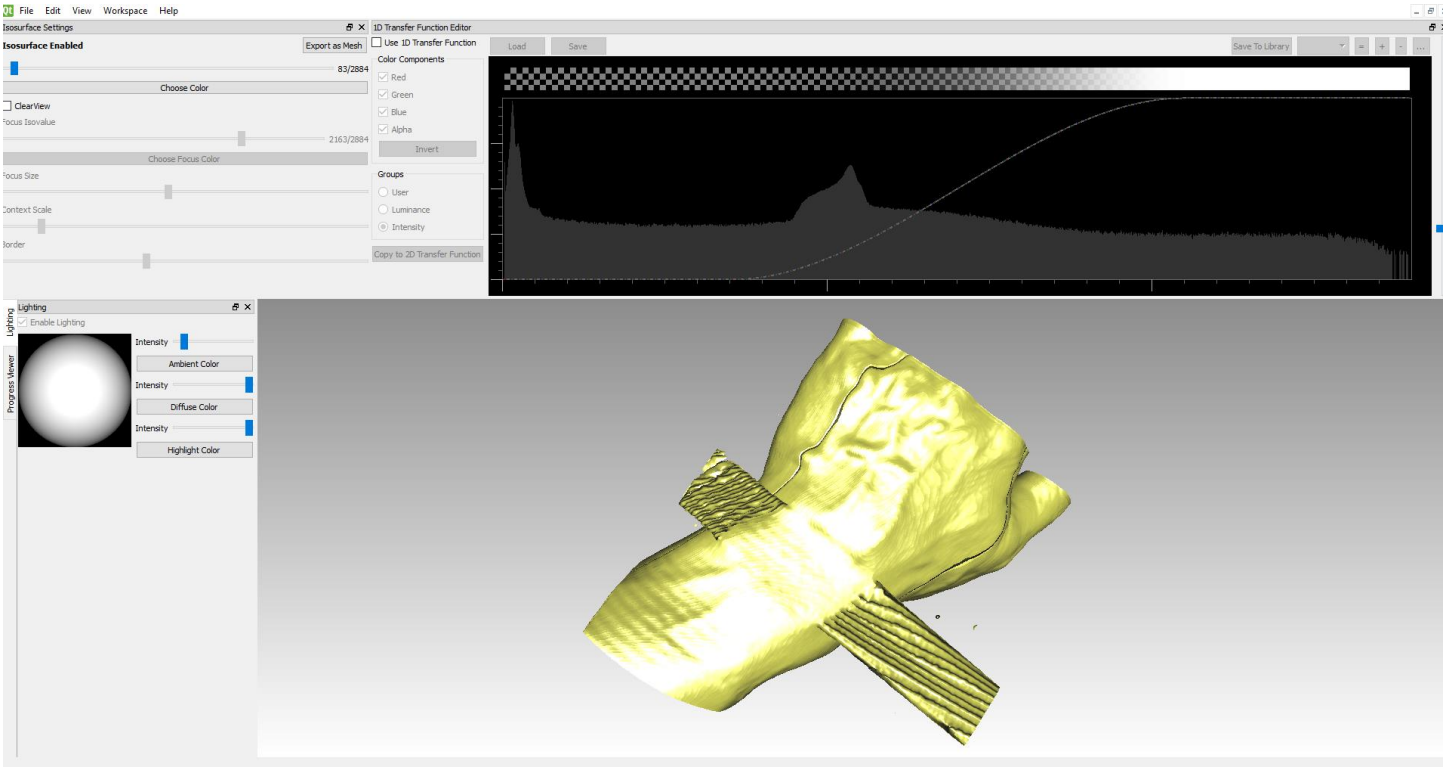
Meysam Hamel **Report Assignment 3** **03/01/2017**

Q1)

• What rendering method did you use for each image? How did you choose the settings?

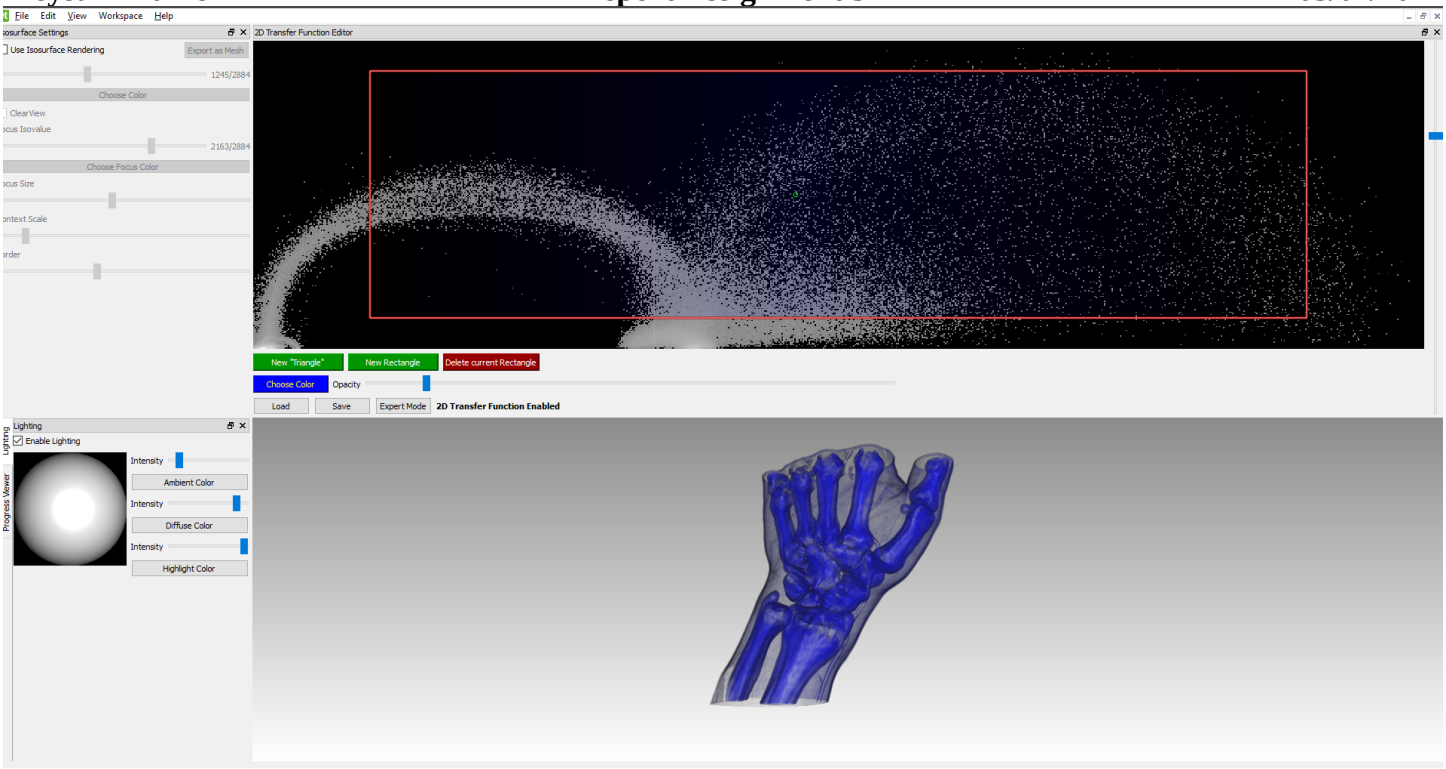
• What Iso-value(s) correspond to the skin? What Iso-value(s) correspond to the bone?

Iso-Value: 83/2884

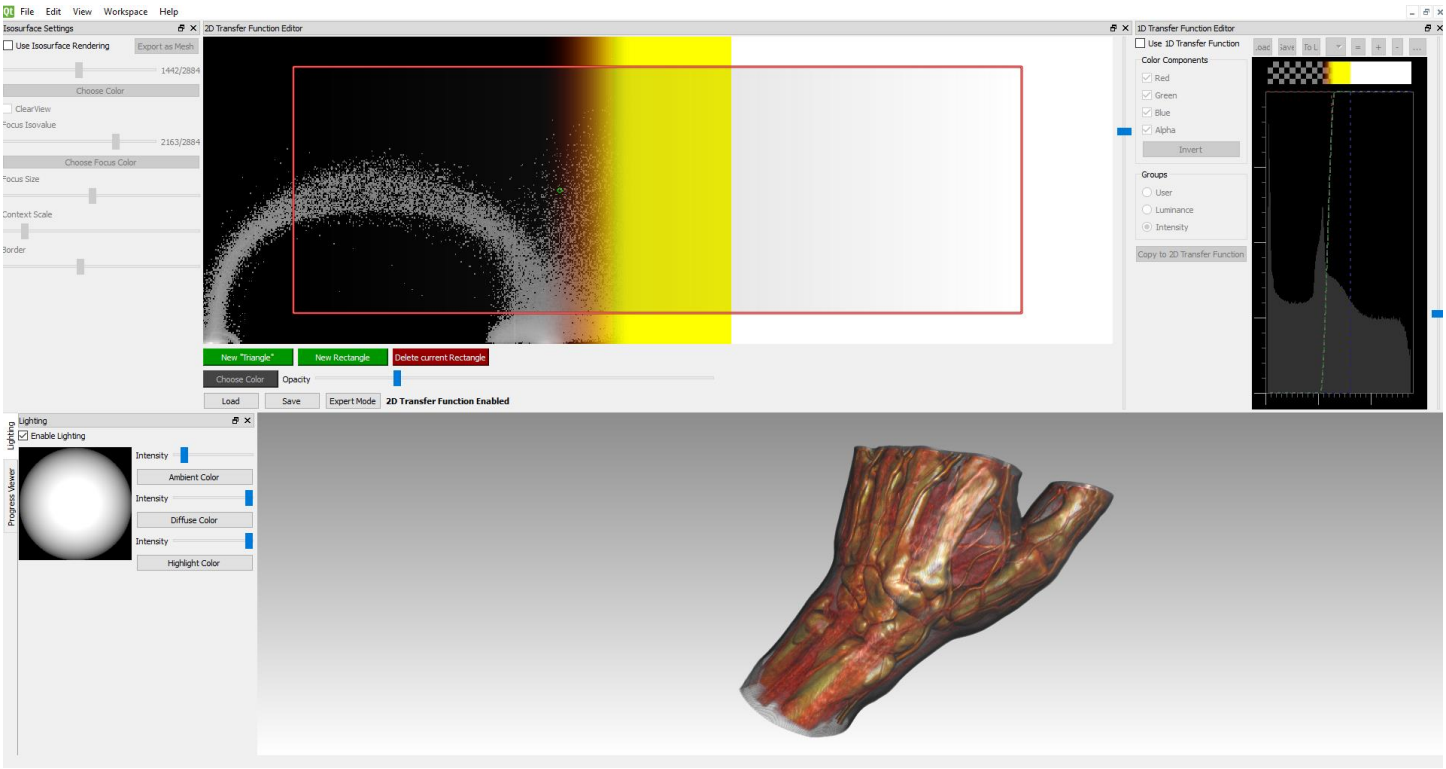


I did not change the Iso-value for the blue hands, I used 2D-Transfer Function. In this case to get the correct result I changed the opacity volume on 2d-Transfer Function.

My Iso-Value in this case is 1245/2884.

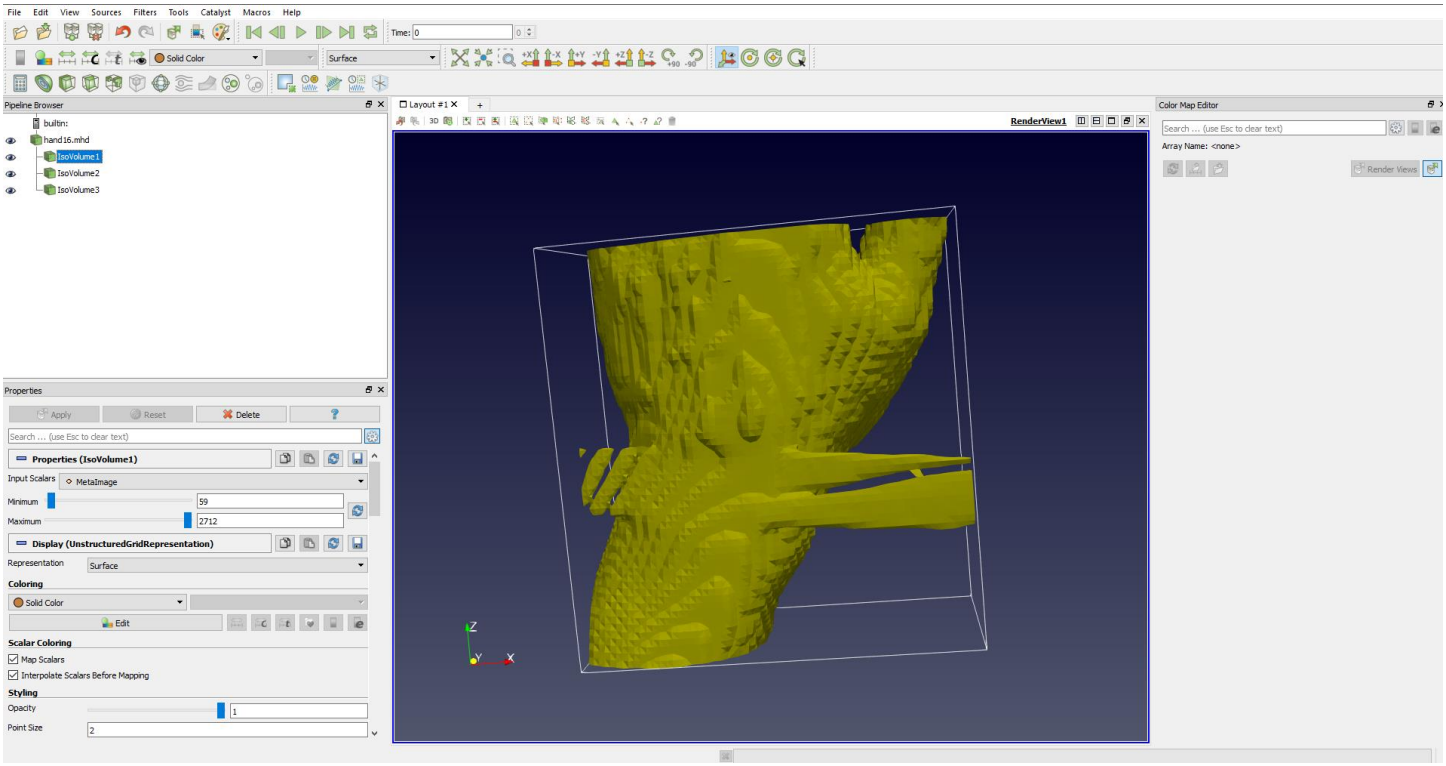


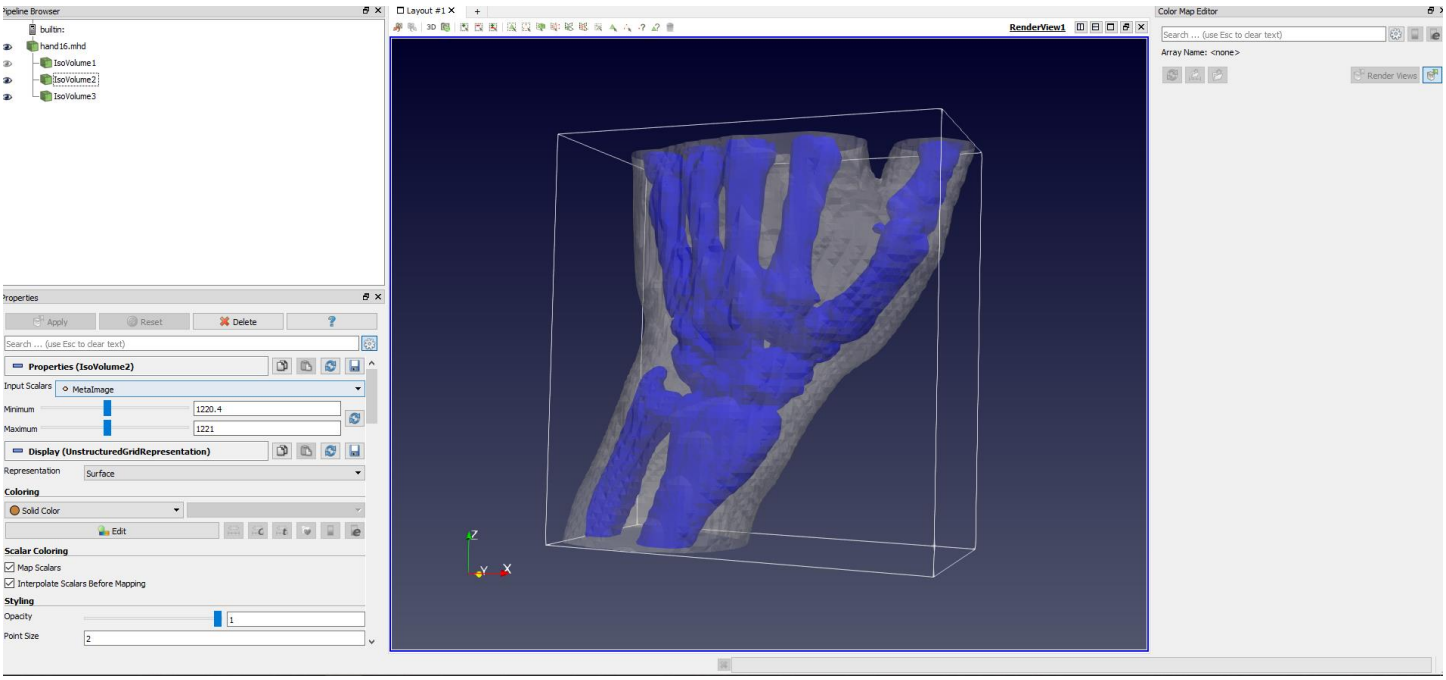
First, I load hand16.uvf and I used 1D-trafsfer Function. When hand show up I loaded hand16.1dt on 1D-transfewr Function and I clicked on “Copy to 2D-Transfer Function”. I played with the opacity for finding the correct pictures. And I picked the dark gray color to make it more likely the picture you gave it to us.



Q2)

I


File Edit View Sources Filters Tools Catalyst Macros Help
Pipeline Browser
builtin:
hand16.mhd
IsoVolume1
IsoVolume2
IsoVolume3
Properties
Apply
Reset
Delete
Properties (IsoVolume1)
Input Scalars
MetaImage
Minimum
59
Maximum
2712
Display (UnstructuredGridRepresentation)
Representation
Surface
Coloring
Solid Color
Edit
Scalar Coloring
Map Scalars
Interpolate Scalars Before Mapping
Styling
Opacity
1
Point Size
2
Layout #1
RenderView1
Color Map Editor
Array Name: <none>


Pipeline Browser
builtin:
hand16.mhd
IsoVolume1
IsoVolume2
IsoVolume3
Properties
Apply
Reset
Delete
Properties (IsoVolume2)
Input Scalars
MetaImage
Minimum
1220.4
Maximum
1221
Display (UnstructuredGridRepresentation)
Representation
Surface
Coloring
Solid Color
Edit
Scalar Coloring
Map Scalars
Interpolate Scalars Before Mapping
Styling
Opacity
1
Point Size
2
Layout #1
RenderView1
Color Map Editor
Array Name: <none>

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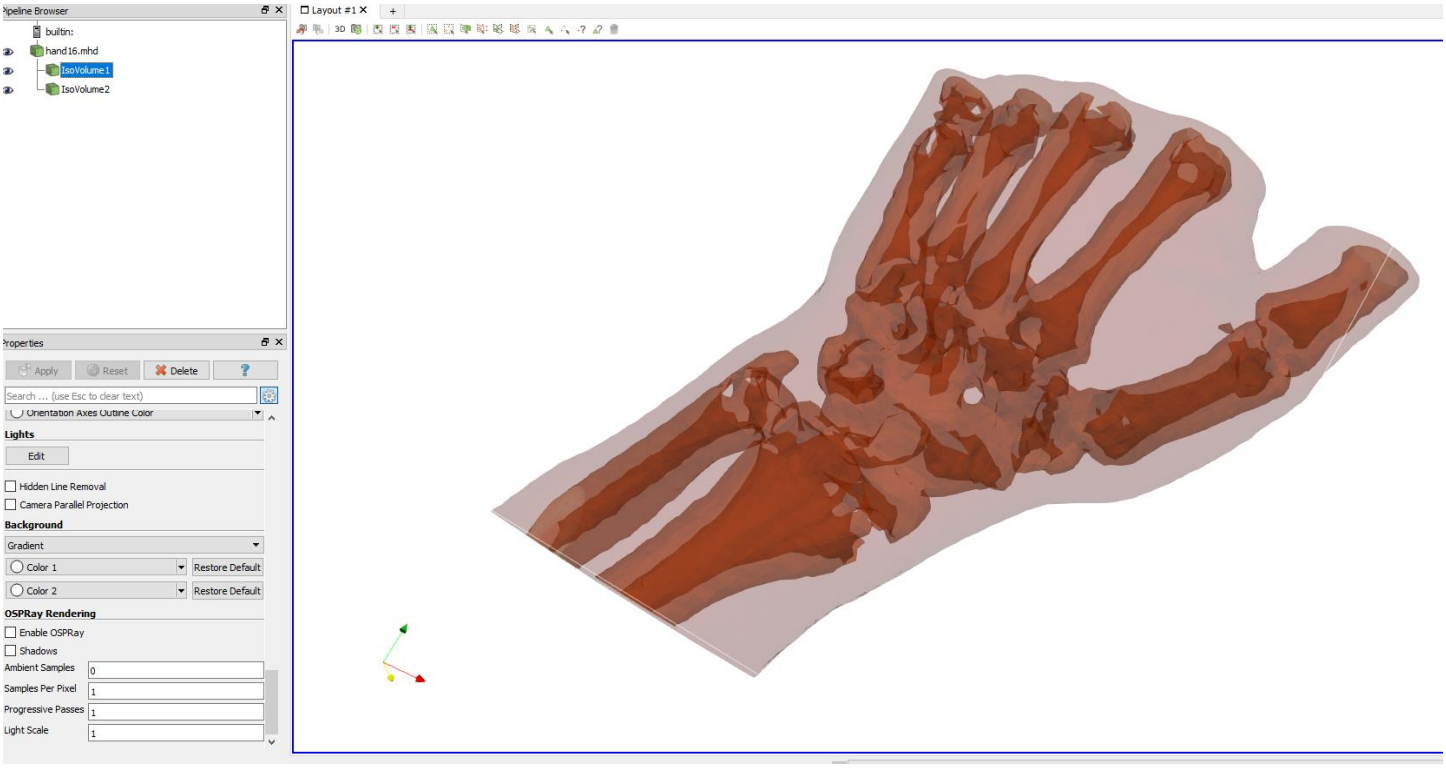
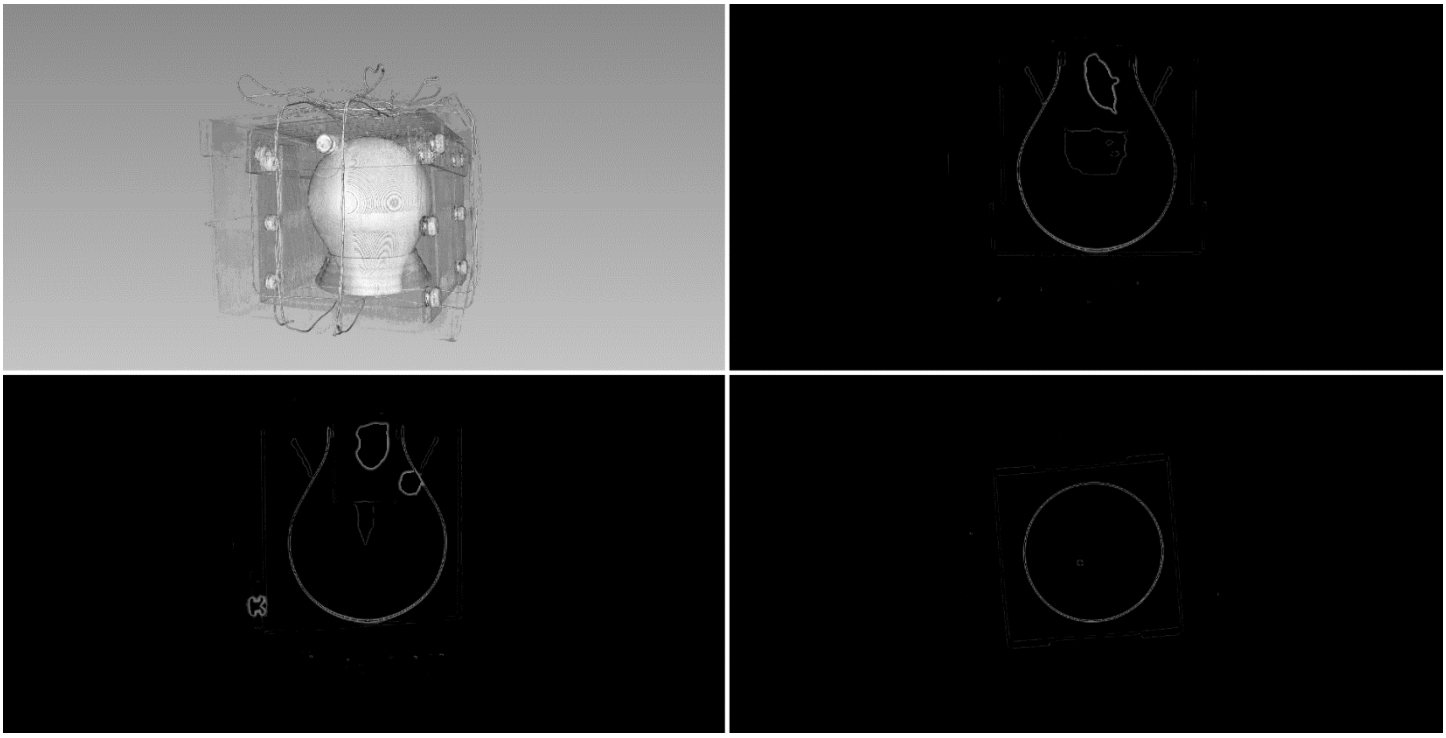
It was impossible for me to find good color on Paraview for hand#3. I used python to convert hand16.1dt to xml or Json but I was not successful. The main problem from my perspective about Paraview is a good open source software but it doesn't support many formats. In addition to that it is not user-friendly software.

Picture below is for hand#3. I used to Iso volume to make this hand more realistic.

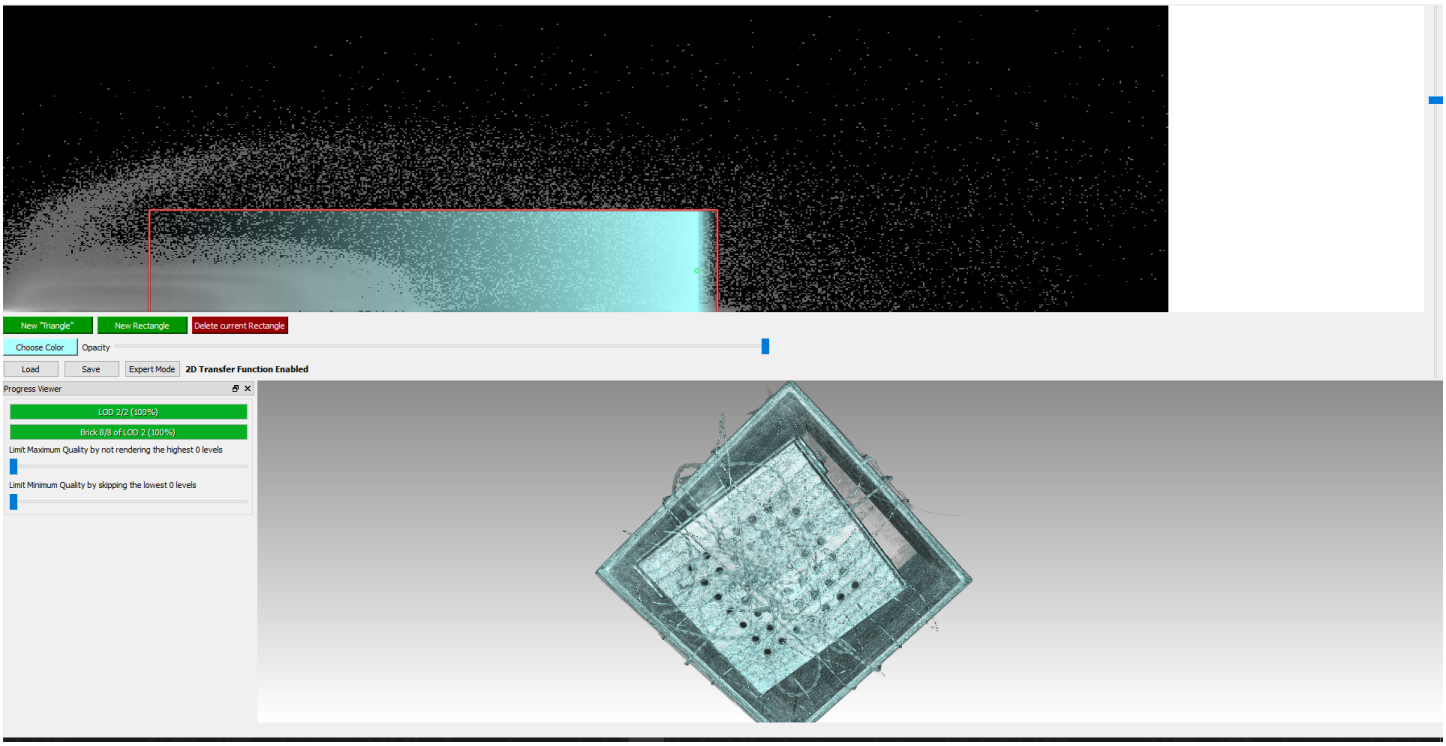


Q3)



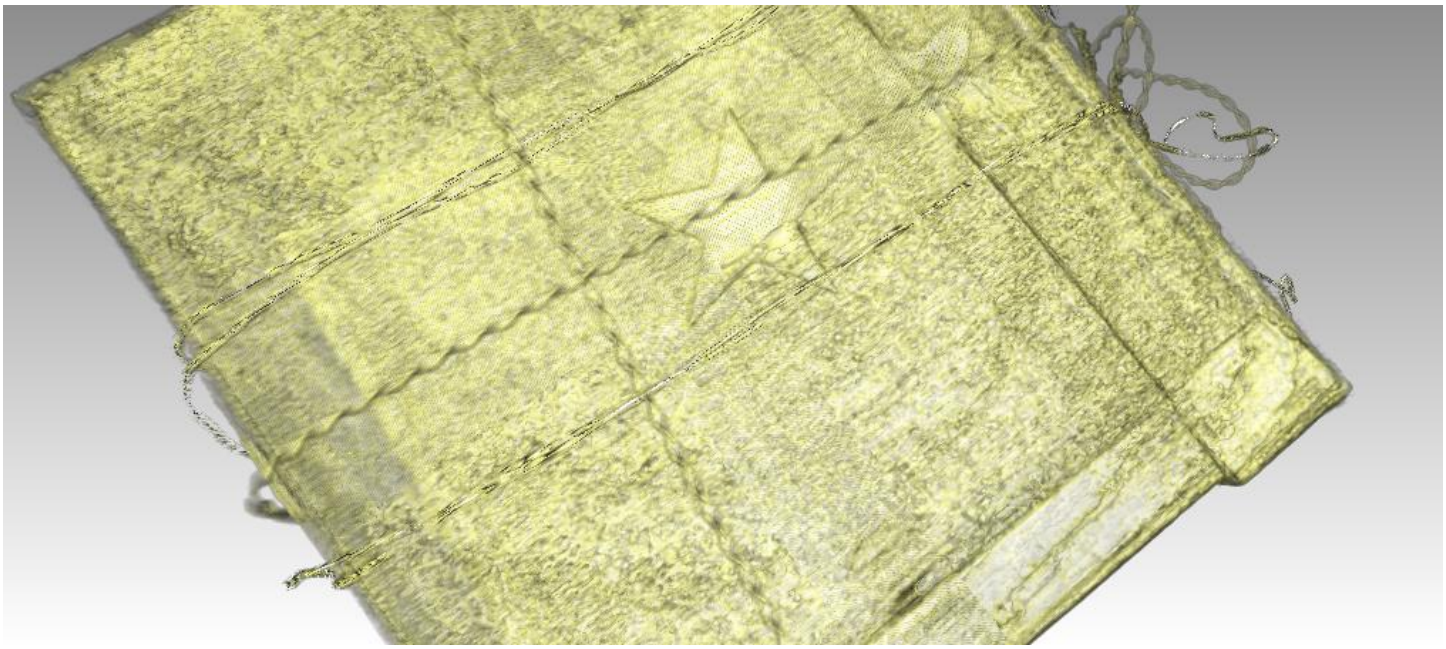
Max Opacity:

I used the 2D-transfer Function, when I changed the opacity to the Max I can see the more details such as 1 box inside a present box. The result below when I changed the opacity to Max:

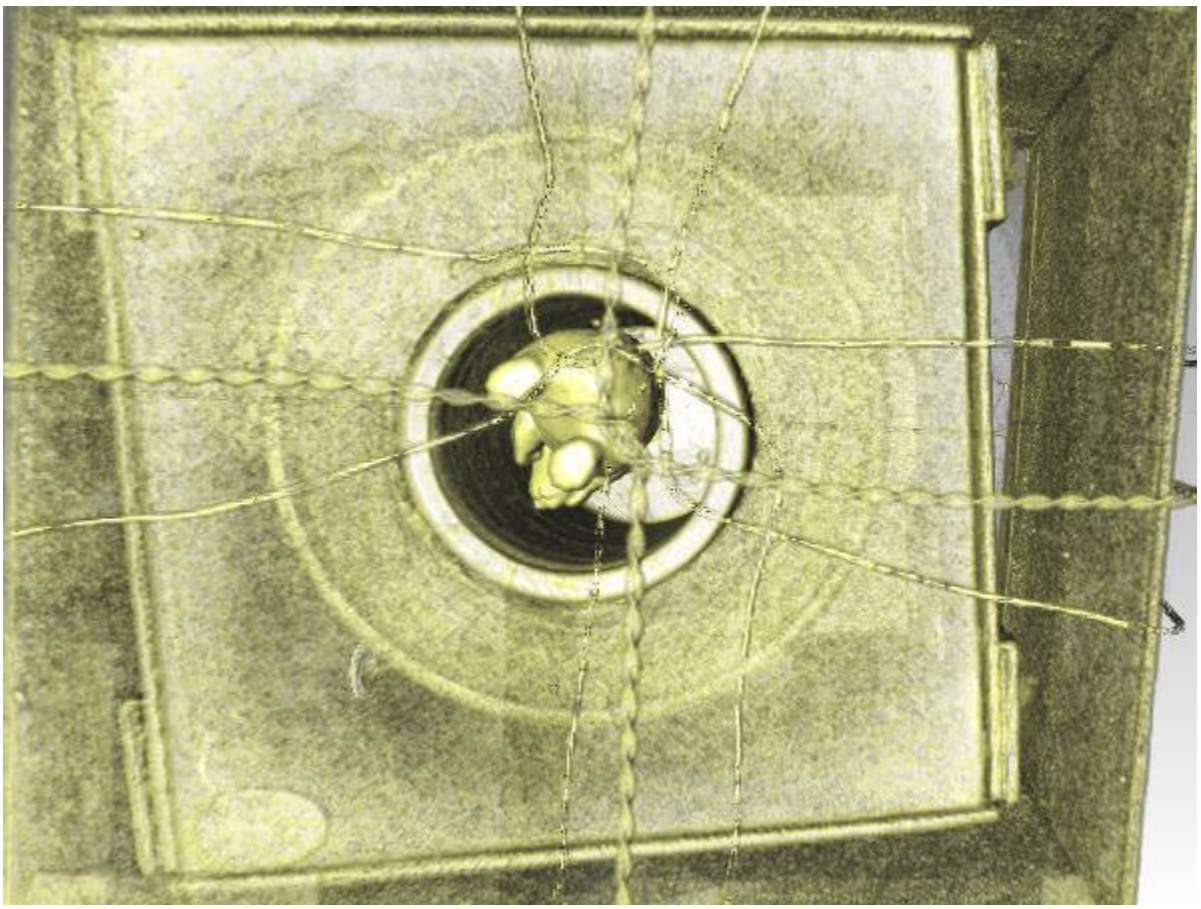


Use volume rendering within ImageVis3D to visualize the data and find out what is in the "present".

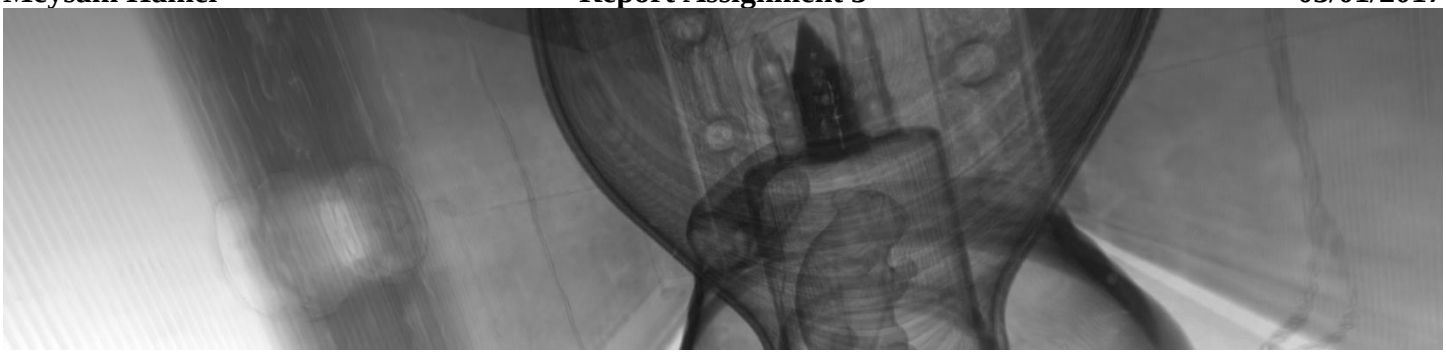
It looks like a cage with many wire that connect the cage to the main box. I saw different sign in the main box such as star.

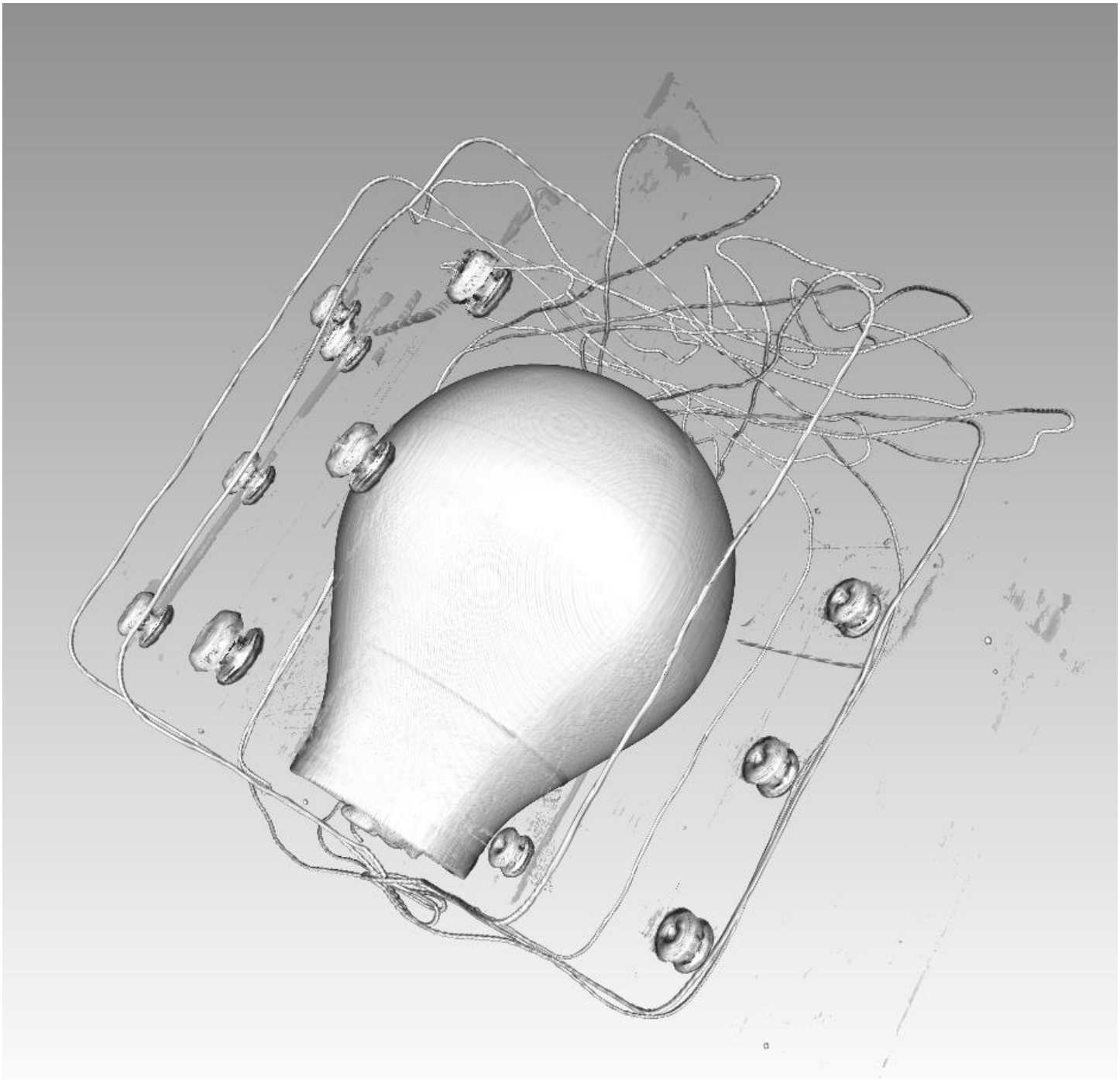


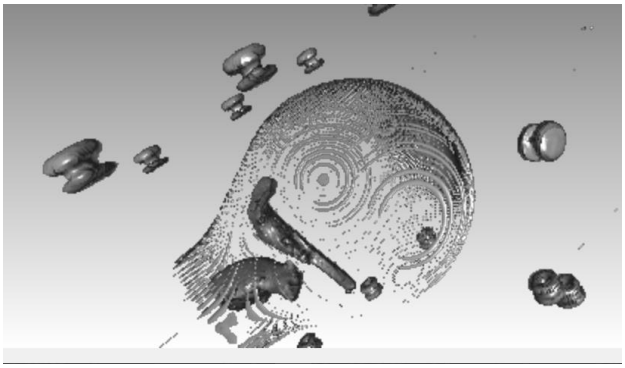
The wire seems more like ribbon. And, inside the second box we have something look like globe. Inside the globe I think we have Squirrel

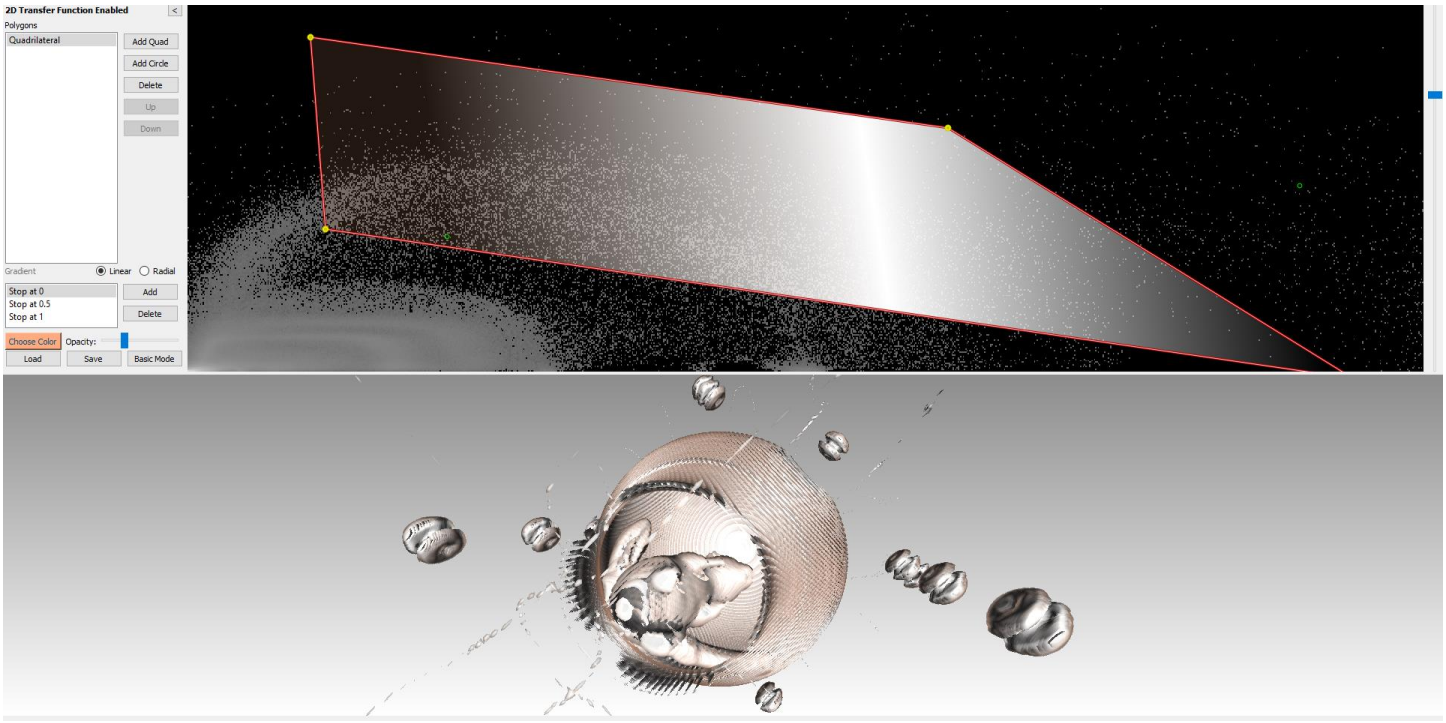


I used new triangle method on 2D transfer function And I put my opacity in the middle and I find many pins that connect the second box to the globe.





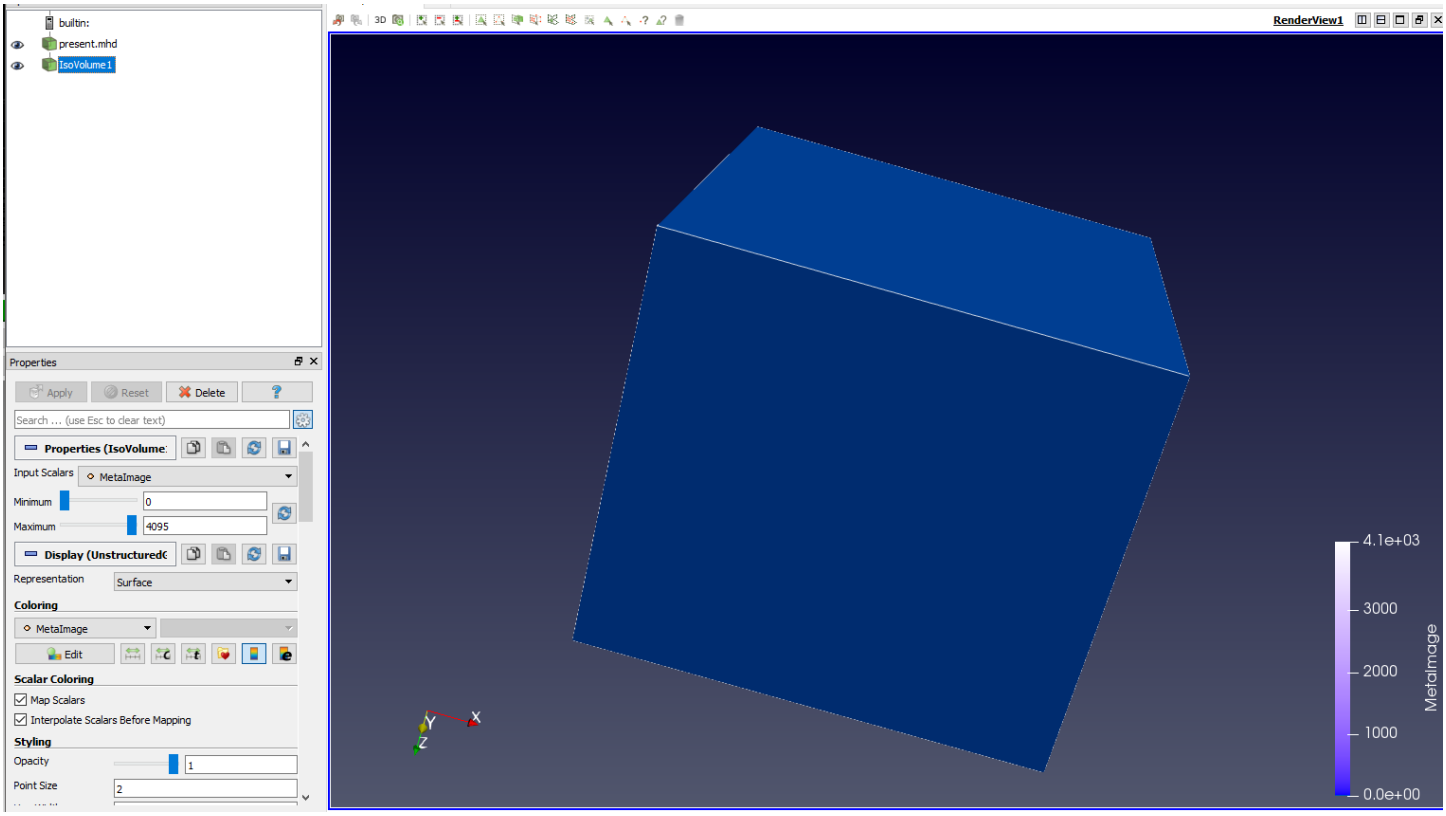



2D Transfer Function Enabled
Polygons
Quadrilateral
Add Quad
Add Circle
Delete
Up
Down
Gradient
Linear
Radial
Stop at 0
Stop at 0.5
Stop at 1
Add
Delete
Choose Color
Opacity:
Load
Save
Basic Mode

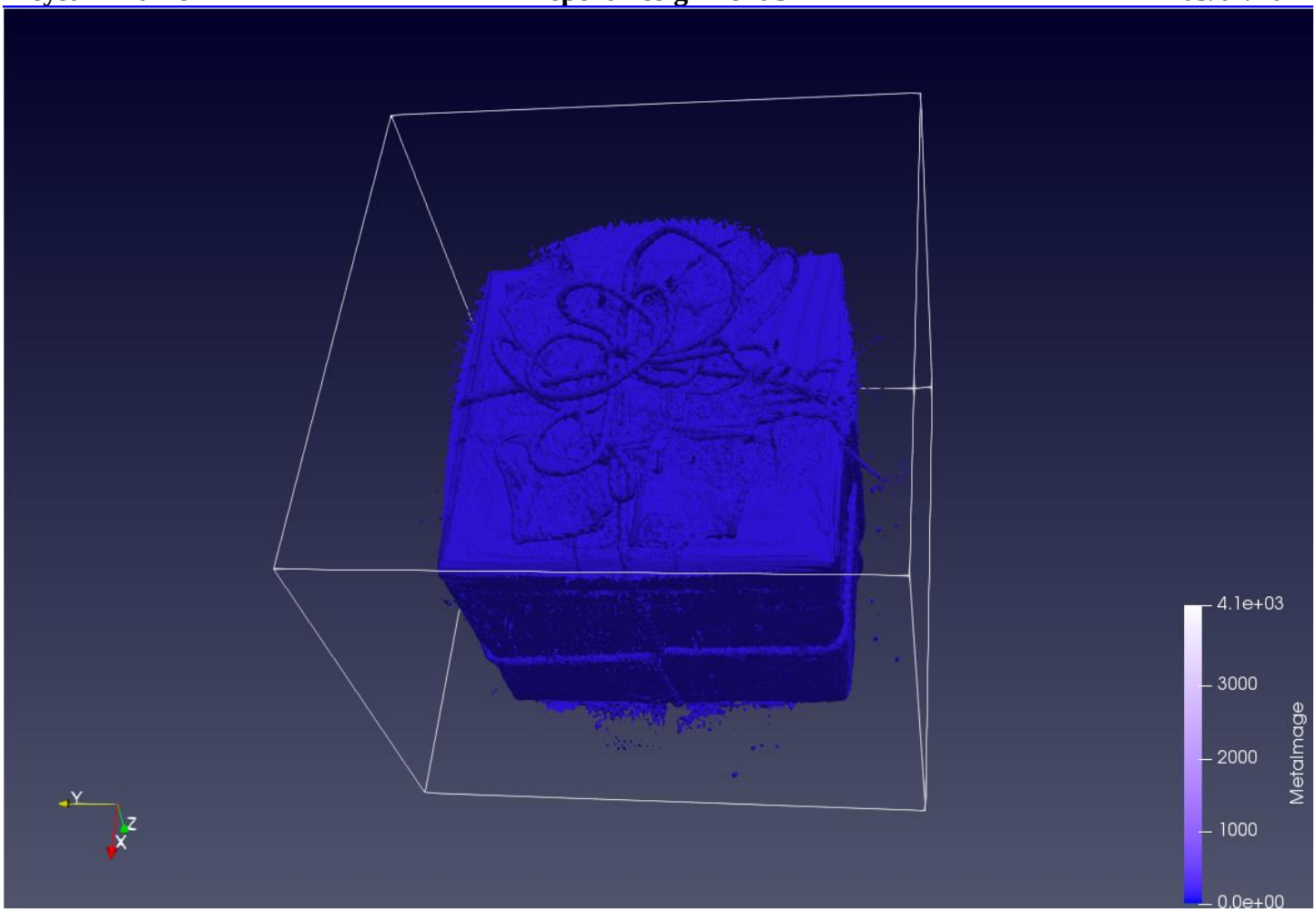
Q4)

Paraview

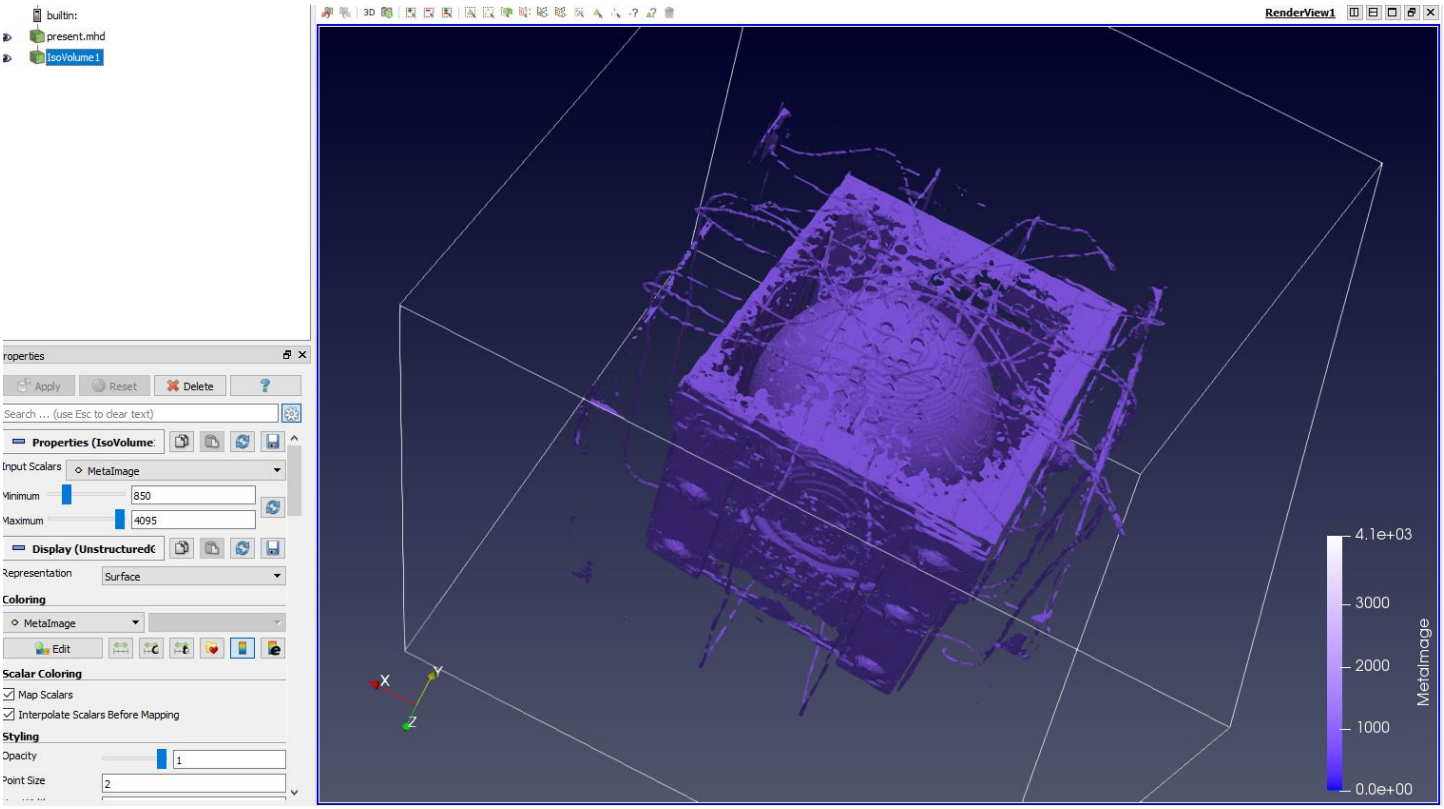
I export the data to the present.mhd. I open the .mhd file in the Paraview and I applied Iso volume filter. In Paraview without any change in Min value our result is just a box like picture below:



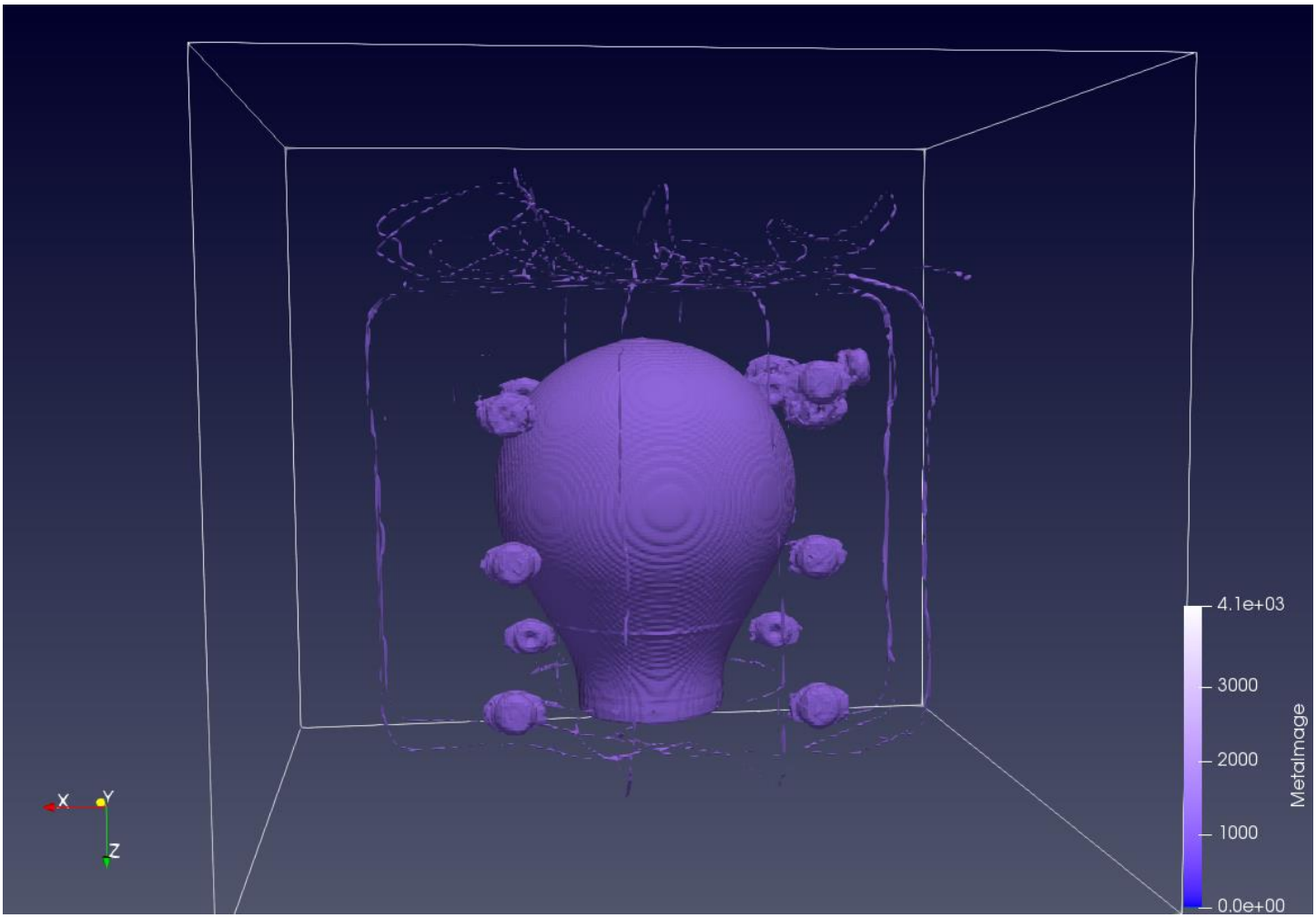
When I changed the Min value in Iso volume we can see inside of the box. I changed the Min value to 100 I got the result below:



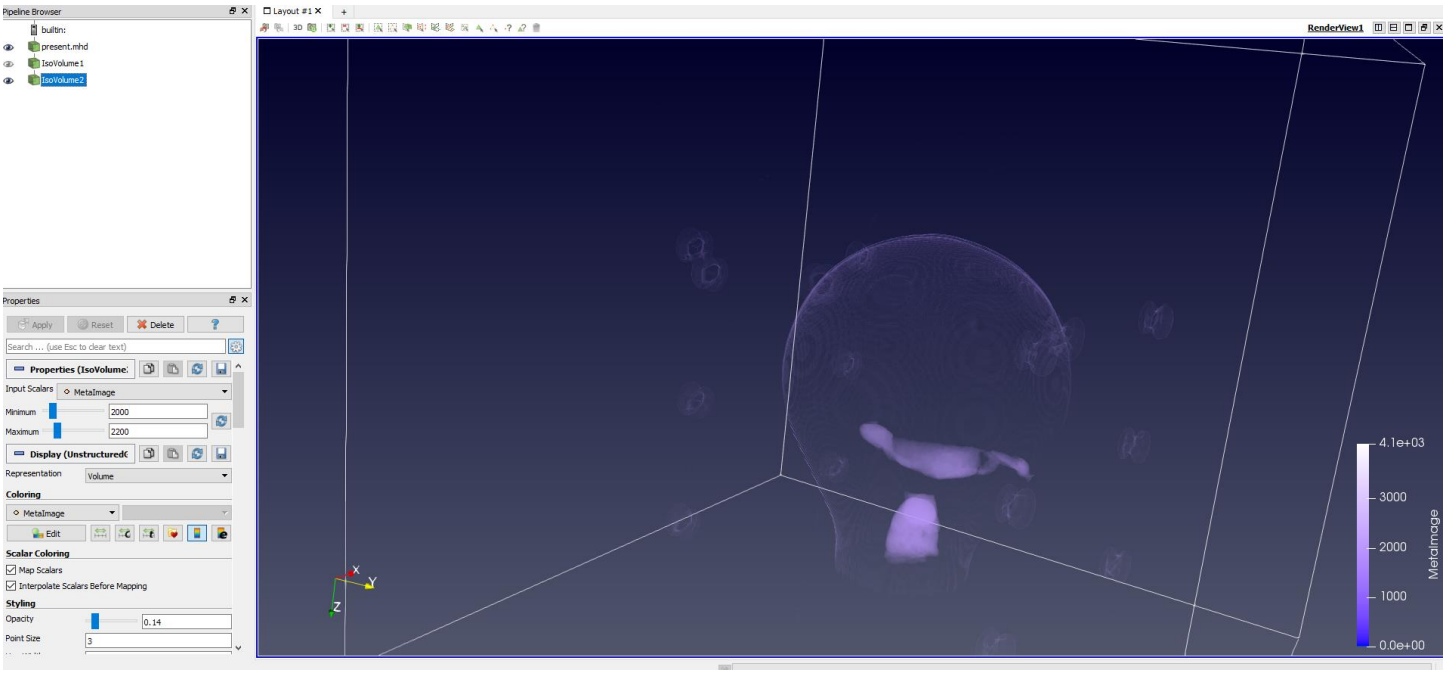
Changed the Min to 850 we have another box with globe:



Changed the Min to 1200, now we just have globe



I added another Iso volume and I changed the opacity to 0.14 and, I changed representation to the volume, I found to animals inside the globe one of them is **Squirrel and another one is Salamander or Lizard.**



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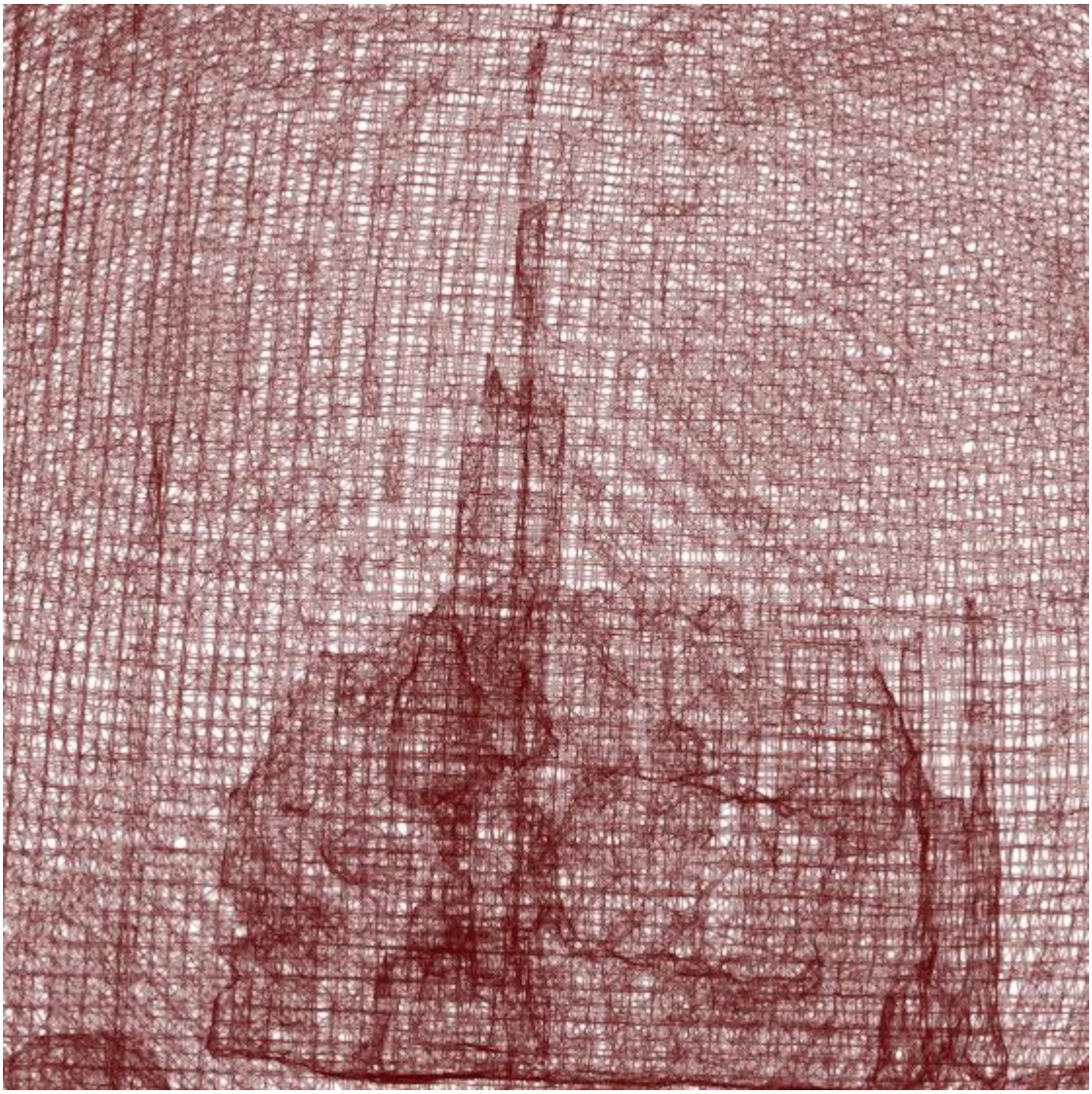
I changed the opacity for first Iso volume to 0.1 and, I hanged the min to 1150 and max 2900 and I found new thing in the box. It looks like a castle or maybe house I have attached the picture below also I changed the representation to the Wireframe.