

DM567 August 2018

Exercises 3

1. Change Program 5.1 to use other textures. Try both finding textures on the web and making your own via a painting program.
2. Animate the texture of Program 5.1 by perturbing the texture coordinates at texture lookup time by a time varying value.
3. Add an “astroid belt” of many small objects to the solar system of Program 4.4 (or to your extension hereof from yesterday). Use instancing (Section 4.6.1) to facilitate a large number.
4. Choose three values $(\alpha_x, \alpha_y, \alpha_z)$ for Euler angles. Then make an animation where a cube at timestep t is rotated around the three coordinate axes with the angles $(\alpha_x \cdot t/T, \alpha_y \cdot t/T, \alpha_z \cdot t/T)$, for a total of T timesteps (and then maybe rotate backwards again etc., for a continuous animation). Try to find values of $(\alpha_x, \alpha_y, \alpha_z)$ which make the animation “tumbling” and uneven.