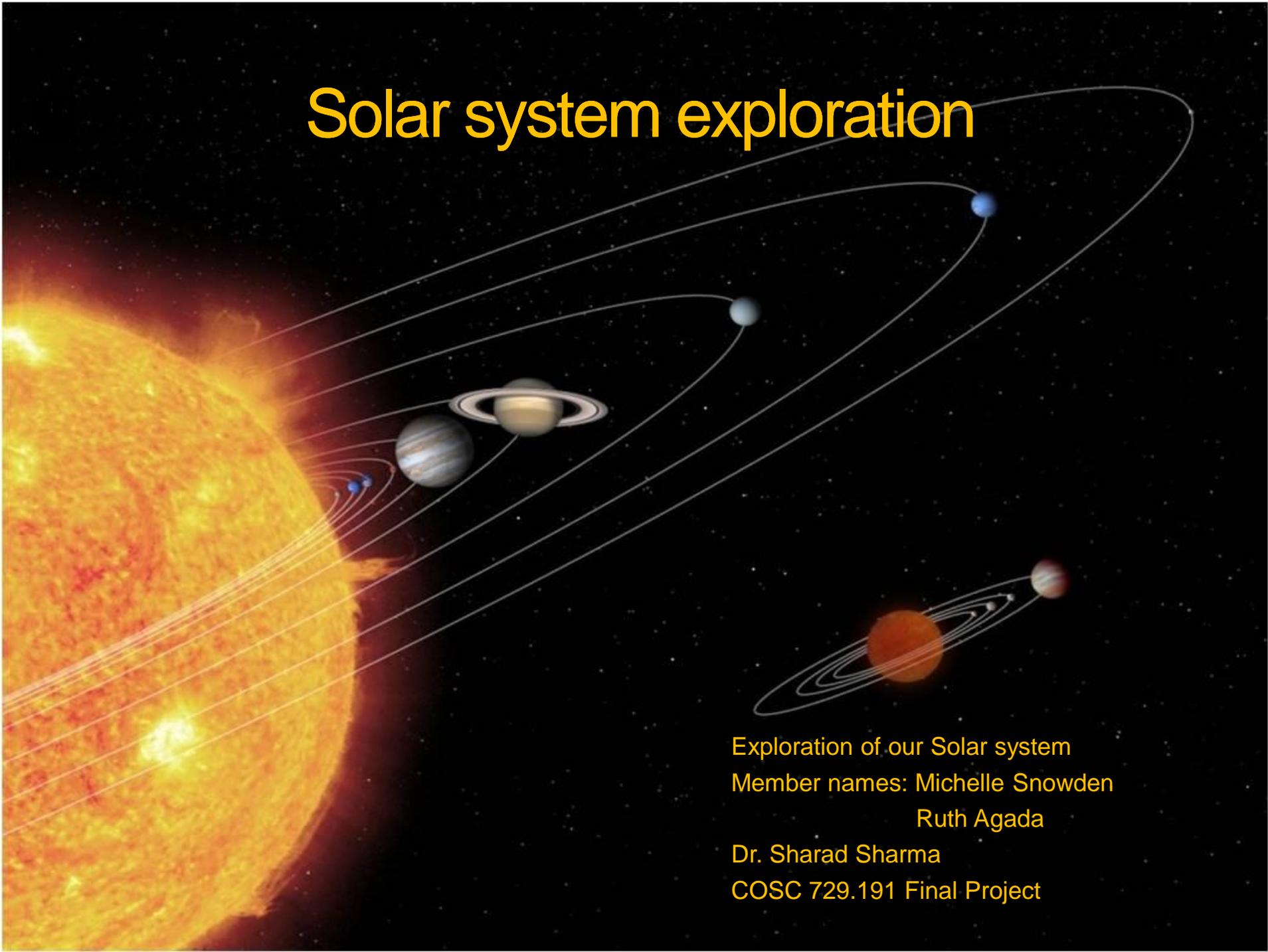# Solar system exploration

Exploration of our Solar system
Member names: Michelle Snowden
Ruth Agada
Dr. Sharad Sharma
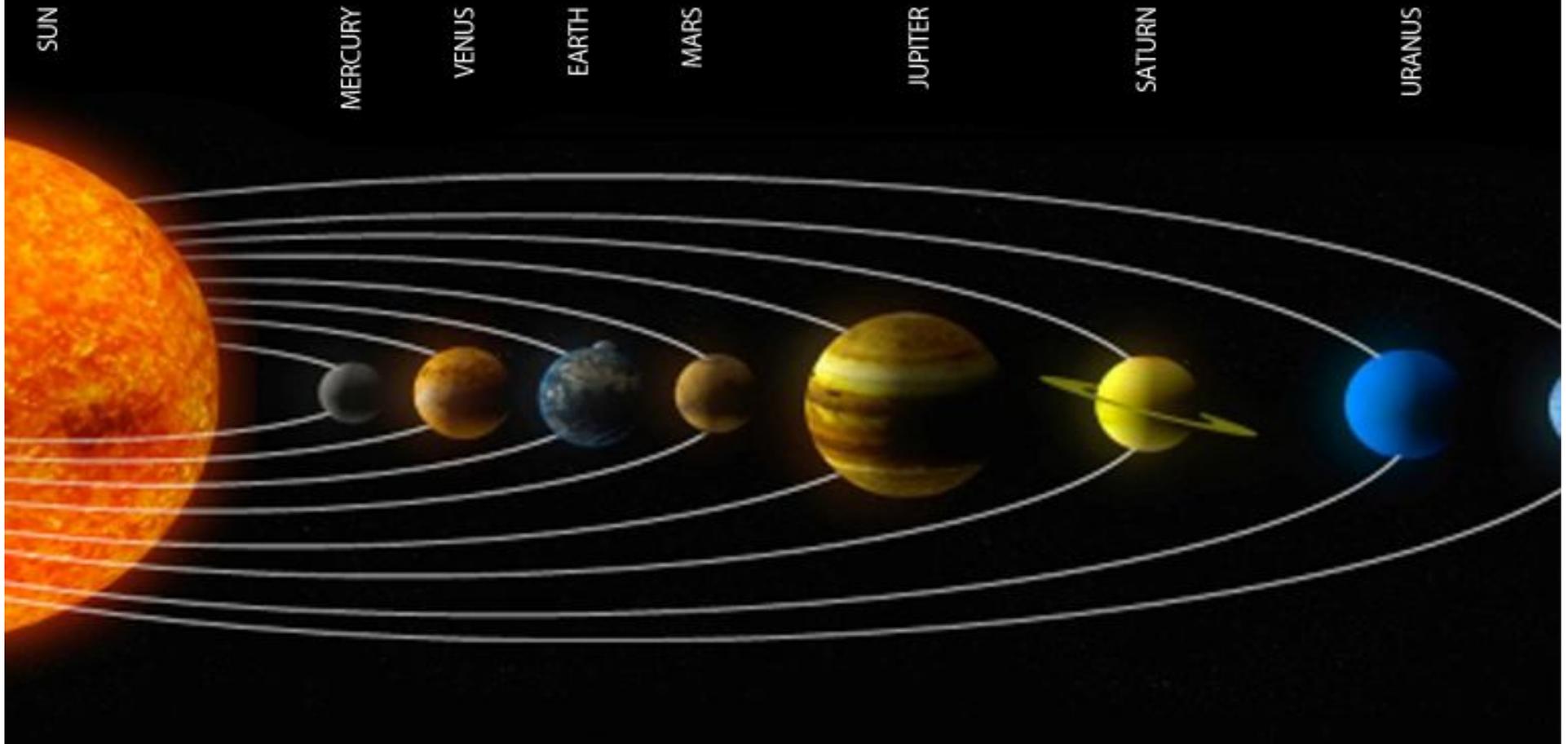COSC 729.191 Final Project

Goals and Objectives

Create a virtual solar system that will:

- learn detailed information about planets
- Play with various objects
- Move through the system

Modeling

- The system below
- Space station – with at least 3 rooms

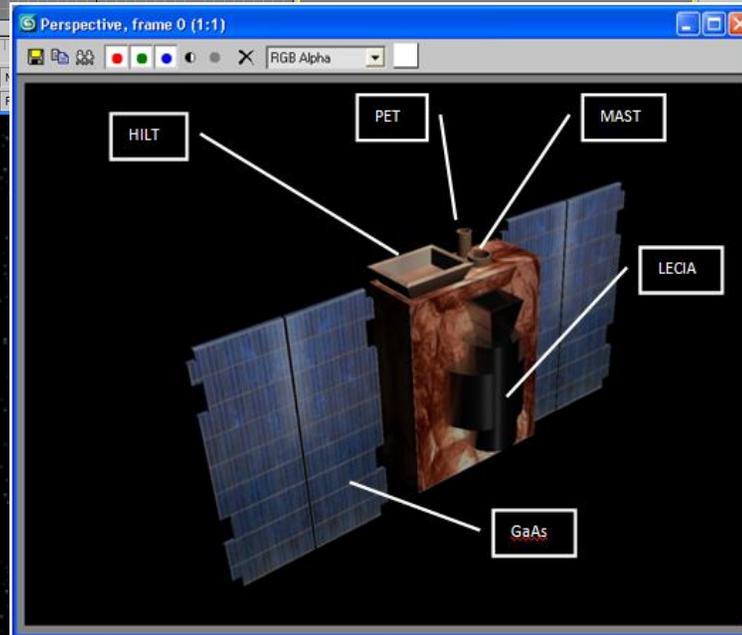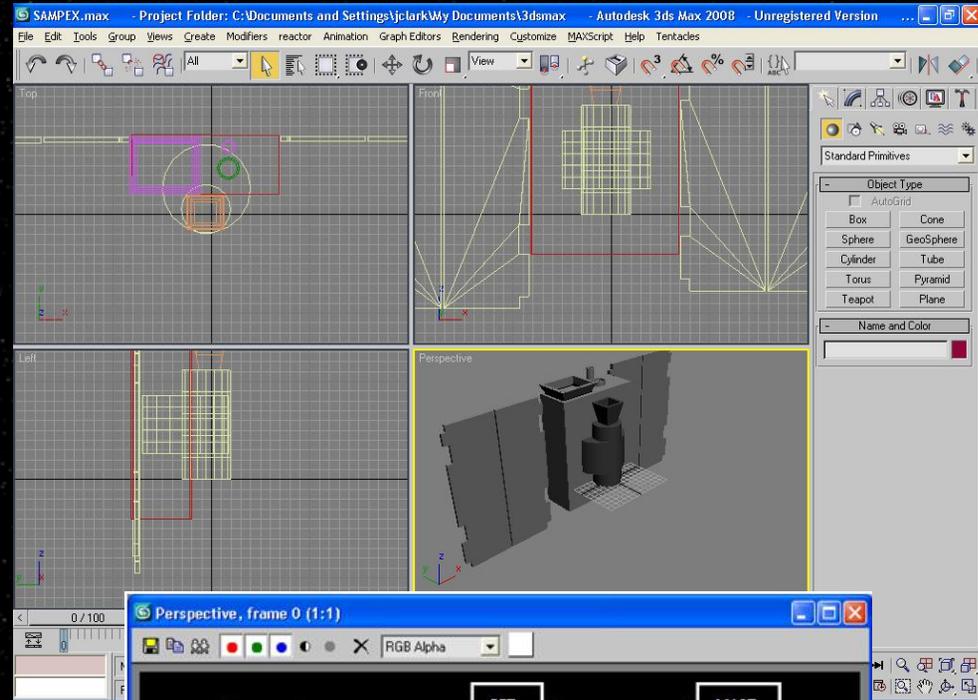SUN   MERCURY   VENUS   EARTH   MARS   JUPITER   SATURN   URANUS

Solar System

- Objects: 8 planets including pluto and the sun
- Image: sun and planet
- Texture: for the sun and planets
- Interpolator: orientation and rotation
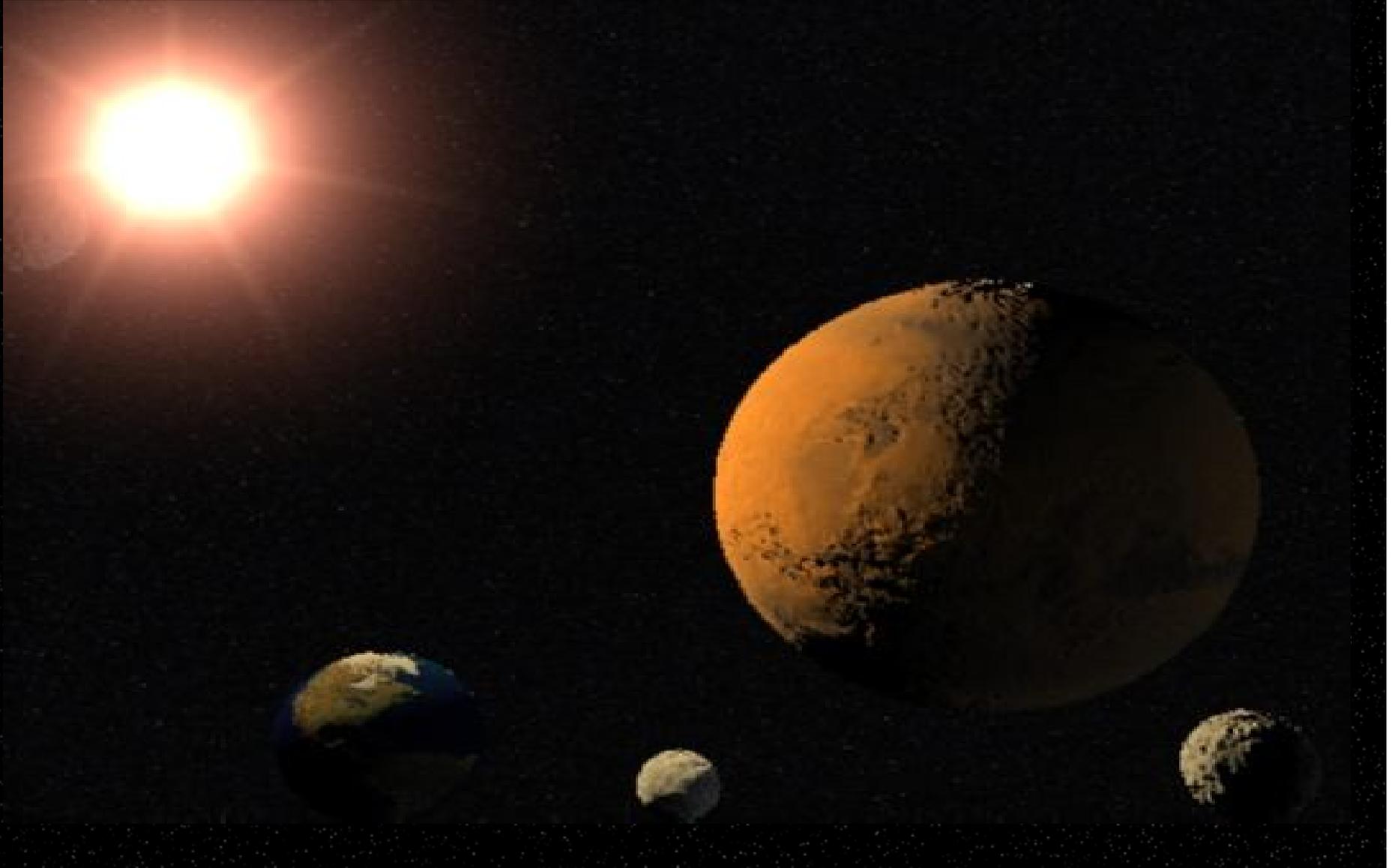- Lights: spot and point

Space Station

- Objects: station, chairs, tables, screens
- Image: solar system
- Texture: metallic surface
- Anchor nodes
- Touch Sensors

3DS Max

Modeling

Solar System

VRML

Satellite Orbit

```
}

#----------------------SAMPEX Oribit ----------------------------

DEF SCRIPT2 Script {
    eventIn SFFloat set_fraction
    eventOut SFVec3f translation_changed
    field    SFVec3f translation 0 0 0

    url "vrmlscript:
        function set_fraction(time){
            t = time * 2 * Math.PI; // time is the time fraction from the time sensor
                                    // here it is converted to radians so that it
                                    // ranges from 0 to 2Pi.
            translation.x = 2000 * Math.sin(t);
            translation.y = 2000 * Math.cos(t);
            translation_changed = translation;
        }
    "
}

ROUTE TIME3.fraction_changed      TO SCRIPT2.set_fraction
ROUTE SCRIPT2.translation_changed TO SAMPEX.set_translation

#----------------------SAMPEX rotation ----------------------------

DEF OI2 OrientationInterpolator {
    key [0, .25 .5, .75, 1.0]
    keyValue [  0 0 1 0.00, 0 0 1 1.57
                0 0 1 3.14, 0 0 1 4.71
                0 0 1 0.00]
        }

    #   DEF TIME5 TimeSensor {
    #       loop TRUE
    #       cycleInterval 5
    #   }

ROUTE TIME3.fraction_changed TO OI2.set_fraction
ROUTE OI2.value_changed TO SAMPEX.set_rotation
#----------------------moon orbit ----------------------
NavigationInfo { headlight FALSE }
DEF TIME2 TimeSensor {
loop TRUE
cycleInterval 40
}
```
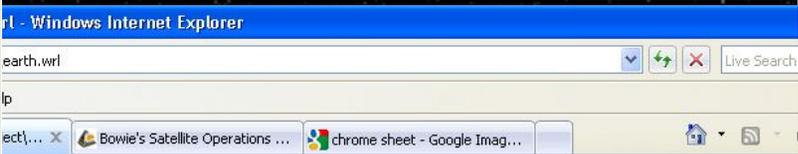
Space Station

Control Room

Problems/Recommendations

- **Problems included**
  - Loss of data and features in transitioning from 3DS Max to VRML
  - Time consumption for modeling planets and animating the Sun
  - Learning to create particle flow source
- **Recommendations**
  - Completing animations for ground station transfers

Questions?