

Kerbal Space Program - Bug #28634

Unnecessary GCAlloc and Increased CPU Time Building Terrain

05/20/2022 06:39 PM - Gameslinx

Status:	New	Start date:	05/20/2022
Severity:	Low	% Done:	0%
Assignee:			
Category:	Bug Tracker		
Target version:			
Version:	1.12.3	Language:	English (US)
Platform:	Linux, OSX, Windows	Mod Related:	No
Expansion:	Breaking Ground, Core Game, Making History		

Description

When profiling the game when a terrain quad is being built, there is a significant amount of GC.Alloc (garbage) being created. The profiler does have a performance hit, but these allocations are taking up 19% of the quad building time. It can be easily avoided, reducing both garbage generated and CPU time.

When accessing Mesh.normals, a new copy of the normals array is returned. In one of the pictures I have attached, Mesh.normals is being accessed for every vertex in the PQS cache. This is the source of these GC.Alloc flags. To fix this, refer to the last image I have attached. In my proposed solution, only 1 copy of the array is created. When accessing that array, a new copy is not made. This will improve quad building times and reduce GC.Alloc flags significantly.

Files

GCAlloc in profiler.png	120 KB	05/20/2022	Gameslinx
BuildTangents method with bad array calling.png	30.9 KB	05/20/2022	Gameslinx
Fixed version.png	34.2 KB	05/20/2022	Gameslinx