Lab 3 – Mars, Moons and Asteroids

GameManagerScript

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
public class GameManagerScript : MonoBehaviour
{
    public GameObject camera, mars;
    public GameObject phobos, deimos, asteroid;

    // Probability of spawning an asteroid per frame
    public float asteroidSpawnProbability = 0.1f;

    void Start()
    {
        camera.transform.position = new Vector3(0f, 0f, -200f);
        camera.transform.LookAt(mars.transform);
        mars.GetComponent<Rigidbody>().AddTorque(new Vector3(0f, 20f,
0f));
    }
    // Update is called once per frame
    void Update()
    {
        phobos.transform.RotateAround(Vector3.zero, Vector3.up, 3f *
Time.deltaTime);
        deimos.transform.RotateAround(Vector3.zero, Vector3.up, 2f *
Time.deltaTime);

        // Check if a random number falls within the spawn probability
        if (Random.Range(0f, 50f) < asteroidSpawnProbability)
        {
            // Spawn a new asteroid using Instantiate
            GameObject newAsteroid = Instantiate(asteroid);
        }
            // NB we are using the camera's own coordinate system
(rather than the global coordinate system) to specify the axis of
rotation
            if (Input.GetKey(KeyCode.LeftArrow))
            camera.transform.RotateAround(Vector3.zero,
camera.transform.up, 50f * Time.deltaTime);
            else if (Input.GetKey(KeyCode.RightArrow))
                camera.transform.RotateAround(Vector3.zero,
camera.transform.up, -50f * Time.deltaTime);
            if (Input.GetKey(KeyCode.UpArrow))
                camera.transform.RotateAround(Vector3.zero,
camera.transform.right, 50f * Time.deltaTime);
            else if (Input.GetKey(KeyCode.DownArrow))
                camera.transform.RotateAround(Vector3.zero,
camera.transform.right, -50f * Time.deltaTime);
    }
}
```

Asteroid Script

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class AsteroidScript : MonoBehaviour
{
    public GameObject asteroid;

    private void Start()
    {
        asteroid.GetComponent<Rigidbody>().AddForce(600,0,0);
        transform.position = new Vector3(
        -150,
        Random.Range(-100f, 100f),
        Random.Range(-100f, 100f)
        );
    }

    // Called when the asteroid collides with another object
    private void OnCollisionEnter(Collision collision)
    {
        GameObject.Destroy(this.gameObject);
    }

    private void OnBecameInvisible()
    {
        GameObject.Destroy(this.gameObject);
    }

}
```