Computational artifact

2a. The name of this app is Meteor Counter. Its purpose is to help map out cosmic debris that Earth encounters and to improve NASA's ability to forecast meteor activity[1] and it works by the users documenting the brightness of an meteor that they have observed. The data, including the time and location of the submission, is automatically shared with NASA researches[1]. This app is a computing innovation as it connects users from around the world to one place, and is shown in the computational artifact with examples of applications that utilize this technology.

2b. For the creation of the computational artifact, I created a collage of pictures of commonly used online tools that use the internet to connect people from around the world. To execute this, I retrieved images of these applications from the web and put them onto a document using Google Docs around text connecting the images under one theme: "connecting people and information from around the world."

2c. Utilizing the technological ability to connect people from around, professional astronomers can get better and more diverse data than they could ever get on their own. However, there is the unintended consequence of this is that the researchers at NASA have no way of proving the credibility of the data and the privacy of the users may be at risk. While NASA might not be going around giving away people's data, this app is evidence that the technology to do so is there and has been since the app was created. This technology can be found pretty much everywhere today, from social media networks giving away user's location[2] to pizzeria apps that need a user's location to deliver them their pizza. Consequently, this technological innovation gives rise

to potential societal problems as now one can, with varying difficulty, access the location of someone else so long as that person has a phone.

2d. Meteor Counter uses the brightness scale used by astronomers (magnitude), which is an exponential/logarithmic scale[3][4] whenever the users input the brightness and magnitude of the reported meteoroids. The app can also record the user's voice if they choose to make comments on the asteroid,[5] and the app also stores the date and location of the submission. NASA then combines all of this data to create a map of numbers and audio commenting on asteroids in a given area. Consequently, users privacy is at risk as their voice is connected to a location and, while it would be challenging to pull off, could result in the user being uncovered. With this innovation, risks such as these are bound to happen as dedicated people can, if they put forth enough effort, can reveal a person's identity. However, this is clearly a difficult process, connecting someone's voice to a location that has no guarantee of being their home or even close, and NASA, being a government organization, has no right nor purpose to do so, unless of course the data is leaked. However, in order for someone's identity to be revealed, they'd have to use the voice recording feature, have a recording of their voice somewhere else for comparison, use the app near their home, and the data for the app would have to leak. As a result, this app is completely justified.

2e

Link 1: https://www.nasa.gov/solve/feature/meteor-counter-app/

Link 2: http://www.businessinsider.com/three-ways-social-media-is-tracking-you-2015-5

Link 3: https://www.space.com/21640-star-luminosity-and-magnitude.html

Link 4: https://www.scientificamerican.com/citizen-science/nasa-meteor-counter/

Link 5: https://science.nasa.gov/science-news/science-at-nasa/2011/13dec_meteorcounter/