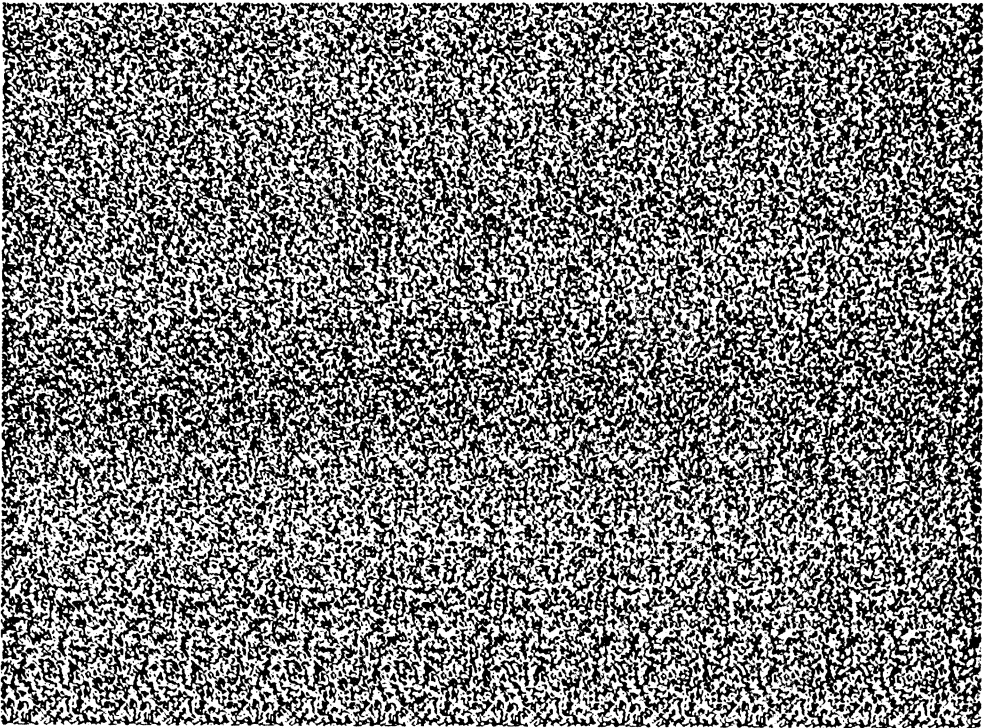


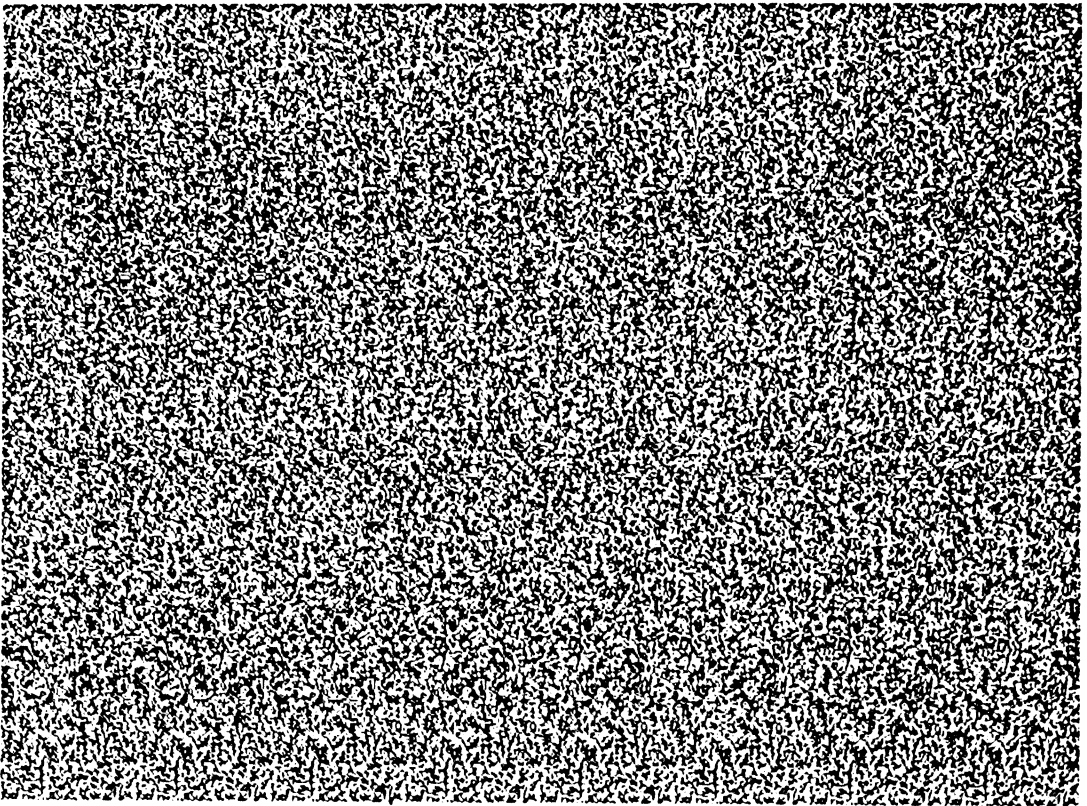
CHAPTER 1

GETTING STARTED



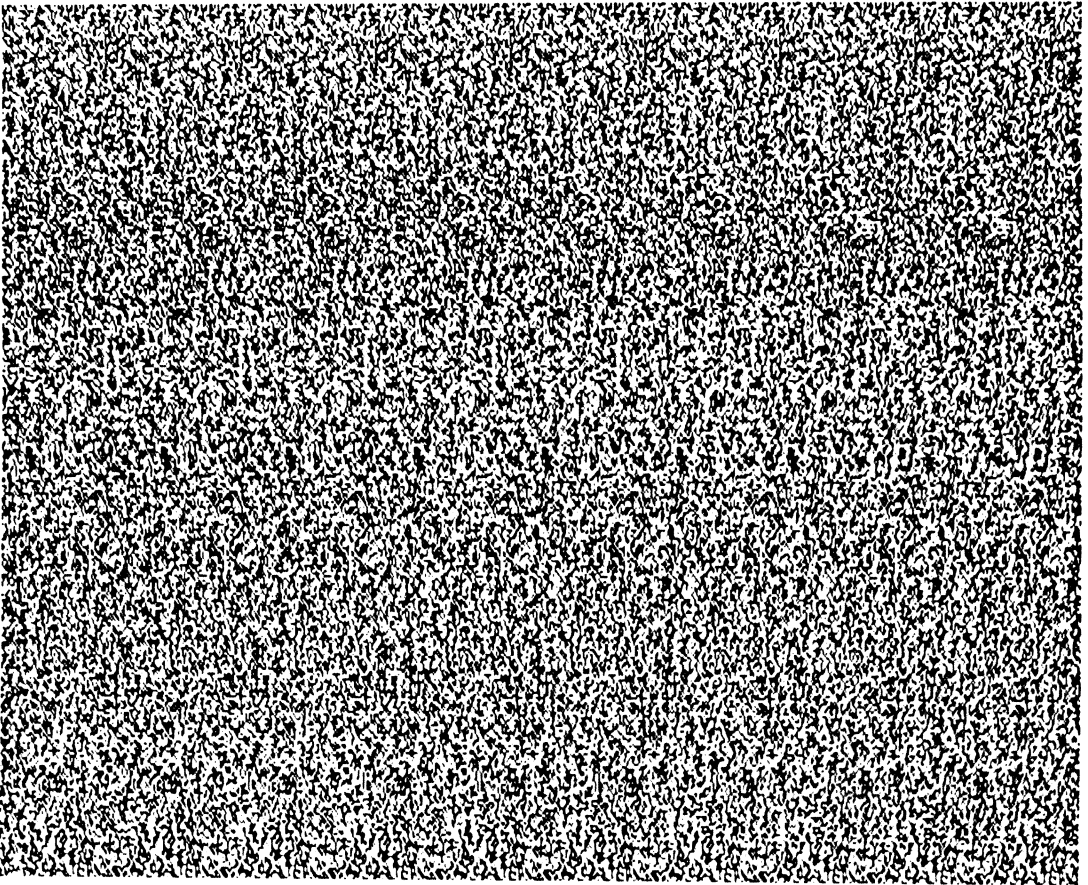
CHAPTER 2

ALL ABOUT STARE·EOs



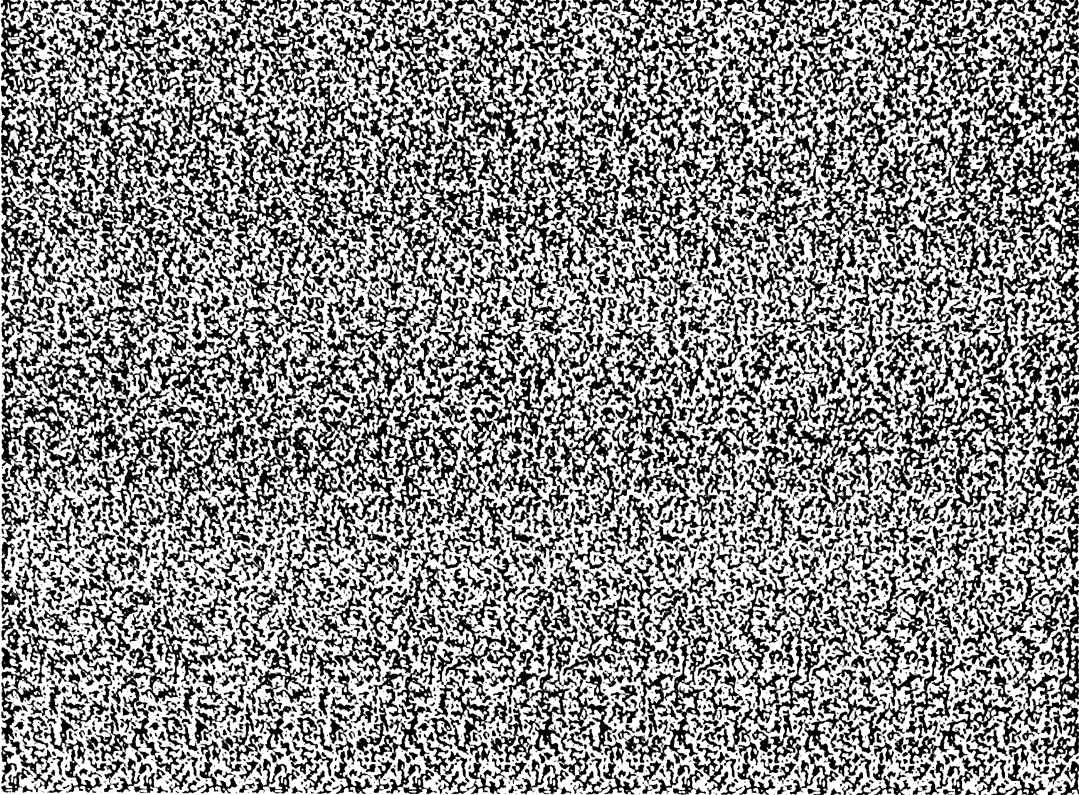
CHAPTER 3

A BRIEF TOUR



CHAPTER 4

GENERAL SET UP



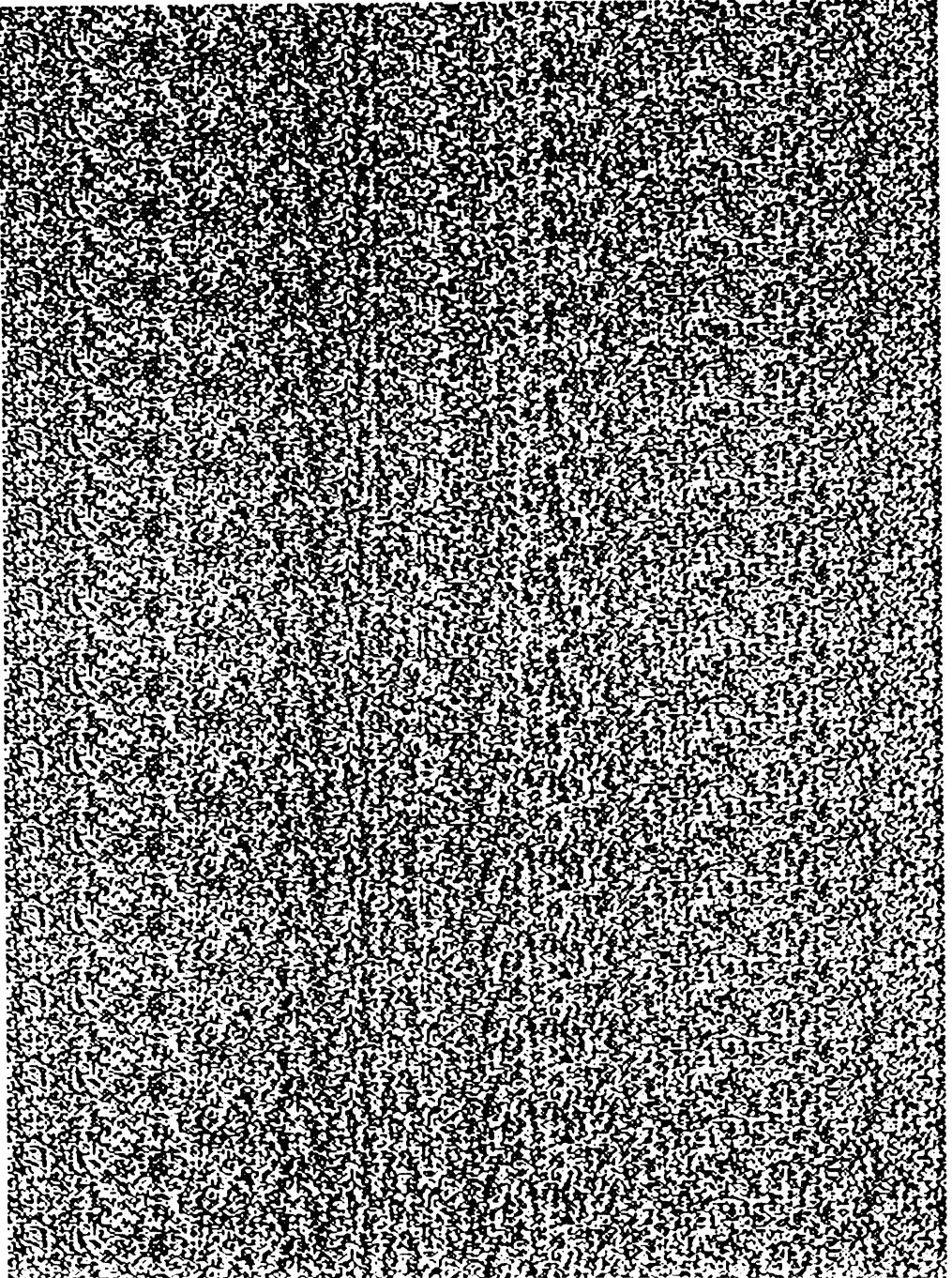


Fig. 1 - A Practice Stare-EO

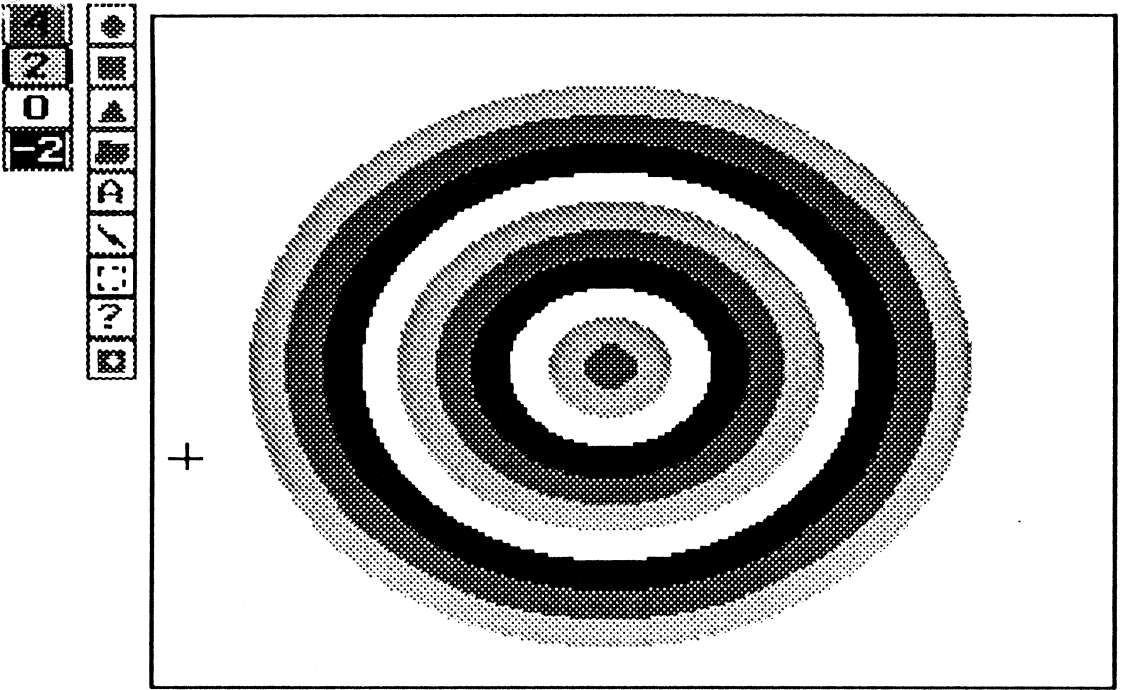



Fig. 3 - A 10 Level Cone Drawn with Only 4 Available Colors

 By default, Stare-EO Workshop will use a color map with *relative* levels, rather than *absolute* levels.

The Color Map Options window shown in figure 1 displays the available colors and their levels of elevation. The top color represents the highest level and the bottom color represents the lowest color, just as you would expect.

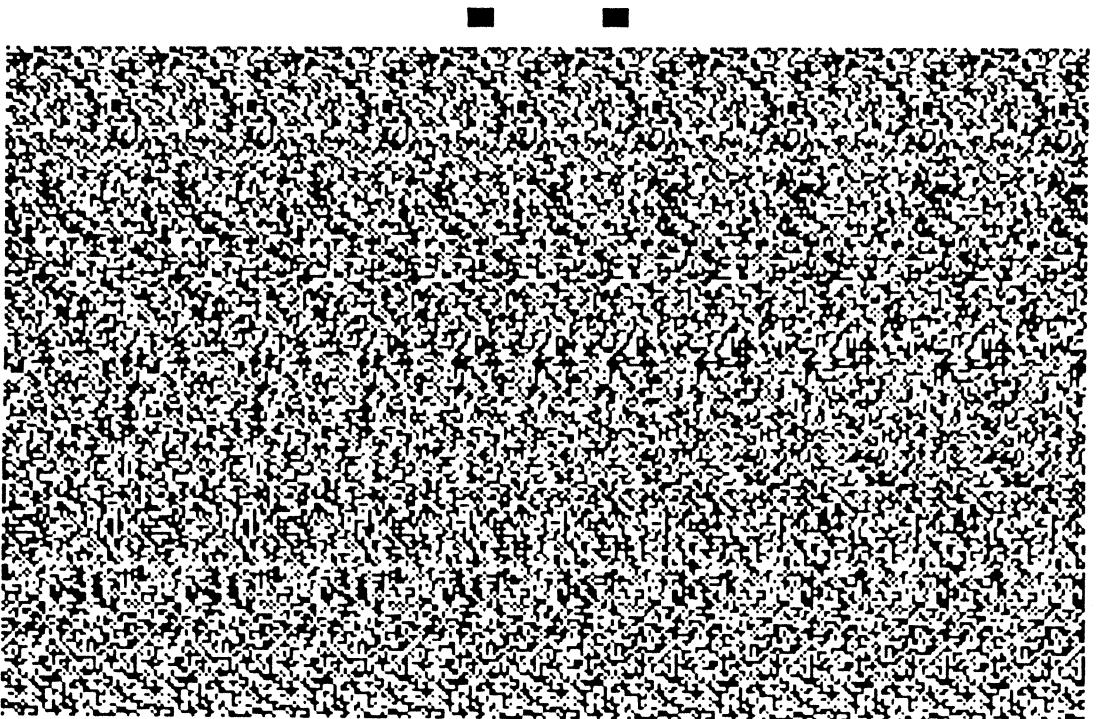
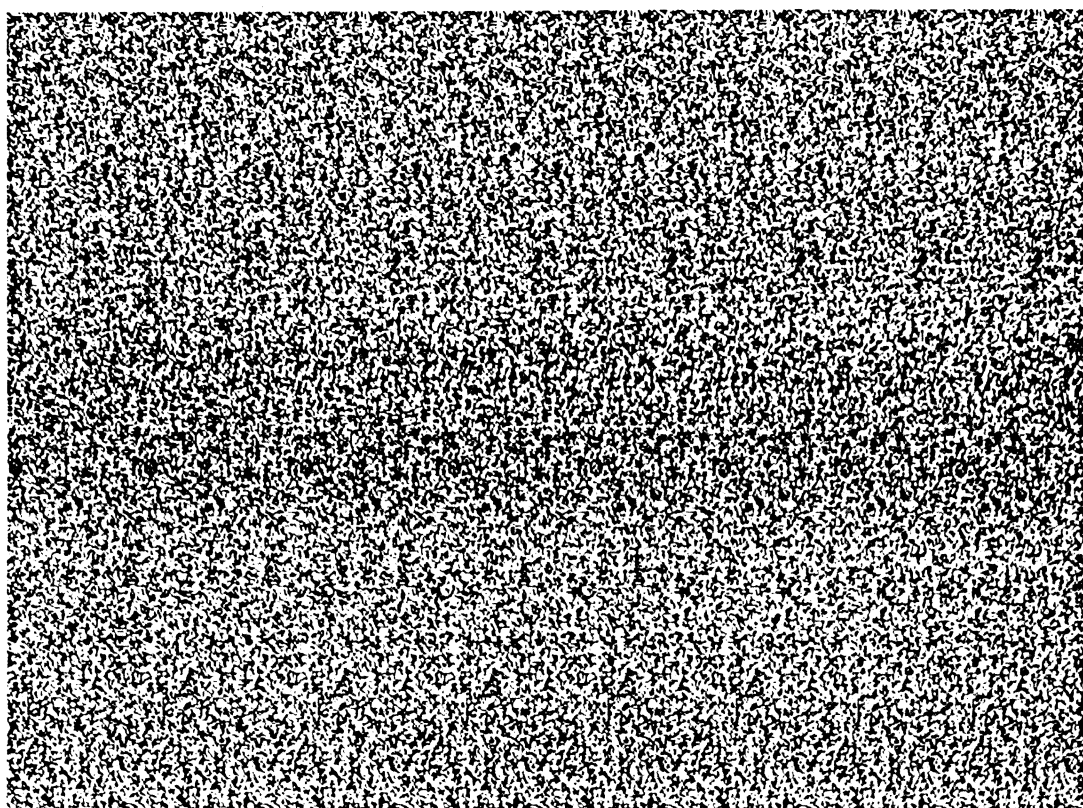


Fig. 4 - The 10 Level Cone Using Relative Levels

CHAPTER 5

THE COLOR MAP



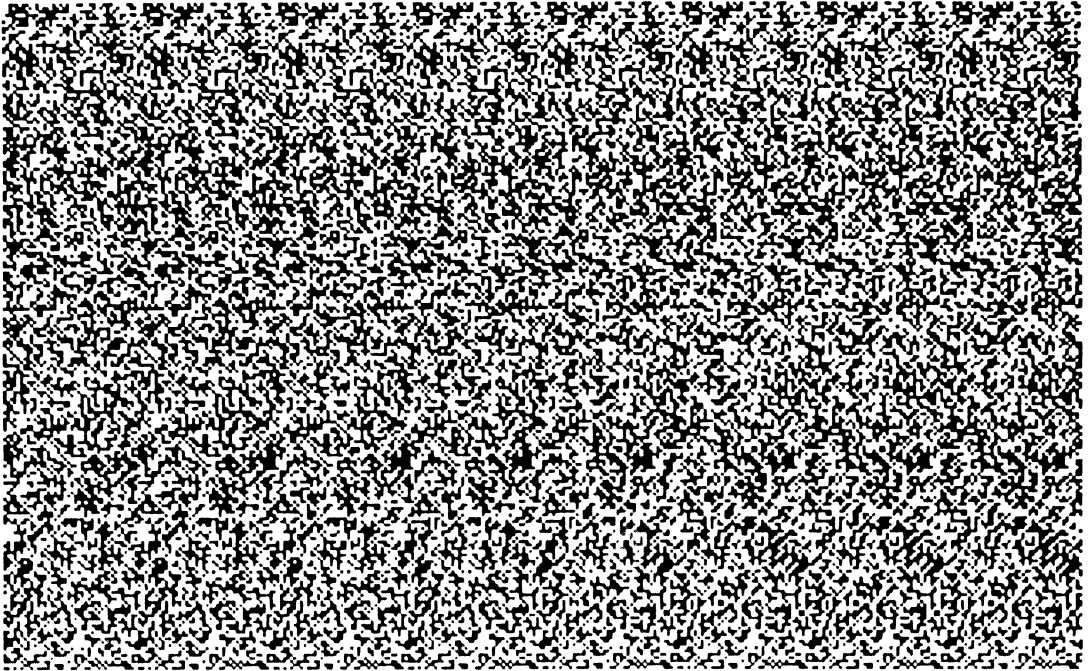


Fig. 5 - The 10 Level Cone Using Absolute Levels

To understand the concept of relative levels, imagine this strip of colors to be circular. As you work your way up the strip, the levels become higher and higher. When you reach the top of the strip, simply start over again at the bottom, and the levels will continue to increase as you once again work your way up the strip.

To illustrate, figure 3 shows a 10 level cone drawn with only 4 available colors. When the top color is reached, the levels start back at the bottom color.

Figure 4 shows the resulting **Stare-EO** using relative levels. Figure 5 shows what you would get with absolute levels.

If *relative* levels allow you an unlimited number of levels, why would you ever

<p>16 Colors - maximum difference of 8 4 Colors - maximum difference of 2 3 Colors* - maximum difference of 1</p> <p>*2 colors plus a 3rd <i>crosshatched</i> color.</p>
--

Fig. 5 - Maximum Differences according to the Rule of Relative Levels

want to use *absolute* levels? Well, relative levels have one drawback and if you are not careful you will get into trouble.

With relative levels, your **Stare-EOs** can have an unlimited number of elevation levels, *but the difference between touching levels cannot exceed a certain number.* This number is one-half of the total number of colors, rounded down. This is the

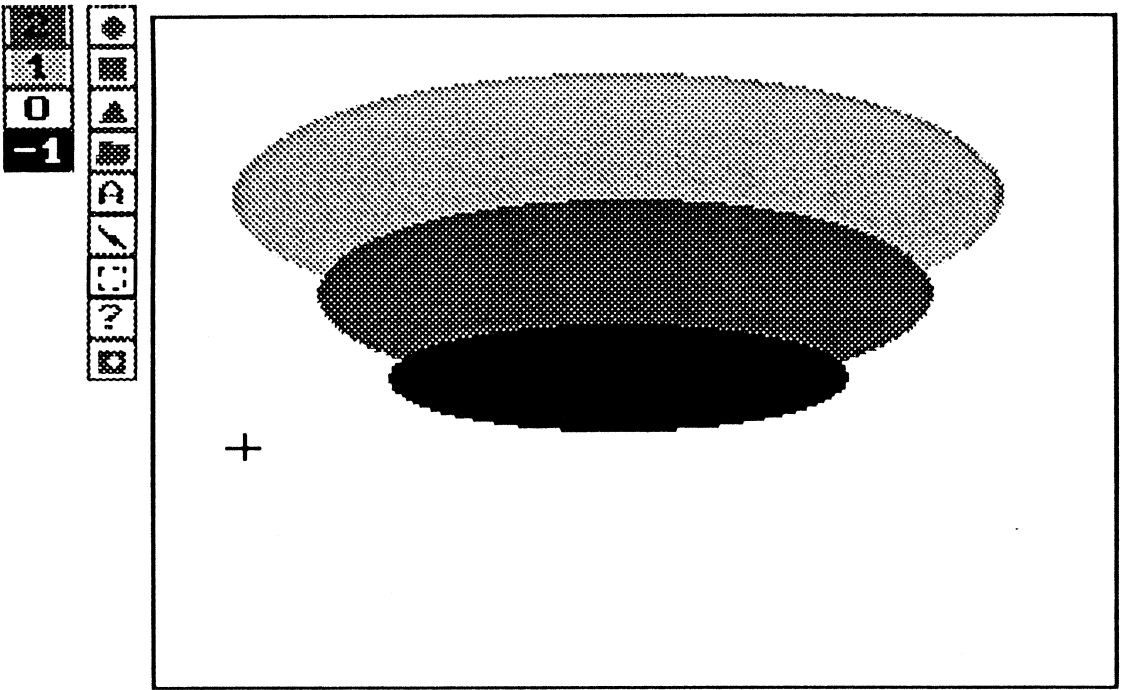


Fig. 6 - Breaking the Rule of Relative Levels

rule of relative levels. Figure 5 shows the maximum allowed differences for 16, 4, and 2 color video modes.

Back to our four color example, examine the drawing in figure 6. Here we are working our way up, from level 1 to level 2 and from level 2 to level 3. When we are at level 3, we attempt to drop back down to the background level of 0. But the

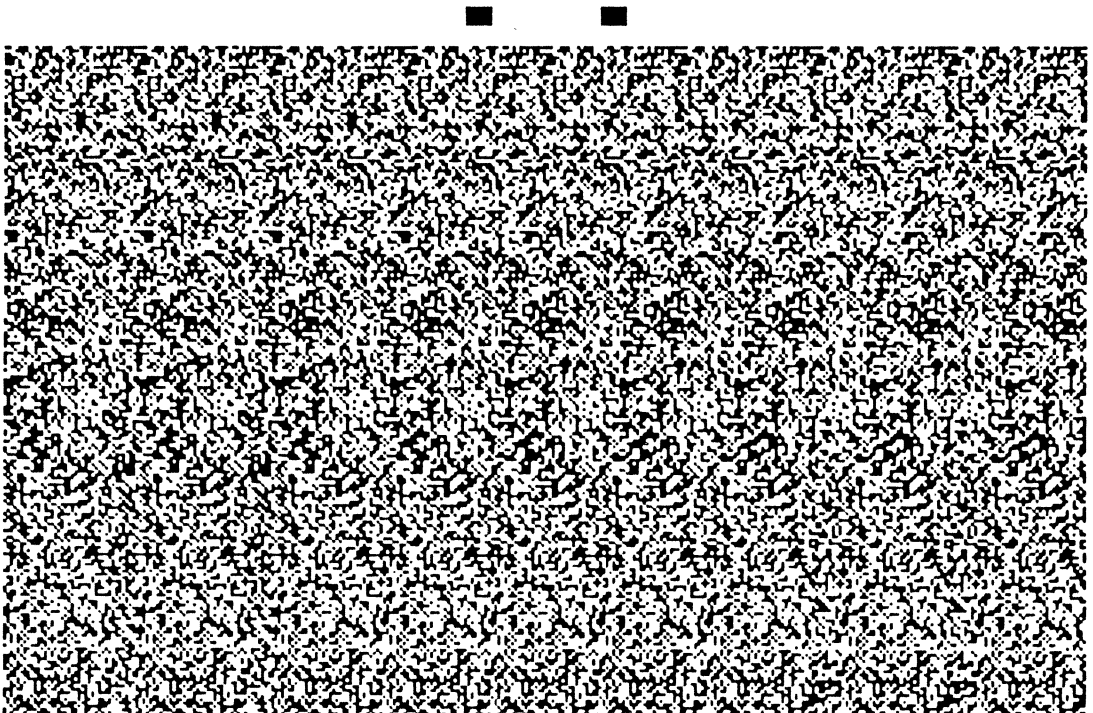
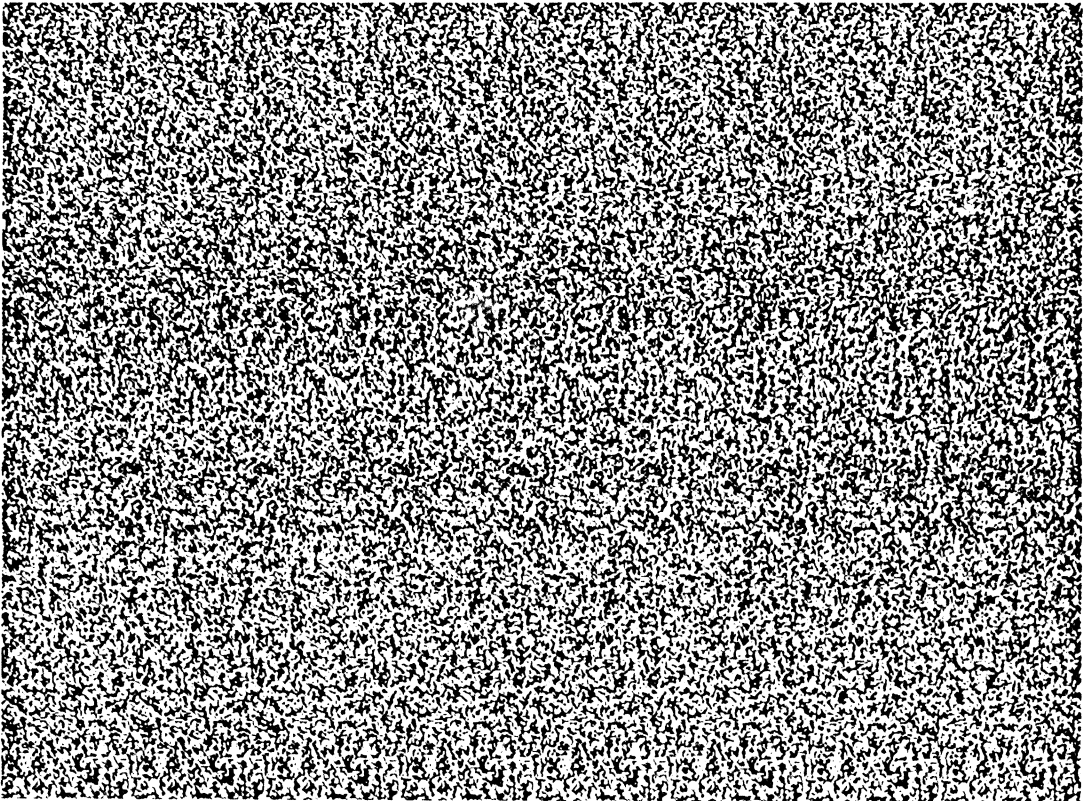


Fig. 7 - A Stare EO Resulting from Breaking the Rule of Relative Levels

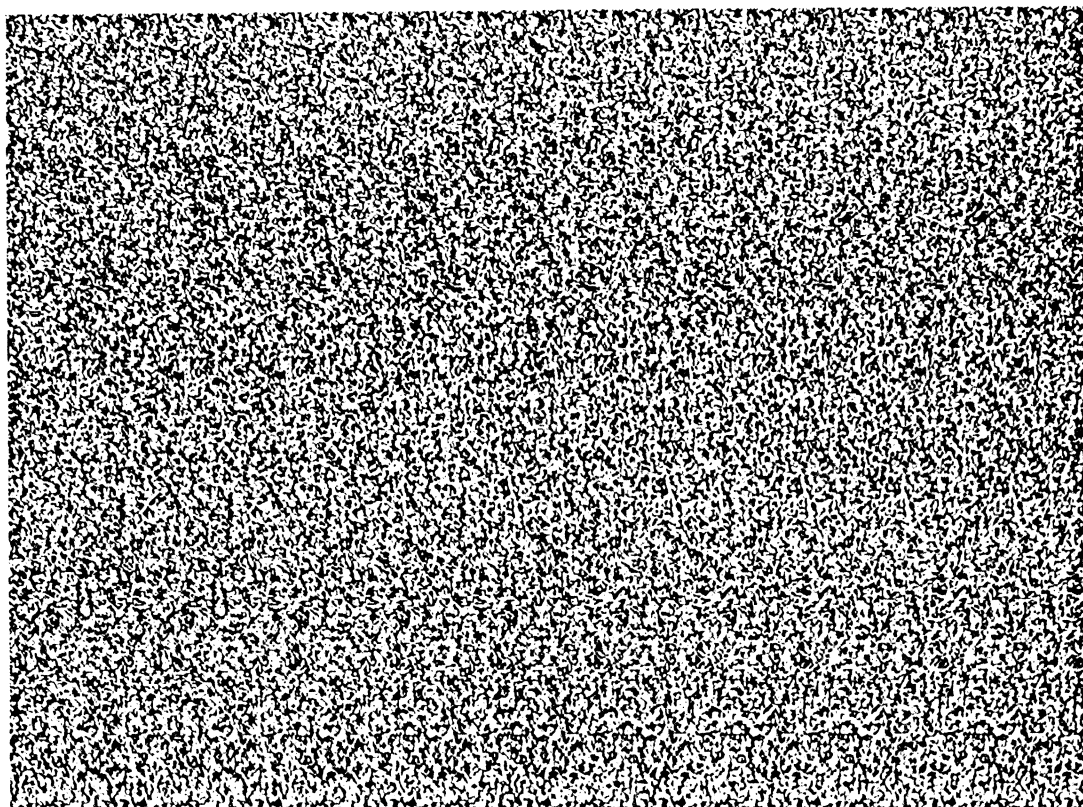
CHAPTER 6

GENERATING OUTPUT



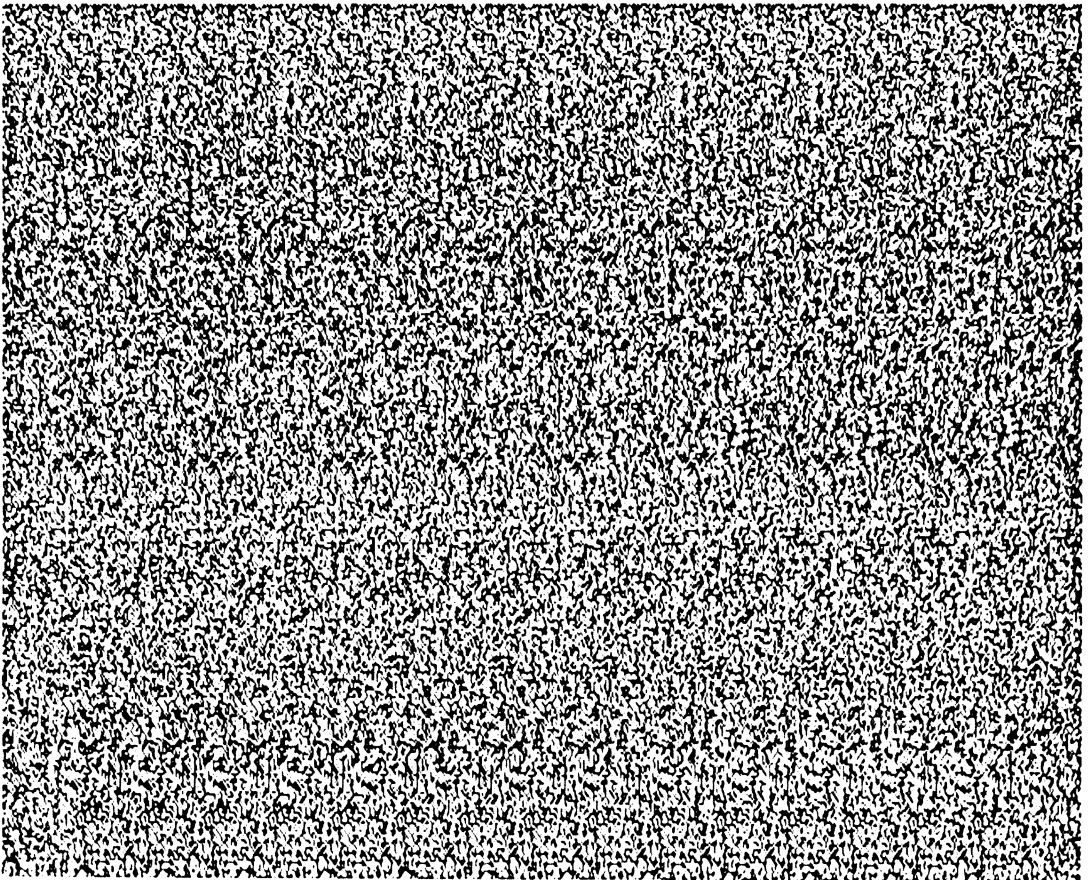
CHAPTER 7

INTRODUCTION TO STARE·EO DRAW



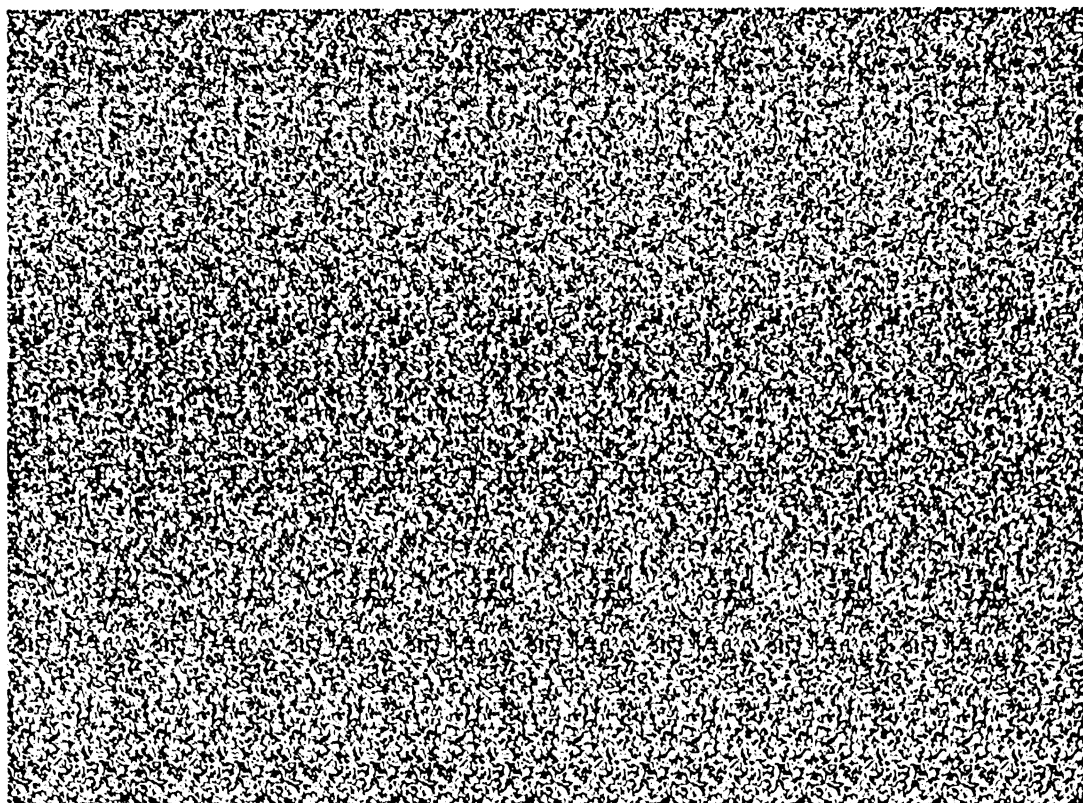
CHAPTER 8

THE STARE·EO DRAW FILE MENU



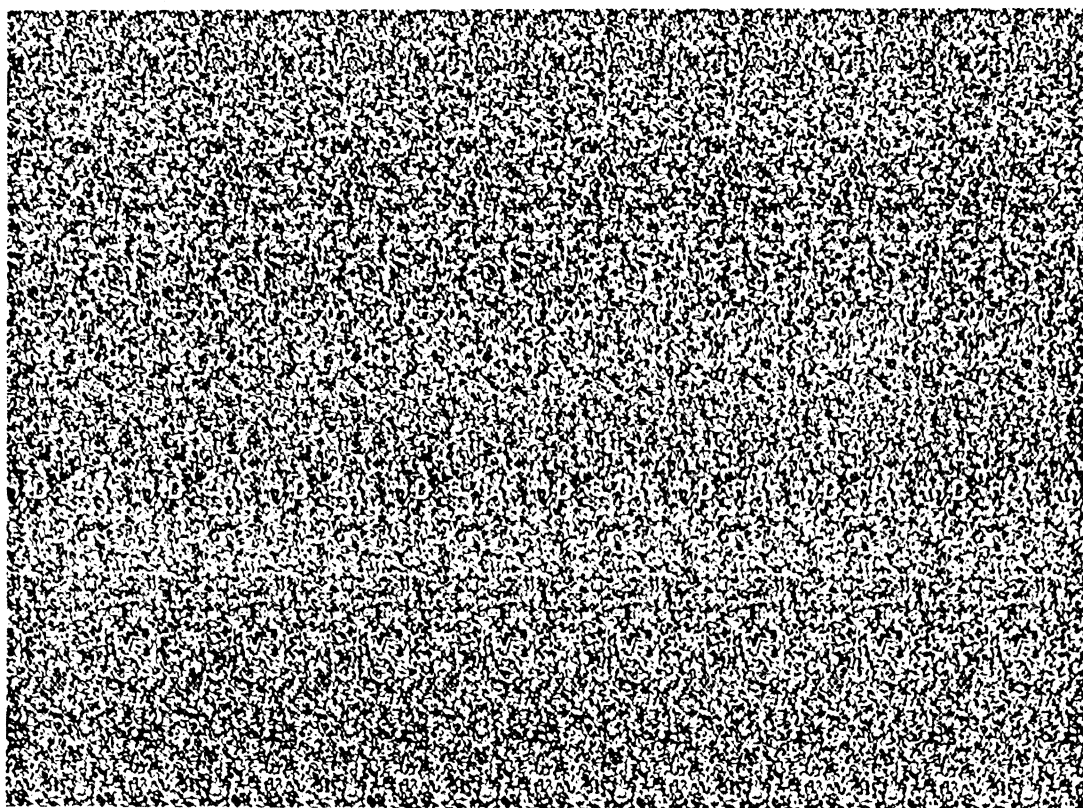
CHAPTER 9

THE STARE·EO DRAW TOOL SET



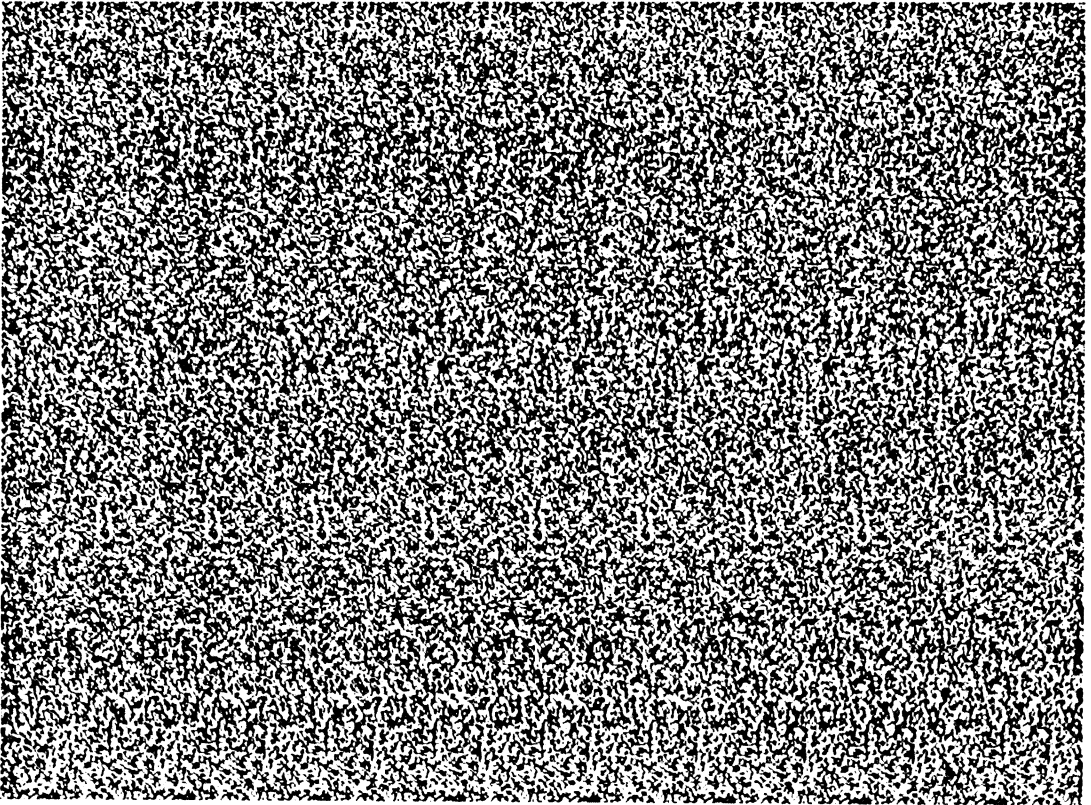
CHAPTER 10

STARE·EO DRAW FUNCTION KEY COMMANDS



CHAPTER 11

STARE·EO DRAW 3D EFFECTS



Introduction

When you create a graphic object with one of the **Drawing Tools**, you are creating a *single level* object in the currently selected color.

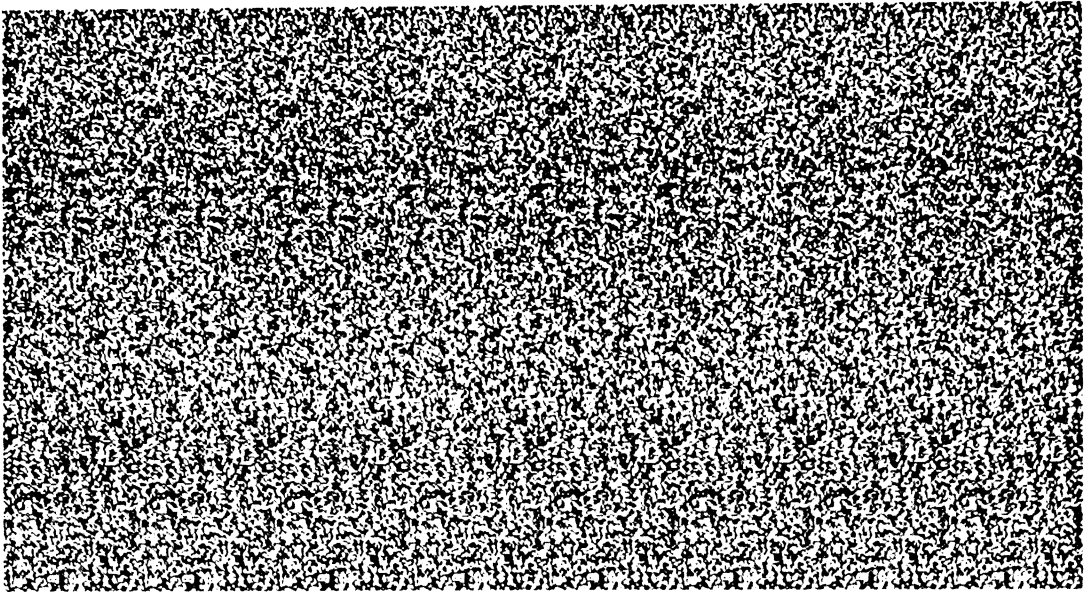


Fig. 1 - A rectangle and its corresponding 3D Effects pyramid

The **3D Effects** command converts a single level object into a *multilevel* object. As shown in Figure 1, you could use 3D Effects to convert a simple rectangle of elevation level 1 into a *pyramid* projecting out of the screen with its *base* at level 1.

To apply 3D Effects to an object, select the object with the **Selection Tool** and press

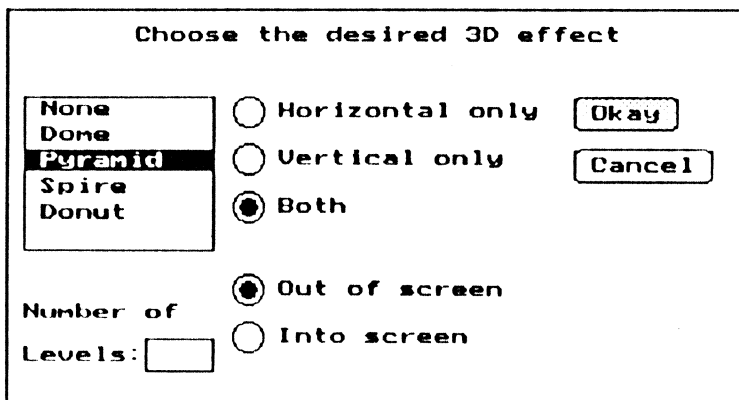



Fig. 2 - The 3D Effects Window

the **F7** function key. The 3D Effects window shown in figure 2 will appear, giving you a number of choices for converting a single level object into a multilevel

object.

This window gives you control over the type of 3D effect, the number of levels, total or partial conversion, and the direction of projection. Each of these options are discussed individually below.

 The 3D Effects command will work for all graphic objects except *text* objects.

Types of 3D Effects

A single level object is converted into a multilevel object based on one of several mathematical formulas. The *type* of 3D effect refers to which formula is used for the conversion.

To simplify matters, each type is given a name loosely associated with a real life item it resembles. The types of 3D Effects are **None**, **Dome**, **Pyramid**, **Spire**, **Donut**, and **Star**.

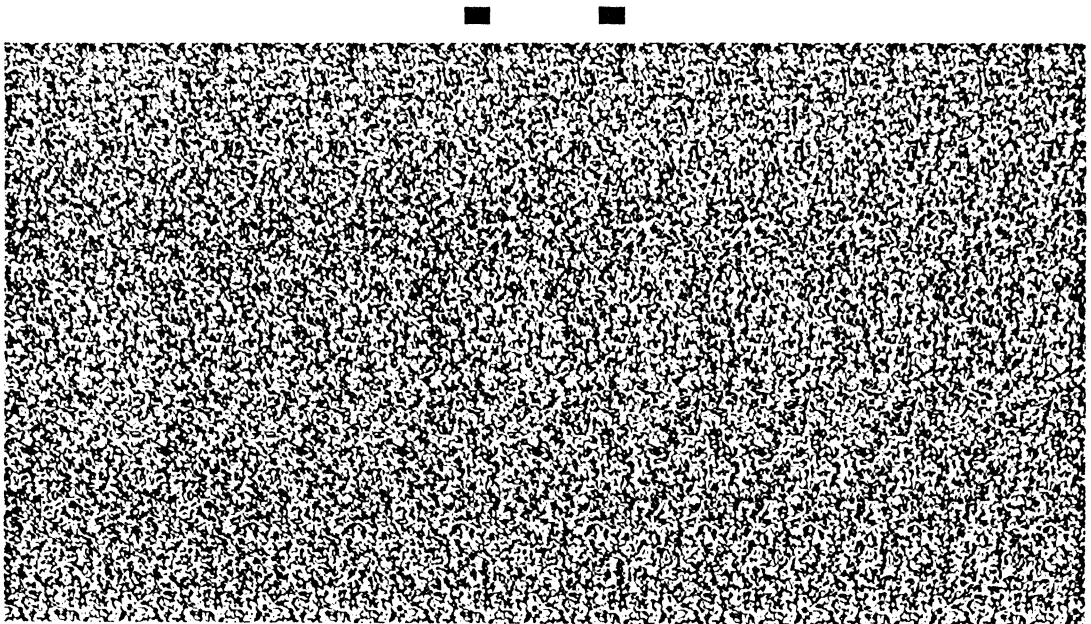


Fig. 3 - Various Domes

The None Type

This cancels previous 3D effects applied to the selected object. If you have converted a single level object into a multilevel object with a 3D effect, and you want to convert it back to the original single level object, select **None**.

The Dome Type

This 3D effect creates an object often resembling the domes found on football stadiums or capitol buildings. As a specific case, it will convert a circle into a *half*

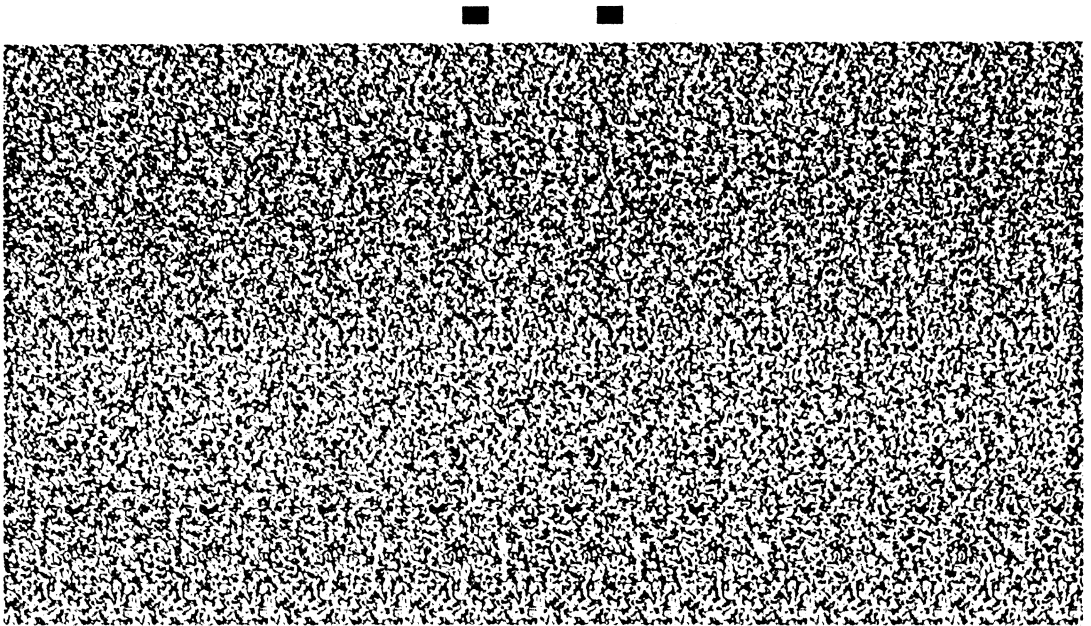


Fig. 4 - Various Pyramids

sphere. Figure 3 illustrates several domes.

The Pyramid Type

This 3D effect creates a pyramid, with the original single level object serving as the *base*. This 3D effect will convert a square into an object resembling the great pyramids of ancient Egypt. Figure 4 illustrates various pyramids.

The Spire Type

This 3D effect often creates an object resembling the spires found on cathedrals and churches. The original object serves as the base of the spire. Refer to figure 5 for examples of spires.

The Donut Type

In the case of a circle, this 3D effect will create an object very much resembling a donut. For other type of objects, the results are often interesting. Figure 6 illustrates several donut objects.

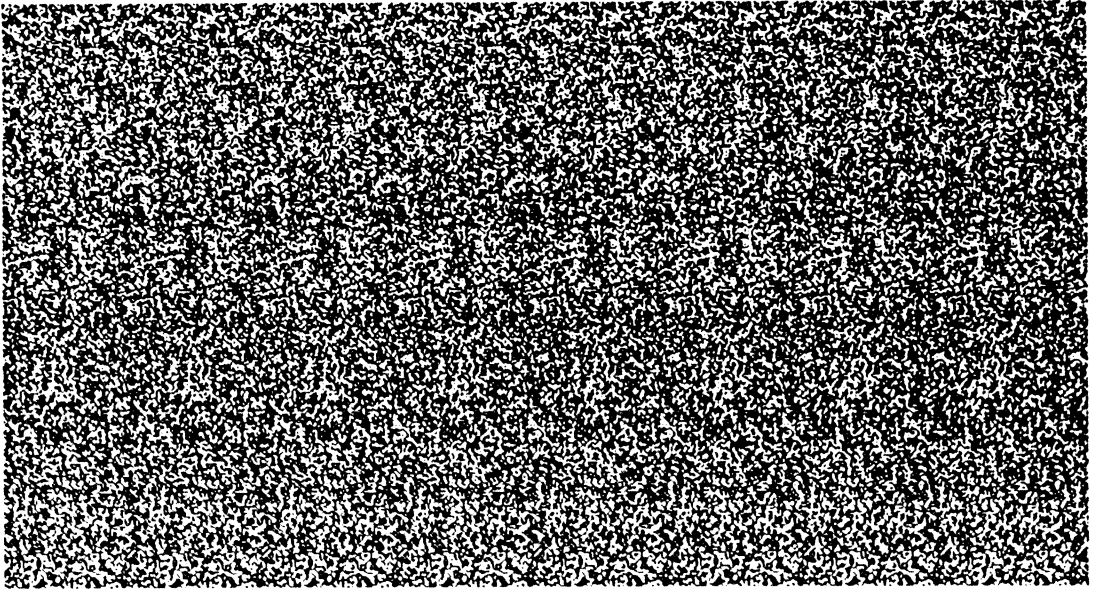


Fig. 5 - Various Spires

The Star Type

This 3D effect often creates an object best described as a star. Each *vertex*, or point, of the object becomes increasingly tapered with each new level, as shown in figure 7.

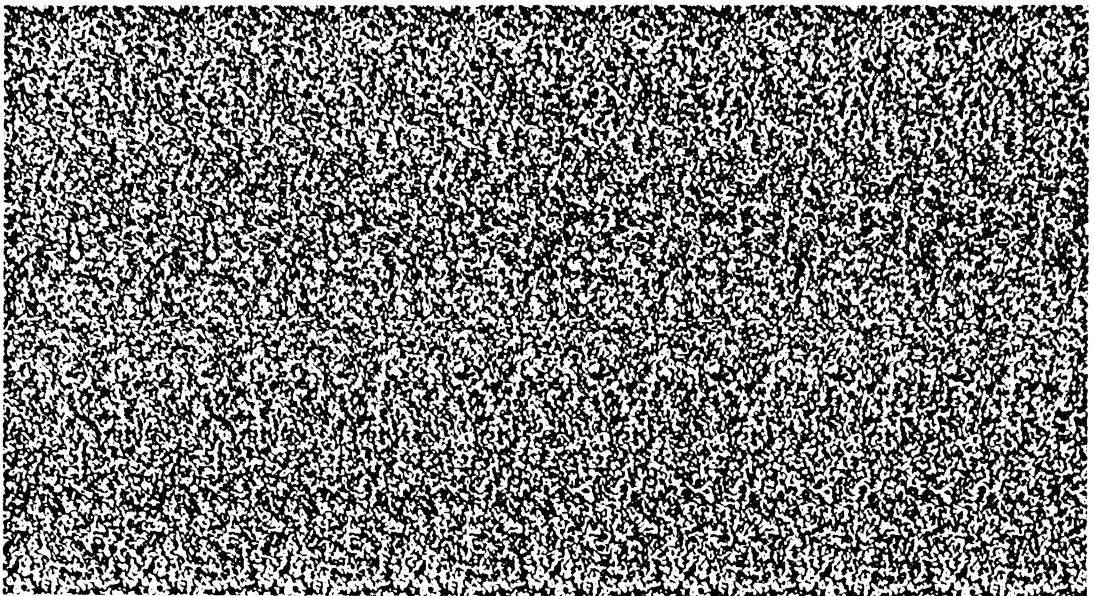



Fig. 6 - Various Donuts

 The Star 3D effect will not work with circles and ellipses, since they do not have any *vertices*, or points.

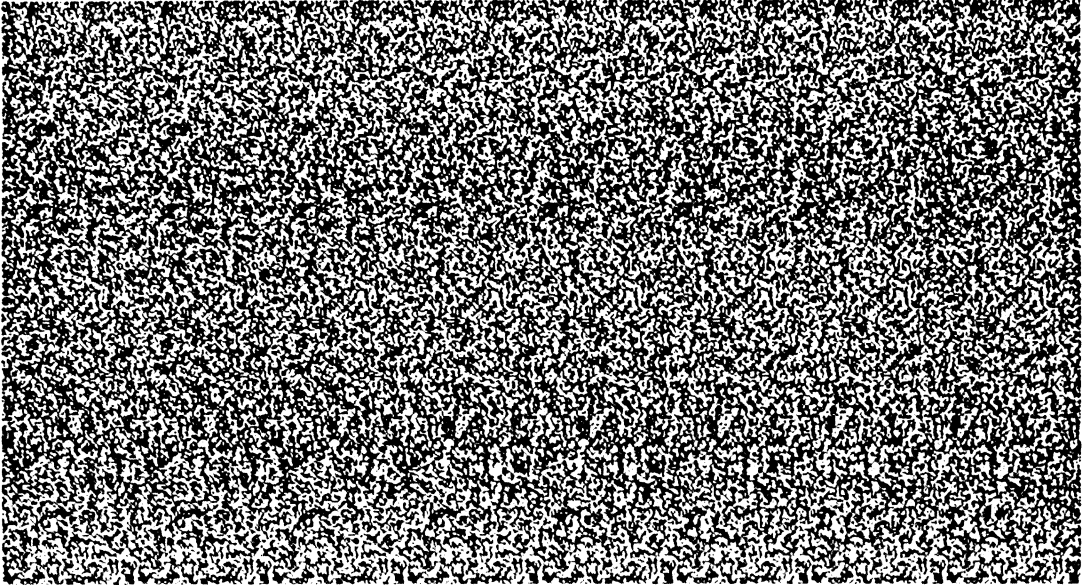


Fig. 7 - Various Stars

Number of Levels

The number of levels specifies the number of levels of elevation for a multilevel object. To illustrate, figure 8 contains three pyramids with five, ten, and fifteen levels of elevation.

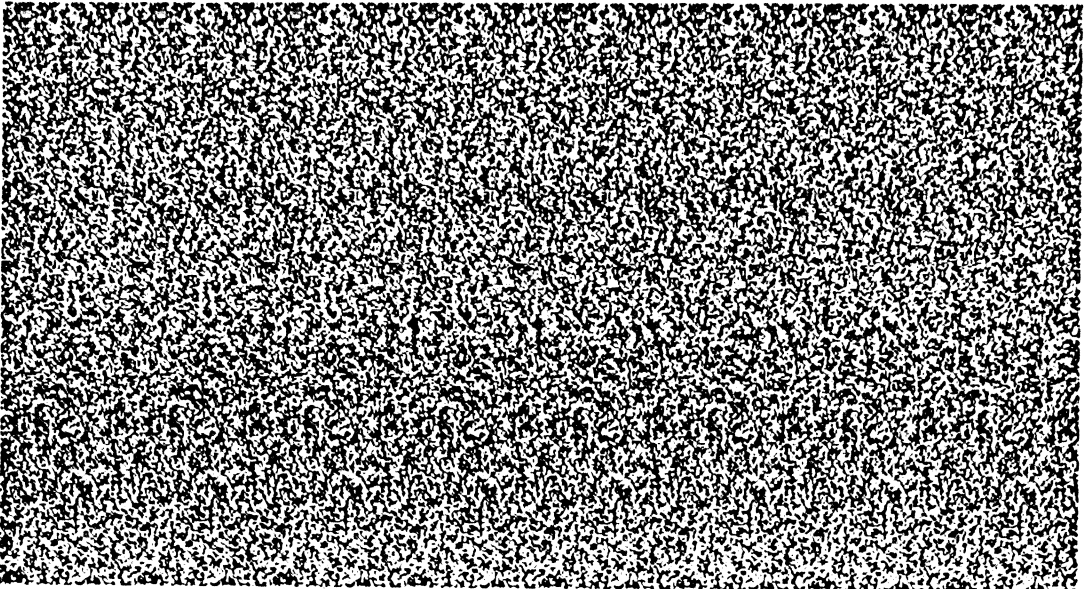


Fig. 8 - Pyramids with 5, 10, and 15 levels

When you convert a single level object into a multilevel object, the level of elevation (color) of the single level object becomes the *base* level of the multilevel object. All levels of the multilevel object are built upon, and are relative to, this

base level.

You should choose a number of levels that is proportional to the size of the selected object. For example, do not choose a very large number of elevations for a small object. Ten levels is often a good starting point.

☞ If you have too many levels of elevation relative to the size of an object, some levels will completely obscure other levels, giving strange or unwanted results when the drawing is converted into a Stare·EO.

Total vs. Partial Conversion.

In all discussions so far, we have assumed that the conversion of a single level object into a multilevel object has been *total*, as opposed to *partial*. This is the case

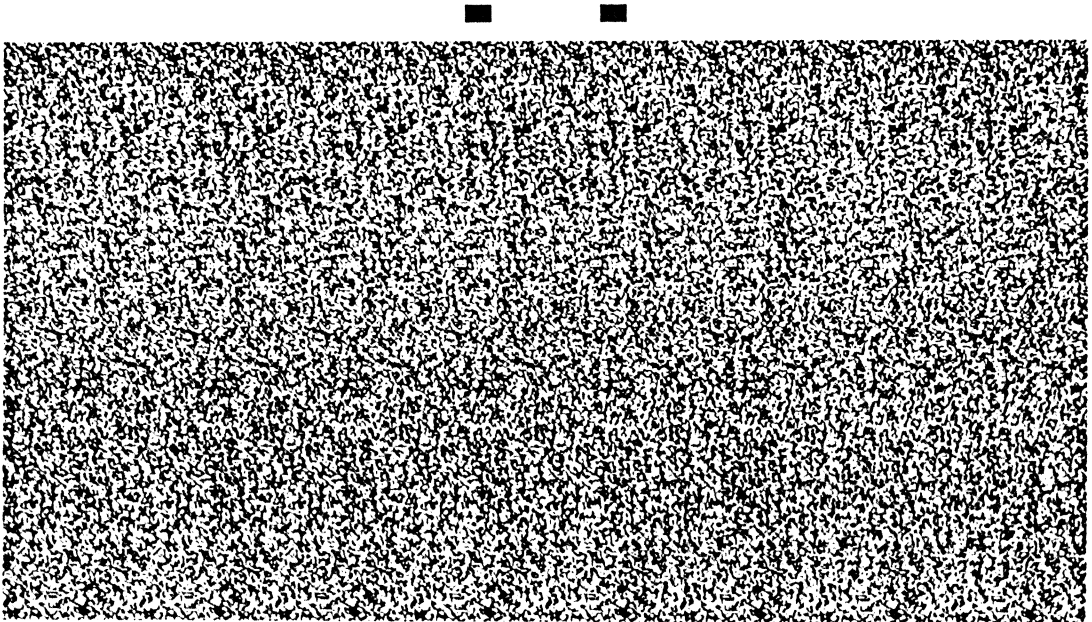


Fig. 9 - *total vs. partial conversion*

when the **Both** button in the **3D Effects** window is pressed. You can specify partial conversions by selecting either the **Horizontal Only** or **Vertical Only** button.

To best explain, consider the outline of a single level object such as a rectangle. Every point on the outline has both an **X** and a **Y** coordinate. In the case of total conversion, when this object is converted to a multilevel object, each new level is derived by modifying both the **X** and **Y** coordinates of the outline of the previous level. In the case of partial conversion, only the **X** or **Y** coordinate is modified for each new level.

Selecting **Horizontal Only** will only modify the horizontal **X** coordinates when calculating the dimensions of each new level. Likewise, selecting **Vertical Only** will only modify the vertical **Y** coordinates.

Partial conversions can lead to some interesting effects. The best way to discover these effects is by experimenting on your own. In figure 9, each row shows from left to right:

- a single level object
- its total conversion into a multilevel object
- one of its partial conversions into a multilevel object

Direction of Projection

This specifies the direction of projection of a multilevel object. If you choose **Out of Screen**, each level of the object will be one level *higher* than the previous level, and the object will appear to project out of the screen when converted into a **Stare·EO**.

If you choose **Into Screen**, each level of the object will be one level *lower* than the previous level, and the object will appear to project into the screen when

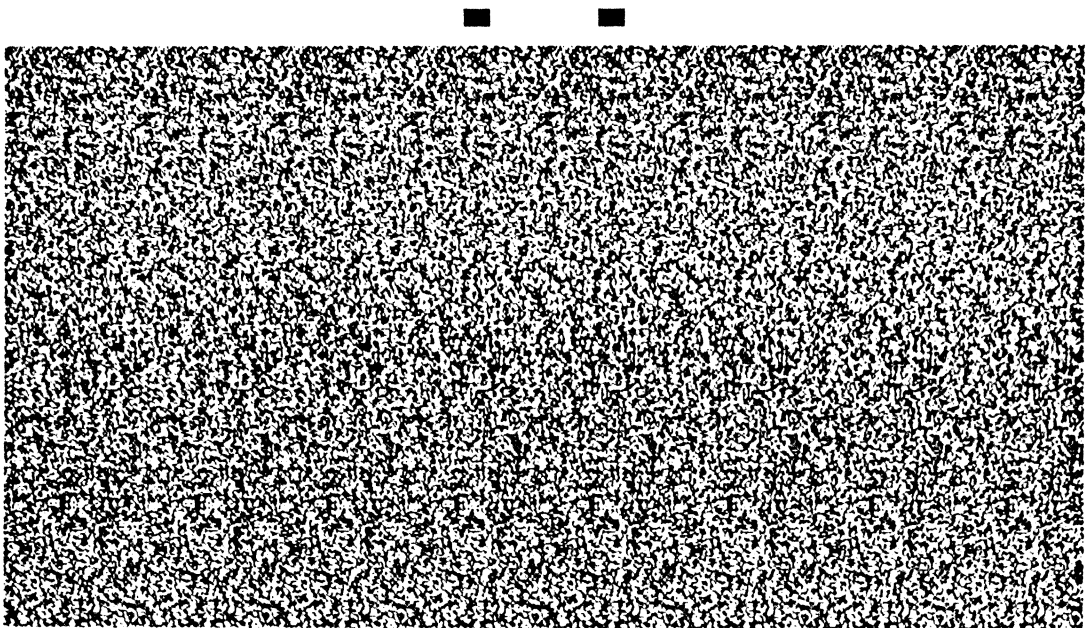


Fig. 10 - Projecting *out of screen* vs. *into screen*

converted into a **Stare·EO**.

In figure 10, the directions of projection are *out of screen* and *into screen*, respectively.

CHAPTER 12

IMPORTING PCX FILES

