

Project:

Songs of the Solar Winds: A Musical and Visual Interpretation of Aurora Science in Antarctica

Many ancient peoples of the Polar Regions believed the aurora to be the feast fires of ancestors. Some tribes have spoken of hearing the voices of these departed elders during these luminous displays. In recent times we have discovered the existence of naturally produced radio signals at very low frequencies (VLF) that, had they occurred as acoustic waves instead of electromagnetic waves, would be audible to the human ear. These radio waves are produced within the earth's ionosphere and magnetosphere by the interaction of the solar wind, especially near the earth's poles. In comparison with visual data from auroral all-sky imagers located in the South Pole and spectrogram data of VLF radio waves it has been noted that changes in phase and amplitude of VLF signals directly coincide with changes in intensity and form of auroral band displays. In essence, they mirror each other.

These audio signals are known as auroral chorus and in addition to other space weather phenomena produce sound of a musical nature in tone, texture, structure and subtle melody. Inspired by the work of Stephen P. McGreevy, a sound recordist who has archived aurora-related audio, and Douglas Quin who has produced a cd of field recordings in Antarctica, I am creating an original musical composition based upon my own high-quality recordings of VLF audio data and sound material to be collected in the field. This experimental music will be the basis of a score to be performed simultaneously with video and still footage of aurora to be acquired in Fairbanks, Alaska preceding my work in and around two AGO locations in Antarctica, McMurdo and Palmer stations.

This material will be edited with footage collected during my time in Antarctica and performed using new techniques in still animation sequencing, video processing, and projection. The preferred venues for this performance would include art galleries, sound and electronic media art festivals and events with the completed works available as a cd/dvd set to be widely promoted and distributed. A documentation of my fieldwork and all archived audio data will be freely available to the public including all academic institutions involved with the atmospheric and radio sciences through a specially created internet website. My completed works will be made available to various art and science-based summer camps for kids and teens.

The landscapes of Antarctica and images of aurora have enthralled audiences around the world. They hold a powerful fascination in which there is a sense that we are viewing imagery not of this earth. By means of innovative techniques in new media arts and exploration of Antarctica's rich sonic environment I hope to inspire a profound appreciation of these hidden gifts of nature. Based upon my subjective interpretation of the Antarctic experience, I wish to create an audiovisual performance to relight these ancestral feast fires and carry the songs of the elders back to us as a storyteller in modern times.

