CS 553 Scientific Visualization

Project 2: Simple Grayscale Point Cloud

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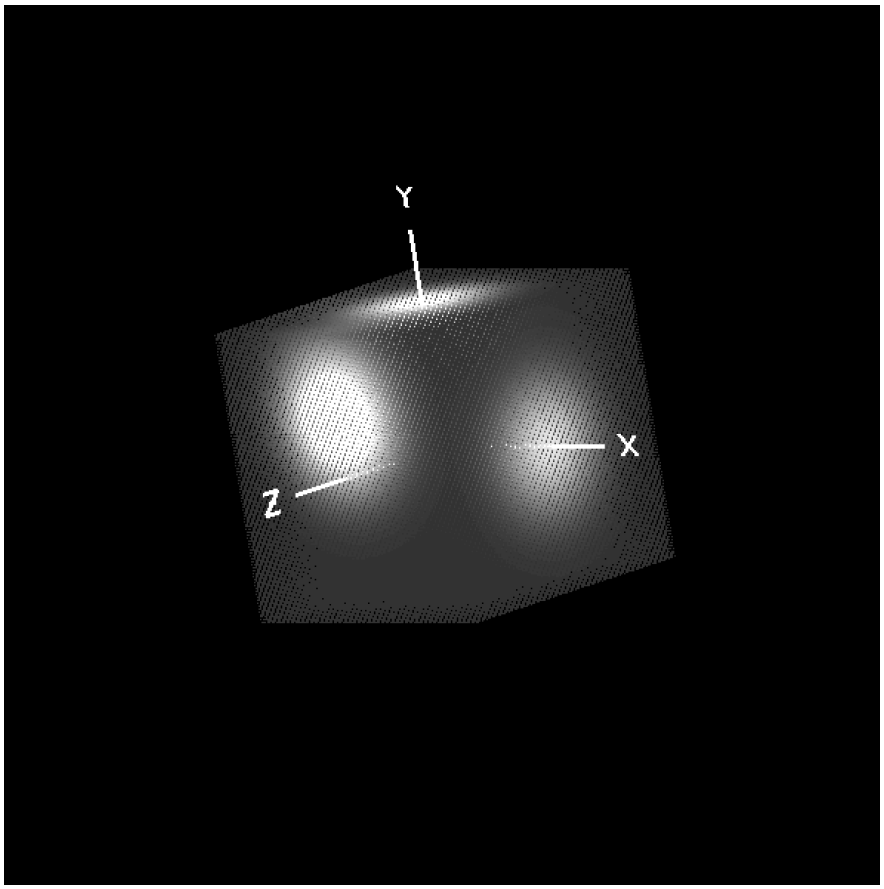
1. Image of My Project



According to this image, we can see the points that are brighter and this means their temperature is higher. I set the point size as 0.1, and number of points, NX, NY and NZ as 100.

2. Key Codes of My Project

```
PointList = glGenLists( 1 );
glNewList( PointList, GL_COMPILE );
glPointSize( 0.1 ); // hardwire this, or set it with a spinner
glBegin( GL_POINTS );
for( int i = 0; i < NX; i++ )
{
    float x = -1.  +  2. * (float)i / (float)(NX-1);
    for( int j = 0; j < NY; j++ )
    {
        float y = -1.  +  2. * (float)j / (float)(NY-1);
        for( int k = 0; k < NZ; k++ )
        {
            float z = -1.  +  2. * (float)k / (float)(NZ-1);
            float t = Temperature(x, y, z);
            float gray = GRAYMIN + ( GRAYMAX - GRAYMIN ) * ( t - TEMPMIN ) / ( TEMPMAX - TEMPMIN );
            glColor3f(gray,gray,gray );
            glVertex3f(x,y,z);
        }
    }
}
glEnd( );
glEndList( );
```

In this project, the most codes are given by our professor, and what we need to do is modifying the codes to the effects showed above. I think the point of this project is to get a better understanding of scientific visualization and the following projects.

We will keep going on changing and adding codes to this sample for the following projects.