General Information and Guidance about Radio JOVE Data Available Through the PDS

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I. Introduction to the Radio JOVE Data

The Radio JOVE data bundles archived by the PDS contain radio astronomy data collected by observing stations that are part of the NASA Radio JOVE project. The CDF files in the bundles contain data that have been converted to CDF format from native formats used in radio astronomy, such as *.sps. (For information about these native formats, see Section II below.) For information about the Radio JOVE project, please consult the Radio JOVE website at https://radiojove.gsfc.nasa.gov

In addition to these bundles of CDF data, the PPI Node of the PDS also maintains a store of Radio JOVE data in the Annex section of its website. These annex data are in native radio astronomy formats instead of CDF and have not yet been reviewed or archived. They are offered in "as-is" condition for the benefit of scientists who are interested in such data. The present document applies to the CDF (reviewed) data and not to these additional data, although the documents discussed herein are useful in understanding both kinds of data.

The Radio JOVE data at the PPI Node can be found via the PPI website at:

https://pds-ppi.igpp.ucla.edu

(follow the link for "Jupiter", then follow the link for "RadioJove").

The annex data can be found at:

https://pds-ppi.igpp.ucla.edu/annex/

(follow the links that begin with "radiojove").

II. Further Documents: Station Diagrams, Ephemerides, Calibration, and Others

Some documents relevant to the CDF data can be found in the document directories of the bundles. More thorough documentation can be found on the Radio JOVE websites. Ephemerides, station diagrams, calibration documents, technical articles, and other

relevant items can be found (at the time of this writing) on the Radio JOVE Spectrograph Users' Group (SUG) website at http://radiojove.org/SUG/. Further information about the Radio JOVE project can be found on the Radio JOVE main website at https://radiojove.gsfc.nasa.gov.

For users of data in native formats such as the data in the PPI annex, the links in the Publications section of the SUG site may be helpful. In particular, there is a link in the Technical Articles subsection to a file "SPS File Format Description, Typinski (2015).pdf" which describes the format of the *.sps data files.

III. Metadata in the CDF Files and Labels

The Global Attributes section of a CDF data file contains general and high-level information about the contents of the file. These attributes may include information about the source of the data; the targets being observed; the calibration of the data; the spectral sampling, resolution, and timing of the data; the latitude and longitude of the observatory; the observatory hardware; and other relevant items.

The Variable Attributes section of the file, and the descriptions that accompany each variable, contain information about the attributes (minimum and maximum, name, time standard, etc.) of the variables whose values make up the body of the data.

The PDS4 label files (*.xml) accompanying the data files also contain metadata describing the data. For information about the PDS4 data standard, please visit the following page on the PDS website: https://pds.nasa.gov/datastandards/documents .

IV. Some Specific Caveats

Users should be alert to the following known issues which they may encounter while using the data in its present version or in past versions.

In some bundles there are variations in the file naming conventions for data files. These differences might or might not reflect differences within the files.

Some data files may contain time intervals during which the instrument recording the data became saturated. Users are cautioned to be alert to the possibility of such regions. Signs of saturation can include a signal that appears to have leveled off unexpectedly at a high numeric value. Calibration documents may also be useful in understanding this phenomenon (see the URL below).

Some of the data files may contain flag values for LABLAXIS and other variables even

when there are no missing data.

It is possible that some data files described as having RCP or LCP polarization may actually have unknown polarization.

Users of the annex data normally will have to access the calibration information for the data before the data can be used. Calibration documents, if not included with the PDS archived data, can be found on the SUG website (see Section II above for information about that site.)

V. Point of Contact

If you have further questions about these data, please contact the PPI Node PDS Operator at pds_operator@igpp.ucla.edu .