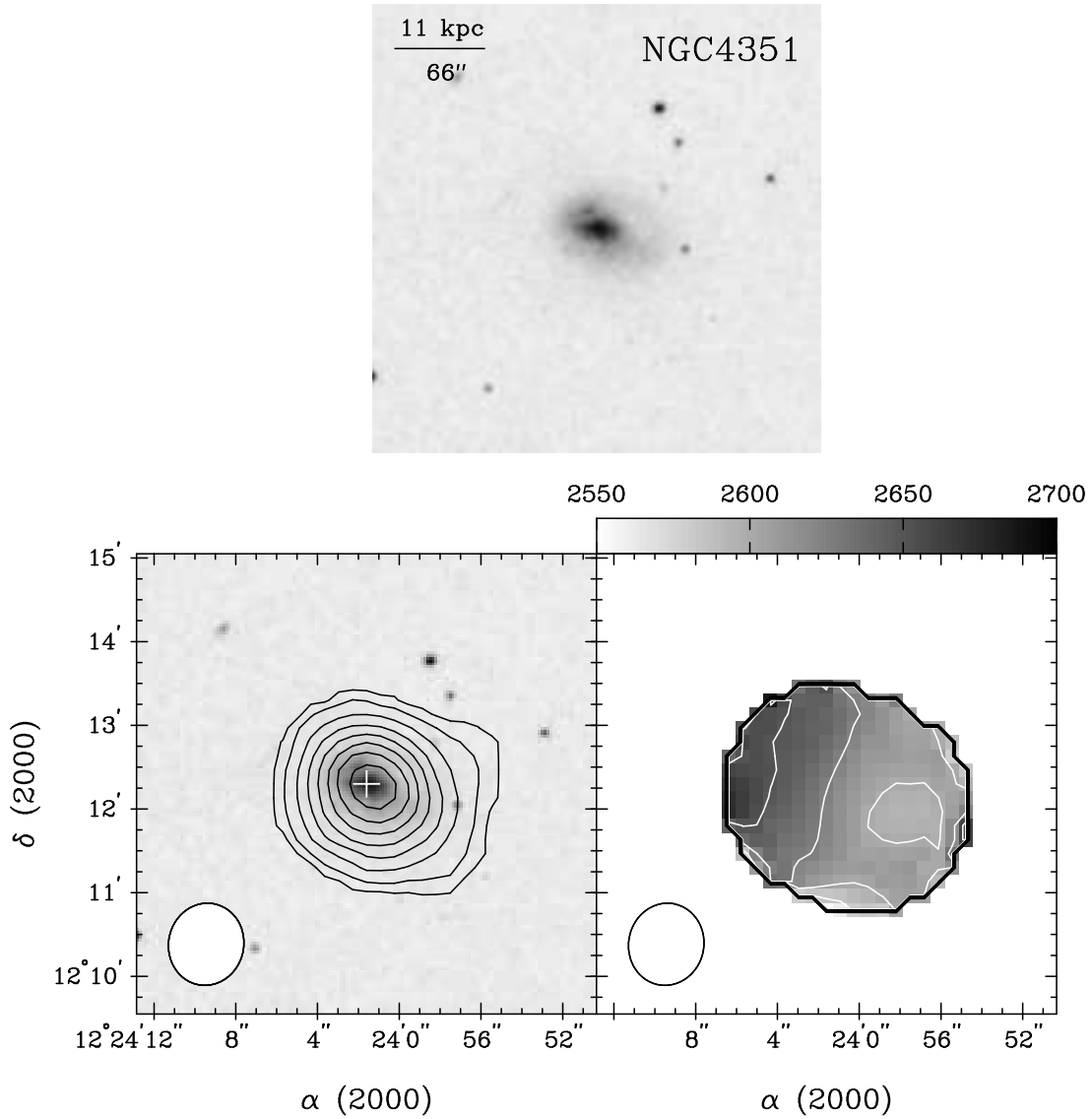


Fig. 15.— Upper panel: Optical image of NGC 4351 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  20.8 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $1.1 \times 10^{19}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 59''  $\times$  54''.

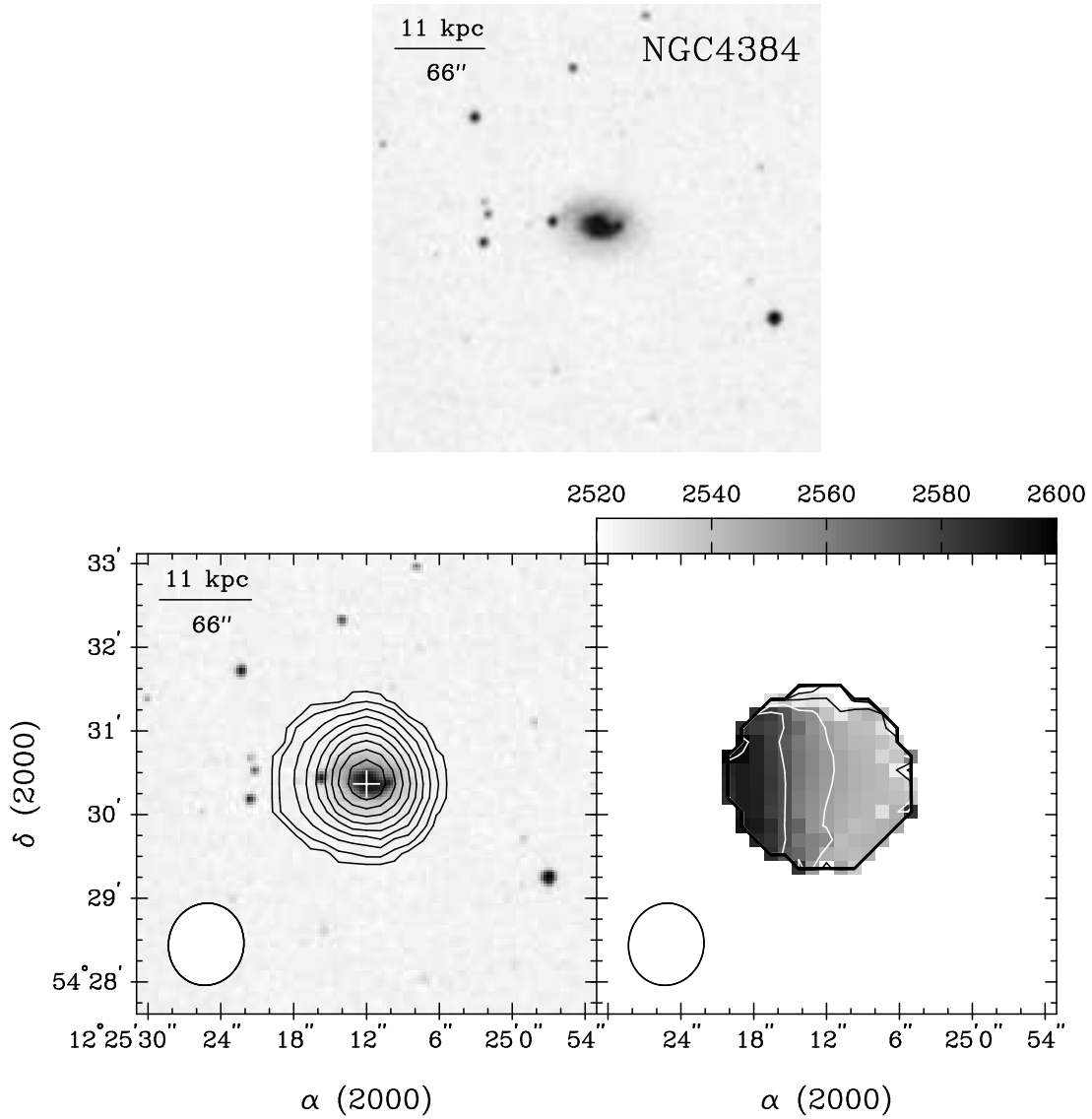


Fig. 16.— Upper panel: Optical image of NGC 4384 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  18.0 mJy beam $^{-1}$  km s $^{-1}$  ( $7.8 \times 10^{18}$  cm $^{-2}$ ). The half-power width of the synthesized beam has a size of 66"  $\times$  56".

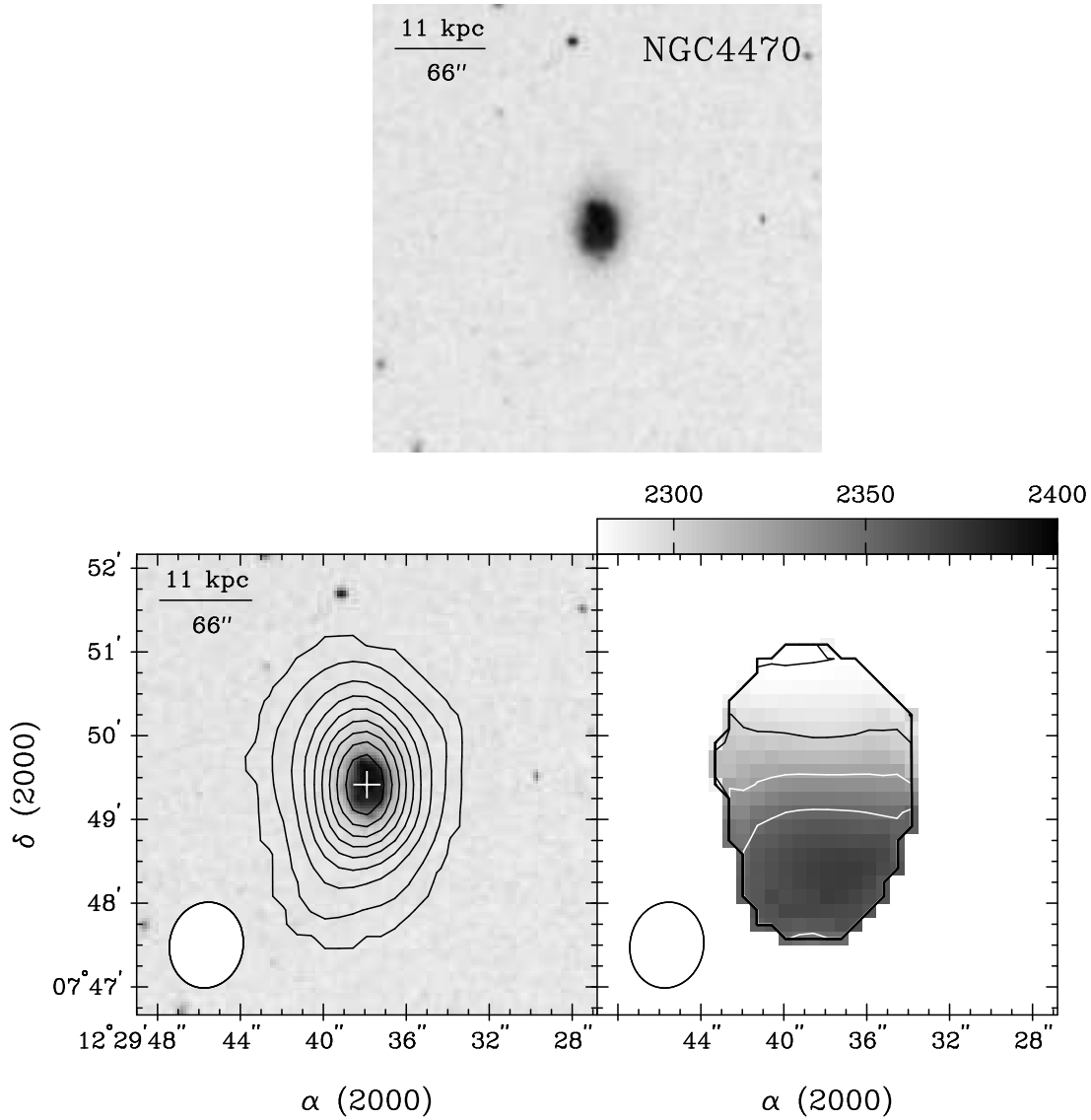


Fig. 17.— Upper panel: Optical image of NGC 4470 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 20, 40, 60, 80  $\times$  17.0 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $8.4 \times 10^{18}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 62''  $\times$  53''.

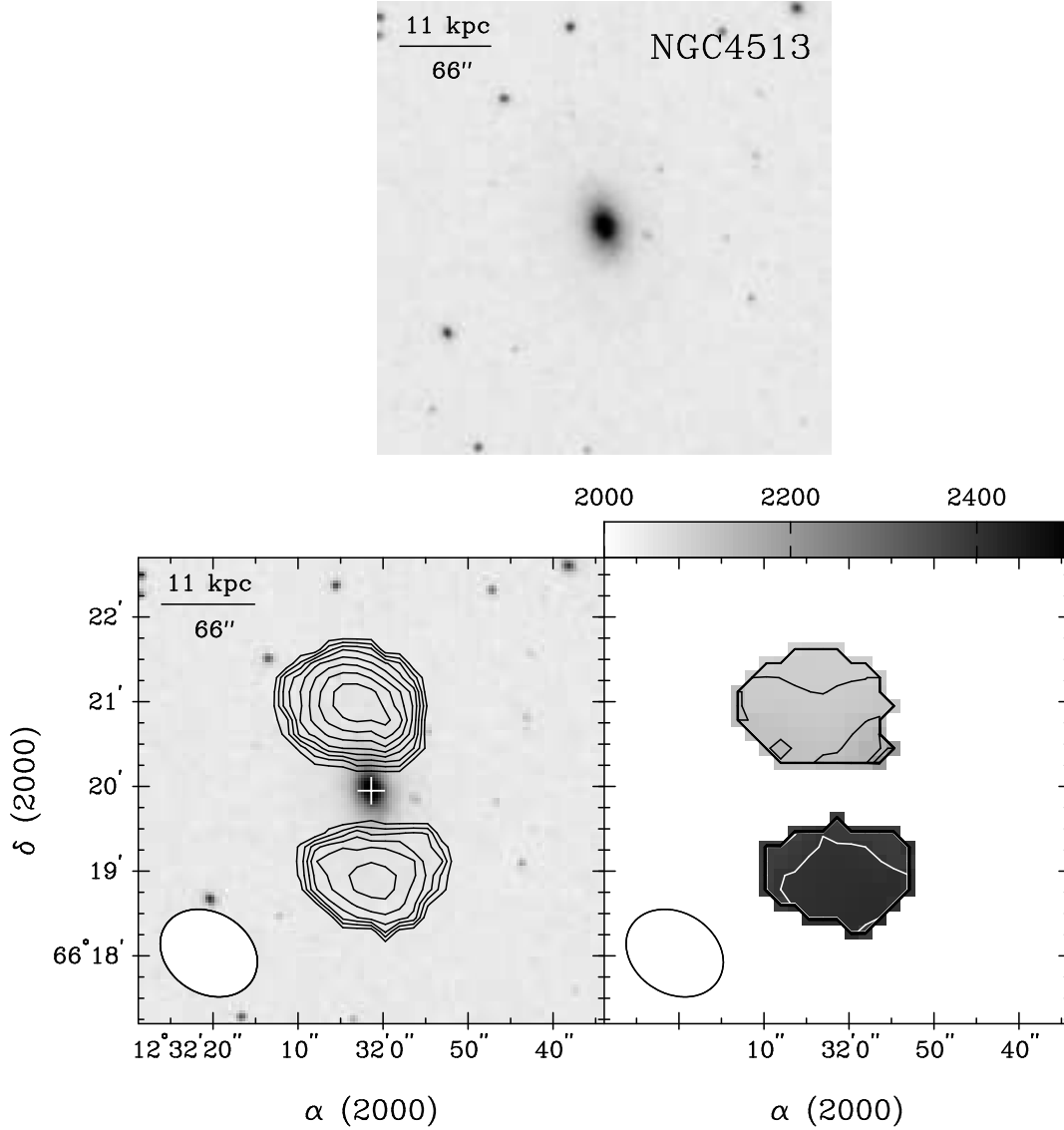


Fig. 18.— Upper panel: Optical image of NGC 4513 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 6, 9, 12, 15  $\times$  31.2 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $1.2 \times 10^{19}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 73''  $\times$  57''.

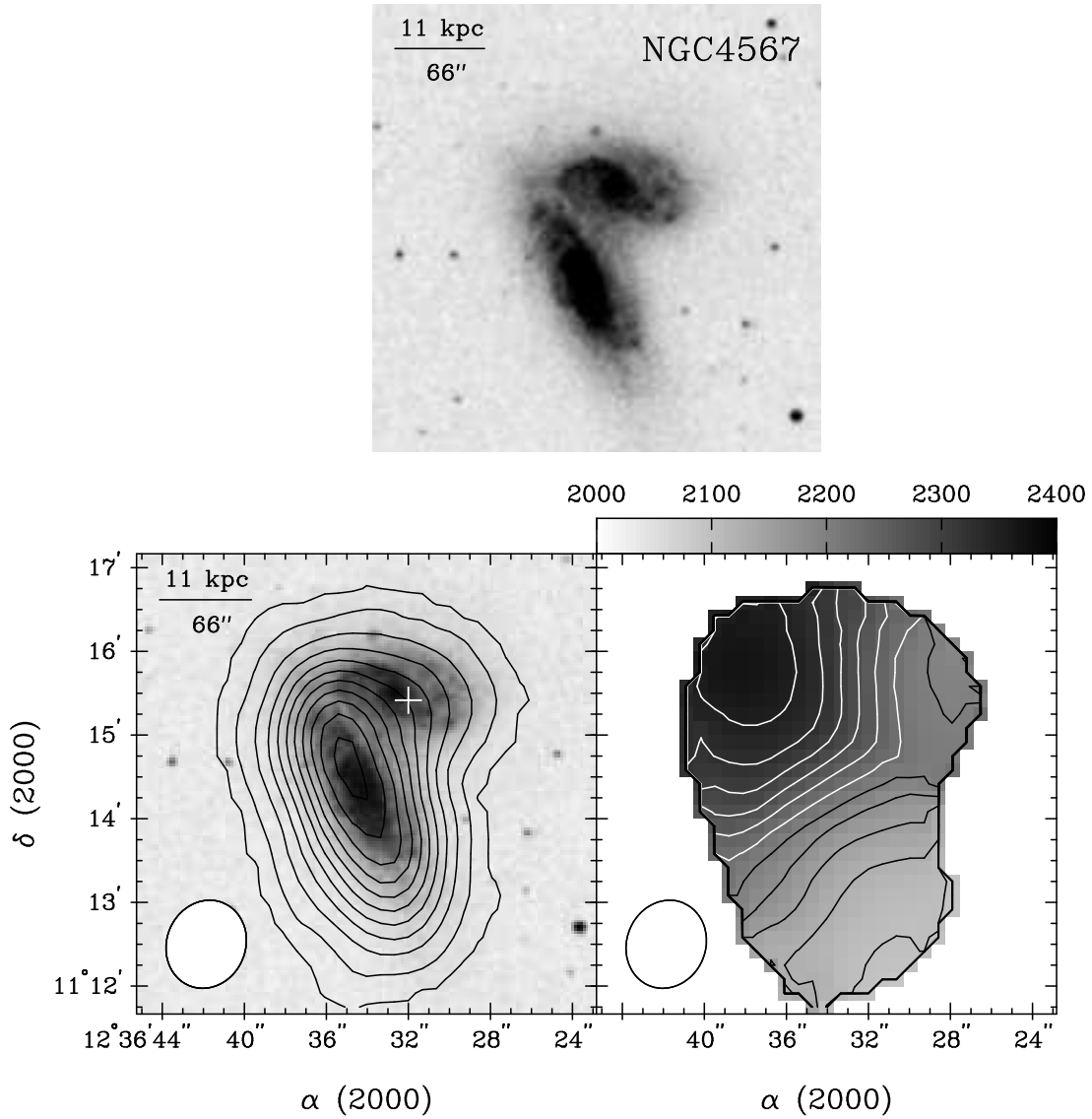


Fig. 19.— Upper panel: Optical image of NGC 4567 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 20, 40, 60, 80 × 24.8 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $1.1 \times 10^{19}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 64'' × 57''.

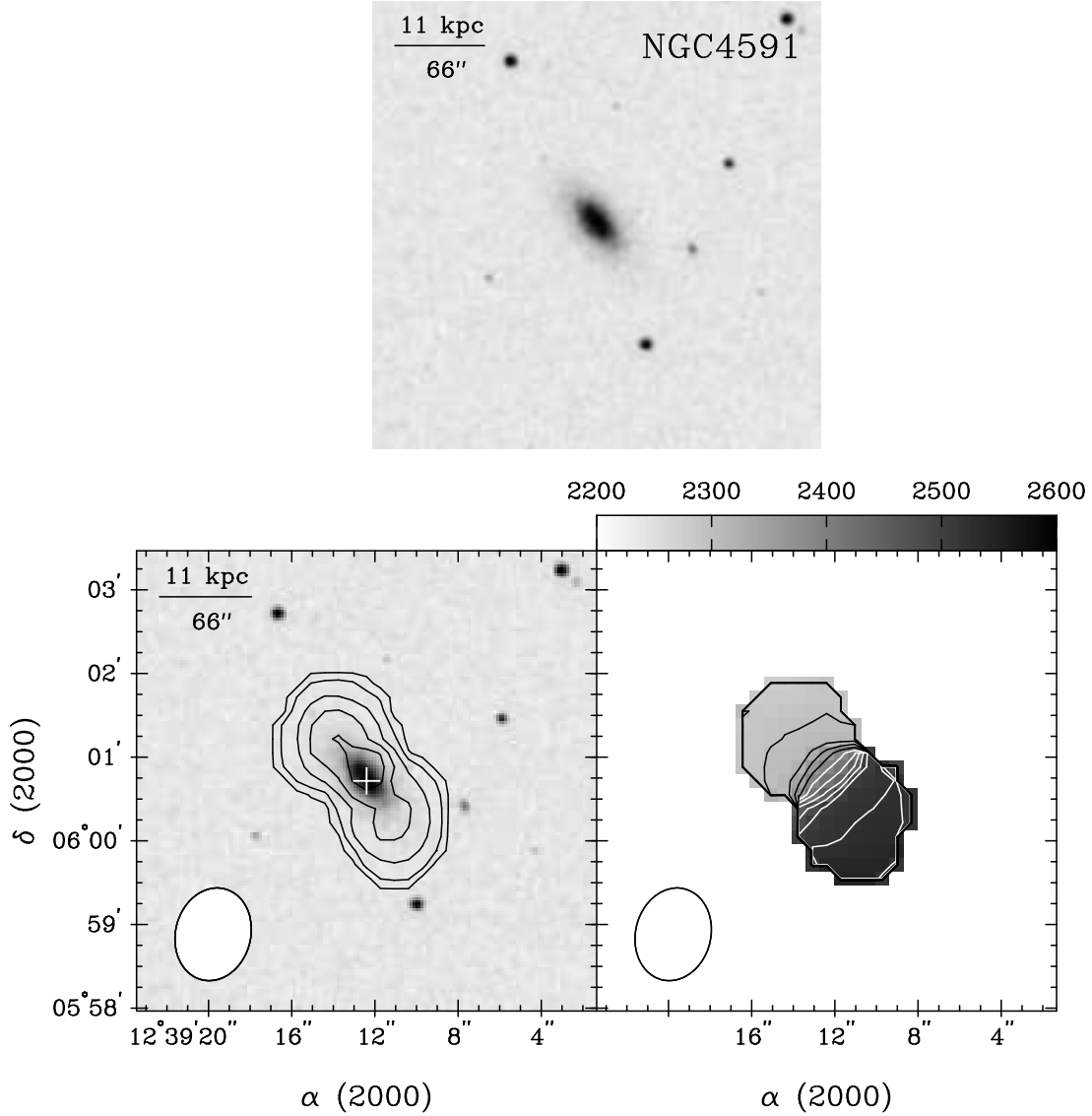


Fig. 20.— Upper panel: Optical image of NGC 4591 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  24.0 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $1.1 \times 10^{19}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 67''  $\times$  54''.

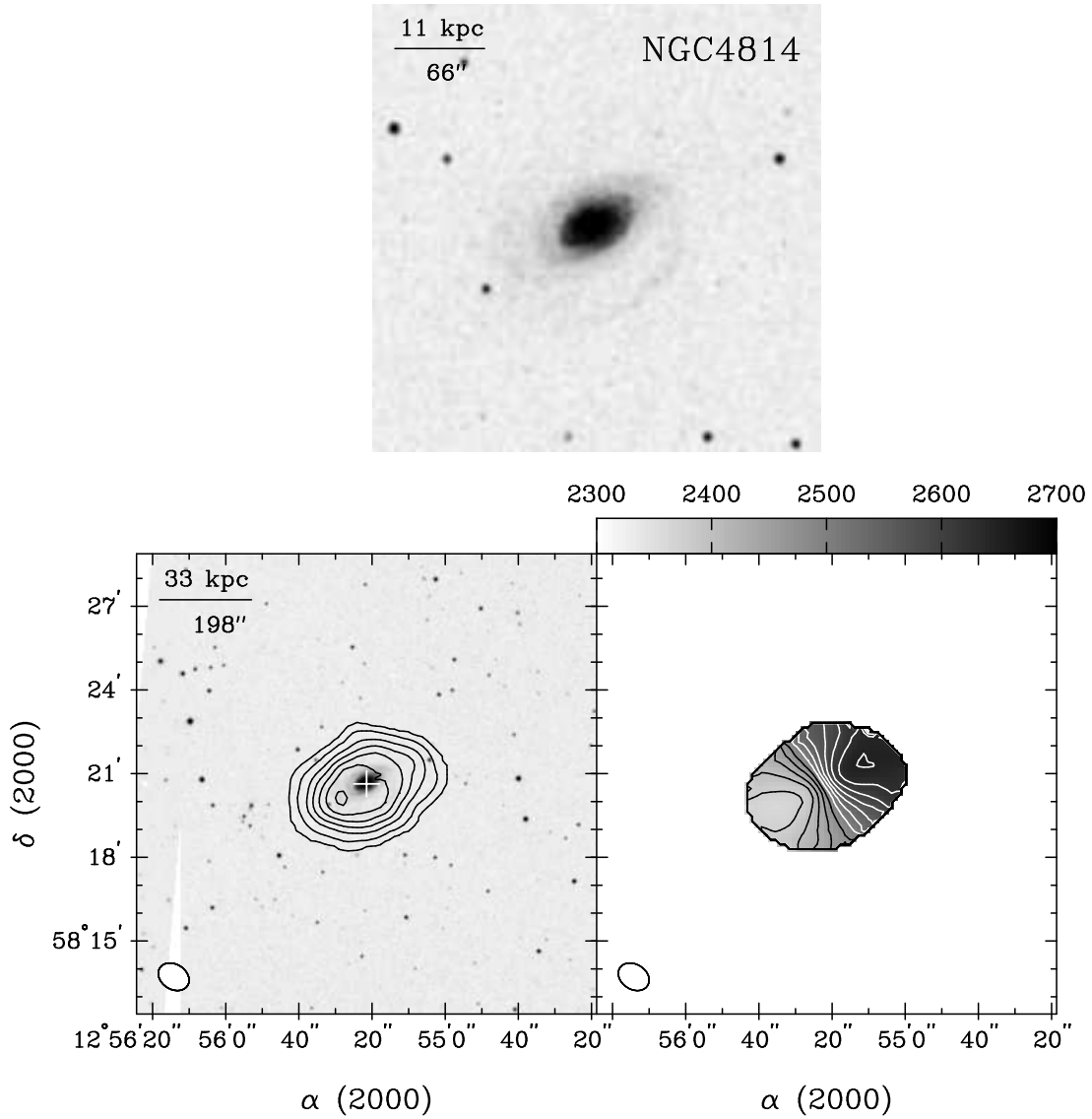


Fig. 21.— Upper panel: Optical image of NGC 4814 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  46.1 mJy beam $^{-1}$  km s $^{-1}$  ( $2.0 \times 10^{19}$  cm $^{-2}$ ). The half-power width of the synthesized beam has a size of 71"  $\times$  54".

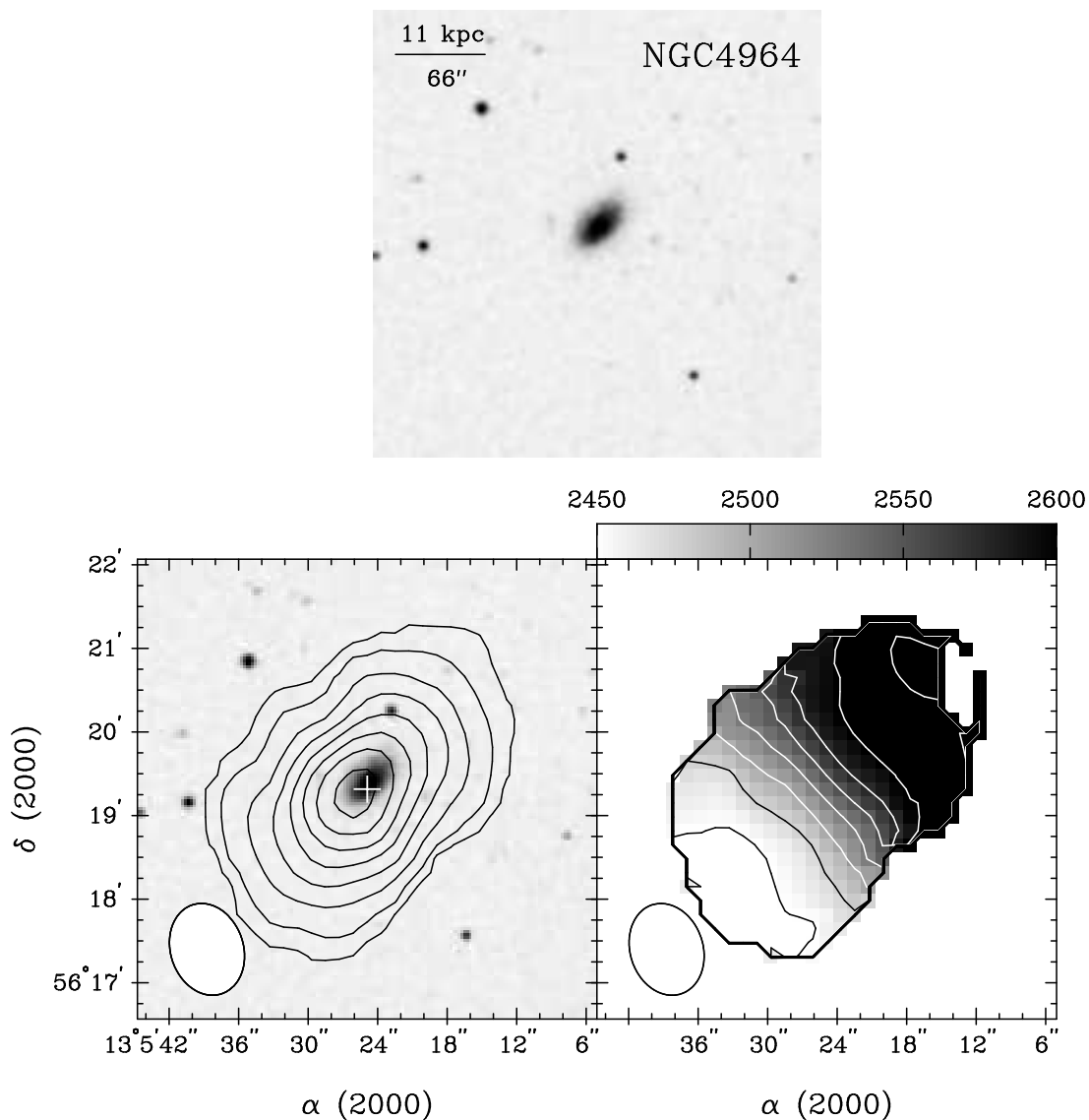


Fig. 22.— Upper panel: Optical image of NGC 4964 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  29.4 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $1.4 \times 10^{19}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 67''  $\times$  52''.

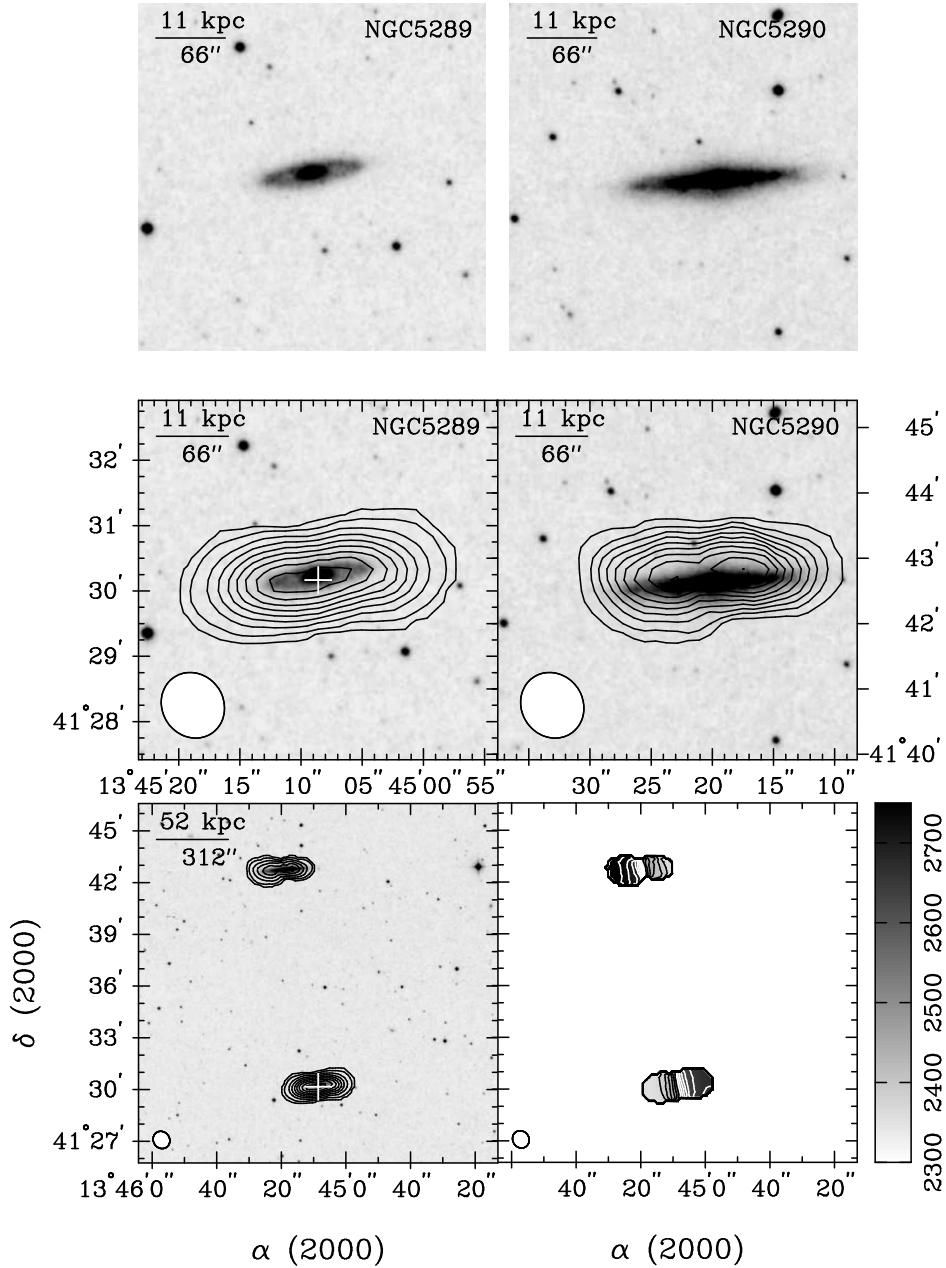


Fig. 23.— Upper panel: Optical image of NGC 5289 (Control sample) and NGC 5290 from the DSS2. Middle panels: Contours of zeroth moment overlaid on the DSS2 image. Lower panels: (Left) Contours of zeroth moment overlaid on the DSS2 image and (Right) first moment map with larger field. In the zeroth moment maps, contours are plotted at 3, 10, 20, 30, 40  $\times$  20.8 mJy beam<sup>-1</sup> km s<sup>-1</sup> ( $9.6 \times 10^{18}$  cm<sup>-2</sup>). The half-power width of the synthesized beam has a size of 62''  $\times$  56''.

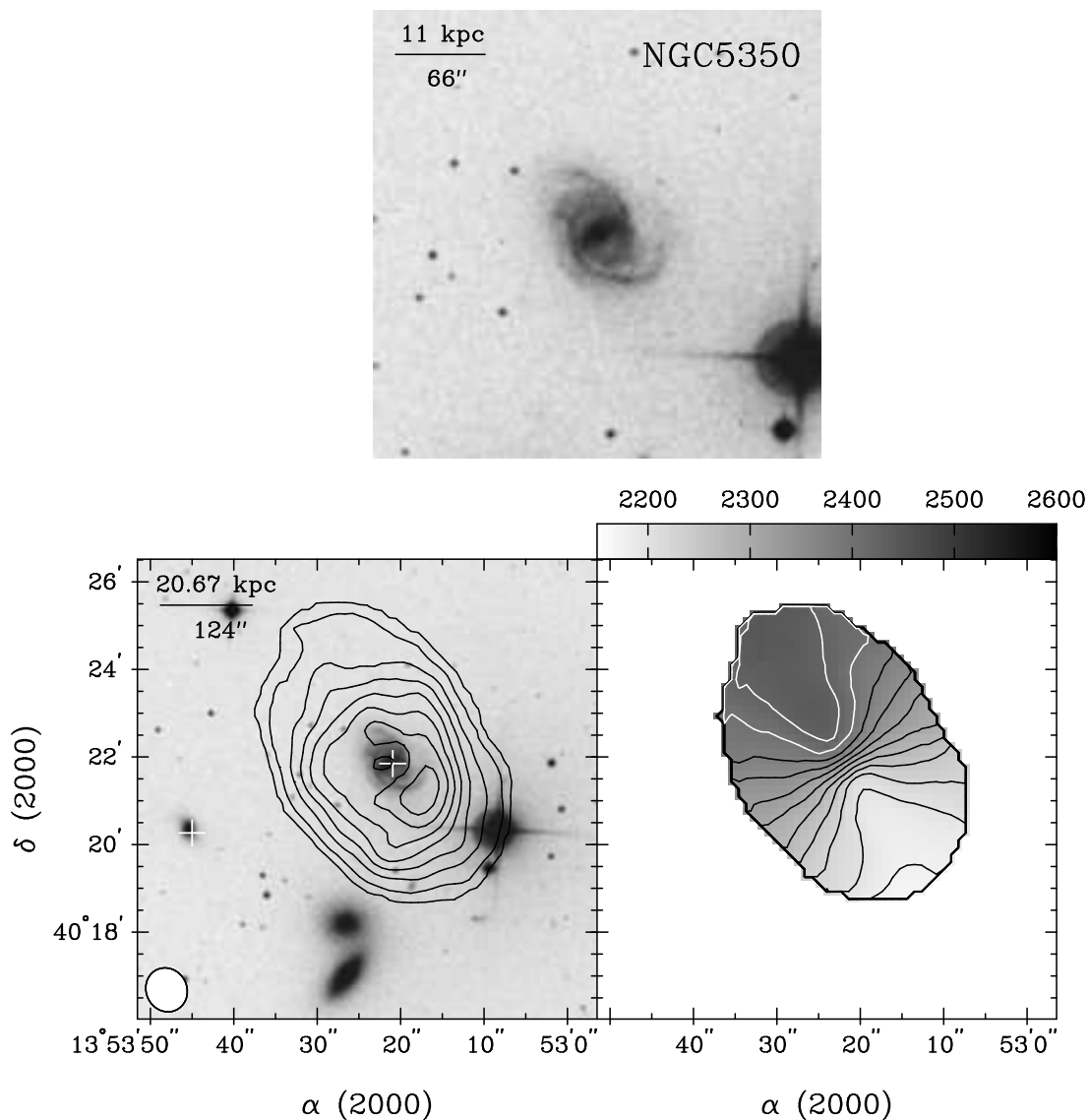


Fig. 24.— Upper panel: Optical image of NGC 5350 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  31.8 mJy beam $^{-1}$  km s $^{-1}$  ( $1.5 \times 10^{19}$  cm $^{-2}$ ). The half-power width of the synthesized beam has a size of 61"  $\times$  56".

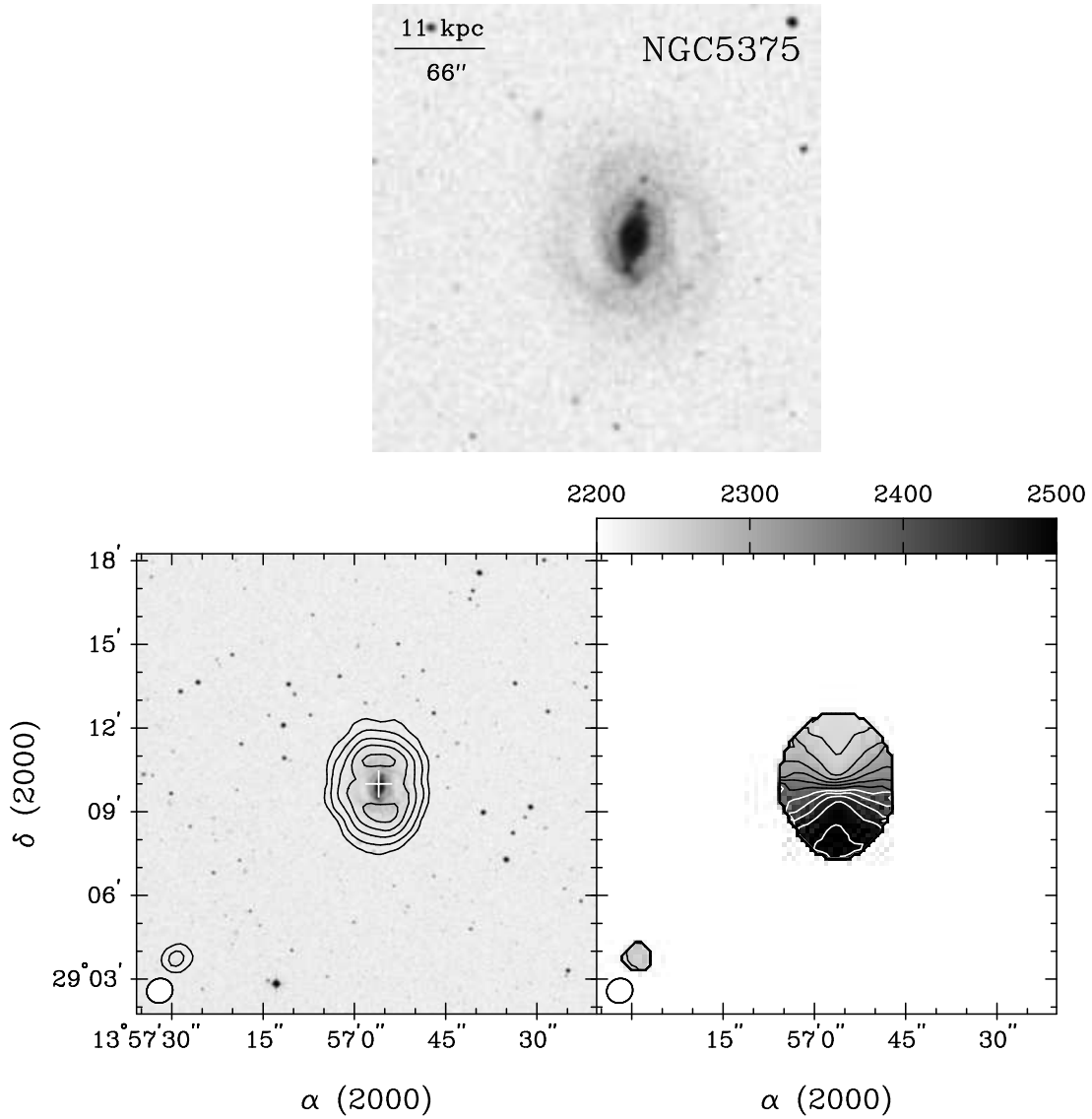


Fig. 25.— Upper panel: Optical image of NGC 5375 (Control sample) from the DSS2. Lower panels: (*Left*) Contours of zeroth moment overlaid on the DSS2 image, and (*Right*) first moment map. In the zeroth moment map, contours are plotted at 3, 10, 20, 30, 40  $\times$  32.3 mJy beam $^{-1}$  km s $^{-1}$  ( $1.8 \times 10^{19}$  cm $^{-2}$ ). The half-power width of the synthesized beam has a size of 57''  $\times$  52''.

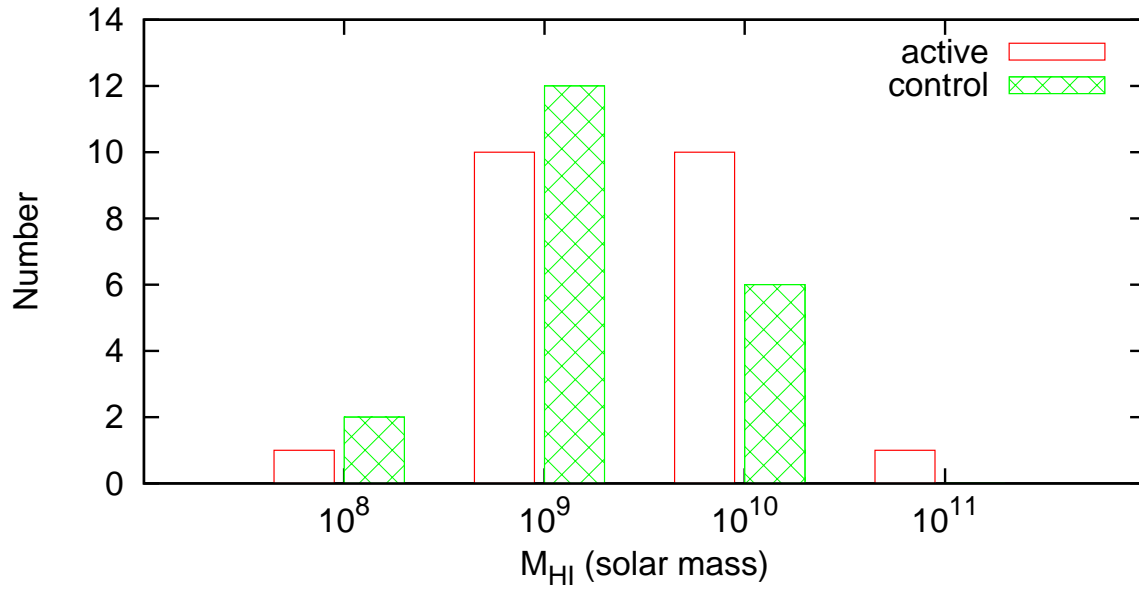


Fig. 26.— Distribution in HI gas masses of ensemble active galaxy sample of ? (solid histogram) and our ensemble control sample (hatched histogram). The combined HI gas masses of NGC 4567/NGC 4568 in the control sample is plotted.

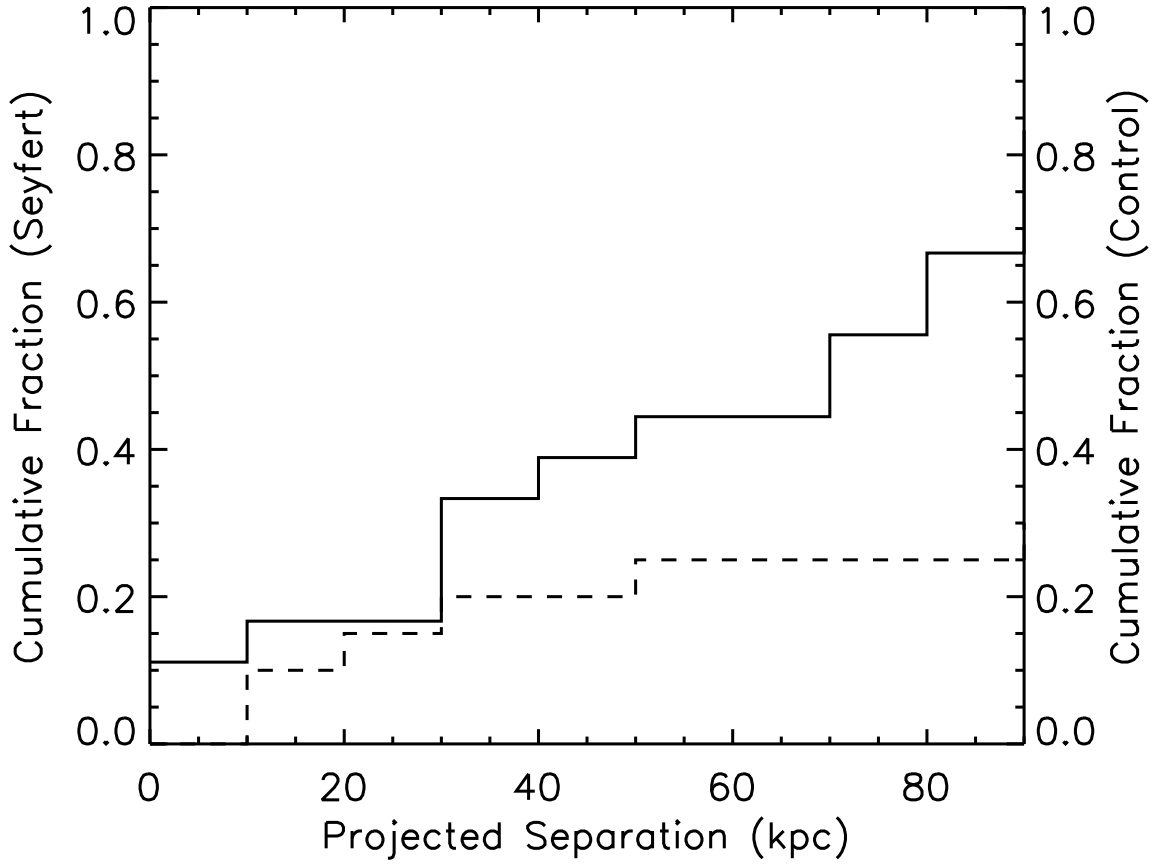


Fig. 27.— Cumulative fraction of Seyfert galaxies (solid line) and control sample (dashed line) with interacting neighboring galaxies plotted as a function of their projected separations.