

Group 4 – SpaceReEscape

Controls:

- F1 – Toggle Debug camera
- W, A, S, D – Debug camera movement
- Q, E – Debug camera movement up / down
- Space – Debug camera movement up
- Left Mouse – Toggle Debug camera mouse control
- F3 – Render regular scene shading
- F4 – F10 – Render specific g-buffer target

Effects:

- GPU Particle System
- Deferred Shading
- Dynamic Environment Map
- Normal mapping where tangent and bitangent are computed manually

General:

In this project we implement the 4 effects listed above. The GPU particle system represents a hurricane / sandstorm in the scene, and the dynamic environment mapping can be observed at the very prominent silver cube in the center of the scene. Further, we use the normal mapping in order to give the sand dunes a more detailed wavy look, which may sometimes be a little hard to see from certain camera angles. Lastly, we make use of a deferred shading approach, where we first render to various different g-buffer targets (albedo, normal, shading coefficients, material parameters, world position) and then do the actual shading in a final full-screen quad draw. As mentioned above, all these different g-buffer targets can be inspected by using F4-F10. F3 then applies the default (PBR-style) shading. Next to this brief documentation, we also included a more detailed JavaDoc-style documentation in the docs folder. Lastly, we added some external code from <https://github.com/ttk592/spline> for creating the paths for our objects / camera but did otherwise not include any additional libraries compared to Submission 2.

