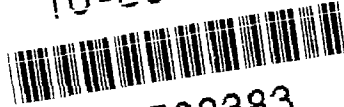


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Director of the US Patent and Trademark Office
P.O. Box 1450
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Mail Stop: Assignment Recordation Services

Please record the attached original documents or copy thereof.

- (1) **Conveying Party(ies):** Smithsonian Astrophysical Observatory
60 Garden Street
Cambridge, MA 02138-1516
- (2) **Receiving Party(ies):** National Aeronautics and Space Administration
Washington, D.C. 20546
- (3) **Nature of Conveyance:** Assignment
Execution Date: October 6, 2003
- (4) **Application Number:** NASA Case No.: MFS-31490-1
Application Title: Electrodynamic Tether
Application Filing Date: October 17, 2003

10/690161

This document is being filed together with a new patent application for letters patent. The execution date of the application is: October 6, 2003

- (5) **Name and address of party to whom correspondence concerning document should be mailed:**
Customer No. 30698

NASA/Marshall Space Flight Center
LS01/Office of Chief Counsel
MSFC, AL 35812

- (6) **Total number of applications involved:** 1(One)
- (7) **Total fee (37 CFR 3.41):** \$40.00. Authorized to be charged to deposit account.
- (8) **Deposit account number:** 14-0116

(9) To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. This cover sheet consists of one page.

Respectfully,

James J. McGroary
Registration No. 38,960

October 17, 2003

(Date)

Enclosure(s): NASA FORM 1639 (2 pages)

Express Mail ER3977 **CERTIFICATE OF MAILING**

I hereby certify that the correspondence is being sent by the United States Postal Service as Express Mail in an envelope addressed for Constitutional Patents, P. O. Box 1450, Alexandria, VA 22313-1450, on the date of signature below
Date 10-17-03 Signature Lisa R. Hughes

10/30/2003 6TOM11 00000001 140116 10690161 40.00 BA 01 FC:8021

PATENT

REEL: 014632 FRAME: 0108



Assignment to the Government and License to the Small Entity Contractor

Contractor/Grantee: Smithsonian Astrophysical Observatory
Incorporated Under the Laws of: Massachusetts
Address: 60 Garden Street
Cambridge, MA 02138-1516

WHEREAS the above named Contractor/Grantee (Hereinafter the Contractor), having elected not to retain title, or hereby elects not to retain title, under the provisions of 35 U.S.C. 202 to a SUBJECT INVENTION made in the performance of work under a contract/grant (Hereinafter a contract) between the Contractor and the Government of the United States of America (Hereinafter the Government), the SUBJECT INVENTION and contract being identified as:

Title of Invention: Electrodynamic Tether

Inventors:

- 1. Enrico Lorenzini Employer Smithsonian Astrophysical Observatory
2. Peter S. Schuler, Hamid R. Mojazza Employer Triton System Inc.
3. John D. Lennhoff Employer Triton System Inc.
4. Charles L. Johnson, Judy L.C. Ballance Employer NASA/MSFC
5. Kenneth J. Welzyn, Jason A. Vaughn Employer NASA/MSFC

This assignment is applicable to INVENTORS (Check appropriate),

- [X] (1), [] (2), [] (3), [] (4), [] (5);

Contract No. NAG8-1605

NASA Case No. MFS-31490-1 Contractor Case No.

Application Executed on October 6, 2003 Application Serial No.

Contractor is a (Check one):

- [] Small Business
[] College or University
[X] Nonprofit Organization

CERTIFICATE OF MAILING

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Date 10-17-03 Signature Lisa B. Hughes

Assignment to the Government

WHEREAS, the Government as represented by the Administrator of the National Aeronautics and Space Administration (NASA), is desirous of acquiring an assignment of the SUBJECT INVENTION identified above and disclosed in said application and other rights and benefits herein granted; Express Mail ER397703263US

Assignment to the Government (continued)

NOW THEREFORE, in consideration of the contract and other benefits attributable to the contractual relationship, the Contractor hereby assigns and transfers to the Government the full and exclusive right in and to said SUBJECT INVENTION within the United States of America, its territories and possession, and the entire right, title, and interest in and to said patent application, and any applications continuing therefrom and such Letters Patent as may issue therefrom.

The Contractor also grants to the Government, an assignment of the foreign rights in and to the said invention including rights of priority under the International Convention of Paris (1883), as amended.

The Contractor hereby covenants that it has the right to grant the foregoing assignments.

The Contractor further agrees to make, execute and/or deliver to the Government, upon request, but at the expense of the Government, any and all data, drawings, notes, reports, information, papers, documents, affidavits, statements, or other items necessary in the prosecution of said application and of any applications continuing therefrom or applications for reissue or reexamination of said Letters Patent, or of any foreign patent application or any application continuing therefrom, and to assist the Government in every way in protecting said invention as may be requested, provided that any expense arising through such assistance will be paid by the Government.

License to the Contractor

FURTHER, the Contractor hereby retains, pursuant to the Federal Acquisition Regulation clause 52.227-11 entitled "Patent Rights - Retention by the Contractor (Short Form)," a revocable, nonexclusive, royalty-free license throughout the world in the SUBJECT INVENTION in each patent application filed in any country on the invention and in any resulting patent in which the Government acquires title. The license extends to the Contractor's domestic subsidiaries and affiliates, if any, within the corporate structure of which the Contractor is a part and includes the right to grant sublicenses of the same scope to the Contractor was legally obligated to do so at the time the contract was awarded. The license is transferable only with the approval of the National Aeronautics and Space Administration except when transferred to the successor of the part of the Contractor's business to which the invention pertains. The Contractor's domestic license may be revoked or modified by the National Aeronautics and Space Administration to the extent necessary to achieve the expeditious practical application of the SUBJECT INVENTION pursuant to an application for an exclusive license submitted in accordance with the Department of Commerce Patent Licensing Regulations. This license will not be revoked in that field of use or the geographical areas in which the Contractor has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of the National Aeronautics and Space Administration to the extent the Contractor, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country. Before revocation or modification of the license, the National Aeronautics and Space Administration will furnish the Contractor a written notice of its intention to revoke or modify the license, and the Contractor will be allowed 30 days (or such other time as may be authorized by the National Aeronautics and Space Administration for good cause shown by the Contractor) after the notice to show cause why the license should not be revoked or modified. The Contractor has the right to appeal, in accordance with the procedures set forth in the Department of Commerce Patent Licensing Regulations, from any decision concerning the revocation or modification of its license.

The Contractor hereby executes this instrument by its legally authorized representative on

6 October 2003

Name John G. Harris

Signature 

Title Contracting Officer

(Corporate Office)