The Heliophysics Data Environment, Virtual Observatories, NSSDC, and SPASE

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Heliophysics (the study of the Sun and its effects on the Solar System, especially the Earth) has an interesting data environment in that the data are often to be found in relatively small data sets widely scattered in archives around the world. Within the last decade there have been more concentrated efforts to organize the data access methods and create a Heliophysics Data and Model Consortium (HDMC). To provide data search and access capability a number of Virtual Observatories (VO's) have been established both via funding from the U.S. National Aeronautics and Space Administration (NASA) and through other funding agencies in the U.S. and worldwide. At least 15 systems can be labeled as Heliophysics Virtual Observatories, 9 of them funded by NASA. Other parts of this data environment include Resident Archives, and the final, or "deep" archive at the National Space Science Data Center (NSSDC). The problem is that different data search and access approaches are used by all of these elements of the HDMC and a search for data relevant to a particular research question can involve consulting with multiple VO's – needing to learn a different approach for finding and acquiring data for each.

The Space Physics Archive Search and Extract (SPASE) project is intended to provide a common data model for Heliophysics data and therefore a common set of metadata for searches of the VO's and other data environment elements. The SPASE Data Model has been developed through the common efforts of the HDMC representatives over a number of years. We currently have released Version 2.1 of the Data Model. The advantages and disadvantages of the Data Model will be discussed along with the plans for the future. Recent changes requested by new members of the SPASE community indicate some of the directions for further development.