

Tcl3D demos at a glance


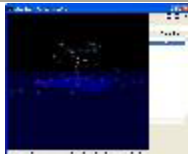

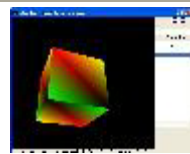
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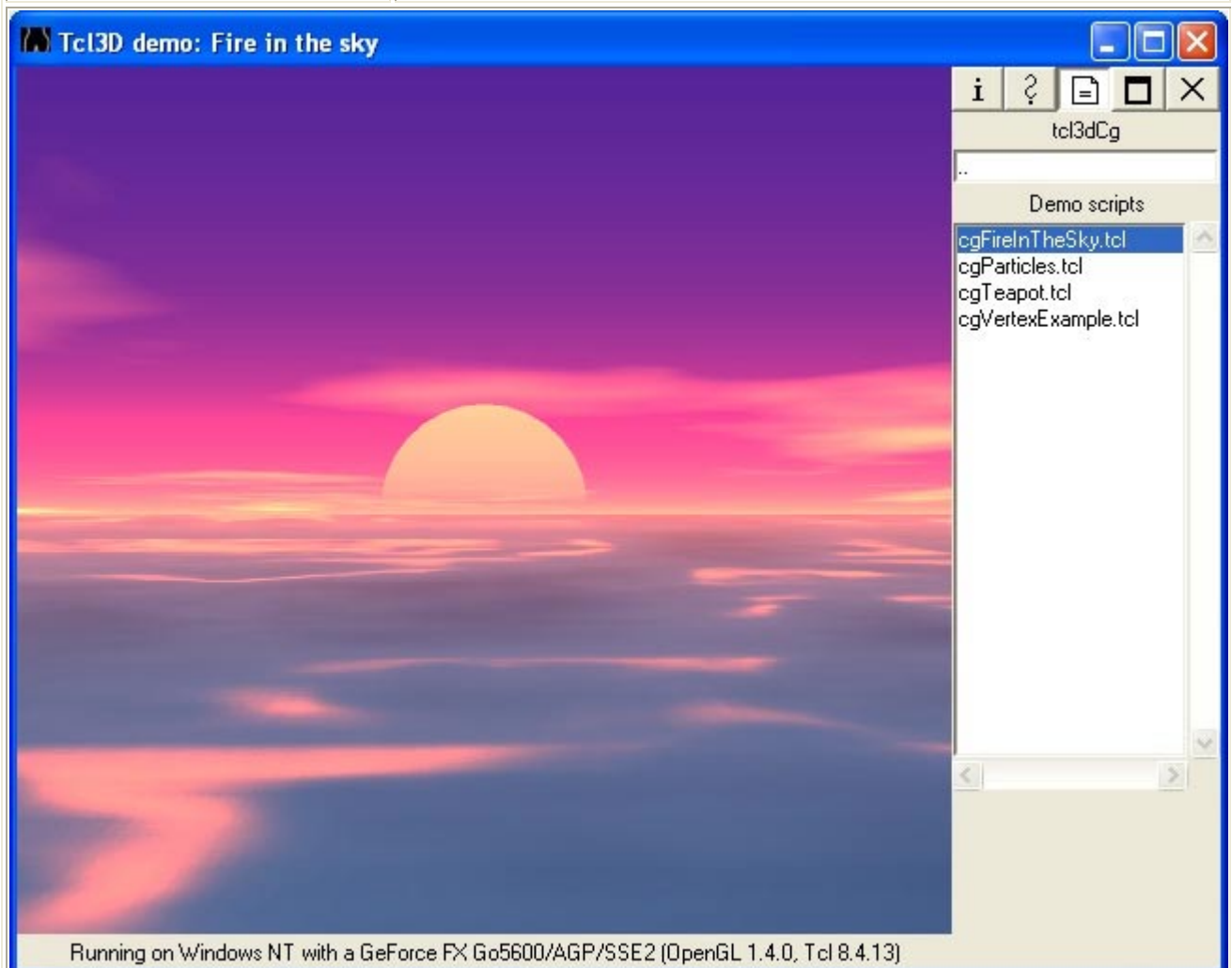
Document generated with Tcl 8.4.14 on 2007/02/24 00:00:36

Overview	
Category	Type
LibrarySpecificDemos	tcl3dCg
	tcl3dFTGL
	tcl3dGauges
	tcl3dOde
	tcl3dOgl
	tcl3dOglExt
	tcl3dSDL
	tcl3dTogl
Tcl3DSpecificDemos	None
TutorialsAndBooks	CodeSampler
	GameProgrammer
	NeHe
	RedBook

Category:	LibrarySpecificDemos
Root:	Contents
Available types	
tcl3dCg	
tcl3dFTGL	
tcl3dGauges	
tcl3dOde	
tcl3dOgl	
tcl3dOglExt	
tcl3dSDL	
tcl3dTogl	

Type:	tcl3dCg		
Category:	LibrarySpecificDemos		
Root:	Contents		
<p>This section contains Cg demo applications from several resources, that have been ported to Tcl3D. The examples cover vertex and fragment shader programming in Cg. Original sources from different sites. See the documentation for details.</p>			
Available demos			
			
cgFireInTheSky	cgParticles	cgTeapot	cgVertexExample

Demo:	cgFireInTheSky
Type:	tcl3dCg
Category:	LibrarySpecificDemos
Root:	Contents



cgFireInTheSky.tcl

Original files from: <http://www.shadertech.com/shaders/FireInTheSky-src.zip>

Original files are Copyright (c) 2002 Jason Jerald

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Modified for Tcl3D by Paul Obermeier 2005/11/07
See www.tcl3d.org for the Tcl3D extension.

Demo:	cgParticles
Type:	tcl3dCg
Category:	LibrarySpecificDemos
Root:	Contents

cgParticles.tcl

Particle Effects using CG and OpenGL

Original files from: <http://www.shadertech.com/shaders/ParticleSystem-src.zip>

Original files are Copyright (c) 20002 Arkadiusz Waliszewski

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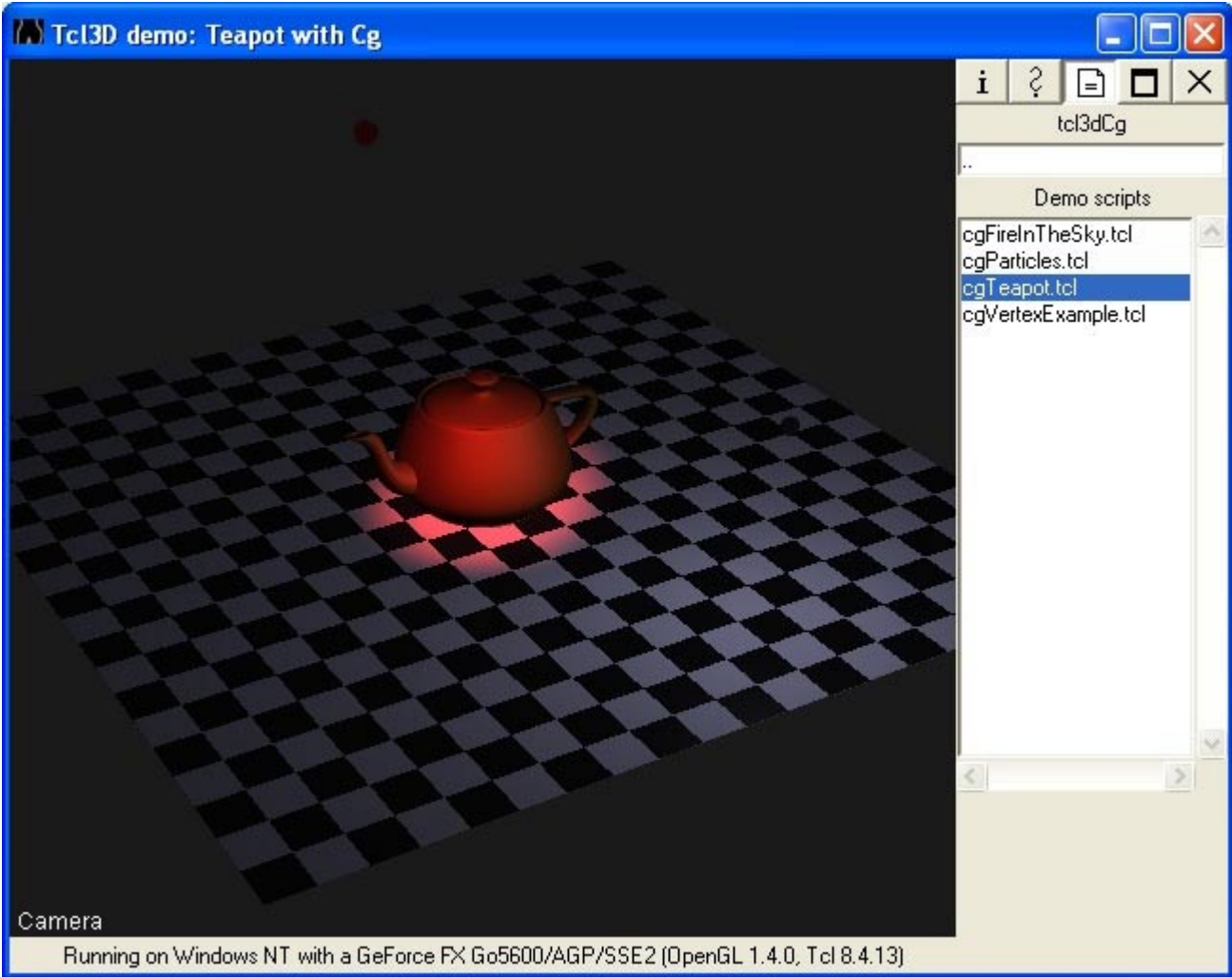
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Modified for Tcl3D by Paul Obermeier 2005/11/07
See www.tcl3d.org for the Tcl3D extension.

Demo:	cgTeapot
Type:	tcl3dCg
Category:	LibrarySpecificDemos
Root:	Contents

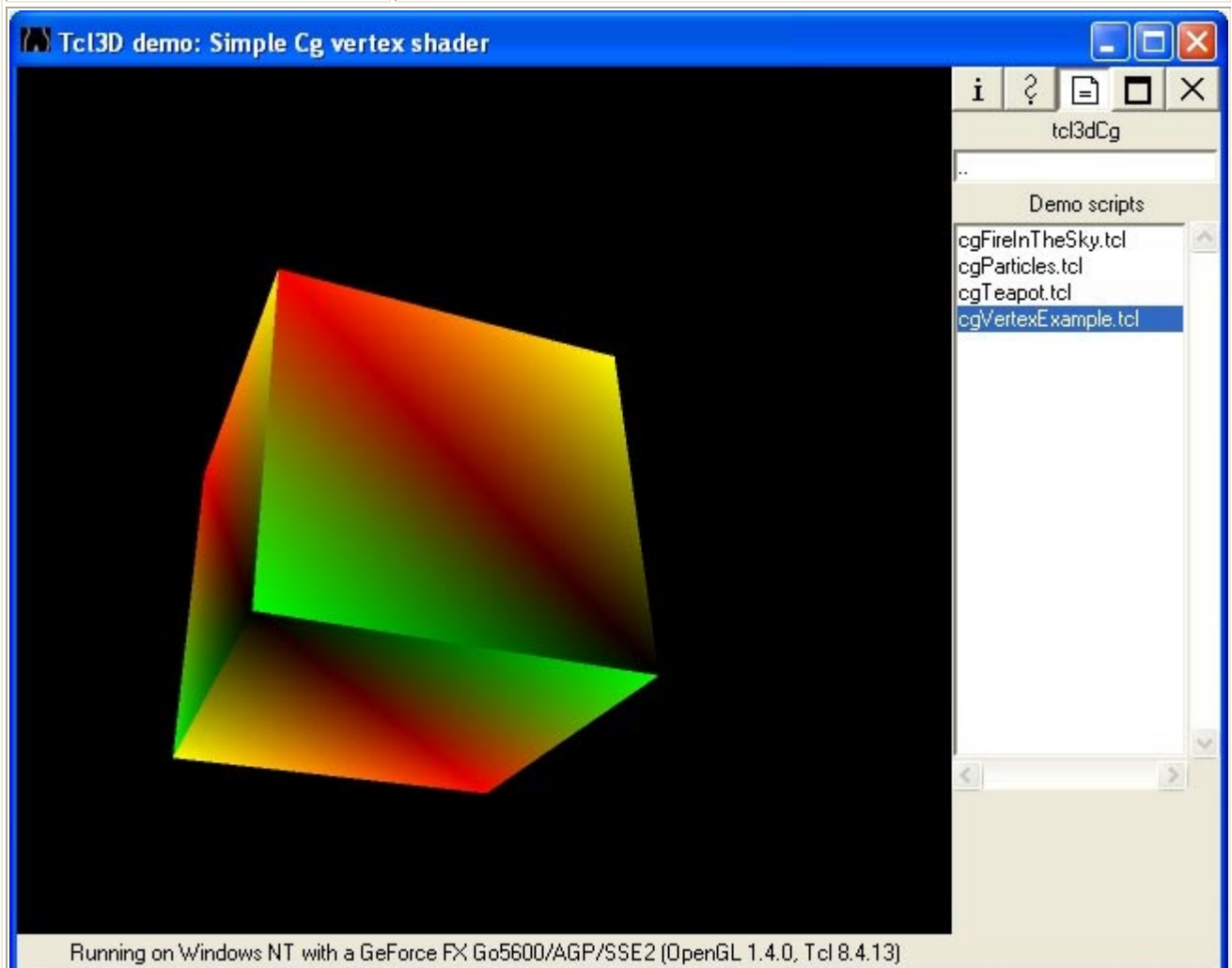


cgTeapot.tcl

Original files from: <http://developer.nvidia.com/Cg>
This is the example called interfaces_ogl as included in the Cg Toolkit.

Modified for Tcl3D by Paul Obermeier 2005/11/07
See www.tcl3d.org for the Tcl3D extension.

Demo:	cgVertexExample
Type:	tcl3dCg
Category:	LibrarySpecificDemos
Root:	Contents





cgVertexExample.tcl

Original files from: <http://developer.nvidia.com/Cg>

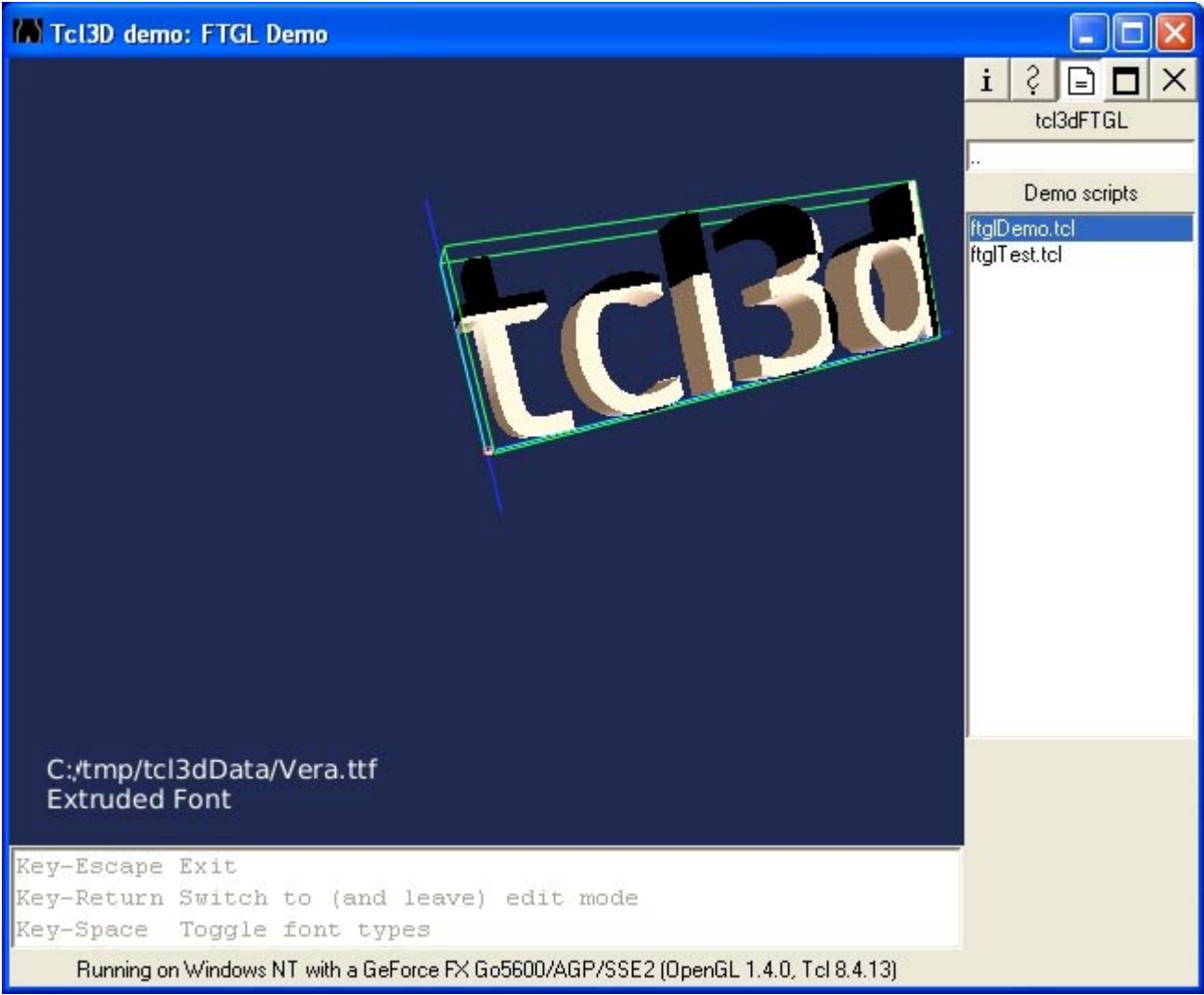
This is the example called runtime_ogl as included in the Cg Toolkit.

Modified for Tcl3D by Paul Obermeier 2005/11/07

See www.tcl3d.org for the Tcl3D extension.

Type:	tcl3dFTGL
Category:	LibrarySpecificDemos
Root:	Contents
This section contains FTGL demo applications written in Tcl3D. The examples cover the demo applications distributed with FTGL.	
Available demos	
	
ftglDemo	ftglTest

Demo:	ftglDemo
Type:	tcl3dFTGL
Category:	LibrarySpecificDemos
Root:	Contents



ftglDemo.tcl

This demo demonstrates the different rendering styles available with FTGL.
 Press <spacebar> to change the font rendering style.
 Press <enter> to enable edit mode.

Please contact me if you have any suggestions, feature requests, or problems.

Henry Maddocks
 henryj@paradise.net.nz
 http://homepages.paradise.net.nz/henryj/

Modified for Tcl3D by Paul Obermeier 2006/01/18
 See www.tcl3d.org for the Tcl3D extension.


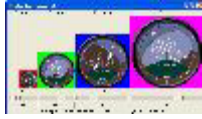
Demo:	ftglTest
Type:	tcl3dFTGL
Category:	LibrarySpecificDemos
Root:	Contents

ftglTest.tcl


C++ source changed by mrn@paus.ch/ max rheiner
original source: henryj@paradise.net.nz

Modified for Tcl3D by Paul Obermeier 2006/01/18
See www.tcl3d.org for the Tcl3D extension.

A test program showing the 5 different font rendering types.

Type:	tcl3dGauges
Category:	LibrarySpecificDemos
Root:	Contents
This section contains demo applications written with Tcl3D extensions packages. The examples cover the tcl3dGauges package, which was supplied by Victor G. Bonilla.	
Available demos	
	
gaugedemo	gaugetest

Demo:	gaugedemo
Type:	tcl3dGauges
Category:	LibrarySpecificDemos
Root:	Contents



Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.12)

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Module: Tcl3D -> tcl3dGauges
Filename: gaugedemo.tcl

Author: Paul Obermeier

Description: Demo program showing the use of the Tcl3D extension package gauge.

Demo:	gaugetest
Type:	tcl3dGauges
Category:	LibrarySpecificDemos
Root:	Contents


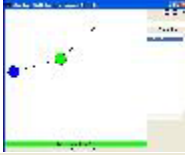
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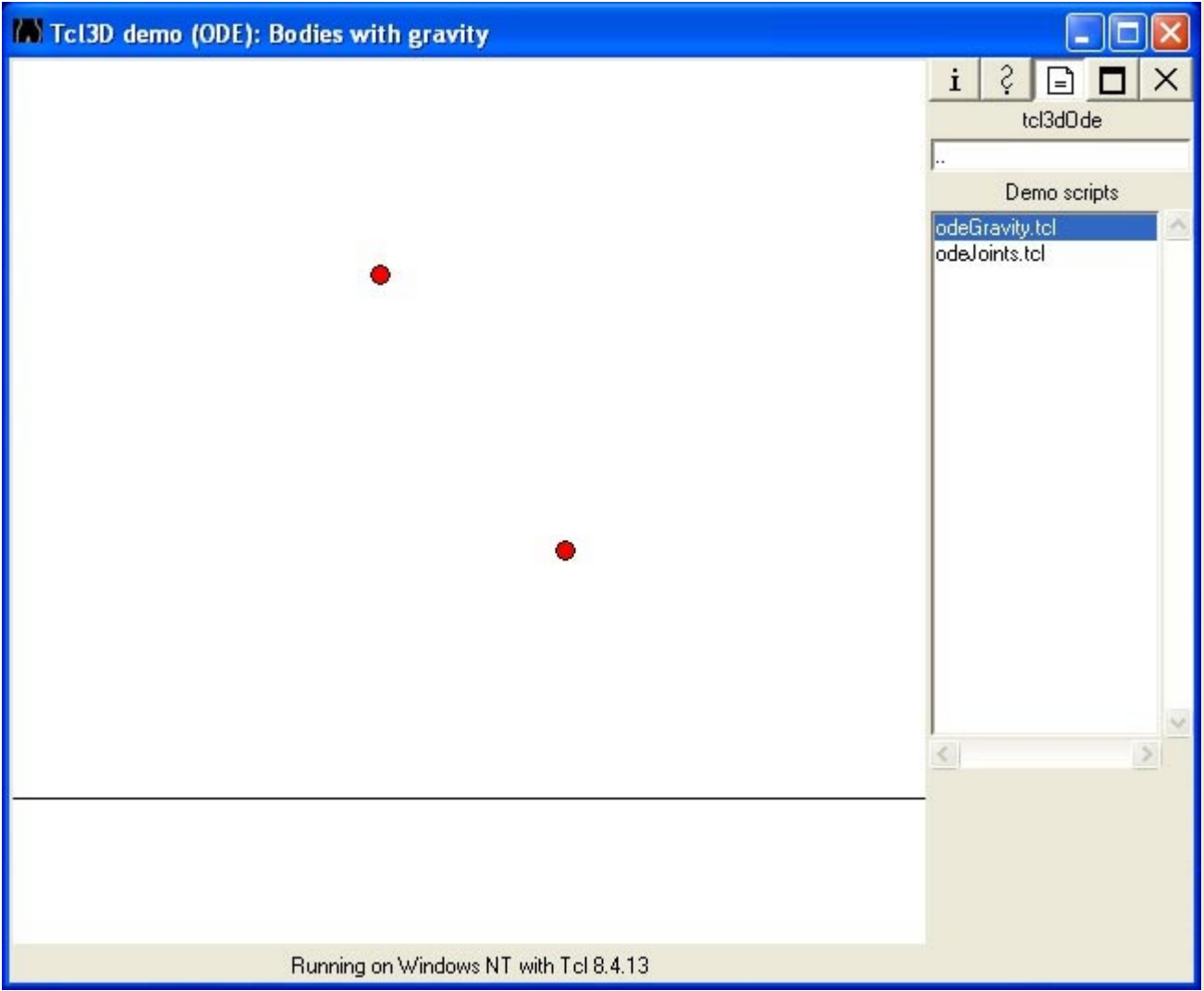
Module: Tcl3D -> tcl3dGauges
Filename: gaugetest.tcl

Author: Paul Obermeier

Description: Test program for the Tcl3D extension package gauge. The program allows to show the 4 gauges at different sizes.

Type:	tcl3dOde
Category:	LibrarySpecificDemos
Root:	Contents
This section contains ODE demo applications written in Tcl3D. The examples cover some demo applications distributed with PyOde.	
Available demos	
	
odeGravity	odeJoints

Demo:	odeGravity
Type:	tcl3dOde
Category:	LibrarySpecificDemos
Root:	Contents



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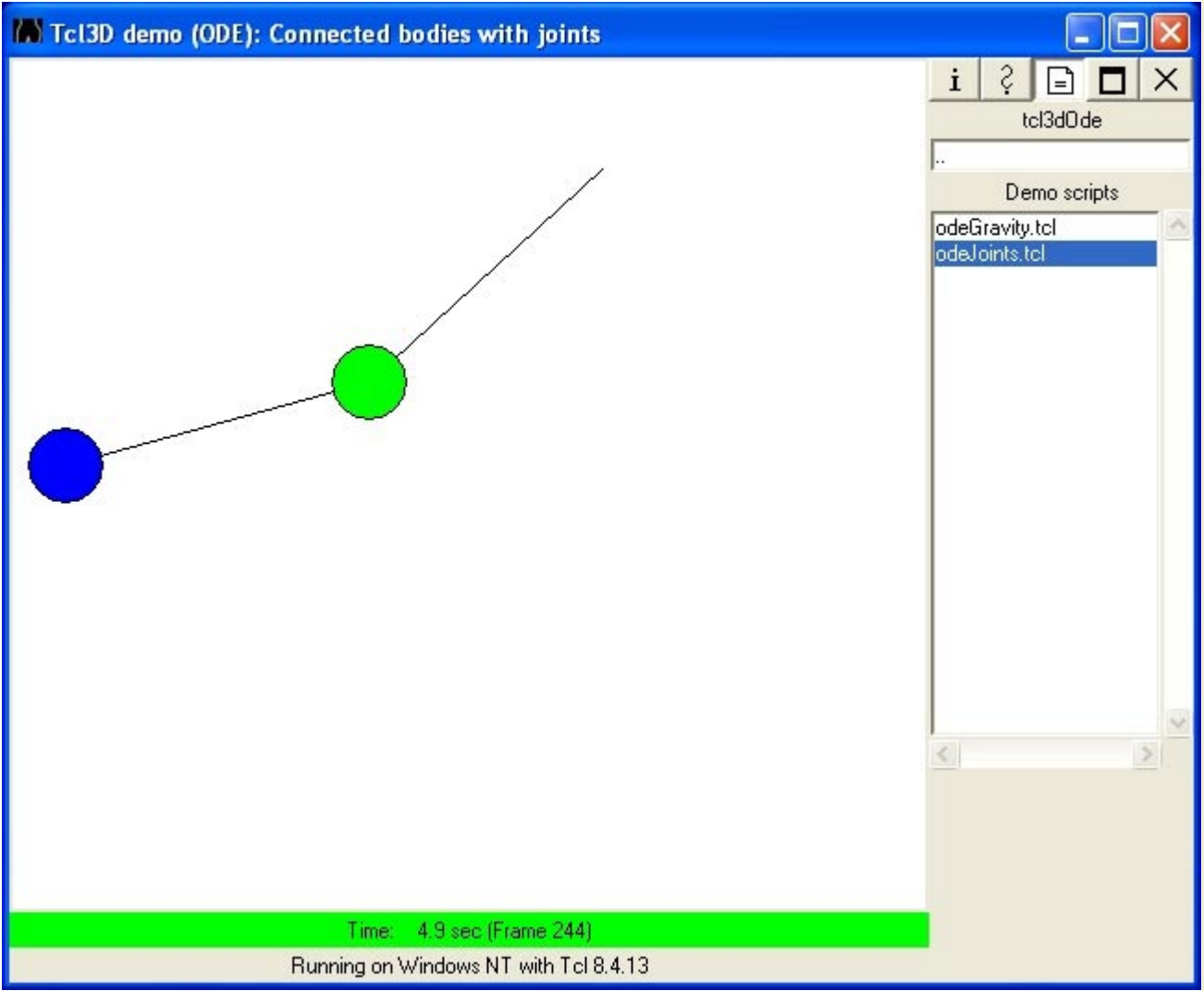
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Module: Tcl3D -> tcl3dOde
Filename: odeGravity.tcl

Author: Paul Obermeier

Description: Tcl3D Ode example: Bodies influenced by gravity.
Based on PyODE Tutorial 1 By Matthias Baas.

Demo:	odeJoints
Type:	tcl3dOde
Category:	LibrarySpecificDemos
Root:	Contents




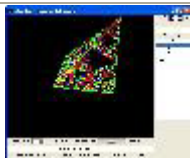
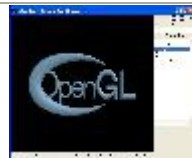
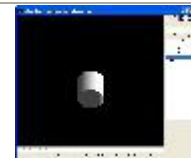
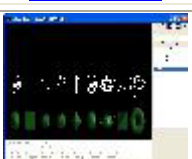


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Module: Tcl3D -> tcl3dOde
 Filename: odeJoints.tcl

Author: Paul Obermeier

Description: Tcl3D Ode example: Connected bodies with joints
 Based on PyODE Tutorial 2 By Matthias Baas.

Type:	tcl3dOgl			
Category:	LibrarySpecificDemos			
Root:	Contents			
<p>This section contains OpenGL demo applications from several resources, that have been ported to Tcl3D. The examples cover basic OpenGL programming. Original sources from different sites. See the documentation for details.</p>				
Available demos				
				
GearTrain	Sierpinski	animlogo	atlantis	gluCylinder
				
glutShapes	multiview	spheres		

Demo:	GearTrain
Type:	tcl3dOgl
Category:	LibrarySpecificDemos
Root:	Contents

Key-Escape Exit
 B1-Motion Rotate
 B2-Motion Zoom

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

GearTrain.tcl

GearTrain Simulator * Version: 1.00

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 <skdutta@del3.vsnl.net.in>

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Slightly modified for Tcl3D presentation by Paul Obermeier 2006/08/02
See www.tcl3d.org for the Tcl3D extension.

Demo:	Sierpinski
Type:	tcl3dOgl
Category:	LibrarySpecificDemos
Root:	Contents

Recursive depth Build ☒ Optimize View distance Animate

4096 triangles: 46 msec to build

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

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Module: Tcl3D -> tcl3dOgl

Filename: Sierpinski.tcl

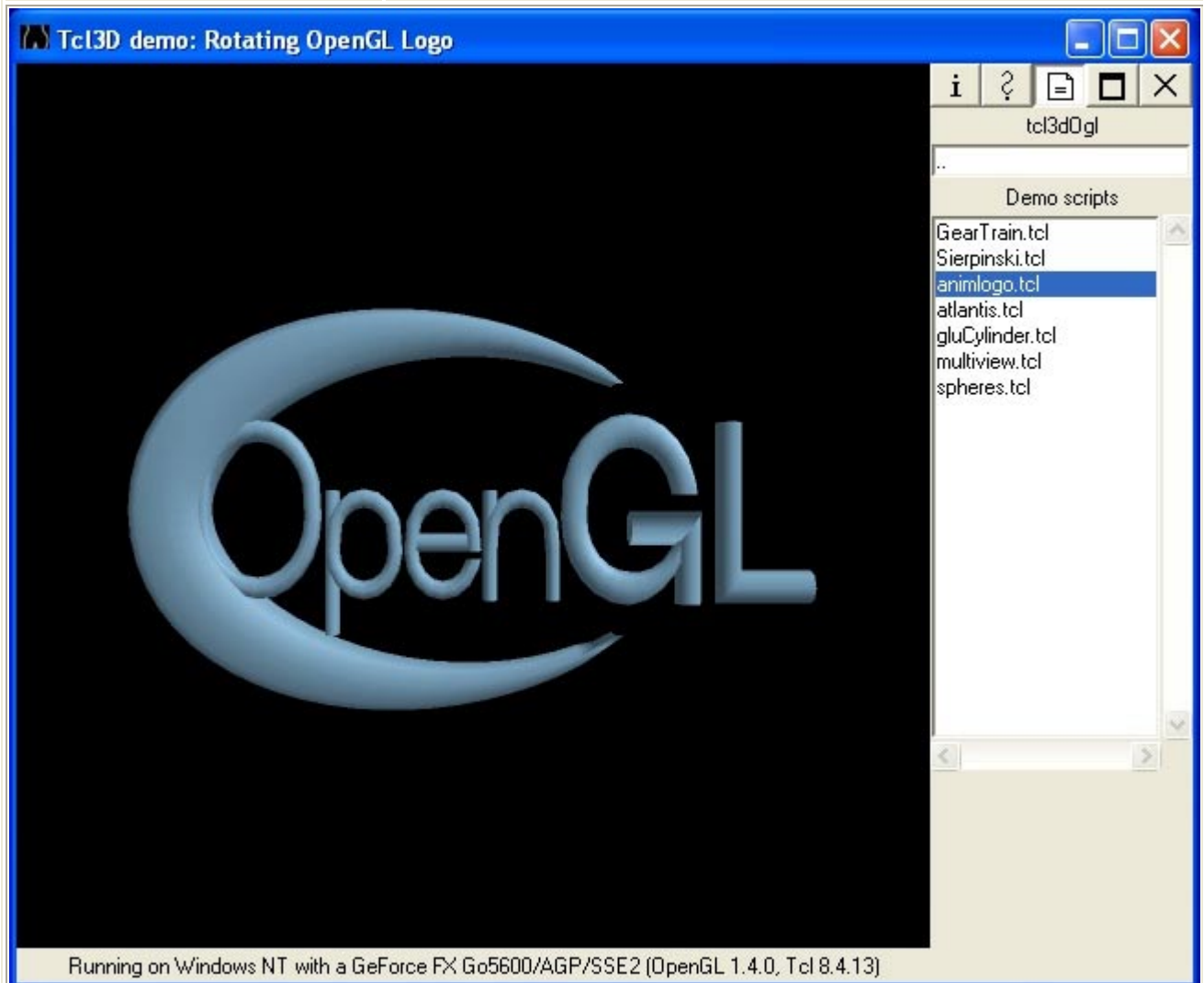
Author: Paul Obermeier

Description: Tcl3D demo displaying a 3D Sierpinski Tetrahedron.

Derived from a demo by Gerard Sookahet (tetra-3dc.tcl), which used the 3dcanvas package.
The original version is at: <http://wiki.tcl.tk/11832>.

Incorporates optimization functions by Philip Quaife.
See the Tcl'ers Wiki <http://wiki.tcl.tk/14820> for a description of his optimizations.

Demo:	animlogo
Type:	tcl3dOgl
Category:	LibrarySpecificDemos
Root:	Contents



animlogo.tcl

The animated OpenGL logo

This file is part of the OpenGL-logo demo.

(c) Henk Kok (kok@wins.uva.nl)

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Original sources available at:

http://www.opengl.org/resources/code/samples/glut_examples/demos/demos.html

Modified for Tcl3D by Paul Obermeier 2006/08/02

See www.tcl3d.org for the Tcl3D extension.

Demo:	atlantis
Type:	tcl3dOgl
Category:	LibrarySpecificDemos
Root:	Contents

Mouse-3 PopupMenu
 Key-s Stop
 Key-p Play
 Key-Space Step
 Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

atlantis.tcl

Copyright (c) Mark J. Kilgard, 1994. */

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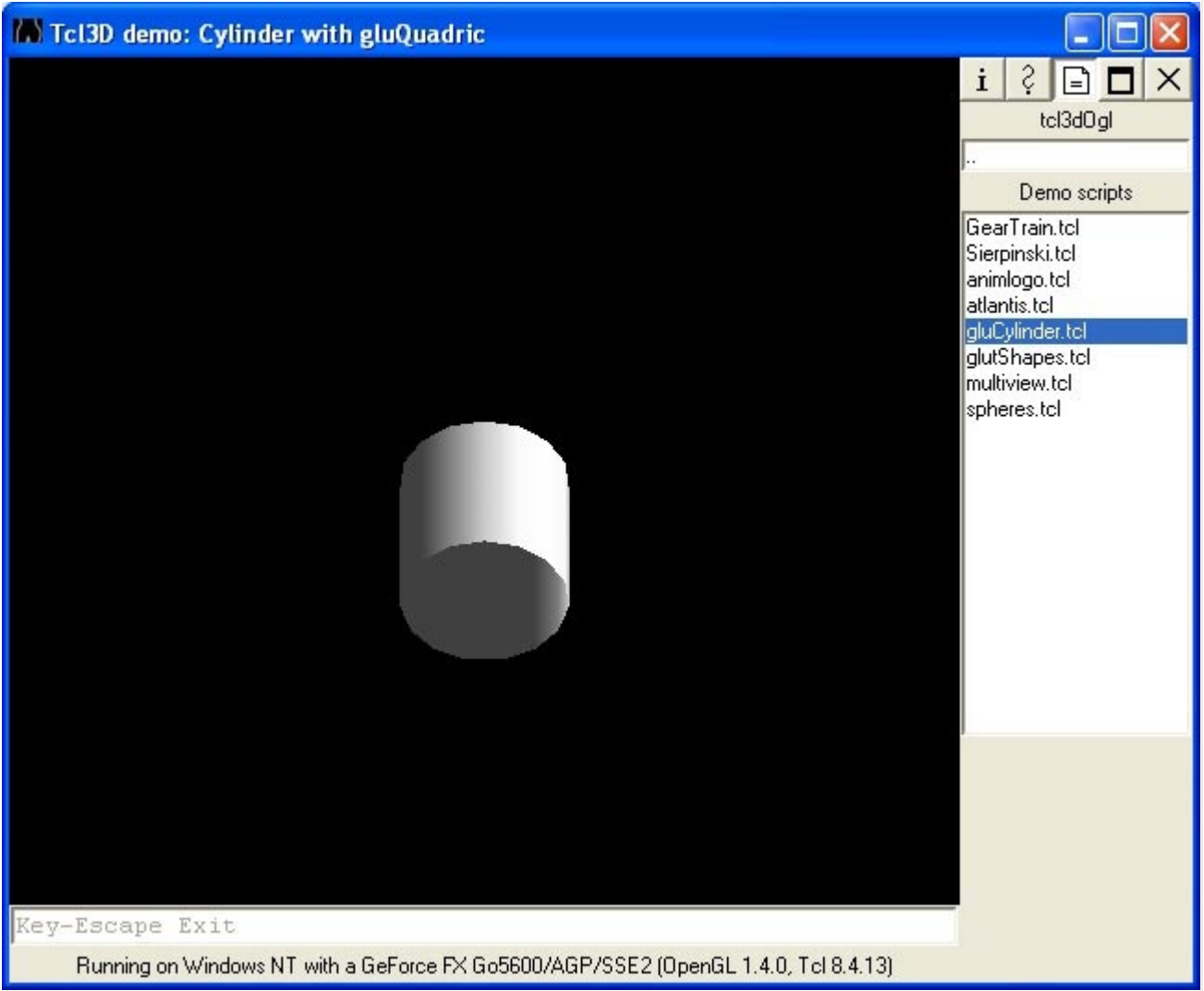
Original sources available at:

http://www.opengl.org/resources/code/samples/glut_examples/demos/demos.html

Modified for Tcl3D by Paul Obermeier 2005/08/14

See www.tcl3d.org for the Tcl3D extension.

Demo:	gluCylinder
Type:	tcl3dOgl
Category:	LibrarySpecificDemos
Root:	Contents



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Module: Tcl3D -> tcl3dOgl
 Filename: gluCylinder.tcl

Author: Paul Obermeier

Description: Tcl3D demo showing the use of gluQuadric routines to draw a cylinder.

Demo:	glutShapes
Type:	tcl3dOgl
Category:	LibrarySpecificDemos
Root:	Contents

Key-Escape Exit
 Key-r Reset rotation
 Key-Up|Down Decrease|Increase x rotation speed
 Key-Left|Right Decrease|Increase y rotation speed

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

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Module:	Tcl3D -> tcl3dOgl
Filename:	glutShapes.tcl
Author:	Paul Obermeier
Date:	2006-12-01
Description:	Tcl3D demo showing all supported GLUT shapes.

Demo:	multiview
Type:	tcl3dOgl
Category:	LibrarySpecificDemos
Root:	Contents

Tcl3D demo: Multiple viewports

Ortho view along Y

Ortho view along X

Perspective view

Ortho view along Z

Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

Demo scripts

- GearTrain.tcl
- Sierpinski.tcl
- animlogo.tcl
- atlantis.tcl
- gluCylinder.tcl
- glutShapes.tcl
- multiview.tcl**
- spheres.tcl

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Module: Tcl3D -> tcl3dOgl

Filename: multiview.tcl

Author: Paul Obermeier

Description: Tcl3D demo showing the famous teapot in 4 different viewports on a single togl widget.

Demo:	spheres
Type:	tcl3dOgl
Category:	LibrarySpecificDemos
Root:	Contents

Tcl3D demo: Molecules benchmark (182 fps)

Number of slices per sphere: 15

Number of stacks per sphere: 15

Number of spheres per side: 7

Number of spheres: 343 (77175 polygons)

☒ Use display list ☐ Use flat shading ☐ Use line mode

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

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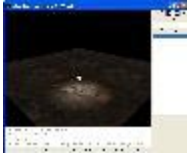
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Module: Tcl3D -> tcl3dOgl

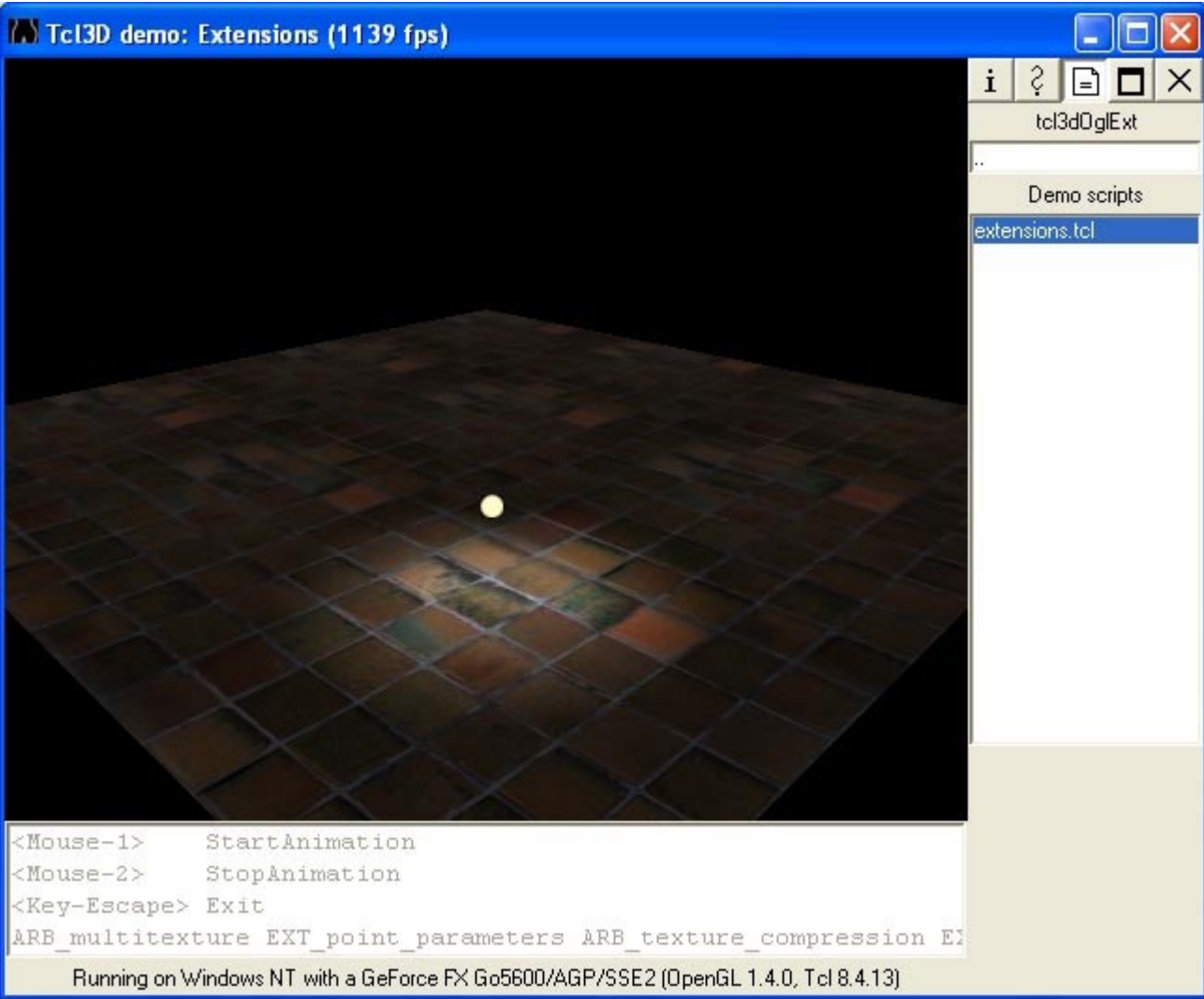
Filename: spheres.tcl

Author: Paul Obermeier

Description: Tcl3D demo displaying spheres in various modes.

Type:	tcl3dOglExt
Category:	LibrarySpecificDemos
Root:	Contents
<p>This section contains OpenGL demo applications from several resources, that have been ported to Tcl3D. The examples cover OpenGL extension programming.</p> <p>Original sources from different sites. See the documentation for details.</p>	
Available demos	
	
extensions	

Demo:	extensions
Type:	tcl3dOglExt
Category:	LibrarySpecificDemos
Root:	Contents





extensions.tcl

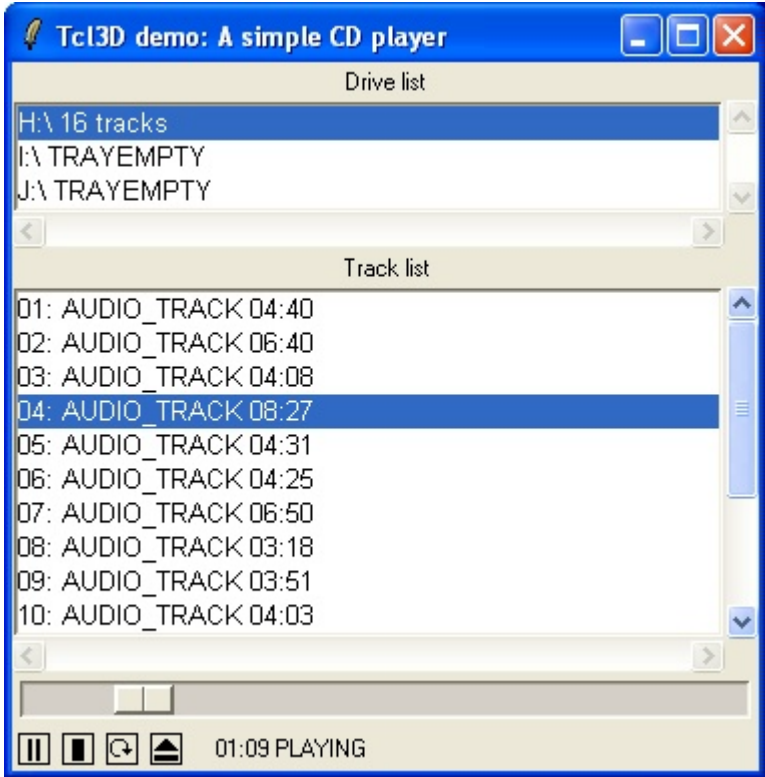
Program to demonstrate the use of extensions.
 Extensions used:

- GL_ARB_multitexture
- GL_EXT_point_parameters
- GL_ARB_texture_compression
- GL_EXT_texture_edge_clamp

Original C++ code by Dave Astle 2/1/2002
 Original files from:
<http://www.gamedev.net/reference/programming/features/oglext/demo.zip>

Modified for Tcl3D by Paul Obermeier 2005/09/05
 See www.tcl3d.org for the Tcl3D extension.

Type:	tcl3dSDL
Category:	LibrarySpecificDemos
Root:	Contents
<p>This section contains SDL demo applications written in Tcl3D. The examples cover joystick and CD programming with the help of the SDL library.</p>	
Available demos	
	
cdplayer	joysticktest

Demo:	cdplayer
Type:	tcl3dSDL
Category:	LibrarySpecificDemos
Root:	Contents
	
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Module:	Tcl3D -> tcl3dSDL
Filename:	cdplayer.tcl
Author:	Paul Obermeier
Description:	Tcl script implementing a simple CD player to test the CD related functions (SDL_CD*) of the Tcl3D SDL wrapping.

Demo:	joysticktest
Type:	tcl3dSDL
Category:	LibrarySpecificDemos
Root:	Contents

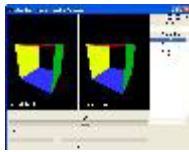

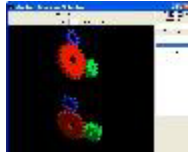
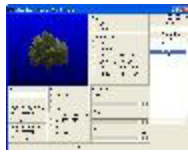

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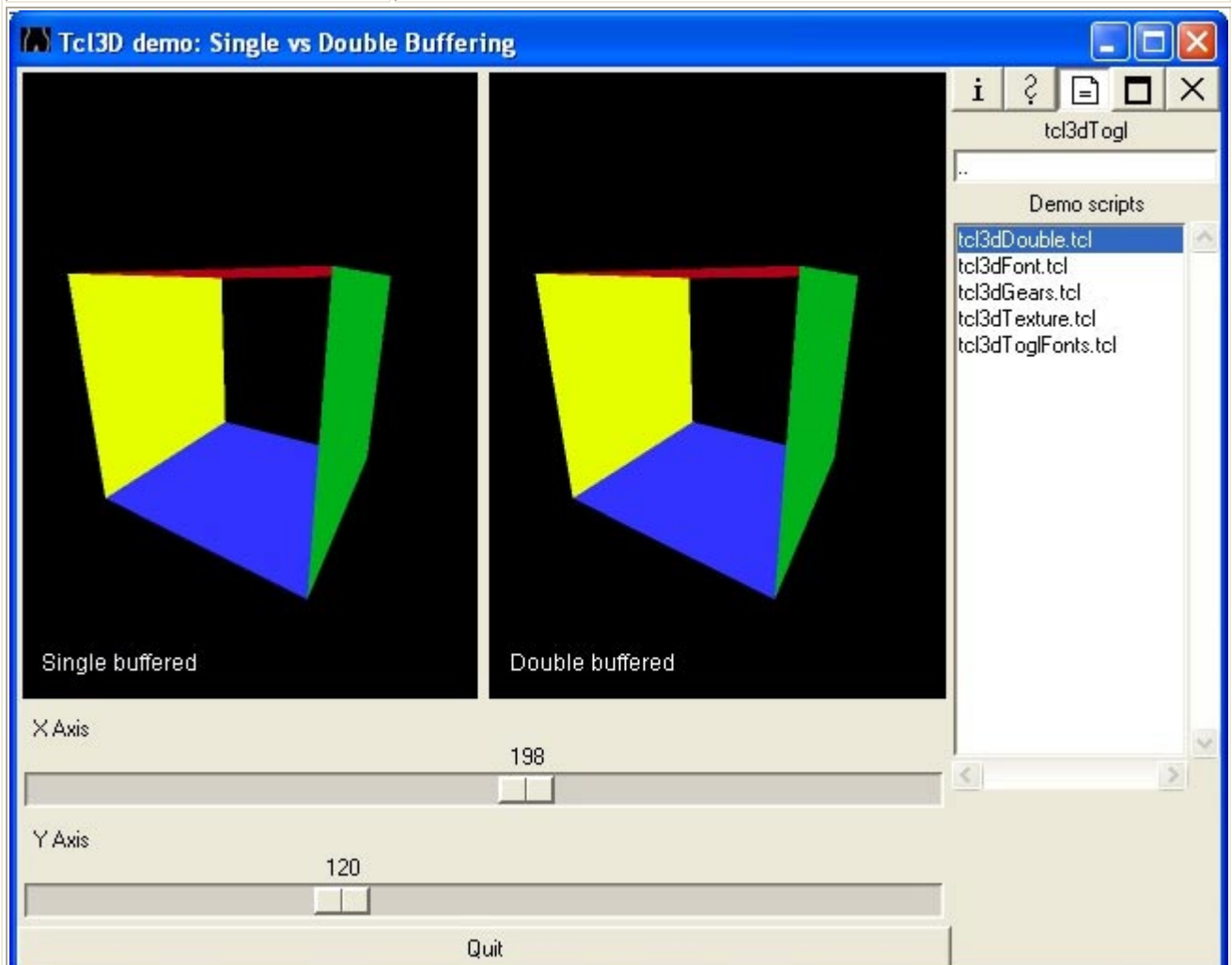
Module: Tcl3D -> tcl3dSDL
 Filename: joysticktest.tcl

Author: Paul Obermeier

Description: Tcl script to test the joystick related functions of the Tcl3D SDL wrapping.

Type:	tcl3dTogl			
Category:	LibrarySpecificDemos			
Root:	Contents			
<p>The following demos from the Togl distribution have been ported to Tcl3D. Original sources available at: http://sourceforge.net/projects/togl/</p>				
Available demos				
				
tcl3dDouble	tcl3dFont	tcl3dGears	tcl3dTexture	tcl3dToglFonts

Demo:	tcl3dDouble
Type:	tcl3dTogl
Category:	LibrarySpecificDemos
Root:	Contents



tcl3dDouble.tcl

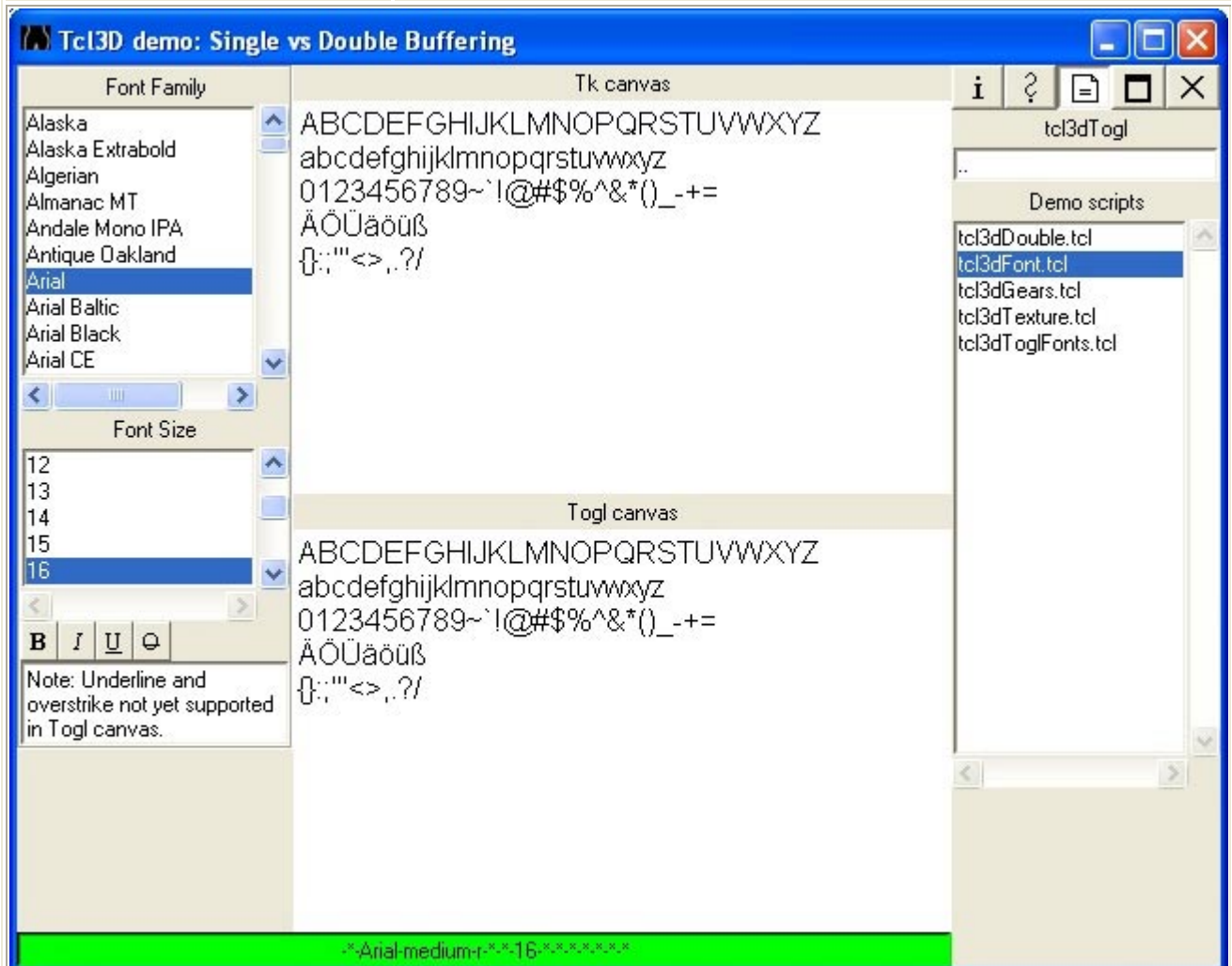
A Tcl3D widget demo with two windows, one single buffered and the other double buffered.

This is a version of the original Togl double demo written entirely in Tcl with the help of the Tcl3D package.

Copyright (C) 1996 Brian Paul and Ben Bederson (Original C/Tcl version)
 Copyright (C) 2005 Paul Obermeier (Tcl3D version)
 See the LICENSE file for copyright details.

Original sources available at: <http://sourceforge.net/projects/togl/>

Demo:	tcl3dFont
Type:	tcl3dToql
Category:	LibrarySpecificDemos
Root:	Contents



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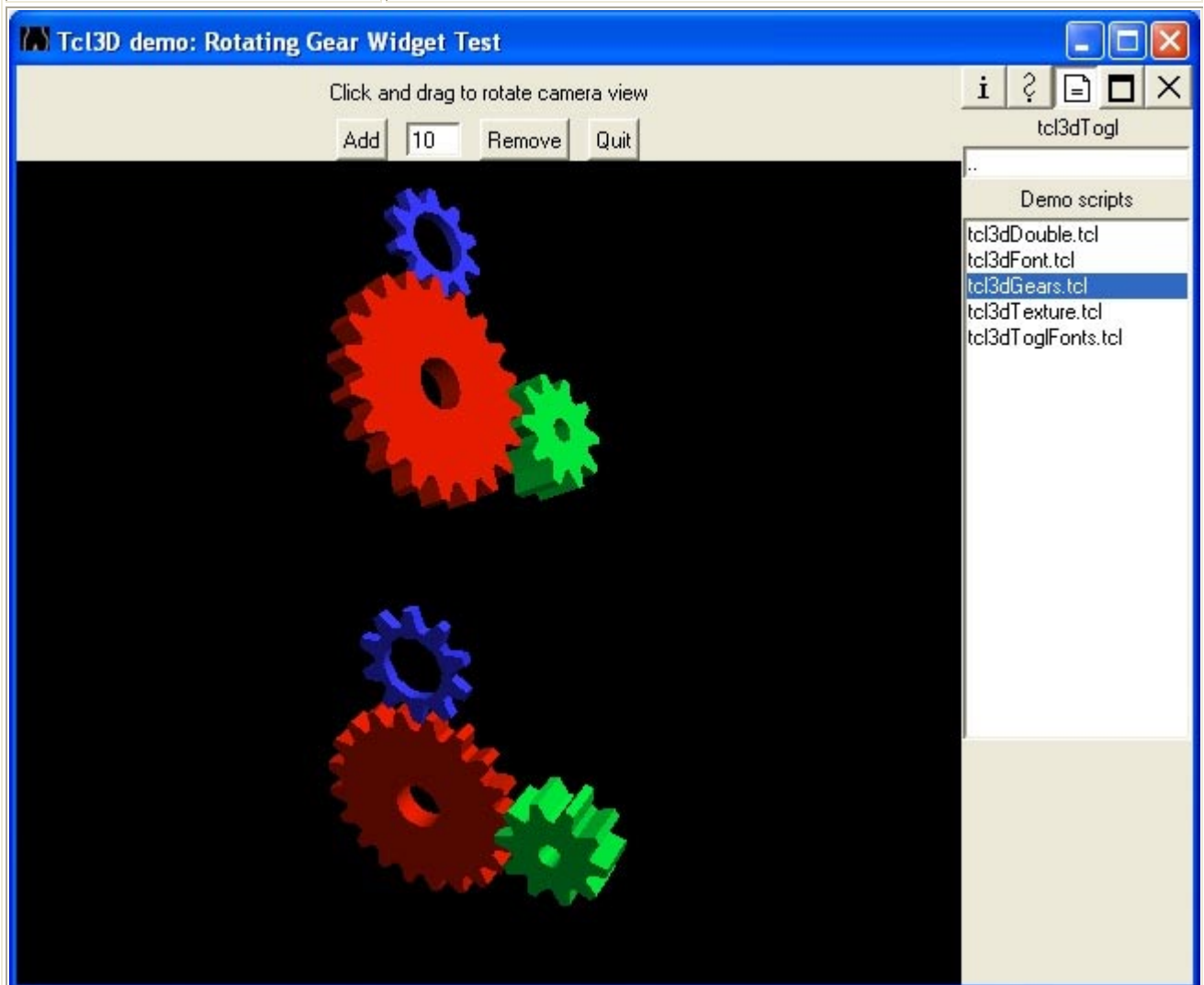
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usage and redistribution of this file, and for a
DISCLAIMER OF ALL WARRANTIES.

```
Module:      Tcl3D -> tcl3dTogl
Filename:    tcl3dFont.tcl
```

Author: Paul Obermeier

Description: Tcl script to select a font. The font is displayed in a Tk widget as well as in an OpenGL window. The font name in XLFD notation is shown in a text widget for copy/paste. This demo shows the usage of the "loadbitmapfont" command built into the Togl widget. Note: The Tk font might look nicer, because font antialiasing is enabled. On Windows this can be toggled in the display property window (Appearance->Effects).

Demo:	tcl3dGears
Type:	tcl3dTogl
Category:	LibrarySpecificDemos
Root:	Contents



tcl3dGears.tcl

Test Togl using GL Gears Demo

This is a version of the original Togl gears demo written entirely in Tcl with the help of the Tcl3D package.

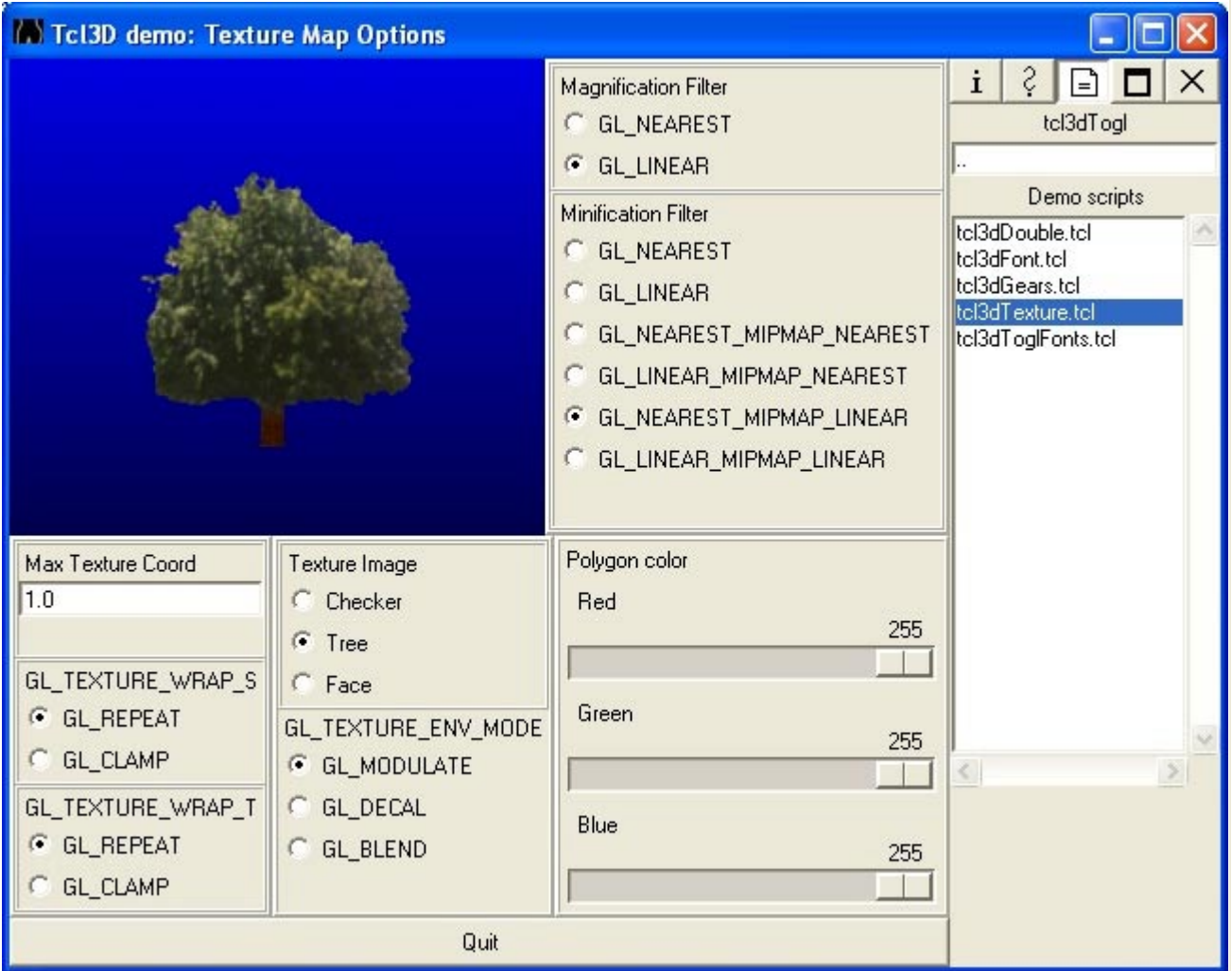
Copyright (C) 1997 Philip Quaife (Original C/Tcl version)

Copyright (C) 2005 Paul Obermeier (Tcl3D version)

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Original sources available at: <http://sourceforge.net/projects/togl/>

Demo:	tcl3dTexture
Type:	tcl3dTogl
Category:	LibrarySpecificDemos
Root:	Contents



tcl3dTexture.tcl

Togl texture map demo

This is a version of the original Togl texture demo written entirely in Tcl with the help of the Tcl3D package.

Copyright (C) 1996 Brian Paul and Ben Bederson (Original C/Tcl version)
 Copyright (C) 2005 Paul Obermeier (Tcl3D version)
 See the LICENSE file for copyright details.

Original sources available at: <http://sourceforge.net/projects/togl/>

Demo:	tcl3dToglFonts
Type:	tcl3dTogl
Category:	LibrarySpecificDemos
Root:	Contents

Tcl3D demo: Togl bitmap font specification examples

```

loadbitmapfont
loadbitmapfont -family courier
loadbitmapfont -family times
loadbitmapfont -family fixed -size 12 -weight medium -slant regular
loadbitmapfont -family fixed -size 12 -weight bold -slant italic
loadbitmapfont -slant xyz
loadbitmapfont -weight xyz
loadbitmapfont -size 20
loadbitmapfont -size 20 -weight bold
loadbitmapfont -size 20 -slant italic
loadbitmapfont -*-courier-bold-r-*-*-10-*-*-*-*
loadbitmapfont -family 8x13
loadbitmapfont 8x13
loadbitmapfont -family a-b
loadbitmapfont a-b
loadbitmapfont -family
loadbitmapfont -family -weight -slant (Could not allocate font "-weight")

```

Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

File list (Demo scripts):

- tcl3dDouble.tcl
- tcl3dFont.tcl
- tcl3dGears.tcl
- tcl3dTexture.tcl
- tcl3dToglFonts.tcl**

Copyright: 2006 Paul Obermeier (obermeier@poSoft.de)

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Module: Tcl3D -> tcl3dTogl
 Filename: tcl3dToglFonts.tcl

Author: Paul Obermeier

Description: Program demonstrating and testing the different possibilities of specifying a bitmap font for the Togl widget.

Category:	Tcl3DSpecificDemos
Root:	Contents
Available types	

Demo:	bytearray
Type:	
Category:	Tcl3DSpecificDemos
Root:	Contents

Tcl3D demo: Creating textures from byte arrays (Test 5)

Key-1: Gradient with tcl3dVector (slow)
 Key-2: Gradient with tcl3dVectorFromByteArray (fast)
 Key-3: Gradient with tcl3dVectorFromByteArray (faster)
 Key-4: Gradient with tcl3dVectorFromByteArray (fastest)
 Key-5: Color gradient with tcl3dVectorFromByteArray
 Key-6: Gradient readback with tcl3dVectorToByteArray
 Key-Escape: Exit

27502 microseconds per iteration

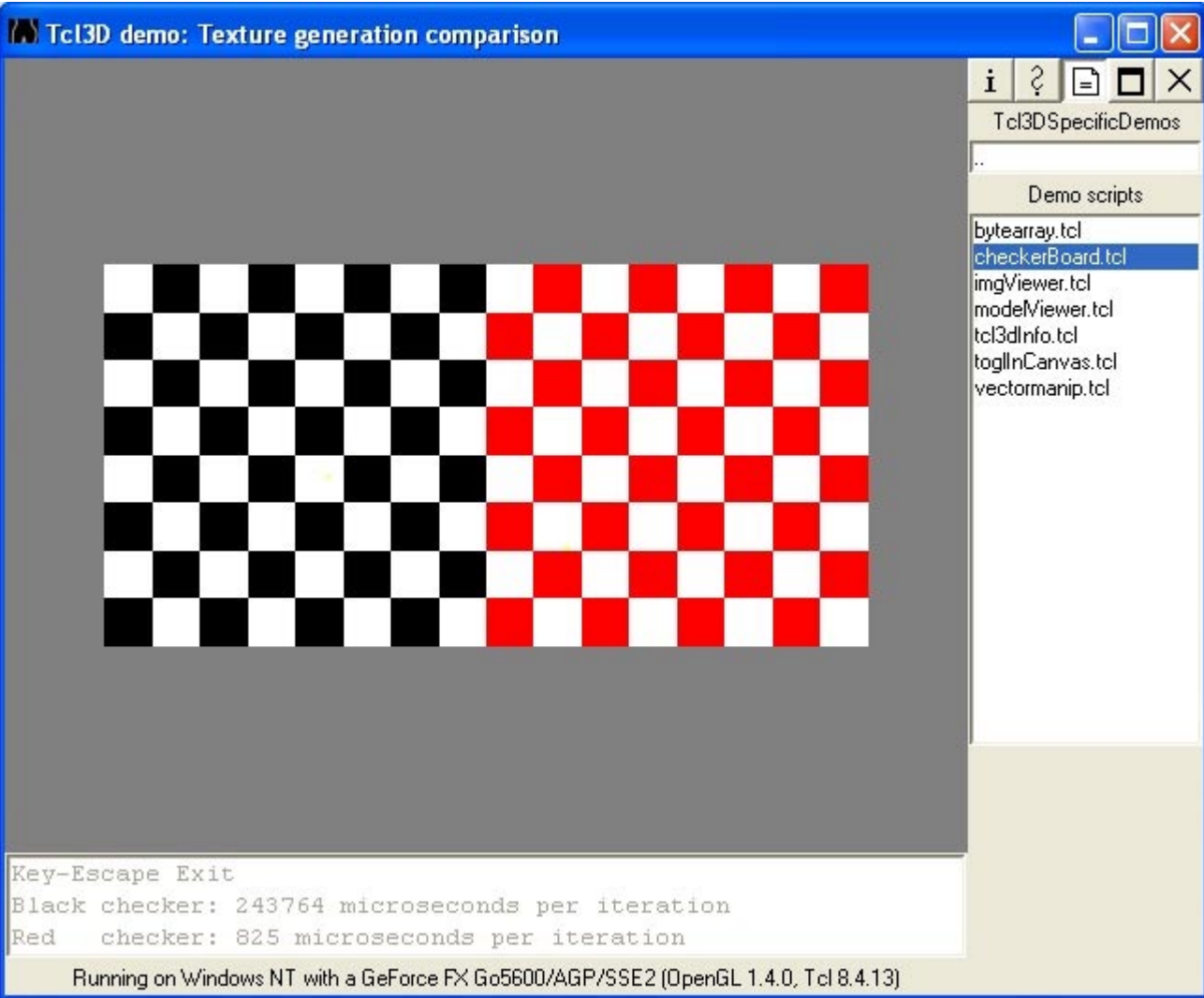
Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

bytearray.tcl

Tcl3D demo showing the use of the tcl3dByteArray2Vector function, introduced in Version 0.3.
 The program texture maps an image generated with Tcl onto a quad.

Author: Paul Obermeier
 Date: 2006-02-01

Demo:	checkerBoard
Type:	
Category:	Tcl3DSpecificDemos
Root:	Contents



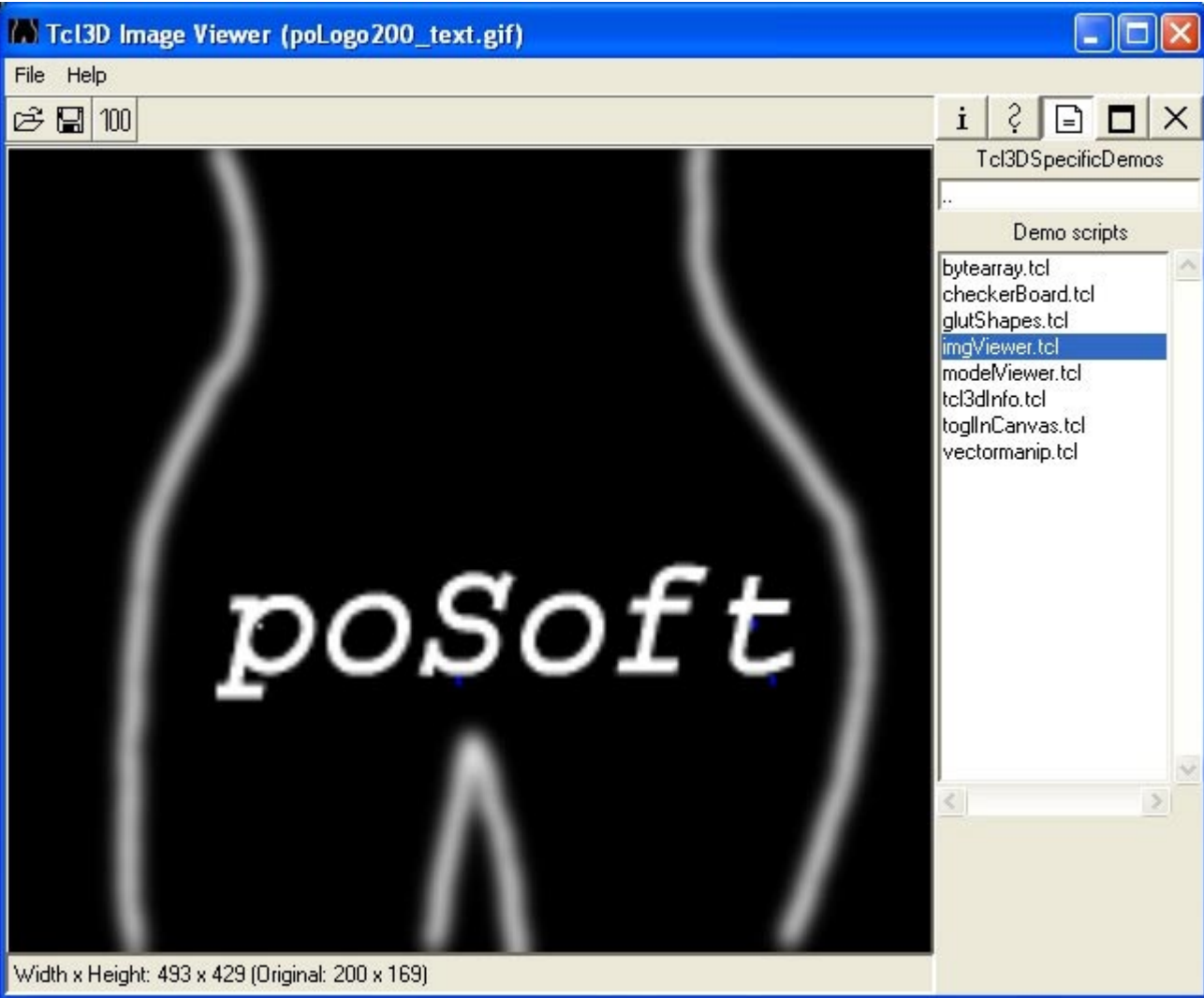
Key-Escape Exit
 Black checker: 243764 microseconds per iteration
 Red checker: 825 microseconds per iteration
 Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

checkerBoard.tcl

This program creates a checkerboard image in two ways.
 The first texture is created with an algorithm, as used in some of the RedBook examples (ex. checker.tcl). This algorithm has been converted 1:1 from C to Tcl. Very slow.
 The second image is created using the Img extension, which is essentially faster.

Author: Paul Obermeier
 Date: 2006-09-22

Demo:	imgViewer
Type:	
Category:	Tcl3DSpecificDemos
Root:	Contents



Copyright: 2005-2006 Paul Obermeier (obermeier@poSoft.de)

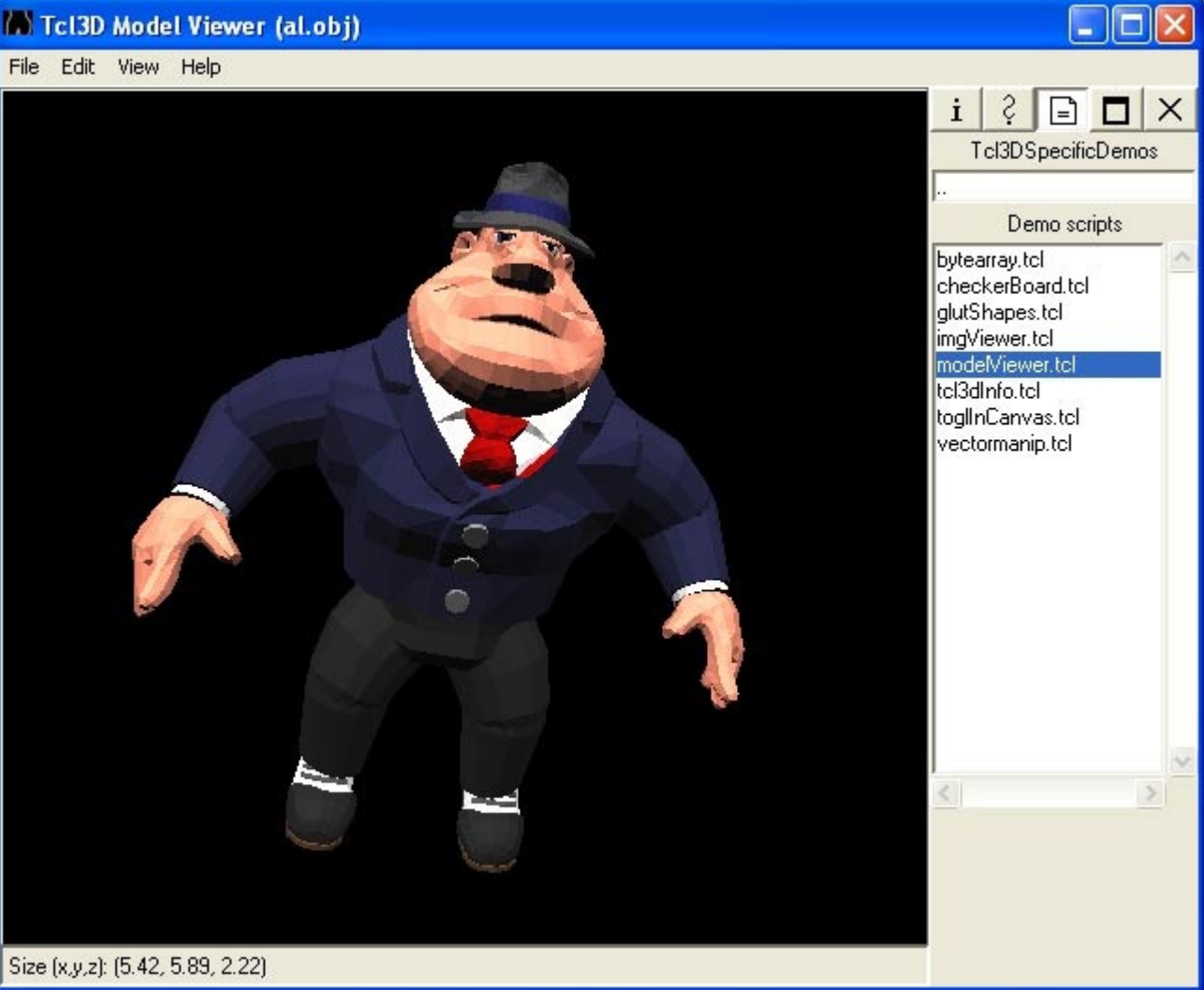
See the file "Tcl3D_License.txt" for information on usage and redistribution of this file, and for a DISCLAIMER OF ALL WARRANTIES.

Module: Tcl3D
 Filename: imgViewer.tcl

Author: Paul Obermeier

Description: Tcl program to display images and stretch them in realtime with the use of OpenGL textures. The images can be read from files in all formats supported by the Img extension. The stretched image may also be written out to an image file.

Demo:	modelViewer
Type:	
Category:	Tcl3DSpecificDemos
Root:	Contents



Copyright: 2005-2006 Paul Obermeier (obermeier@poSoft.de)

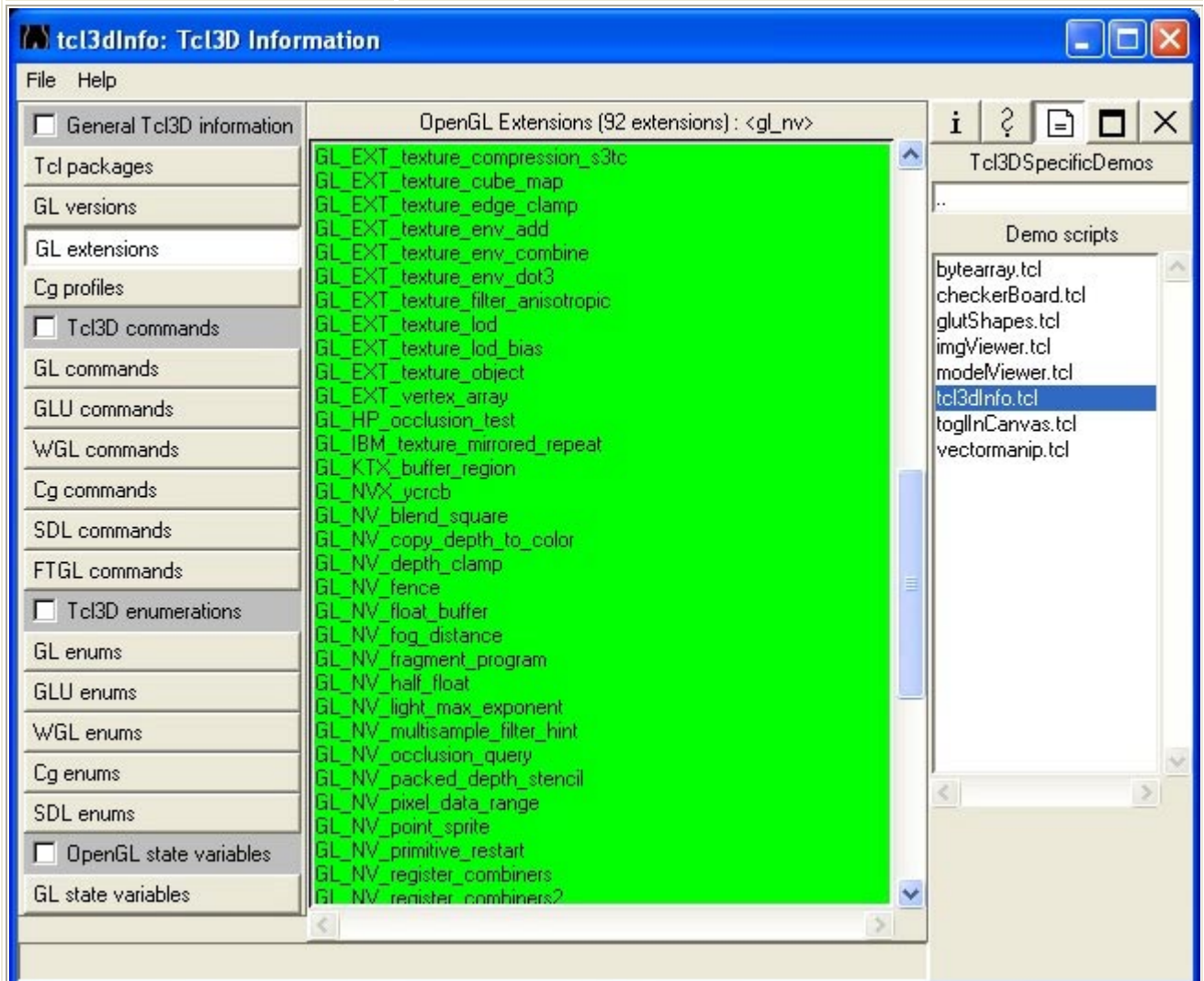
See the file "Tcl3D_License.txt" for information on usage and redistribution of this file, and for a DISCLAIMER OF ALL WARRANTIES.

Module: Tcl3D
Filename: modelViewer.tcl

Author: Paul Obermeier

Description: Tcl program to display 3D model files in all formats supported by the Tcl3D extension.

Demo:	tcl3dInfo
Type:	
Category:	Tcl3DSpecificDemos
Root:	Contents



Copyright: 2005-2006 Paul Obermeier (obermeier@poSoft.de)

See the file "Tcl3D_License.txt" for information on usage and redistribution of this file, and for a DISCLAIMER OF ALL WARRANTIES.

Module: Tcl3D
Filename: tcl3dInfo.tcl

Author: Paul Obermeier

Description: Tcl script to display OpenGL related information. When called without arguments, a window is opened with buttons to display OpenGL information for the following categories:

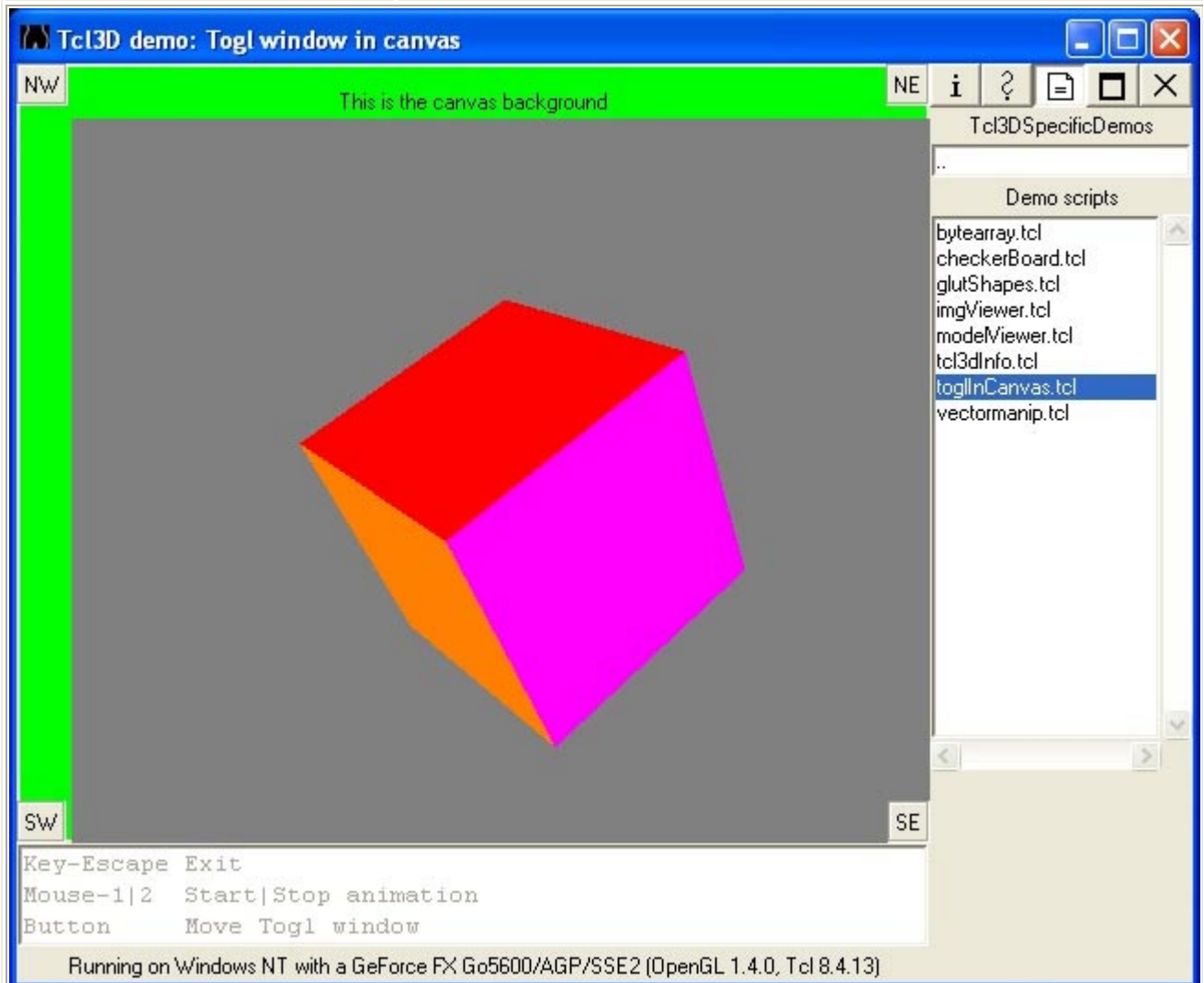
- General information (-info)
- Available OpenGL commands in Tcl (-cmd)
- Available OpenGL enumerations in Tcl (-enum)
- Current values of OpenGL state variables (-state)

The information texts can also be printed to stdout without opening a GUI, if calling this Tcl script

with any of the above listed command line options.
To display all four categories, the option "-all"
can be used.

Note: To retrieve all necessary information, an OpenGL
context has to be established. So the batch mode
needs a DISPLAY, too.

Demo:	toglInCanvas
Type:	
Category:	Tcl3DSpecificDemos
Root:	Contents



`toglInCanvas.tcl`

Tcl3D demo using a Togl window and some button widgets inserted into a canvas.

Author: Paul Obermeier

Date: 2006-12-08

Demo:	vectormanip
Type:	
Category:	Tcl3DSpecificDemos
Root:	Contents

Key-1: Copy: Dest (bw) = Src (bw)
 Key-2: Copy: Dest (r,g,b) = Src (r,g,b)
 Key-3: Manip: Dest (bw) = -1 * Src (bw) + 255
 Key-4: Manip: Dest (r,g,b) = -1 * Src (r,g,b) + 255
 Key-5: Swap : Dest (r,g,b) = Src (g,r,b)
 Key-Escape: Exit


Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

vectormanip.tcl

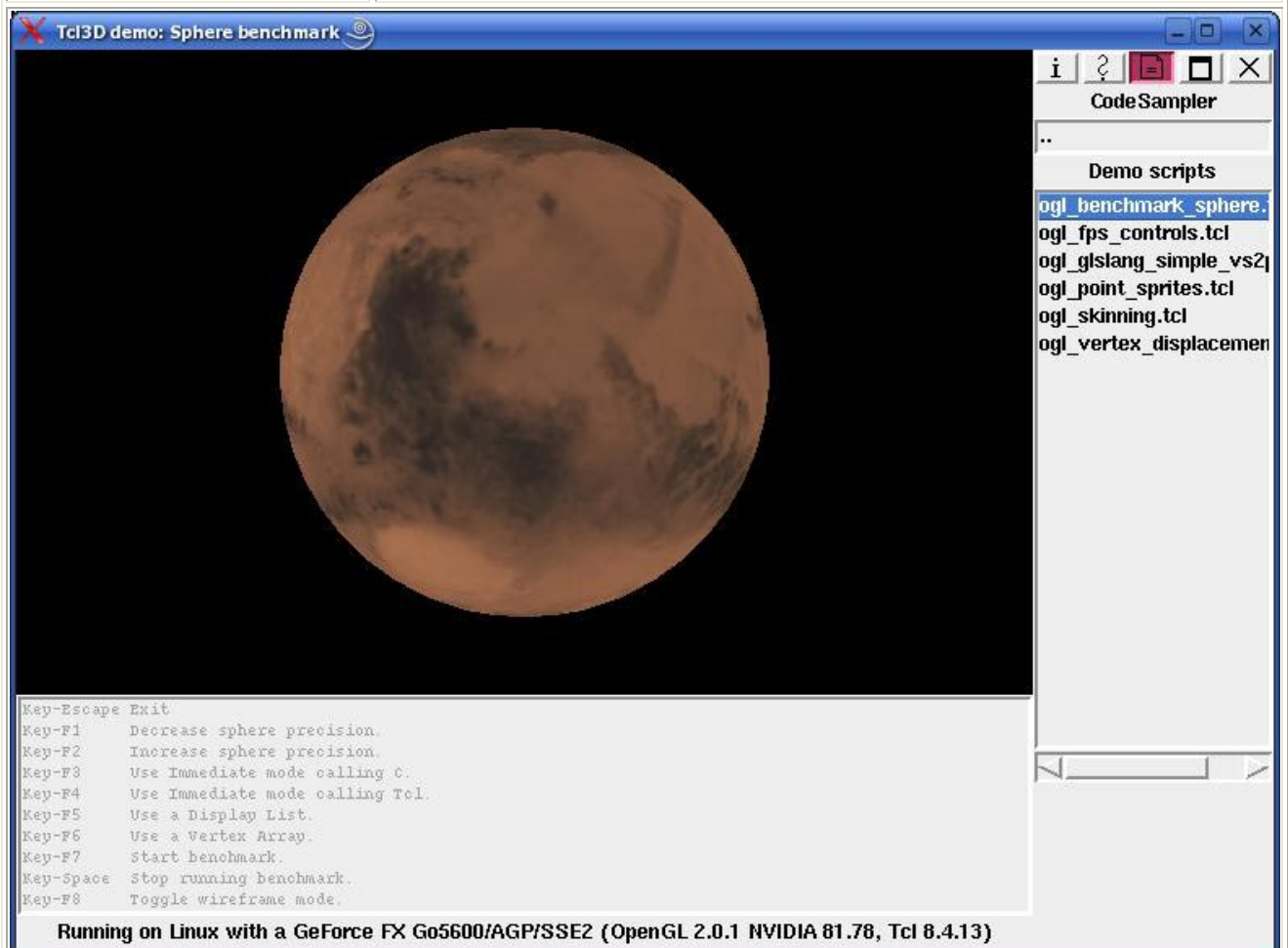
Tcl3D demo showing the use of the Vector manipulation functions, introduced in Version 0.3.2.
 The program texture maps an image generated with Tcl (the source) onto the left quad. The source texture is manipulated with the vector functions according to the chosen method and mapped onto the right quad.
 See functions `execMethod?` below.

Author: Paul Obermeier
 Date: 2006-08-15

Category:	TutorialsAndBooks
Root:	Contents
	Available types
	CodeSampler
	GameProgrammer
	NeHe
	RedBook

Type:	CodeSampler			
Category:	TutorialsAndBooks			
Root:	Contents			
<p>Several demo applications from Kevin Harris' page have been ported to Tcl3D. The examples cover Cg, GLSL and OpenGL extension programming.</p> <p>Original sources available at: http://www.codesampler.com/oglsrc.htm</p>				
Available demos				
				
ogl benchmark sphere	ogl fps controls	ogl glslang simple vs2ps	ogl point sprites	ogl skinning
				
ogl vertex displacement				

Demo:	ogl_benchmark_sphere
Type:	CodeSampler
Category:	TutorialsAndBooks
Root:	Contents



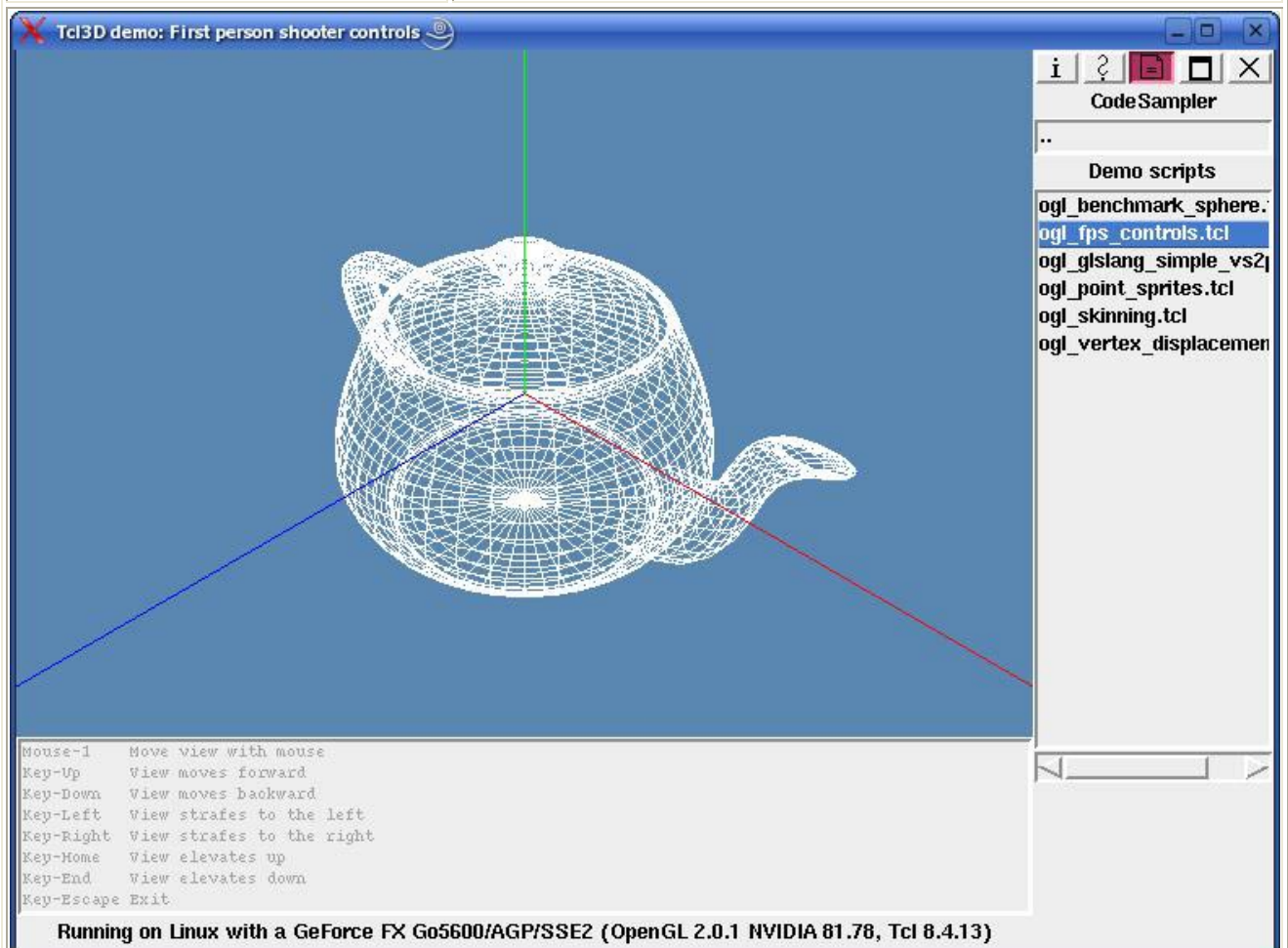
ogl_benchmark_sphere.tcl

Renders a textured sphere using either Immediate Mode calls, Immediate Mode calls cached in a Display List, or as a collection of geometric data stored in an interleaved fashion within a Vertex Array.

Original C++ code by Kevin Harris (kevin@codesampler.com) 04/21/05
 See www.codesampler.com for the original files
 OpenGL samples page 9: Benchmarking Test App

Modified for Tcl3D by Paul Obermeier 2005/11/07
 See www.tcl3d.org for the Tcl3D extension.

Demo:	ogl_fps_controls
Type:	CodeSampler
Category:	TutorialsAndBooks
Root:	Contents



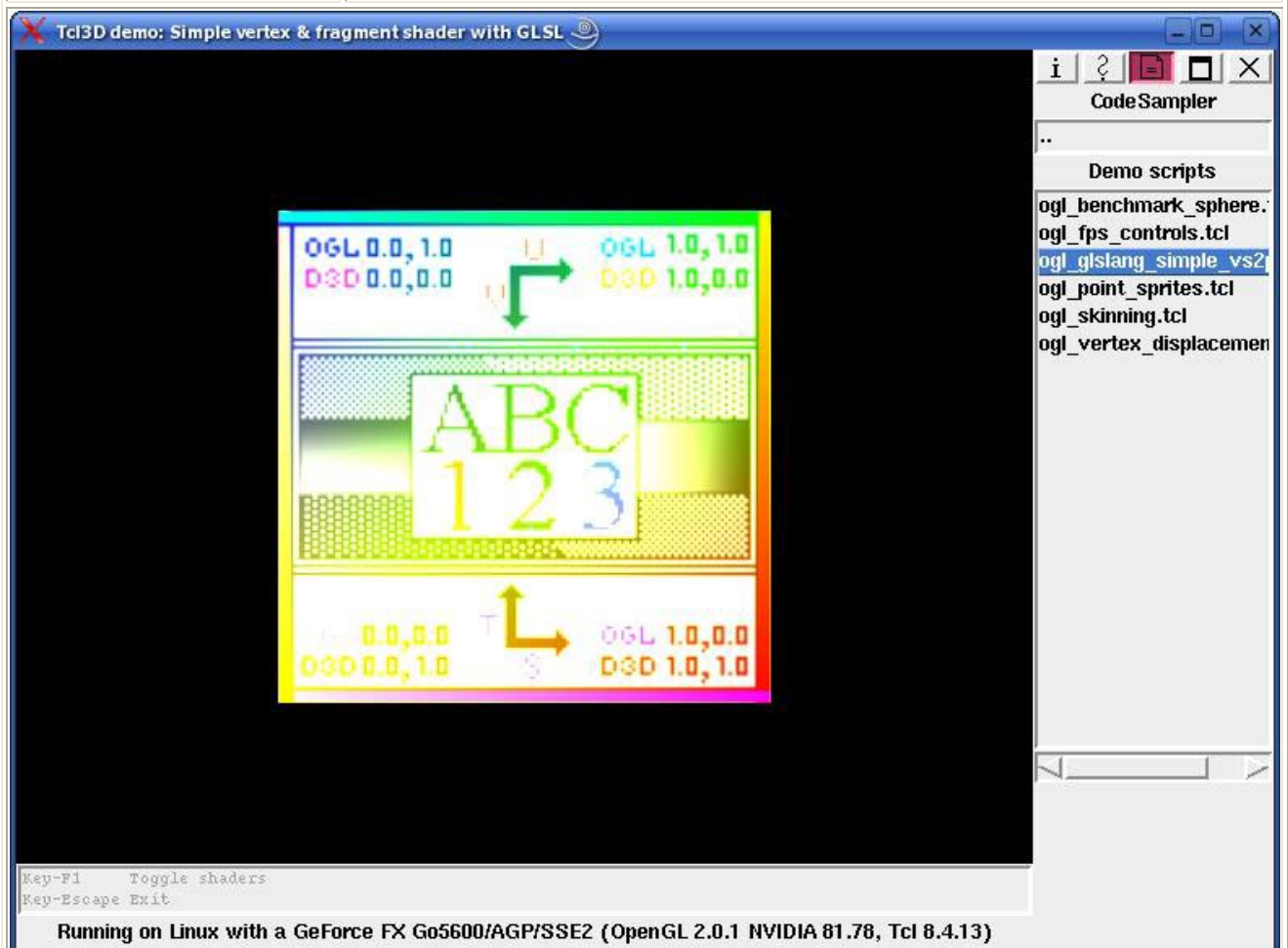
ogl_fps_controls.tcl

This sample demonstrates how to collect user input and build a custom view matrix for First Person Shooter style controls.

Original C++ code by Kevin Harris (kevin@codesampler.com) 02/01/05
 See www.codesampler.com for the original files
 OpenGL samples page 5: First Person Shooter Controls

Modified for Tcl3D by Paul Obermeier 2005/11/05
 See www.tcl3d.org for the Tcl3D extension.

Demo:	ogl_glslang_simple_vs2ps
Type:	CodeSampler
Category:	TutorialsAndBooks
Root:	Contents



ogl_glslang_simple_vs2ps.tcl

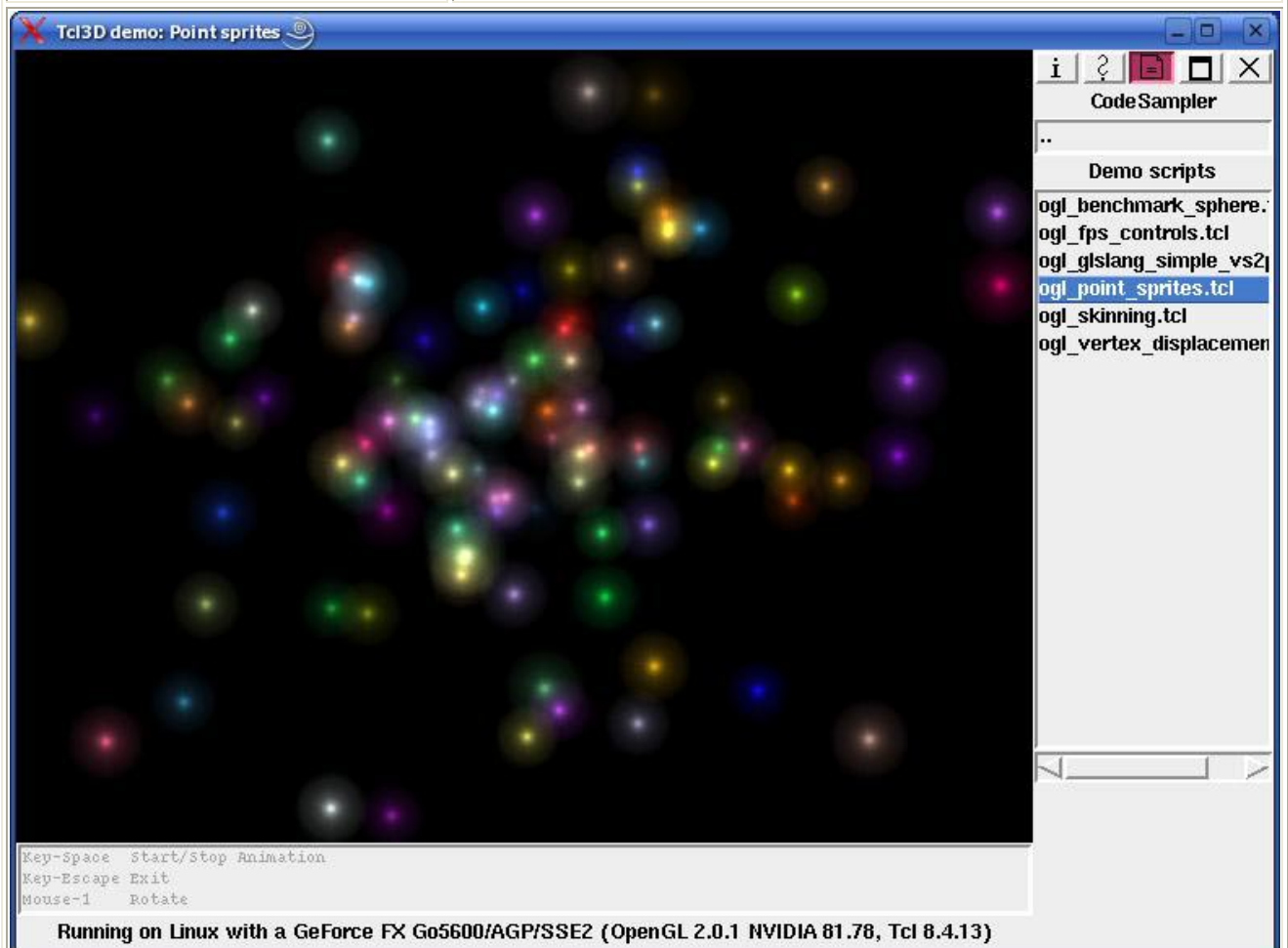
This sample demonstrates how to write vertex and fragment shaders using OpenGL's new high-level shading language GLSLang.

Original C++ code by Kevin Harris (kevin@codesampler.com) 04/21/05
 See www.codesampler.com for the original files
 OpenGL samples page 10: Simple Vertex & Fragment Shader (GLSLang)

Modified for Tcl3D by Paul Obermeier 2005/11/05
 See www.tcl3d.org for the Tcl3D extension.

Note: The fragment shader has been changed slightly from what the fixed-function pipeline does by default so you can see a noticeable change when toggling the shaders on and off. Instead of modulating the vertex color with the texture's texel, the fragment shader adds the two together, which causes the fragment shader to produce a brighter, washed-out image. This modification can be switched back in the fragment shader file.

Demo:	ogl_point_sprites
Type:	CodeSampler
Category:	TutorialsAndBooks
Root:	Contents



ogl_point_sprites.tcl

This sample demonstrates how to create point sprites using OpenGL's GL_ARB_point_sprite extension, which can be used to create point-rotated billboards on the GPU.

Original C++ code by Kevin Harris (kevin@codesampler.com) 02/01/05
See www.codesampler.com for the original files
OpenGL samples page 6: Point Sprites

Modified for Tcl3D by Paul Obermeier 2005/11/08
See www.tcl3d.org for the Tcl3D extension.

Demo:	ogl_skinning
Type:	CodeSampler
Category:	TutorialsAndBooks
Root:	Contents

Mouse-1 Spin the matrix for bone0.
 Mouse-2 Spin the matrix for bone1.
 Key-Space Start/Stop animation.
 Key-Up Increase distance.
 Key-Down Decrease distance.
 Key-F1 Toggle test geometry.
 Key-F2 Toggle wireframe mode.
 Key-Escape Exit.
 Command line parameters: glsl or cg

Running on Linux with a GeForce FX Go5600/AGP/SSE2 (OpenGL 2.0.1 NVIDIA 81.78, Tcl 8.4.13)

ogl_skinning.tcl

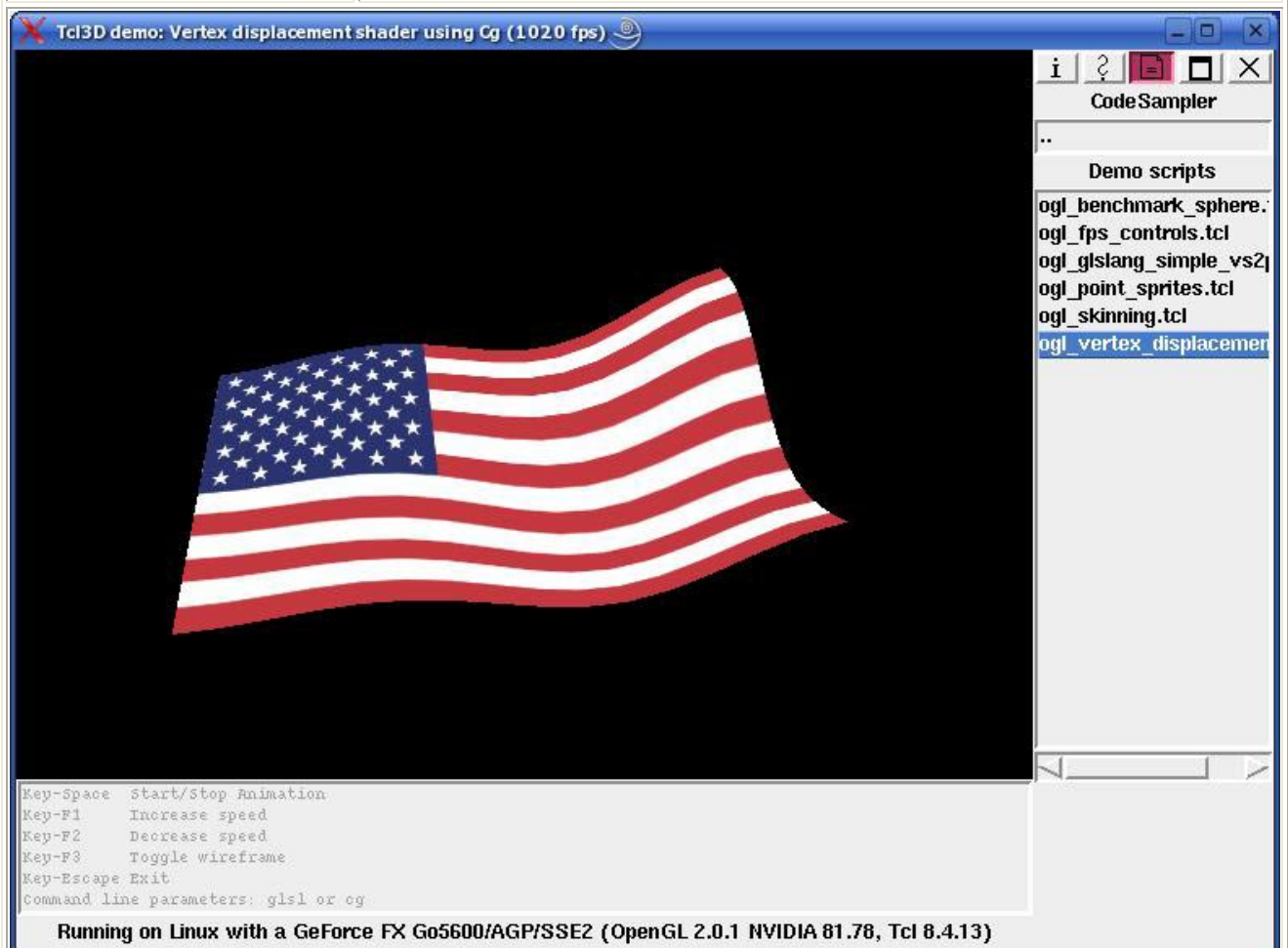
This sample demonstrates how to skin a mesh on the hardware using a Cg or GLSL shader. To keep things simple, the skeletal system used in this sample is very simple and only consists of two bones or bone matrices.

Original C++ code by Kevin Harris (kevin@codesampler.com) 04/28/05
 See www.codesampler.com for the original files
 OpenGL samples page 11: Matrix Palette Skinning on the Hardware

Modified for Tcl3D by Paul Obermeier 2005/11/05
 See www.tcl3d.org for the Tcl3D extension.

This sample integrates the Cg and GLSL code into one file.
 If called with no command line arguments, it uses the Cg shader.
 Use "glsl" as parameter to use the GLSL shader.

Demo:	ogl_vertex_displacement
Type:	CodeSampler
Category:	TutorialsAndBooks
Root:	Contents



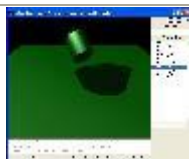
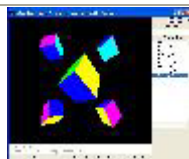
ogl_vertex_displacement.tcl

This sample demonstrates how to perform mesh deformation or vertex displacement with OpenGL using a Cg and GLSL shader.

Original C++ code by Kevin Harris (kevin@codesampler.com) 04/21/05
 See www.codesampler.com for the original files
 OpenGL samples page 11: Vertex Displacement or Mesh Deformation Shader

Modified for Tcl3D by Paul Obermeier 2005/11/05
 See www.tcl3d.org for the Tcl3D extension.

This sample integrates the Cg and GLSL code into one file.
 If called with no command line arguments, it uses the Cg shader.
 Use "glsl" as parameter to use the GLSL shader.

Type:	GameProgrammer			
Category:	TutorialsAndBooks			
Root:	Contents			
Several demo applications from Vahid Kazemi's page have been ported to Tcl3D. Original sources available at: http://www.GameProgrammer.org				
Available demos				
				
GL Blending	GL Envmap	GL Font	GL Lighting	GL Motionblur
				
GL Primitives	GL Shadow	GL Texturing	GL Viewing	

Demo:	GL_Blending
Type:	GameProgrammer
Category:	TutorialsAndBooks
Root:	Contents



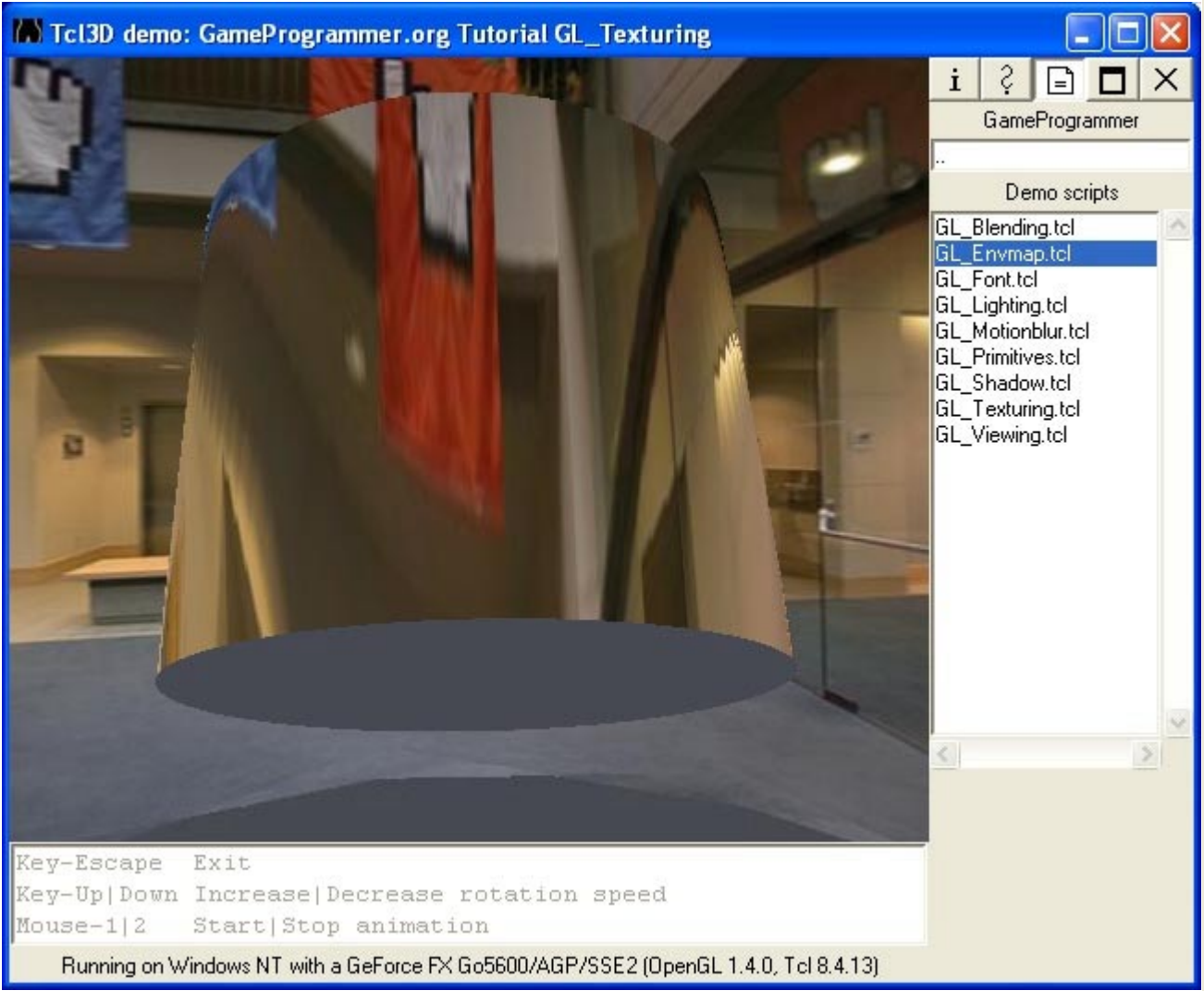
GL_Blending.tcl

Tutorial from www.GameProgrammer.org
Blending demo

Original code Copyright 2005 by Vahid Kazemi

Modified for Tcl3D by Paul Obermeier 2006/09/12
See www.tcl3d.org for the Tcl3D extension.

Demo:	GL_Envmap
Type:	GameProgrammer
Category:	TutorialsAndBooks
Root:	Contents



Key-Escape Exit
 Key-Up|Down Increase|Decrease rotation speed
 Mouse-1|2 Start|Stop animation

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

GL_Texturing.tcl

Tutorial from www.GameProgrammer.org
 Using Textures

Original code Copyright 2004 by Vahid Kazemi

Modified for Tcl3D by Paul Obermeier 2006/09/12
 See www.tcl3d.org for the Tcl3D extension.

Demo:	GL_Font
Type:	GameProgrammer
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit
 Key-Up|Down Increase|Decrease alpha change speed
 Mouse-1|2 Start|Stop animation

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

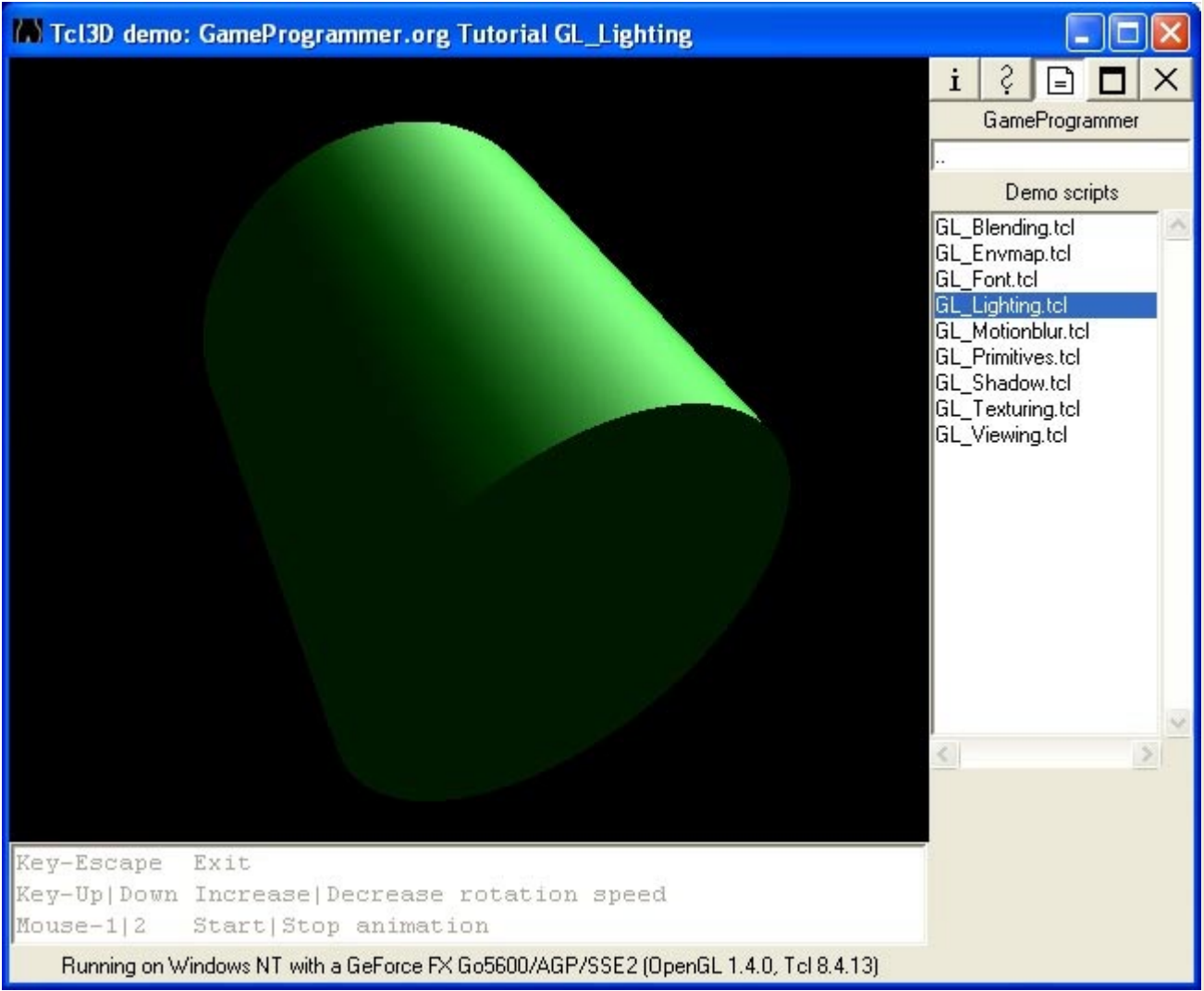
GL_Font.tcl

Tutorial from www.GameProgrammer.org
 Bitmap fonts

Original code Copyright 2005 by Vahid Kazemi

Modified for Tcl3D by Paul Obermeier 2006/09/15
 See www.tcl3d.org for the Tcl3D extension.

Demo:	GL_Lighting
Type:	GameProgrammer
Category:	TutorialsAndBooks
Root:	Contents



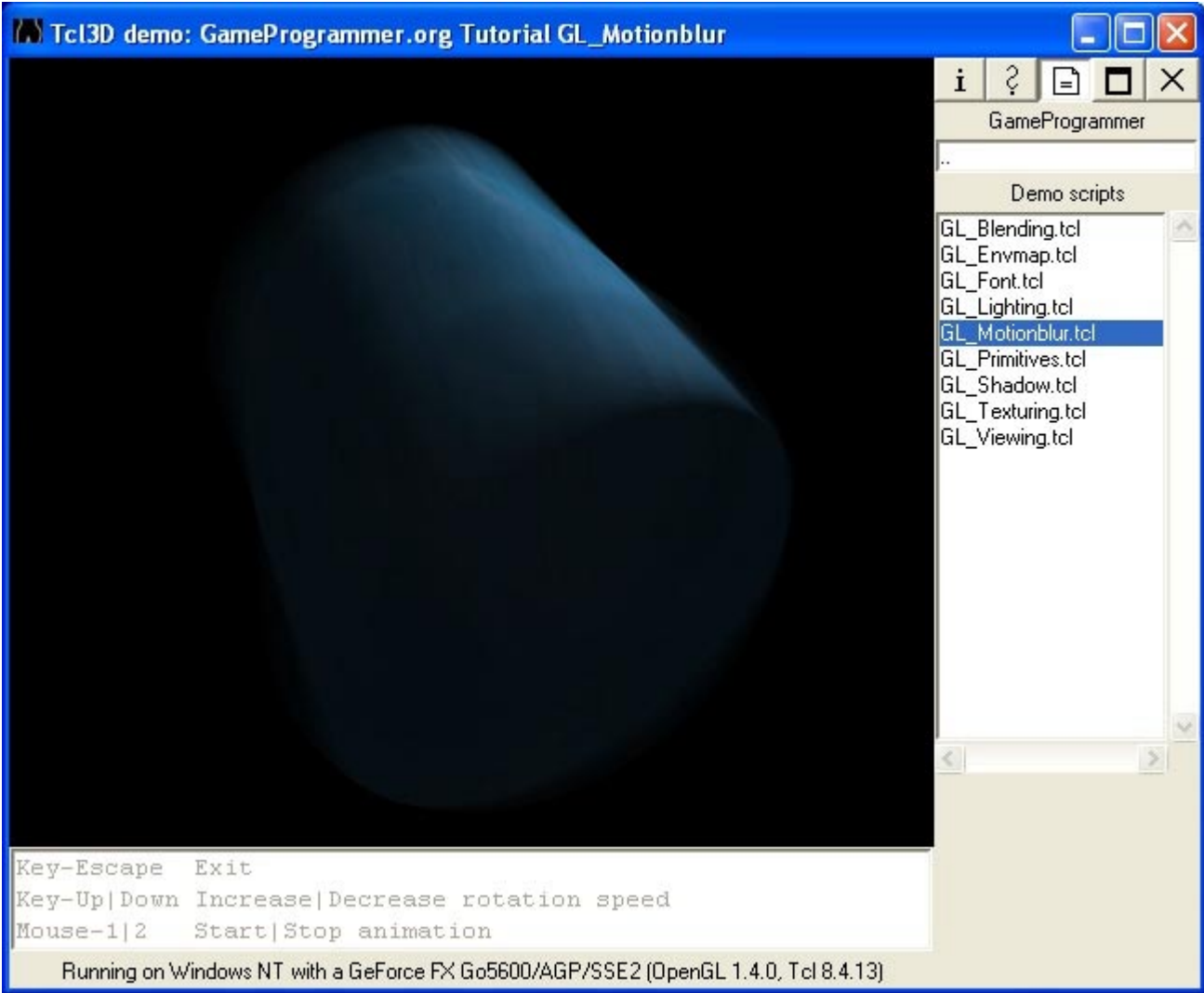
GL_Lighting.tcl

Tutorial from www.GameProgrammer.org
Turn the lights on!

Original code Copyright 2004 by Vahid Kazemi

Modified for Tcl3D by Paul Obermeier 2006/09/11
See www.tcl3d.org for the Tcl3D extension.

Demo:	GL_Motionblur
Type:	GameProgrammer
Category:	TutorialsAndBooks
Root:	Contents



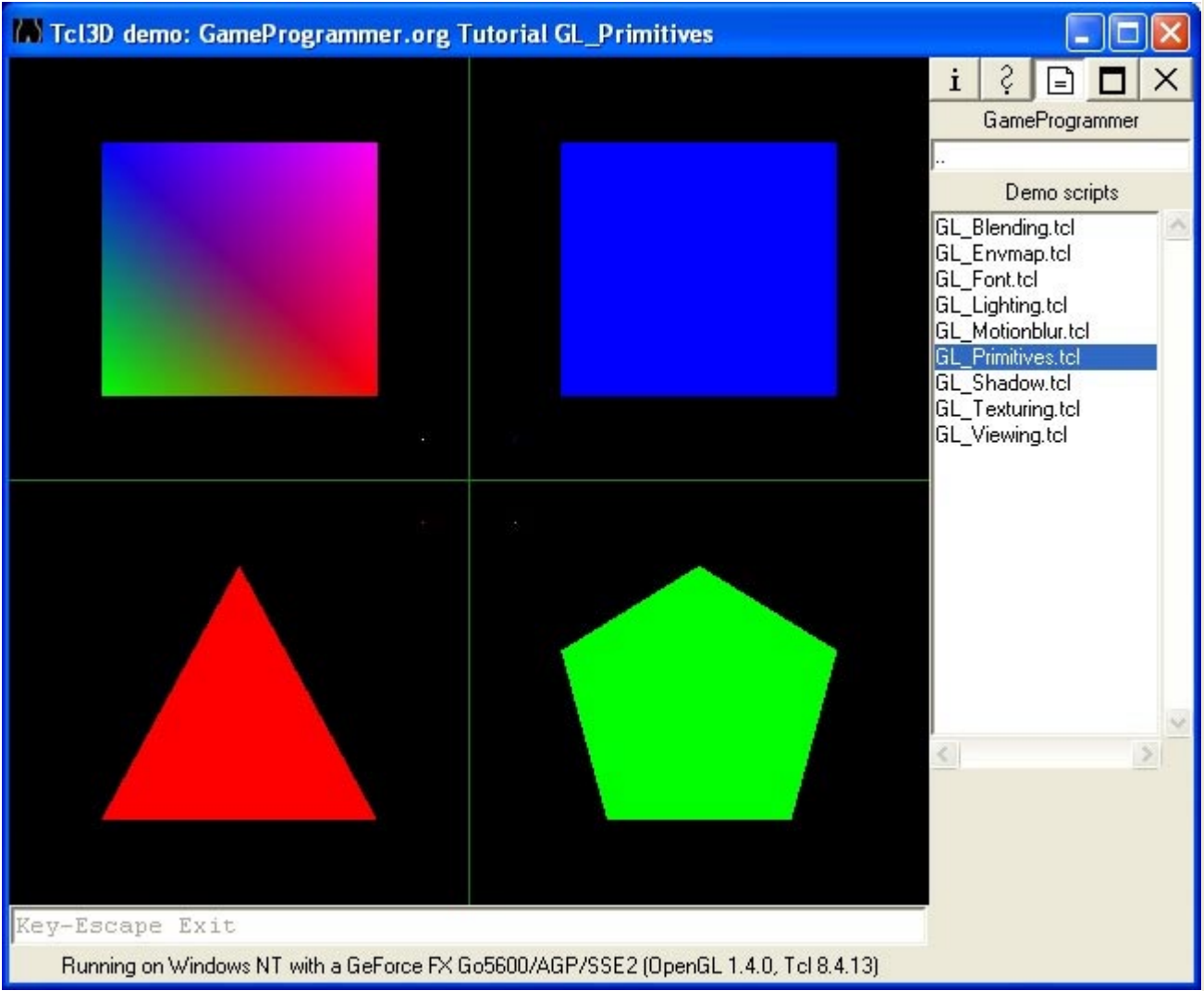
GL_Motionblur.tcl

Tutorial from www.GameProgrammer.org
Using Textures

Original code Copyright 2006 by Vahid Kazemi

Modified for Tcl3D by Paul Obermeier 2006/09/14
See www.tcl3d.org for the Tcl3D extension.

Demo:	GL_Primitives
Type:	GameProgrammer
Category:	TutorialsAndBooks
Root:	Contents



GL_Primitives.tcl

Tutorial from www.GameProgrammer.org
OpenGL Primitives.

Original code Copyright 2004 by Vahid Kazemi

Modified for Tcl3D by Paul Obermeier 2006/09/11
See www.tcl3d.org for the Tcl3D extension.

Demo:	GL_Shadow
Type:	GameProgrammer
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit
 Key-Up|Down Increase|Decrease rotation speed
 Mouse-1|2 Start|Stop animation

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

GL_Shadow.tcl

Tutorial from www.GameProgrammer.org
 Stencil shadows.

Original code Copyright 2005 by Vahid Kazemi

Modified for Tcl3D by Paul Obermeier 2006/09/10
 See www.tcl3d.org for the Tcl3D extension.

Demo:	GL_Texturing
Type:	GameProgrammer
Category:	TutorialsAndBooks
Root:	Contents

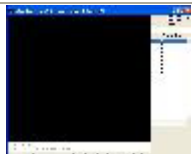
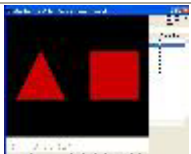
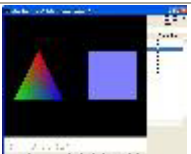
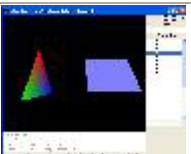
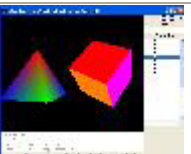
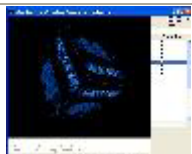
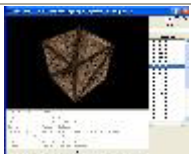
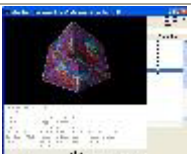

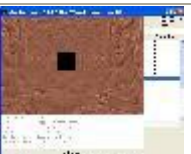

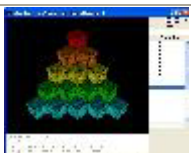



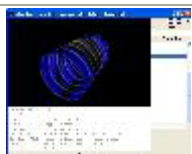

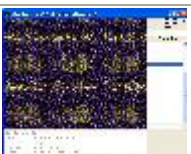



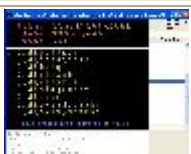
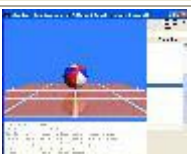
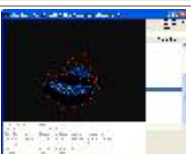
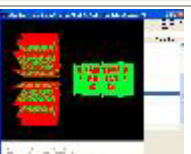



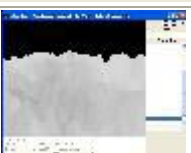

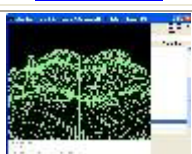
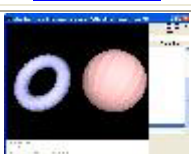
GL_Texturing.tcl

Tutorial from www.GameProgrammer.org
Using Textures

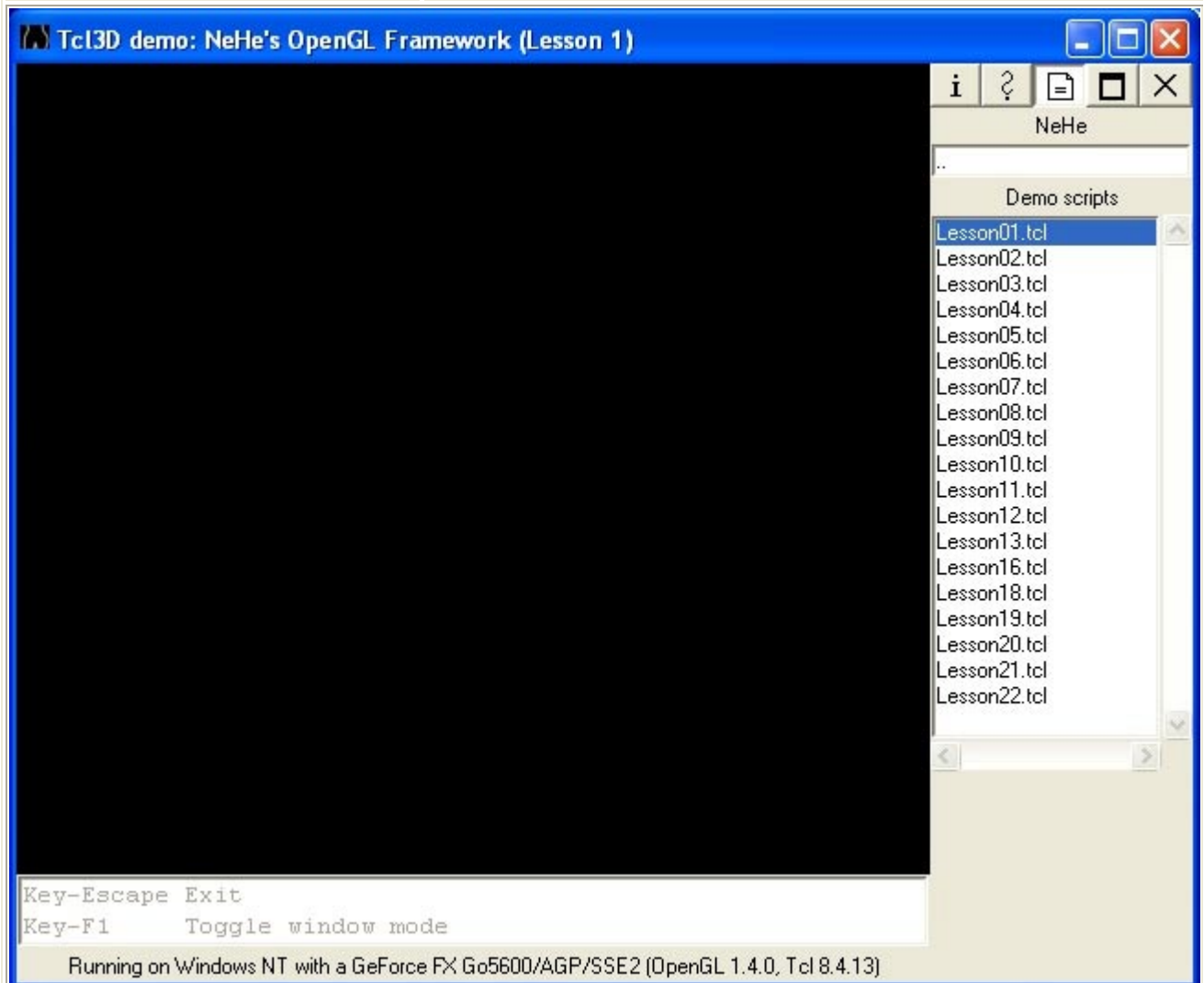
Original code Copyright 2004 by Vahid Kazemi

Modified for Tcl3D by Paul Obermeier 2006/09/12
See www.tcl3d.org for the Tcl3D extension.

Demo:	GL_Viewing
Type:	GameProgrammer
Category:	TutorialsAndBooks
Root:	Contents

Type:	NeHe			
Category:	TutorialsAndBooks			
Root:	Contents			
Some of the NeHe OpenGL tutorials have been ported to run with Tcl3D. Currently 32 out of 48 lessons are available.				
Original sources available at: http://nehe.gamedev.net/				
Available demos				
				
Lesson01	Lesson02	Lesson03	Lesson04	Lesson05
				
Lesson06	Lesson07	Lesson08	Lesson09	Lesson10
				
Lesson11	Lesson12	Lesson13	Lesson14	Lesson16
				
Lesson18	Lesson19	Lesson20	Lesson21	Lesson22
				
Lesson23	Lesson24	Lesson26	Lesson28	Lesson33
				
Lesson36	Lesson37	Lesson41	Lesson45	Lesson46
				
Lesson47	Lesson48			

Demo:	Lesson01
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



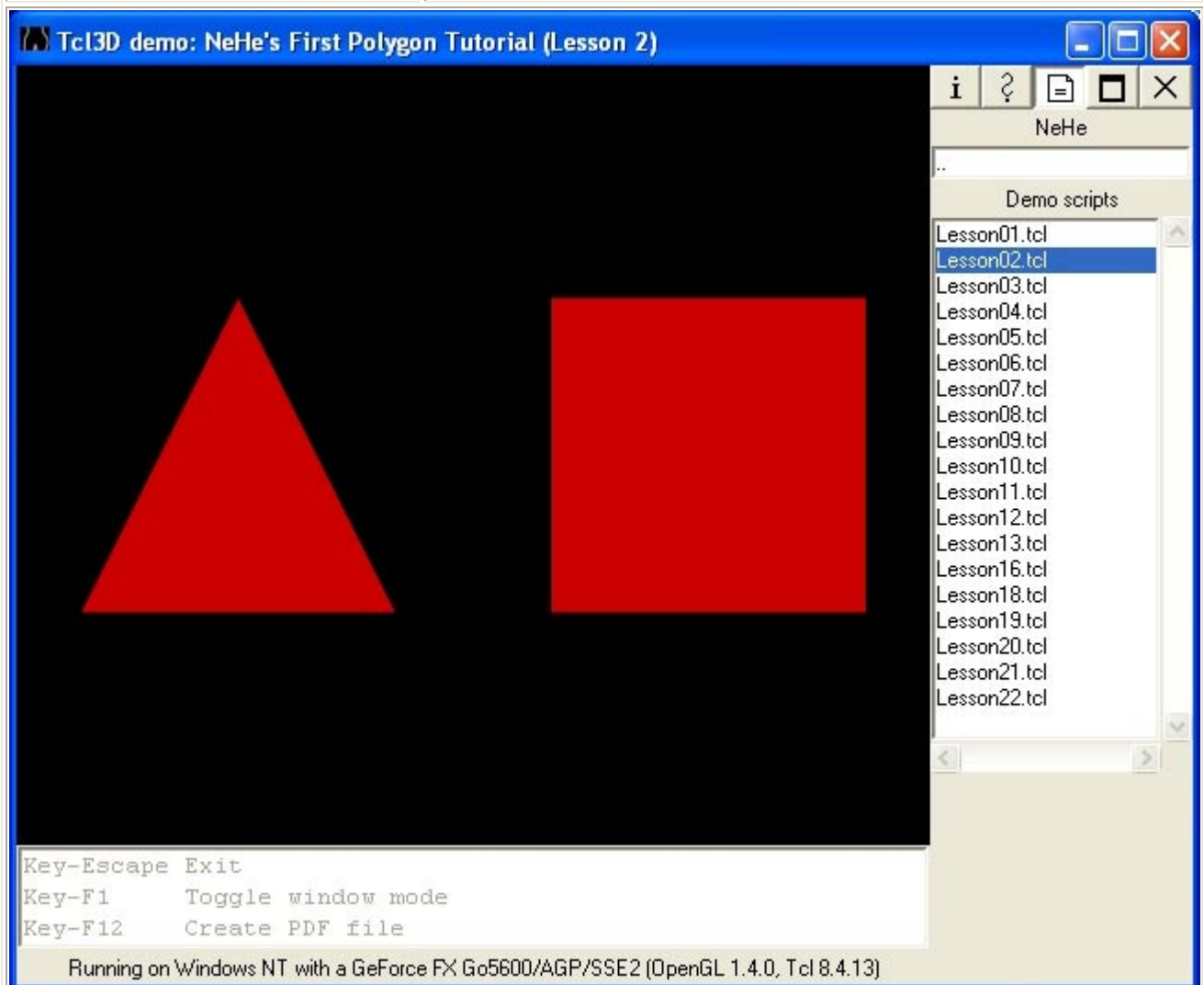
Lesson01.tcl

NeHe's OpenGL Framework

This Code Was Created By Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson02
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



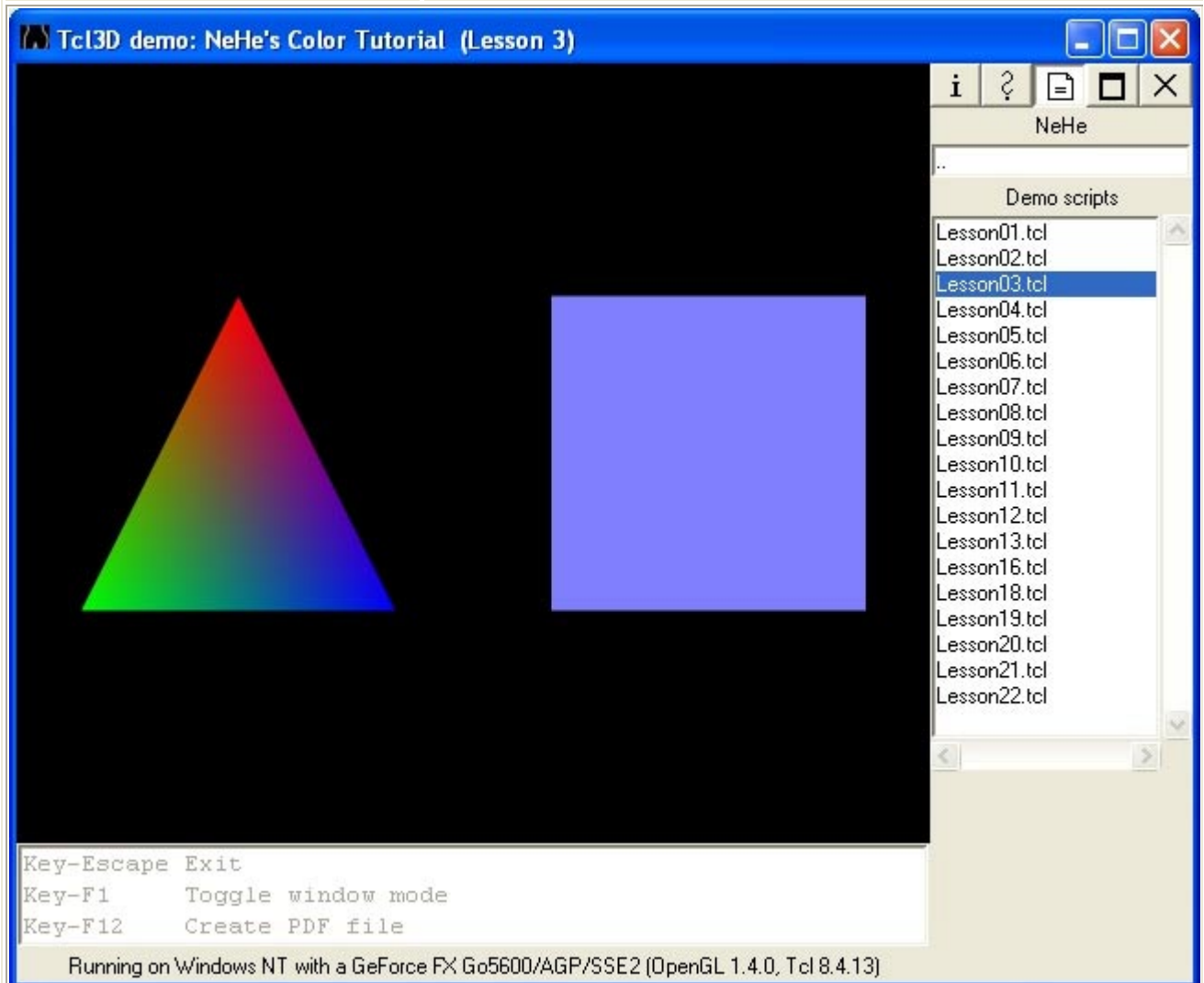
Lesson02.tcl

NeHe's First Polygon Tutorial

This Code Was Created By Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson03
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



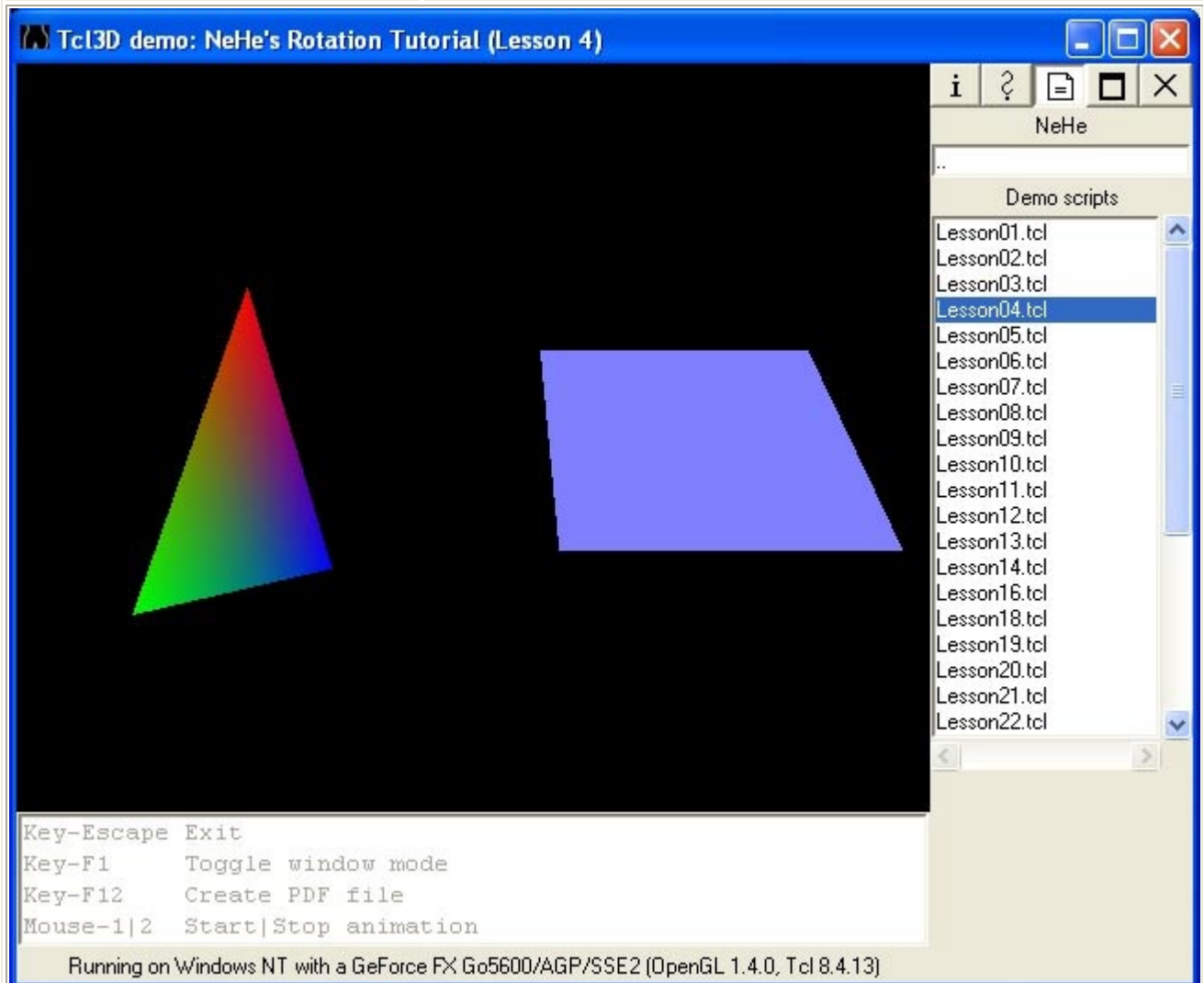
Lesson03.tcl

NeHe's Color Tutorial

This Code Was Created By Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson04
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



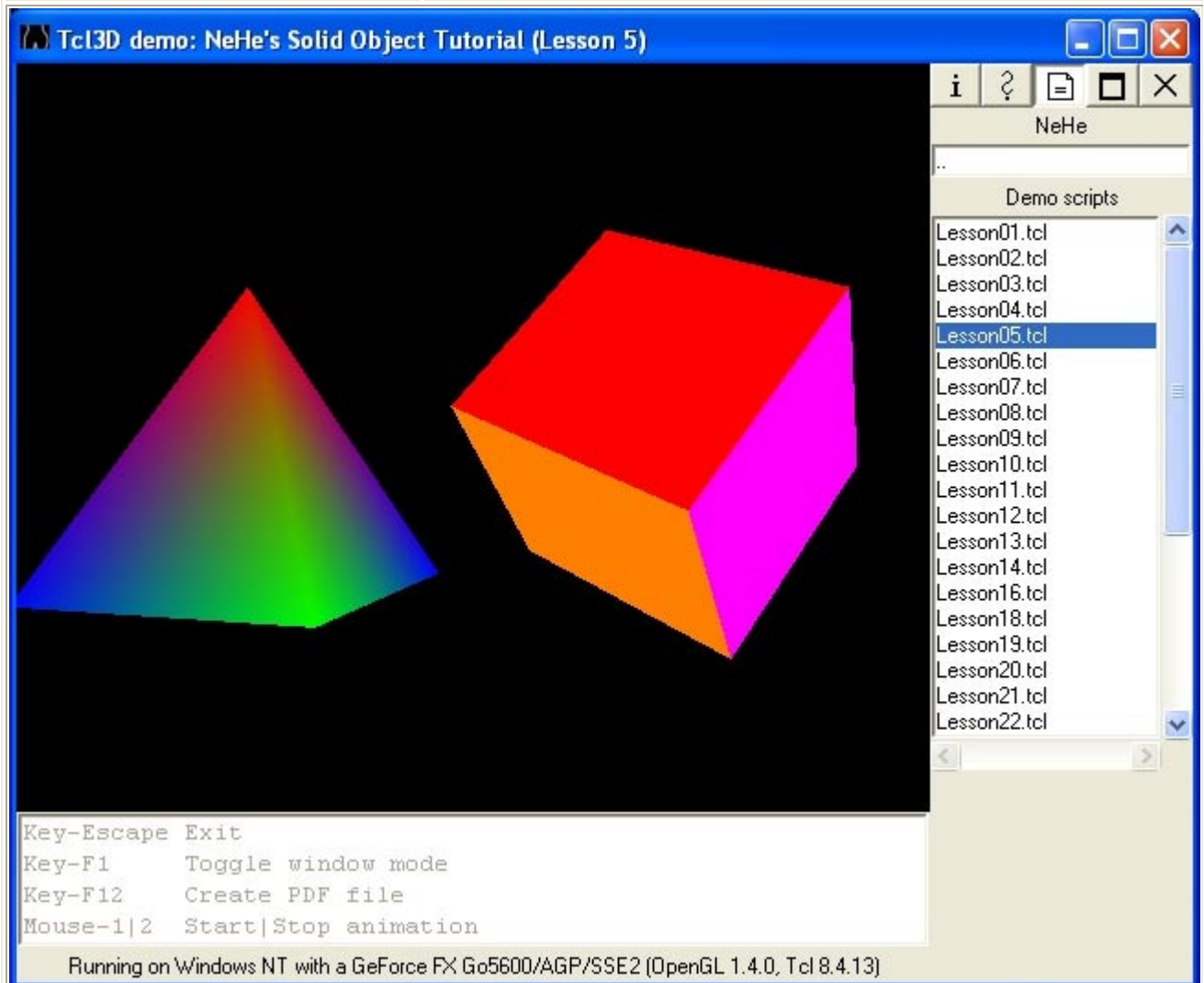
Lesson04.tcl

NeHe's Rotation Tutorial

This Code Was Created By Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson05
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



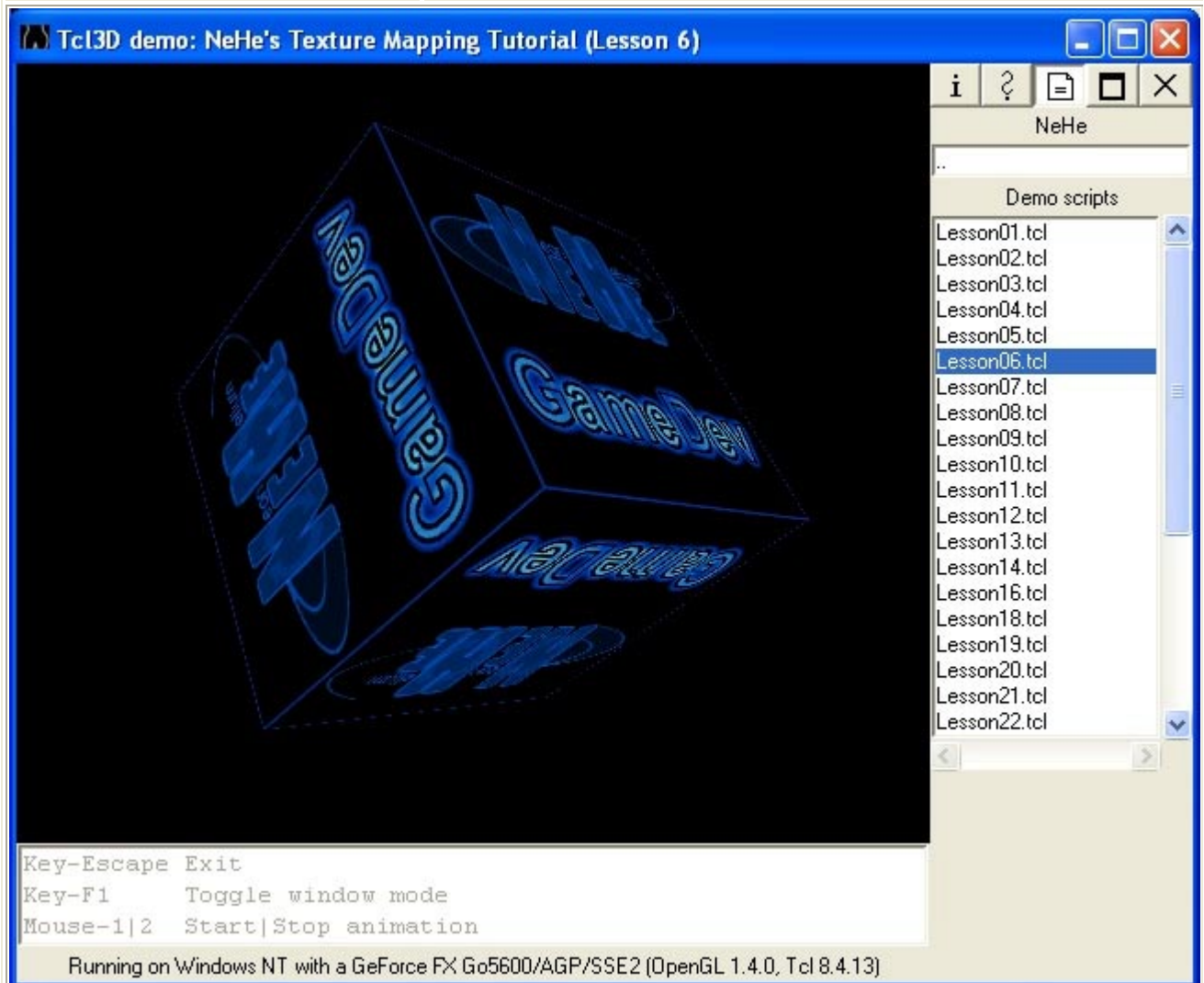
Lesson05.tcl

NeHe's Solid Object Tutorial

This Code Was Created By Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson06
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



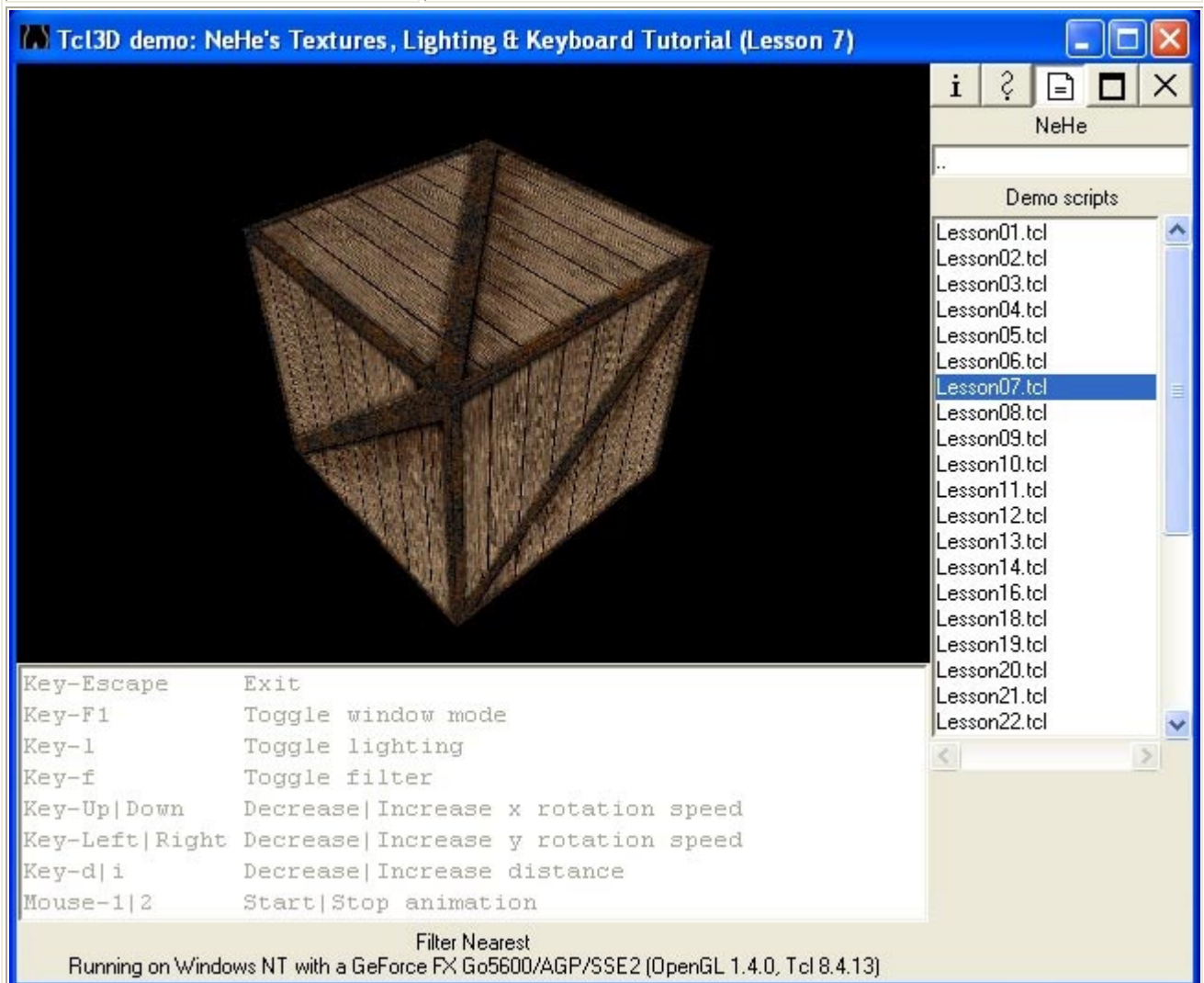
Lesson06.tcl

NeHe's Texture Mapping Tutorial

This Code Was Created By Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson07
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Lesson07.tcl

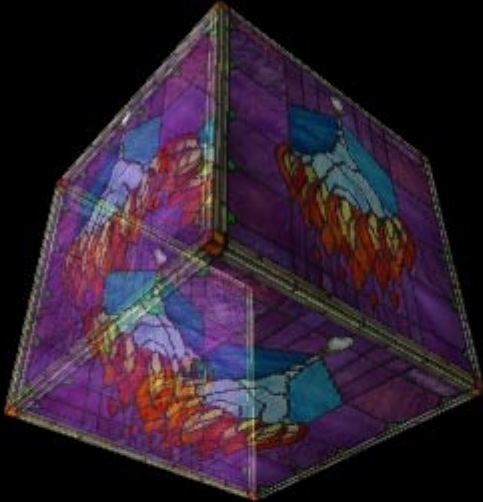
NeHe's Textures, Lighting & Keyboard Tutorial

This Code Was Created By Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson08
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents

Tcl3D demo: Tom Stanis & NeHe's Blending Tutorial (Lesson 8)



NeHe

Demo scripts

- Lesson01.tcl
- Lesson02.tcl
- Lesson03.tcl
- Lesson04.tcl
- Lesson05.tcl
- Lesson06.tcl
- Lesson07.tcl
- Lesson08.tcl**
- Lesson09.tcl
- Lesson10.tcl
- Lesson11.tcl
- Lesson12.tcl
- Lesson13.tcl
- Lesson14.tcl
- Lesson16.tcl
- Lesson18.tcl
- Lesson19.tcl
- Lesson20.tcl
- Lesson21.tcl
- Lesson22.tcl

Key-Escape Exit
 Key-F1 Toggle window mode
 Key-l Toggle lighting
 Key-f Toggle filter
 Key-b Toggle blending
 Key-Up|Down Decrease|Increase x rotation speed
 Key-Left|Right Decrease|Increase y rotation speed
 Key-d|i Decrease|Increase distance
 Mouse-1|2 Start|Stop animation

Filter Nearest
 Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

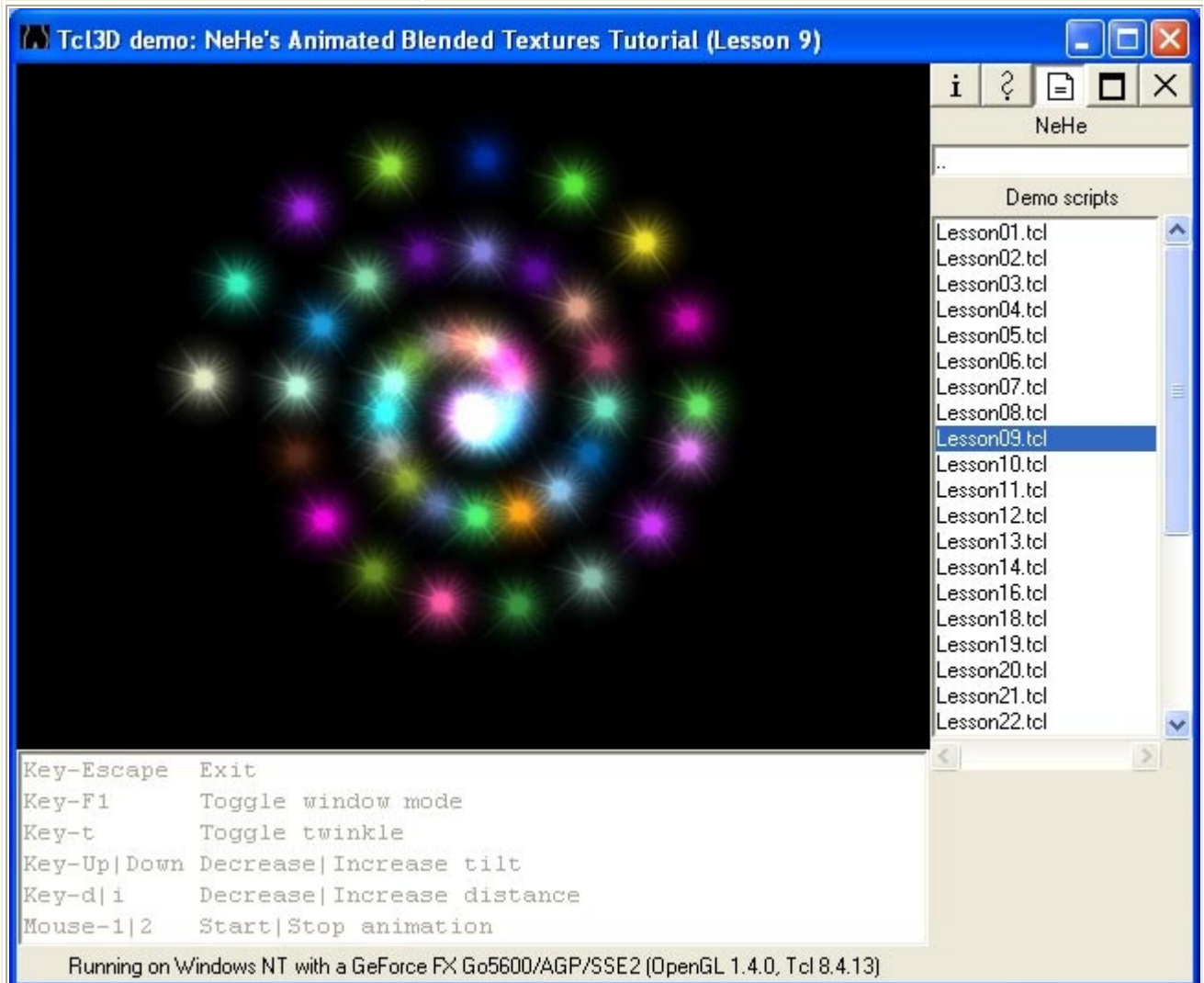
Lesson08.tcl

Tom Stanis & NeHe's Blending Tutorial

This Code Was Created By Tom Stanis / Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson09
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Lesson09.tcl

NeHe's Animated Blended Textures Tutorial

This Code Was Created By Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson10
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit
 Key-F1 Toggle window mode
 Key-b Toggle blending
 Key-f Toggle filter
 Key-Up|Down Move forth|back
 Key-Left|Right Look left|right
 Key-PgUp|PgDn Look up|down

Filter MipMapped
 Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

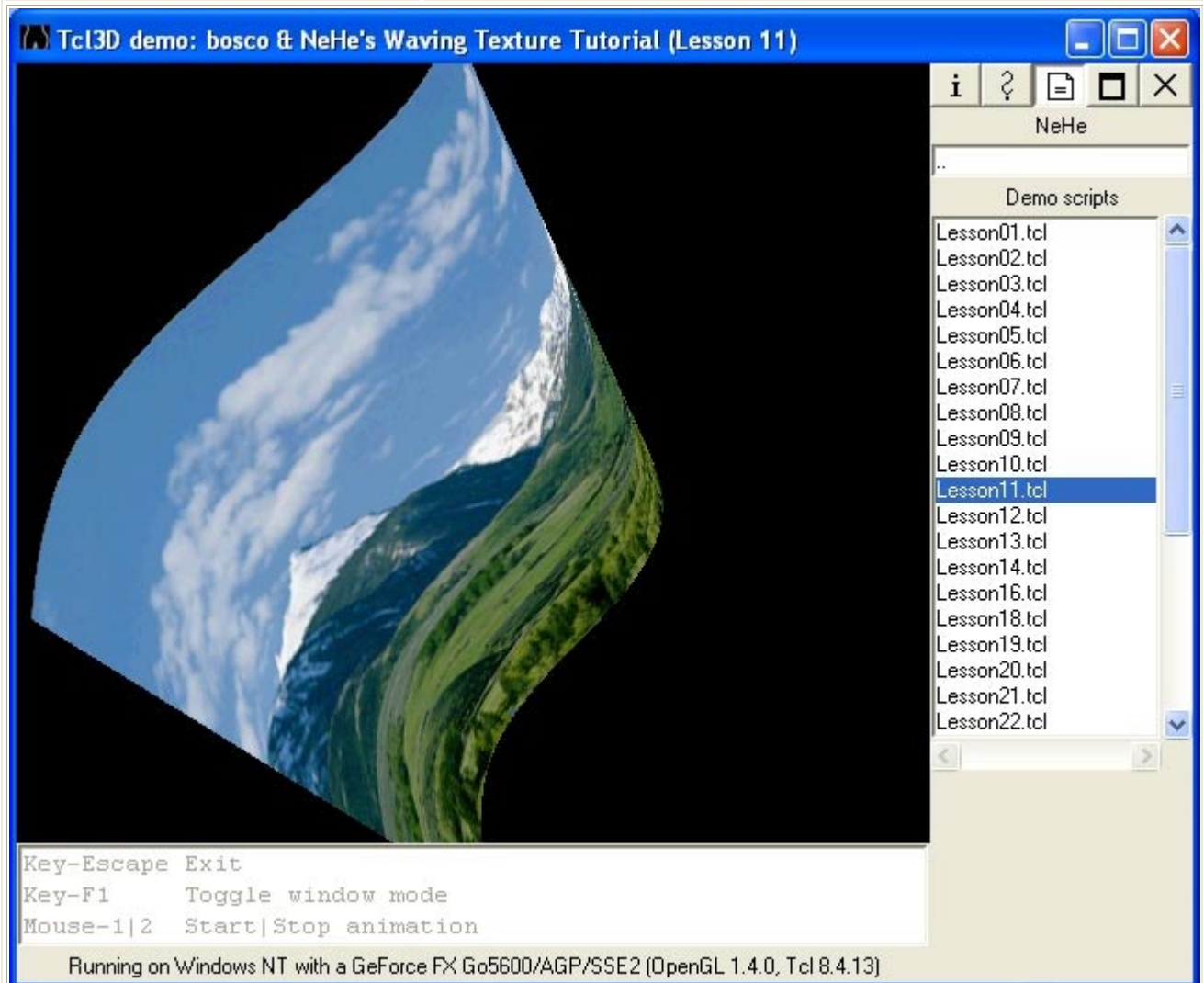
Lesson10.tcl

Lionel Brits & NeHe's 3D World Tutorial

This Code Was Created By Lionel Brits & Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson11
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



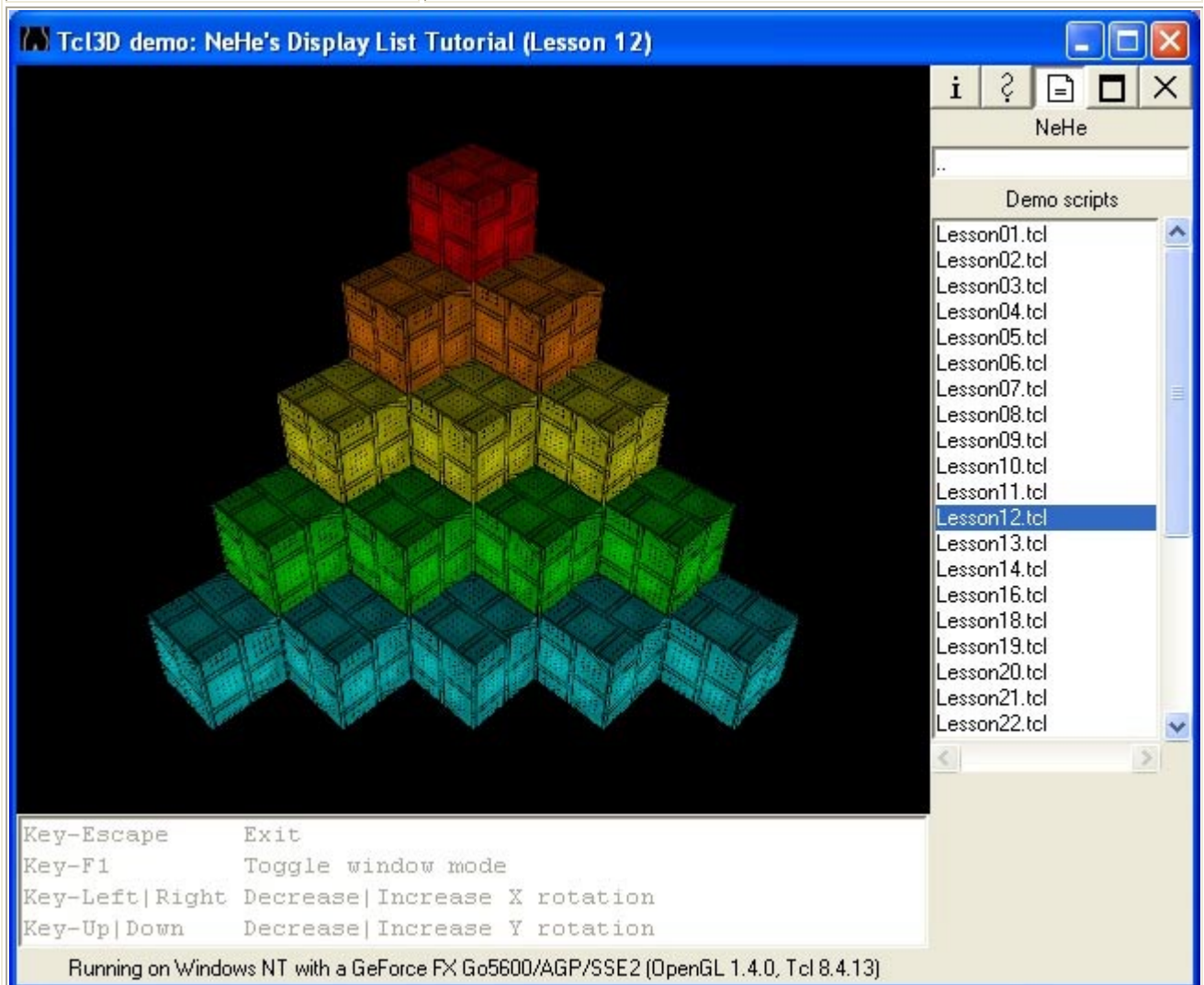
Lesson11.tcl

bosco & NeHe's Waving Texture Tutorial

This Code Was Created By bosco / Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson12
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



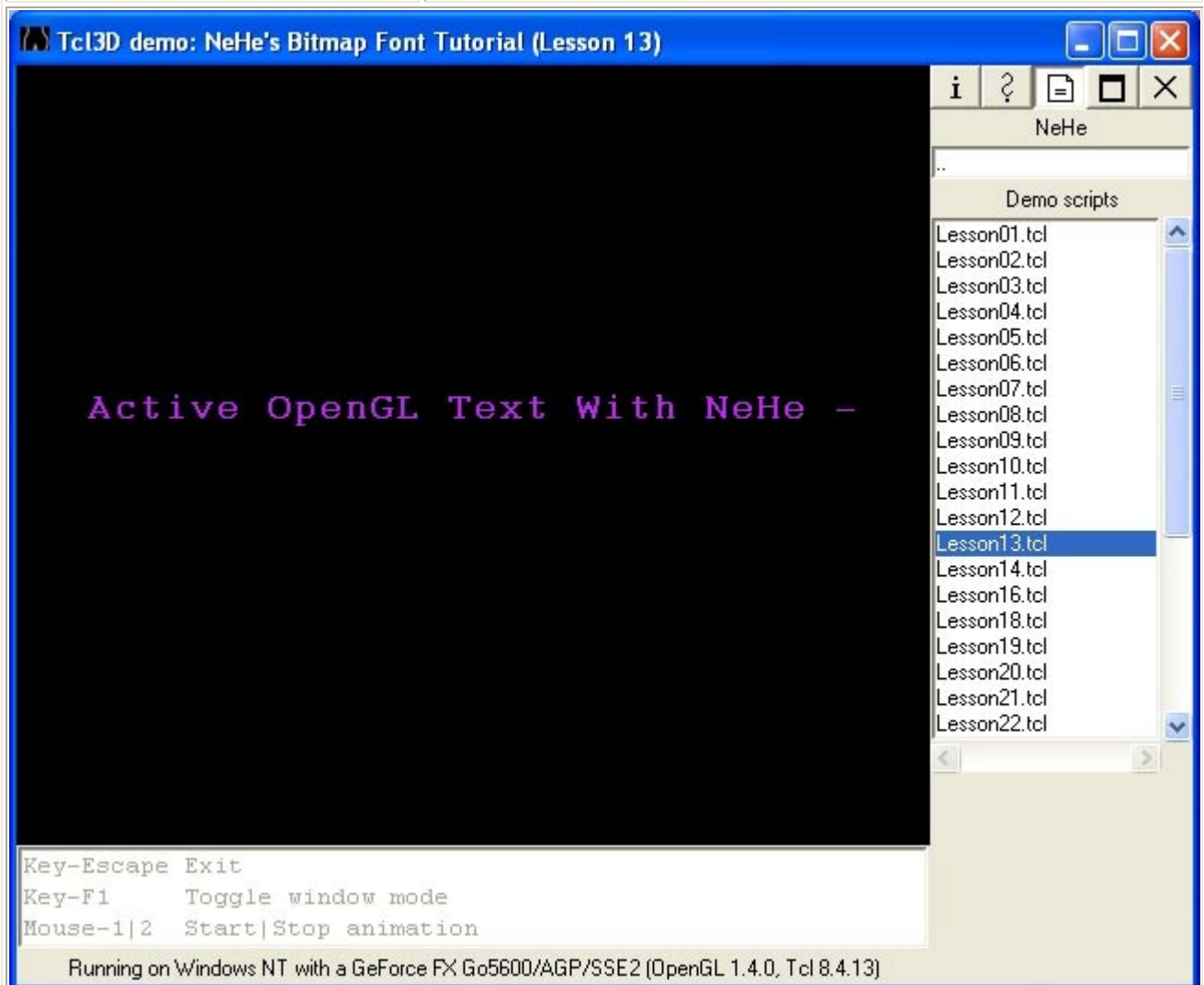
Lesson12.tcl

NeHe's Display List Tutorial

This Code Was Created By Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson13
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



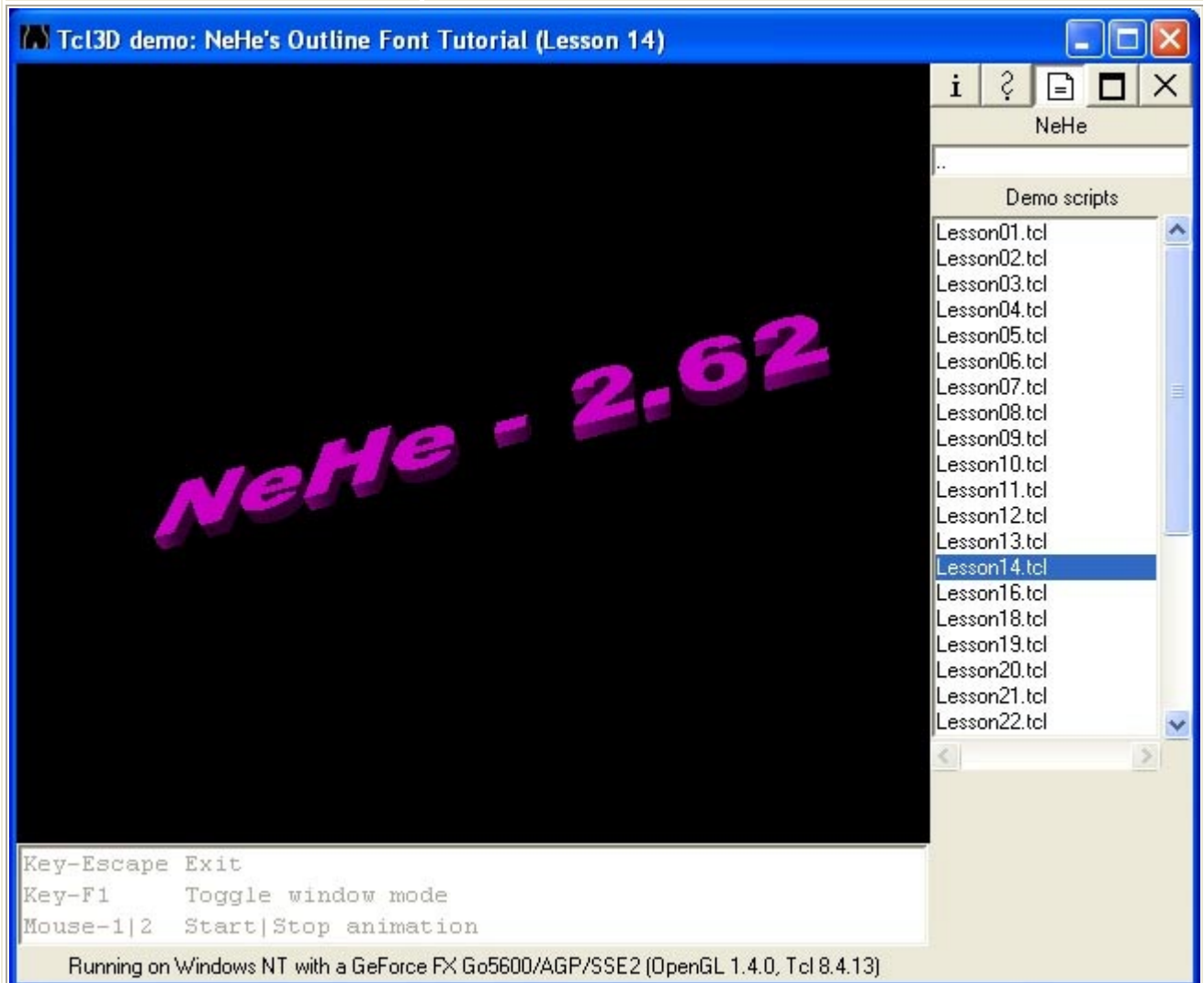
Lesson13.tcl

NeHe's Bitmap Font Tutorial

This Code Was Created By Jeff Molofee 2000
 Modified by Shawn T. to handle (%3.2f, num) parameters.
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing The Base Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson14
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents




Lesson14.tcl

NeHe's Outline Font Tutorial

This Code Was Created By Jeff Molofee 2000
 Modified by Shawn T. to handle (%3.2f, num) parameters.
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing The Base Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/26
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson16
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Tcl3D demo: Chris Aliotta & NeHe's Fog Tutorial (Lesson 16)

NeHe

Demo scripts

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- Lesson02.tcl
- Lesson03.tcl
- Lesson04.tcl
- Lesson05.tcl
- Lesson06.tcl
- Lesson07.tcl
- Lesson08.tcl
- Lesson09.tcl
- Lesson10.tcl
- Lesson11.tcl
- Lesson12.tcl
- Lesson13.tcl
- Lesson14.tcl
- Lesson16.tcl**
- Lesson18.tcl
- Lesson19.tcl
- Lesson20.tcl
- Lesson21.tcl
- Lesson22.tcl

Key-Escape Exit

Key-F1 Toggle window mode

Key-l Toggle lighting

Key-f Toggle texture filter

Key-g Toggle fog filter

Key-Up|Down Decrease|Increase x rotation speed

Key-Left|Right Decrease|Increase y rotation speed

Key-d|i Decrease|Increase distance

Mouse-1|2 Start|Stop animation

Fog GL_EXP2

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

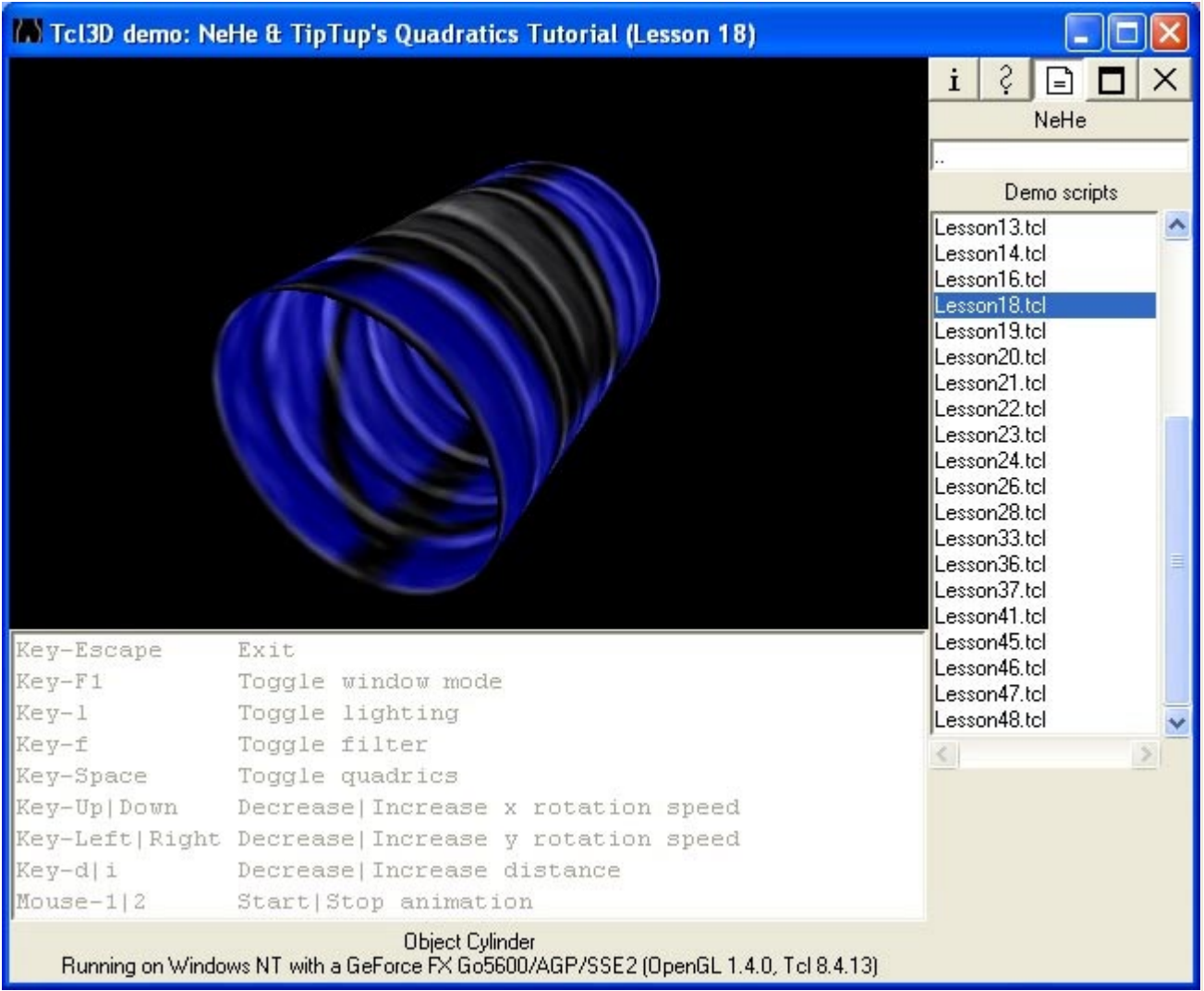
Lesson16.tcl

Chris Aliotta & NeHe's Fog Tutorial

This Code Was Created By Christopher Aliotta & Jeff Molofee 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson18
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Key-Escape Exit

Key-F1 Toggle window mode

Key-l Toggle lighting

Key-f Toggle filter

Key-Space Toggle quadrics

Key-Up|Down Decrease|Increase x rotation speed

Key-Left|Right Decrease|Increase y rotation speed

Key-d|i Decrease|Increase distance

Mouse-1|2 Start|Stop animation

Object Cylinder

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

Lesson18.tcl

NeHe & TipTup's Quadratics Tutorial

This Code Was Created By Jeff Molofee and GB Schmick 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing This Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit Our Sites At www.tiptup.com and nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/01/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson19
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents

Tcl3D demo: NeHe's Particle Tutorial (Lesson 19)

Key-Escape Exit
 Key-F1 Toggle window mode
 Key-Return Toggle rainbow mode
 Key-space Toggle colors
 Key-Tab Burst
 Key-8|2 Pull up|down
 Key-6|4 Pull left|right
 Key-Up|Down Increase upward|downward speed
 Key-Left|Right Increase left|right speed
 Key-d|i Decrease|Increase distance
 Mouse-1|2 Start|Stop animation

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

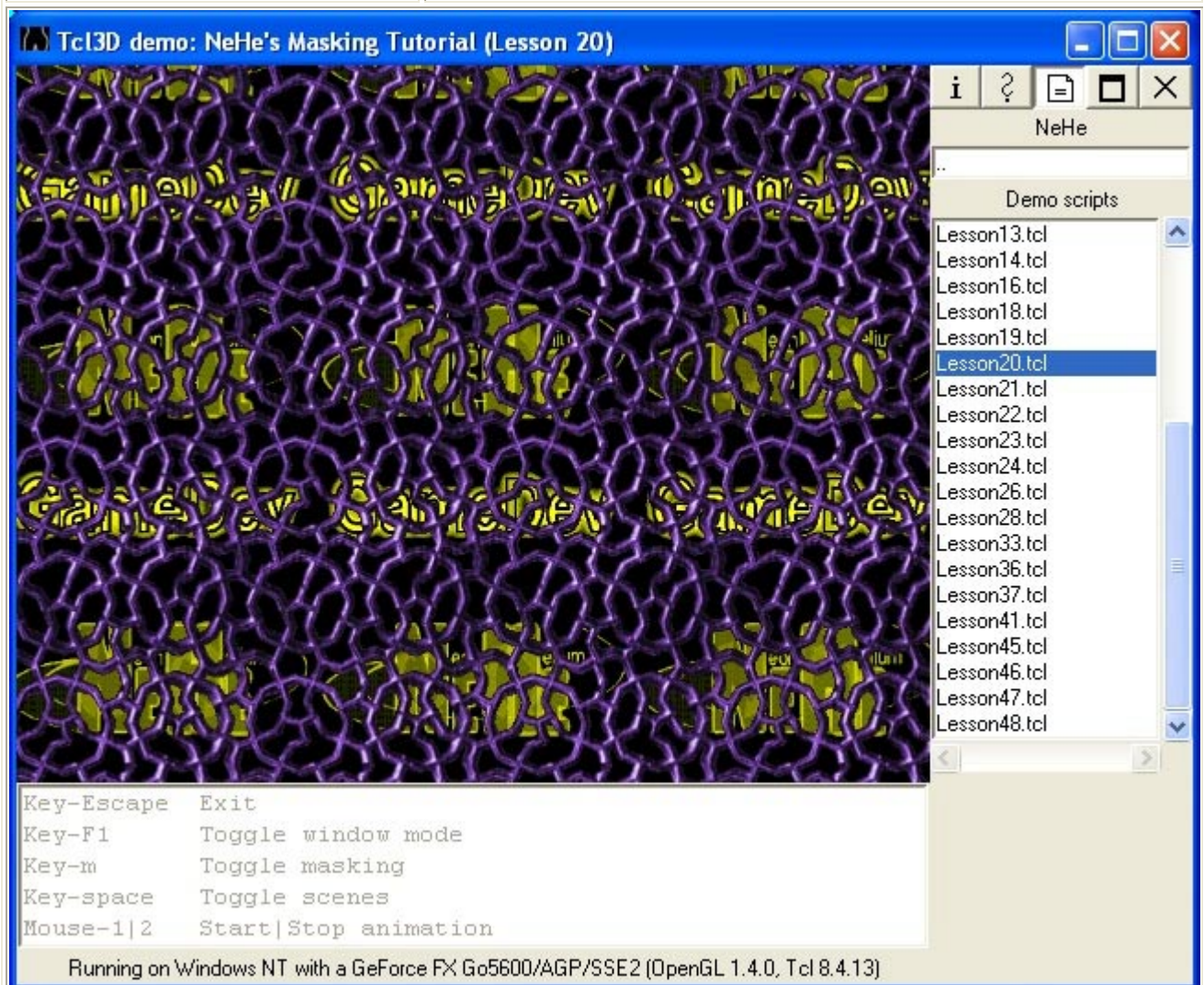
Lesson19.tcl

NeHe's Particle Tutorial

This Code Was Created By Jeff Molofee 2000
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/03/14
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson20
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Lesson20.tcl

NeHe's Masking Tutorial

This Code Was Created By Jeff Molofee 2000
 And Modified By Giuseppe D'Agata (waveform@tiscalinet.it)
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/03/14
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson21
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Lesson21.tcl

NeHe's Line Tutorial

This Code Was Created By Jeff Molofee 2000
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Modified for Tcl3D by Paul Obermeier 2006/03/14
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson22
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit

Key-F1 Toggle window mode

Key-e Toggle emboss

Key-m Toggle multitexturing

Key-b Toggle bump maps

Key-f Toggle filter

Key-Up|Down Decrease|Increase x rotation speed

Key-Left|Right Decrease|Increase y rotation speed

Key-d|i Decrease|Increase distance

Mouse-1|2 Start|Stop animation

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

Lesson22.tcl

NeHe's GL_ARB_multitexture & Bump Mapping Tutorial

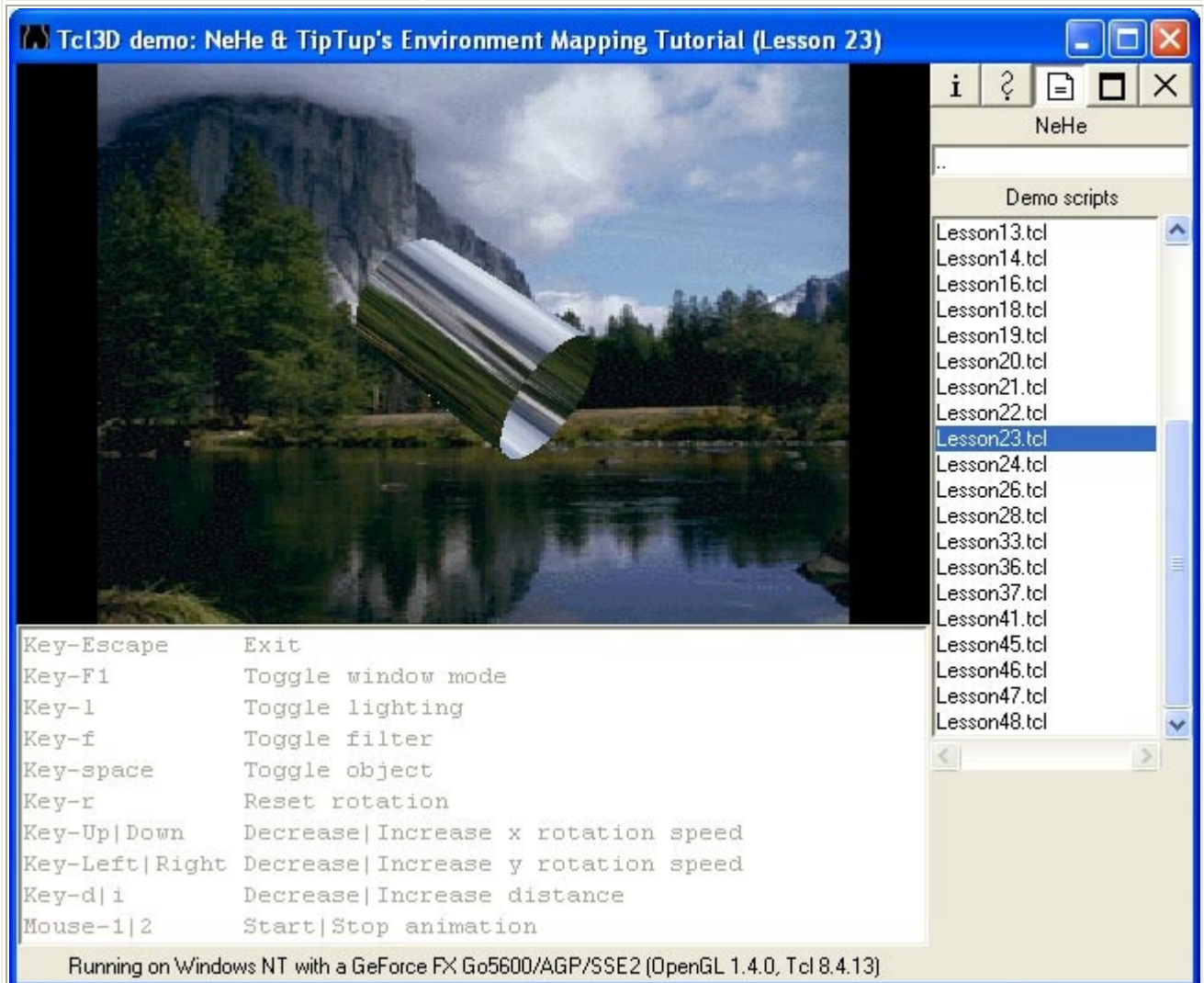
This Code Was Created by Jens Schneider (WizardSoft) 2000
Lesson22 to the series of OpenGL tutorials by NeHe-Production

This Code is loosely based upon Lesson06 by Jeff Molofee.
contact me at: schneide@pool.informatik.rwth-aachen.de

Basecode Was Created By Jeff Molofee 2000
If You've Found This Code Useful, Please Let Me Know.
Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/16
See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson23
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Lesson23.tcl

NeHe & TipTup's Environment Mapping Tutorial

This Code Was Created By Jeff Molofee and GB Schmick 2000
 A HUGE Thanks To Fredric Echols For Cleaning Up
 And Optimizing The Base Code, Making It More Flexible!
 If You've Found This Code Useful, Please Let Me Know.
 Visit Our Sites At www.tiptup.com and nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/27
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson24
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents

Tcl3D demo: NeHe's Token, Extensions, Scissoring & TGA Loading Tutorial (Lesson 24)

Renderer *GeForce FX Go5600/AGP/SSE2*
 Vendor *NVIDIA Corporation*
 Version *1.4.0*

1 GL_ARB_depth_texture
 2 GL_ARB_fragment_program
 3 GL_ARB_imaging
 4 GL_ARB_multisample
 5 GL_ARB_multitexture
 6 GL_ARB_point_parameters
 7 GL_ARB_shadow
 8 GL_ARB_texture_border_clamp
 9 GL_ARB_texture_compression

NeHe Productions (powered by Tcl3D)

Key-Escape	Exit
Key-F1	Toggle window mode
Key-Up Down	Line up down
Key-PgUp PgDown	Page up down
Key-Home End	First last page

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

Lesson24.tcl

NeHe's Token, Extensions, Scissoring & TGA Loading Tutorial

This Code Was Created By Jeff Molofee 2000
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/25
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson26
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit
 Key-F1 Toggle window mode
 Key-Up|Down Decrease|Increase x rotation speed
 Key-Left|Right Decrease|Increase y rotation speed
 Key-PgDn|PgUp Decrease|Increase height
 Key-d|i Decrease|Increase distance
 Mouse-1|2 Start|Stop animation

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

Lesson26.tcl

Banu Octavian & NeHe's Stencil & Reflection Tutorial

This code has been created by Banu Octavian aka Choko - 20 may 2000 and uses NeHe tutorials as a starting point (window initialization, texture loading, GL initialization and code for keypresses) - very good tutorials, Jeff. If anyone is interested about the presented algorithm please e-mail me at boct@romwest.ro

Code Commenting And Clean Up By Jeff Molofee (NeHe)
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/16
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson28
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit
 Key-F1 Toggle window mode
 Key-Up|Down Increase|Decrease resolution
 Key-Left|Right Increase|Decrease rotation angle
 Key-space Toggle control point drawing
 Mouse-1 Start animation
 Mouse-2 Stop animation

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

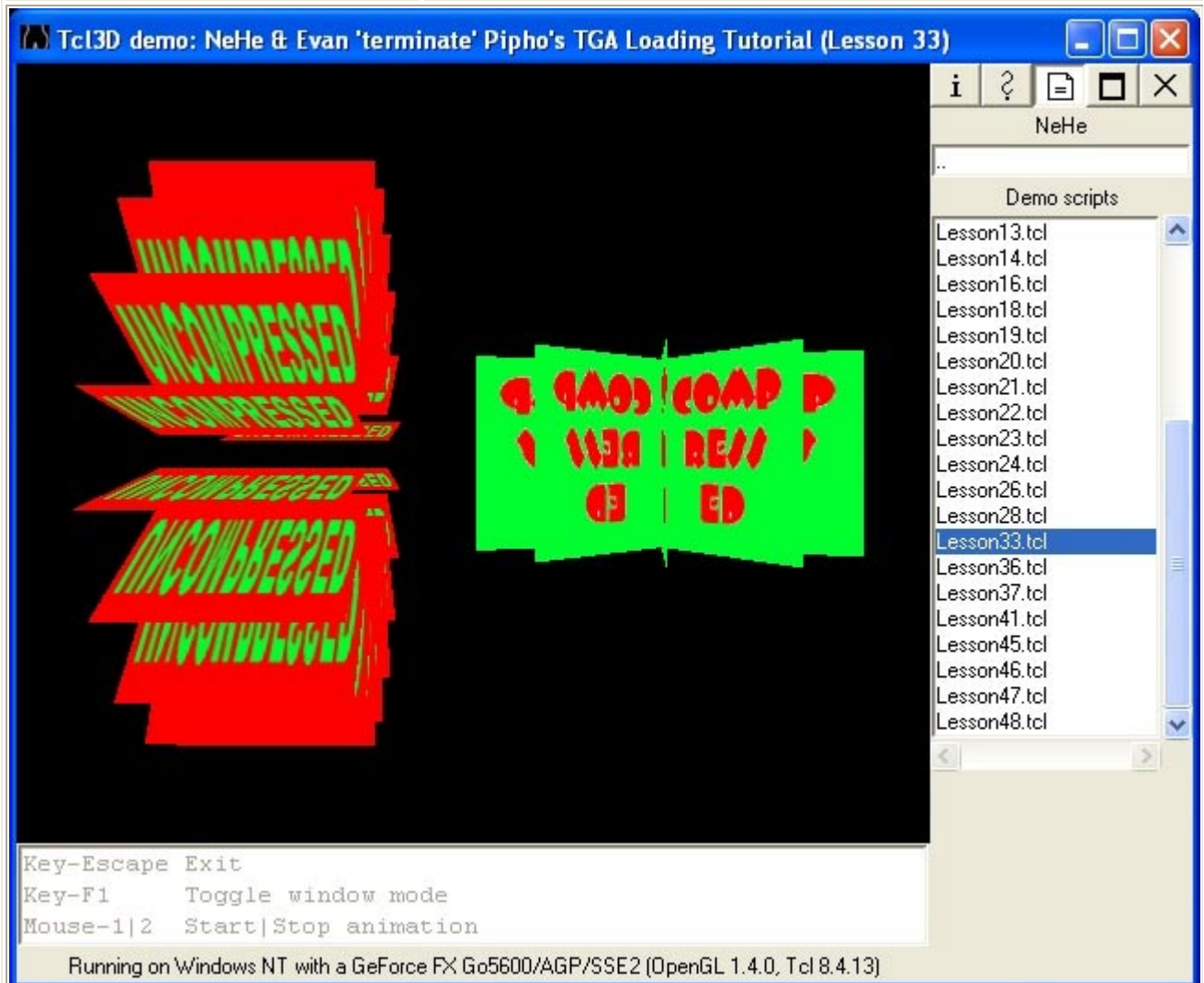
Lesson28.tcl

David Nikdel & NeHe's Bezier Tutorial

This Code Was Published By Jeff Molofee 2000
 Code Was Created By David Nikdel For NeHe Productions
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/29
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson33
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Lesson33.tcl

NeHe & Evan 'terminate' Piphos TGA Loading Tutorial

Loading Uncompressed and Compressed .TGA Files with the Img extension.

This Code Was Created By Evan Piphos
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/16
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson36
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit
 Key-F1 Toggle window mode
 Mouse-1|2 Start|Stop animation

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

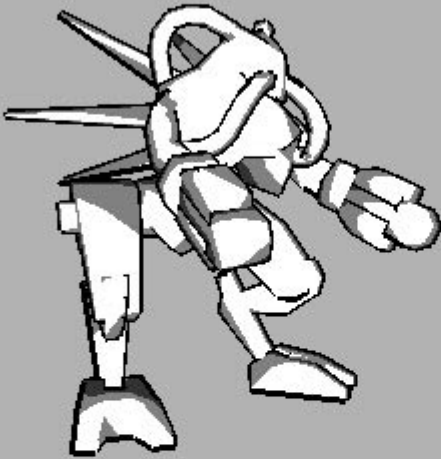
Lesson36.tcl

Dario Corno's Radial Blur & Rendering To A Texture Tutorial

If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/23
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson37
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Key-Escape Exit
 Key-F1 Toggle window mode
 Key-o Toggle optimized vs. simple version
 Key-1 Toggle outline draw
 Key-2 Toggle outline smooth
 Key-Up|Down Increase|Decrease outline width
 Mouse-1|2 Start|Stop animation

Draw: 0 msec Outline: 0 msec

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

NeHe

Demo scripts

- Lesson13.tcl
- Lesson14.tcl
- Lesson16.tcl
- Lesson18.tcl
- Lesson19.tcl
- Lesson20.tcl
- Lesson21.tcl
- Lesson22.tcl
- Lesson23.tcl
- Lesson24.tcl
- Lesson26.tcl
- Lesson28.tcl
- Lesson33.tcl
- Lesson36.tcl
- Lesson37.tcl**
- Lesson41.tcl
- Lesson45.tcl
- Lesson46.tcl
- Lesson47.tcl
- Lesson48.tcl

Lesson37.tcl


Sami Hamlaoui's Cel-Shading Code

Note: The original article for this code can be found at:
<http://www.gamedev.net/reference/programming/features/celshading>

If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/22
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson41
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Lesson41.tcl

NeHe's Volumetric Fog Tutorial

This Code Was Created By Jeff Molofee 2003
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/27
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson45
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents

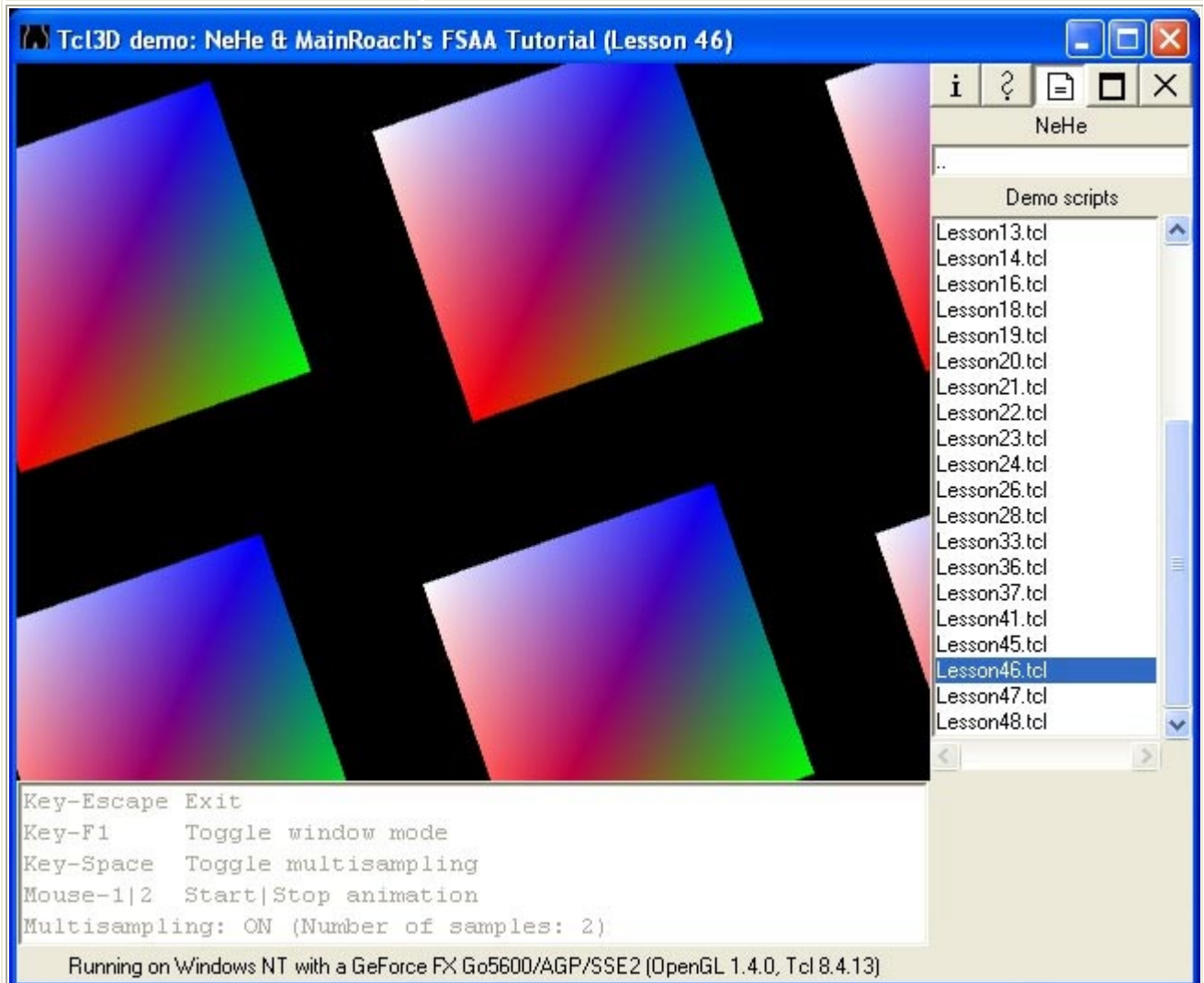
Lesson26.tcl

Paul Frazee's Vertex Buffer Object Tutorial

Code Commmenting And Clean Up By Jeff Molofee (NeHe)
 If You've Found This Code Useful, Please Let Me Know.
 Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/17
 See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson46
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Lesson46.tcl

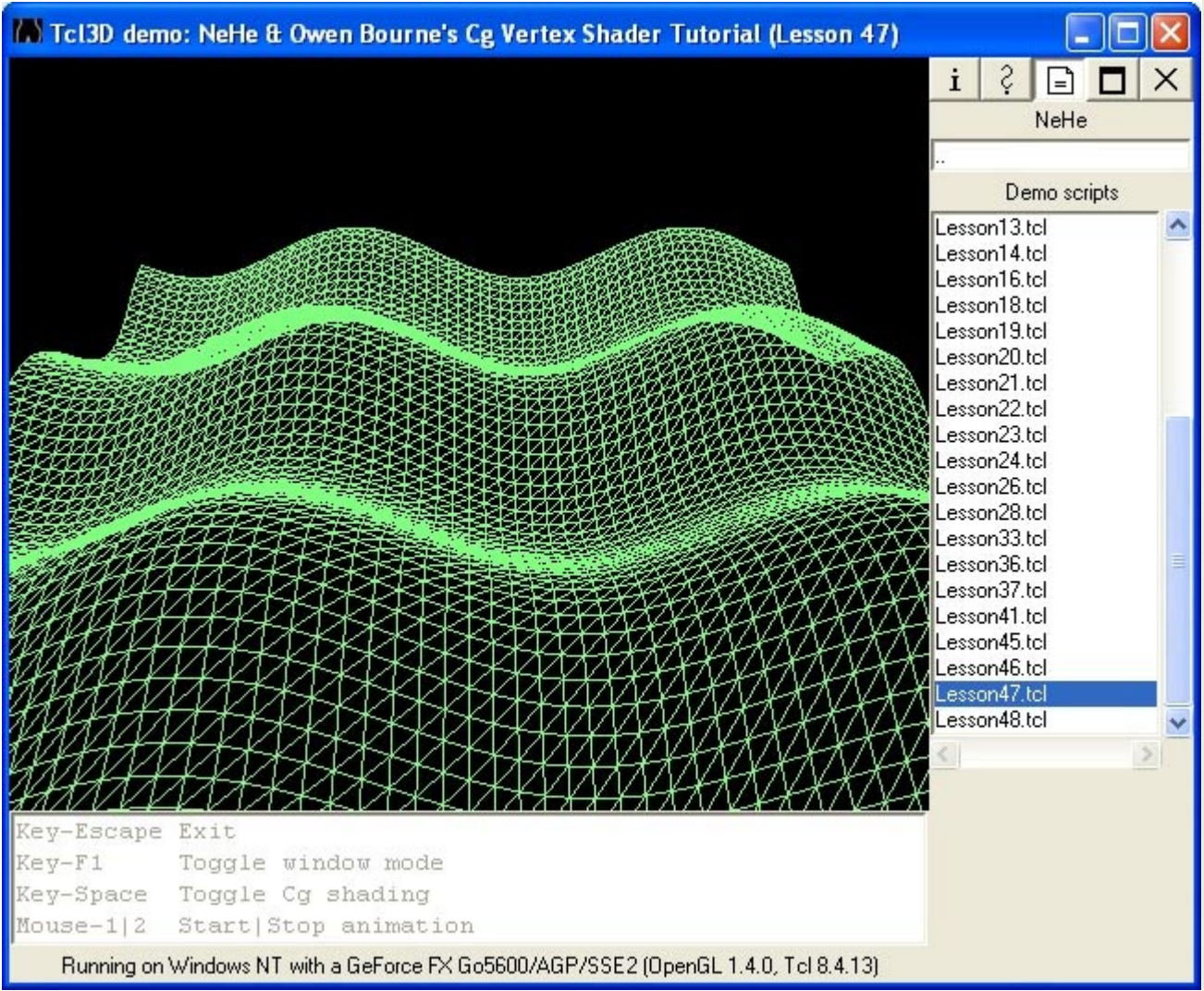
NeHe & MainRoach's FSAA Tutorial

This Code Was Created By Jeff Molofee 2001
and Colt McAnlis (MainRoach).
If You've Found This Code Useful, Please Let Me Know.
Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/08/13
See www.tcl3d.org for the Tcl3D extension.

This demo uses the multisampling options built into tcl3dTogl starting from version 0.3.2.
Another way to set the number of samples is via the driver specific GUI under Windows, or by setting the environment variable `__GL_FSAA_MODE` under Linux.

Demo:	Lesson47
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



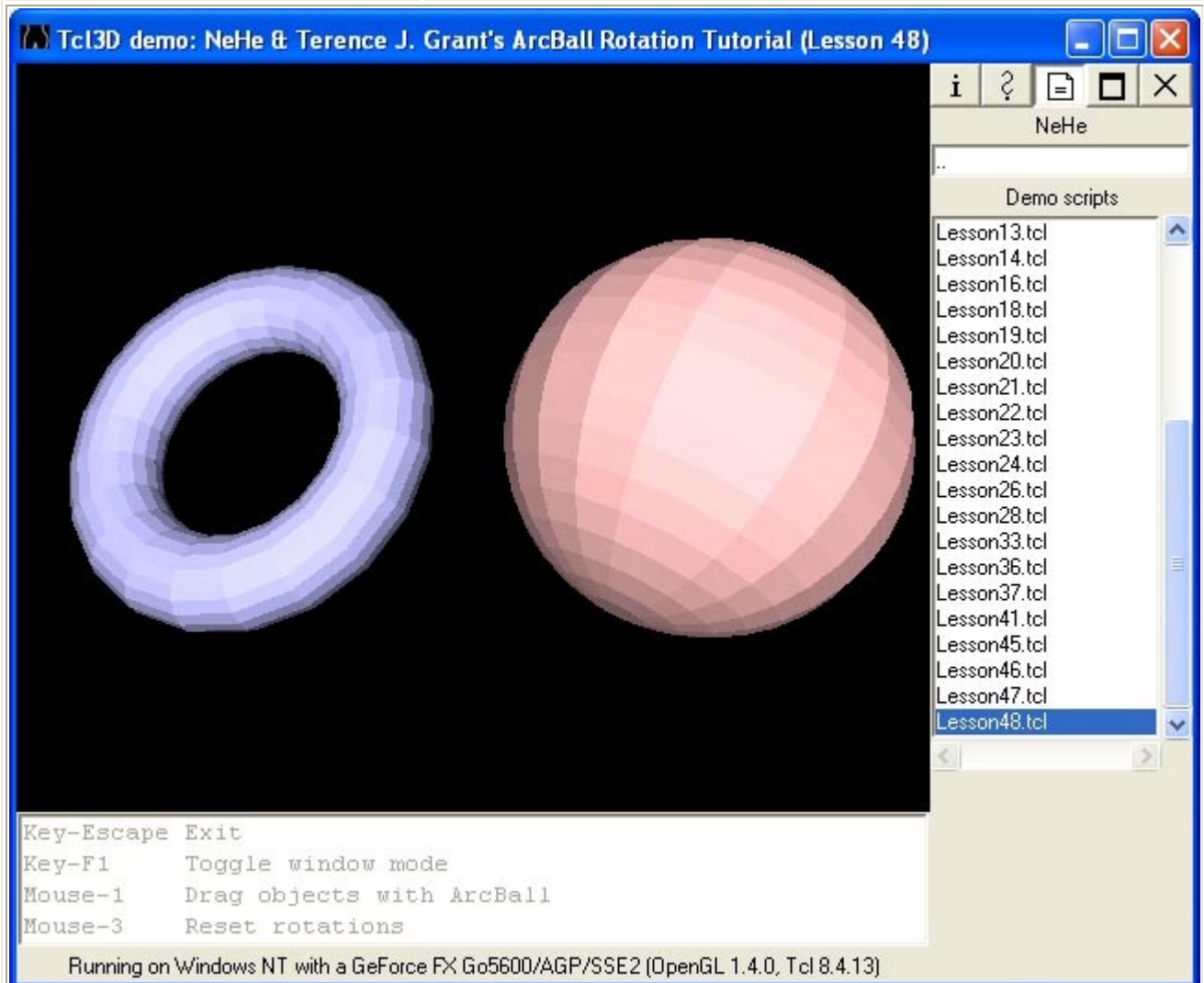
Lesson47.tcl

NeHe & Owen Bourne's Cg Vertex Shader Tutorial

If You've Found This Code Useful, Please Let Me Know.
Visit My Site At nehe.gamedev.net

Modified for Tcl3D by Paul Obermeier 2006/09/05
See www.tcl3d.org for the Tcl3D extension.

Demo:	Lesson48
Type:	NeHe
Category:	TutorialsAndBooks
Root:	Contents



Lesson48.tcl

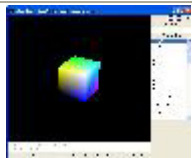
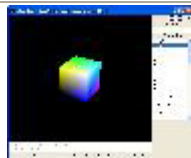
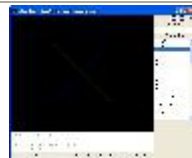
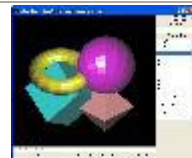
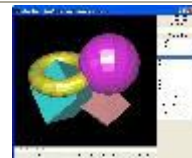
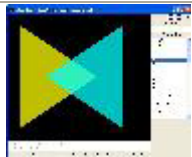
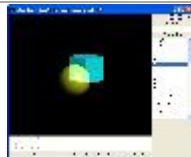
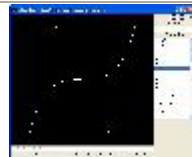
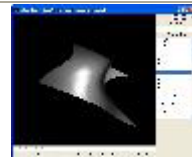
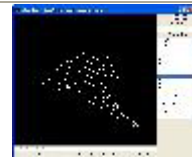
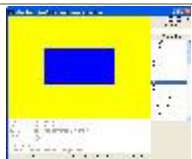
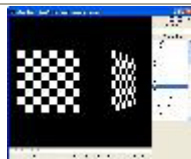
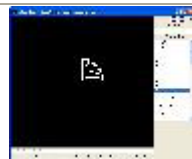
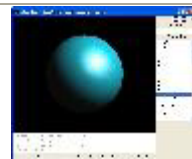


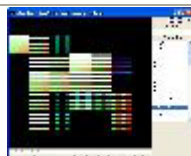
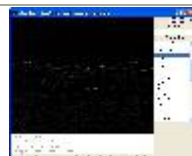
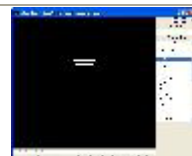
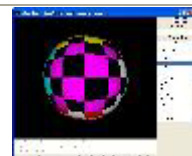

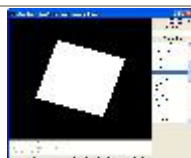
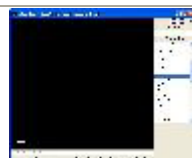

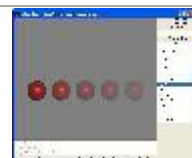
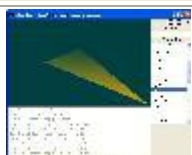
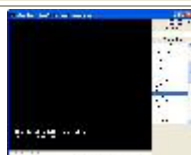
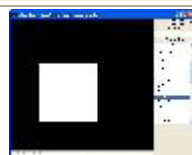


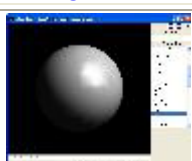

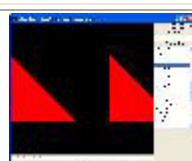


NeHe & Terence J. Grant's ArcBall Rotation Tutorial

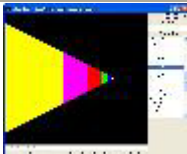
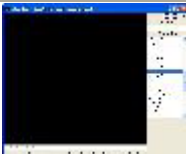
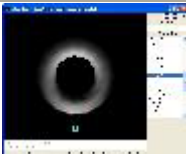
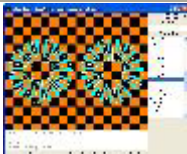

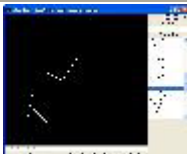
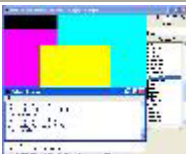
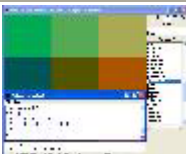
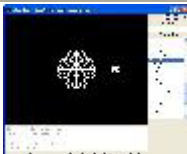


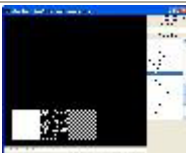
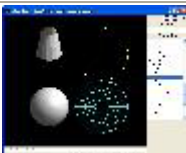

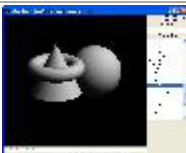


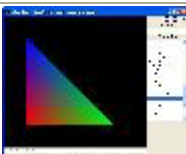
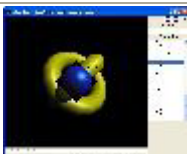
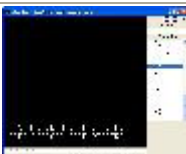
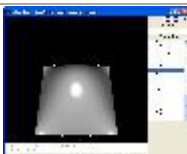

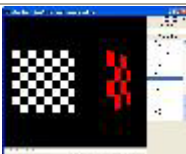
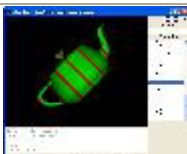
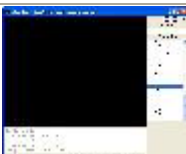
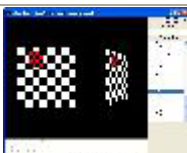
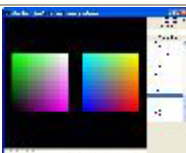
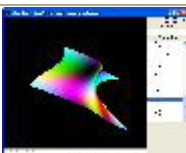
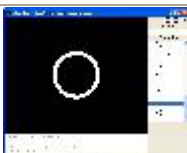
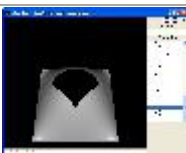
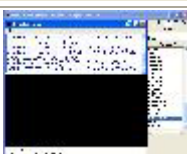
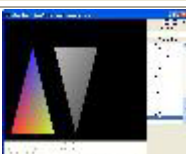

Authors Name: Terence J. Grant

NeHe Productions 1997-2004

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Modified for Tcl3D by Paul Obermeier 2006/08/31
See www.tcl3d.org for the Tcl3D extension.

Type:	RedBook			
Category:	TutorialsAndBooks			
Root:	Contents			
<p>The Redbook describing OpenGL Version 1.4 contains 72 examples written in C. 67 of them have been successfully converted into equivalent Tcl3D scripts and the results compared on several operating systems and computers against the C version.</p> <p>Three of the missing five examples (surfpoints, tess, tesswin) deal with tessellation, which is currently not supported. The other two test programs (aaindex, fogindex) not yet ported deal with color index mode, which is not yet implemented in the tcl3dTogl widget.</p> <p>Original sources available at: http://www.opengl-redbook.com/source/</p>				
Available demos				
				
aapoly	aapolyStride	aargb	accanti	accpersp
				
alpha	alpha3D	bezcurve	bezmesh	bezsurf
				
blendeqn	checker	clip	colormat	colormatrix
				
colortable	combiner	convolution	cube	cubemap
				
dof	double	drawf	feedback	fog
				
fogcoord	font	hello	histogram	image
				
light	lines	list	material	minmax

				
mipmap	model	movelight	multisamp	multitex
				
mvarray	pickdepth	picksquare	planet	pointp
				
polyoff	polys	quadric	robot	scene
				
select	shadowmap	smooth	stencil	stroke
				
surface	teapots	texbind	texgen	texprox
				
texsub	texture3d	texturesurf	torus	trim
				
unproject	varray	wrap		

Demo:	aapoly
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-t Toggle smoothing
Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

aapoly.tcl

An example of the OpenGL red book modified to work with Tcl3D.
The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
See file LICENSE for complete license information.

This program draws filled polygons with antialiased edges. The special GL_SRC_ALPHA_SATURATE blending function is used.
Pressing the 't' key turns the antialiasing on and off.

Demo:	aapolyStride
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-t Toggle smoothing
Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

aapoly.tcl

An example of the OpenGL red book modified to work with Tcl3D.
The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program draws filled polygons with antialiased edges. The special GL_SRC_ALPHA_SATURATE blending function is used.
Pressing the 't' key turns the antialiasing on and off.

Demo:	aargb
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-r Rotate
 Key-Escape Exit
 GL_LINE_WIDTH_GRANULARITY: 0.125
 GL_LINE_WIDTH_RANGE: 0.5 10.0

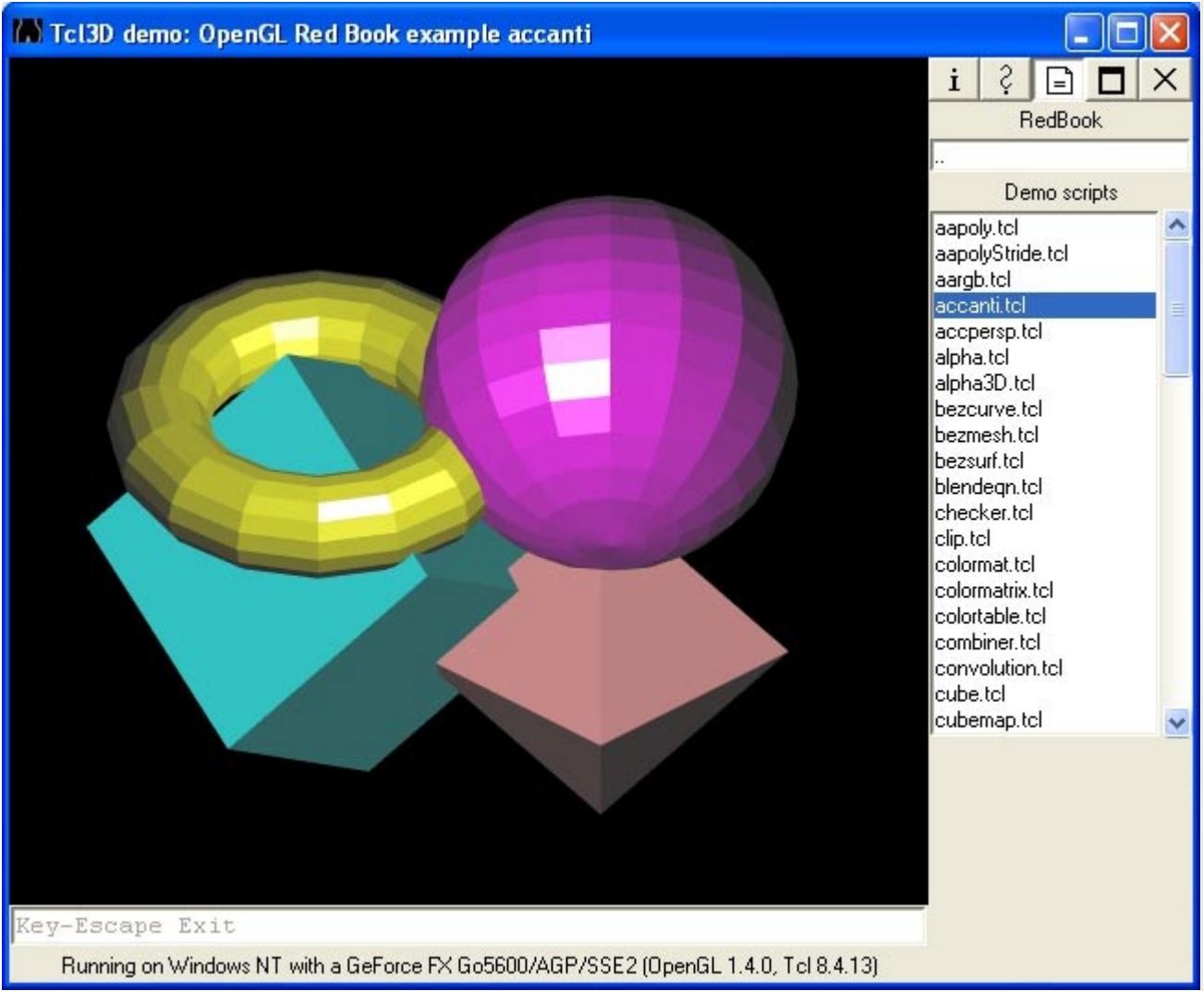
Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

aargb.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program draws shows how to draw anti-aliased lines. It draws two diagonal lines to form an X; when 'r' is typed in the window, the lines are rotated in opposite directions.

Demo:	accanti
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

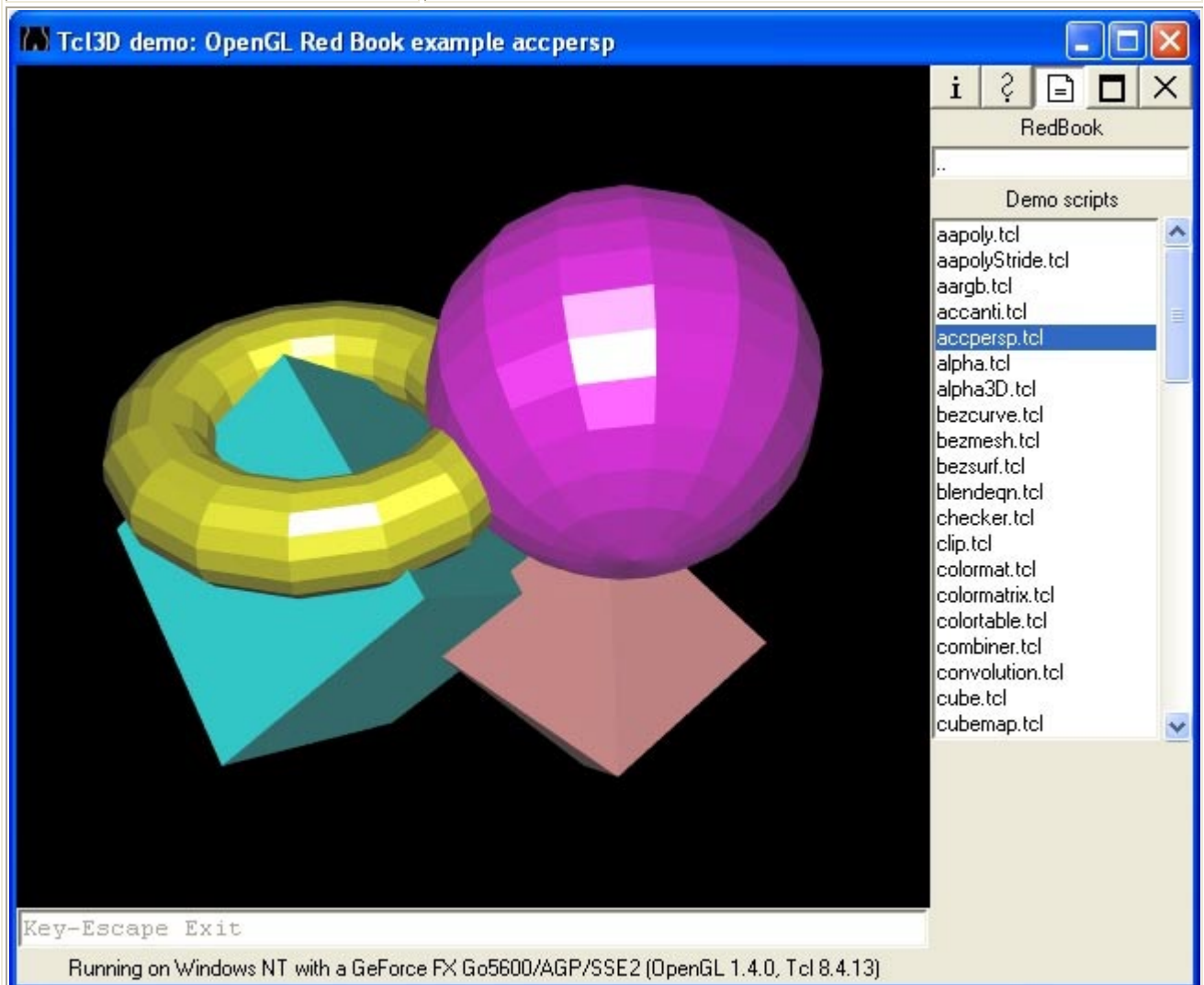


accanti.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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Use the accumulation buffer to do full-scene antialiasing
 on a scene with orthographic parallel projection.

Demo:	accpersp
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



accpersp.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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Use the accumulation buffer to do full-scene antialiasing
 on a scene with perspective projection, using the special
 routines `accFrustum()` and `accPerspective()`.

Demo:	alpha
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-t Toggle polygon order
Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

alpha.tcl

An example of the OpenGL red book modified to work with Tcl3D.
The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program draws several overlapping filled polygons
to demonstrate the effect order has on alpha blending results.
Use the 't' key to toggle the order of drawing polygons.

Demo:	alpha3D
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-a Start animation
 Key-r Reset
 Key-Escape Exit

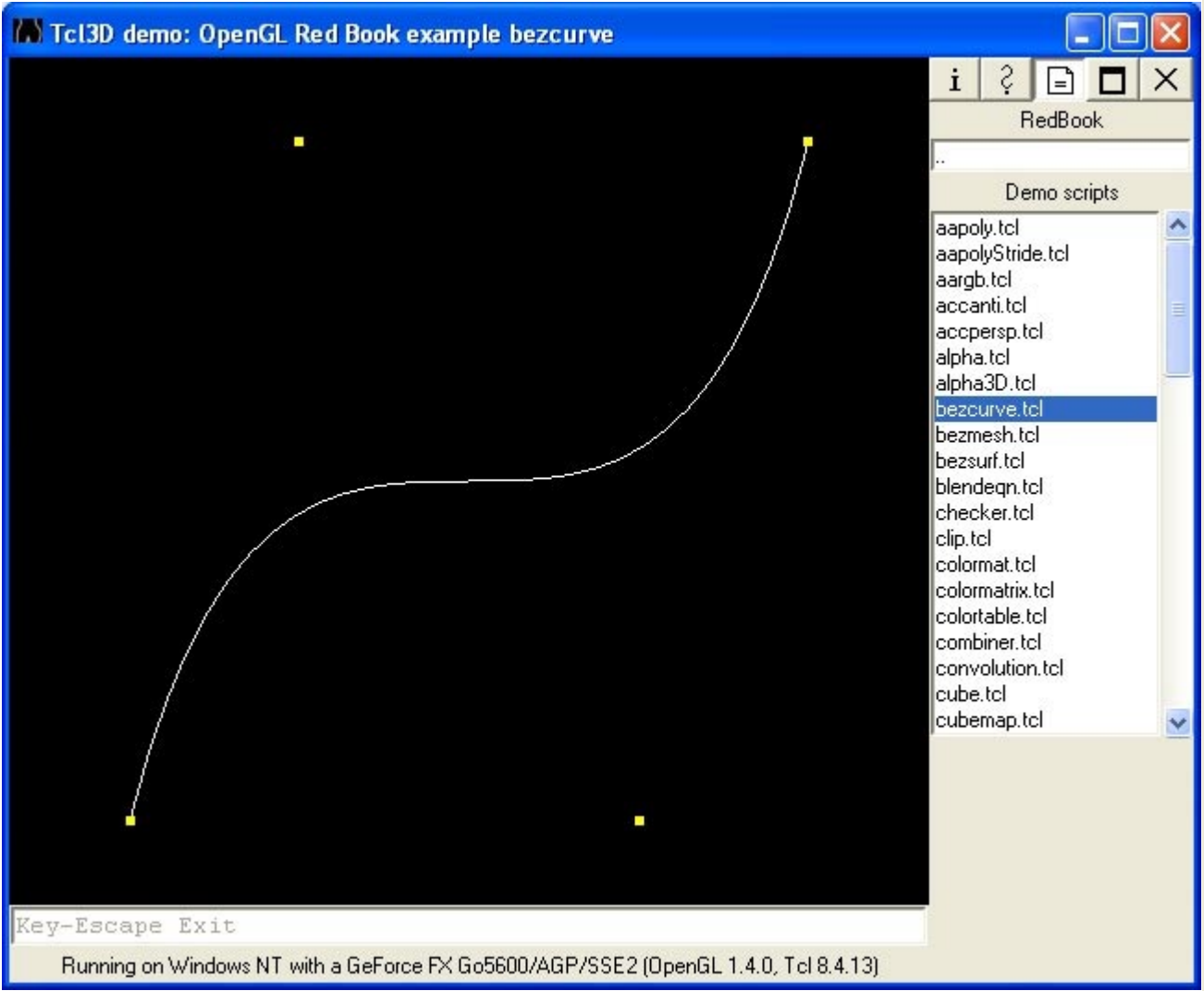
Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

alpha3D.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates how to intermix opaque and alpha blended polygons in the same scene, by using `glDepthMask`. Press the 'a' key to animate moving the transparent object through the opaque object. Press the 'r' key to reset the scene.

Demo:	bezcurve
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



bezcurve.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program uses evaluators to draw a Bezier curve.

Demo:	bezmesh
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit

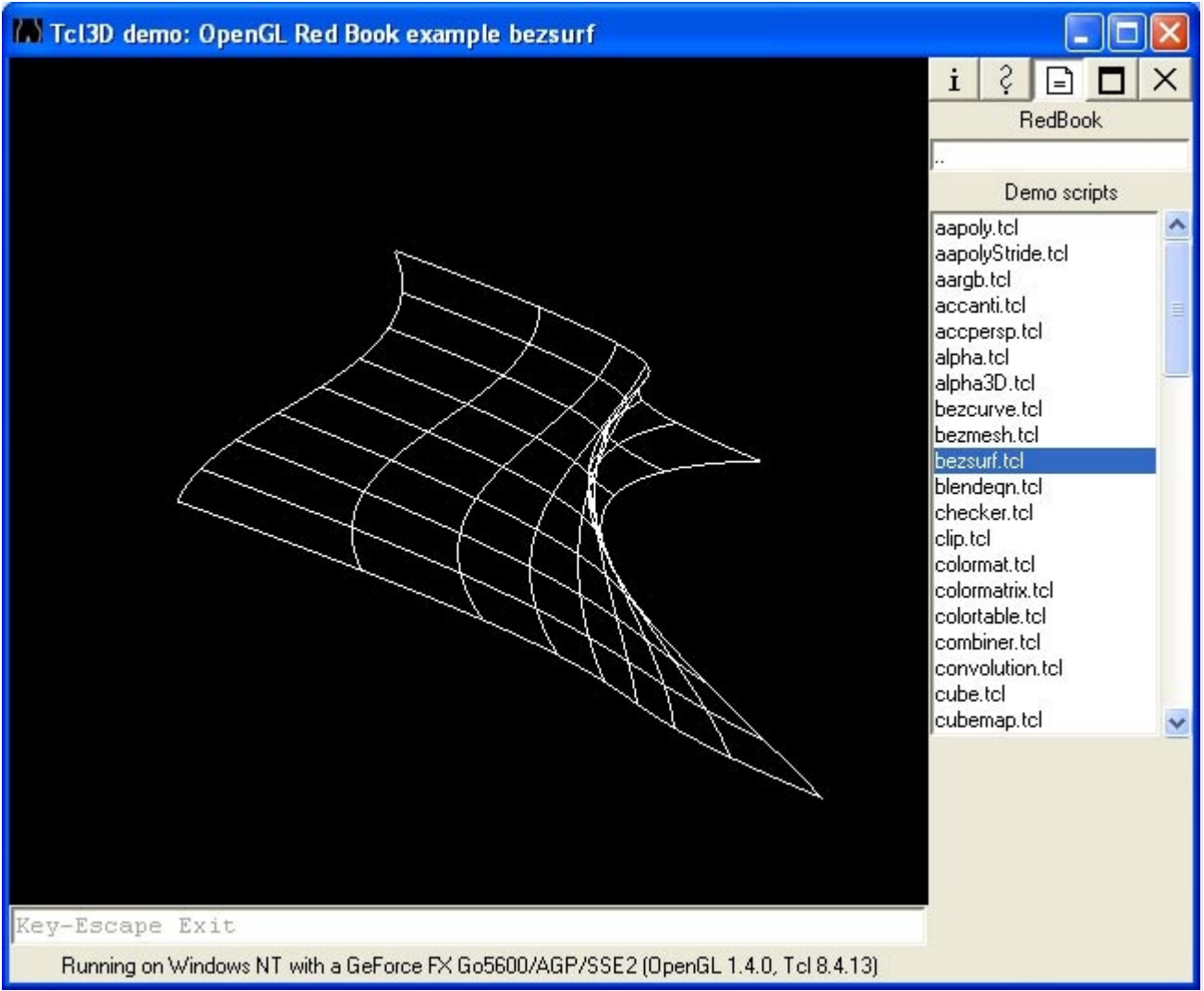
Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

bezmesh.tcl

An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program renders a lighted, filled Bezier surface,
 using two-dimensional evaluators.

Demo:	bezsurf
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



bezsurf.tcl

An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program renders a wireframe Bezier surface,
 using two-dimensional evaluators.

Demo:	blendeqn
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-a GL_FUNC_ADD
 Key-s GL_FUNC_SUBTRACT
 Key-r GL_FUNC_REVERSE_SUBTRACT
 Key-m GL_MIN
 Key-x GL_MAX
 Key-Escape Exit
 blue square on yellow background
 Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

blendeqn.tcl

An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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Demonstrate the different blending functions available with the
 OpenGL imaging subset. This program demonstrates use of the
 glBlendEquation() call.

The following keys change the selected blend equation function:

```
'a' -> GL_FUNC_ADD
's' -> GL_FUNC_SUBTRACT
'r' -> GL_FUNC_REVERSE_SUBTRACT
'm' -> GL_MIN
'x' -> GL_MAX
```

Extension function: glBlendEquation OpenGL 1.2

Demo:	checker
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

The screenshot shows a graphical user interface for a Tcl3D demo. The title bar reads "Tcl3D demo: OpenGL Red Book example checker". The main display area is black, featuring two checkerboard textures. The one on the left is a flat 2D grid, while the one on the right is a 3D grid that appears to be receding into the distance. To the right of the main display is a sidebar with a file list titled "Demo scripts". The list includes various .tcl files, with "checker.tcl" highlighted in blue. Above the list is a search bar and some icons. At the bottom of the window, a status bar indicates the hardware and software configuration: "Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)".

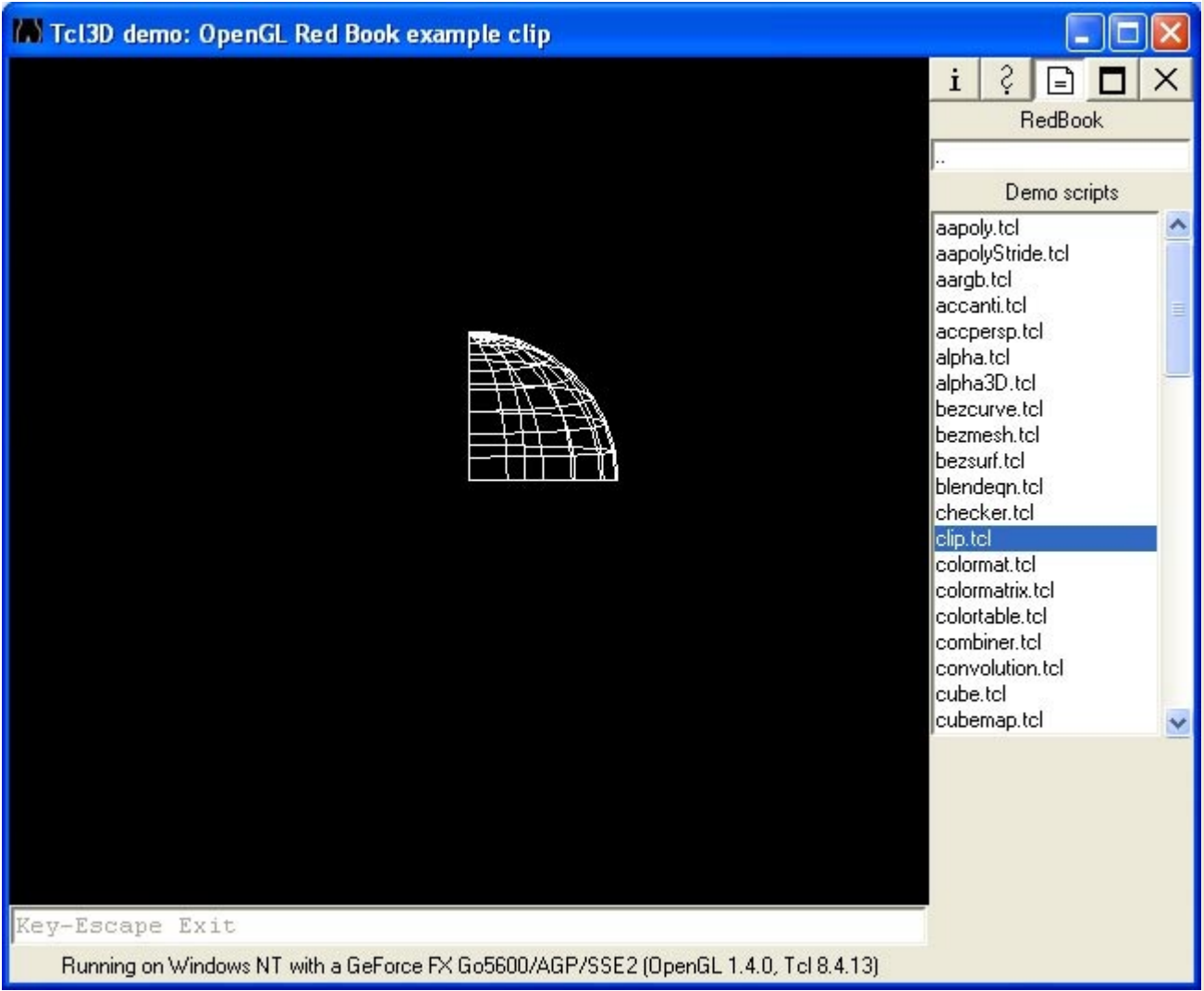
checker.tcl

An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
 See file LICENSE for complete license information.

This program texture maps a checkerboard image onto two rectangles.

If running this program on OpenGL 1.0, texture objects are not used.

Demo:	clip
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



clip.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program demonstrates arbitrary clipping planes.

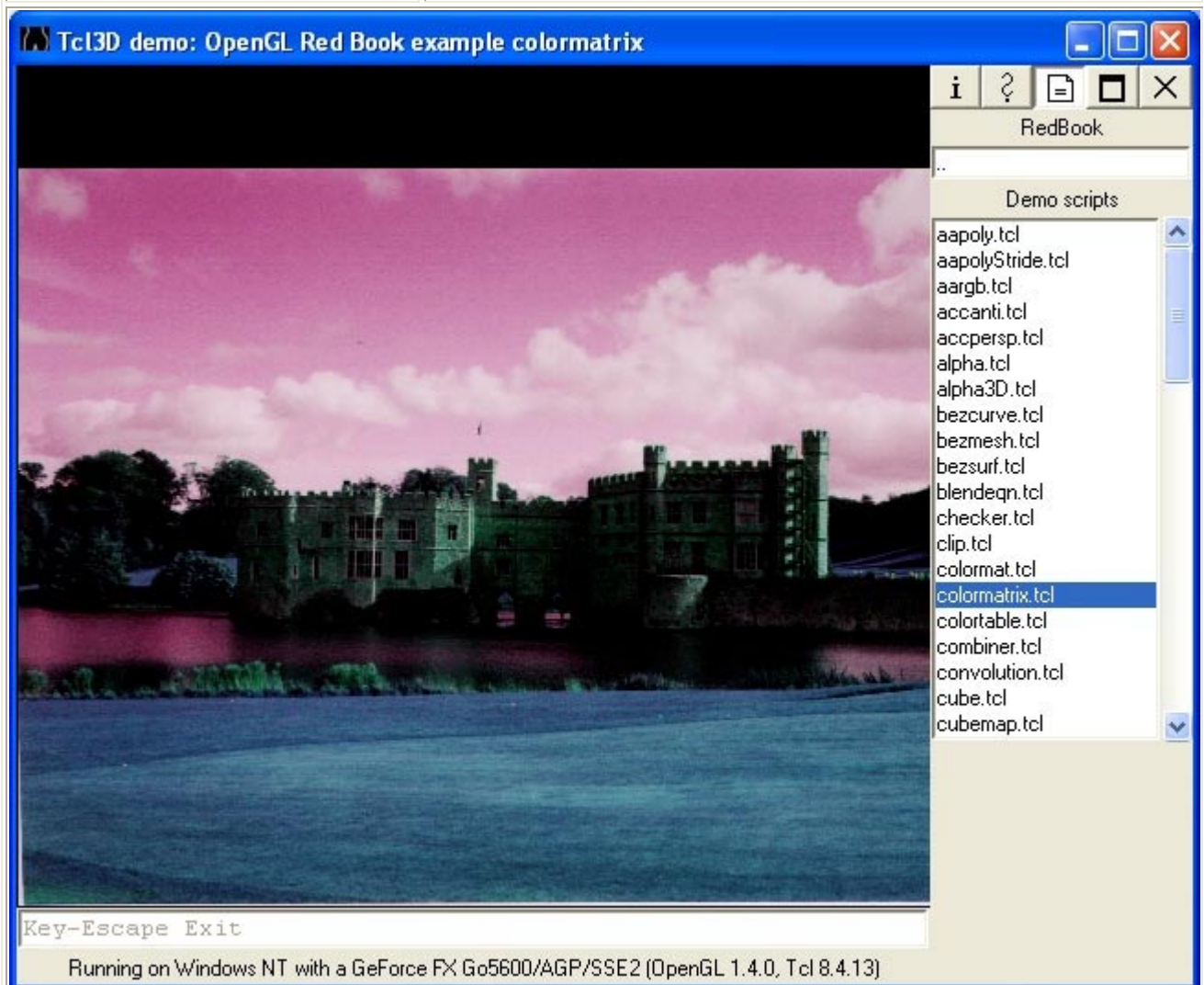
Demo:	colormat
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

colormat.tcl

An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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After initialization, the program will be in
 ColorMaterial mode. Interaction: pressing the
 mouse buttons will change the diffuse reflection values.

Demo:	colormatrix
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



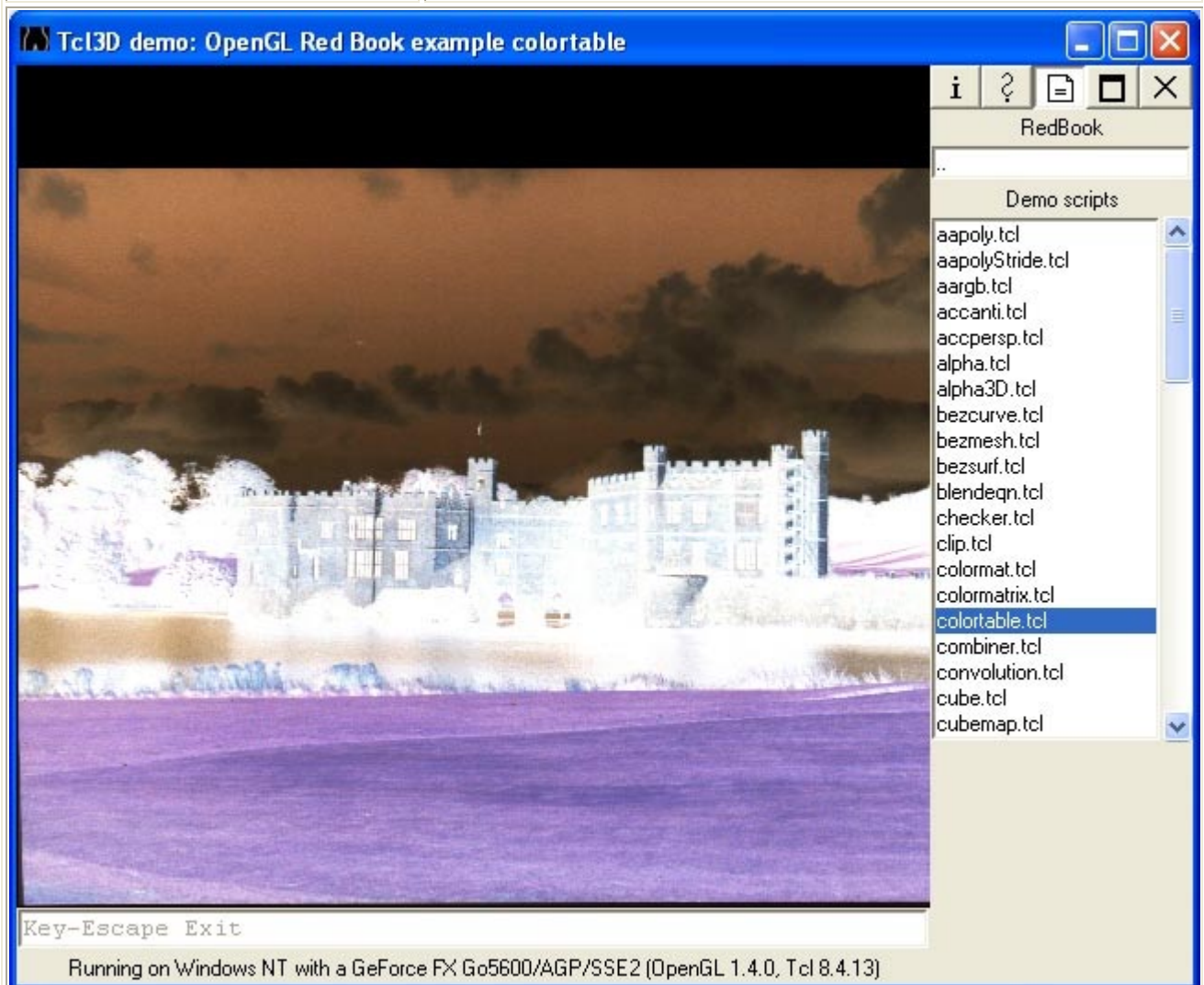
colormatrix.tcl

An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program uses the color matrix to exchange the color channels of an image.

Red -> Green
 Green -> Blue
 Blue -> Red

Demo:	colortable
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



colortable.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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Invert a passed block of pixels. This program illustrates the use of the glColorTable() function.

Demo:	combiner
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

combiner.tcl

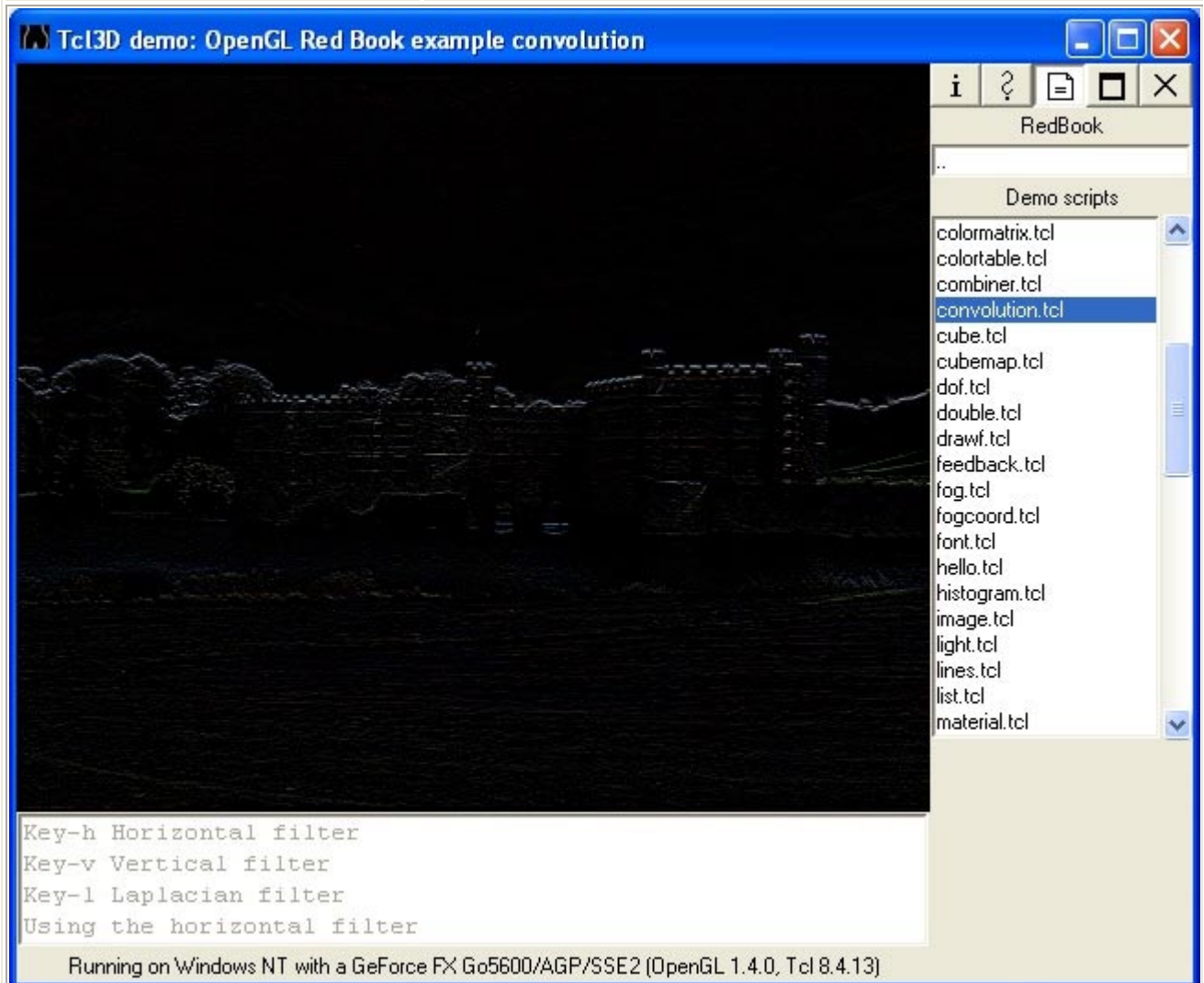
An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program renders a variety of quads showing different effects of texture combiner functions.

The first row renders an untextured polygon (so you can compare the fragment colors) and then the 2 textures.
 The second row shows several different combiner functions on a single texture: replace, modulate, add, add-signed, and subtract.
 The third row shows the interpolate combiner function on a single texture with a constant color/alpha value, varying the amount of interpolation.
 The fourth row uses multitexturing with two textures and different combiner functions.
 The fifth row are some combiner experiments: using the scaling factor and reversing the order of subtraction

for a combination function.

Demo:	convolution
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

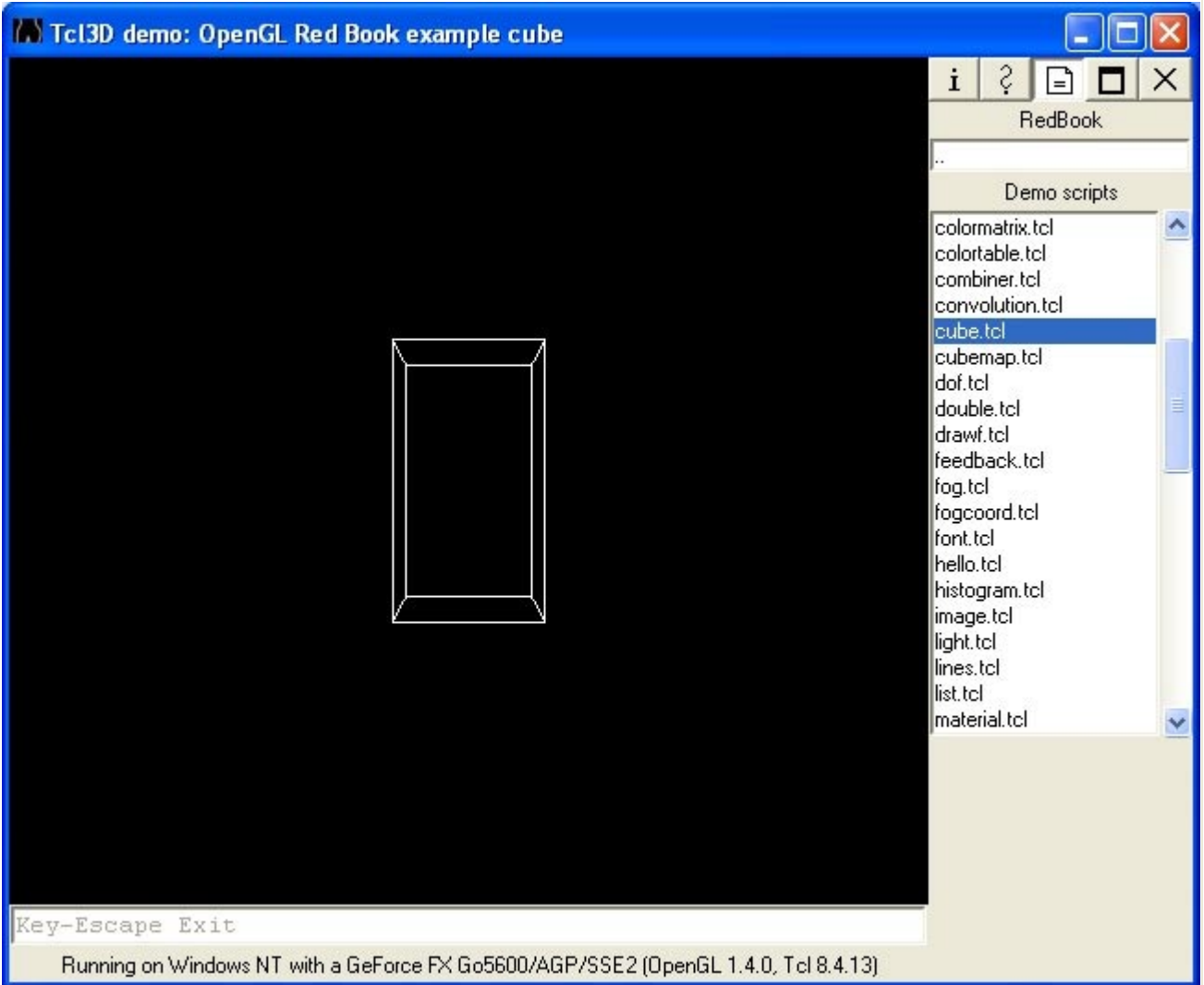


convolution.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
 See file LICENSE for complete license information.

Use various 2D convolutions filters to find edges in an image.

Demo:	cube
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



`cube.tcl`

An example of the OpenGL red book modified to work with Tcl3D.
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 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program demonstrates a single modeling transformation, `glScalef()` and a single viewing transformation, `gluLookAt()`.
 A wireframe cube is rendered.

Demo:	cubemap
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-f Move object forward
 Key-b Move object backward
 Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

cubemap.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates cube map textures.
 Six different colored checker board textures are
 created and applied to a lit sphere.

Pressing the 'f' and 'b' keys translate the object
 forward and backward.

Demo:	dof
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-1 Set jitter sample to 2
 Key-2 Set jitter sample to 3
 Key-3 Set jitter sample to 4
 Key-4 Set jitter sample to 8
 Key-5 Set jitter sample to 15
 Key-6 Set jitter sample to 24
 Key-7 Set jitter sample to 66
 Key-Escape Exit

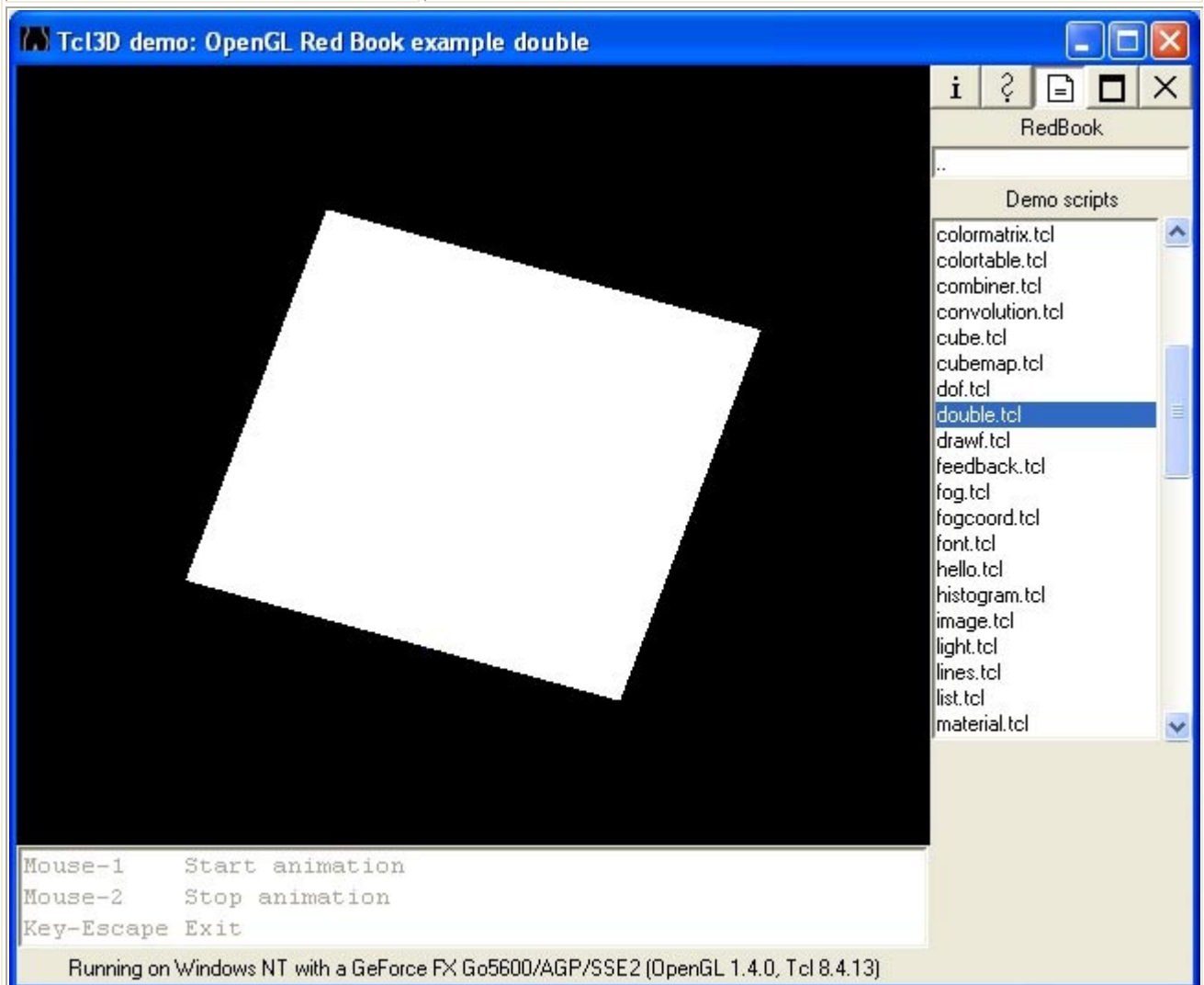
Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

dof.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates use of the accumulation buffer to create an out-of-focus depth-of-field effect. The teapots are drawn several times into the accumulation buffer. The viewing volume is jittered, except at the focal point, where the viewing volume is at the same position, each time. In this case, the gold teapot remains in focus.

Demo:	double
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

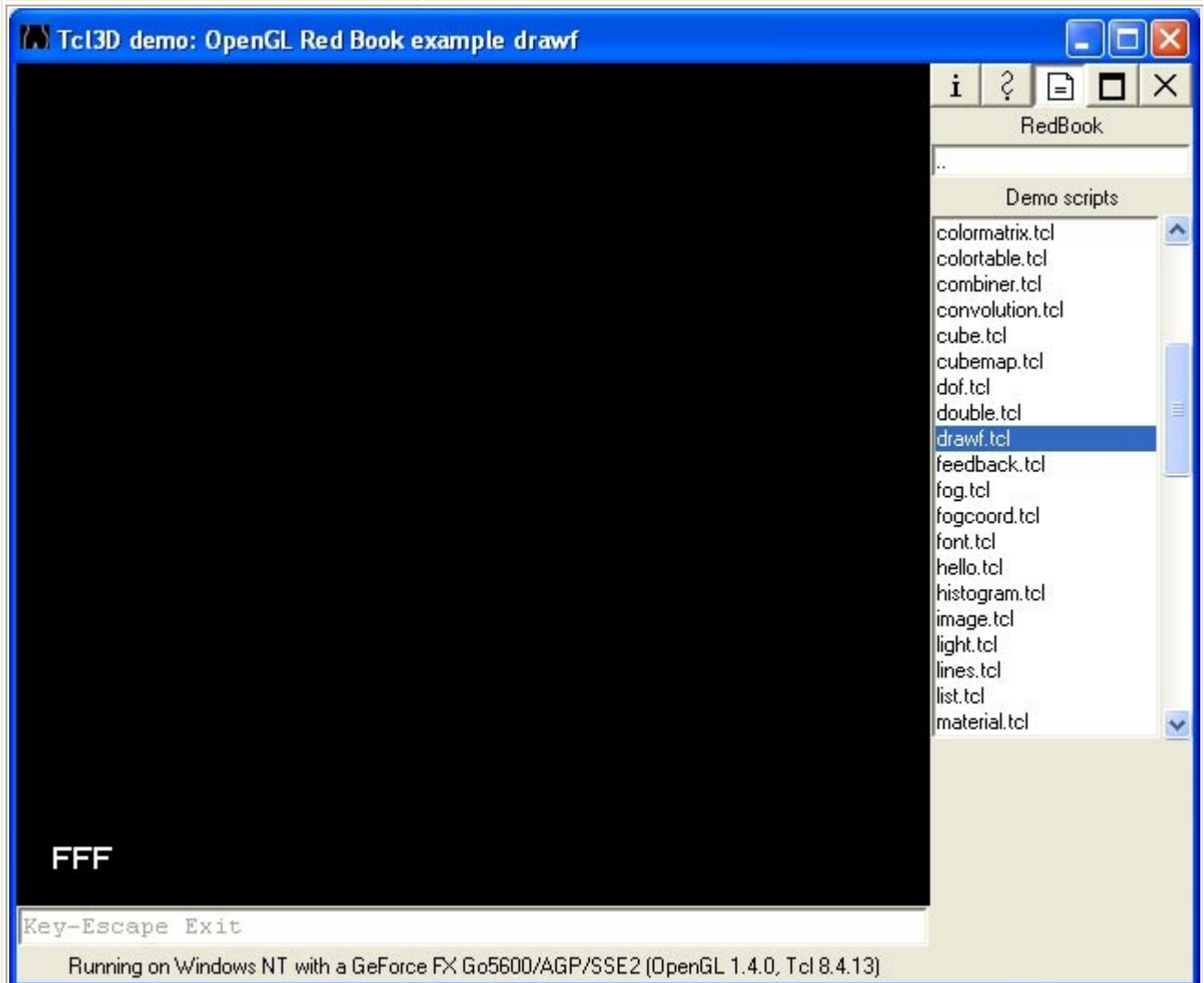


double.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This is a simple double buffered program.
 Pressing the left mouse button rotates the rectangle.
 Pressing the middle mouse button stops the rotation.

Demo:	drawf
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



drawf.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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Draws the bitmapped letter F on the screen (several times).
 This demonstrates use of the glBitmap() call.

Demo:	feedback
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

The screenshot shows a Tcl3D demo window titled "Tcl3D demo: OpenGL Red Book example feedback". It contains a "Feedback Output" panel with a menu bar (File, Edit) and a list of OpenGL tokens and their values:

```

GL_PASS_THROUGH_TOKEN
  1.00
GL_PASS_THROUGH_TOKEN
  2.00
GL_POINT_TOKEN
  200.00 200.00 0.00 0.84 0.84 0.84 1.00
#

```

Below the text is a 3D rendering area showing a simple wireframe triangle. At the bottom, it says "Key-Escape Exit" and "Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)". On the right, there is a "RedBook" panel with a "Demo scripts" list containing various .tcl files, with "feedback.tcl" selected.

feedback.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates use of OpenGL feedback. First,
 a lighting environment is set up and a few lines are drawn.
 Then feedback mode is entered, and the same lines are
 drawn. The results in the feedback buffer are printed.

Demo:	fog
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

The screenshot shows a graphical user interface for a 3D demo. The main window displays five red spheres arranged horizontally, each with a different level of fog effect. To the right of the main window is a sidebar with a file list titled 'Demo scripts'. The file 'fog.tcl' is highlighted. Below the main window is a console area with the following text: 'Key-f ToggleFog', 'Key-Escape Exit', 'Fog mode is GL_EXP', and 'Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)'.

fog.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program draws 5 red spheres, each at a different
 z distance from the eye, in different types of fog.
 Pressing the f key chooses between 3 types of
 fog: exponential, exponential squared, and linear.
 In this program, there is a fixed density value, as well
 as fixed start and end values for the linear fog.

Demo:	fogcoord
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-f Move viewer forward
 Key-b Move viewer backwards
 Key-c Initiate fog generation
 Key-C Restore explicit fog coordinates
 Key-1 Add fog coord value (vtx 1)
 Key-2 Add fog coord value (vtx 2)
 Key-3 Add fog coord value (vtx 3)
 Key-8 Subtract fog coord value (vtx 1)
 Key-9 Subtract fog coord value (vtx 2)
 Key-0 Subtract fog coord value (vtx 3)

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

fogcoord.tcl

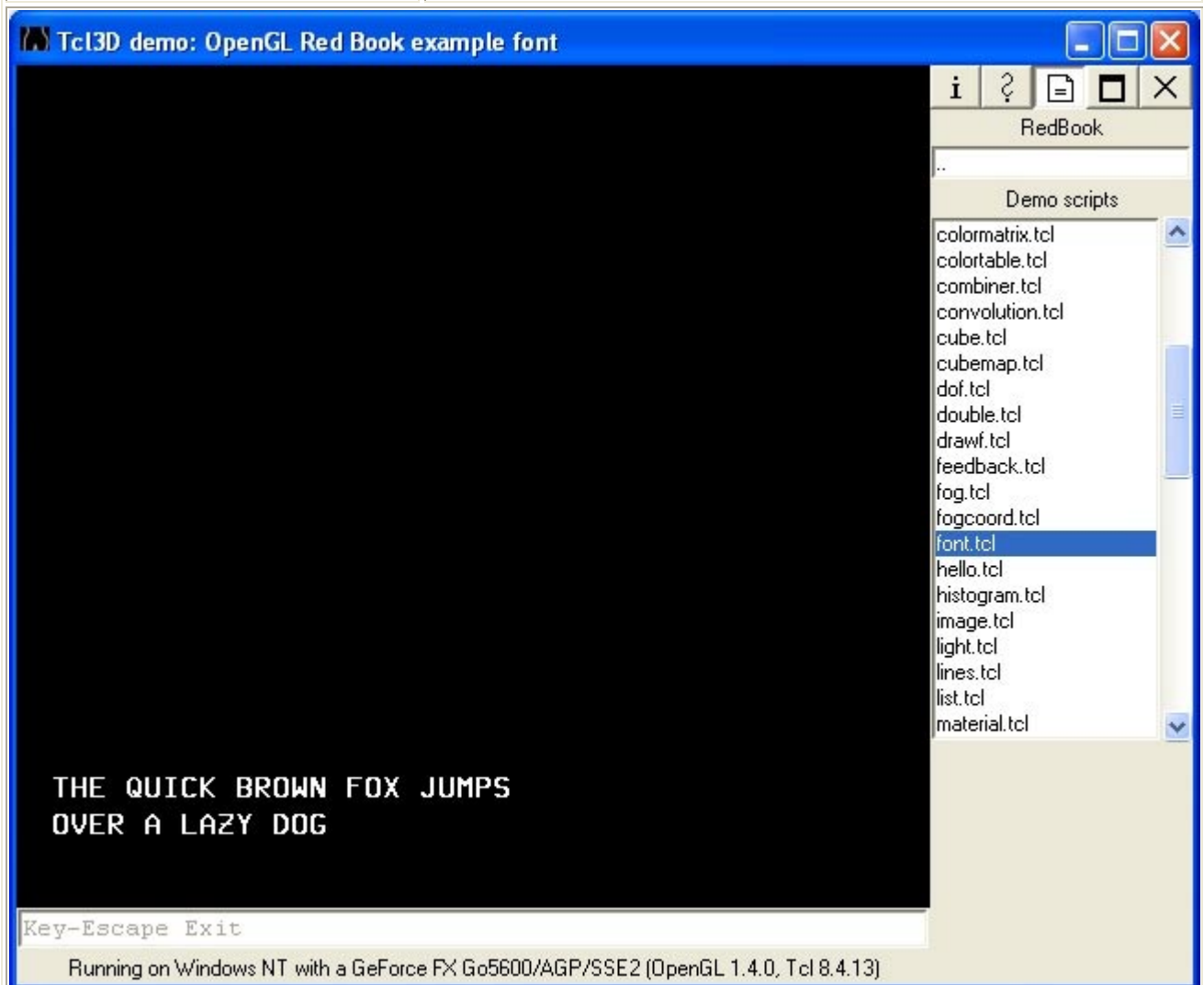
An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program demonstrates the use of explicit fog coordinates. You can press the keyboard and change the fog coordinate value at any vertex. You can also switch between using explicit fog coordinates and the default fog generation mode.

Pressing the 'f' and 'b' keys move the viewer forward and backwards.
 Pressing 'c' initiates the default fog generation.
 Pressing capital 'C' restores explicit fog coordinates.
 Pressing '1', '2', '3', '8', '9', and '0' add or subtract from the fog coordinate values at one of the three vertices of the triangle.

Extension function: glFogCoordfEXT

Demo:	font
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

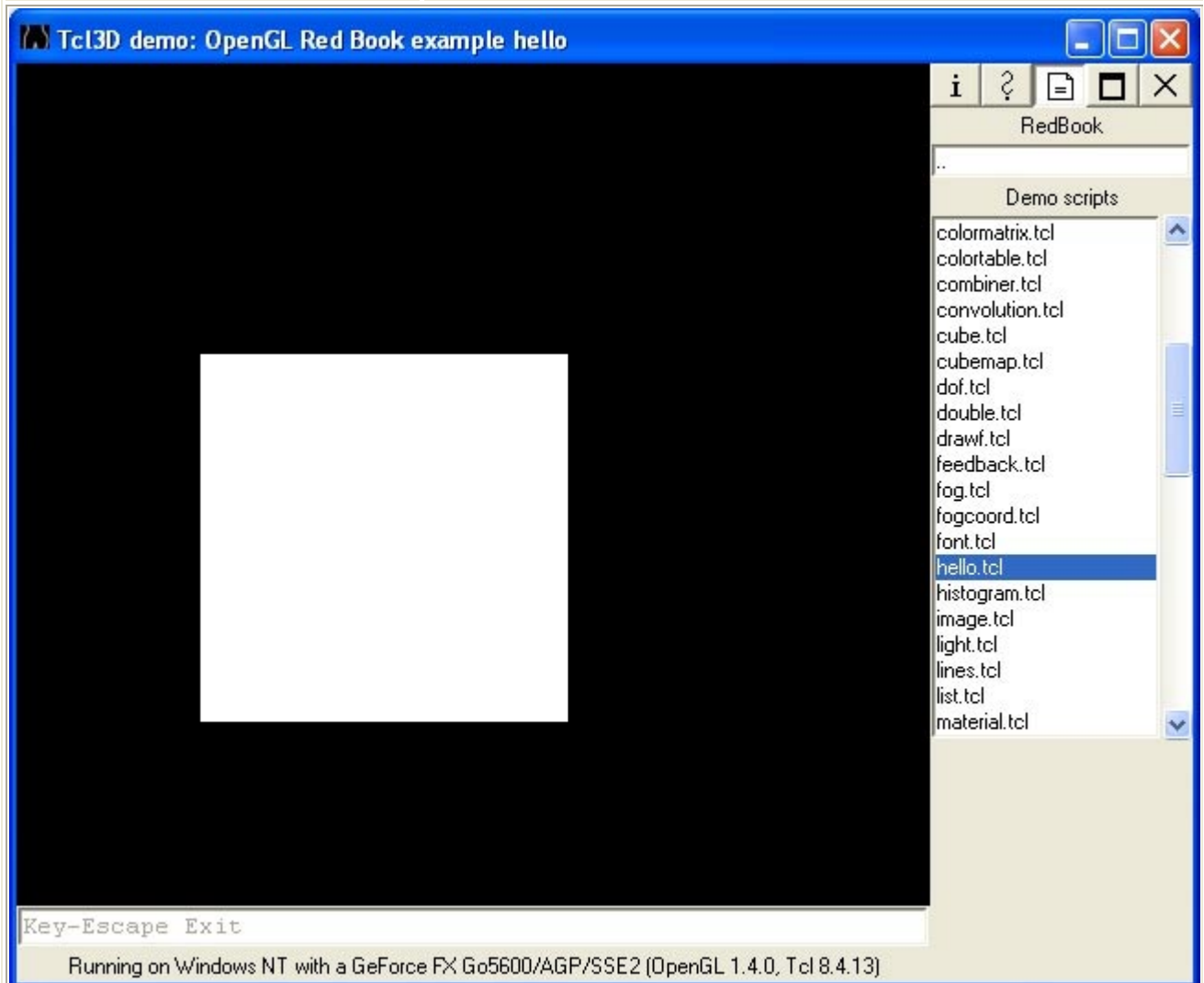


font.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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Draws some text in a bitmapped font. Uses glBitmap()
 and other pixel routines. Also demonstrates use of
 display lists.

Demo:	hello
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

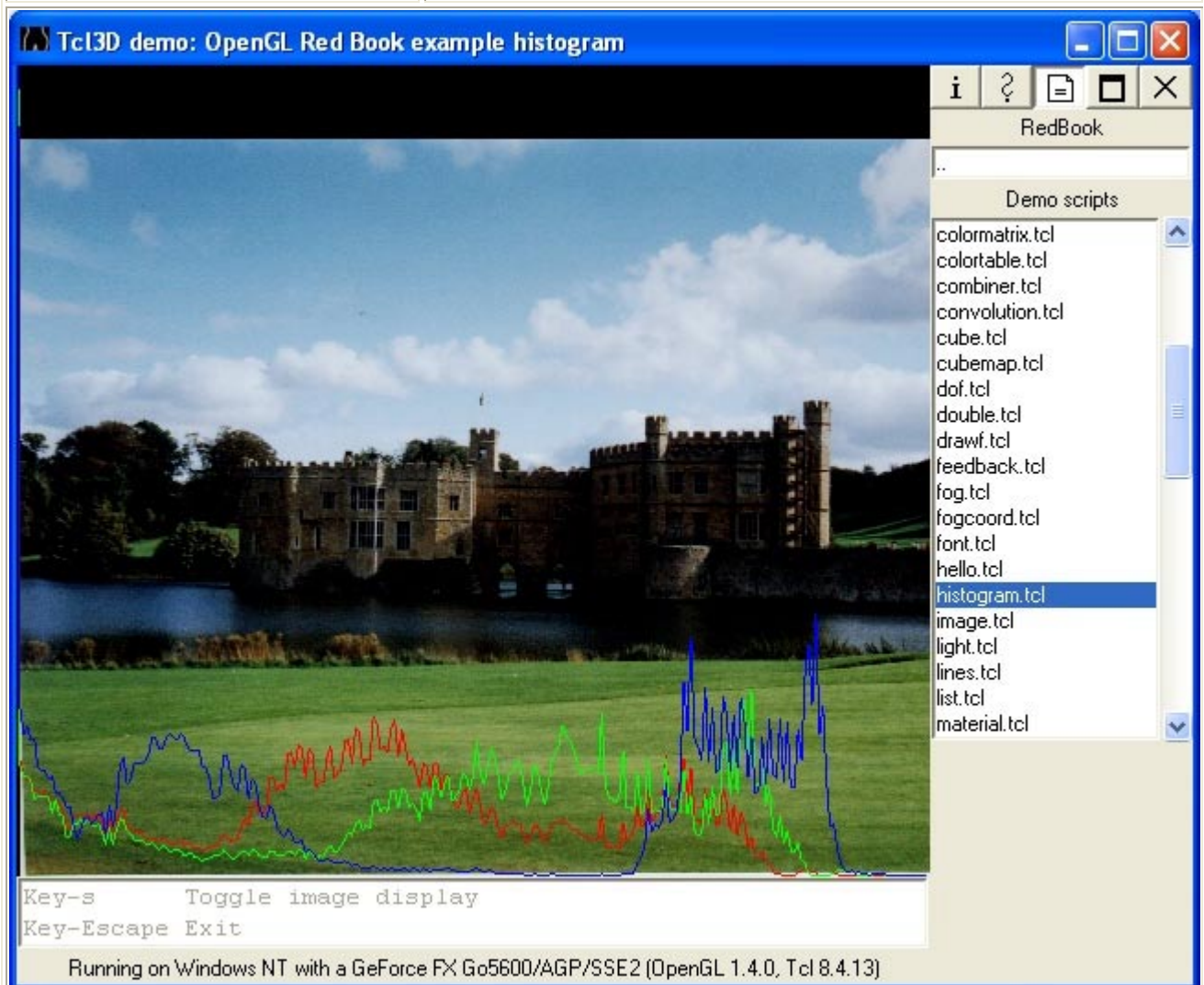


hello.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This is a simple, introductory OpenGL program.

Demo:	histogram
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



histogram.tcl

An example of the OpenGL red book modified to work with Tcl3D.
The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
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Compute the histogram of the image. This program illustrates the use of the `glHistogram()` function.

Demo:	image
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-r Reset zoom
 Key-z Increment zoom
 Key-Z Decrement zoom
 Mouse-1 Paint
 Key-Escape Exit
 Initial zoom factor is 1.0

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

image.tcl

An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
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This program demonstrates drawing pixels and shows the effect of `glDrawPixels()`, `glCopyPixels()`, and `glPixelZoom()`.
 Interaction: moving the mouse while pressing the mouse button will copy the image in the lower-left corner of the window to the mouse position, using the current pixel zoom factors. There is no attempt to prevent you from drawing over the original image. If you press the 'r' key, the original image and zoom factors are reset. If you press the 'z' or 'Z' keys, you change the zoom factors.

Demo:	light
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

light.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates the use of the OpenGL lighting model. A sphere is drawn using a grey material characteristic. A single light source illuminates the object.

Demo:	lines
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

lines.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates geometric primitives and
 their attributes.

Demo:	list
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

The screenshot shows a window titled "Tcl3D demo: OpenGL Red Book example list". The main area displays a 3D scene with two red triangles on a black background. On the right side, there is a file list titled "RedBook" and "Demo scripts". The file list includes: histogram.tcl, image.tcl, light.tcl, lines.tcl, list.tcl (highlighted), material.tcl, minmax.tcl, mipmap.tcl, model.tcl, movelight.tcl, multisamp.tcl, multitex.tcl, mvarray.tcl, pickdepth.tcl, picksquare.tcl, planet.tcl, pointp.tcl, polyoff.tcl, polys.tcl, and quadric.tcl. At the bottom of the window, there is a status bar that reads "Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)".

list.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates how to make and execute a display list. Note that attributes, such as current color and matrix, are changed.

Demo:	material
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit

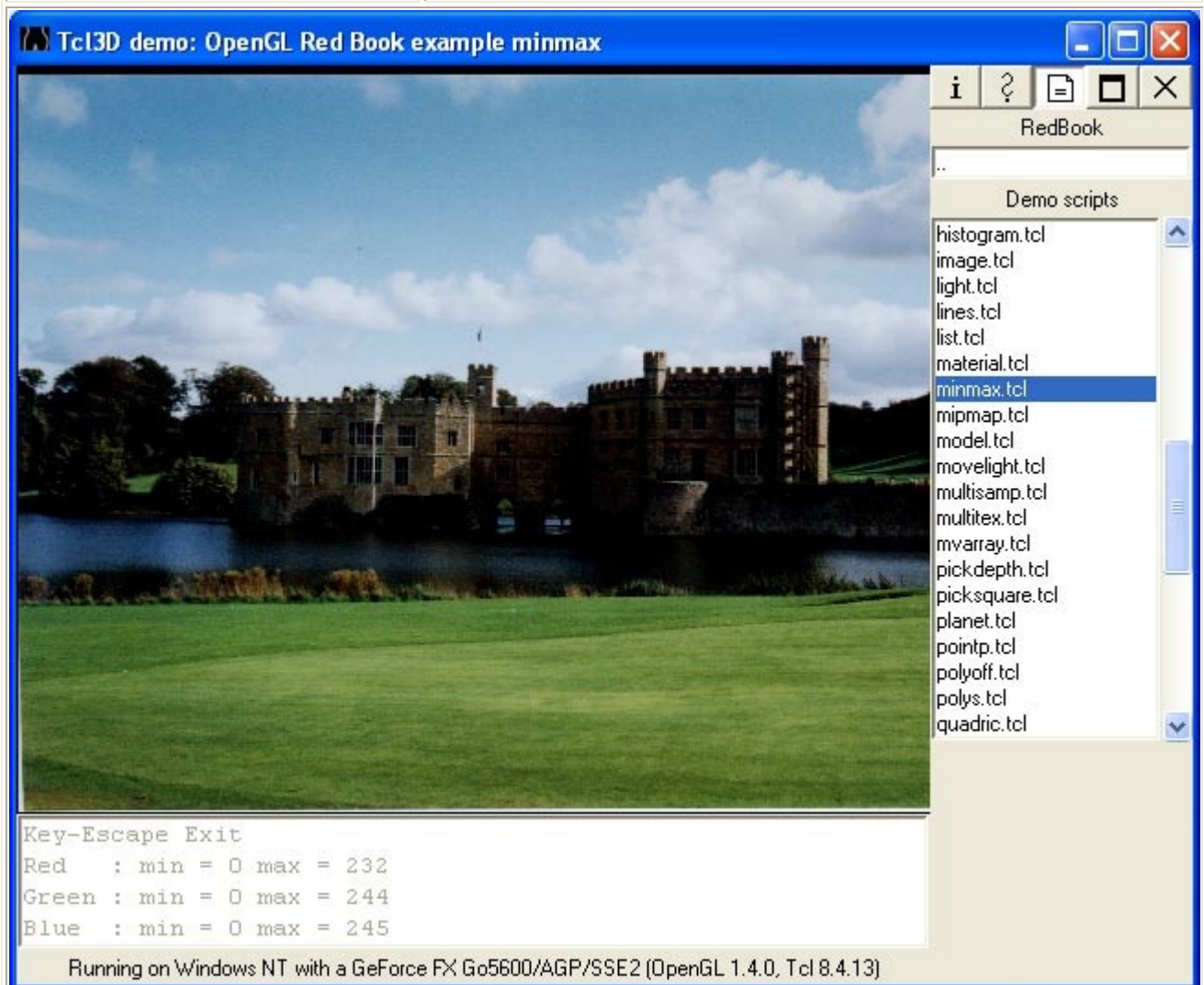
Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

material.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates the use of the GL lighting model.
 Several objects are drawn using different material characteristics.
 A single light source illuminates the objects.

Demo:	minmax
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



minmax.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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Determine the minimum and maximum values of a group of pixels.
 This demonstrates use of the glMinmax() call.

Demo:	mipmap
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

mipmap.tcl

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This program demonstrates using mipmaps for texture maps.
 To overtly show the effect of mipmaps, each mipmap reduction
 level has a solidly colored, contrasting texture image.
 Thus, the quadrilateral which is drawn is drawn with several
 different colors.

Demo:	model
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Tcl3D demo: OpenGL Red Book example model

RedBook

Demo scripts

- histogram.tcl
- image.tcl
- light.tcl
- lines.tcl
- list.tcl
- material.tcl
- minmax.tcl
- mipmap.tcl
- model.tcl**
- movelight.tcl
- multisamp.tcl
- multitex.tcl
- mvarray.tcl
- pickdepth.tcl
- picksquare.tcl
- planet.tcl
- pointp.tcl
- polyoff.tcl
- polys.tcl
- quadric.tcl

Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

`model.tcl`

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates modeling transformations

Demo:	movelight
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

movelight.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates when to issue lighting and transformation commands to render a model with a light which is moved by a modeling transformation (rotate or translate). The light position is reset after the modeling transformation is called. The eye position does not change.

A sphere is drawn using a grey material characteristic.
 A single light source illuminates the object.

Interaction: pressing the left mouse button alters the modeling transformation (x rotation) by 30 degrees. The scene is then redrawn with the light in a new position.

Demo:	multisamp
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

multisamp.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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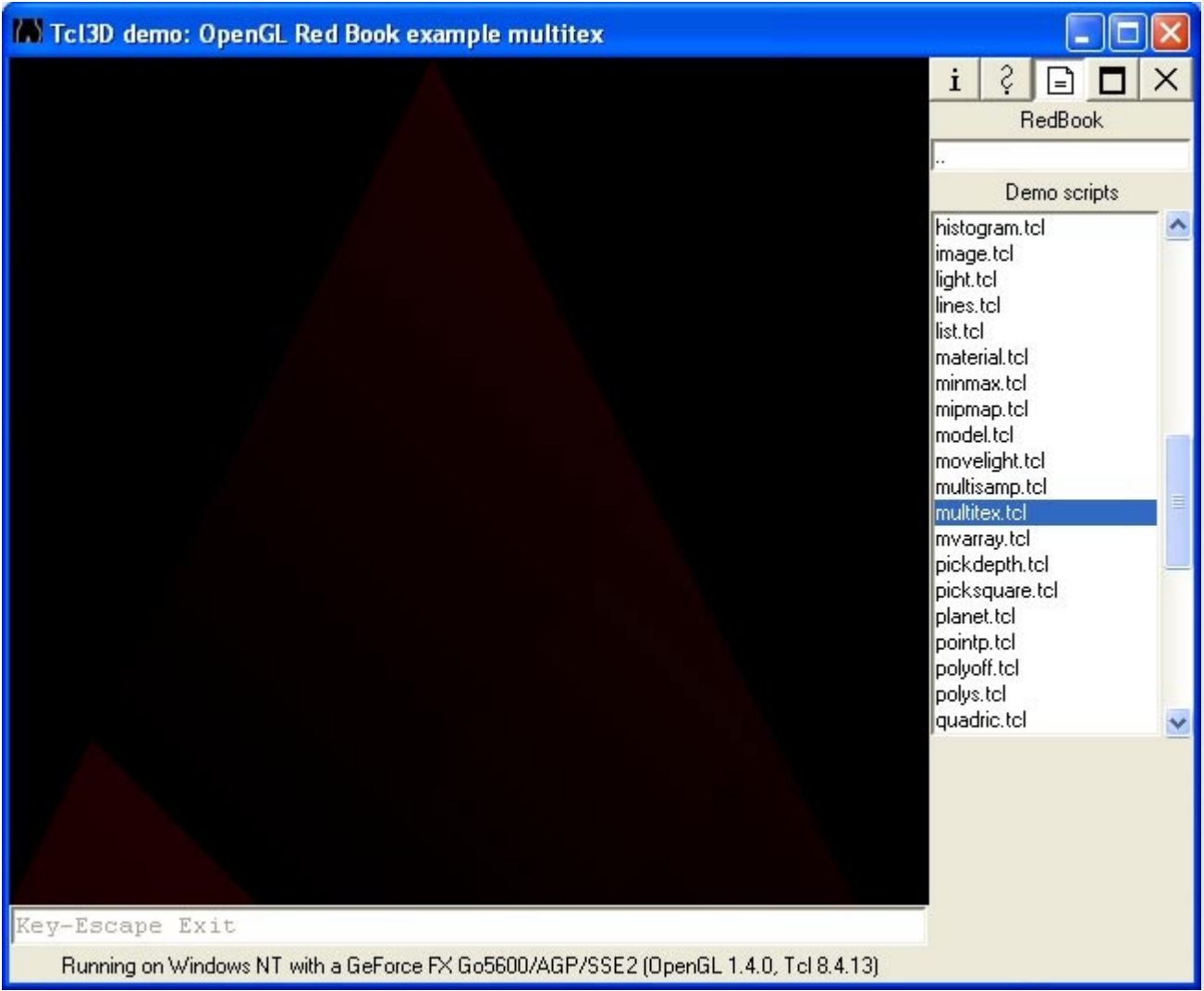
This program draws shows how to use multisampling to draw anti-aliased geometric primitives. The same display list, a pinwheel of triangles and lines of varying widths, is rendered twice. Multisampling is enabled when the left side is drawn. Multisampling is disabled when the right side is drawn.

Pressing the 'b' key toggles drawing of the checkerboard background. Antialiasing is sometimes easier to see when objects are rendered over a contrasting background.

This demo uses the multisampling options built into tcl3dTogl starting from version 0.3.2.

Another way to set the number of samples is via the driver specific GUI under Windows, or by setting the environment variable `__GL_FSAA_MODE` under Linux.

Demo:	multitex
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



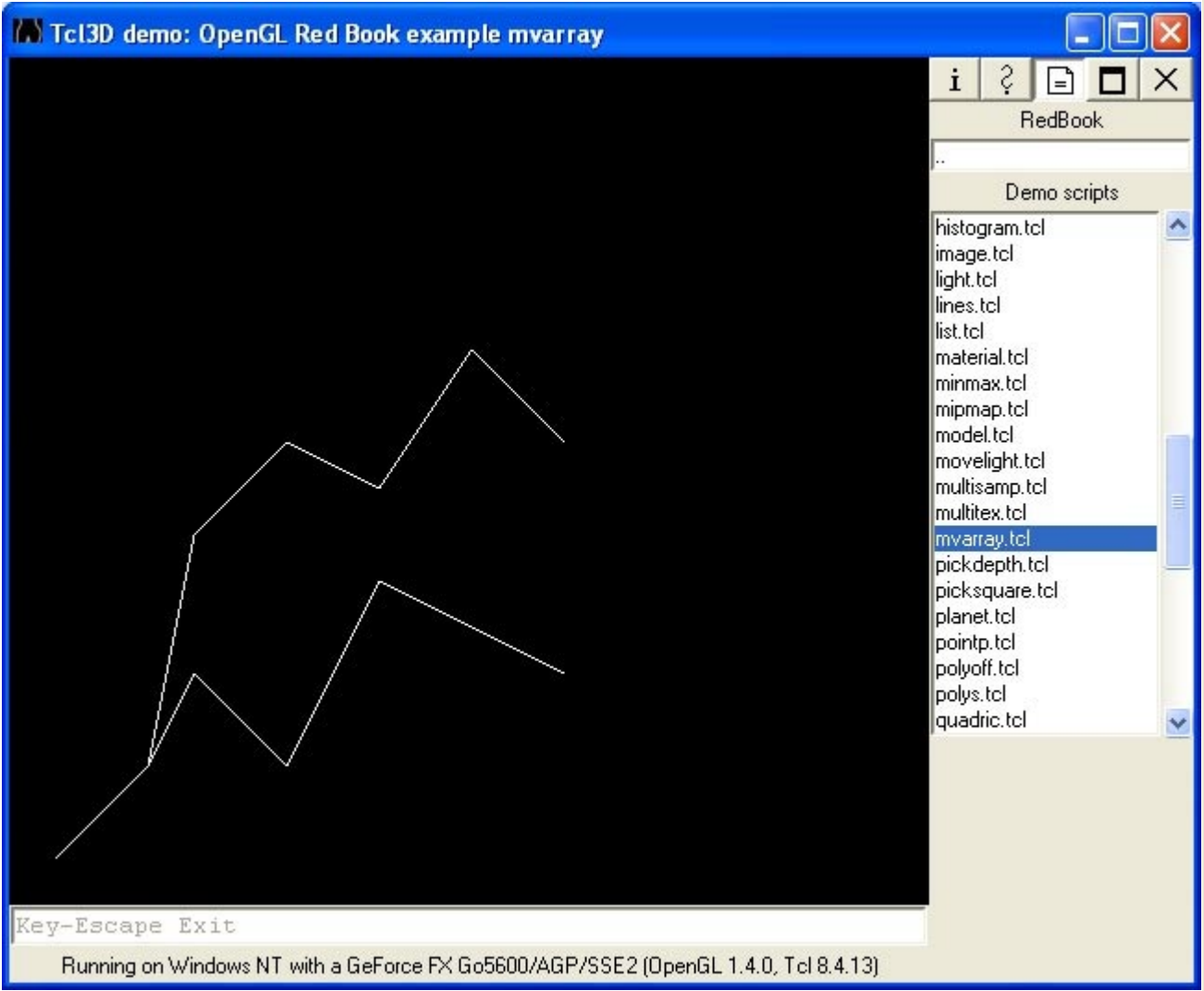
Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

multitex.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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Demo:	mvarray
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



mvarray.tcl

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This program demonstrates multiple vertex arrays,
 specifically the OpenGL routine `glMultiDrawElements()`.

Demo:	pickdepth
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Pickdepth Output

```

File Edit
number of names for hit = 1
z1 is 0.999999; z2 is 0.999999
the name is 2
number of names for hit = 1
z1 is -0.333334; z2 is -0.333334
the name is 3
#|

```

Key-Escape Exit
 Mouse-1 Get pick results

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

pickdepth.tcl

An example of the OpenGL red book modified to work with Tcl3D.
 The original C sources are Copyright (c) 1993-2003, Silicon Graphics, Inc.
 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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Picking is demonstrated in this program. In rendering mode, three overlapping rectangles are drawn. When the left mouse button is pressed, selection mode is entered with the picking matrix. Rectangles which are drawn under the cursor position are "picked." Pay special attention to the depth value range, which is returned.

Demo:	picksquare
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

picksquare.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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Use of multiple names and picking are demonstrated.
 A 3x3 grid of squares is drawn. When the left mouse button is pressed, all squares under the cursor position have their color changed.

Demo:	planet
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-y Increase year
 Key-Y Decrease year
 Key-d Increase day
 Key-D Decrease day
 Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

planet.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program shows how to composite modeling transformations
 to draw translated and rotated models.
 Interaction: pressing the d and y keys (day and year)
 alters the rotation of the planet around the sun.

Demo:	pointp
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-+ Increase point size
 Key-- Decrease point size
 Key-f Move viewer forwards
 Key-b Move viewer backwards
 Key-c Constant attenuation
 Key-l Linear attenuation
 Key-q Quadratic attenuation
 Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

pointp.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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 The Tcl3D sources are Copyright (c) 2005, Paul Obermeier.
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This program demonstrates point parameters and their effect on point primitives.
 250 points are randomly generated within a 10 by 10 by 40 region, centered at the origin. In some modes (including the default), points that are closer to the viewer will appear larger.

Pressing the 'l', 'q', and 'c' keys switch the point parameters attenuation mode to linear, quadratic, or constant, respectively.

Pressing the 'f' and 'b' keys move the viewer forward and backwards. In either linear or quadratic attenuation mode, the distance from the viewer to the point will change the size of the point primitive.

Pressing the '+' and '-' keys will change the current point size. In this program, the point size is bounded, so it

will not get less than 2.0, nor greater than GL_POINT_SIZE_MAX.

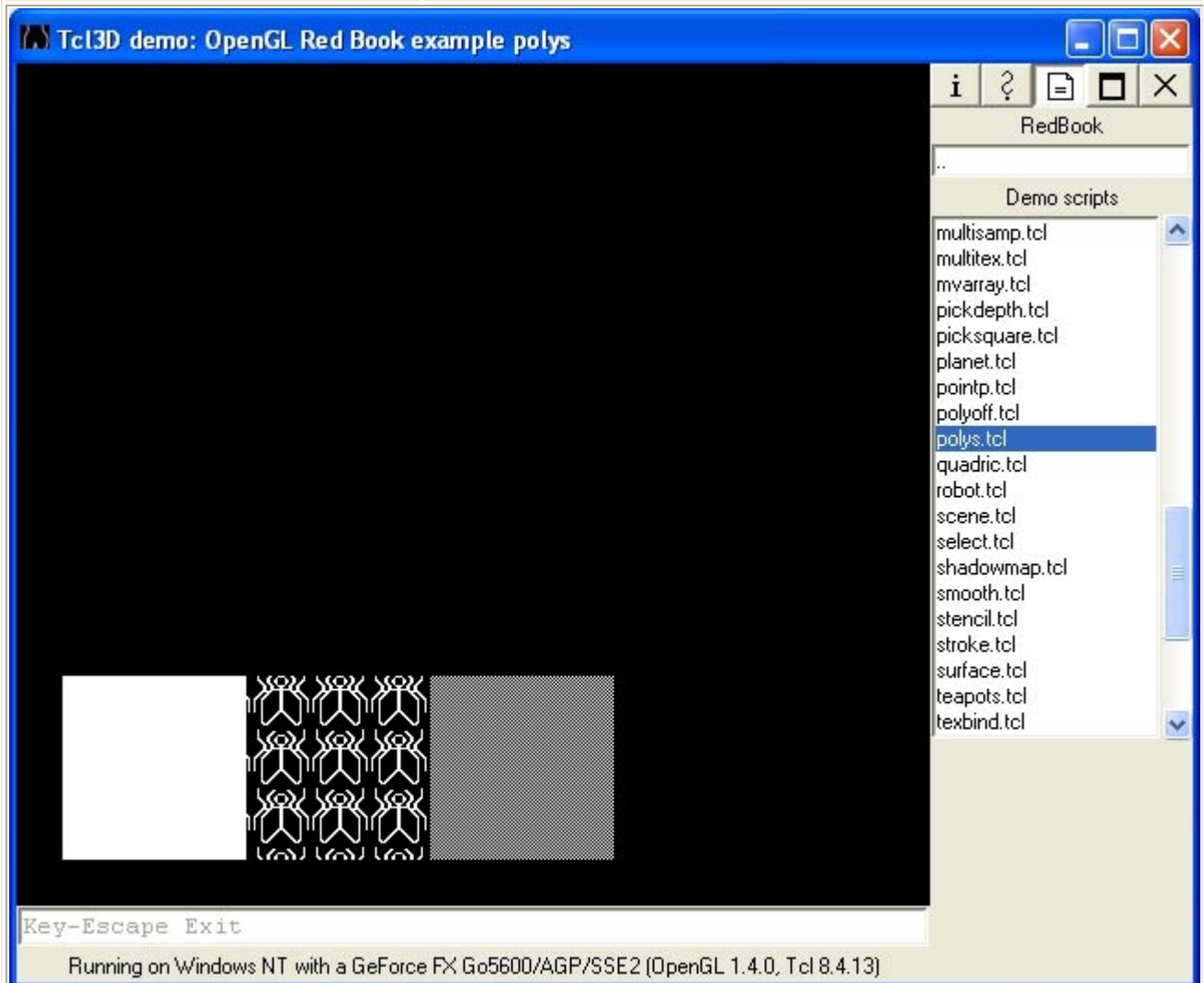
Demo:	polyoff
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

polyoff.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates polygon offset to draw a shaded polygon and its wireframe counterpart without ugly visual artifacts ("stitching").

Demo:	polys
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



polys.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates polygon stippling.

Demo:	quadric
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

quadric.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates the use of some of the `gluQuadric*` routines. Quadric objects are created with some `quadric` properties and the callback routine to handle errors.
 Note that the cylinder has no top or bottom and the circle has a hole in it.

Demo:	robot
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-s IncrShoulder 5
 Key-S IncrShoulder -5
 Key-e IncrElbow 5
 Key-E IncrElbow -5
 Key-Escape Exit

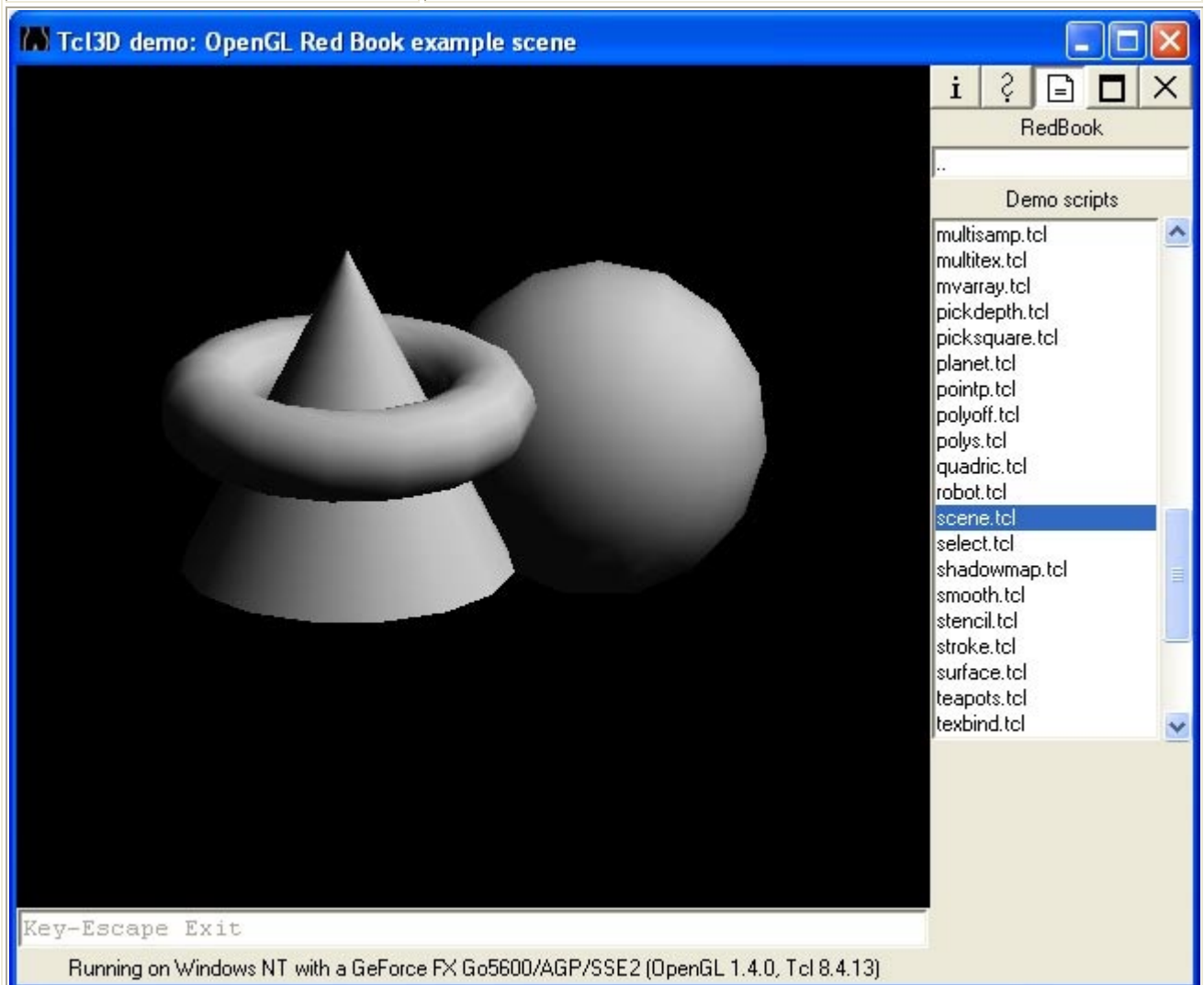
Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

robot.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program shows how to composite modeling transformations
 to draw translated and rotated hierarchical models.
 Interaction: pressing the s and e keys (shoulder and elbow)
 alters the rotation of the robot arm.

Demo:	scene
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



scene.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates the use of the GL lighting model.
 Objects are drawn using a grey material characteristic.
 A single light source illuminates the objects.

Demo:	select
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Tcl3D demo: OpenGL Red Book example select

Select Output

```

File Edit
hits = 2
number of names for hit = 1
  z1 is 0.999999; z2 is 0.999999
  the name is 1
number of names for hit = 1
  z1 is 0; z2 is -1.07288e-006
  the name is 3
  
```

Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

RedBook

.. Data

Demo scripts

- material.tcl
- minmax.tcl
- mipmap.tcl
- model.tcl
- movelight.tcl
- multisamp.tcl
- multitex.tcl
- mvarray.tcl
- pickdepth.tcl
- picksquare.tcl
- planet.tcl
- pointp.tcl
- polyoff.tcl
- polys.tcl
- quadric.tcl
- robot.tcl
- scene.tcl
- select.tcl**
- shadowmap.tcl
- smooth.tcl

select.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This is an illustration of the selection mode and name stack, which detects whether objects which collide with a viewing volume. First, four triangles and a rectangular box representing a viewing volume are drawn (drawScene routine). The green triangle and yellow triangles appear to lie within the viewing volume, but the red triangle appears to lie outside it. Then the selection mode is entered (selectObjects routine). Drawing to the screen ceases. To see if any collisions occur, the four triangles are called. In this example, the green triangle causes one hit with the name 1, and the yellow triangles cause one hit with the name 3.

Demo:	shadowmap
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-t Toggle Texture
 Key-m Toggle CompareMode
 Key-f Toggle FuncMode
 Key-s Toggle ShowShadow
 Key-p Toggle Animation
 Key-Escape Exit
 Texture on

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

shadowmap.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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Demo:	smooth
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

smooth.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates smooth shading.
 A smooth shaded polygon is drawn in a 2-D projection.

Demo:	stencil
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

stencil.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates use of the stencil buffer for masking nonrectangular regions.
 Whenever the window is redrawn, a value of 1 is drawn into a diamond-shaped region in the stencil buffer.
 Elsewhere in the stencil buffer, the value is 0.
 Then a blue sphere is drawn where the stencil value is 1, and yellow torii are drawn where the stencil value is not 1.

Demo:	stroke
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

stroke.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates some characters of a stroke (vector) font. The characters are represented by display lists, which are given numbers which correspond to the ASCII values of the characters. Use of `glCallLists()` is demonstrated.

Demo:	surface
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-c Toggle control points
Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

surface.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program draws a NURBS surface in the shape of a symmetrical hill. The 'c' keyboard key allows you to toggle the visibility of the control points themselves. Note that some of the control points are hidden by the surface itself.

Demo:	teapots
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

teapots.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates lots of material properties.
 A single light source illuminates the objects.

Demo:	texbind
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

texbind.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates using `glBindTexture()` by creating and managing two textures.

Demo:	texgen
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-e SetEyeLinear
 Key-o SetObjLinear
 Key-s SetSlanted
 Key-x SetZero
 Key-Escape Exit

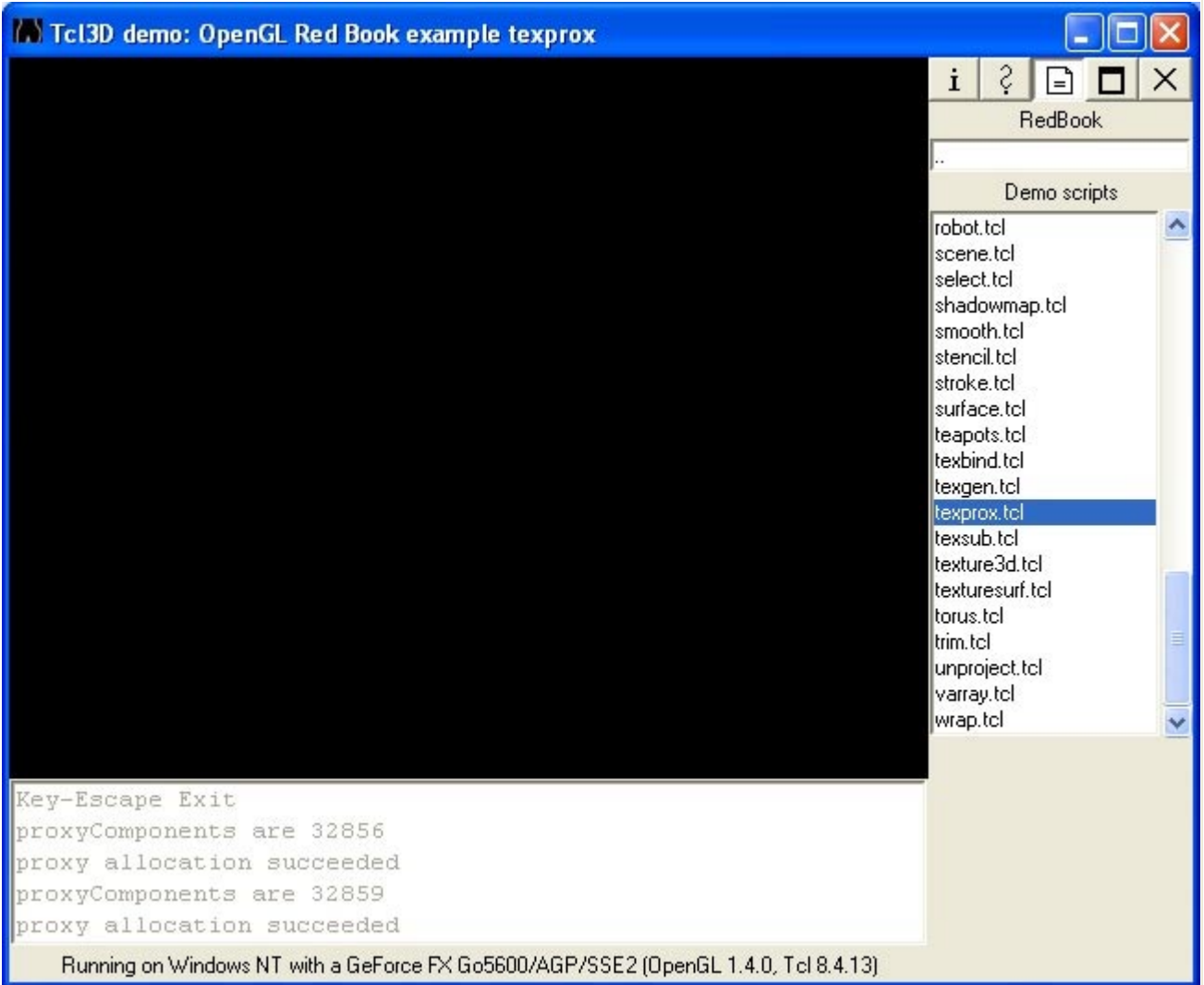
Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

texgen.c

An example of the OpenGL red book modified to work with Tcl3D.
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This program draws a texture mapped teapot with automatically generated texture coordinates. The texture is rendered as stripes on the teapot. Initially, the object is drawn with texture coordinates based upon the object coordinates of the vertex and distance from the plane $x = 0$. Pressing the 'e' key changes the coordinate generation to eye coordinates of the vertex. Pressing the 'o' key switches it back to the object coordinates. Pressing the 's' key changes the plane to a slanted one ($x + y + z = 0$). Pressing the 'x' key switches it back to $x = 0$.

Demo:	texprox
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



Key-Escape Exit
 proxyComponents are 32856
 proxy allocation succeeded
 proxyComponents are 32859
 proxy allocation succeeded

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

texprox.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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The brief program illustrates use of texture proxies.
 This program only prints out some messages about whether
 certain size textures are supported and then exits.

Demo:	texsub
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-s Set Subtexture
 Key-r Reset
 Key-Escape Exit

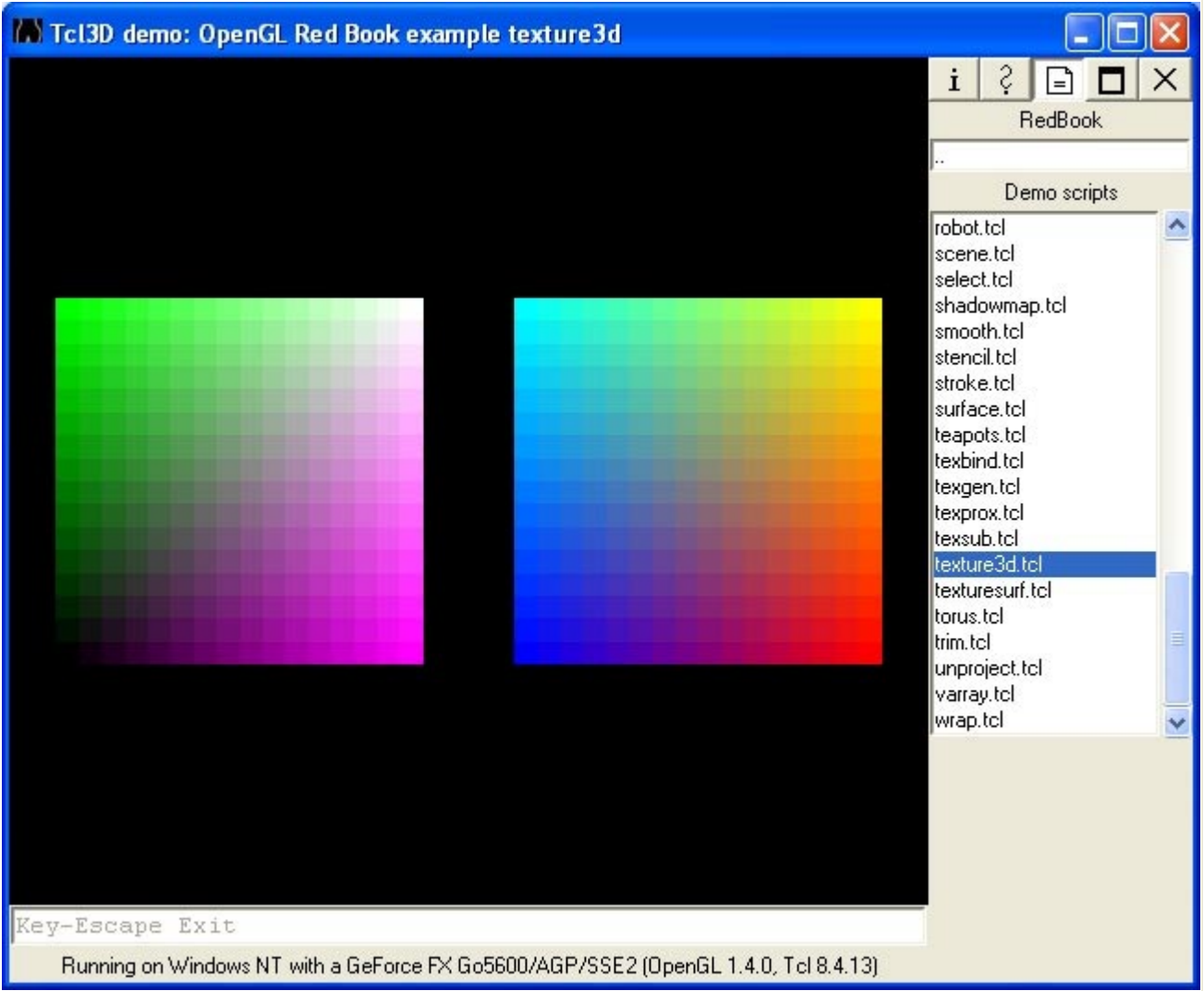
Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

texsub.tcl

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This program texture maps a checkerboard image onto two rectangles. This program clamps the texture, if the texture coordinates fall outside 0.0 and 1.0. If the s key is pressed, a texture subimage is used to alter the original texture. If the r key is pressed, the original texture is restored.

Demo:	texture3d
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents



texture3d.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates using a three-dimensional texture.
It creates a 3D texture and then renders two rectangles
with different texture coordinates to obtain different
"slices" of the 3D texture.

Demo:	texturesurf
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

`texturesurf.tcl`

An example of the OpenGL red book modified to work with Tcl3D.
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This program uses evaluators to generate a curved surface and automatically generated texture coordinates.

Demo:	torus
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-x Rotate around X
 Key-y Rotate around Y
 Key-i Reset Transformations
 Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

torus.tcl

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This program demonstrates the creation of a display list.

Demo:	trim
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

trim.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program draws a NURBS surface in the shape of a symmetrical hill, using both a NURBS curve and pwl (piecewise linear) curve to trim part of the surface.

Demo:	unproject
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

The screenshot shows the Tcl3D demo window titled "Tcl3D demo: OpenGL Red Book example unproject". It features a menu bar with "File" and "Edit". The main area is split into two panes. The left pane, titled "Unproject Output", displays the following text:

```
World coords at z=1.0 are (-36.912870, -34.846499, -99.999894)
Coordinates at cursor are (113, 327)
World coords at z=0.0 are (-0.254539, 0.200062, -1.000000)
World coords at z=1.0 are (-25.453913, 20.006211, -99.999894)
Coordinates at cursor are (345, 99)
World coords at z=0.0 are (0.181277, -0.228240, -1.000000)
World coords at z=1.0 are (18.127694, -22.823987, -99.999894)
..!
```

The right pane, titled "RedBook", shows a list of demo scripts. The script "unproject.tcl" is selected and highlighted in blue. Other scripts in the list include robot.tcl, scene.tcl, select.tcl, shadowmap.tcl, smooth.tcl, stencil.tcl, stroke.tcl, surface.tcl, teapots.tcl, texbind.tcl, texgen.tcl, texprox.tcl, texsub.tcl, texture3d.tcl, texturesurf.tcl, torus.tcl, trim.tcl, varray.tcl, and wrap.tcl.

At the bottom of the window, a status bar indicates: "Key-Escape Exit", "Mouse-1 Get pick results", and "Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)".

unproject.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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When the left mouse button is pressed, this program reads the mouse position and determines two 3D points from which it was transformed. Very little is displayed.

Demo:	varray
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

varray.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program demonstrates vertex arrays.

Demo:	wrap
Type:	RedBook
Category:	TutorialsAndBooks
Root:	Contents

Key-s TexParameter S_CLAMP
 Key-S TexParameter S_REPEAT
 Key-t TexParameter T_CLAMP
 Key-T TexParameter T_REPEAT
 Key-Escape Exit

Running on Windows NT with a GeForce FX Go5600/AGP/SSE2 (OpenGL 1.4.0, Tcl 8.4.13)

wrap.tcl

An example of the OpenGL red book modified to work with Tcl3D.
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This program texture maps a checkerboard image onto two rectangles. This program demonstrates the wrapping modes, if the texture coordinates fall outside 0.0 and 1.0.
 Interaction: Pressing the 's' and 'S' keys switch the wrapping between clamping and repeating for the s parameter.
 The 't' and 'T' keys control the wrapping for the t parameter.

If running this program on OpenGL 1.0, texture objects are not used.