Taming the data wilderness with the VHO: Integrating heliospheric data sets

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Currently, space physicists are faced with a bewildering array of heliospheric missions, experiments, and data sets available at archives distributed around the world. Daunting even for those most familiar with the field, physicists in other concentrations (solar physics, magnetospheric physics, etc.) find locating the heliospheric data that they need extremely challenging if not impossible. The Virtual Heliospheric Observatory (VHO) will help to solve this problem by creating an Application Programming Interface (API) and web portal that integrates these data sets to find the highest quality data for a given task. The VHO will locate the best available data, often found only at PI institutions rather than at national archives like the NSSDC. The VHO will therefore facilitate a dynamic data environment where improved data products are made available immediately. In order to accomplish this, the VHO will enforce a metadata standard on participating data providers with sufficient depth to allow for meaningful scientific evaluation of similar data products. The VHO will provide an automated way for secondary sites to keep mirrors of data archives up to date and encouraging the generation of secondary or added-value data products. The VHO will interact seamlessly with the Virtual Solar Observatory (VSO) and other Virtual Observatories (VxO's) to allow for inter-disciplinary data searching. Software tools for these data sets will also be available through the VHO. Finally, the VHO will provide linkages to the modeling community and will develop metadata standards for the inclusion of data processing services. By providing a single, easy-to-use interface to all these communities, the VHO will seek to tame the increasingly complex heliospheric data

environment.