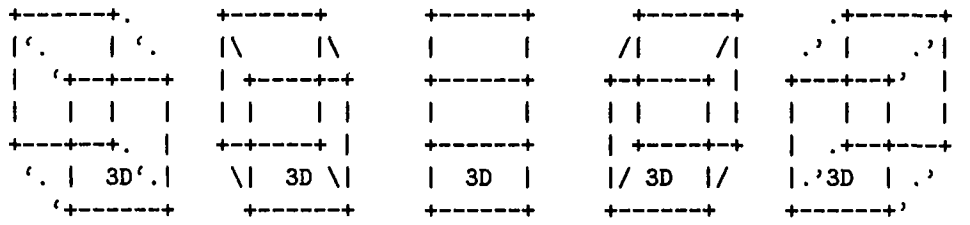
SYMMETRY, ASYMMETRY AND 3-D AUTOSTEREOGRAMS

Brigitte Servatius,
Mathematical Sciences, Worcester Polytechnic Institute,
Worcester, MA 01609-2280
E-mail: bservat@wpi.edu



In deference to the commercial arts community, we will explore the mathematical and cultural aspects of the ubiquitous autostereogram. The mathematical, optical, and physiological aspects will be explained, with many and various examples, modern and historical, artistic and whimsical.

Look at the simple typewriter graphic above. By either crossing or relaxing your eyes, merge any two neighboring "cubes". Then you will see six cubes, all of which look three dimensional, while the degenerate cube in the middle disappears.

Usually people have trouble crossing their eyes, however, for large autostereograms, say, projected by an overhead, the eye-crossing is easier, and the results are rather dramatic.

We will explain several of the popular algorithms for their generation, and probe the connection between depth, asymmetry, and broken patterns.

Participants are invited and encouraged to bing along their favorite examples and programs.