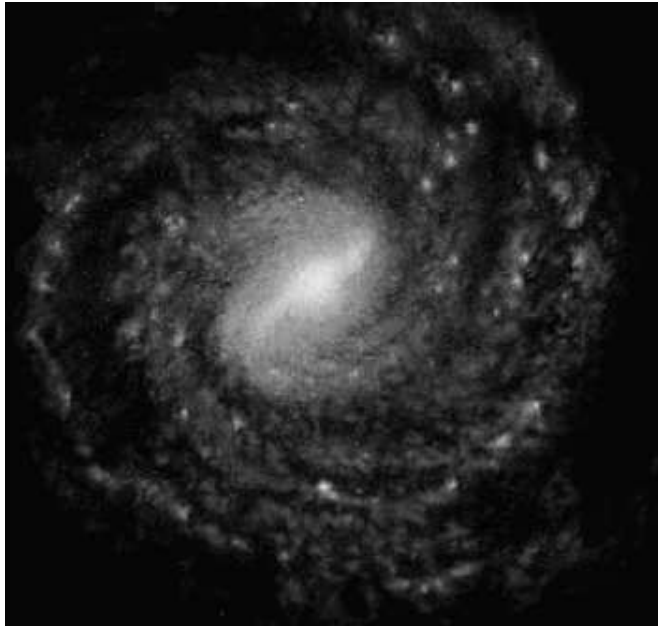


Surface Brightness profiles of Galaxy Components
[as function of (R,z)]

Milky Way = SBbc

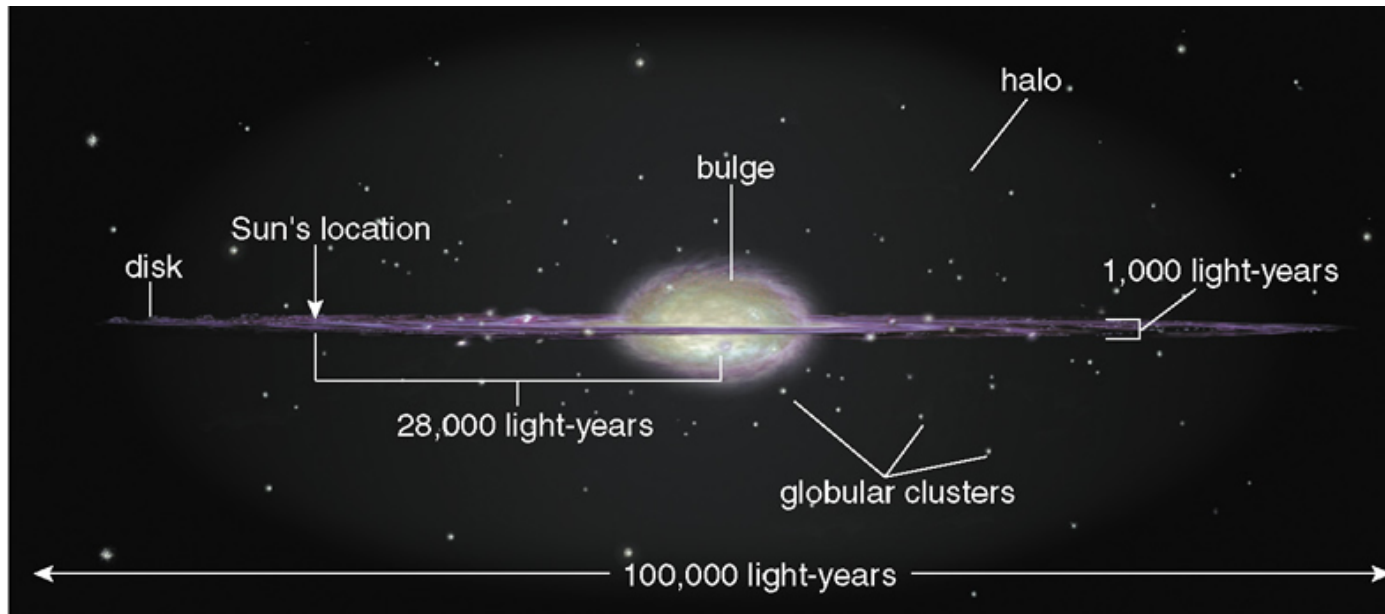


Face-on view
(Artist's conception)

Bulge, bar,
spiral arms
disk
+
(halo, DM halo)



Edge-on view :
Actual infrared image
from COBE satellite



Edge-on view
(Artist's conception)

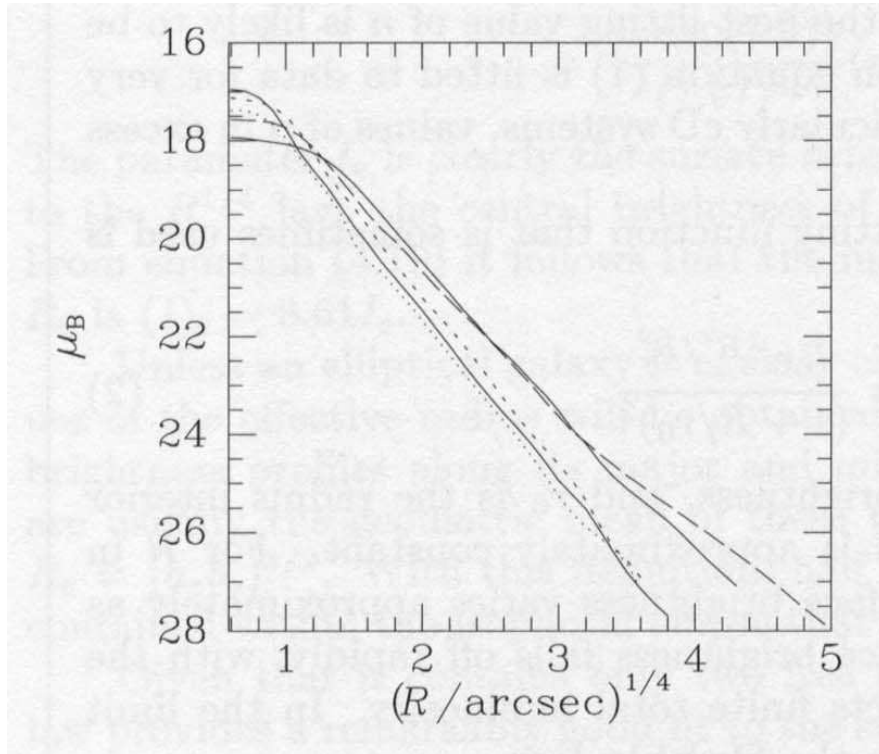


NGC 1300 (SBbc): bulge, strong bar, spiral arms, disk

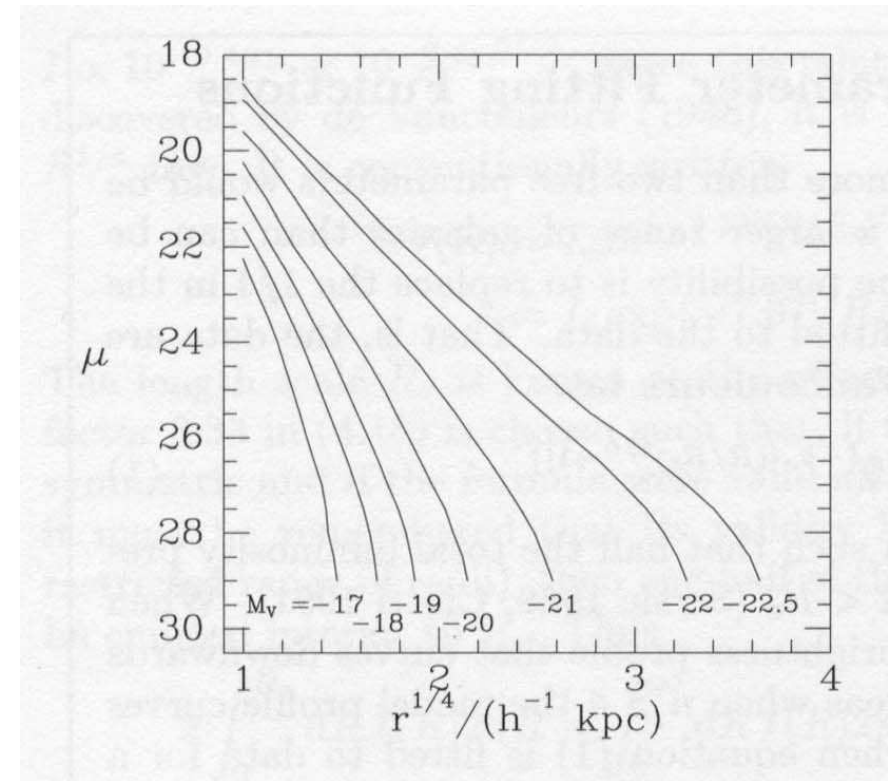


NGC 4594 or M104 (Sombrero) ; HST image
Spiral, with a large bulge and a dusty disk, seen edge-on

Surface Brightness profile of E galaxies à fitted by de Vaucouleurs profile (except for core)



B-band SB profiles for five Es : NGC 720, 1199, 1209, 1395, 1426

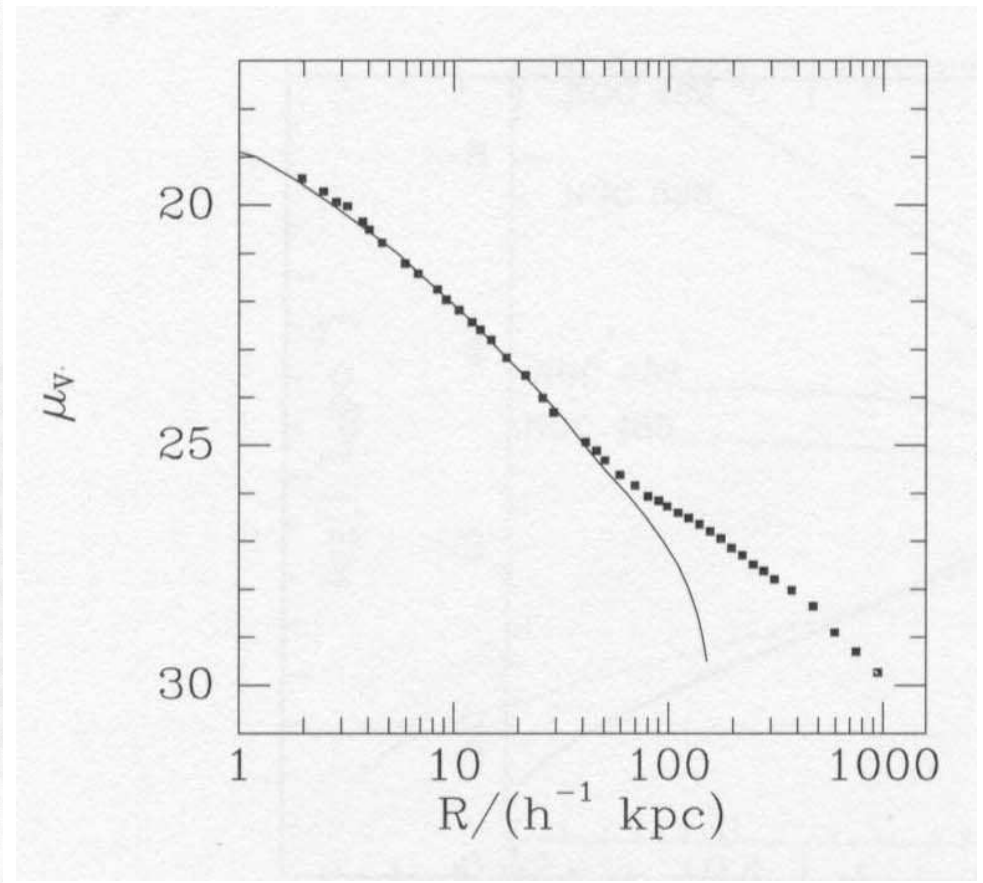


V-band SB profiles for Es of different luminosities

Surface Brightness profile of cD galaxies ($10 L^*$ galaxy
à fitted by a de Vaucouleurs profile (except for extended outer envelope)



Figure 4.29 The cD NGC 4881 is located near the center of the Coma cluster and is surrounded by a swarm of much less luminous galaxies. [Figure courtesy of STScI]



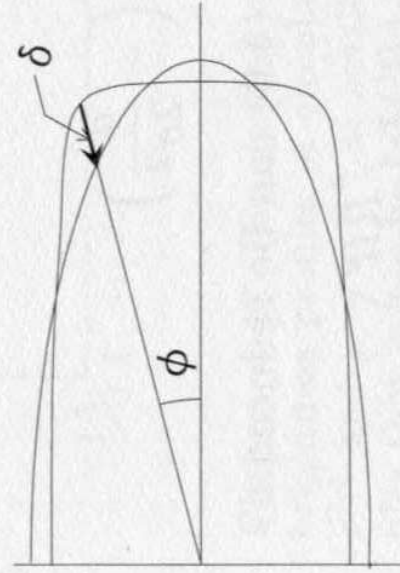
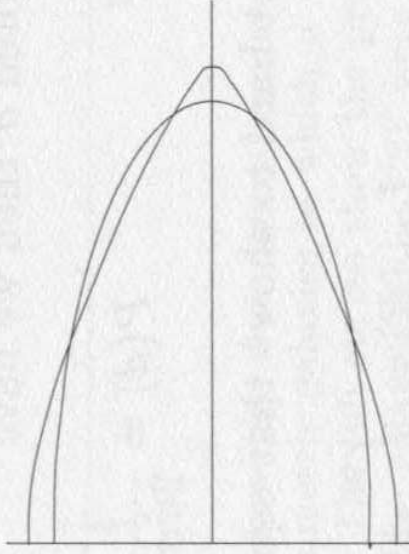
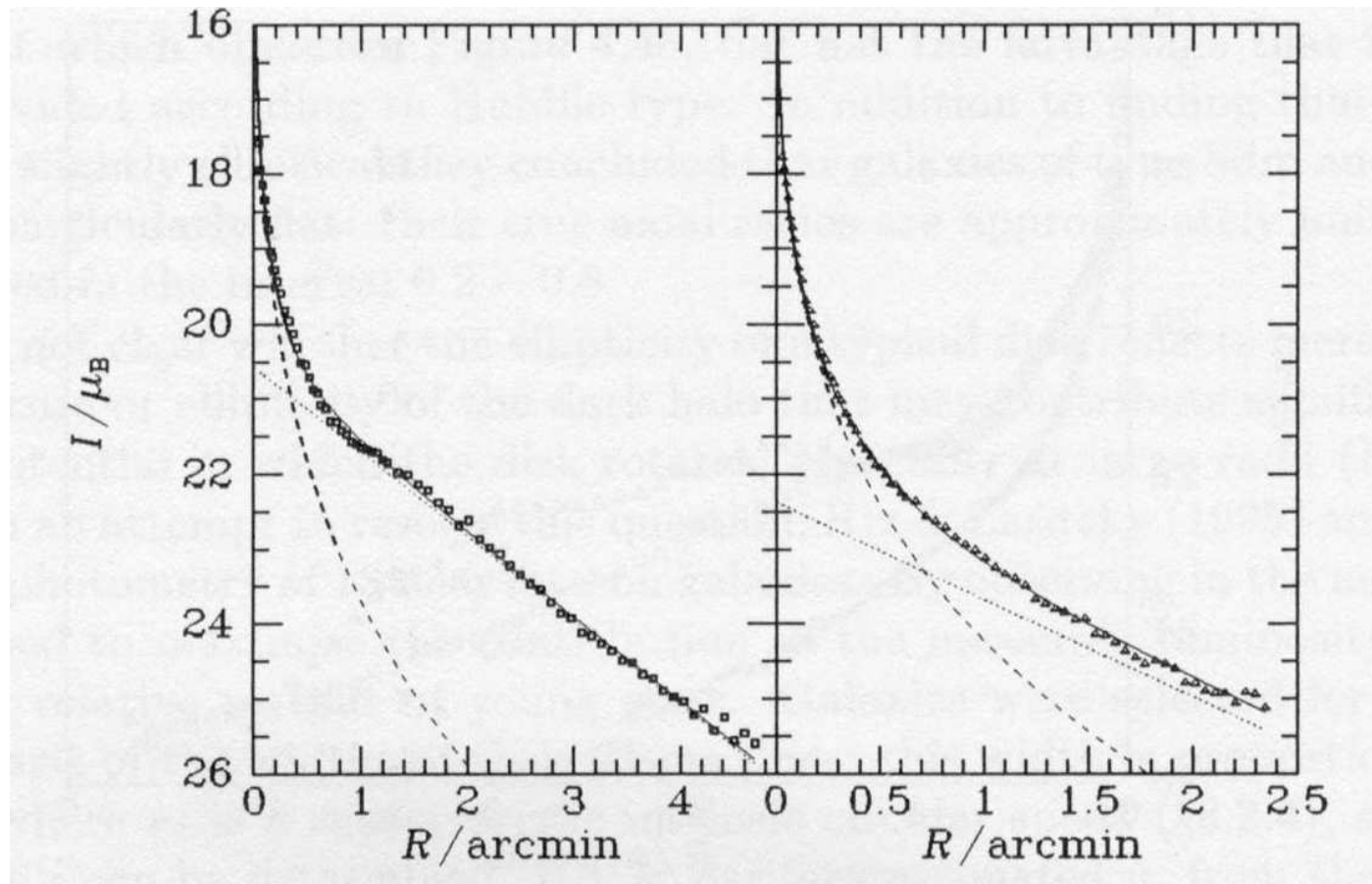
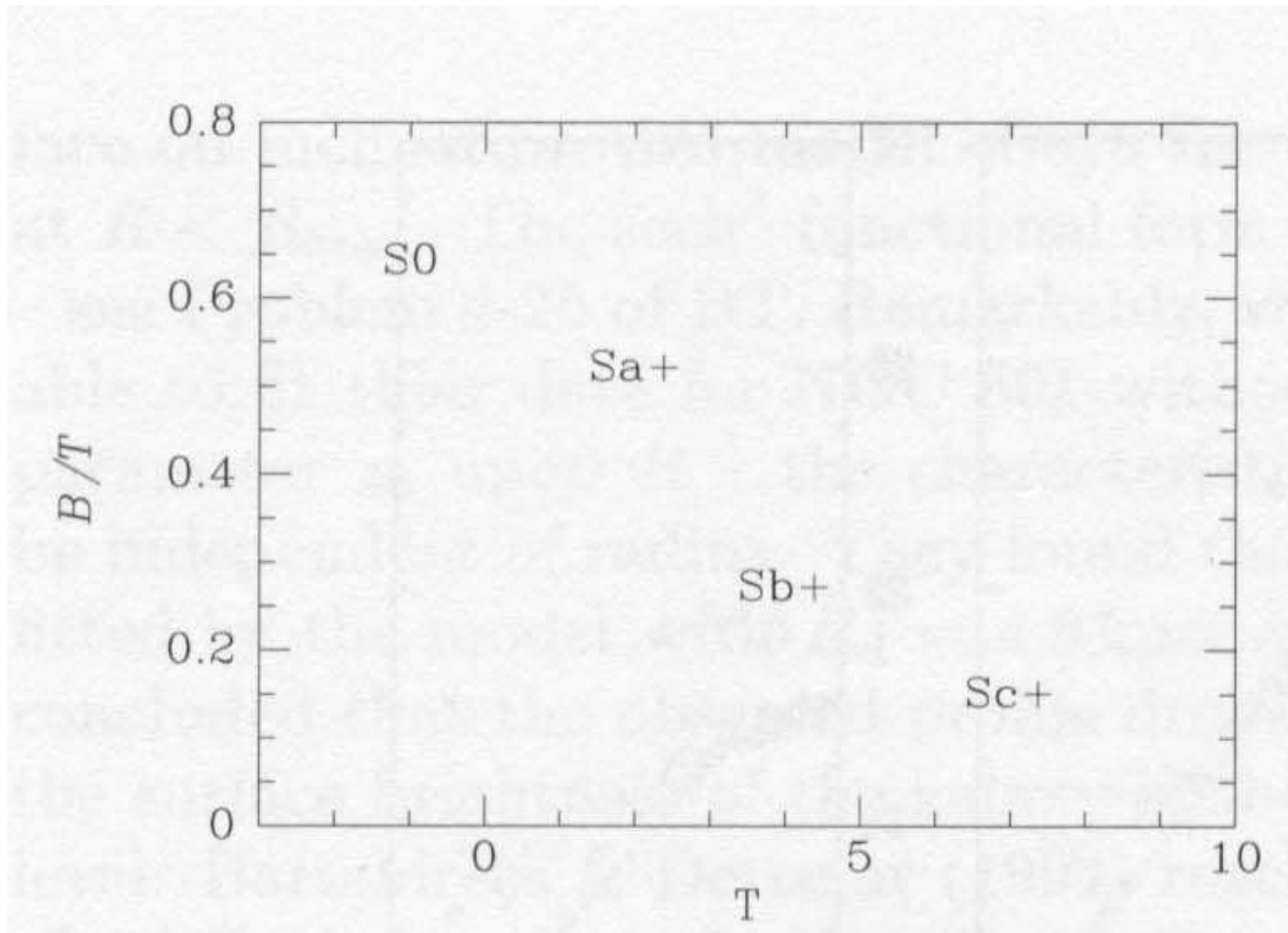


Figure 4.20 Left: an outer boxy isophote fitted by an ellipse with geometry of a_4 detection shown. Right: a disk-like isophote and its fitting ellipse.

Surface Brightness profile of Spirals and S0s galaxies à (Bulge + Disk) can be fitted by a (de Vaucouleurs + Exponential) profile



Diamonds, Triangles = observed B-band surface brightness profiles of 2 spirals
Dotted curve = Exponential fits to disk
Dashed curve = De Vaucouleurs fit to bulge
Solid curve = Exp + de Vauc fit



- Fit SB profile (or 2-D image) of spirals and S0 with De Vaucouleurs and Exponential
- Calculate (bulge/ total luminosity) = (B/T) from fitted models
 - à Find B/T falls increases from Sc to Sa and even from Sa to S0!

Fitting the 2-D image (rather than the 1-D azimuthally averaged SB profile) with a 2-D (de Vaucouleurs + Exponential) model

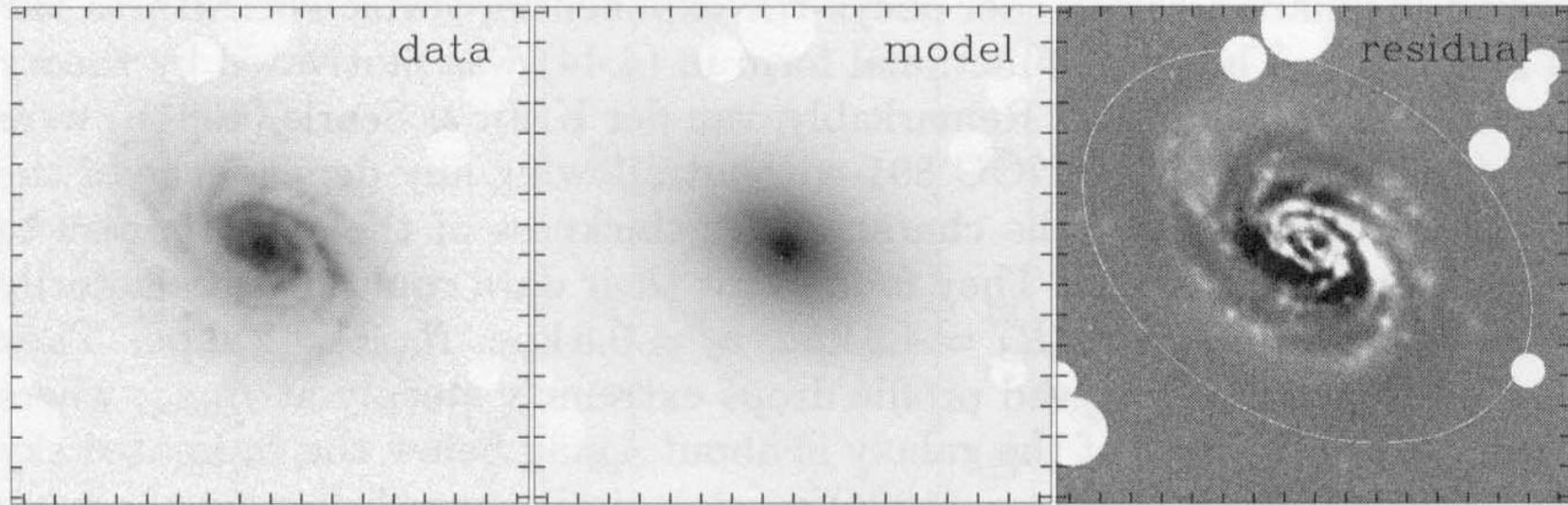


Figure 4.49 Modeling photometry of a galaxy in two dimensions. The left panel shows a B-band CCD image of NGC 214; the middle panel shows the projection onto the sky of the best-fitting combination of an exponential disk and an $R^{1/4}$ -law bulge; and the right panel shows the residuals after this model has been subtracted. The tick marks are at 10 arcsec intervals. The ellipse in the right panel is the region over which the fit was performed, and the empty circles are regions that were excluded because they are contaminated by light from other objects. [Data kindly provided by R. de Jong]