

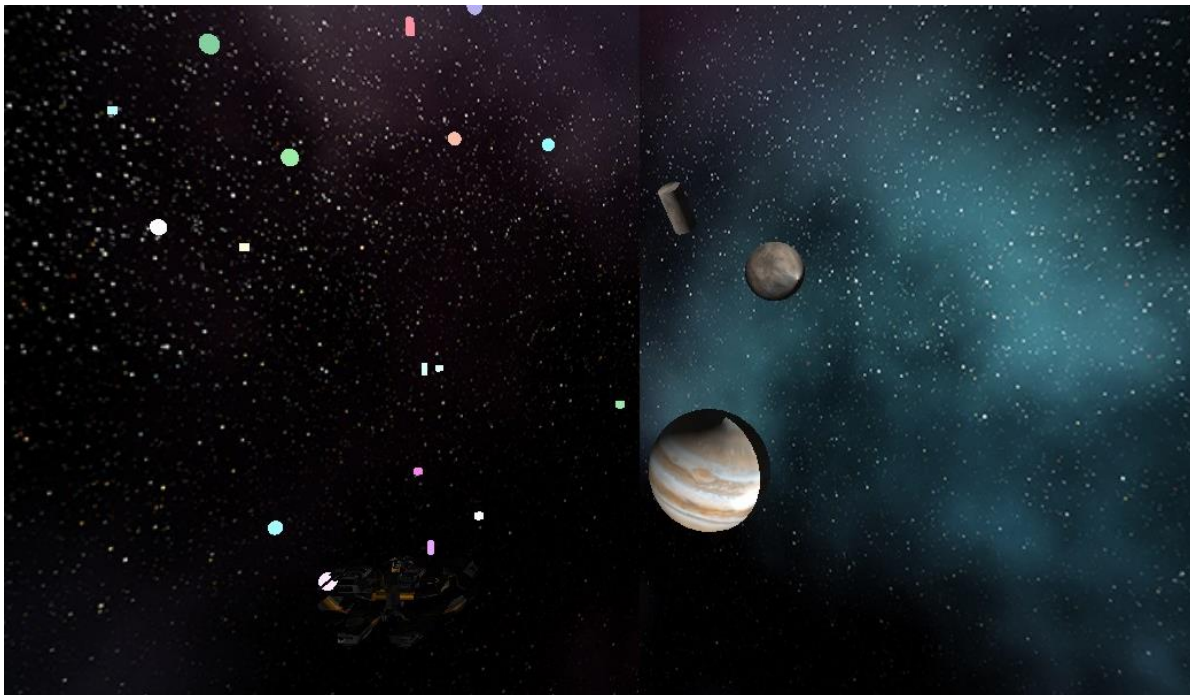
# CSC8502 Coursework <https://youtu.be/efa4Qk9fIKc>



Space:

A sun, A planet, three satellites, a spaceship and shining stars and space cube box.

The sun and the planet have self-rotation. Light position is sun position.



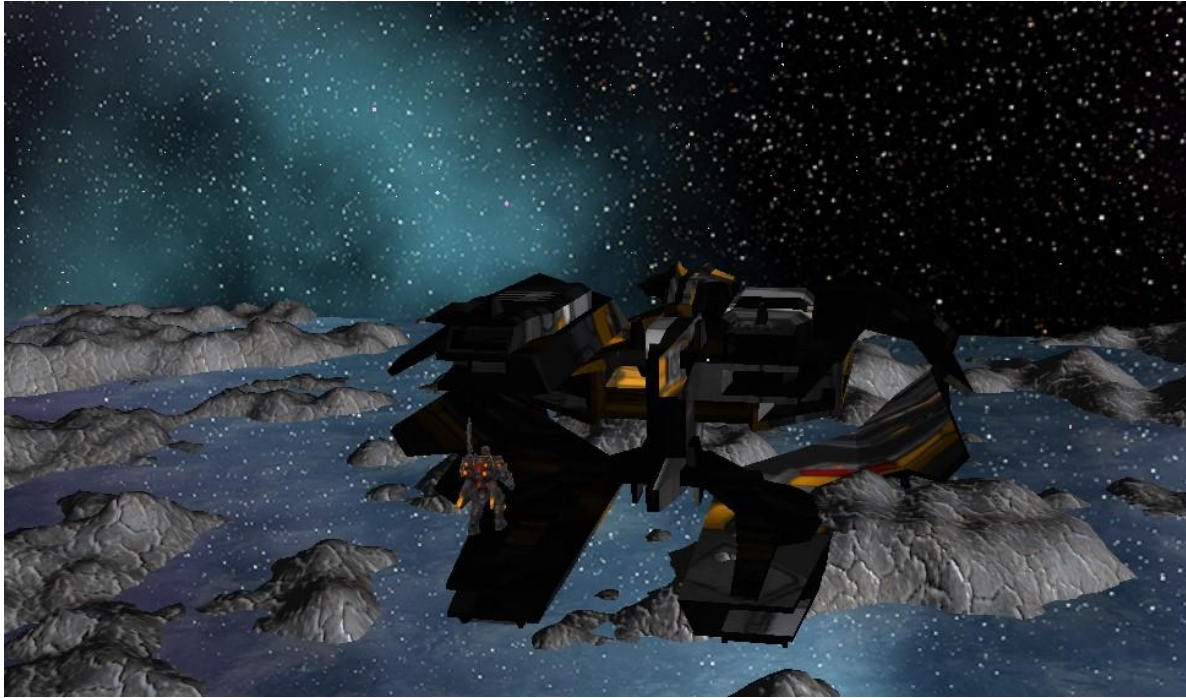
Three satellites rotate around the planet. The spaceship follows the motion of camera, it always shown on the left bottom part on the screen.

The planet, satellites and the spaceship have shadow.



There are shining stars in the space, they show up and disappear with time change.





## Planet Surface:

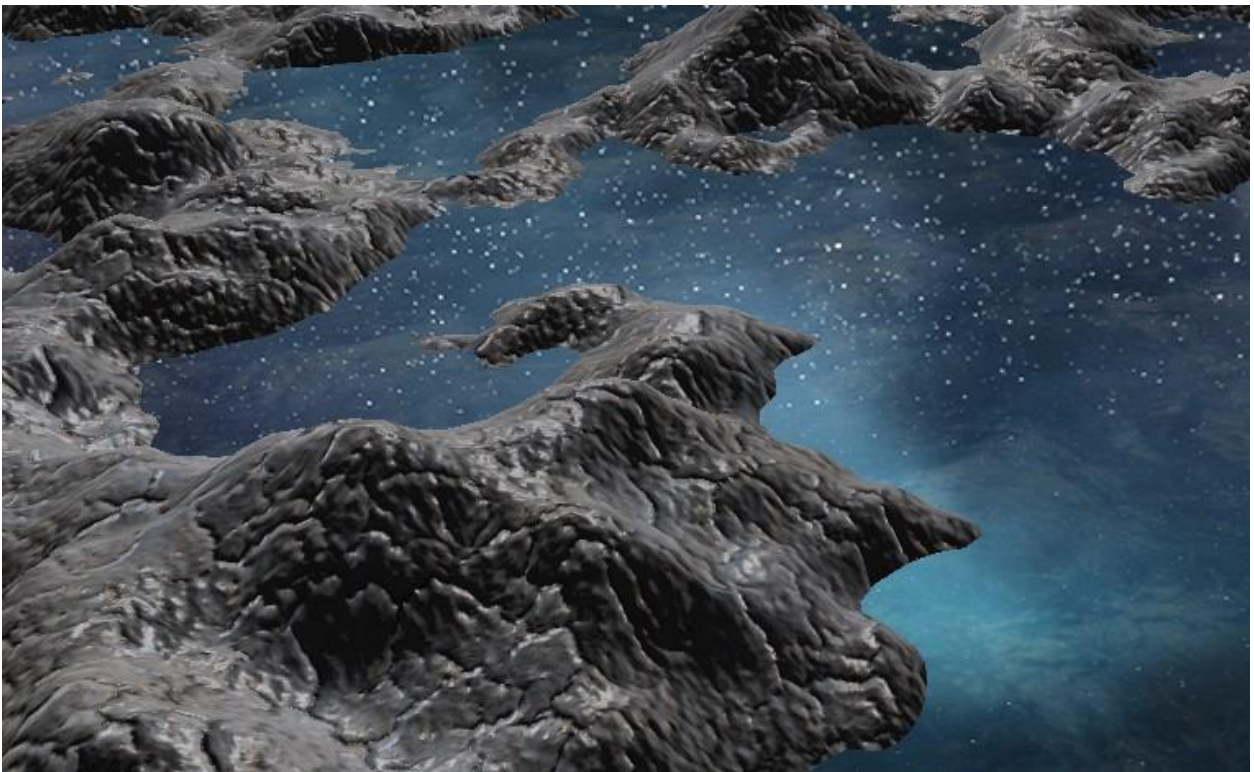
If camera close to the planet or drive the spaceship close to planet, we will transfer to the planet surface.



Same as the space, there are shining stars above the surface.



There are sunrise and sun set on the planet surface. The light moves with the sun.





The landscape has bump texture and water have rotation.

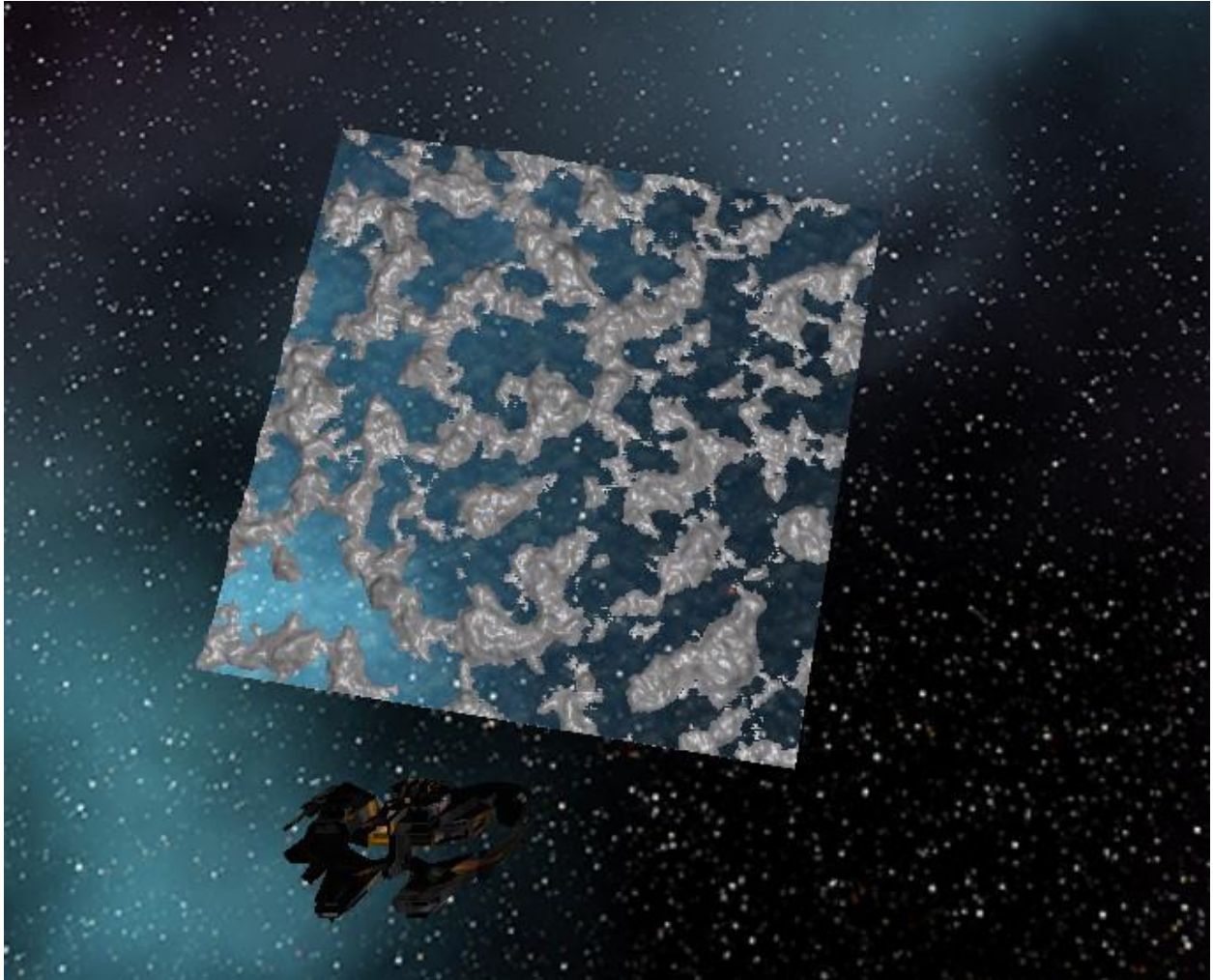


After landing on the planet surface there is a spaceship and an animated character.

If the camera close to the spaceship we will back to the space.

## Scene Transform:

Space scene is not far from to the heightmap. You can see the heightmap and water from the space scene, it just below planets. I add an alpha factor to heightmap, water and the character. The alpha colour time the alpha factor is the final alpha value of the colour. If showing the space scene, the alpha factor will be 0.0f, so the final alpha value is 0, they are transparent, we can't see them from space scene. If I did not add the alpha factor, I look down at space scene we can see heightmap and water like the image below.



Heightmap and water if not control there transparency.

### Keyboard control:

W: move forward.

S: move backward.

A: move left.

D: move right.

Q: enable / disable free camera.

Shift: move up.

Space: move down.

ESC: exit.

Youtube Link: [CSC8502 - YouTube](#)

## Reference:

spaceship mesh and texture:

author: CGPitbull Website: [Free SF Fighter | 3D Space | Unity Asset Store](#)

Planet texture, Sun texture, Satellite texture:

website: [Solar Textures | Solar System Scope](#)

space cube box:

website:

[https://www.freepik.com/free-photo/night-sky-background-with-nebula\\_2295933.htm#query=space%20textures&position=23&from\\_view=keyword&track=ais](https://www.freepik.com/free-photo/night-sky-background-with-nebula_2295933.htm#query=space%20textures&position=23&from_view=keyword&track=ais)