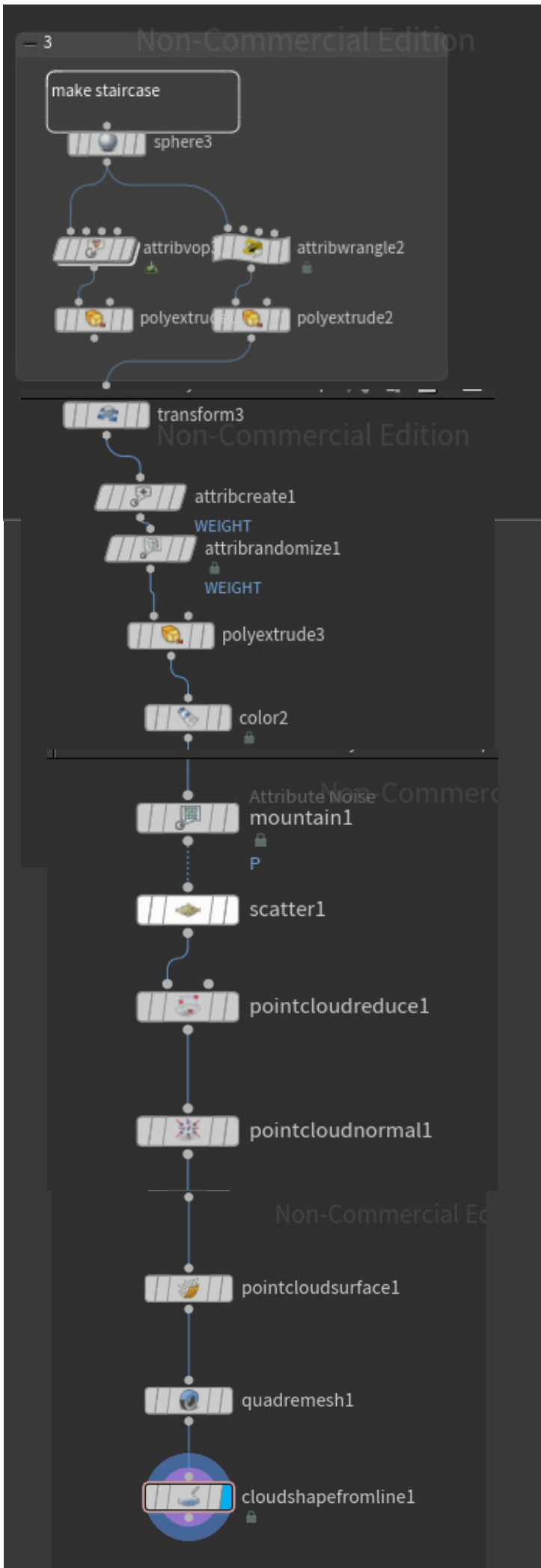
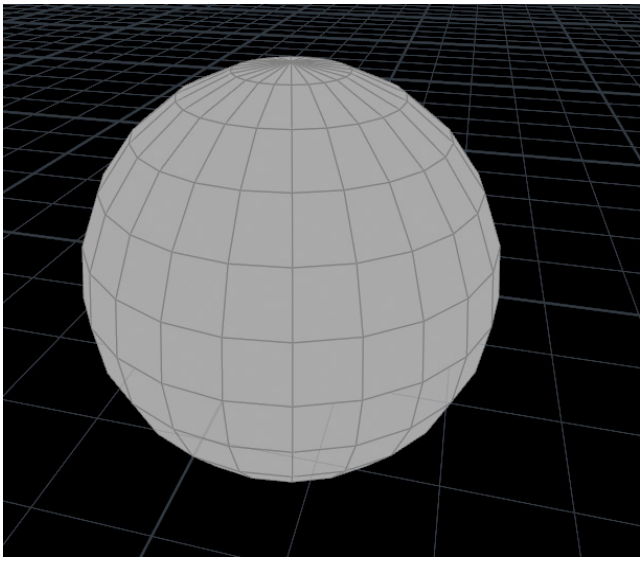
Master Node Diagram



(Detailed on back page)

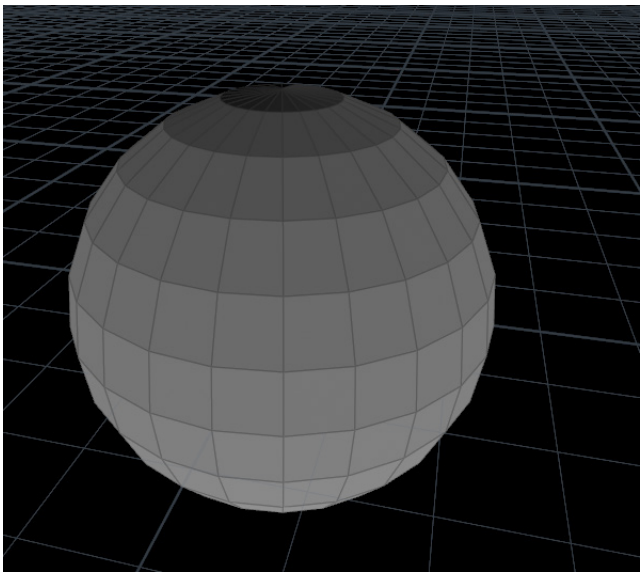
1 Sphere SOP

In Houdini, I started by creating a Sphere SOP. This node generates a sphere using the primitive type ‘polygon’.



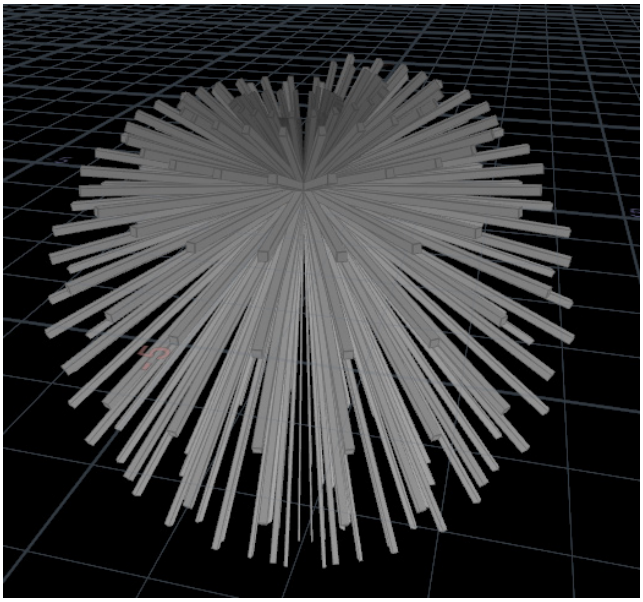
2Attribute Wrangle SOP

Following the sphere, an Attribute Wrangle SOP was added. Here, I used VEX to calculate a float attribute named increment, defined as the ratio of the current primitive number (@primnum) to the total number of primitives minus one (@ numprim - 1).



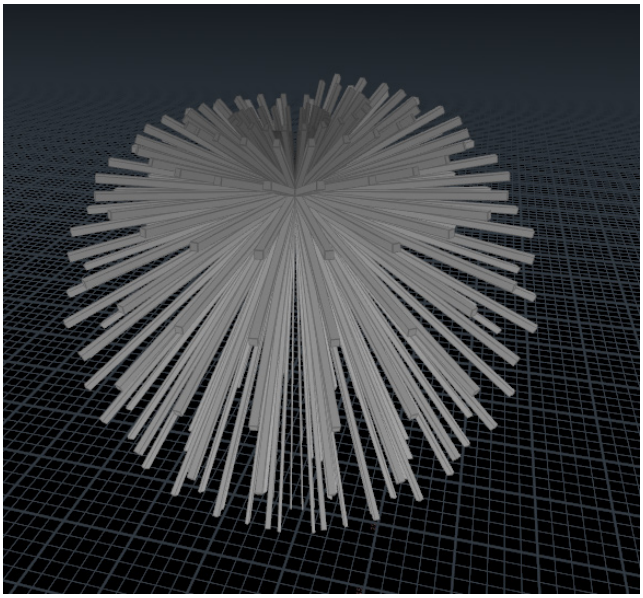
3 PolyExtrude SOP

Next, a PolyExtrude SOP was connected to extrude the sphere. The extrusion distance was set to 6.9 units.



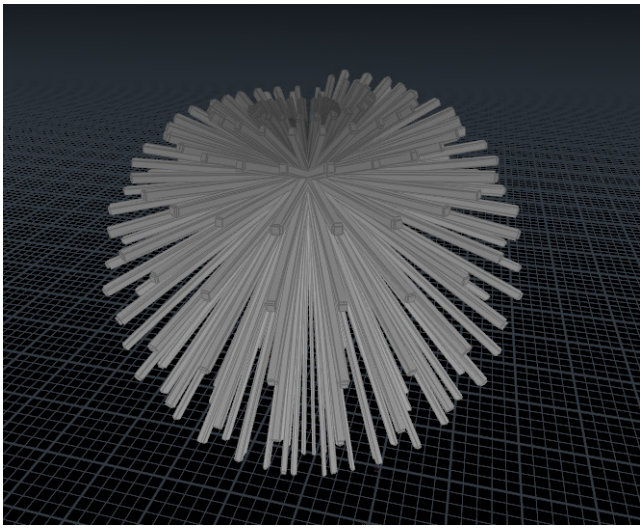
4 Transform SOP

A Transform SOP was then used to translate the entire geometry upward by 30 units. This alteration repositions the extruded sphere.



5 Attribute Create SOP

Following the transformation, an Attribute Create SOP was employed to introduce a new attribute named WEIGHT. This attribute is intended for later use in controlling other procedural effects.

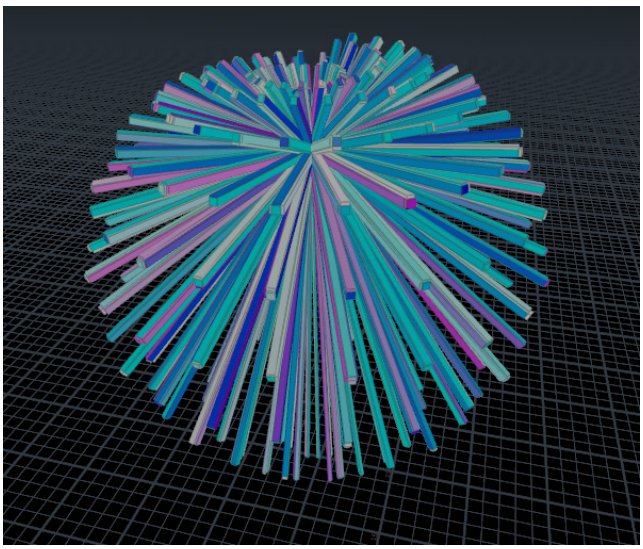


6 Attribute Randomize SOP

An Attribute Randomize SOP was connected next, tasked with assigning random values between 0 and 1 to the WEIGHT attribute on each primitive.

7 Second PolyExtrude SOP

Another PolyExtrude SOP was added, setting the extrusion distance to a subtle 0.054 units. This extrusion was applied selectively to primitives.

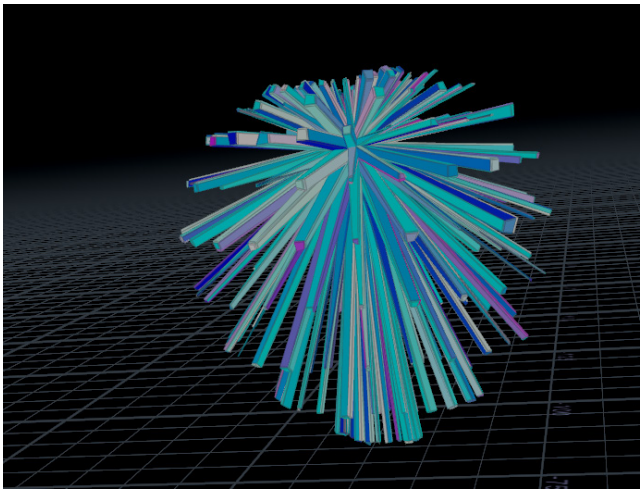


8 Color SOP

Finally, a Color SOP was used to colorize the geometry. The color assignment was driven by the WEIGHT attribute, affecting each primitive individually.

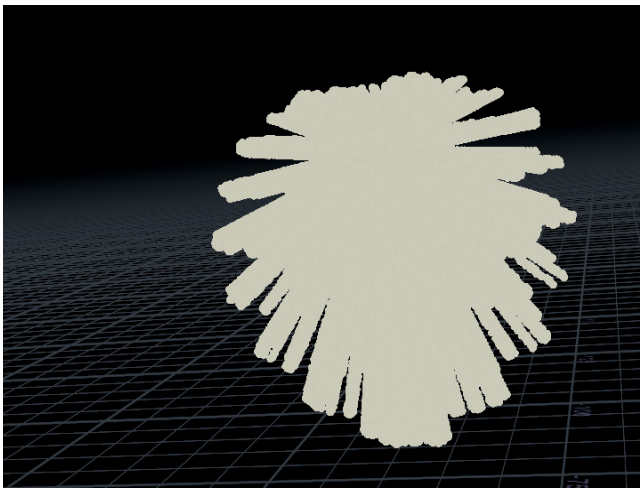
9 Mountain SOP

Following the previous steps, a Mountain SOP was utilized to add procedural displacement to the geometry's surface.



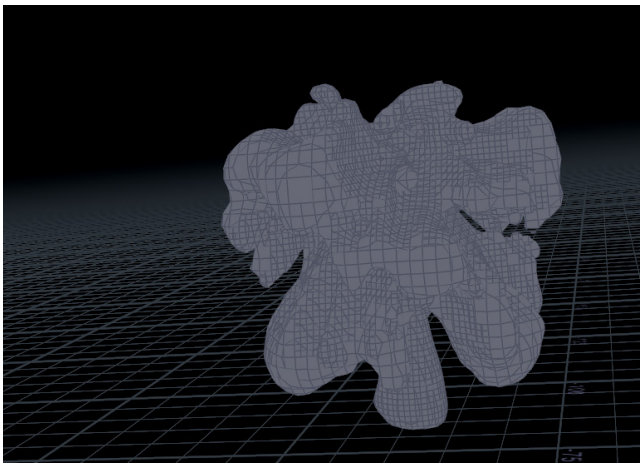
10 Scatter, PointCloudReduce, and PointCloudNormal SOPs

The next steps involved using the Scatter SOP to distribute points across the surface of the geometry, creating a dense point cloud. This was followed by a PointCloudReduce SOP, which optimizes the point cloud by reducing its density. The PointCloudNormal SOP was then applied to calculate and assign normals to the points.



11 PointCloudSurface and QuadRemesh SOPs

The PointCloudSurface SOP was used next to generate a smooth surface from the optimized point cloud.



12 CloudShapeFromLine SOP

Lastly, the CloudShapeFromLine SOP was added to convert line geometry into volumetric clouds.