



# Cosmic Dust Sample Investigator's Guidebook

Astromaterials Research and Exploration Science Directorate  
Astromaterials Acquisition and Curation Office  
NASA Johnson Space Center  
Houston, TX 77058

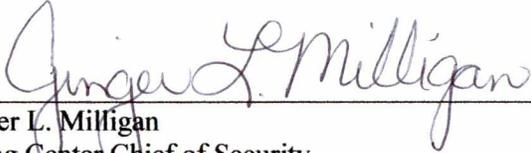
**AUTHORIZATION (SIGNATURE) PAGE**

  
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## Cosmic Dust Sample Summary

Cosmic dust, otherwise known as interplanetary dust particles (IDPs), has been collected by NASA U-2, ER2, WB57F aircraft in the stratosphere on oil-coated Lexan surfaces since 1981, and is curated at the Johnson Space Center. Many thousands of 2 – 100  $\mu\text{m}$  particles have been collected, and it is believed that both comet and asteroid samples are present. Several cosmic dust collections have been flown during periods that coincided with prominent meteor streams and low velocity fresh cometary dust trails. These samples therefore have great scientific value. This material is curated at Johnson Space Center and made available for allocation to the international scientific community through sample requests following guidelines outlined within this document.

### *State of the Cosmic Dust Samples*

The cosmic dust particles are observed as fine particles dispersed on the silicone oil ( $\text{n}((\text{CH}_3)_2\text{SiO})$ ) coated surfaces of the cosmic dust sample collectors. Particles removed from these collectors are rinsed with the organic solvent hexane to remove silicone oil, but some residual oil may remain on the particles. Cosmic dust has also recently been successfully collected using oil-free polyurethane foam substrates, and other alternative oil-free substrates may be flown in the future.

Due to the presence of terrestrial contaminants, the curation staff is rarely certain of the origin of any particular extraterrestrial particle. A subset of the collected particles are examined by optical and scanning electron microscopy and energy dispersive X-ray spectrometry (EDS) to determine the structure and chemical composition of individual dust grains. Extraterrestrial particles are often identifiable by their characteristic chemical compositions and are termed “Cosmic”. Cosmic type particles are provisionally identified as those having one of the three following sets of attributes: a) Irregular to spherical, opaque, dark-colored particles composed mostly of Fe with minor S and/or Ni. b) Irregular to spherical, translucent to opaque, dark-colored particles containing various proportions of Mg, Si, and Fe with traces of S and/or Ni. c) Irregular to faceted or blocky, transparent to translucent particles containing mostly Mg, Si, and Fe but with traces of S and/or Ni. Some extraterrestrial particles may have chemical compositions that differ from these classes. Other particle types include artificial terrestrial contamination (TCA), natural terrestrial contamination (TCN), and aluminum oxide spheres (AOS). Common contaminants include reentering spacecraft debris, volcanic ash and desert dust. We emphasize that, for catalog purposes, types are defined for their descriptive and curatorial utility, not as scientific classifications. The provisional identifications made in the cosmic dust catalogs are indeed only tentative.

Some cosmic dust particles fragment into dozens to thousands of grains upon impact into the cosmic dust collector. Individual pieces of these ‘cluster particles’ may be allocated to different investigators, enabling multiple independent investigations of the same sample. Cosmic Dust Catalog #16 compiles a listing of available cluster particles as of July 2004.

## ***Cosmic Dust Sample Preparation***

The Curatorial Facility at JSC is responsible for the preparation of cosmic dust samples, within the capabilities of the curatorial operation. Although a few particles may reach one hundred  $\mu\text{m}$  in diameter, most available particles are on the order of 10  $\mu\text{m}$  or smaller. JSC curation has extensive experience in the handling and preparation of small particles, including Hayabusa Mission and Stardust Mission samples. However, each laboratory/instrument may have unique sample preparation requirements that go beyond the capabilities or experience of the JSC curation facility. Investigators are strongly encouraged to consult closely with the JSC curatorial staff regarding their sample preparation requirements before submitting a sample request. The curator may in turn refer the Investigator to others in the community having expertise in specific areas of sample preparation.

The types of samples made available by JSC curation are individual whole particles, and very rarely, entire small collection surfaces. Particles are named for the number and type of stratospheric collector they are collected onto, and the final sample mount they ended up residing on in the curation lab. Thus particle L2005 E12 would have been collected onto the 5<sup>th</sup> (005) large area collector (L), flown on an ER-2 (2) aircraft, and would presently be the 12<sup>th</sup> particle on curation mount E. Particle W7016 A31 would have been collected from a WB57F aircraft (W7), the 16<sup>th</sup> small collection surface (016), and presently be the 31<sup>st</sup> particle on curation mount A. In addition, particles that break up during collection are called “cluster particles” and are given additional names - in the past they were denoted by adding a “\*” to the name, and for the past 28 years by explicitly adding the word “cluster” to their name.

## ***Cosmic Dust Sample Allocation***

Cosmic dust samples collected by NASA are made available to the investigators only under a carefully controlled and monitored program.

The cosmic dust sample curator is responsible for the preservation of the cosmic dust sample collection and for providing appropriate samples to Investigators. Entire small cosmic dust collectors are available to qualified investigators. In general we have curated  $\frac{1}{2}$  of all collection surfaces to permit future scientists access to samples collected in the past.

The curator will allocate cosmic dust samples to Investigators on the advice of the Cosmic Dust Committee (CDC) of the Curation and Analysis Planning Team for Extraterrestrial Materials (CAPTEM). Allocation plans will be approved by the Associate Administrator of the Science Mission Directorate or designee.

Requests for cosmic dust samples will be accepted at any time, in accordance with the information posted on the JSC curation website <http://curator.jsc.nasa.gov>. Requests will be considered at periodic meetings of the CDC.

## Cosmic Dust Sample Requests

The cosmic dust samples are a unique and valuable collection. Typical samples allocated to Investigators will be on the order of 10  $\mu\text{m}$  in size. Larger particles, reaching up to 100  $\mu\text{m}$  in diameter, are very rare. Cosmic Dust Catalogs are available for inspection at this site: <http://curator.jsc.nasa.gov/dust/index.cfm>. Preference will be given to Investigators who have demonstrated capability of handling and analyzing small particles, consortium studies, and analyses that do not completely consume samples.

Investigators are strongly encouraged to form consortia in order to maximize the scientific return from each sample. Coordinated analyses are considered to be especially important for studies that will result in damage to or destruction of the samples. The largest particles in the collection and those particles exhibiting unusual or rare properties will be reserved for well qualified consortia.

JSC curation will perform preliminary examination of a subset of the samples, including obtaining secondary electron images and energy dispersive X-ray spectra. However, owing to limited curation resources, the samples will not, in general, be extensively characterized prior to allocation. Investigators who receive completely uncharacterized samples should thus be prepared to do pre-analysis characterization of samples allocated to them, and should be prepared for the possibility that allocated samples may not match their expectations.

Investigators are also encouraged to make the minimum request that meets the requirements of the proposed measurements. Please ensure that all items called for in Appendix A “Sample Request Guidelines” are included in the sample request. All samples are photographed before shipment, to prove that samples were indeed shipped, so samples lost during handling by investigators must be re-requested and undergo peer review as a new request.

Prior to receiving samples, investigators must complete a Cosmic Dust Sample Loan Agreement. Appendix B is an example of the loan agreement format for domestic investigators. International investigators must contact the cosmic dust curator to execute an International Loan Agreement.

Loan Agreements and sample loans are limited to five years. Investigators wishing to extend their sample loan agreement must submit a properly justified request to the curator. Investigators who have samples beyond the approved return date and who have not requested an extension may be considered delinquent and ineligible for additional sample allocations until their existing samples have been returned.

### ***Sample Request Submission***

Guidelines and requirements for cosmic dust allocation requests are described in Appendix A of this document. Sample requests should be submitted electronically in pdf format to the cosmic dust sample curator, [marc.d.fries@nasa.gov](mailto:marc.d.fries@nasa.gov).

## ***Sample Request Review***

Sample requests are reviewed by a subcommittee of CAPTEM, the Cosmic Dust Committee (CDC). In considering allocation requests, the CDC will assess the scientific merit of the proposal, the capability of the proposers, the availability of requested samples, and the realism of the investigation. The CDC will also weigh the overall merit of the request with the required amount of sample and any possible damage that the sample may incur. The subcommittee will consist of approximately five scientists from diverse fields, and will be appointed by the Chair of CAPTEM. Service on the CDC is subject to the procedures established by CAPTEM.

## ***Sample Preparation Priority***

Some types of sample preparation are time-consuming and risky, while others are relatively straightforward. Allocations may not, therefore, be made in the order in which proposals are received. While the CDC may make recommendations for ordering of sample requests, the decisions for prioritization of sample preparation in order to maximize the number of allocations will be made solely by the Curator. All sample requests supported by the CDC will be regarded to have equal scientific merit for the purpose of prioritization of allocations.

## ***Alteration of Samples***

Any procedure that is likely to result in a major change in the final state of allocated samples (e.g., subdivision, complete destruction, substantial radiation damage, substantial heating) as compared with that described in the initial sample request must be reviewed by the CDC. Such requests should be made in writing to the cosmic dust sample curator.

## ***Other Use of Samples***

Samples are generally provided to Investigators for research purposes only. Requests for samples for display or educational purposes are rarely approved.

## **Cosmic Dust Sample Security and Accountability**

The cosmic dust samples are the property of the United States government. It is NASA's policy that samples are used only for authorized purposes. Sample security requirements are detailed in the Cosmic Dust Sample Loan Agreement (Appendices B and C).

## ***Cosmic Dust Investigators***

Investigators who wish to analyze cosmic dust samples must become cosmic dust investigators before receipt of any cosmic dust samples, either from the curator or from any already-approved Investigator as part of collaborative/consortium studies. Potential cosmic dust investigators must make a written commitment to abide by a set of rules, procedures, and restrictions, as outlined below. Investigators make this commitment by signing and returning to the curator the Cosmic Dust Sample Loan Agreement. A sample loan agreement is shown in Appendices B and C, and can be downloaded from the web at <http://curator.jsc.nasa.gov/dust/forms>. The form must be signed and returned by mail to the cosmic dust curator (Mailing Address: Cosmic Dust Sample Curator, Mail Code KT, Johnson Space Center, 2101 NASA Parkway, Houston, TX 77058).

## ***Sample Receipt***

A Sample Assignment form will accompany each sample distributed by the curator. ***The Sample Assignment form must be signed and returned by mail upon receipt of the samples.*** A blank copy of this form is included in Appendix D.

## ***Sample Transfer between Investigators***

Sample transfers between investigators are permitted only under the following circumstances: (1) Samples may be transferred between the cosmic dust investigator and his collaborators if the collaborative work was part of the original sample allocation request reviewed by CDC and approved by the curator. In this case, the PI remains responsible for the security and prompt return of samples (to the PI) after the collaborator is done with the measurements and samples. (2) If the PI wishes to transfer samples to collaborators other than those who were approved in the original sample request, permission must be requested from the curator, who may request review by the CDC. Once permission is granted, the PI may transfer the samples as in case 1, above. (3) If a loan is terminated, either at the request of the cosmic dust investigator or the curator, and the sample is assigned to a new PI, the curator may direct the original investigator to transfer the sample directly to the new investigator. Policies governing sample transfer are included in the Cosmic Dust Loan Agreement (Appendices B and C). In any sample transfer both the transmitting and receiving Investigators must complete and return Cosmic Dust Sample Transfer Forms by e-mail or fax to the curator. These transfer forms may be downloaded from the web at: <http://curator.jsc.nasa.gov/CosmicDust/forms>.

## ***Sample Security***

Cosmic dust investigators are responsible for the security of the samples allocated to them, and will be held accountable in the event that samples are lost, stolen or misused. When analyses require facilities outside of the laboratory of the Investigator, the samples remain under the supervision by the Investigator or the Investigator's research team. The investigator should prevent unsupervised access to the samples by anyone not on the research team. However, the Investigator should

exercise reasonable judgment in the handling and security of these samples in order to maximize the scientific yield of sample analysis.

### ***Sample Storage***

The full requirements for the storage of cosmic dust samples are given in the Cosmic Dust Sample Loan Agreement, and are summarized here. Samples should be stored in clean and secure conditions, commensurate with the preciousness of these samples. The sample must be stored in a locked safe or a locked laboratory. They should be stored and handled in such a manner as to prevent cross-contamination with terrestrial and other extraterrestrial samples.

### ***Lost Samples***

In the event that a sample cannot be accounted for, the investigator must report the loss to the cosmic dust curator immediately, by completing and emailing, faxing or mailing a Sample Loss or Consumption form. This form can be downloaded from the web at: <http://curator.jsc.nasa.gov/dust/forms>.

### ***Sample Accountability***

Each cosmic dust investigator is required to maintain records of the use of allocated samples. Samples become the investigator's responsibility when the investigator accepts delivery of the samples from NASA. That responsibility ends only when loaned samples have been returned to NASA, or completely consumed by analysis as per the approved sample request.

A dedicated laboratory notebook should be used to maintain records of the receipt, transmittal, and treatment of samples, including any intentional or accidental damage, contamination or destruction.

Investigators are required to maintain a complete inventory of loaned samples. Investigators are required to complete, sign and return an inventory of loaned samples to the curator annually. Investigators are reminded that their records and inventory may be audited by the US Government at any time. The inventory must be witnessed by a security representative or a representative of the Institution.

### ***Destruction During Analysis***

If, in the course of analysis or handling, loaned samples are consumed or destroyed, whether intentionally or unintentionally, a Sample Loss or Consumption Form indicating this fact should be completed and returned by email, fax or mail to the curator. Blank forms may be downloaded from the web at: <http://curator.jsc.nasa.gov/dust/forms>. A blank copy of this form is included in Appendix E.

## ***Sample Transfer Methods***

These guidelines apply to transfers from the curator to cosmic dust investigators, from cosmic dust investigators to the curator, and to transfers between cosmic dust investigators.

Samples can be sent by an overnight package delivery service that allows packages to be tracked online (e.g., FedEx, DHL), or by registered mail. Before shipment, the sender and the recipient must agree on a date on which the recipient or the recipient's designee can receive the allocation. Only persons authorized by the Investigator may receive and open the package. The authorized official shall record the receipt of the samples promptly.

The value of the shipment must be recorded on the shipping form as "zero". To preclude inadvertent opening by mailroom employees, place inside the box a prominent message "MAIL ROOM EMPLOYEES: THIS PACKAGE CONTAINS MATERIALS TO BE OPENED ONLY IN A CLEAN ENVIRONMENT". Samples should be sealed in at least two layers of packaging so that exterior packaging can be removed prior to clean environment entry.

Samples may also be carried by hand from and to JSC. If samples are hand-carried by air, an accompanying letter from NASA should be carried with the samples indicating the scientific value of the samples and cautioning airport security personnel against opening or touching the samples. The samples should not be put in checked luggage.

## Appendix A: Sample Request Guidelines

Requests for research samples from the NASA cosmic dust sample collection are carefully reviewed by the Cosmic Dust Sample Allocation Committee (CDC), a subcommittee of the Curation and Analysis Planning Team for Extraterrestrial Materials (CAPTEM). Sample requests are considered independently of the status of research proposals that have been submitted or funded for the analysis of cosmic dust samples. Therefore, each cosmic dust sample request must be as informative and well justified as possible.

The sample request consists of a letter or e-mail from the Principal Investigator (PI) who will be responsible for the loan of any cosmic dust samples. The request letter will contain the following:

1. A clear description of the **scientific goals** and objectives of the proposed work and how the new analyses or tests will improve upon or complement previous work.
2. A clear description of the **measurements to be made**. For example, specify whether 'probe' analyses are electron-, ion-, proton-, or other microbeam method. Identify which Co-I and facility will perform each analysis. The request must demonstrate that the proposed measurements can be made with the requisite sensitivity and accuracy to achieve the scientific objectives, ideally by previous analyses of similarly prepared samples or analogs. The request must state whether the proposed analyses will completely consume the samples.
3. **For new investigators or new techniques**, the following should be provided:
  - a. PI/Co-I team's previous relevant experience and publications on cosmic dust samples or a closely related subject.
  - b. Demonstrate the feasibility of the analysis (sensitivity, precision, and accuracy) by similar measurements of appropriate analog samples
4. Explanation of **time constraints** (such as schedules for instrument time).
5. **Sample requirements**
  - a. Composition and size of sample necessary for the proposed investigation. If samples matching these requirements are not available, the request may be denied.
  - b. Form of samples: individual grains, or complete collection surfaces. Special sample preparation procedures may be requested, but may not be possible owing to time or resource constraints.
  - c. Mounting requirements (type of TEM grid or substrate). Special sample substrates and special sample containers must be provided by the requestor.

- d. Specific sample numbers (if known). Samples may be given unofficial designations by individual PIs that differ from the official designations assigned by the cosmic dust sample curator. The curator must be able to unambiguously identify the sample.
- e. Specify whether returned (previously studied) cosmic dust samples are acceptable.

**6. List of cosmic dust samples already in the possession of the PI.**

Please refer any questions about cosmic dust sample requests as follows:

Marc Fries (marc.d.fries@nasa.gov)  
Cosmic Dust Sample Curator, Mail Code KT  
NASA Lyndon B. Johnson Space Center, 2101 NASA Parkway Houston, TX 77058-3696

## **Appendix B: Domestic Sample Loan Agreement**

### **Agreement Between The National Aeronautics and Space Administration and [INSTITUTION NAME] For the Loan of Cosmic Dust Samples**

#### **AUTHORITY AND PARTIES**

In accordance with the National Aeronautics and Space Act (51 U.S.C. § 20113), this Loan Agreement is entered into by the National Aeronautics and Space Administration Johnson Space Center, located at Houston, Texas (hereinafter referred to as “NASA” or “JSC”) and [INSTITUTION NAME] in [INSTITUTION LOCATION] (hereinafter referred to as “the Institution”). NASA and the Institution may be individually referred to as a “Party” and collectively referred to as the “Parties.”

#### **PURPOSE**

Cosmic Dust samples distributed by NASA, a U.S. federal agency, are property of the U.S. Government and are under the custody and curatorial control of JSC.

NASA desires to make certain Cosmic Dust samples available to the Institution by entering into this Loan Agreement. The Institution proposes to use these Cosmic Dust samples to undertake scientific investigations led by its Principal Investigator (the person who performs the investigations, hereinafter referred to as “PI”). These investigations are described in one or more sample requests submitted by the PI to the Cosmic Dust Sample Curator at JSC and approved by the Cosmic Dust Sample Curator. Once approved, these sample requests are an integral part of this Loan Agreement. JSC approval of the sample request (the award letter) is a prerequisite to the initiation of this Loan Agreement and subsequent loan of the Cosmic Dust samples. The approved samples will not be provided to the PI, through the Institution, until after conclusion of this Loan Agreement.

The use of the Cosmic Dust samples will permit beneficial contact among representatives of JSC and the Institution, including through the PI; will provide opportunities for discovery and dissemination of information to the broader scientific community and to the general public; will promote the maximum utilization of Cosmic Dust samples by JSC; and will provide opportunities for the dissemination of information concerning the activities of NASA.

### **RELATIONSHIP BETWEEN THE INSTITUTION AND PI**

The Institution hereby designates [PI NAME] as the PI for the purposes of this Loan Agreement. The Institution will enter into a separate legally binding agreement with the PI for purposes of carrying out certain responsibilities of the Institution, as appropriate, that are set forth in this Loan Agreement. The Institution will be responsible for ensuring the PI's and his/her designee(s)' adherence to this separate agreement which is attached to this Loan Agreement as Annex 1 and is an integral part of this Loan Agreement.

### **RESPONSIBILITIES:**

The Parties agree to the following:

1. The Cosmic Dust samples made subject to this Loan Agreement shall be identified and assigned to the Institution by the JSC Cosmic Dust Sample Curator via Cosmic Dust sample assignment forms signed by the Cosmic Dust Sample Curator and the PI.
2. The Cosmic Dust samples are irreplaceable and are therefore made available through institutions to PIs only under a carefully controlled and monitored program. It is therefore essential that rigorous security and accountability procedures be followed by all persons who have access to the Cosmic Dust samples. The Institution shall designate the PI to be responsible for the receipt, use (including security during use), and accountability of the Cosmic Dust samples, through the attached agreement.
3. Title to the Cosmic Dust samples shall remain with the U.S. Government and shall not be affected by the incorporation, attachment, or mixture thereof to or with property not owned by NASA.
4. As determined by NASA, the Cosmic Dust samples shall be either hand-carried, at the expense of the Institution, by an authorized official of the Institution, or mailed at JSC's

expense, to the Institution via registered mail or a shipping service approved by JSC. JSC reserves the right, at the expense of the Institution, to direct the mode of transportation for the return of the Cosmic Dust sample.

5. Only the PI or the PI's designee(s), may receive and open the registered package. The PI or the PI's designee(s) shall record all of the Cosmic Dust samples promptly upon receipt, and a record of receipt shall be maintained while the Cosmic Dust samples are in the custody, possession or control of the PI and the Institution.
6. During the use for research purposes, the Cosmic Dust samples must be under the constant control of the PI or the PI's designee(s). At no time may the Cosmic Dust samples be left unattended. At the end of each use of the Cosmic Dust samples, an inventory shall be made to insure the accountability of the Cosmic Dust samples. Such inventories shall be maintained as a permanent record and shall be made accessible to NASA at all times.
7. When not being actively investigated, the Cosmic Dust samples must be maintained in a secure nitrogen cabinet behind a door with a combination padlock or equivalent. The combination to the locked door be under the exclusive control of the PI and, if appropriate, the Institution's security organization. If a controlled environment is required for scientific purposes, samples not being actively investigated must be stored in a locked laboratory.
8. In no case may Cosmic Dust samples on loan from NASA be stored with money, precious stones or minerals, classified material or any other item that is considered to be of high theft value. Cosmic Dust samples may be stored with other astromaterials (e.g., meteorites).
9. To ensure that appropriate security arrangements are followed, the Institution holding the Cosmic Dust samples shall be subject to inspection by NASA representatives upon request at all times.
10. The Institution and the PI shall report immediately the loss or damage of the Cosmic Dust samples to the Cosmic Dust Sample Curator.
11. The Institution security organization must be informed of the presence and location of the Cosmic Dust samples by the PI.
12. The Institution, or, if and when the Institution determines appropriate, the PI, is responsible for returning the Cosmic Dust samples upon expiration or termination of this Loan

Agreement. However, the Institution retains the ultimate responsibility for the return of Cosmic Dust samples.

13. The PI shall be responsible for accurate accounting of all Cosmic Dust samples by sample name, number and location. The Institution shall perform an inventory of the Cosmic Dust samples on an annual basis beginning no later than approximately one year from the effective date of this Agreement, using the sample inventory form provided by the Cosmic Dust Sample Curator, and submit this form to the Cosmic Dust Sample Curator within two months of receipt. This inventory includes any samples consumed or destroyed in the course of the research. This inventory shall be signed by the PI and certified by an official or security representative of the Institution.
14. The Institution, acting through the PI, may only use the Cosmic Dust samples at the Institution, or may permit the PI to use the sample at other locations consistent with the approved sample request. Any uses not expressly addressed in the approved sample request will require the advance written approval of the Cosmic Dust Sample Curator. If the approved sample request entails collaborative work at another institution, the Cosmic Dust samples shall be either hand-carried, at the expense of the Institution, by an authorized official of the Institution, or mailed at the Institution's expense, via registered mail or by a shipping service approved by JSC. The Institution, acting through the PI shall keep a record of all such transfers, inform the Cosmic Dust Sample Curator when such transfers occur, and note them in the annual inventory. When the samples are in use by a collaborator, the original Institution is responsible for extending the security requirements set forth in this agreement and shall retain responsibility for the Cosmic Dust samples.
15. This Loan Agreement is not transferable to another institution or investigator. If the PI relocates to another institution and wishes to continue research on the Cosmic Dust samples, a new Loan Agreement must be completed between the new Institution and NASA before Cosmic Dust samples can be transferred. If the PI is finished with a sample, but another investigator at the Institution is interested in studying this sample, a new sample request must be submitted to the Cosmic Dust Sample Curator, and if approved, a new Loan Agreement must be completed by the new Institution.

16. Return of Cosmic Dust samples to JSC may arise from several circumstances. If the PI completes or terminates research on the Cosmic Dust samples, or if the PI relocates to a new institution without executing a new loan agreement with NASA, the samples must be returned to the Cosmic Dust Sample Curator at JSC. Upon the circumstances of death or incapacitation of the PI, the Institution will likewise be responsible for returning the Cosmic Dust samples to the Cosmic Dust Sample Curator at JSC. Finally, if this agreement expires without a new loan agreement being entered into by the Parties, or is terminated by either Party, the Cosmic Dust samples must be returned to the Cosmic Dust Sample Curator at JSC. In all cases described above, the Cosmic Dust samples shall be returned with a full accounting of the Cosmic Dust samples, using the sample return forms provided by the Cosmic Dust Sample Curator.
17. The use of Cosmic Dust samples shall be solely for the purposes set forth in the approved sample request. This Loan Agreement allows the Institution to use destructive analytical procedures only as specified in the approved sample request. The Institution, acting through the PI, may request from the Cosmic Dust Sample Curator an amendment to the sample request in order to perform additional research on the samples.
18. When requested by NASA, the Institution, acting through the PI, shall provide the Cosmic Dust Sample Curator at JSC a copy of any publication(s) resulting from the Institution's research and confer any scientific knowledge acquired as a result of such use, provided that no proprietary knowledge shall be disclosed involuntarily in the discharge of this obligation.
19. NASA or the Institution, in part acting through the PI, may, consistent with Federal law and this Loan Agreement, release general information regarding its participation in this Loan Agreement as desired.

#### **LIABILITY AND RISK OF LOSS**

1. The Institution shall be responsible for any loss or damage to the Cosmic Dust samples.
2. The Institution recognizes that the United States Government may take any action available under US law against the Institution with respect to such loss or damage.

3. Loss or damage to the Cosmic Dust samples caused by failure to follow proper safeguarding standards as set forth in this Loan Agreement, or by any willful act or omission, lack of good faith, or negligence of the Institution may result in the recall of all Cosmic Dust samples in the Institution's possession and will be considered in selecting future recipients, both PIs and Institutions, for Cosmic Dust sample loans.
4. NASA, its officers, and employees shall not be liable for any loss, damage, expense, or liability of whatsoever nature or kind arising out of, or as a result of, or in connection with the possession or use of the samples during the term of the loan or any extension thereof.
5. The Institution hereby waives any claims against NASA, its employees, its related entities, (including, but not limited to, contractors and subcontractors at any tier, grantees, investigators, customers, users, and their contractors and subcontractors, at any tier) and employees of NASA's related entities for any injury to, or death of, Institution employees or the employees of the Institution's related entities, or for damage to, or loss of, the Institution's property or the property of its related entities arising from or related to activities conducted under this Loan Agreement, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of willful misconduct. The Institution further agrees to extend this unilateral waiver to its related entities, including the PIs, by requiring them, by contract or otherwise, to waive all claims against NASA, its related entities, and employees of NASA and employees of NASA's related entities for injury, death, damage, or loss arising from or related to activities conducted under this Loan Agreement.
6. The Institution shall ensure that the PI is responsible to the United States Government to the same extent as the Institution as set forth in paragraphs 1 through 5 of this provision.

### **FINANCIAL OBLIGATIONS**

There shall be no transfer of funds between the Parties under this Loan Agreement and each Party shall fund its own participation. All activities under or pursuant to this Loan Agreement are subject to the availability of funds, and no provision of this Loan Agreement shall be

interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, (31 U.S.C. § 1341).

### **PRIORITY OF USE**

Any schedule or milestone in this Loan Agreement is estimated based upon the Parties' current understanding of the projected availability of NASA goods, services, facilities, or equipment. In the event that NASA's projected availability changes, the Institution shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The Parties agree that NASA's use of the goods, services, facilities, or equipment shall have priority over the use planned in this Loan Agreement. Should a conflict arise, NASA in its sole discretion shall determine whether to exercise that priority. Likewise, should a conflict arise as between two or more non-NASA Parties, NASA, in its sole discretion, shall determine the priority as between those Parties. This Loan Agreement does not obligate NASA to seek alternative government property or services under the jurisdiction of NASA at other locations.

### **NONEXCLUSIVITY**

This Loan Agreement is not exclusive; accordingly, NASA may enter into similar agreements for the same or similar purpose with other private or public entities.

### **USE OF NASA NAME, INITIALS, AND EMBLEM**

The Institution or the PI shall not use "National Aeronautics and Space Administration" or "NASA" in a way that creates the impression that a product or service has the authorization, support, sponsorship, or endorsement of NASA, which does not, in fact, exist. The Institution or the PI must submit any proposed public use of the NASA name or initials (including press releases and all promotional and advertising use) to the NASA Assistant Administrator for the Office of Communication or designee ("NASA Communications") for review and approval. Approval by NASA Communications shall be based on applicable law and policy governing the use of the NASA name and initials.

Use of NASA emblems (*i.e.*, NASA Seal, NASA Insignia, NASA logotype, NASA Program Identifiers, and the NASA Flag) is governed by 14 C.F.R. Part 1221. The Institution or the PI

must submit any proposed use of the emblems to NASA Communications for review and approval.

The Institution shall ensure that the PI carries out these obligations.

**TERMS OF AGREEMENT -- DURATION, TERMINATION, AND MODIFICATION**

This Loan Agreement becomes effective upon the date of the last signature below (“effective date”) and shall remain in effect until the completion of all obligations of the Parties hereto, or five years from the effective date, whichever is sooner. This Loan Agreement may be amended at any time by written agreement of the Parties.

The Parties may unilaterally terminate this Loan Agreement by providing thirty (30) calendar days written notice to the other Parties. Upon termination the Institution, or if and when the Institution determines appropriate, the PI, is responsible for returning the Cosmic Dust samples to the Cosmic Dust Sample Curator within thirty (30) days. However, if any provision of this Loan Agreement is violated, NASA may request the return of all the Cosmic Dust samples, and the Cosmic Dust samples shall be returned immediately. The Institution retains the ultimate responsibility for the return.

**POINTS OF CONTACT**

The following personnel are designated as the Points of Contact between the Parties in the performance of this Loan Agreement:

<u>Principal Investigator (PI)</u>	<u>Institution Official</u>
Name	Name
Title	Title
Email	Email
Telephone	Telephone
Fax	Fax
Address	Address

NASA Cosmic Dust Sample Curator

Name: Marc Fries  
Email: [marc.d.fries@nasa.gov](mailto:marc.d.fries@nasa.gov)  
Telephone: (281) 244-1455  
Fax: (281) 483-5347  
Address: NASA – JSC, Mail Code KT  
2101 NASA PKWY  
Houston TX 77058  
USA

**DISPUTE RESOLUTION**

All disputes concerning questions of fact or law arising under this Loan Agreement shall be referred by the claimant in writing to the appropriate persons identified in this Loan Agreement as the “Points of Contact.” The persons identified as the “Point of Contact” for NASA and the Institution shall consult and attempt to resolve all issues arising from the implementation of this Loan Agreement. If the Parties are unable to resolve the dispute, then the NASA signatory or that person’s Designee, as applicable, shall issue a written decision that shall be the final agency decision for the purpose of judicial review. Nothing in this article limits or prevents any of the Parties from pursuing any other right or remedy available by law upon the issuance of the final NASA decision.

**APPLICABLE LAW**

U.S. Federal law governs this Loan Agreement for all purposes, including, but not limited to, determining the validity of the Loan Agreement, the meaning of its provisions, and the rights, obligations and remedies of the Parties.

**SIGNATORY AUTHORITY**

The signatories to this Loan Agreement covenant and warrant that they have authority to execute this Loan Agreement. By signing below, the undersigned agrees to the above terms and conditions:

***Institution Official:***

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

***NASA Cosmic Dust Sample Curator:***

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

***Observer: Principal Investigator (PI):***

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

**ANNEX 1**

**AGREEMENT BETWEEN [INSTITUTION NAME] AND [PI NAME]**

1. [INSTITUTION NAME] designates [PI NAME] to be the Principal Investigator (hereinafter referred to as “PI.”) for the Agreement between the National Aeronautics and Space Administration Johnson Space Center and [INSTITUTION NAME] of [INSTITUTION LOCATION] for the Loan of Cosmic Dust samples (hereinafter referred to as the “Loan Agreement”), to which this Agreement is affixed.
2. The PI agrees that s/he will be accountable for the responsibilities of the Institution and of the PI as set forth in the provisions of the Loan Agreement. These responsibilities are detailed in the following sections of the Loan Agreement:  
  
PURPOSE; RESPONSIBILITIES; LIABILITY AND RISK OF LOSS; PRIORITY OF USE; CUSTOMS CLEARANCE AND MOVEMENT OF PERSONS; USE OF NASA NAME, INITIALS, AND EMBLEM; TERMS OF AGREEMENT – DURATION, TERMINATION, AND MODIFICATION; POINTS OF CONTACT; and DISPUTE RESOLUTION.
3. This Agreement terminates or expires at such time as the Loan Agreement terminates or expires.

*Institution Official*

*Principal Investigator*

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Date

## **Appendix C: International Sample Loan Agreement**

### **Agreement Between The National Aeronautics and Space Administration and [INSTITUTION NAME] For the Loan of Cosmic Dust Samples**

#### **AUTHORITY AND PARTIES**

In accordance with the National Aeronautics and Space Act (51 U.S.C. § 20113), this Loan Agreement is entered into by the National Aeronautics and Space Administration Johnson Space Center, located at Houston, Texas (hereinafter referred to as “NASA” or “JSC”) and [INSTITUTION NAME] in [INSTITUTION LOCATION] (hereinafter referred to as “the Institution”). NASA and the Institution may be individually referred to as a “Party” and collectively referred to as the “Parties.”

#### **PURPOSE**

Cosmic Dust samples distributed by NASA, a U.S. federal agency, are property of the U.S. Government and are under the custody and curatorial control of JSC.

NASA desires to make certain Cosmic Dust samples available to the Institution by entering into this Loan Agreement. The Institution proposes to use these Cosmic Dust samples to undertake scientific investigations led by its Principal Investigator (the person who performs the investigations, hereinafter referred to as “PI”). These investigations are described in one or more sample requests submitted by the PI to the Cosmic Dust Sample Curator at JSC and approved by the Cosmic Dust Sample Curator. Once approved, these sample requests are an integral part of this Loan Agreement. JSC approval of the sample request (the award letter) is a prerequisite to the initiation of this Loan Agreement and subsequent loan of the Cosmic Dust samples. The approved samples will not be provided to the PI, through the Institution, until after conclusion of this Loan Agreement.

The use of the Cosmic Dust samples will permit beneficial contact among representatives of JSC and the Institution, including through the PI; will provide opportunities for discovery and dissemination of information to the broader scientific community and to the general public; will promote the maximum utilization of Cosmic Dust samples by JSC; and will provide opportunities for the dissemination of information concerning the activities of NASA.

### **RELATIONSHIP BETWEEN THE INSTITUTION AND PI**

The Institution hereby designates [PI NAME] as the PI for the purposes of this Loan Agreement. The Institution will enter into a separate legally binding agreement with the PI for purposes of carrying out certain responsibilities of the Institution, as appropriate, that are set forth in this Loan Agreement. The Institution will be responsible for ensuring the PI's and his/her designee(s)' adherence to this separate agreement which is attached to this Loan Agreement as Annex 1 and is an integral part of this Loan Agreement.

### **RESPONSIBILITIES:**

The Parties agree to the following:

20. The Cosmic Dust samples made subject to this Loan Agreement shall be identified and assigned to the Institution by the JSC Cosmic Dust Sample Curator via Cosmic Dust sample assignment forms signed by the Cosmic Dust Sample Curator and the PI.
21. The Cosmic Dust samples are irreplaceable and are therefore made available through institutions to PIs only under a carefully controlled and monitored program. It is therefore essential that rigorous security and accountability procedures be followed by all persons who have access to the Cosmic Dust samples. The Institution shall designate the PI to be responsible for the receipt, use (including security during use), and accountability of the Cosmic Dust samples, through the attached agreement.
22. Title to the Cosmic Dust samples shall remain with the U.S. Government and shall not be affected by the incorporation, attachment, or mixture thereof to or with property not owned by NASA.
23. As determined by NASA, the Cosmic Dust samples shall be either hand-carried, at the expense of the Institution, by an authorized official of the Institution, or mailed at JSC's

expense, to the Institution via registered mail or a shipping service approved by JSC. JSC reserves the right, at the expense of the Institution, to direct the mode of transportation for the return of the Cosmic Dust sample.

24. Only the PI or the PI's designee(s), may receive and open the registered package. The PI or the PI's designee(s) shall record all of the Cosmic Dust samples promptly upon receipt, and a record of receipt shall be maintained while the Cosmic Dust samples are in the custody, possession or control of the PI and the Institution.
25. During the use for research purposes, the Cosmic Dust samples must be under the constant control of the PI or the PI's designee(s). At no time may the Cosmic Dust samples be left unattended. At the end of each use of the Cosmic Dust samples, an inventory shall be made to insure the accountability of the Cosmic Dust samples. Such inventories shall be maintained as a permanent record and shall be made accessible to NASA at all times.
26. When not being actively investigated, the Cosmic Dust samples must be locked in a secure nitrogen cabinet behind a door with a combination padlock or equivalent. The door combination shall be under the exclusive control of the PI and, if appropriate, the Institution's security organization. If a controlled environment is required for scientific purposes, samples not being actively investigated must be stored in a locked laboratory.
27. In no case may Cosmic Dust samples on loan from NASA be stored with money, precious stones or minerals, classified material or any other item that is considered to be of high theft value. Cosmic Dust samples may be stored with other astromaterials (e.g., meteorites).
28. To ensure that appropriate security arrangements are followed, the Institution holding the Cosmic Dust samples shall be subject to inspection by NASA representatives upon request at all times.
29. The Institution and the PI shall report immediately the loss or damage of the Cosmic Dust samples to the Cosmic Dust Sample Curator.
30. The Institution security organization must be informed of the presence and location of the Cosmic Dust samples by the PI.
31. The Institution, or, if and when the Institution determines appropriate, the PI, is responsible for returning the Cosmic Dust samples upon expiration or termination of this Loan

Agreement. However, the Institution retains the ultimate responsibility for the return of Cosmic Dust samples.

32. The PI shall be responsible for accurate accounting of all Cosmic Dust samples by sample name, number and location. The Institution shall perform an inventory of the Cosmic Dust samples on an annual basis beginning no later than approximately one year from the effective date of this Agreement, using the sample inventory form provided by the Cosmic Dust Sample Curator, and submit this form to the Cosmic Dust Sample Curator within two months of receipt. This inventory includes any samples consumed or destroyed in the course of the research. This inventory shall be signed by the PI and certified by an official or security representative of the Institution.
33. The Institution, acting through the PI, may only use the Cosmic Dust samples at the Institution, or may permit the PI to use the sample at other locations consistent with the approved sample request. Any uses not expressly addressed in the approved sample request will require the advance written approval of the Cosmic Dust Sample Curator. If the approved sample request entails collaborative work at another institution, the Cosmic Dust samples shall be either hand-carried, at the expense of the Institution, by an authorized official of the Institution, or mailed at the Institution's expense, via registered mail or by a shipping service approved by JSC. The Institution, acting through the PI shall keep a record of all such transfers, inform the Cosmic Dust Sample Curator when such transfers occur, and note them in the annual inventory. When the samples are in use by a collaborator, the original Institution is responsible for extending the security requirements set forth in this agreement and shall retain responsibility for the Cosmic Dust samples.
34. This Loan Agreement is not transferable to another institution or investigator. If the PI relocates to another institution and wishes to continue research on the Cosmic Dust samples, a new Loan Agreement must be completed between the new Institution and NASA before Cosmic Dust samples can be transferred. If the PI is finished with a sample, but another investigator at the Institution is interested in studying this sample, a new sample request must be submitted to the Cosmic Dust Sample Curator, and if approved, a new Loan Agreement must be completed by the new Institution.

35. Return of Cosmic Dust samples to JSC may arise from several circumstances. If the PI completes or terminates research on the Cosmic Dust samples, or if the PI relocates to a new institution without executing a new loan agreement with NASA, the samples must be returned to the Cosmic Dust Sample Curator at JSC. Upon the circumstances of death or incapacitation of the PI, the Institution will likewise be responsible for returning the Cosmic Dust samples to the Cosmic Dust Sample Curator at JSC. Finally, if this agreement expires without a new loan agreement being entered into by the Parties, or is terminated by either Party, the Cosmic Dust samples must be returned to the Cosmic Dust Sample Curator at JSC. In all cases described above, the Cosmic Dust samples shall be returned with a full accounting of the Cosmic Dust samples, using the sample return forms provided by the Cosmic Dust Sample Curator.
36. The use of Cosmic Dust samples shall be solely for the purposes set forth in the approved sample request. This Loan Agreement allows the Institution to use destructive analytical procedures only as specified in the approved sample request. The Institution, acting through the PI, may request from the Cosmic Dust Sample Curator an amendment to the sample request in order to perform additional research on the samples.
37. When requested by NASA, the Institution, acting through the PI, shall provide the Cosmic Dust Sample Curator at JSC a copy of any publication(s) resulting from the Institution's research and confer any scientific knowledge acquired as a result of such use, provided that no proprietary knowledge shall be disclosed involuntarily in the discharge of this obligation.
38. NASA or the Institution, in part acting through the PI, may, consistent with Federal law and this Loan Agreement, release general information regarding its participation in this Loan Agreement as desired.

#### **LIABILITY AND RISK OF LOSS**

7. The Institution shall be responsible for any loss or damage to the Cosmic Dust samples.
8. The Institution recognizes that the United States Government may take any action available under US law against the Institution with respect to such loss or damage.

9. Loss or damage to the Cosmic Dust samples caused by failure to follow proper safeguarding standards as set forth in this Loan Agreement, or by any willful act or omission, lack of good faith, or negligence of the Institution may result in the recall of all Cosmic Dust samples in the Institution's possession and will be considered in selecting future recipients, both PIs and Institutions, for Cosmic Dust sample loans.
10. NASA, its officers, and employees shall not be liable for any loss, damage, expense, or liability of whatsoever nature or kind arising out of, or as a result of, or in connection with the possession or use of the samples during the term of the loan or any extension thereof.
11. The Institution hereby waives any claims against NASA, its employees, its related entities, (including, but not limited to, contractors and subcontractors at any tier, grantees, investigators, customers, users, and their contractors and subcontractors, at any tier) and employees of NASA's related entities for any injury to, or death of, Institution employees or the employees of the Institution's related entities, or for damage to, or loss of, the Institution's property or the property of its related entities arising from or related to activities conducted under this Loan Agreement, whether such injury, death, damage, or loss arises through negligence or otherwise, except in the case of willful misconduct. The Institution further agrees to extend this unilateral waiver to its related entities, including the PIs, by requiring them, by contract or otherwise, to waive all claims against NASA, its related entities, and employees of NASA and employees of NASA's related entities for injury, death, damage, or loss arising from or related to activities conducted under this Loan Agreement.
12. The Institution shall ensure that the PI is responsible to the United States Government to the same extent as the Institution as set forth in paragraphs 1 through 5 of this provision.

### **FINANCIAL OBLIGATIONS**

There shall be no transfer of funds between the Parties under this Loan Agreement and each Party shall fund its own participation. All activities under or pursuant to this Loan Agreement are subject to the availability of funds, and no provision of this Loan Agreement shall be

interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, (31 U.S.C. § 1341).

### **PRIORITY OF USE**

Any schedule or milestone in this Loan Agreement is estimated based upon the Parties' current understanding of the projected availability of NASA goods, services, facilities, or equipment. In the event that NASA's projected availability changes, the Institution shall be given reasonable notice of that change, so that the schedule and milestones may be adjusted accordingly. The Parties agree that NASA's use of the goods, services, facilities, or equipment shall have priority over the use planned in this Loan Agreement. Should a conflict arise, NASA in its sole discretion shall determine whether to exercise that priority. Likewise, should a conflict arise as between two or more non-NASA Parties, NASA, in its sole discretion, shall determine the priority as between those Parties. This Loan Agreement does not obligate NASA to seek alternative government property or services under the jurisdiction of NASA at other locations.

### **CUSTOMS CLEARANCE AND MOVEMENT OF PERSONS**

In accordance with its laws and regulations, each Party will facilitate free customs clearance and waiver of all applicable customs duties and taxes for goods necessary for the implementation of this Loan Agreement. In the event that any customs duties or taxes of any kind are nonetheless levied on such equipment and related goods, such customs duties or taxes will be borne by the Party of the country levying such customs duties or taxes.

In accordance with its laws and regulations, each of the Parties will also facilitate the movement of goods into and out of its territory as necessary to comply with this Loan Agreement.

### **NONEXCLUSIVITY**

This Loan Agreement is not exclusive; accordingly, NASA may enter into similar agreements for the same or similar purpose with other private or public entities.

### **USE OF NASA NAME, INITIALS, AND EMBLEM**

The Institution or the PI shall not use “National Aeronautics and Space Administration” or “NASA” in a way that creates the impression that a product or service has the authorization, support, sponsorship, or endorsement of NASA, which does not, in fact, exist. The Institution or the PI must submit any proposed public use of the NASA name or initials (including press releases and all promotional and advertising use) to the NASA Assistant Administrator for the Office of Communication or designee (“NASA Communications”) for review and approval. Approval by NASA Communications shall be based on applicable law and policy governing the use of the NASA name and initials.

Use of NASA emblems (*i.e.*, NASA Seal, NASA Insignia, NASA logotype, NASA Program Identifiers, and the NASA Flag) is governed by 14 C.F.R. Part 1221. The Institution or the PI must submit any proposed use of the emblems to NASA Communications for review and approval.

The Institution shall ensure that the PI carries out these obligations.

### **TERMS OF AGREEMENT -- DURATION, TERMINATION, AND MODIFICATION**

This Loan Agreement becomes effective upon the date of the last signature below (“effective date”) and shall remain in effect until the completion of all obligations of the Parties hereto, or five years from the effective date, whichever is sooner. This Loan Agreement may be amended at any time by written agreement of the Parties.

The Parties may unilaterally terminate this Loan Agreement by providing thirty (30) calendar days written notice to the other Parties. Upon termination the Institution, or if and when the Institution determines appropriate, the PI, is responsible for returning the Cosmic Dust samples to the Cosmic Dust Sample Curator within thirty (30) days. However, if any provision of this Loan Agreement is violated, NASA may request the return of all the Cosmic Dust samples, and the Cosmic Dust samples shall be returned immediately. The Institution retains the ultimate responsibility for the return.

**POINTS OF CONTACT**

The following personnel are designated as the Points of Contact between the Parties in the performance of this Loan Agreement:

<u>Principal Investigator (PI)</u>	<u>Institution Official</u>
Name	Name
Title	Title
Email	Email
Telephone	Telephone
Fax	Fax
Address	Address

NASA Headquarters, Office of International and Interagency Relations

Name            Sherry Copeland  
Email            [Sherry.T.Copeland@nasa.gov](mailto:Sherry.T.Copeland@nasa.gov)  
Telephone        (202) 358-2283  
Fax                (202) 358-3030  
Address          NASA Headquarters  
                      Mail Suite 2X54  
                      300 E Street, SW  
                      Washington, DC 20546-0001  
                      USA

NASA Cosmic Dust Sample Curator

Name:            Marc Fries  
Email: [marc.d.fries@nasa.gov](mailto:marc.d.fries@nasa.gov)  
Telephone:        (281) 244-1455  
Fax:                (281) 483-5347  
Address:          NASA – JSC,  
                      Mail Code KT  
                      2101 NASA PKWY  
                      Houston TX 77058  
                      USA

**DISPUTE RESOLUTION**

All disputes concerning questions of fact or law arising under this Loan Agreement shall be referred by the claimant in writing to the appropriate persons identified in this Loan Agreement

as the “Points of Contact.” The persons identified as the “Point of Contact” for NASA and the Institution shall consult and attempt to resolve all issues arising from the implementation of this Loan Agreement. If the Parties are unable to resolve the dispute, then the NASA signatory or that person’s Designee, as applicable, shall issue a written decision that shall be the final agency decision for the purpose of judicial review. Nothing in this article limits or prevents any of the Parties from pursuing any other right or remedy available by law upon the issuance of the final NASA decision.

**APPLICABLE LAW**

U.S. Federal law governs this Loan Agreement for all purposes, including, but not limited to, determining the validity of the Loan Agreement, the meaning of its provisions, and the rights, obligations and remedies of the Parties.

**SIGNATORY AUTHORITY**

The signatories to this Loan Agreement covenant and warrant that they have authority to execute this Loan Agreement. By signing below, the undersigned agrees to the above terms and conditions:

*Institution Official:*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

***NASA Cosmic Dust Sample Curator:***

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

***Director, Aeronautics and Cross-Agency  
Support Division (ACD), NASA Headquarters  
Office of International and Interagency Relations:***

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

***Observer: Principal Investigator (PI):***

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

**ANNEX 1**

**AGREEMENT BETWEEN [INSTITUTION NAME] AND [PI NAME]**

4. [INSTITUTION NAME] designates [PI NAME] to be the Principal Investigator (hereinafter referred to as “PI.”) for the Agreement between the National Aeronautics and Space Administration Johnson Space Center and [INSTITUTION NAME] of [INSTITUTION LOCATION] for the Loan of Cosmic Dust samples (hereinafter referred to as the “Loan Agreement”), to which this Agreement is affixed.
5. The PI agrees that s/he will be accountable for the responsibilities of the Institution and of the PI as set forth in the provisions of the Loan Agreement. These responsibilities are detailed in the following sections of the Loan Agreement:  
  
PURPOSE; RESPONSIBILITIES; LIABILITY AND RISK OF LOSS; PRIORITY OF USE; CUSTOMS CLEARANCE AND MOVEMENT OF PERSONS; USE OF NASA NAME, INITIALS, AND EMBLEM; TERMS OF AGREEMENT – DURATION, TERMINATION, AND MODIFICATION; POINTS OF CONTACT; and DISPUTE RESOLUTION.
6. This Agreement terminates or expires at such time as the Loan Agreement terminates or expires.

*Institution Official*

*Principal Investigator*

\_\_\_\_\_

Printed Name

\_\_\_\_\_

Printed Name

\_\_\_\_\_

Signature

\_\_\_\_\_

Signature

\_\_\_\_\_

Date

\_\_\_\_\_

Date

**Appendix D: Sample Assignment Form**  
**COSMIC DUST SAMPLE ASSIGNMENT**

<<PI>> has been assigned the following sample(s):

**<<Sample Number>>**

\_\_\_\_\_  
Cosmic Dust Sample Curator

Issue Date: <<Date>>

Return Date: None/Date

I acknowledge receipt of the above samples(s):

\_\_\_\_\_  
Signature & Date

\_\_\_\_\_  
Recipient's name, printed

By accepting custody of the above sample(s), the recipient understands that it is furnished pursuant to, and is fully subject to, the terms and conditions of the agreement under which the related Cosmic Dust Samples analysis is to be performed.

**Upon receipt of the samples, please sign this form and return it to the  
Cosmic Dust Sample Curator  
Mail Code: KT  
Johnson Space Center,  
Houston, Texas 77058**

## Appendix E: Sample Documentation Form

Date:

CO:

Event:           \_\_Transmittal   \_\_Receipt   \_\_Loss or Destruction   \_\_Subdivision

JSC Tracking Number:	Cosmic Dust Sample Description
Transfer from:  <hr/>	Processor:
Date:	
Transfer to:	Receipt signature:

PLEASE RETURN THIS FORM TO:

COSMIC DUST SAMPLE CURATOR  
MAIL CODE KT  
NASA JOHNSON SPACE CENTER  
2101 NASA PARKWAY  
HOUSTON, TX 77058