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CS450  
Project 6

For the static display of the oval, I placed this piece of code in the display() function:

```
NowS0 = 0.5f;
NowT0 = 0.5f;
NowRs = 0.1f;
NowRt = NowRs;
Pattern.SetUniformVariable( "uSc", NowS0 );
Pattern.SetUniformVariable( "uTc", NowT0 );
Pattern.SetUniformVariable( "uRs", NowRs );
Pattern.SetUniformVariable( "uRt", NowRt );
```

For the keytime animation, I placed this code in my display() function:

```
Pattern.Use();
if( KeytimePatternFlag ) {
    float sc = uSc.GetValue( Time );
    float tc = uTc.GetValue( Time );

    Pattern.SetUniformVariable( "uSc", sc );
    Pattern.SetUniformVariable( "uTc", tc );
}
```

In the initGraphics() function I set my keytime values to:

```
uSc.Init();
uSc.AddTimeValue(0, .5);
uSc.AddTimeValue(.25, .0);
uSc.AddTimeValue(.5, .5);
uSc.AddTimeValue(.75, .99);
uSc.AddTimeValue(.99, .5);

uTc.Init();
uTc.AddTimeValue(0, .5);
uTc.AddTimeValue(.25, .6);
uTc.AddTimeValue(.5, .5);
uTc.AddTimeValue(.75, .4);
uTc.AddTimeValue(.99, .5);
```

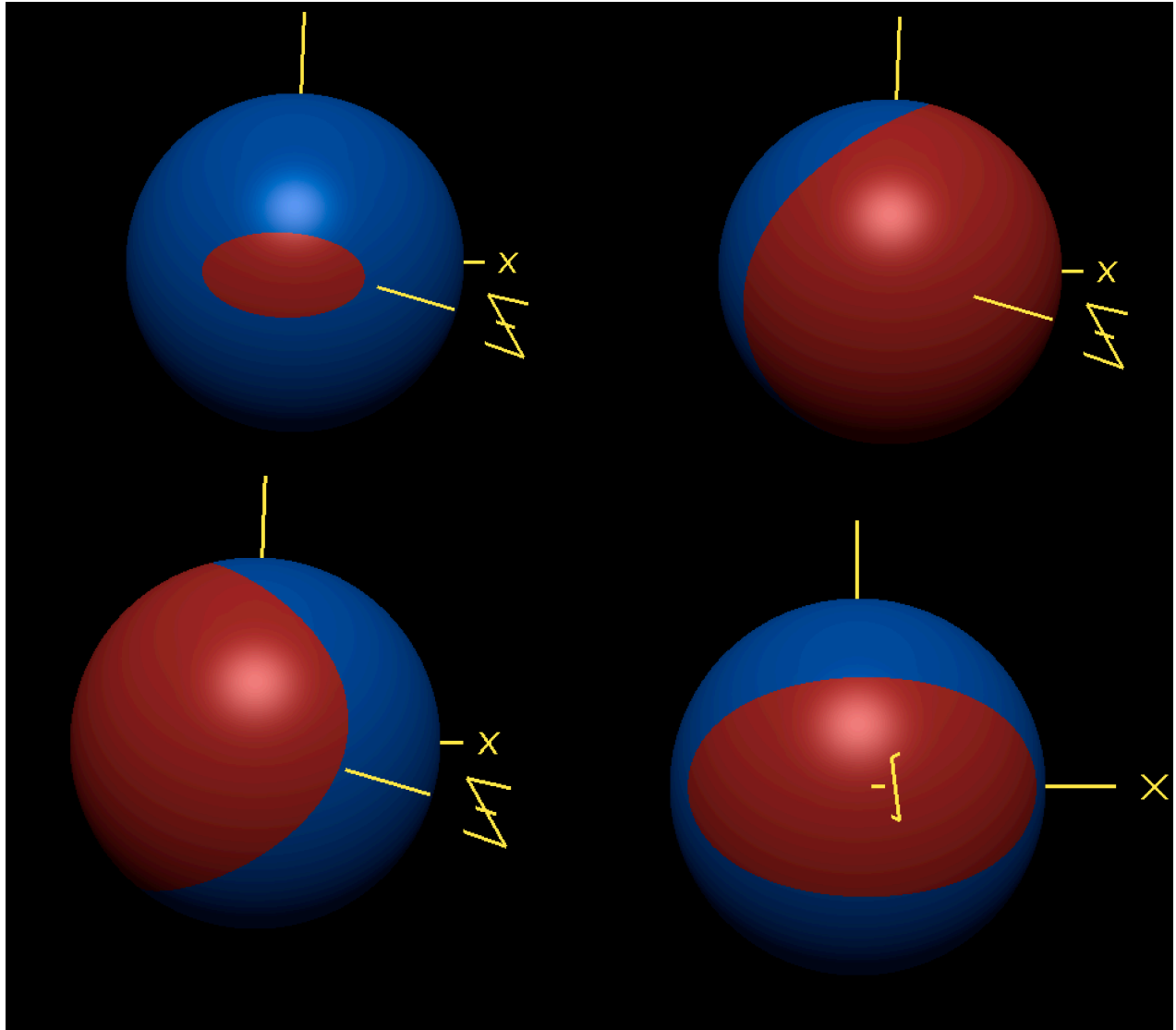
For the Time-equation animation, I placed this code in my display() function:

```
if( TimePatternFlag ) {
    rs = sin(Time);
    rt = sin(Time);

    Pattern.SetUniformVariable( "uRs", rs );
    Pattern.SetUniformVariable( "uRt", rt );
}
```

For both animations, I made flags called KeytimePatternFlag and TimePatternFlag to keep track of the toggle function. Every time the 'k' key is pressed the variable 'kCount' increases by 1. Then KeytimePatternFlag = kCount % 2 to toggle the keytime animation on and off. I do the same thing with the TimePatternFlag using the variable 'tCount'.

Based on my  $uSc$  and  $uTc$  values, I expect the oval to move horizontally from it's starting point, to the left (180 degrees) and then move horizontally right (360 degrees, a full circle), and then come back to the starting point. While it's moving horizontally, I also expect it to move up and down a little bit. Since it does both those things, I am confident that it does what I set it up to do.



Video Link: [https://media.oregonstate.edu/media/t/1\\_agsud5ul](https://media.oregonstate.edu/media/t/1_agsud5ul)