Guidelines for scientific usage of Stanford VLF receiver data

Introduction
The first AWESOME VLF Workshop, in Sebha, Libya, 8-11 June 2008, represents a significant milestone. Stanford has pursued a number of collaborations with groups internationally that involve setting up a Stanford-built VLF receiver, and working together on joint projects on the analysis of this data. However, the current International Heliophysical Year (IHY) has provided the impetus for a significant expansion of the number of sites hosting VLF receivers built by Stanford, which has also enabled this workshop to take place. The purpose of this document is to document our vision for the sharing and continued availability of data from IHY/AWESOME VLF receiver sites, as well as for the pursuit of scientific projects and investigations, many of whose observations which will be inherently collaborative or multi-site oriented.

Data Sharing
It is a most important aspect of this research work that narrowband data be shared; i.e., all of our IHY AWESOME VLF receiver hosts should be able to view narrowband data from any other site. Stanford will continue to make all low-resolution data available on the Internet, with our data viewer (currently located at http://vlf-ihy.Stanford.edu) containing low-resolution (1 Hz) narrowband data. Hi-resolution data (50 Hz) from any AWESOME site will be available upon request from Stanford University.

It is very important that site hosts maintain a constant Internet connection to the AWESOME receiver at all times, so that narrowband data can be sent to Stanford over ftp link (with a copy being kept locally if the host wishes to keep it). Network connection should be maintained to enable transfer of ~500 MB per day on average, unless alternate arrangements have been made with Stanford (like regular mailing of DVDs or hard drives).

Broadband data will not be sent to Stanford regularly due to its higher volume (~23 MB/minute), but can be collected by site hosts in as much capacity as they desire, with consultation with Stanford as per its usefulness. Broadband data does not have to be shared online, but should be shared and made available to Stanford upon request.

Usage of data for scientific investigations
The sharing of data will not only enable more elaborate observations utilizing many observations of similar phenomena, but will also encourage collaborations on projects of joint interest between sites. Fostering such collaborations is a most important aspect of the Stanford AWESOME VLF receiver network.

We encourage our VLF receiver site hosts to pursue scientific topics of their interest and choosing, utilizing, if necessary, data from multiple sites. One of the purposes of this workshop is to make sure that sites have a specific topic to pursue, using some suitable combination of data from their sites and/or other sites.

In the interest of ensuring that significant overlap of scientific topics among different collaborative studies be avoided, we ask that site hosts pursuing a new topic do notify Stanford with a short summary of the topic to be undertaken and the datasets likely to be used. Stanford will then make sure that a project is not repeated simultaneously by multiple groups of collaborators.

Authorship
We strongly encourage publication of results obtained with Stanford VLF receivers, either in university-level, national, or international refereed journals. Stanford does not, in general, require authorship of a Stanford person in order to pursue these papers, however, we do ask that our contribution of the receiver be included at least in the acknowledgements. In certain cases, Stanford may be willing to contribute more substantially to a given topic, using data from our own sites, other tools available to Stanford, or just general advice on content/style, etc. These cases, as well as authorship decisions, can be discussed individually via email with Stanford.

In addition, while it is important to allow our VLF receiver site hosts to access data from other sites, it is also important to ensure that hosts have the opportunity to contribute to the scientific papers being generated with the data from their own site. Hence, if a paper is being written (or worked on) by any host which draws heavily on the narrowband data from another site, we ask that the author provide the opportunity for that host of the other site to contribute substantially to the paper, and thereby become a co-author.

Stanford will attempt to resolve any such disputes that arise with regards to these guidelines, though the purpose of these guidelines is, in fact, to advance the science of VLF observations in the most effective way possible.

We look forward to sharing with you our vision of a thriving community of VLF/AWESOME researchers, collaborating together on a variety of broad topics, and utilizing the full depth afforded by VLF data.