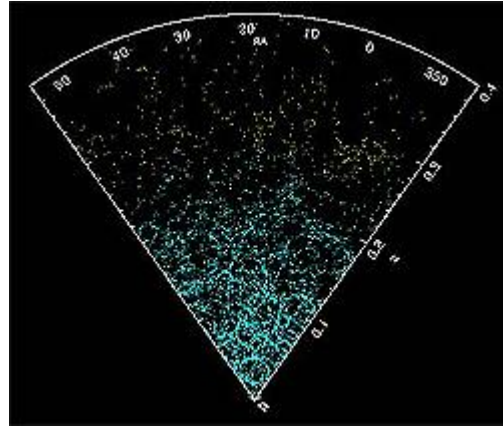


Map the Universe

Research Question

Make a map of the universe. The easiest way to make this map is to search a wide range of RA and a narrow range of dec to get a 2-D slice through the full 3-D map. But can you make a map in 3-D?

What does the universe look like? Can you quantify the spacing between walls of galaxies?



A sample map of the universe

Things you might think about

1. What does redshift mean?
2. Can you convert redshift to distance? Do you need to?
3. How does the expansion of the universe affect the map?

Tools that might help you (all links open in new windows)

[Search Form](#): use this tool to search for the positions of many galaxies to make your map. See the [user's guide](#) to learn how to use the tool.

[SQL Search](#): use this tool to write complex Structured Query Language (SQL) searches for galaxies that you can use to make your map

Science background (new windows)

[SDSS "How Big is Big?" press release, about the scale of the universe](#)

[What is large-scale structure?](#)

["Universe" at Wikipedia](#)

Hints and cautions (new windows)

Your data is polar (redshift $\rightarrow r$, RA $\rightarrow \theta$), while Excel can only graph x-y quantities. How will you overcome this problem?

