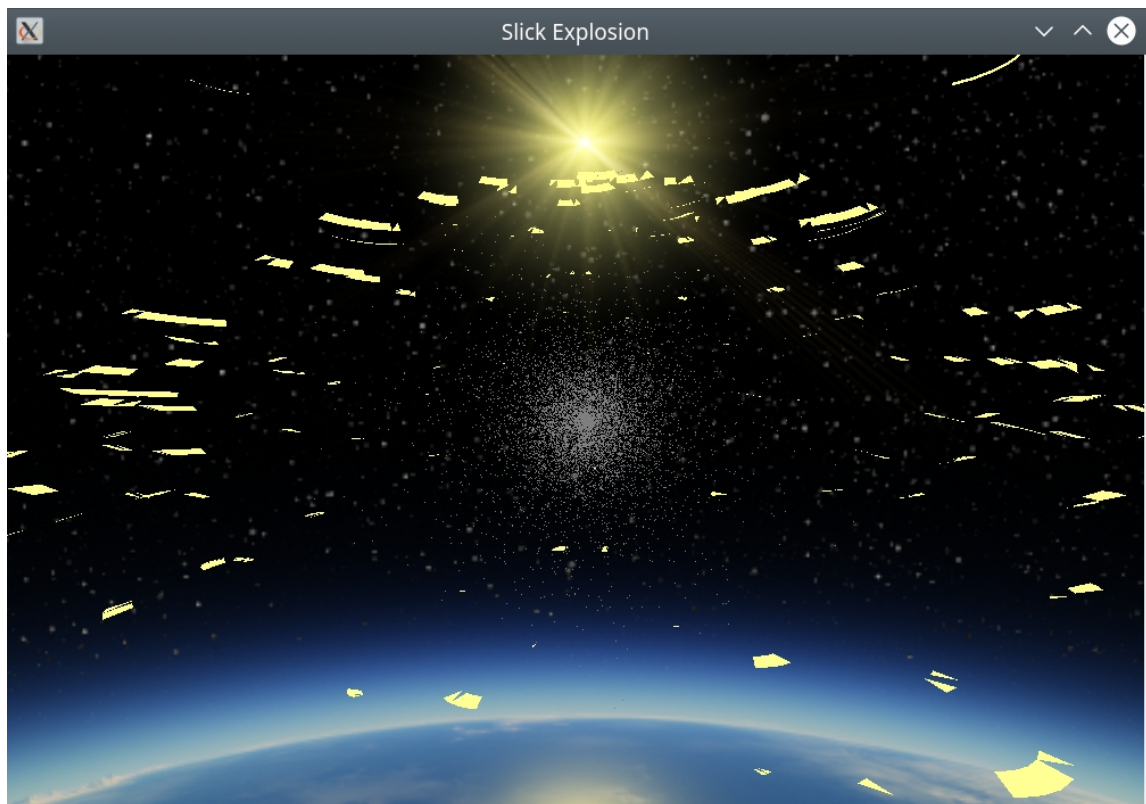
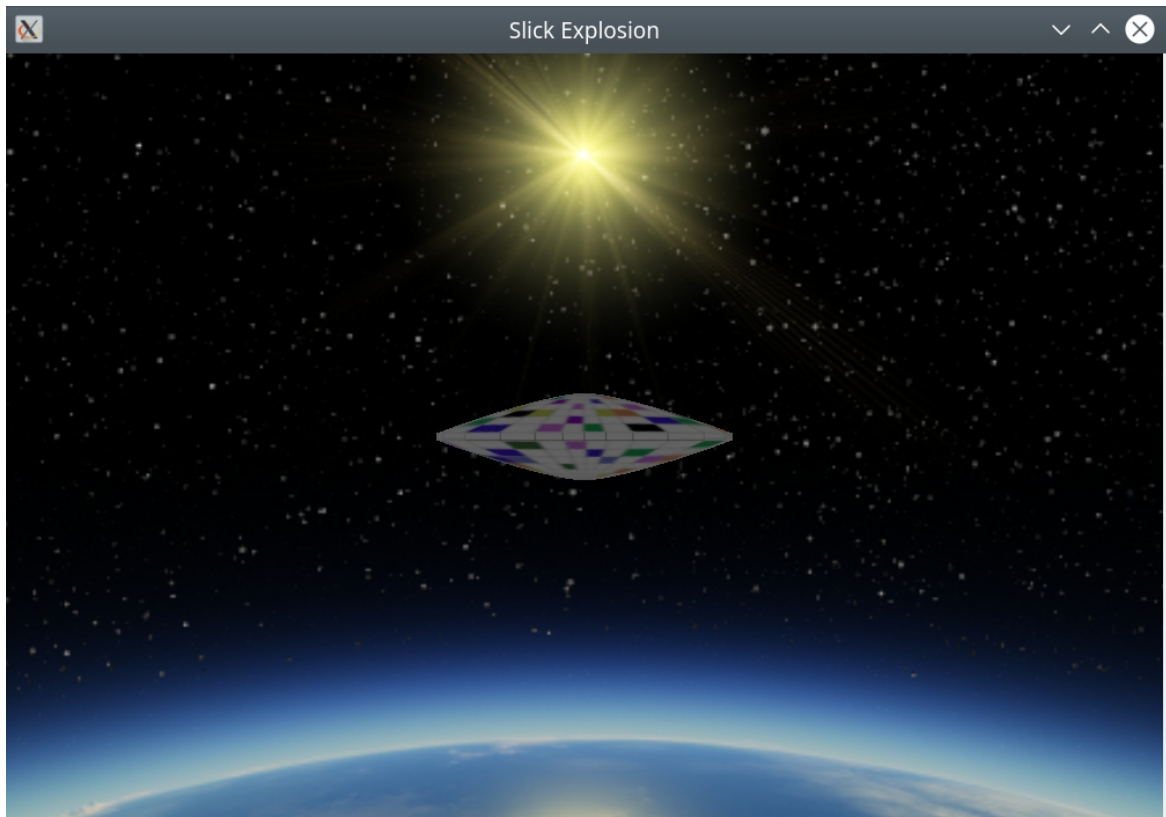


# Slick Explosion



Slick explosion is an interesting program in that it is an OpenGL program with an explosion and a smoke cloud. The cloud of particles are a collection of points drawn on the screen as points from a vertex array. The time standard used throughout is milliseconds and there are variables for time gap and the overall scale of the displayed image. You can find these variables in the defines in the file commonheader.h and smokecloud.h in the include directory. They are as follows:

The define in CommonHeader (adjusts sound timing):

SlickExplosion

#define EXP\_GAP 2000

The defines in SmokeCloud:

AssimpOpenGL

#define NUM\_PARTICLES 10000 Total number of particles.

#define SCALE 15 Scale of the display.

The define in CommonHeader (adjusts breakup of the object):

AssimpOpenGL

#define CHUNK\_SIZE 10

You can adjust these to optimize the performance of the program on your system.

Generally, reducing the number of particles and increasing the chunk size increases performance. And, of course, you may have to adjust the library setting in CMakeLists.txt.

What follows is the contents of the README.txt file.

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San Diego, California USA

slickexplosion is a program that displays an explosion with sound.

The keys are as follows.

a right

s back

d left

w forward

r up

f down

x reverse view.

z reset view.

Escape ends the program.

Alt+Return sets full screen.

Up arrow zooms in.

Down arrow zooms out.

To compile the program you will need the following libraries:

FreeImage, GLEW, SDL2, boost, pthread and GLM.

You must also have cmake, doxygen, graphviz and dia.

The commands are:

```
cd build
cmake ..
sudo make
sudo make doc
sudo make install
```

To run the program:

```
slickexplosion
```

The documentation is located in:

```
/usr/share/doc/slickexplosion-doc
```

The sources I used to educate myself concerning OpenGL are as follows:

"OpenGL ES 3.0 Programming Guide Second Edition"  
by Dan Ginsburg and Budirijanto Purnomo published by Addison-Wesley 2014.  
[www.learnopengl.com](http://www.learnopengl.com).

GLEW <http://glew.sourceforge.net>, and  
CMAKE [www.cmake.org](http://www.cmake.org).

SDL2 <https://wiki.libsdl.org/FrontPage>

pthread <https://www.gnu.org/software/hurd/libpthread.html>

OpenGL is generally available on any system as part of the underlying graphics subsystem and GLEW will get you access to it.

Documentation is available after install at:

```
/usr/share/doc/slickexplosion-doc
```

The program was written and compiled on debian linux available at: [www.debian.org](http://www.debian.org).

You can reach me at <[eberdeed@eberdeed.net](mailto:eberdeed@eberdeed.net)>.

Updates will be available at [www.eberdeed.net](http://www.eberdeed.net).

Edward Charles Eberle

March 25th, 2021 San Diego, California United States of America

This program is licensed under the Lesser GNU Public license.

It can be found in the `assimpopengl/LGPL` directory

and once installed it will be also found at

```
/usr/share/doc/slickexplosion-doc/LGPL.
```

 This

program is given as an instructional aid for learning

and using the libraries presented and is not to

be considered fit for any particular use.