

Lunar Reconnaissance Orbiter

Cosmic Ray Telescope for the Effects of Radiation (CRaTER) Science Team and the PDS Planetary Plasma Interactions Node INTERFACE CONTROL DOCUMENT (ICD)

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This document is controlled by the PPI Discipline Node of the Planetary Data System

Prepared by:

Peter G. Ford
CRaTER SOC Lead
MIT

Date

Prepared by:

Steven P. Joy
PDS-PPI Discipline Node
UCLA

Date

Reviewed by:

Harlan Spence
Principal Investigator, CRaTER
Boston University

Date

Approved by:

Gordon Chin
LRO Project Scientist
GSFC Code 693.1

Date

Approved by:

Raymond J. Walker
Director, PDS PPI Node
UCLA

Date

Concurred by:

Stan Scott
LRO Project Science Data Manager
GSFC Code 451

Date

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TBD ITEMS

Section	Description
§1.3	LRO Mission Archive Plan
§1.3	LRO CRaTER Data Product & Archive Volume Software Interface Specification
Table 5.1	Distribution schedule for PDS products
Table 5.1	Size and release schedule of calibration data archive to be sent to PDS

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ACRONYMS

CRaTER	Cosmic Ray Telescope for the Effects of Radiation (Instrument)
DAWG	(LRO) Data Archive Working Group
DM&AP	Data Management and Archive Plan
HTML	HyperText Markup Language
ICD	Interface Control Document
LRO	Lunar Reconnaissance Orbiter
MAP	Mission Archive Plan
NSSDC	National Space Science Data Center
PDS	Planetary Data System
PPI	(PDS) Planetary Plasma Interactions (Node)
SIS	Software Interface Specification
TBD	To Be Determined

1. INTRODUCTION

1.1 Purpose and Scope

This Interface Control Document (ICD) defines the relationship between the Cosmic Ray Telescope for the Effects of Radiation (CRaTER) Science Team and the Planetary Data System (PDS) Planetary Plasma Interactions Node for the purpose of archiving CRaTER science data from the LRO mission in the PDS and distributing it to the science community.

1.2 Contents

This ICD specifies the responsibilities of the CRaTER Science Team and the PDS Planetary Plasma Interactions Node in archiving CRaTER science data. It lists the deliverables expected from both entities in the context of LRO mission operations.

1.3 Applicable Documents and Constraints

1. Planetary Data System Standards Reference, JPL D-7669 part 2, version 3.7, 03/20/2006.
2. Planetary Data System Archive Preparation Guide, version 0.050503, 05/03/2005.
3. LRO Mission Archive Plan, to be written.
4. LRO CRaTER Data Management and Archive Plan, 32-01210.
5. LRO CRaTER Data Product and Archive Volume Software Interface Specification, 32-01211.

1.4 Relationships with Other Interfaces

This ICD could be affected by changes to the LRO Archive Plan (Applicable Document 3.) This ICD specifies responsibilities for writing the CRaTER Data Product and Archive Volume SIS.

This ICD may be revised by consent of the signatories.

2. MANAGEMENT AND OVERSIGHT

The CRaTER Principal Investigator will be responsible for managing the archiving activities of the CRaTER Team, and the Planetary Plasma Interactions Node Manager will be responsible for managing the archiving activities of the Planetary Plasma Interactions Node. CRaTER Team and Planetary Plasma Interactions Node members will meet periodically to discuss archiving issues, usually by teleconference.

Oversight of the archiving process will be provided by the LRO Data Archive Working Group (DAWG). A subgroup of the LRO Project Science Group, the DAWG coordinates the planning, generation, validation, and delivery of all LRO archives. The DAWG meets regularly by teleconference during the archive planning period and as needed during mission operations. Representatives of the CRaTER Team and Planetary Plasma Interactions Node will attend Data Archive Working Group meetings and report progress, status of previous DAWG action items, and other activity.

3. RESPONSIBILITIES OF CRATER SCIENCE TEAM

3.1 CRaTER Science Data Archives

The CRaTER Team is responsible for writing the CRaTER Standard Data Product and Archive Volume SIS, with help from the Planetary Plasma Interactions Node as needed.

The CRaTER Team is responsible for writing instrument, data set, personnel, and reference descriptions for the PDS catalog (*i.e.* “catalog files”) in the format specified in the PDS Standards Reference, with help from the Planetary Plasma Interactions Node as needed. Mission and spacecraft catalog files will be written by an author designated by the LRO Project for use on all instrument teams’ archives. The CRaTER Team will obtain these files from the Project or from whomever the Project has designated to maintain them.

The CRaTER Team is responsible for performing science validation on CRaTER data products. Science validation means ensuring that data products contain the expected measurements and are otherwise suitable for analysis.

The CRaTER Team is responsible for assembling and validating PDS-compliant CRaTER archive volumes.

The CRaTER Team will deliver completely assembled archive volumes to the Planetary Plasma Interactions Node according to the schedule in the LRO Archive Plan. Data will be transferred either electronically or on physical media such as external hard disks, provided by the CRaTER team.

CRaTER archive volumes will include the following components:

- Raw and derived CRaTER data products with PDS labels;
- Calibration reports and files needed for data calibration;
- PDS catalog files as required by PDS in the PDS Standards Reference;
- An index table and PDS label as required by PDS in the PDS Standards Reference;
- Documentation, including the CRaTER Standard Data Product and Archive Volume SIS and any additional documentation the team wishes to include. Documentation files should be in either plain text or HTML format to be PDS-compliant. Other versions such as Adobe PDF may also be included at the team's discretion.

The CRaTER Team will transfer the CRaTER archive volumes to the Planetary Plasma Interactions Node according to the schedule in the LRO Archive Plan.

The CRaTER Team is responsible for providing samples of all data products and product labels as described in the Standard Data Product and Archive Volume SIS for the PDS-required peer review. The Team is also responsible for resolving any liens that may be placed against CRaTER science data sets as a result of the peer review, with help from the Planetary Plasma Interactions Node as needed.

4. RESPONSIBILITIES OF PLANETARY PLASMA INTERACTIONS NODE

4.1 CRaTER Science Data Archives

The Planetary Plasma Interactions Node is responsible for providing the CRaTER team with an example Standard Data Product and Archive Volume SIS from a similar instrument on a different spacecraft. In addition, the PPI Node will assist the CRaTER Science Team with the preparation of the document as needed.

The Planetary Plasma Interactions Node will receive completely assembled CRaTER archive volumes from the CRaTER Team.

The Planetary Plasma Interactions Node will validate the CRaTER archive volumes as required by PDS. PDS validation ensures that a data set is compliant with PDS standards and with the relevant Standard Data Product and Archive Volume SIS.

The Planetary Plasma Interactions Node is responsible for maintaining an online repository of CRaTER science data archives. The repository will allow public access to data products that have been released to the PDS.

The Planetary Plasma Interactions Node is responsible for developing and operating an interface for the science community that provides search and retrieval capabilities to access the online repository of CRaTER science data archives.

The Planetary Plasma Interactions Node is responsible for making copies of the CRaTER archive available for long term storage at PDS and the National Space Science Data Center (NSSDC) according to agreements between PDS and NSSDC.

4.2 Peer Review

The Planetary Plasma Interactions Node is responsible for organizing the Peer Review of CRaTER data sets according to PDS policy. The review focuses on the design of CRaTER data products as specified in the CRaTER Standard Data Product and Archive Volume SIS, including example products with PDS labels. The review will be done on a schedule that will allow time for changes to the product design if needed. The Peer Review committee will include a small number of scientists from outside the CRaTER Team who are interested in using the data. The CRaTER Team and the Planetary Plasma Interactions Node will work together to identify possible reviewers. In addition, the review committee will include CRaTER Team representatives, Planetary Plasma Interactions Node representatives, and at least one PDS representative from outside the Planetary Plasma Interactions Node. The Planetary Plasma Interactions Node will assist the CRaTER Team in resolving any liens that may be placed against the data products as a result of the peer review.

5. DELIVERABLES AND SCHEDULE

Table 5.1 shows deliverables to and from the CRaTER SOC and the Planetary Plasma Interactions Node. The LRO Data System Manager will maintain the schedule for completing these deliverables.

Table 5.1. Deliverables associated with CRaTER archives.

Deliverable	From	To	Dates	Size
CRaTER Standard Data Product and Archive Volume SIS	CRaTER SOC	PDS PPI Node	11/2007 (draft) 02/2008 (final)	N/A
Sample CRaTER data products with PDS labels for peer review	CRaTER SOC	PDS PPI Node	12/2007	TBD
Completely assembled CRaTER archive volumes, including: <ul style="list-style-type: none"> • CRaTER data products with PDS labels • PDS catalog files (mission, spacecraft, instrument, data set, personnel, and reference) • An index table listing each product in the archive, and a PDS label that describes the index • The CRaTER Standard Data Product and Archive Volume SISs • Other documentation at the team's discretion 	CRaTER SOC	PDS PPI Node	Launch+6 months, thereafter at 3 month intervals	450 GB per year
CRaTER calibration data and reports needed for data calibration	CRaTER SOC	PDS PPI Node	Launch+6 months, then as necessary	TBD
Completely assembled and validated CRaTER archive volumes online for public access	PDS PPI Node	PDS PPI Node	TBD	TBD
Completely assembled and validated CRaTER archive volumes for long term storage	PDS PPI Node	PDS, NSSDC	TBD	TBD
Web-based interface for searching and downloading CRaTER data	PDS PPI Node	Science Community	TBD	N/A