



# User Guide

Rainbow Fogbow Sample

DEVELOPMENT



# Introduction to the Rainbow Fogbow Sample

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## What Is the Rainbow Fogbow Sample?

This program demonstrates a technique for rendering Rainbows, Fogbows, and Corona (a fogbow is simply a rainbow caused by very small drops of water). Any effect that varies with the angle between the view direction and the light direction can be pre-baked into a texture and referenced at runtime. That is what is shown in this sample.

For more information, refer to:

- [Rainbow Fogbow whitepaper at ./RainbowFogbow.doc.](#)



# Using the Rainbow Fogbow Sample

When you first launch the sample, you will see Figure 1. You immediately see the rainbow in the distance, and if you turn around you see a corona around the sun. You can use FPS style keyboard and mouse controls to move around in the world. Refer to Table 1 for complete keyboard controls.

Move the camera around and observe the landscape. Use 'R' and 'Shift +R' to change the radii of the water droplets causing the effect. Decrease the radius and notice the effect of supernumerary rainbows underneath the main rainbow. Decrease the radius further and notice the fogbow.

Press Ctrl +A to see the steps used in creating this effect as shown in Figure 2. Press Ctrl +N to go back to the normal rendering mode. Use 'I' and 'Shift +I' to change the intensity of the effect.



Figure 1. Rainbow Fogbow Sample just launched



Figure 2. Rainbow Fogbow Sample Visualize Technique

Starting at the top left you see:  $R$  the plain rainbow,  $M$  the moisture in the scene,  $M * R$  the rainbow being caused by the moisture,  $S$  the scene as you would normally render it,  $S + (M * R)$  the scene with the rainbow light added.

## Keyboard Controls

Table 1 lists the keyboard controls.

Table 1. Keyboard Commands

Key	Description
<b>W, A, S, D</b>	Movement control
<b>Ctrl+A</b>	Show all visualization modes
<b>Ctrl+N</b>	Show the 'normal mode' Stop showing visualization mode
<b>Shift+R</b>	Increase the water droplet radius
<b>R</b>	Decrease the water droplet radius
<b>Shift+I</b>	Increase the intensity of the rainbow
<b>I</b>	Decrease the intensity of the rainbow
<b>F2</b>	Configure display
<b>Alt + Enter</b>	Toggle Full screen mode
<b>Esc</b>	Exit

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## Known Bugs

The Corona lookup texture does not change with a change in the water droplet radii. Just need to generate the proper texture to do so.



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