

# Notes Regarding LRO Diviner Derived1 Bundle and PDS3 to PDS4 Migration

PDS Geosciences Node

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These notes apply to Lunar Reconnaissance Orbiter (LRO) Diviner derived data archives at the PDS Geosciences Node. Diviner derived data include the following data products: Global Cumulative Products (GCP), Gridded Data Products (GDR), Polar Cumulative Products (PCP), Polar Resource Products (PRP), Regional Cumulative Products (RCP), and Diviner Global High-Resolution Mosaics (GHRM). Most LRO data sets were originally archived under the PDS3 standard. These datasets have now been migrated to the PDS4 standard.

## Notes on Data Set Organization

Instead of datasets and archive volumes in PDS3, products in PDS4 are organized into collections and bundles. A collection is a set of related products, which may be data products, document products, browse products, miscellaneous products, etc. A bundle is a set of related collections.

The Diviner derived1 data bundle has 7 data collections, 3 browse collections, 2 document collections, and a miscellaneous collection that holds the PDS3 index tables. The tables below show the correspondence between the PDS3 volume and PDS4 bundle and PDS3 product types and PDS4 collections, respectively.

### ***LRO Diviner Derived PDS4 Bundle and Corresponding PDS3 Volume and Data Set IDs***

Archives	PDS4 Bundle	PDS3 Volume	PDS3 Data Set IDs
Global cumulative products (GCP)	urn:nasa:pds:lro_diviner_derived1	lrod1r_1001	LRO-L-DLRE-5-GCP-V1.0
Gridded data products (GDR)	urn:nasa:pds:lro_diviner_derived1	lrod1r_1001	LRO-L-DLRE-5-GDR-V1.0
Polar cumulative products (PCP)	urn:nasa:pds:lro_diviner_derived1	lrod1r_1001	LRO-L-DLRE-5-GCP-V1.0
Polar resource products (PRP)	urn:nasa:pds:lro_diviner_derived1	lrod1r_1001	LRO-L-DLRE-5-PRP-V2.0
Regional cumulative products (RCP)	urn:nasa:pds:lro_diviner_derived1	N/A	N/A
Global high-resolution mosaics (GHRM)	urn:nasa:pds:lro_diviner_derived1	N/A	N/A

## ***LRO Diviner Derived PDS4 Data Collections and Corresponding Collection IDs***

<b>PDS Collection</b>	<b>PDS4 Collection ID</b>
Global cumulative products	data_derived_gcp
Level 2 gridded data products	data_derived_gdr_level2
Level 3 gridded data products	data_derived_gdr_level3
Polar cumulative products	data_derived_pcp
Polar resource products	data_derived_prp
Regional cumulative products	data_derived_rcp
Global high-resolution mosaics	data_derived_ghrm

A PDS4 bundle is identified by a file named **bundle\_\*.xml** in the root directory of a bundle; it describes the bundle and lists the collections that belong to it. A collection is identified by a file named **collection\_\*.xml** in a subdirectory. The file **collection\_\*\_inventory.csv** is a list of the products that belong to the collection.

Every PDS4 product, collection, and bundle has a Logical Identifier (LID) that is guaranteed to be unique throughout PDS. The LID is defined in the PDS4 label using the tag **<logical\_identifier>**. For data products, the LID is analogous to PRODUCT\_ID in a PDS3 label.

## Notes on Migration

The migration of Diviner derived data involved both generation of PDS4 labels and reorganization of data.

The metadata in PDS3 labels were copied to PDS4 labels, so that each data product has both a PDS3 and a PDS4 XML (Extended Markup Language) label. The exceptions are the GHRM, RCP, and seasonal PCP products, which are new derived products that are archived using the PDS4 standard and do not include PDS3 labels.

Prior to PDS Release 55, the GCP, GDR, and PRP data products were part of the Diviner RDR PDS3 data volume (LRODLR\_1001). As part of PDS4 migration activities, the RDR data were migrated to the Diviner calibrated data bundle (urn:nasa:pds:lro\_diviner\_calibrated) and the GCP, GDR, and PRP data were migrated to the previously-existing Diviner derived1 data bundle (urn:nasa:pds:lro\_diviner\_derived1). The RCP and PCP data products were already included in this bundle. Ancillary files (catalogs, browse products, etc.) that pertain to these datasets were also moved to the derived1 data bundle.

The PDS3 derived data at the Geosciences Node, except for the GDR JPEG2000 images, were already PDS4-compliant, so there was no need to alter the data files during migration. JPEG2000 is not an acceptable PDS4 storage format. As such, these products are not considered to be part of the PDS4 bundle and no PDS4 labels are provided for them. However, the JPEG2000 files have been copied to the PDS4 bundle for completeness. In addition, the label and extras directories, moved from the RDR PDS3 volume, are included for completeness, but are also not part of the PDS4 bundle.

Note that the SIS documents in the document directory refer to the GCP, GDR, and PRP PDS3 datasets. However, the RDR SIS has been revised to describe the GHRM, RCP, and PCP PDS4 data products.

## Document Change Log

Date	Description
August 22, 2023	Initial version
February 2, 2024	Added information for GHRMs.