DRAFT ARCHIVE PLAN FOR A NASA RESEARCH PROPOSAL
# PDS IMAGING NODE GUIDANCE (WITH YOUR PROJECT-SPECIFIC INPUT)
6/18/15

Development of this archive will follow Planetary Data System (PDS) standards and procedures. All archived data and supportive ancillary products will be compatible with the new PDS4 standard, an eXtensible Markup Language (XML)-based architecture. This process involves design and production of PDS "bundles", "collections", and "data product" entities as necessary to prepare the archive. This structure ensures long-term usability and preservation of the products to be developed as part of your proposal. Archive guides can be found on the PDS Home page under PDS4, Information for Data Providers (see https://pds.jpl.nasa.gov/pds4/about/portal.shtml, also see https://pds.nasa.gov/pds4/doc/examples/). Available PDS4 software, including Generate, Validate and Transform tools as well as the PDS4-specific tools (see https://pds.jpl.nasa.gov/pds4/software/index.shtml) will be used for the production of a PDS4 compliant archive. We will refer to the PDS4 Schema (see https://pds.jpl.nasa.gov/pds4/schema/index.shtml) to understand how the planned archive will fit into the PDS4 system. We will commit to working closely with personnel of the PDS Imaging Node (PDS-IMG) to accomplish the archiving tasks described in this plan.

Data Compilation and Processing

Data products created as a result of this proposed work reside [*where? At your site on your directories, or at multiple institutions? Provide information on the location of data to be gathered*]. These will need to be [*gathered and*] staged locally to support detailed archive design and development. [*Products will be retrieved from these institutions and added to the existing repository at our facility.*] The data and supporting ancillary products will be organized within a detailed archive structure, represented in general by the figure below (include *your proposed archive design as needed*).

A Sample Archive Bundle
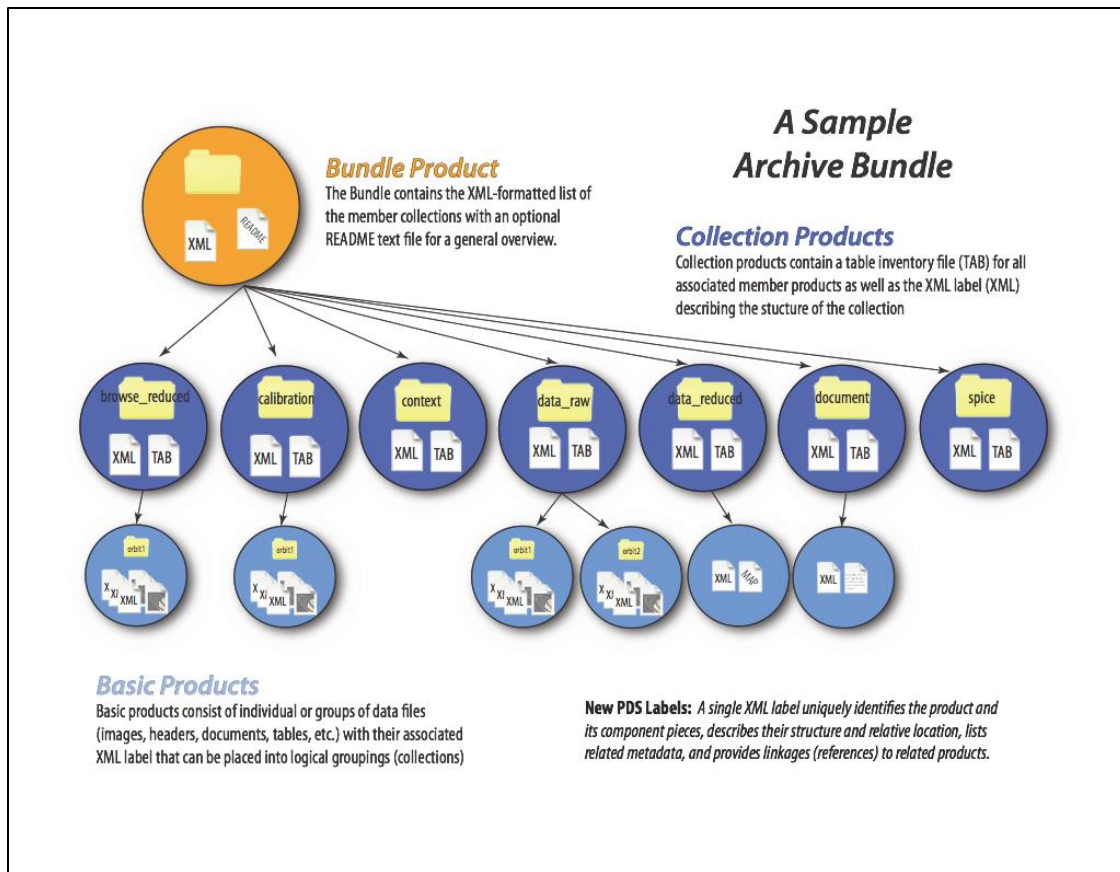
Processing of these data will involve X steps, including *[provide basic details of planned updates or changes or retrieved data to be archived.*] The planned archive will include X types of products, including: *[list types of data].* These will be organized into a project-level bundle containing collections, with separate collections for documents, data products, calibration (if needed), and other information required to fully utilize and support the planned archive. The bundle and all components will have associated XML labels with elements and attributes describing their contents in detail. Required time estimated for these tasks is 0.X work-year.

Data Formatting and Metadata Development

All archive products will require PDS4 integration involving the conversion from existing data formats to PDS compliant formats. In addition, bundle and product/collection labels will be developed through the addition and parsing of detailed metadata describing the contents, history, linkages to existing PDS data archives (if needed), etc. Development of scripts and software will be required to accomplish these tasks. Archived data will be formatted as [*arrays, tables, parsable byte streams, or encoded byte streams*], in compliance with PDS4 formatting requirements. In addition, maps, mosaics and other cartographic products will be delivered in common formats, such as geographically tagged TIFF or JPEG

images, that are readable by common XML and Geographic Information Systems (GIS) applications. Required time estimated for these tasks is 0.X work-year.

PDS4 Label Design and Generation

PDS labels are required for describing the bundle and all contents and formats. As part of this proposal, the PDS Generate tool will be used to create PDS4 labels that fully describe the organization, content, and format of data products, documentation, and ancillary information. Required time estimated for these tasks is 0.X work-year.

Documentation and Ancillary Files

Reference materials that describe how the data were created, derived, processed and/or updated will be included in the archive as PDF files. These are intended to support the long-term usability of the archive and will provide information needed for future scientists to fully utilize these archived products. In addition, high-level documentation and indexing of all elements of the archive will be included to support registration within the PDS4 system as well as integrated search and retrieval capabilities through PDS web interfaces. Required time estimated for these tasks is 0.X work-year.

Expected Data Volumes

The expected volume of data archived as a result of this proposed work is X GB/TB. This volume includes all elements of the proposed archive, and can be summarized as follows (show table).

Archive Development, Data Delivery and Access

We will work closely with PDS-IMG to iterate the design, implementation, validation, review, and lien resolution of the products archived as a result of this proposal. Archived data will be delivered to the PDS in digital form on a hard-drive [*or electronically, by ftp, etc.*].

Commitment to This Data Archiving Plan

The data to be archived through this proposed work will be delivered to PDS in PDS4-compliant form following peer review and lien resolution, in full cooperation with the PDS Imaging Node. We have discussed this archive plan with PDS-IMG personnel, including the full scope and complexity of the planned archive as well as the expected data volume. We will commit to working with PDS-IMG personnel as required to fully support the development and delivery of the planned data archive. Time estimates for all proposed archiving tasks is 0.X work-year [*you may want to summarize this in a table*].

References:

Crichton, D. (2012), PDS4: Developing the Next Generation Planetary Data System, presented at the NASA Planetary Data Workshop, June 25-29, 2012, Flagstaff, AZ. (see also https://www.dropbox.com/sh/mbmo9fw64q3pfyf/I7dcb74ULs/Crichton_PDS4_PlanetaryDataWorkshop2012.pdf).

Planetary Data System, 2013, <u>PDS4 Concepts</u>, Data Design Working Group, version 1.0.0.

Planetary Data System, 2013, <u>Planetary Data System Standards Reference</u>, version 1.0.0.

Planetary Data System, 2014, <u>Data Providers' Handbook, Archiving Guide to the PDS4 Data Standards</u>, version 1.3.0.