CSCI3260 Project

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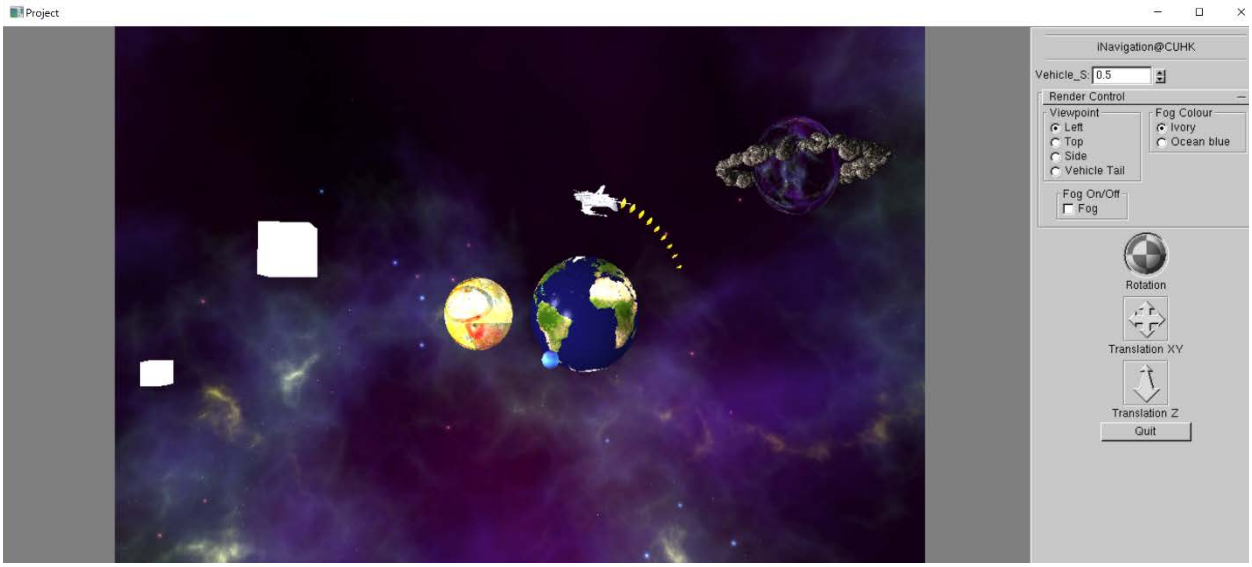
Features:

- ✓ 3 Viewpoints
- ✓ Skybox and light source cube
- ✓ 2 light sources
- ✓ Fog with 2-colour options
- ✓ Normal mapping
- ✓ Displacement mapping (craters)
- ✓ Phong shading (ADS lighting)
- ✓ Self-rotation and rotation around another planet at the same time
- ✓ Multiple shading
- ✓ Environment shading
- ✓ Star trail
- ✓ Instanced rendering of asteroids
- ✓ etc.

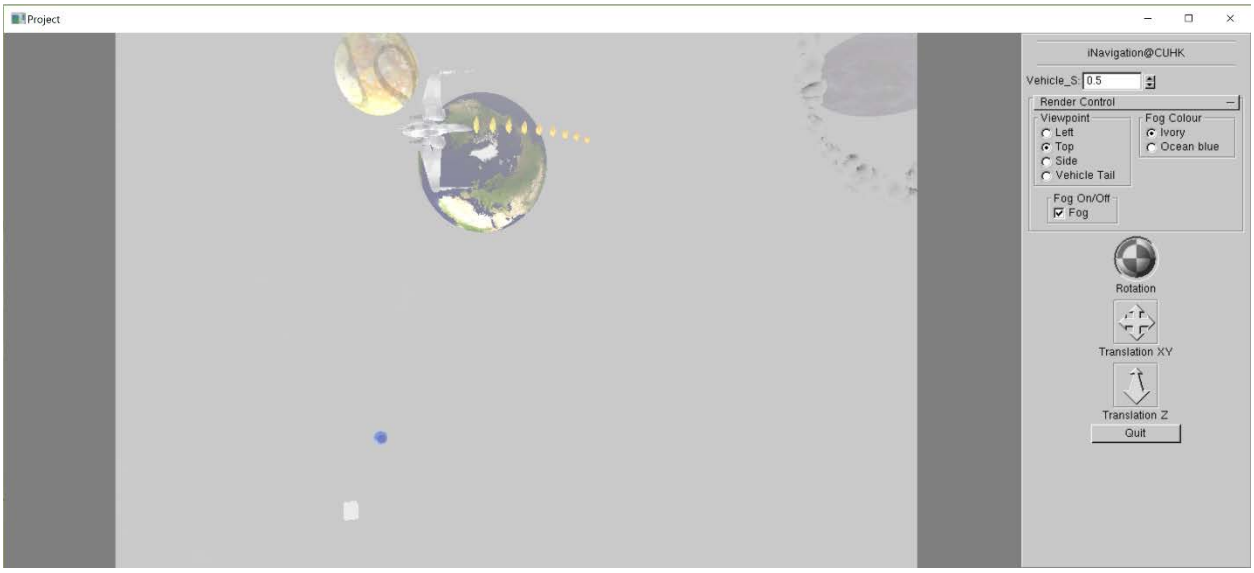
Manipulation:

Key 'a' or 'A':	Set viewpoint to centre of the skybox
Key 's' or 'S':	Set viewpoint to top of the skybox
Key 'd' or 'D':	Set viewpoint to vehicle
Key 'f' or 'F':	Rotate camera westwards
Key 'h' or 'H':	Rotate camera eastwards
Key 'g' or 'G':	Rotate camera sorthwards
Key 'f' or 'F':	Rotate camera northwards
Key 'q' or 'Q':	Increase diffuse lighting
Key 'e' or 'E':	Decrease diffuse lighting
Key 'Esc':	Quit the program
Mouse cursor:	Move scene
Ket ' ':	Toggle mouse control
Mouse wheel scroll:	Zoom in/out

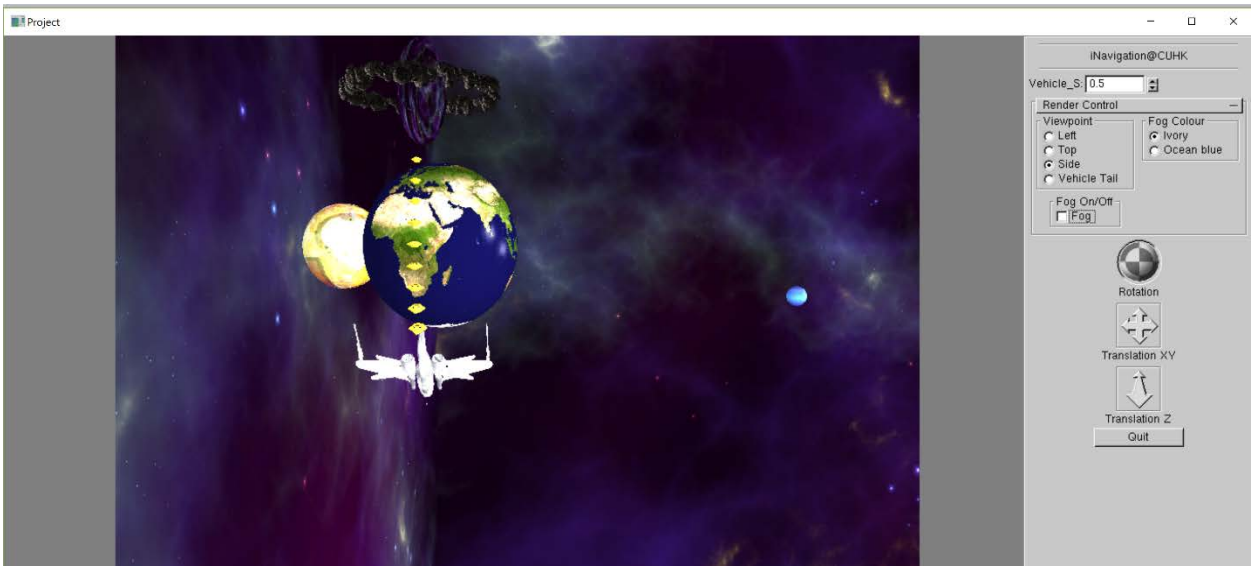
Viewpoint 1



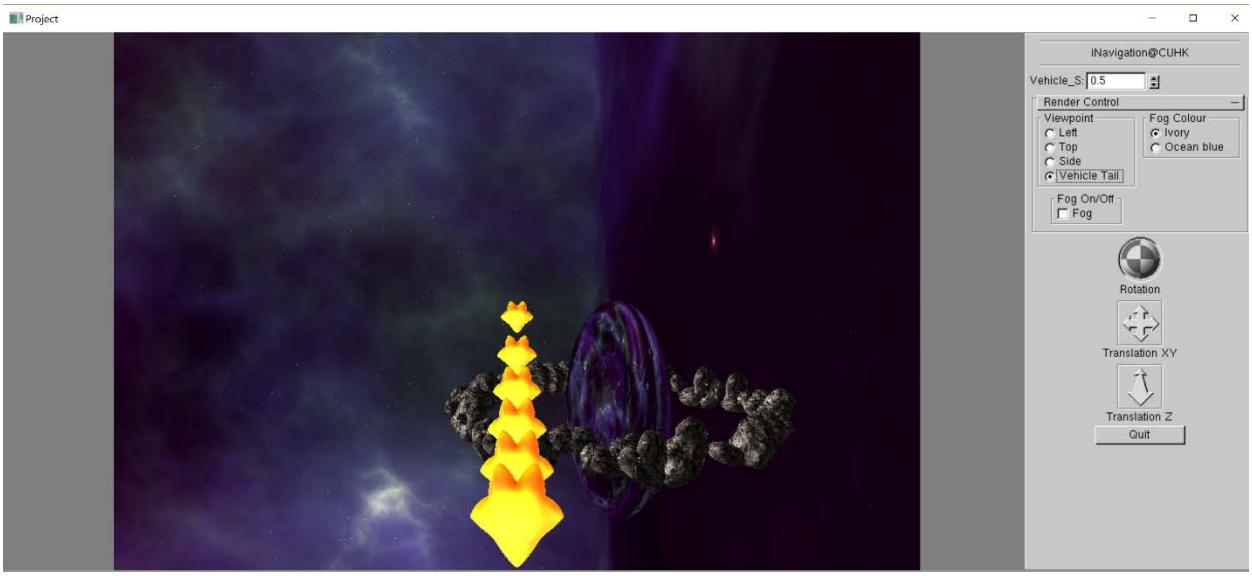
Viewpoint 2



Viewpoint 3

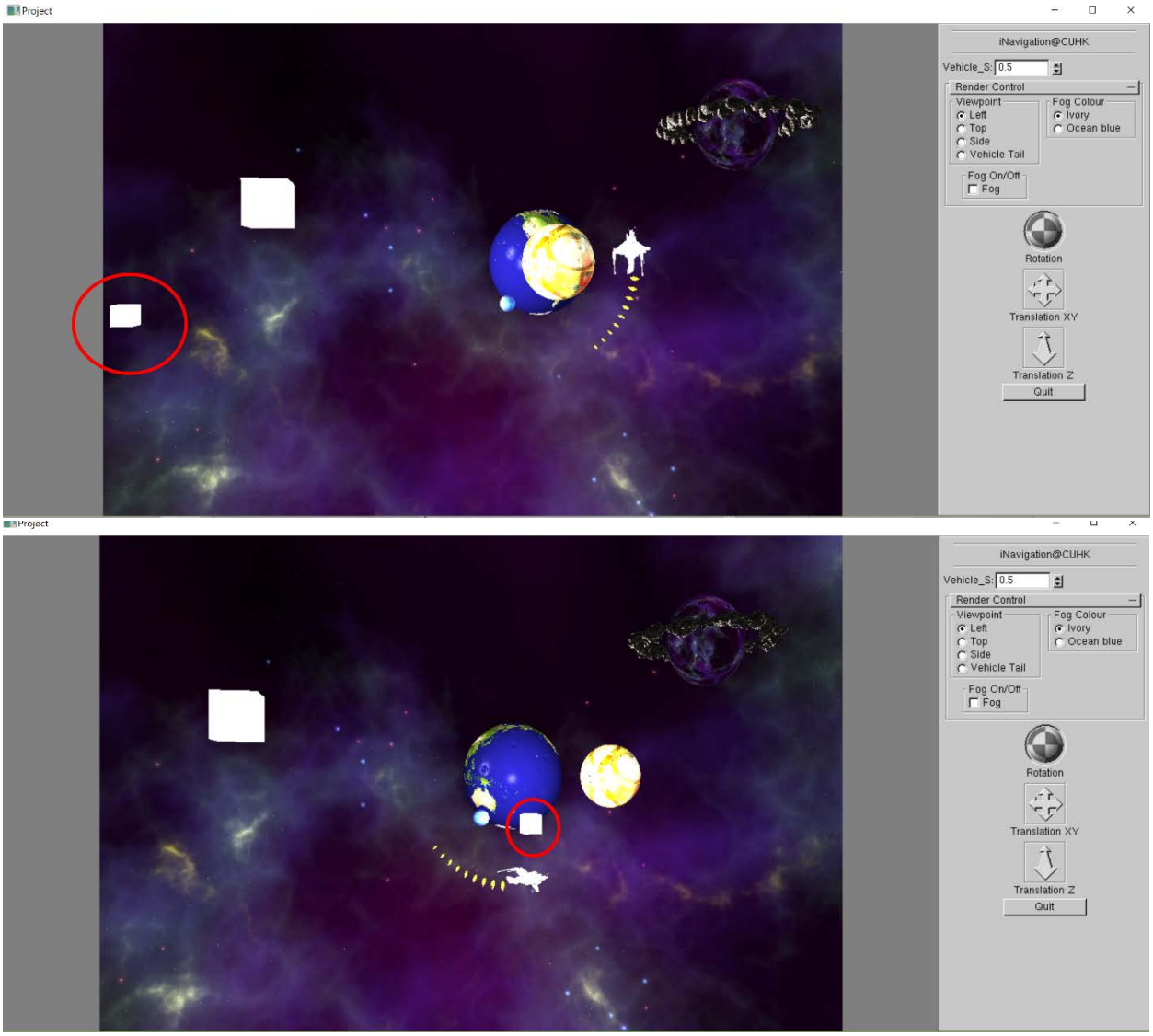


Viewpoint 4

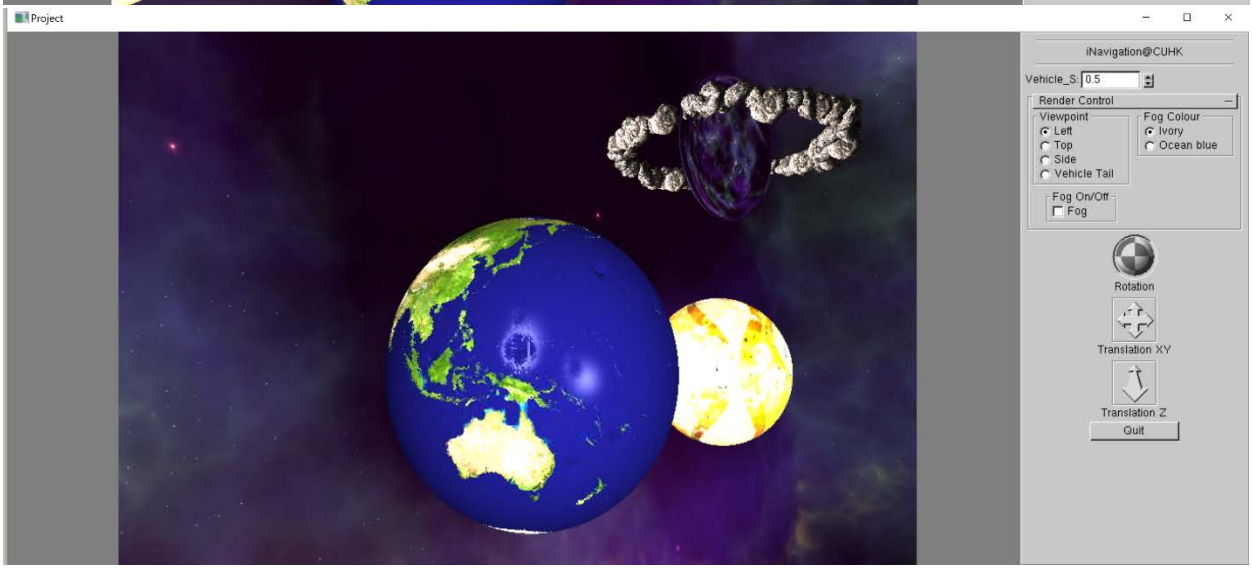


One of the two light source is moving

Increase the diffuse lighting to show how the light source affects the planets

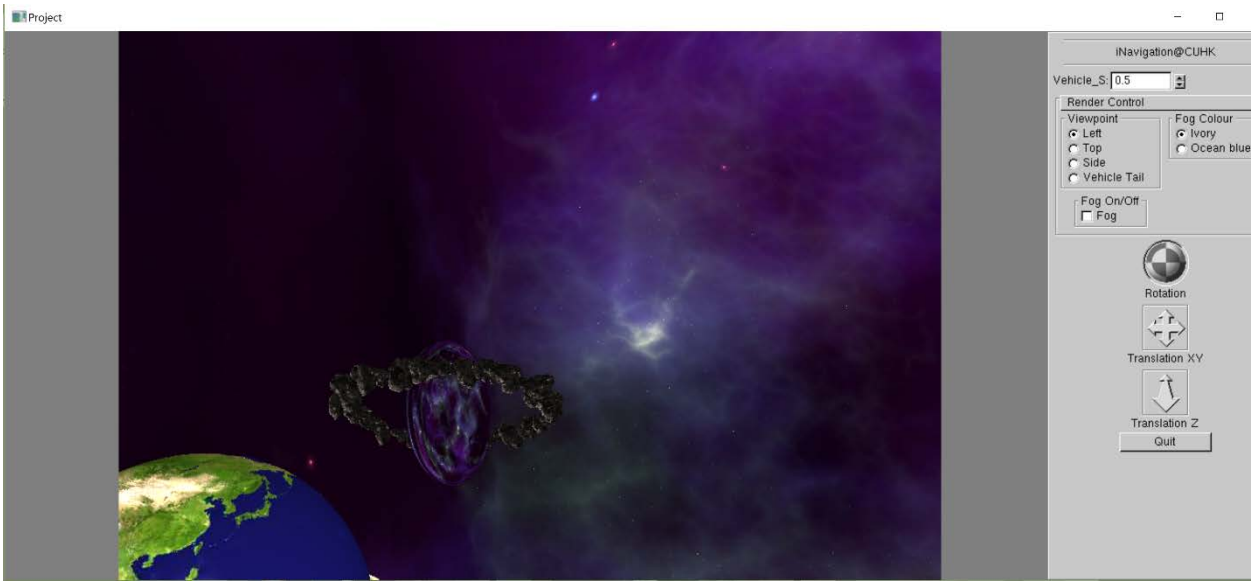


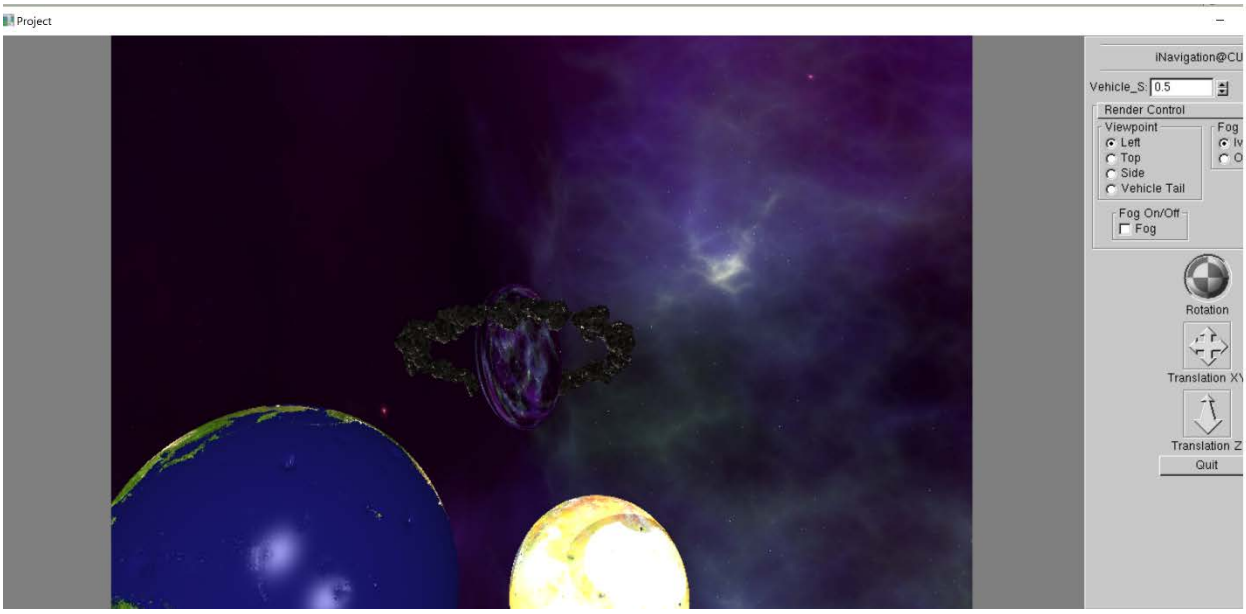
Displacement mapping (craters)



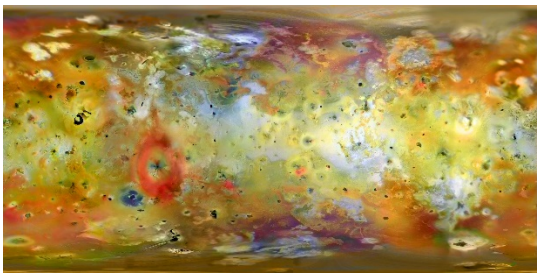
Environment mapping (Top-right planet)

Floating (rotating) meteoroids using instanced rendering (Also you can see normal mapping in Asia)

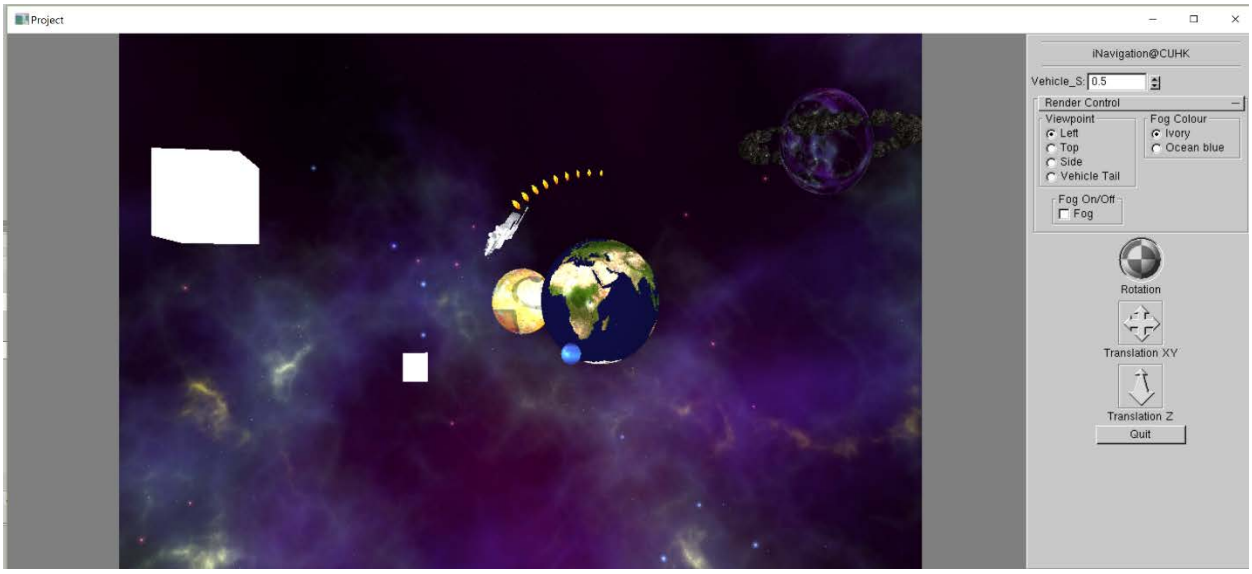


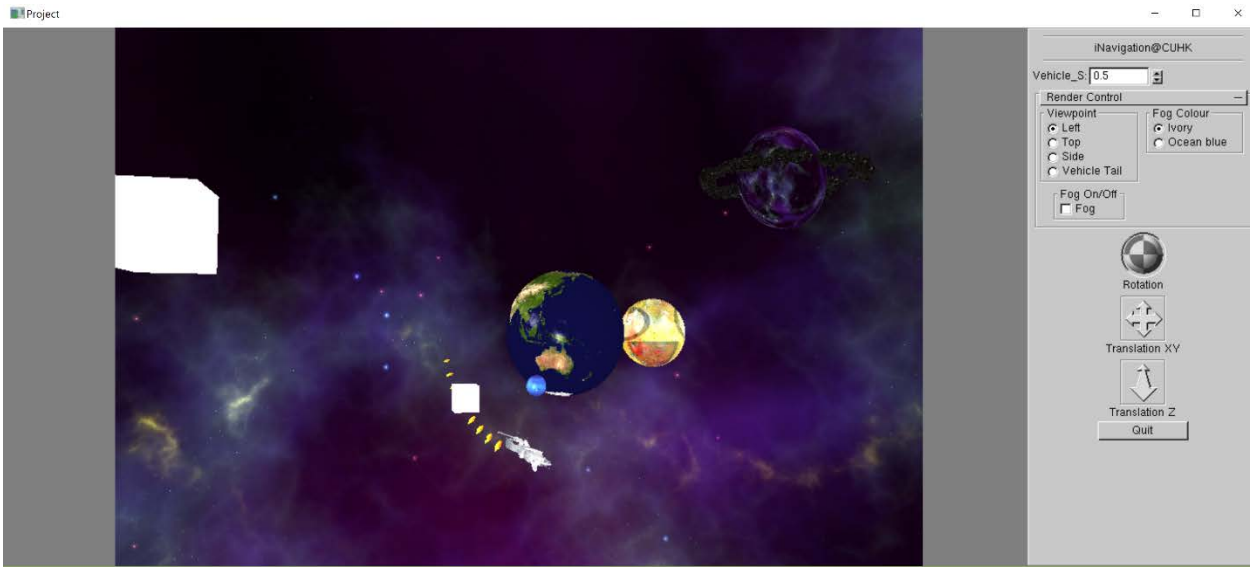


Happy face planet (yellow) uses multiple shading.

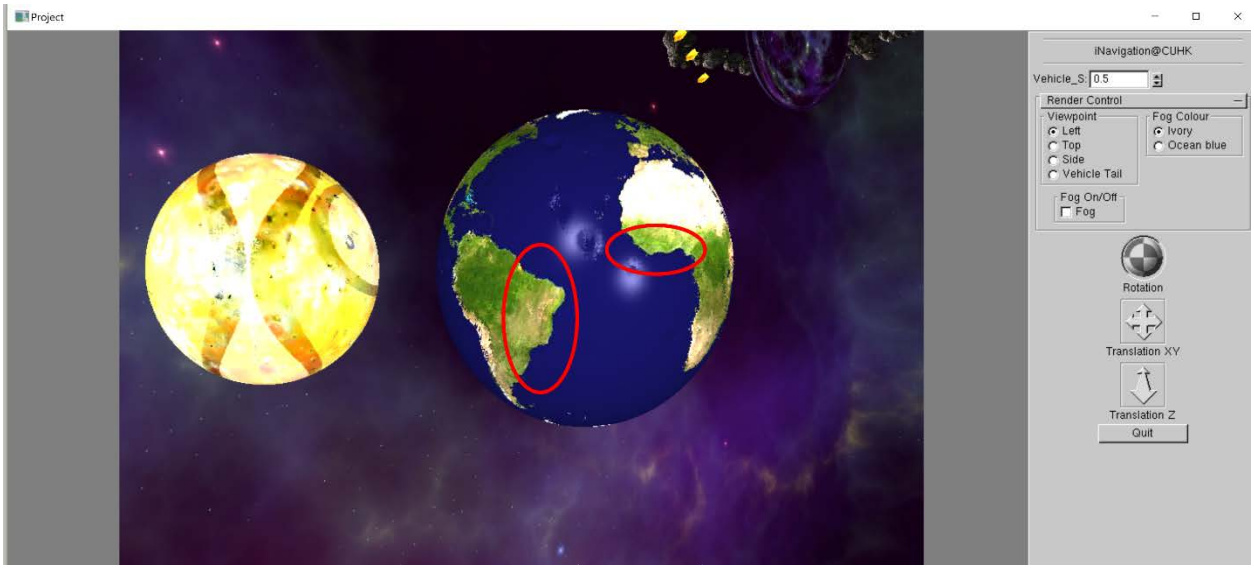


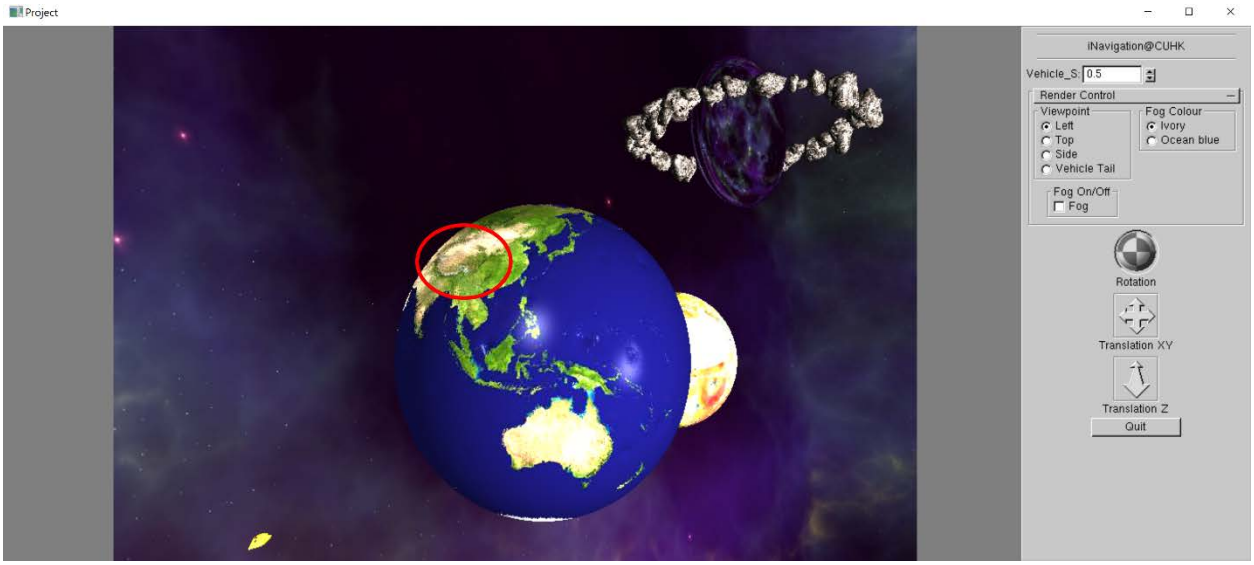
Both self-rotates and rotates around Earth





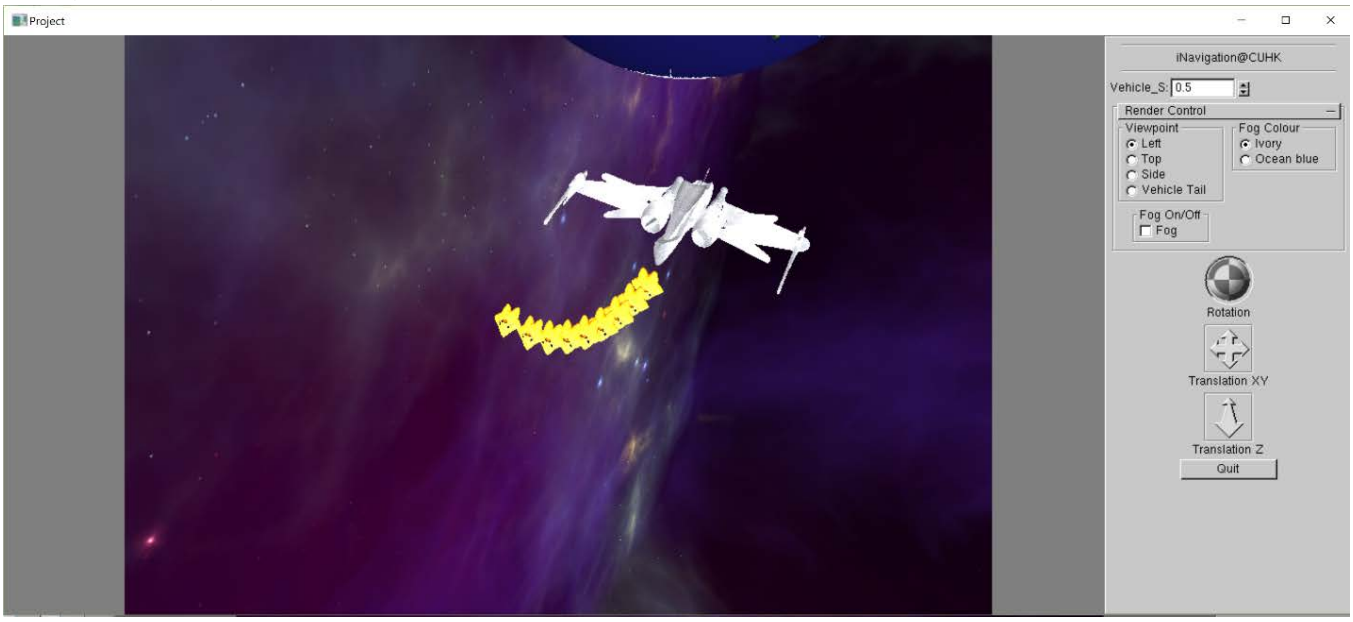
Normal mapping (circled)



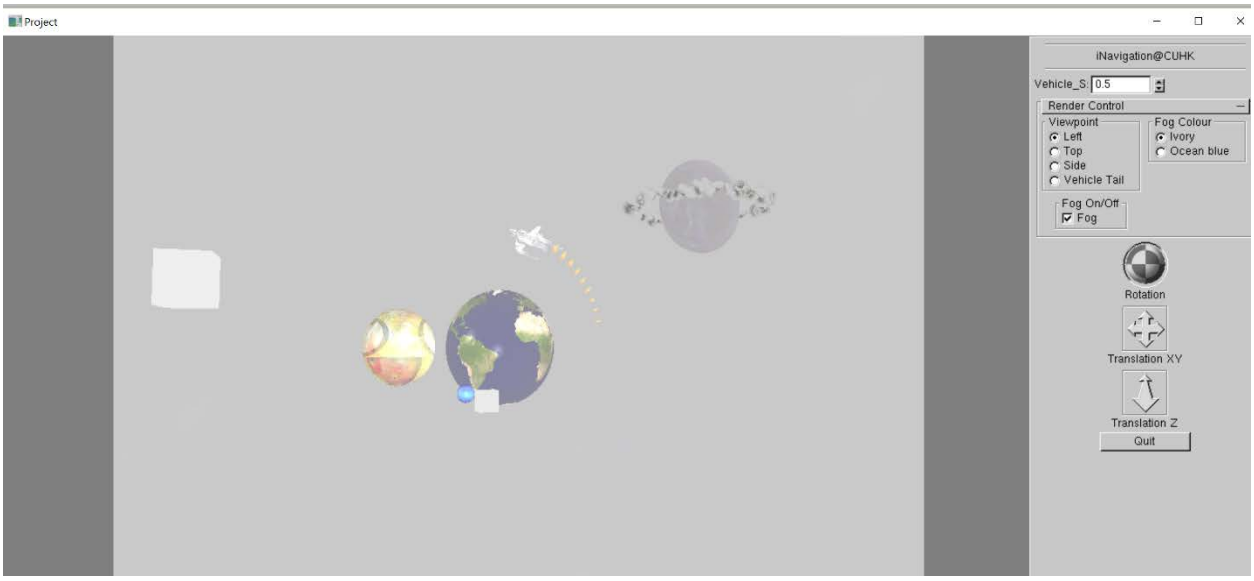


Environment mapping (Top-right planet)

Stars (with faces!)



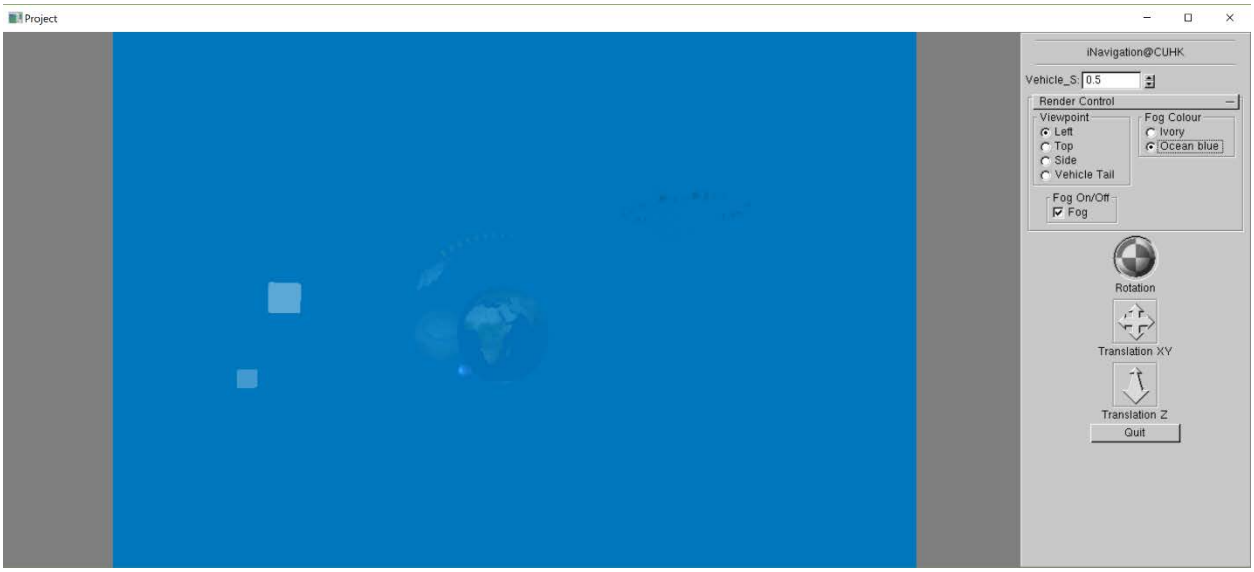
White fog



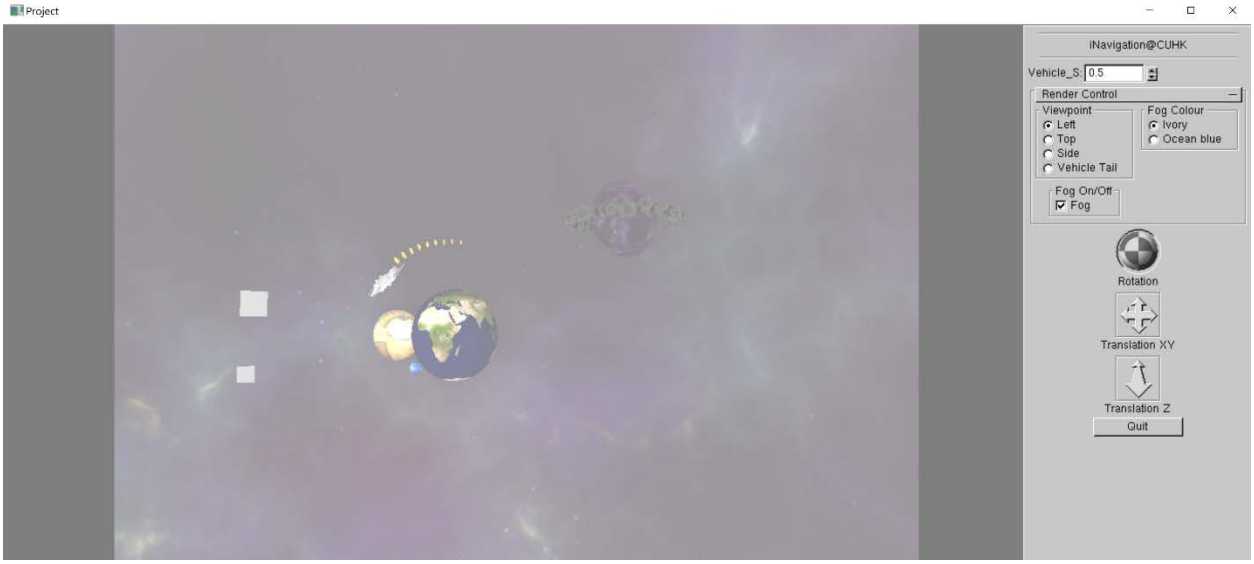
Blue fog

High-density fog

High-density fog (blue)



Low-gradient fog



Low-gradient fog (blue)