

THE VIRTUAL RADIATION BELT OBSERVATORY (VIRBO) AND THE FUTURE OF THE VxO ENVIRONMENT

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This presentation will cover two topics: (1) the data products available and exposed through ViRBO and (2) our perspectives and predictions about how the rapidly evolving virtual observatory environment will facilitate research that requires the integration of data and model results from many different sources. ViRBO is a virtual observatory which allows access to and use of data and tools for radiation belt scientists. Data sets include data from the SAMPEX, GOES, POES, LANL GEO, Polar, and GPS satellites. A number of new data sets, not previously available, are available from the HEO-1, HEO-3, CRRES, SCATHA, OV1-19, ICO, S3-3, and OV3-3 spacecraft. Scientist-contributed model data include that of the radiation belt content index, a geostationary plasma density and temperature reanalysis data set, and a four-decade-long set of time series of key inputs to modern empirical magnetic field models. In collaboration with the Geospace Environment Modeling Radiation Belt Climatology Focus Group, ViRBO has synthesized and created a data set containing a large collection of data relevant to climatological and statistical studies. Data are served in a number of ways, including from a basic FTP site and an OPeNDAP server. Visualizations of data are created using Autoplot, which is a spin-off project of ViRBO. Metadata search, editing, and access are provided through VxOware, another spin-off project of ViRBO that is in preparation for general release.

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