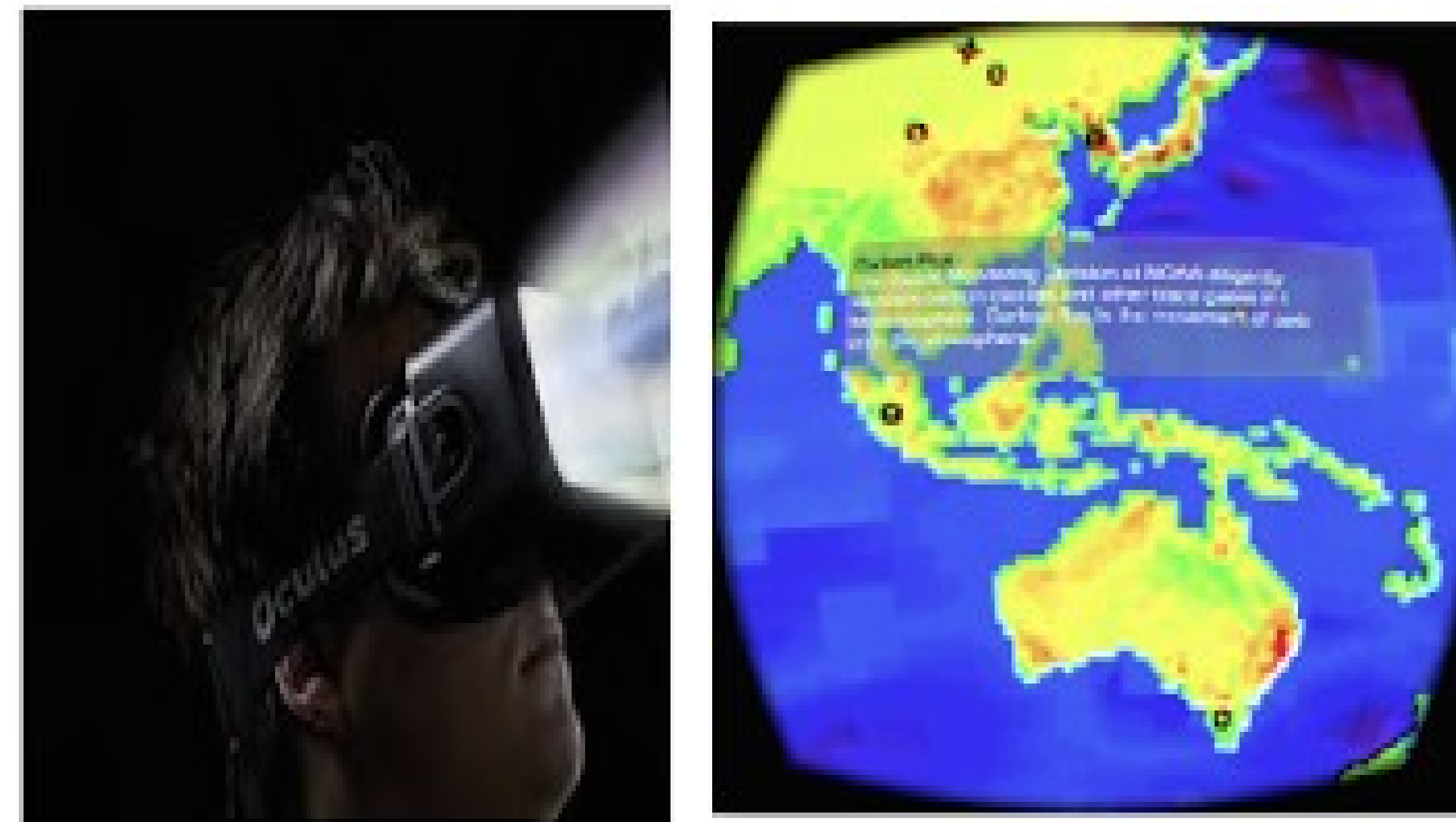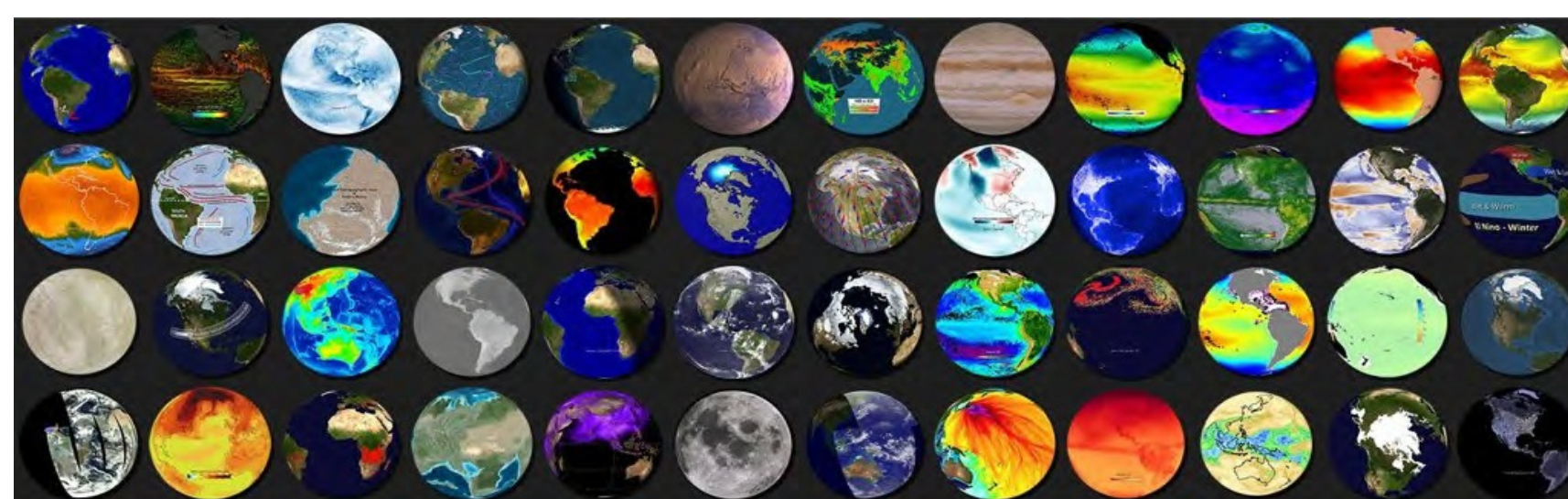# Science on a Sphere in the Oculus Rift

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Abstract

Science on a Sphere has over 250 datasets on our planet which are viewable on a sphere at specific stations, which can be displayed on a spherical apparatus. The Oculus Rift was used to visualize the various datasets as an immersive virtual reality world. The spherical apparatus necessary to view the SOS data is expensive and only allows for the viewers to observe one portion of the data. This application allows for a more effective way to view the SOS datasets while also providing a chance to look at the spheres from the inside while cutting the traveling costs to the areas with the spheres.

The main goal of this project was to build three demo scenes displaying different datasets. When a user opens the program, he/she will have the choice to pick one of three demos to view; Science on a Sphere, Virtual Field Trip, and Sea Surface Temperature. This project has been developed using javascript, and html languages along with the use of the three.js library, other necessary files provided by MozVR (Firefox Nightly).
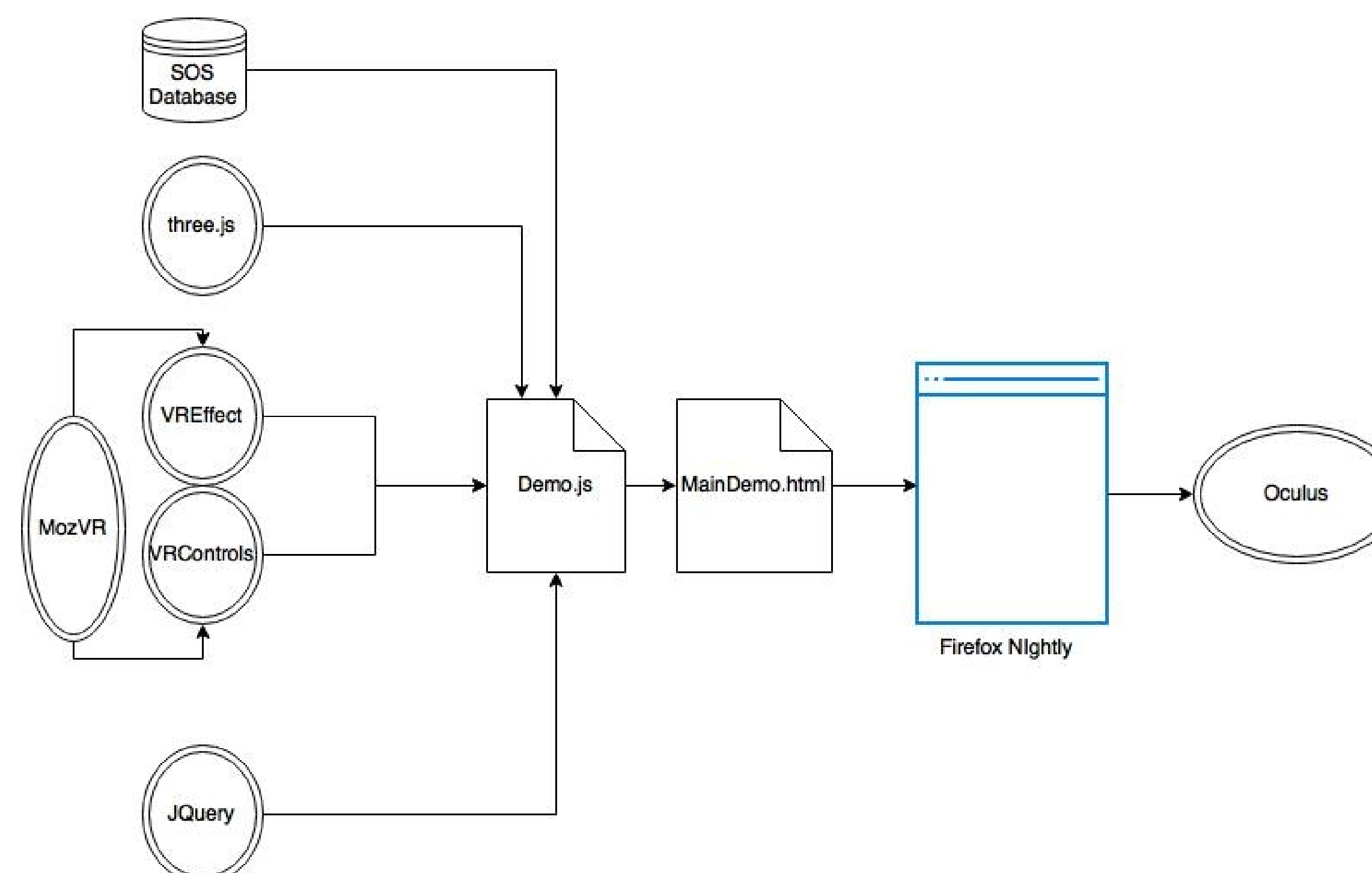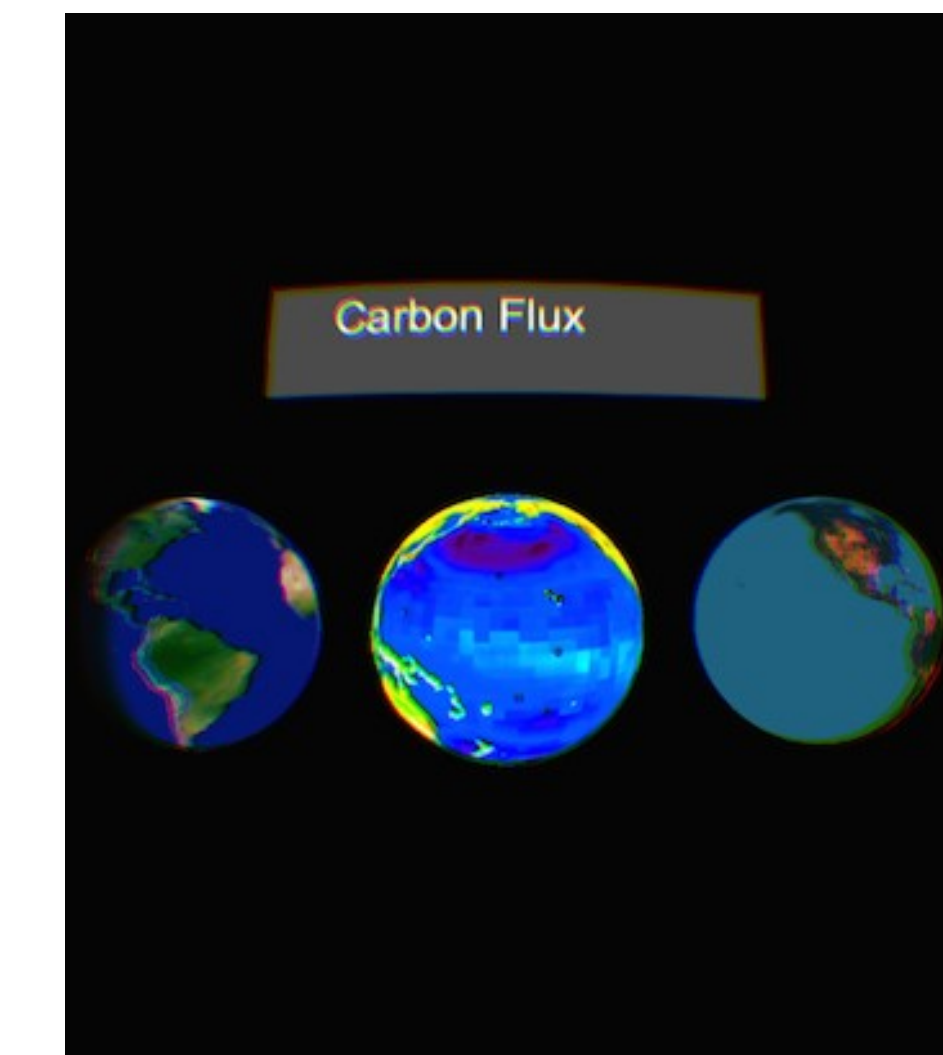
Methodology

Browser	Firefox Nightly V.36
Languages	Javascript, HTML5, CSS3
JS Libraries	JQuery, MozVR, three.js

Main Libraries Used

- VREffects: Renders the screen in Oculus View
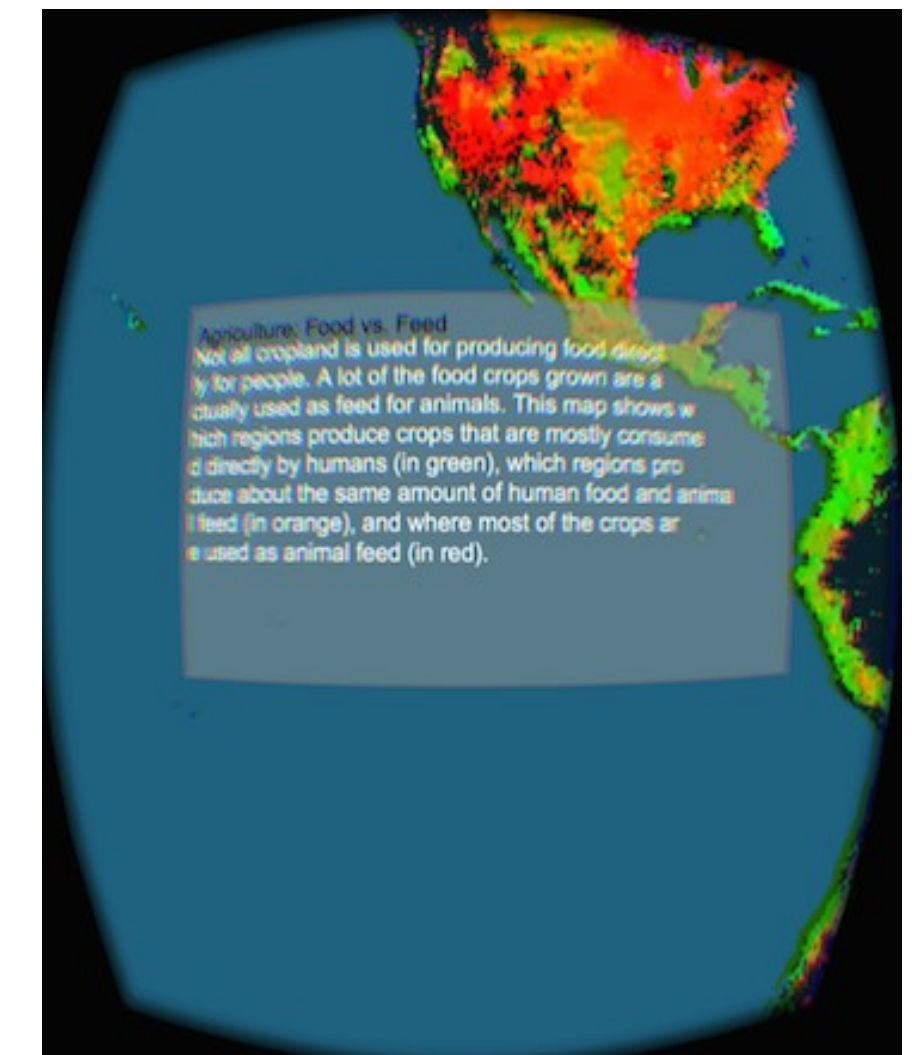- VRControls: Oculus Sensor Control
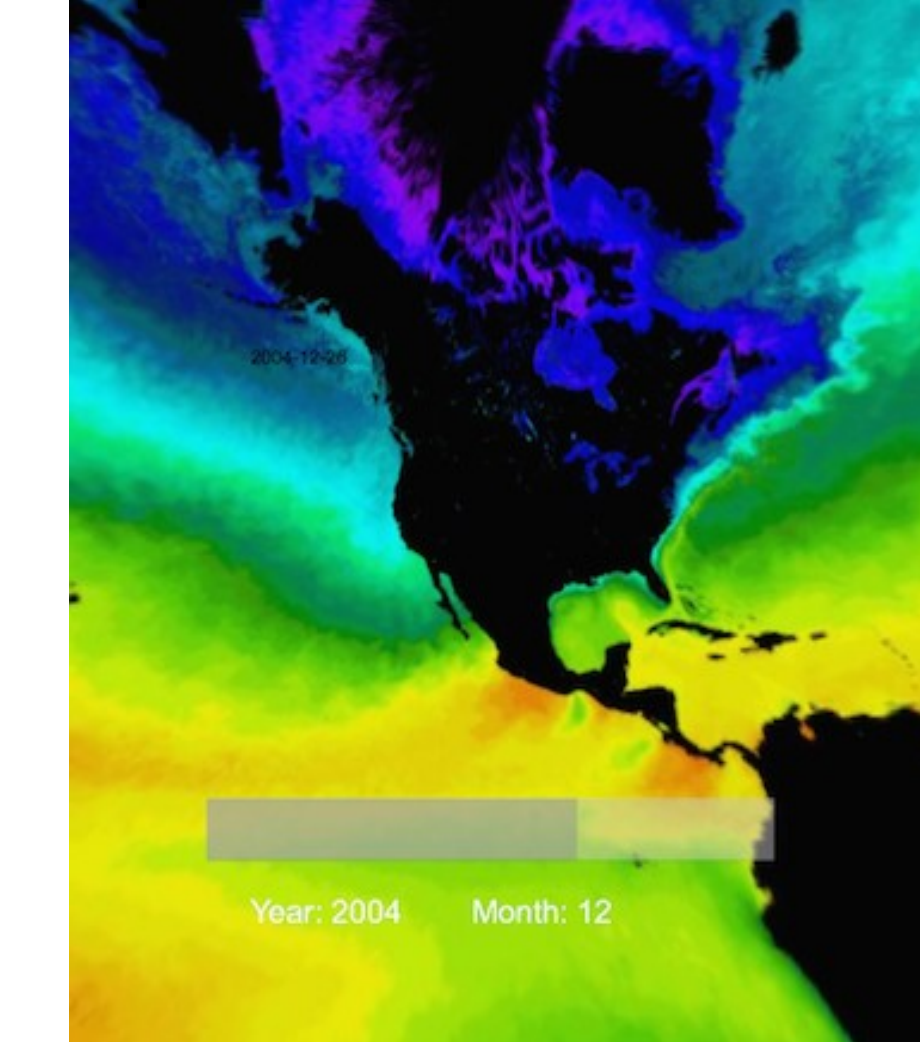- three.js : 3D World Renderer

Data Sphere Selection

Carbon Flux

Eartharium View

Virtual Field Trip

Sphere Time Series

Future Development

- Integrate live data
- Encapsulated everything into one united application

Conclusion

It was difficult implementing HTML5 and CSS into Javascript with three.js. Despide all odds, we were successful in implementing our goals

Acknowledgements