

The Earth from Orbit as a Musical Score

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Abstract

The Earth, when viewed from space reveals patterns made by geological forces, weather and the activities of humans and other life forms. The authors propose to transform these patterns into sound for the performance of music as well as to sonify this visual information that changes over time. As work not yet even begun, this should be read as a position statement, and a 'call to arms' for potential collaborators.



Figure 1 – Earth photographed by Apollo 17 [3]

1. Introduction

The film maker Jean Cocteau once remarked that cinema would never be a true art form until it is as cheap, and accessible, as a piece of paper. Bearing this in mind, the use of space as a site for artistic expression is still a long way from M. Cocteau's ideal. The authors are shamelessly seduced by the idea of placing massive art objects in orbit to be admired from the ground, but for now, we intend to follow a much more modest path.

Given the opportunity to access a live video data feed from a satellite, we plan to transform this data into sound, primarily for a musical experience, but also to sonify the image content for other research applications.

2. Eyes to Ears - Visual & Sonic Features

The translation of information from one mode of perception to another has fascinated artists for some time. A number of famous artists and musicians, such as Scriabin and Kandinsky, are believed by some to have had a condition known as synaesthesia [1] whereby sounds might be also experienced as flavours in the mouth, and colours might be also experienced as sounds. Meanwhile, a whole field has grown up [2] around such cross-modal mappings for the auditory display of data. Our challenge in this case is to find a mapping or set of mappings that convey some of the meaning or feeling of the satellite's video stream as a artificially synaesthetic vision of sound.

A live video image is in constant change with features entering and leaving the frame over time, and lends itself to a similarly time-dependent mapping as sound. In addition, we plan to use existing algorithms for locating features, such as rivers, clouds, roads etc., to make sonic features that are similarly recognised over the more low-level visual/sonic background.

By taking an initially simple approach, we believe we can build up the means to sonically respond to the unfolding vista of Earth from space.

References

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- [2] Kramer, G., Auditory Display: Sonification, Audification and Auditory Interfaces. in *First International Conference on Auditory Display*, (Reading MA, 1994), Addison and Wesley.
- [3] Wikipedia. The earth (image: the earth seen from apollo 17), Wikipedia, 2007. <http://en.wikipedia.org/wiki/Earth>