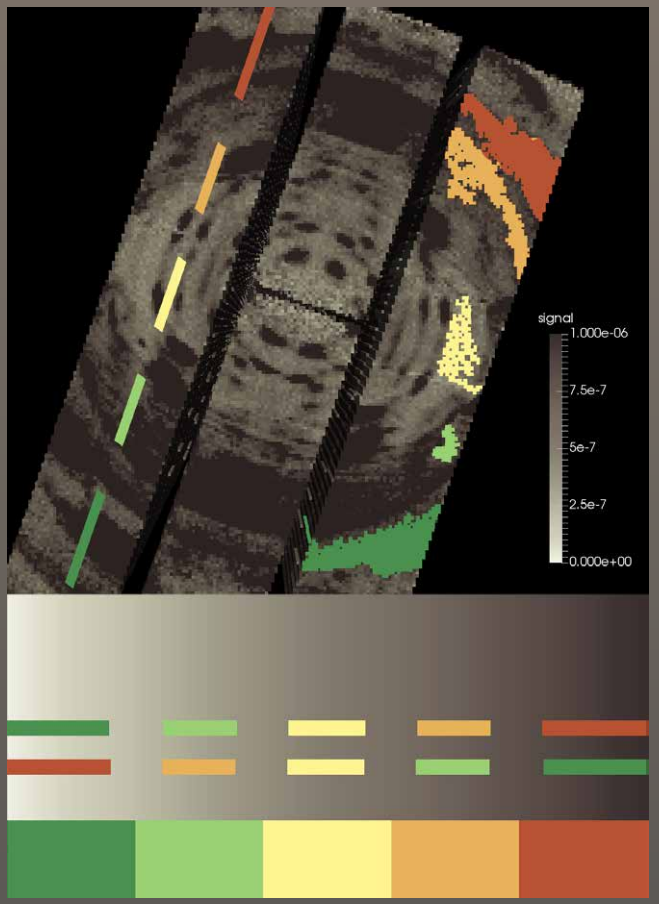
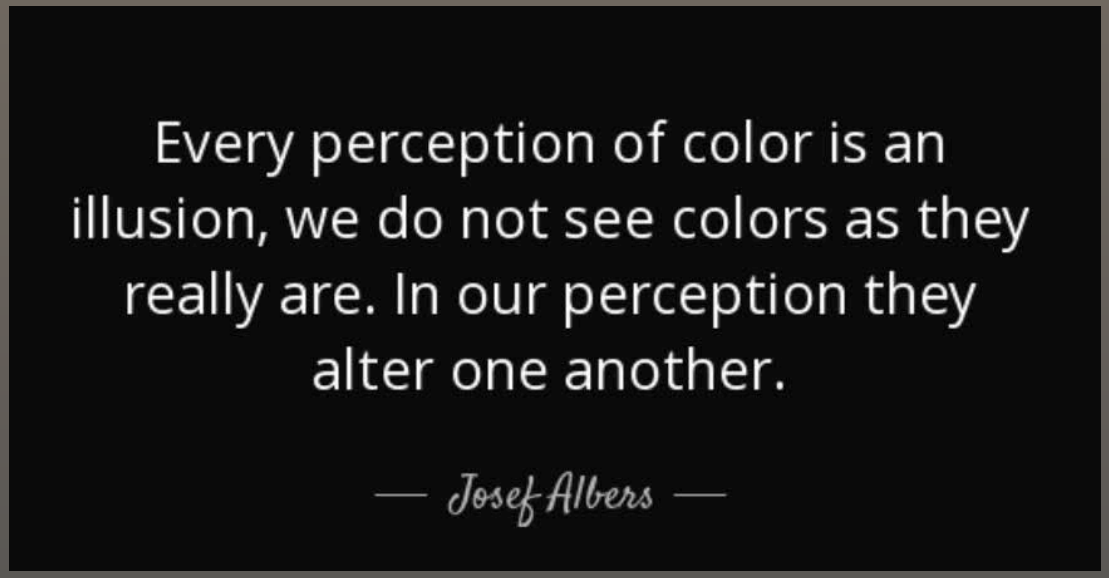
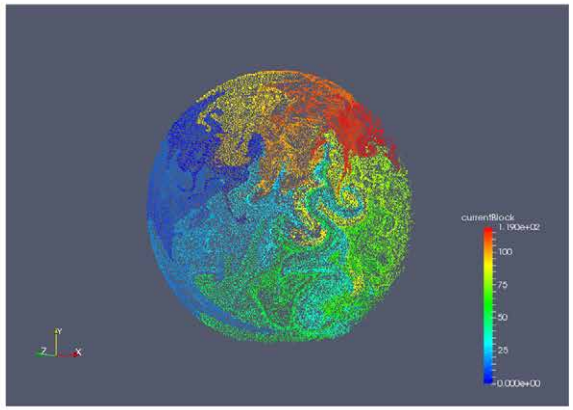
Color Sets and Background Color

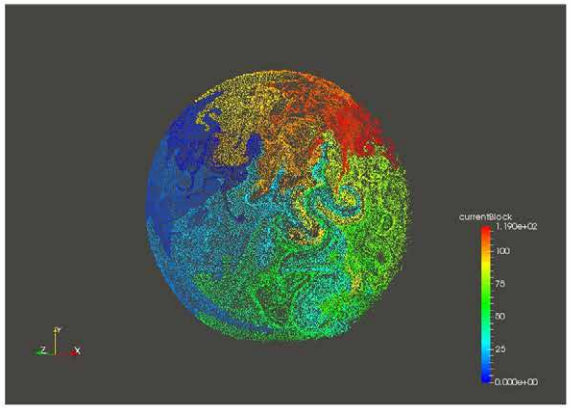


A few words about
Color Sets …

This is where things get tricky because….





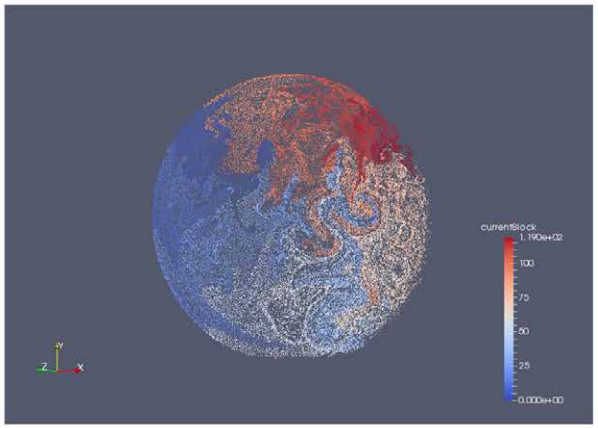


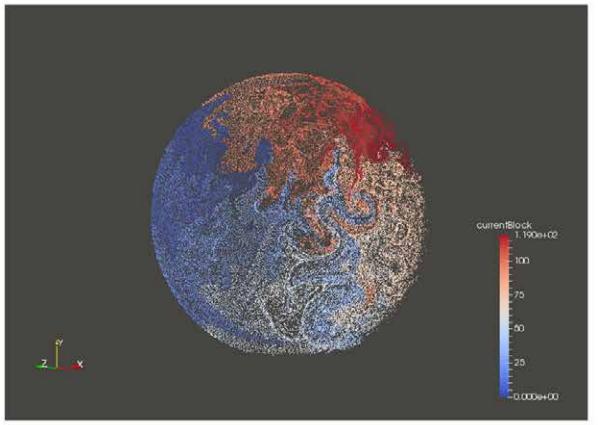
Change the Paraview background default!

Your life and vis will be calmer.

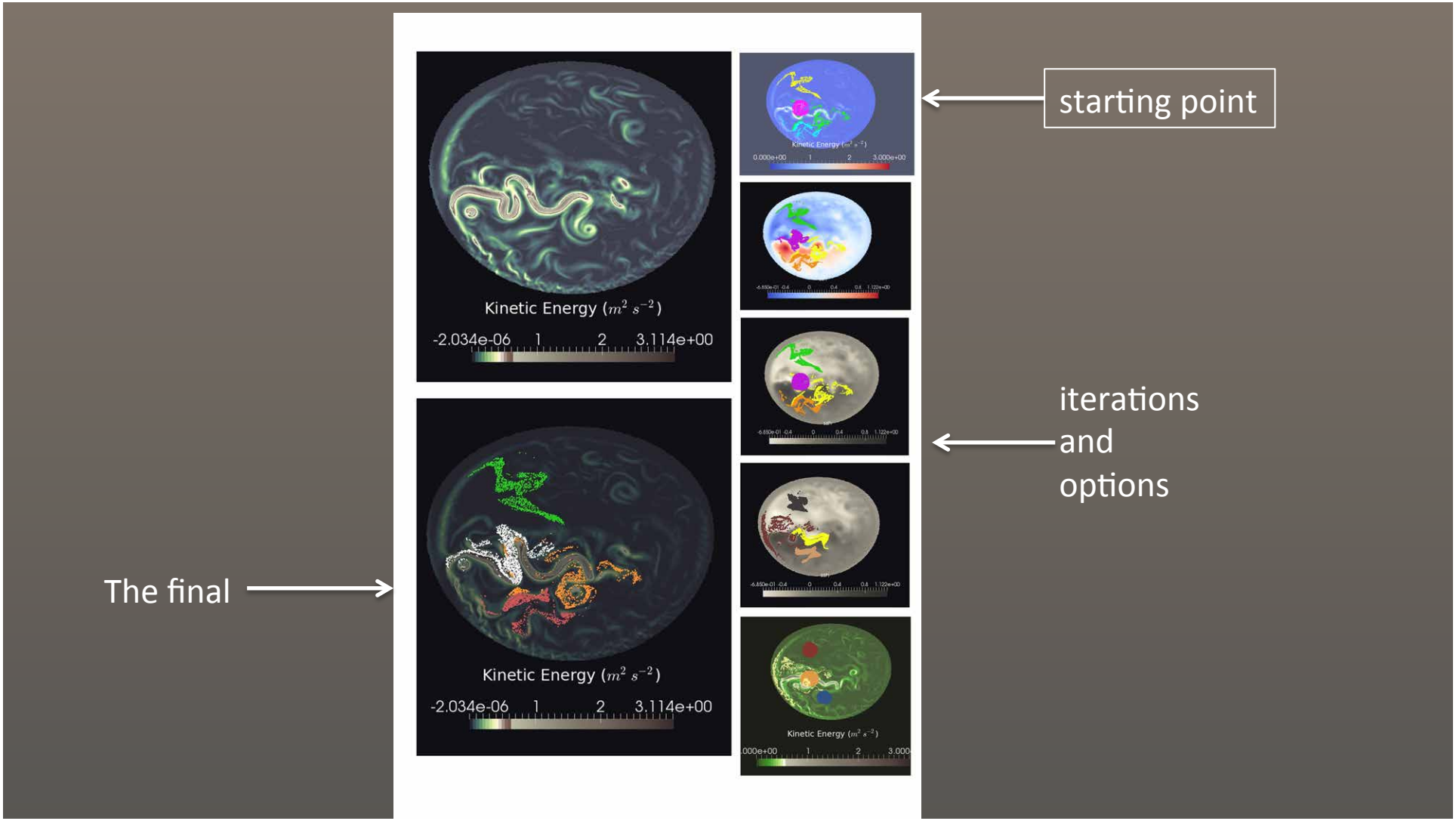
RGB 107 107 107

The only difference is the **background color**.



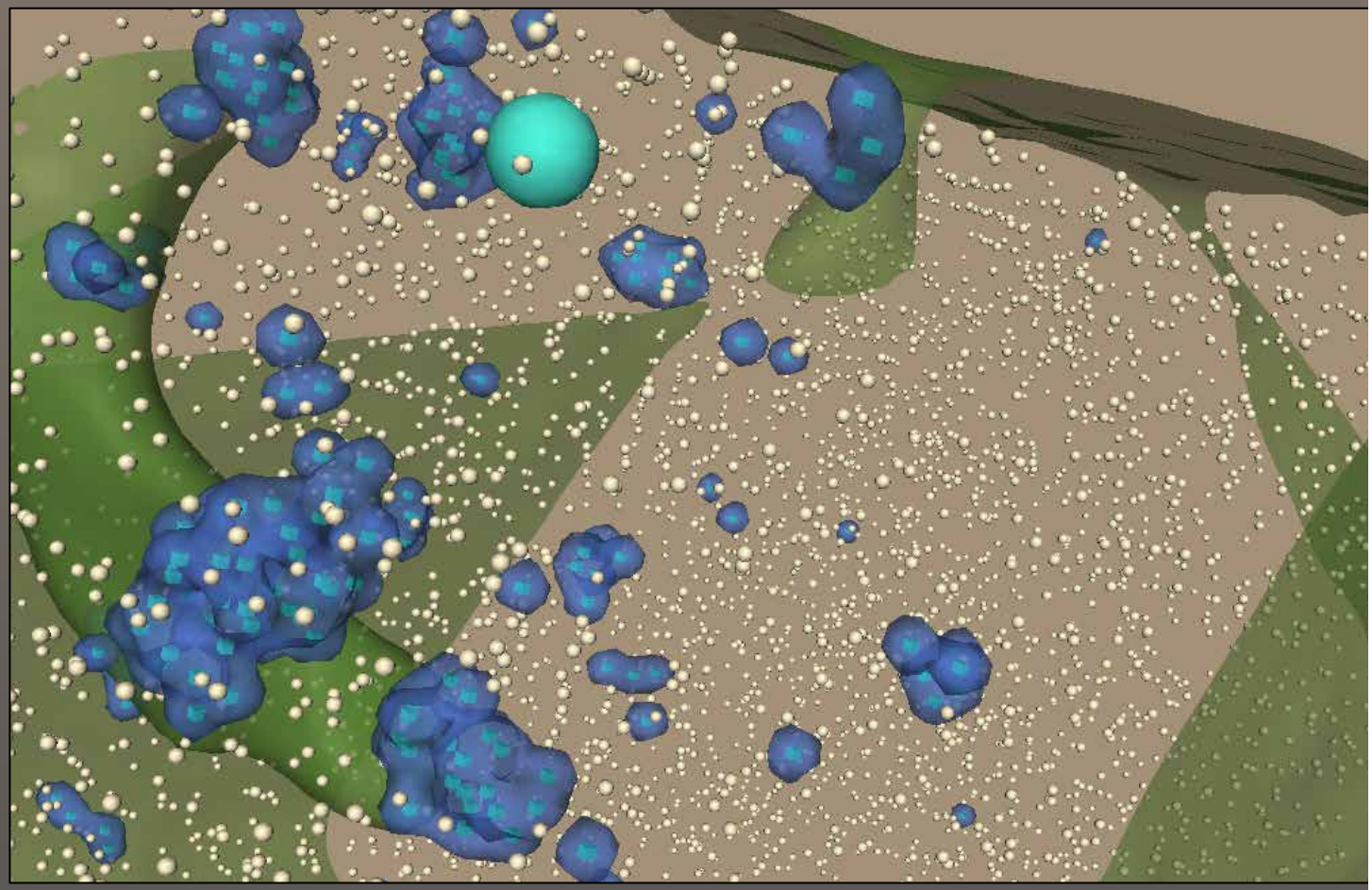


In general, cool colormaps such as the ParaView default,
need a warm background but in reality,
the ParaView background is almost always worse.

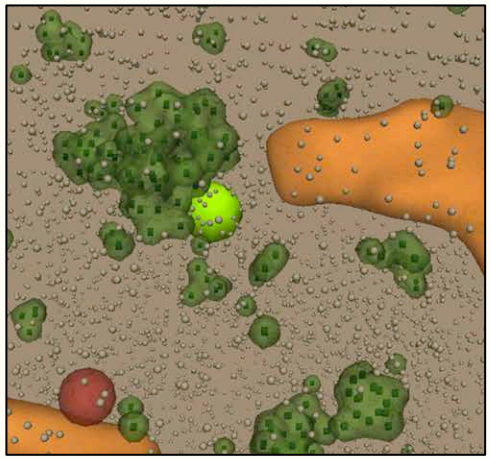

starting point
iterations
and
options
The final
Kinetic Energy ($m^2\ s^{-2}$)
-2.034e-06
1
2
3.114e+00
Kinetic Energy ($m^2\ s^{-2}$)
-2.034e-06
1
2
3.114e+00

Color Sets

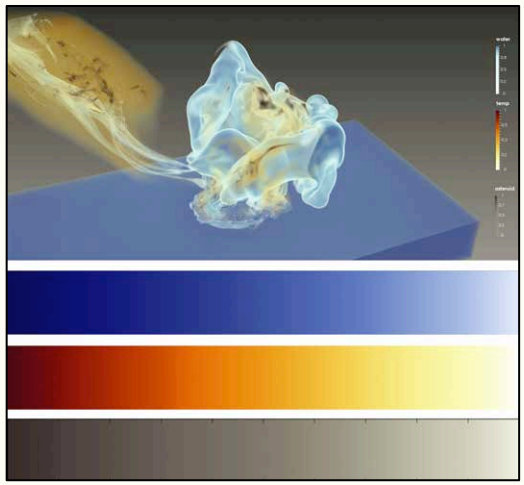
Using color to
organize,
categorize
and direct attention



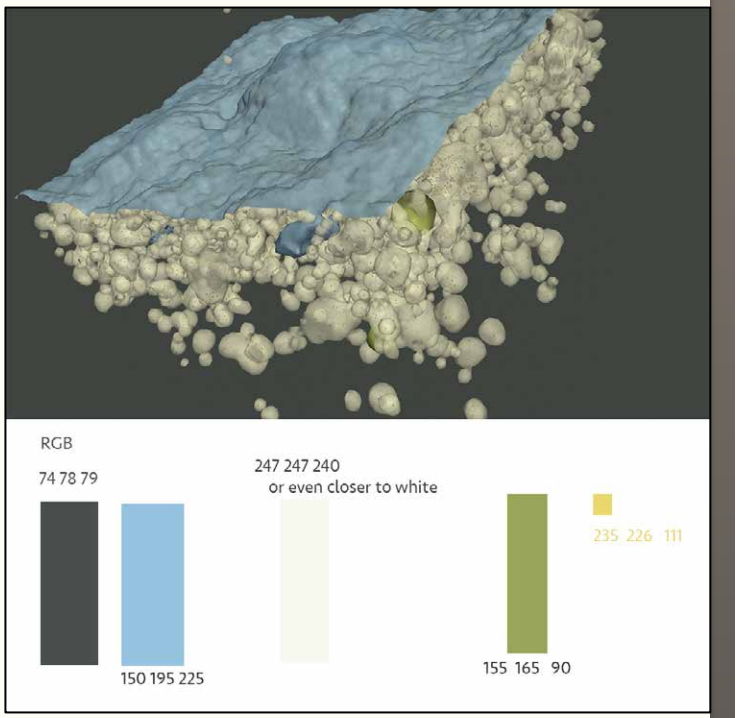
Three types of sets



discrete color sets
for organizing 3D data

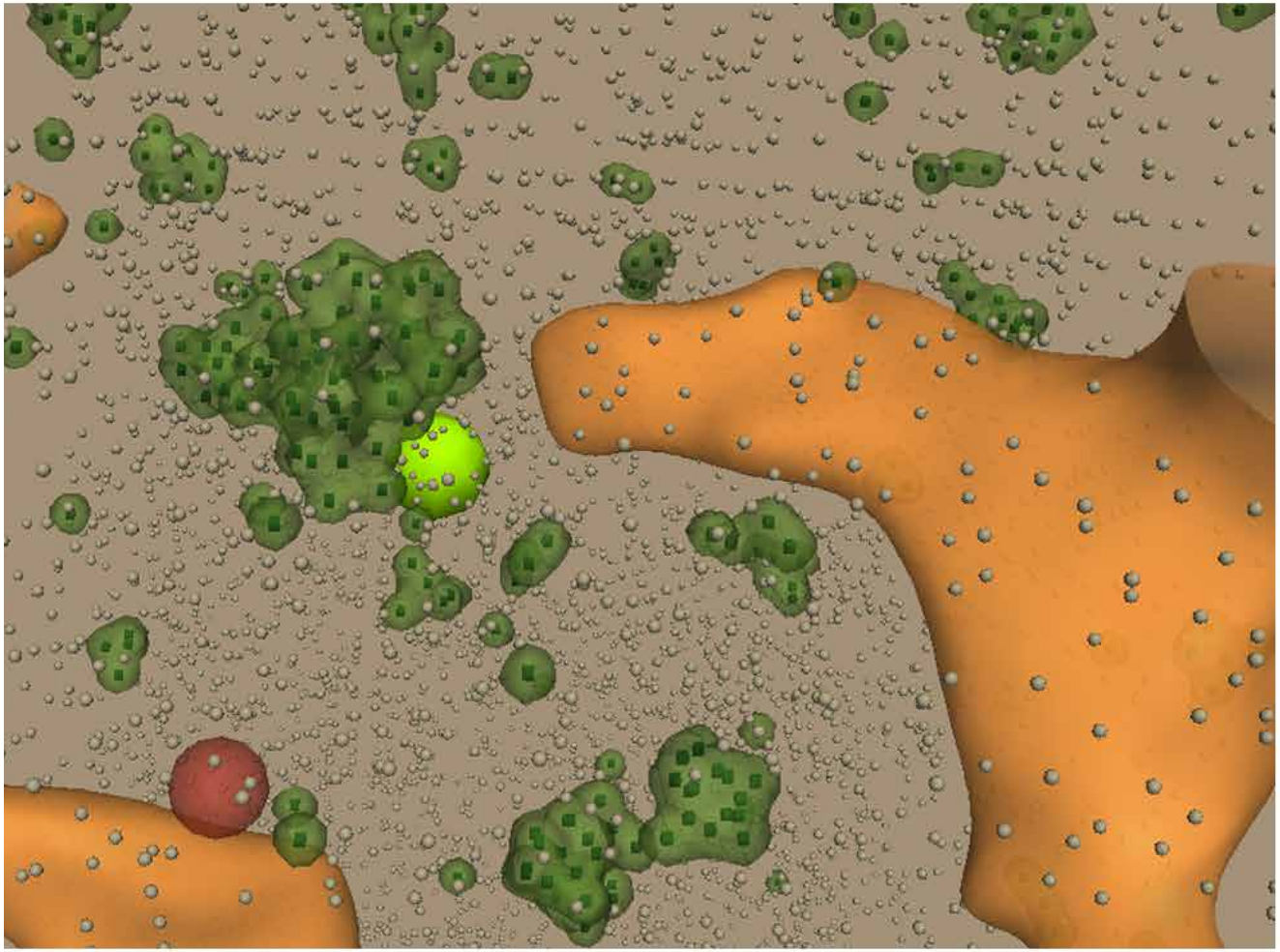


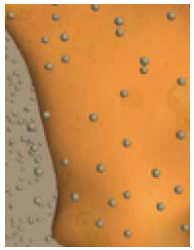
sets for multiple 3D variables



categorical sets

Organization





related

different

related

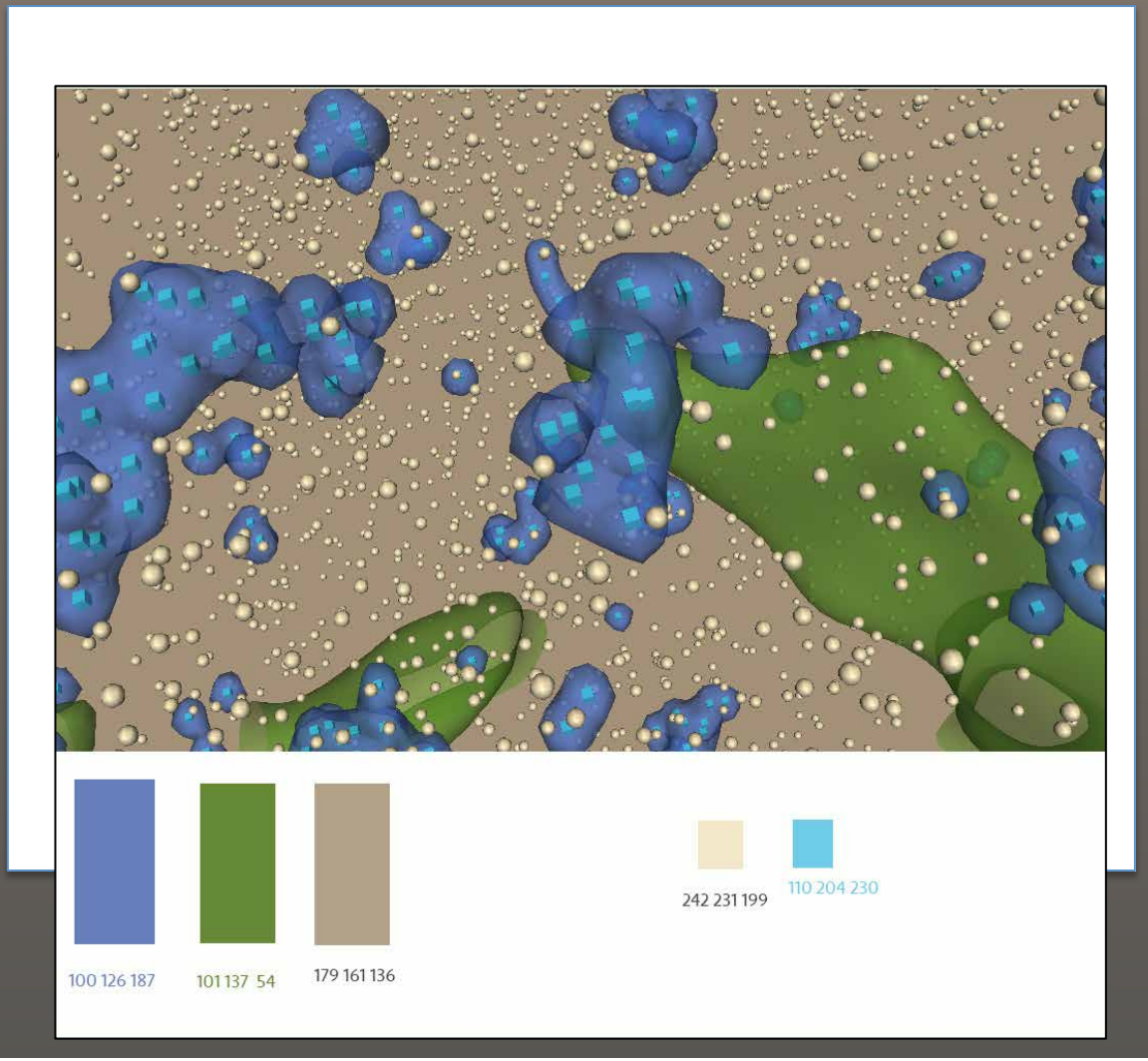
Blue and Green:

Two categories of equally important variables.

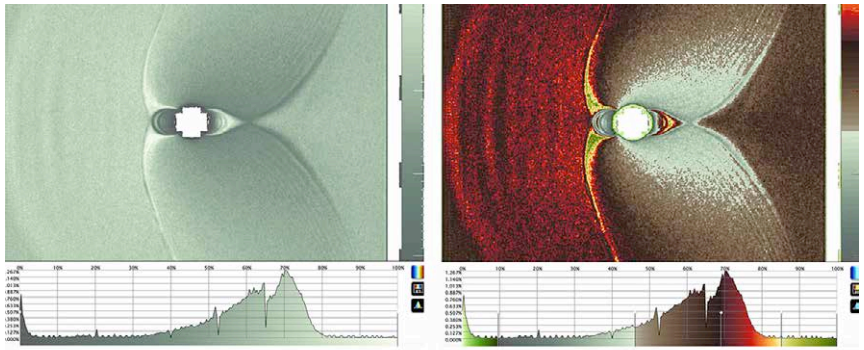
Blue and Turquoise – related.

Tans - not important,

serve as context.



Colormap Properties



cool, light, muted

neutral, dark, muted

warm, saturated hue-spanning

cool, saturated, narrow hue

Colormap Usage

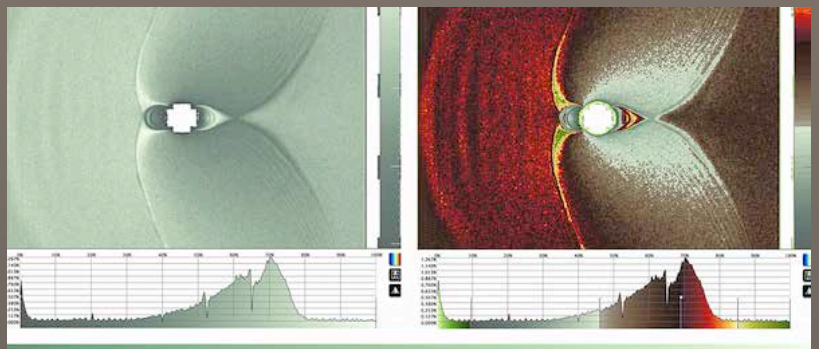
contextual data

least important data

highlight larger areas of important data

highlight small areas of important data

Color Scale Sets

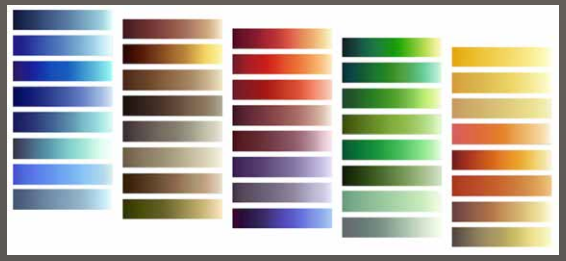


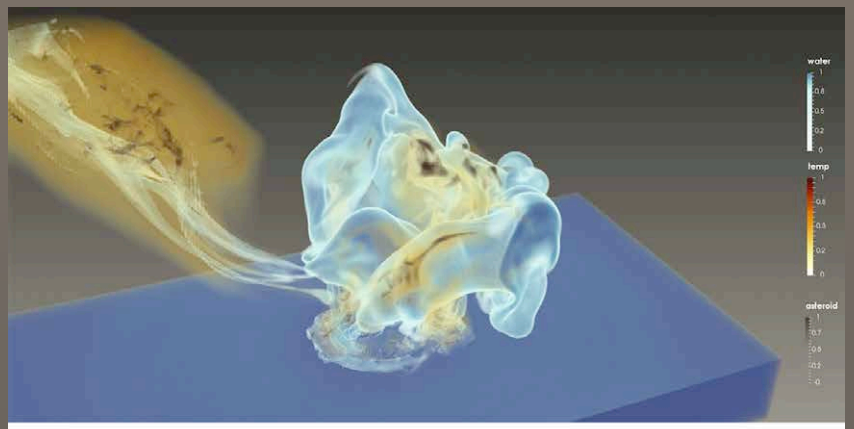
green 7

brown 4

red 2

green 4





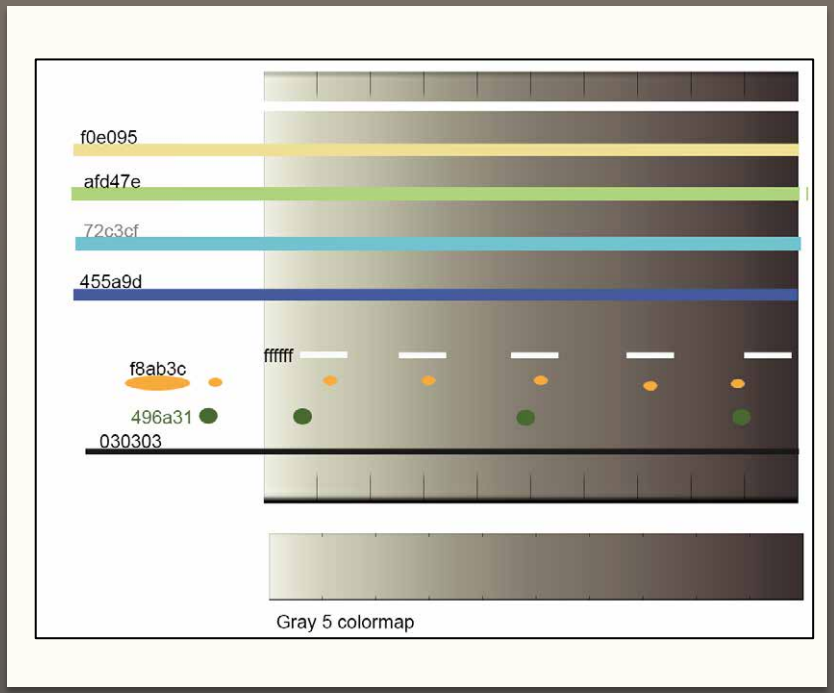
blue 4

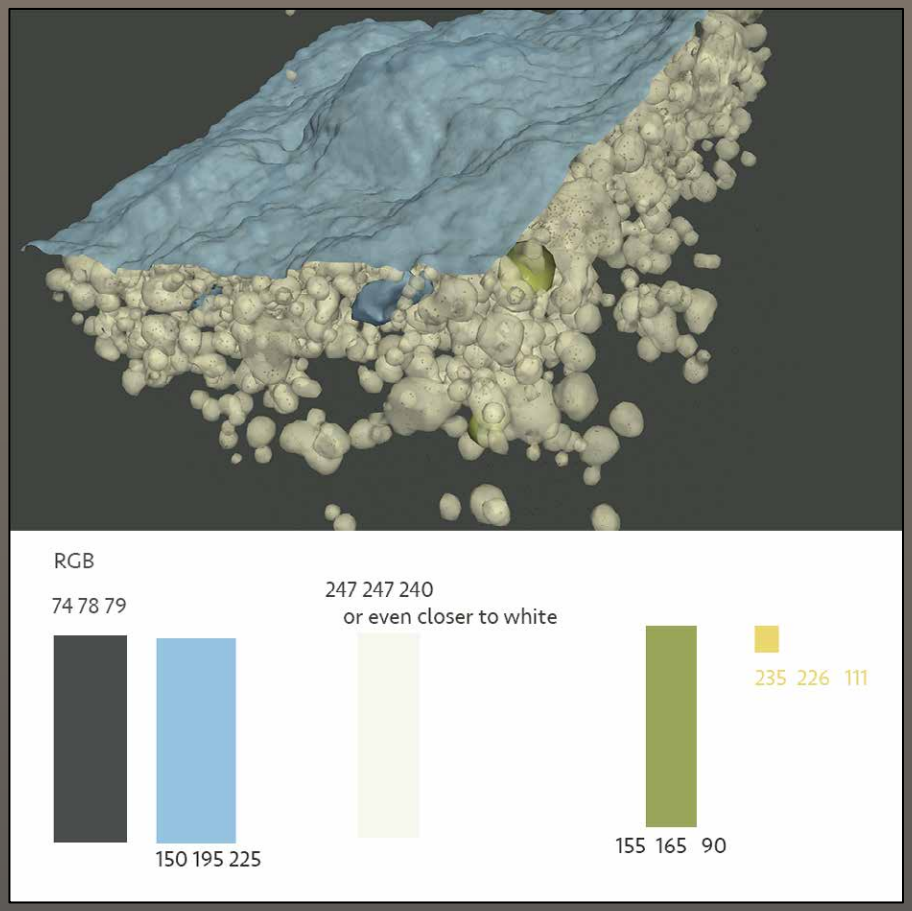
yellow 15

brown 7

See SciVisColor.org
for color map documentation.

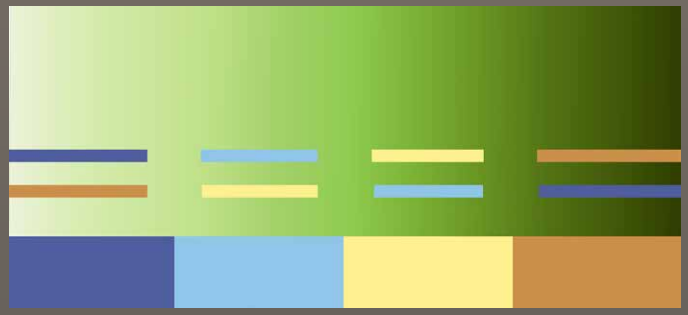
Ready-made sets

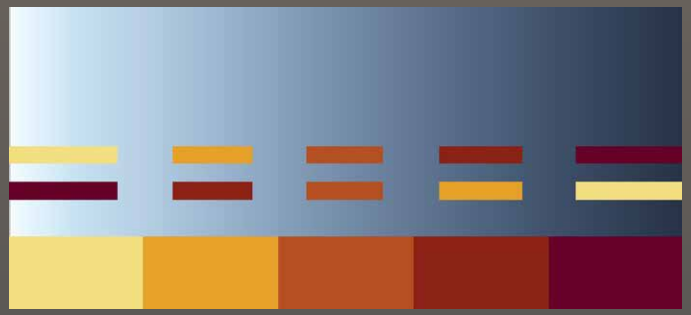


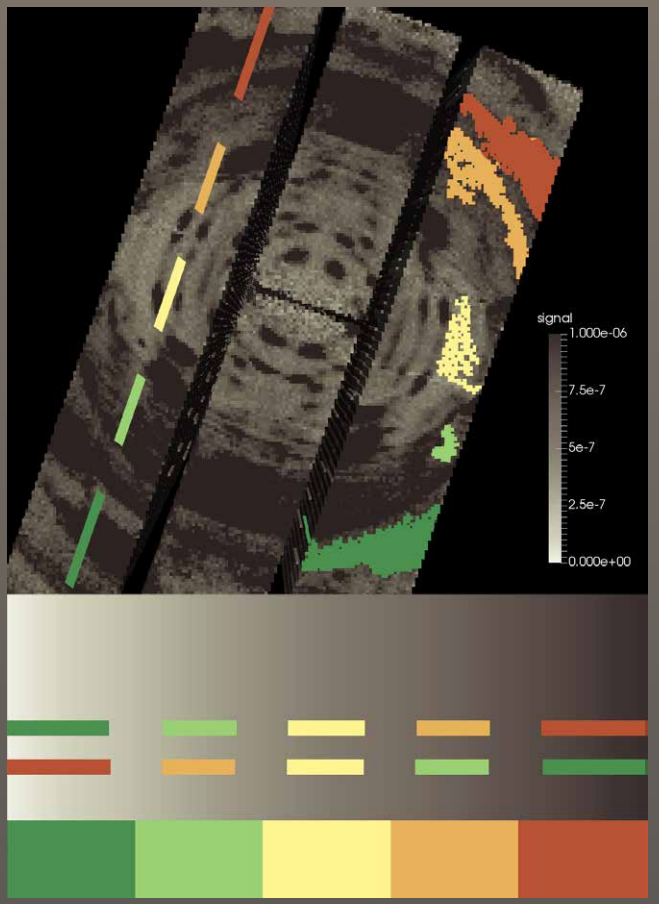


Visualization and Analysis of Large-Scale Atomistic Simulations of Plasma–Surface Interactions
Wathsala Widanagamaachchi, Karl D. Hammond, Li-Ta Lo,3 Brian D. Wirth, Francesca Samsel, Christopher Sewell, James Ahrens, Valerio Pascucci

Color sets:
color scales with discrete colors
visible across color scale ranges

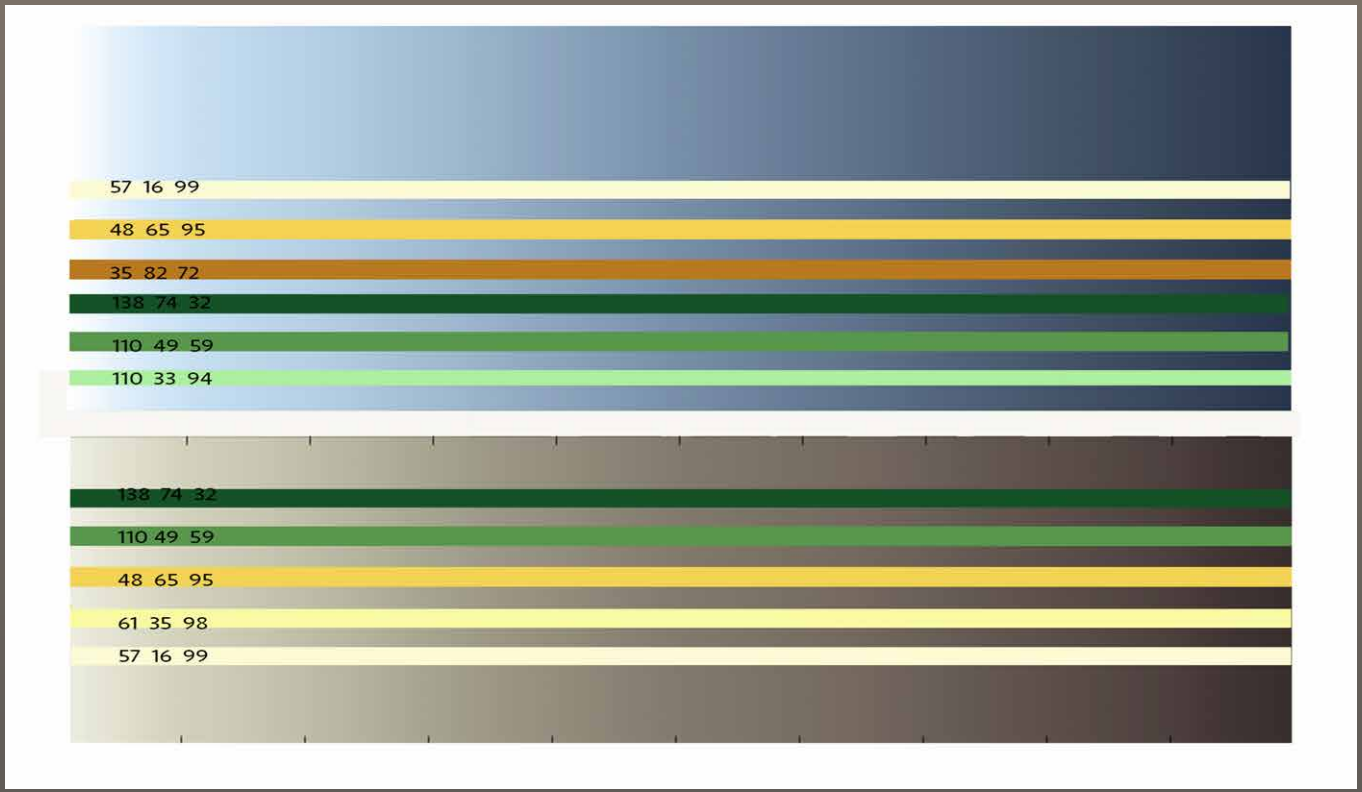






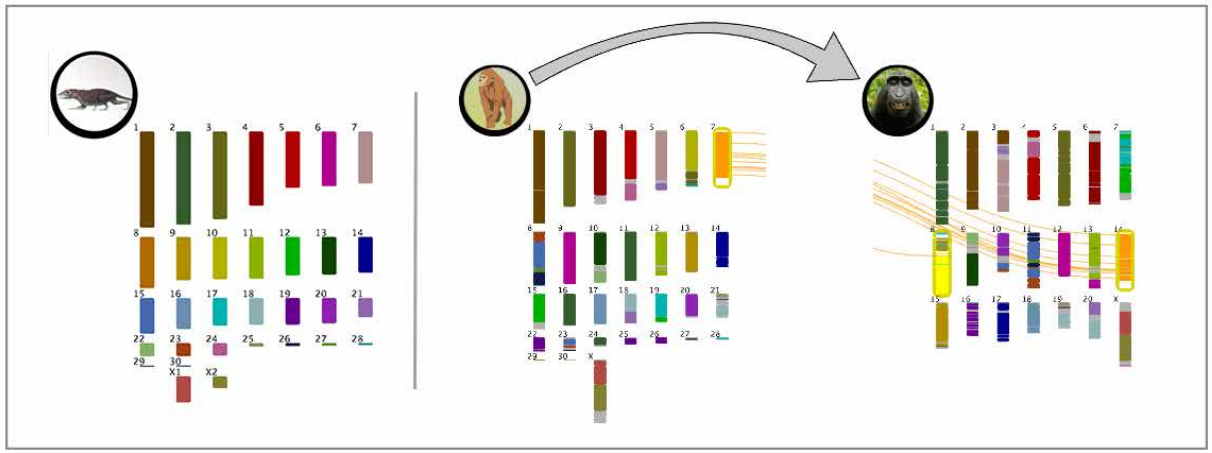
Available in SciVisColor.org!

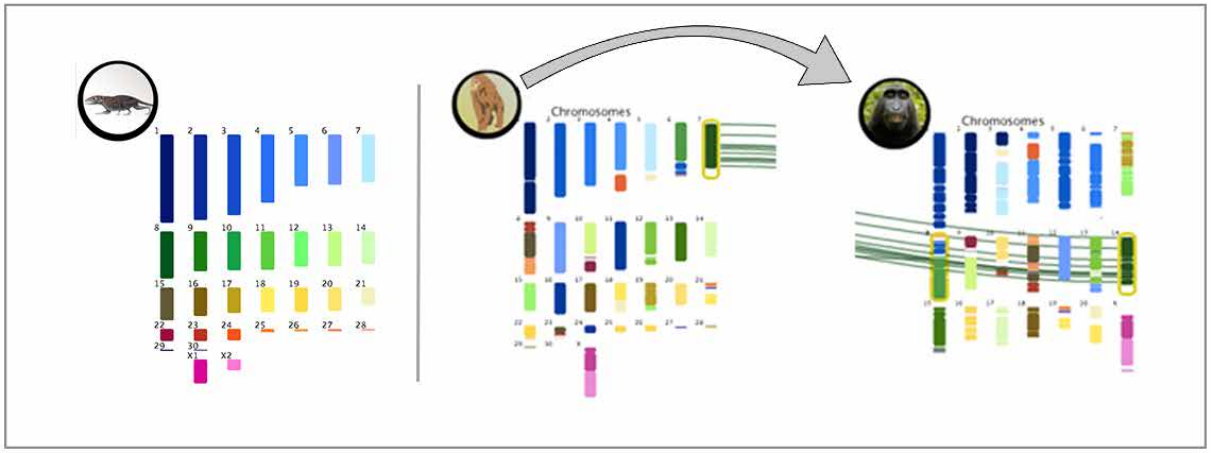
Suggested colormap and glyph color sets.



gray 5

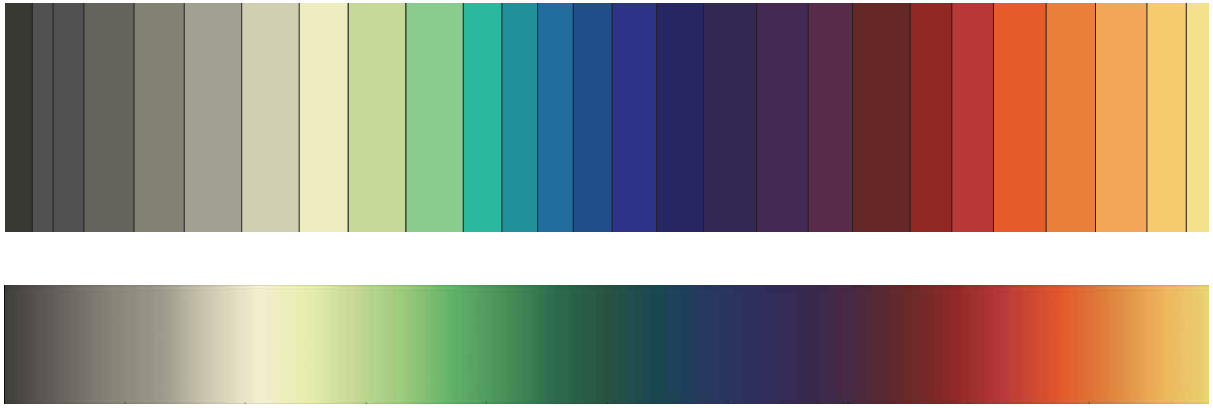
It is important to watch the points where values overlap.
Those are the weak points. When the value of the color scale and solid color are the same, distinguishing between the two is most difficult.



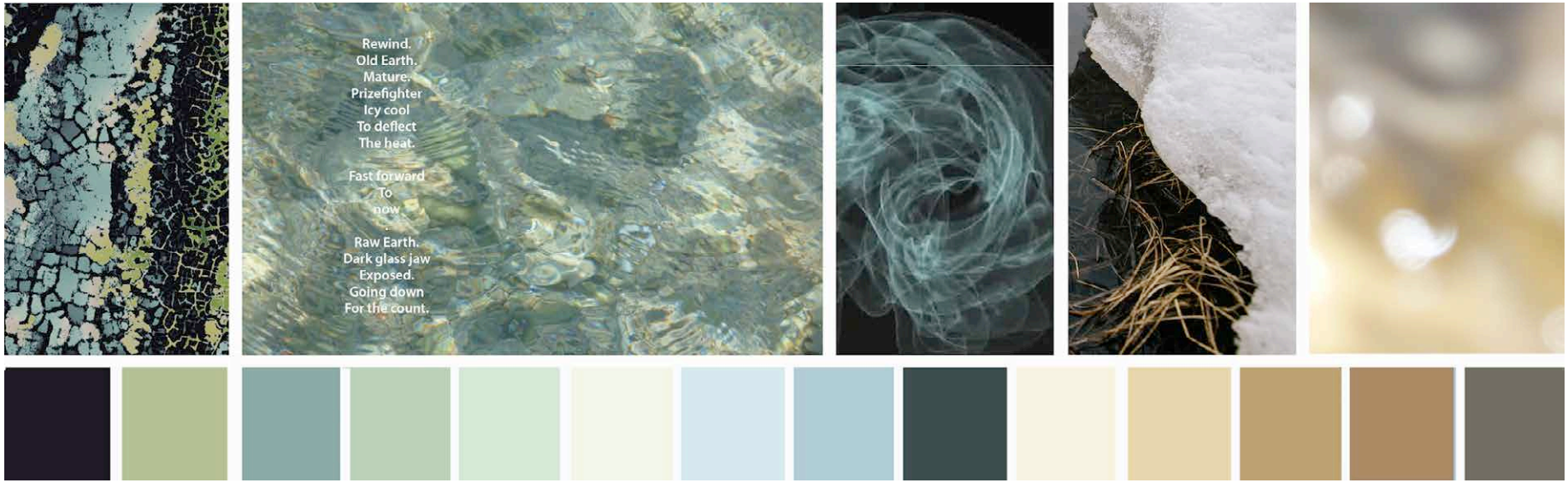


41 discrete colors organized to structure the content.

Discrete sets to colormaps



HSV			
0	40	6	25
0.04	44	8	38
0.08	46	10	51
0.13	48	12	62
0.17	51	14	81
0.21	55	15	95
0.25	64	26	93
0.29	77	31	85
0.33	96	39	80
0.375	125	46	69
0.42	134	51	55
0.46	152	59	41
0.50	153	53	33
0.54	190	70	32
0.58	217	62	37
0.63	242	51	36
0.67	266	47	30
0.71	320	45	29
0.75	0	60	40
0.79	2	74	56
0.83	0	69	72
0.88	15	81	89
0.92	26	72	87
0.96	36	62	93
1	48	52	92



Feedback Loop by Michael G. Smith