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FOIA MARKER

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Record Group/Collection: George H.W. Bush Presidential Records
Collection/Office of Origin: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Personal Files

OA/ID Number: 62028
Folder ID Number: 62028-005

Folder Title:
D. Allan Bromley - Personal [5 of 8] [1991]

Stack:

Row:

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"CORRESPONDENCE TRACKING"

TYPE: ACTION DOCUMENT NUMBER: 9122044
ORIGINATOR: 02 STATUS I DIRECTORATE STATUS

FROM: DENYSYK, Bo: GLOBAL USA, INC.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/05/91

SUBJECT: REQUEST TO ARRANGE A LETTER FROM PRESIDENT BUSH
CONGRATULATING THE LAUREATES ON THE OCCASSION OF
THEIR RECEIVING OF THE PRIZE IN KYOTO ON NOVEMBER
10, 1991, WHICH HAS BEEN A TRADITION SINCE 1984.

DIRECTORATE STAFF
ASSIGNED: D. Allan Bromley ASSIGNED:

ACTION STAFF
REQUIRED: AS NECESSARY ACTION:

SENDER'S DUE DATE: 10/15/91
OSTP DUE DATE: 07/24/91 STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO:

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

CLOSED

OSTP RECEIVED: 07/10/91 FILE: P-BROMLEY *Personal* CORRESPONDENCE
DEPT RECEIVED:

12044
RECEIVED

July 5, 1991

91 JUL 10 AM 11:52

OFFICE OF THE
DIRECTOR

Dr. Allan Bromley
Assistant to the President
for Science and Technology
The White House
Old Executive Office Building
17th Street and Pennsylvania Avenue, N.W.
Washington, DC 20500

Dear Dr. Bromley:

Thank you again for graciously agreeing to meet with Dr. Inamori during his recent visit to Washington. He found the discussion with you stimulating and insightful and hopes that he has the opportunity to reciprocate your kindness during one of your visits to Japan.

Also, please accept my apology for not attending the meeting, but an unexpected development forced me to make an unscheduled visit to the USSR.

Allow me to once again impose on your good offices on a matter relating to Dr. Inamori. The three Kyoto Prize Laureates have been announced and they include two U.S. scientists - Dr. Szwarc (USC), and Dr. Lorenz (MIT). The third Laureate is British playwright and stage director, Peter Brook (see attachments for additional details). As you know, the Kyoto Prize (approximately \$350,000 per Laureate) is fully funded by the Inamori Foundation.

If at all possible, we would welcome a letter from President Bush congratulating the Laureates on the occasion of their receiving of the Prize in Kyoto on November 10, 1991.

You may know that if President Bush kindly consents to forwarding a congratulatory letter, he will be continuing a tradition started in 1984, with the award of the very first Kyoto Prize. Since 1984, former President Reagan and President Bush have sent letters every year that there has been an American Laureate. There has been an American Laureate every year, except in 1990. May I also mention that the Heads of Government of every country from where the Laureate heralds, have sent congratulatory letters since the inception of the Prize.

I know that this request is an inconvenience and an imposition, but we hope that you will find the time to arrange for a Presidential letter. Recognition in science and the creative

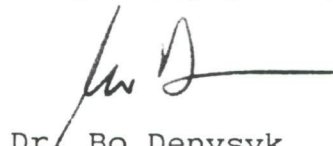
arts is all to infrequent, in comparison to the lifetime dedication. The Kyoto Prize hopes, in a small way, to increase the recognition. However, in conjunction with a Presidential greeting, the Laureates will be spurred onto new heights. Also, their younger colleagues may have more incentive to strive even further into the depths of the unknown.

If you agree to assist in securing a letter, may I suggest that it be forwarded to my office by October 15, 1991, to ensure that the original be transmitted in time for the ceremony.

Please do not hesitate to contact me if you have any questions or comments.

With deepest personal regards, I remain,

Very truly yours,

A handwritten signature in dark ink, appearing to read 'Bo Denysyk', with a long horizontal stroke extending to the right.

Dr. Bo Denysyk
Senior Vice President
GLOBAL USA, INC.

THE WHITE HOUSE

WASHINGTON

November 1, 1985

On the occasion of the first annual awards ceremony of the Kyoto Prize I take great pleasure in congratulating the four winners and acknowledging the efforts of the countless participants in this important international event.

The value of ingenuity and creativity cannot be measured, but through the initiative and great personal generosity of Kazuo Inamori, there is now a means to reward and encourage their pursuit all over the world.

The Kyoto Prizes acknowledge the indispensable role played by basic research, the applied sciences, and the expressive arts in enriching the lives of everyone regardless of nationality. These dynamic forces fuel the economic, technological, and cultural progress of nations. It is evident, then, that the winners you honor today have made contributions of international proportions and deserve international recognition and acclaim.

Ronald Reagan

THE
87 Shijodori Muromachi Higashi-iru
INAMORI
Shimogyo-ku, Kyoto 600, Japan
FOUNDATION
Phone: (075)255-2688

THE 1991 KYOTO PRIZES

LAUREATE REFERENCES

1991.6.14

THE INAMORI FOUNDATION

The Laureates of the 1991 Kyoto Prizes

Advanced Technology

Michael Szwarc (U.K.)(born in 1909)

Professor, University of Southern California

A chemist who has made an outstanding contribution to the research and development of polymeric materials for the materials sciences, Professor Szwarc is best known for discovering "living polymerization," paving the way for new functional materials with indispensable applications in advanced technology, and providing many scientists and engineers (particularly polymer scientists) with significant and unprecedented methodologies for the design and synthesis of new polymeric materials.

Basic Sciences

Edward Norton Lorenz (U.S.A.)(born in 1917)

Professor Emeritus, M.I.T.

A meteorologist who established the theoretical basis of weather and climate predictability, as well as the basis for computer-aided atmospheric physics and meteorology, Professor Lorenz made his boldest scientific achievement in discovering "deterministic chaos," a principle which has profoundly influenced a wide range of basic sciences and brought about one of the most dramatic changes in mankind's view of nature since Sir Isaac Newton.

Creative Arts and Moral Sciences

Peter Stephen Paul Brook (U.K.)(born in 1925)

Director, International Centre for Theatre Creations

A quintessential stage director who has exerted an extraordinary, worldwide influence over theater and drama for four decades, Mr. Brook has continually broken the bonds of theatrical convention with works that are at once extremely classical, yet fully contemporary, integrating both Eastern and Western theater at a level which transcends mere form.

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01a. Resume	Resume of Michael Szwarc [personal information redacted] (2 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Personal Files
WHORM Cat.:
File Location: D. Allan Bromley - Personal [5 of 8] [1991]

Date Closed:	3/8/2010	OA/ID Number:	62028-005
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P-2/P-5 Review Case #:		Disposition Date:	
AR Case #:		MR Case #:	
AR Disposition:		MR Disposition:	
AR Disposition Date:		MR Disposition Date:	

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

P-1 National Security Classified Information [(a)(1) of the PRA]
 P-2 Relating to the appointment to Federal office [(a)(2) of the PRA]
 P-3 Release would violate a Federal statute [(a)(3) of the PRA]
 P-4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
 P-5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
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C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Removed as a personal record misfile.

Freedom of Information Act - [5 U.S.C. 552(b)]

(b)(1) National security classified information [(b)(1) of the FOIA]
 (b)(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
 (b)(3) Release would violate a Federal statute [(b)(3) of the FOIA]
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 (b)(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
 (b)(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
 (b)(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
 (b)(9) Release would disclose geological or geophysical information

Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01b. Biography	Biography of Michael Szwarc [personal information redacted] (3 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Personal Files
WHORM Cat.:
File Location: D. Allan Bromley - Personal [5 of 8] [1991]

Date Closed:	3/8/2010	OA/ID Number:	62028-005
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Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01c. Resume	Resume of Edward Norton Lorenz [personal information redacted] (2 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Personal Files
WHORM Cat.:
File Location: D. Allan Bromley - Personal [5 of 8] [1991]

Date Closed:	3/8/2010	OA/ID Number:	62028-005
FOIA/SYS Case #:	2005-0336-F	Appeal Case #:	
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Withdrawal/Redaction Sheet

(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01d. Biography	Biography of Edward Norton Lorenz [personal information redacted] (3 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Personal Files
WHORM Cat.:
File Location: D. Allan Bromley - Personal [5 of 8] [1991]

Date Closed:	3/8/2010	OA/ID Number:	62028-005
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(George Bush Library)

Document No. and Type	Subject/Title of Document	Date	Restriction	Class.
01e. resume	Resume of Peter Stephen Paul Brook [personal information redacted] (2 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records
Office: Science and Technology Policy, Office of (OSTP)
Series: Bromley, D. Allan, Files
Subseries: Personal Files
WHORM Cat.:
File Location: D. Allan Bromley - Personal [5 of 8] [1991]

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01f. Biography	Biography of Peter Stephen Paul Brook [personal information redacted] (2 pp.)		(b)(6)	

Collection:

Record Group: Bush Presidential Records
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MEMBERS OF THE KYOTO PRIZE SCREENING ORGANIZATION

THE KYOTO PRIZE EXECUTIVE COMMITTEE

Okamoto, Michio (Chairman)	Director, International Institute for Advanced Studies
Fukui, Kenichi	Director, Institute for Fundamental Chemistry
Hironaka, Heisuke	Professor, Harvard University
Saito, Shinroku	President, Kanagawa Academy of Science and Technology Foundation
Sakurai, Yoshifumi	Vice President, Setsunan University
Sengen, Ryuichiro	Professor, Faculty of Law, Doshisha University
Yano, Toru	Director, Center for Southeast Asian Studies, Kyoto University

THE KYOTO PRIZE COMMITTEE

1. ADVANCED TECHNOLOGY

Saito, Shinroku (Chairman)	President, Kanagawa Academy of Science and Technology Foundation
Adachi, Kengo	Professor, Faculty of Science, Shinshu University
Imura, Hiroo	Dean, Faculty of Medicine, Kyoto University
Ishii, Takemochi	Professor, Faculty of Environmental Information, Keio University
Izumi, Osamu	Professor Emeritus, Tohoku University
Sakurai, Yoshifumi	Vice President, Setsunan University
Soga, Naohiro	Professor, Faculty of Engineering, Kyoto University
Tsuruta, Teiji	Director, Research Institute for Biosciences, Science University of Tokyo

2. BASIC SCIENCES

Hironaka, Heisuke (Chairman)	Professor, Harvard University
Amari, Shun-ichi	Professor, Faculty of Engineering University of Tokyo
Fukui, Kenichi	Director, Institute for Fundamental Chemistry
Hayakawa, Sachio	President, Nagoya University
Ichinohe, Tokio	Professor Emeritus, Kyoto University
Nasu, Noriyuki	Professor, University of the Air
Teramoto, Ei	Professor, Faculty of Science and Technology, Ryukoku University
Unno, Wasaburo	Professor, Research Institute for Science and Technology, Kinki University

3. CREATIVE ARTS AND MORAL SCIENCES

Yano, Toru (Chairman)	Director, Center for Southeast Asian Studies, Kyoto University
Fujisawa, Norio	Director-General, Kyoto National Museum
Kishi, Tetsuo	Professor, Faculty of Letters, Kyoto University
Miyagawa, Kazuo	Film Director
Sato, Tadao	Chairman, Japan Film Pen Club
Takashina, Shuji	Professor, Faculty of Letters, University of Tokyo
Tohyama, Kazuyuki	Director, Tokyo Metropolitan Festival Hall

THE KYOTO PRIZE SCREENING COMMITTEE

1. ADVANCED TECHNOLOGY

Izumi, Osamu (Chairman)	Professor Emeritus, Tohoku University
Higashimura, Toshinobu	Professor, Faculty of Engineering, Kyoto University
Kawamura, Takao	Professor, Faculty of Engineering, University of Osaka Prefecture
Koizumi, Mitsue	Professor, Faculty of Science and Technology, Ryukoku University
Saegusa, Takeo	Professor Emeritus, Kyoto University
Taya, Minoru	Professor, Faculty of Engineering, Tohoku University
Yanagida, Hiroaki	Professor, Research Center for Advanced Science and Technology, University of Tokyo

2. BASIC SCIENCES

Hayakawa, Sachio (Chairman)	President, Nagoya University
Kogure, Tomokazu	Professor Emeritus, Kyoto University
Mizutani, Hitoshi	Professor, Institute of Space and Astronautical Science
Morimoto, Masaki	Professor, National Astronomical Observatory
Sato, Humitaka	Professor, Faculty of Science, Kyoto University
Ueda, Seiya	Professor, School of Marine Science and Technology, Tokai University
Yamamoto, Ryozauro	Professor, Faculty of Science, Kyoto University
Yasukawa, Katsumi	Professor, Faculty of Science, Kobe University

3.CREATIVE ARTS AND MORAL SCIENCES

Sato, Tadao (Chairman)	Chairman, Japan Film Pen Club
Nakagawa, Hisayasu	Professor, Faculty of Letters, Kyoto University
Odashima, Yushi	Professor, Faculty of Letters, University of Tokyo
Ozaki, Hirotsugu	Vice President, Japanese Centre International Theatre Institute
Takano, Etsuko	General Manager, Iwanami Hall
Togawa, Naoki	Cinema Critic
Yamamoto, Kikuo	Professor, Faculty of Letters, Waseda University
Yamazaki, Masakazu	Professor, Faculty of Letters, Osaka University

EVENTS SCHEDULE OF THE 1991 KYOTO PRIZES

1. WELCOME RECEPTION

DATE : November 9, Sat., 1991, Evening

PLACE : Hotel (to be decided)

A welcome dinner reception will be held for the honorable laureates.

2. PRIZE PRESENTATION CEREMONY

DATE : November 10, Sun., 1991, Afternoon

PLACE : Main Conference Hall

Kyoto International Conference Hall

The Kyoto Prizes will be presented to the laureates.

3. BANQUET

DATE : November 10, Sun., 1991, Evening

PLACE : Kyoto Takaragaike Prince Hotel

A celebratory dinner party will be held in honor of the laureates.

4. COMMEMORATIVE LECTURES

DATE : November 11, Mon., 1991, Afternoon

PLACE : Main Conference Hall

Kyoto International Conference Hall

The laureates will reveal their thoughts and feelings reflecting on their works to a public audience.

5. WORKSHOPS

DATE : November 12, Tues., 1991

PLACE : Kyoto International Conference Hall

The workshops will be held with the laureates and researchers of their specific fields in each category respectively.

FOR FURTHER INFORMATION, PLEASE CONTACT

Seiichi Nagataka

Manager, Public Affairs
The Inamori Foundation

Address : 87 Kankoboko-cho, Shijodori-Muromachi-
Higashi-iru, Shimogyo-ku, Kyoto 600

Telephone : 075-255-2688

Facsimile : 075-255-3360

.....OR.....

William L. Everitt

Vice President
Kyocera International, Inc.

Address: 8611 Balboa Avenue
San Diego, California 92123-1580

Telephone: 619-576-2670

Facsimile: 619-492-1456



The Kyoto Prizes

and

The Inamori Foundation

- 1) Philosophy of the Kyoto Prizes
- 2) Summary of the Kyoto Prizes
- 3) Kyoto Prize Screening Organization Chart
- 4) The former laureates of the Kyoto Prizes
- 5) Summary of The Inamori Foundation
- 6) List of members of the Special Advisors,
the Board of Directors and the Board of Councillors.

PHILOSOPHY OF THE KYOTO PRIZES

In the 25 years since I founded Kyocera Corporation in 1959, Kyocera and I have done considerable work on ceramic materials, such as electronic ceramics, engineering ceramics, and structural ceramics. Today, I like to think that Kyocera has contributed in some small way to the development of the fine ceramics industry.

After more than a quarter-century of unstinted endeavor, and by the grace of God, Kyocera has grown to annual sales of ¥230 billion and pre-tax profits of ¥53 billion. Having attained this plateau, I feel it only appropriate that, in line with my lifelong belief that man has no higher calling than to strive for the greater good of humankind and all the world, I have endowed The Inamori Foundation with a gift of approximately ¥20 billion in cash and Kyocera stock so as to establish the Kyoto Prizes for recognizing some of those people who have contributed so much to scientific progress, cultural advances, and human betterment.

Recipients of the Kyoto Prizes must be people who evidence the same devotion to their work that Kyocera epitomizes-people who are sensitive to their own human fallibility, and who have a deeply rooted reverence for the universal spirit. Their achievements will have contributed significantly to mankind's scientific, cultural, and spiritual betterment; and, perhaps most importantly, they must be people who have been sincerely motivated to improve the human condition.

There are thus two major reasons for my establishing the Kyoto Prizes. One is that, in line with my belief that man has no higher calling than to work for the greater good of all humankind, I wish to show my gratitude to my fellow men for having sustained and nurtured me all these years. The second reason is that I would like to rectify the relative lack of encouragement for dedicated people who do their research unsung. In essence, I hope both to recognize these people's extraordinary

efforts and their outstanding contributions to science, culture, and the arts and to stimulate them and others like them to still greater heights.

Mankind's future is assured only when there is a balance between our scientific developments and our psychological maturity. Today, we are rushing ahead with incredible scientific and technological achievements while understanding of our emotional and psychological development lags deplorably. There are positive and negative sides to everything - the yin and the yang, the light and the dark - and equilibrium can be maintained only when there is balanced development and awareness of both sides of this duality. An unhealthy emphasis on either side to the detriment of the other can only result in upsetting the natural balance and contribute to human misery. It is my hope that these Kyoto Prizes will encourage balanced development of both our scientific and our spiritual sides, and hence provide new impetus toward the structuring of new philosophical paradigms.

April 12, 1984

Kazuo Inamori

THE KYOTO PRIZES

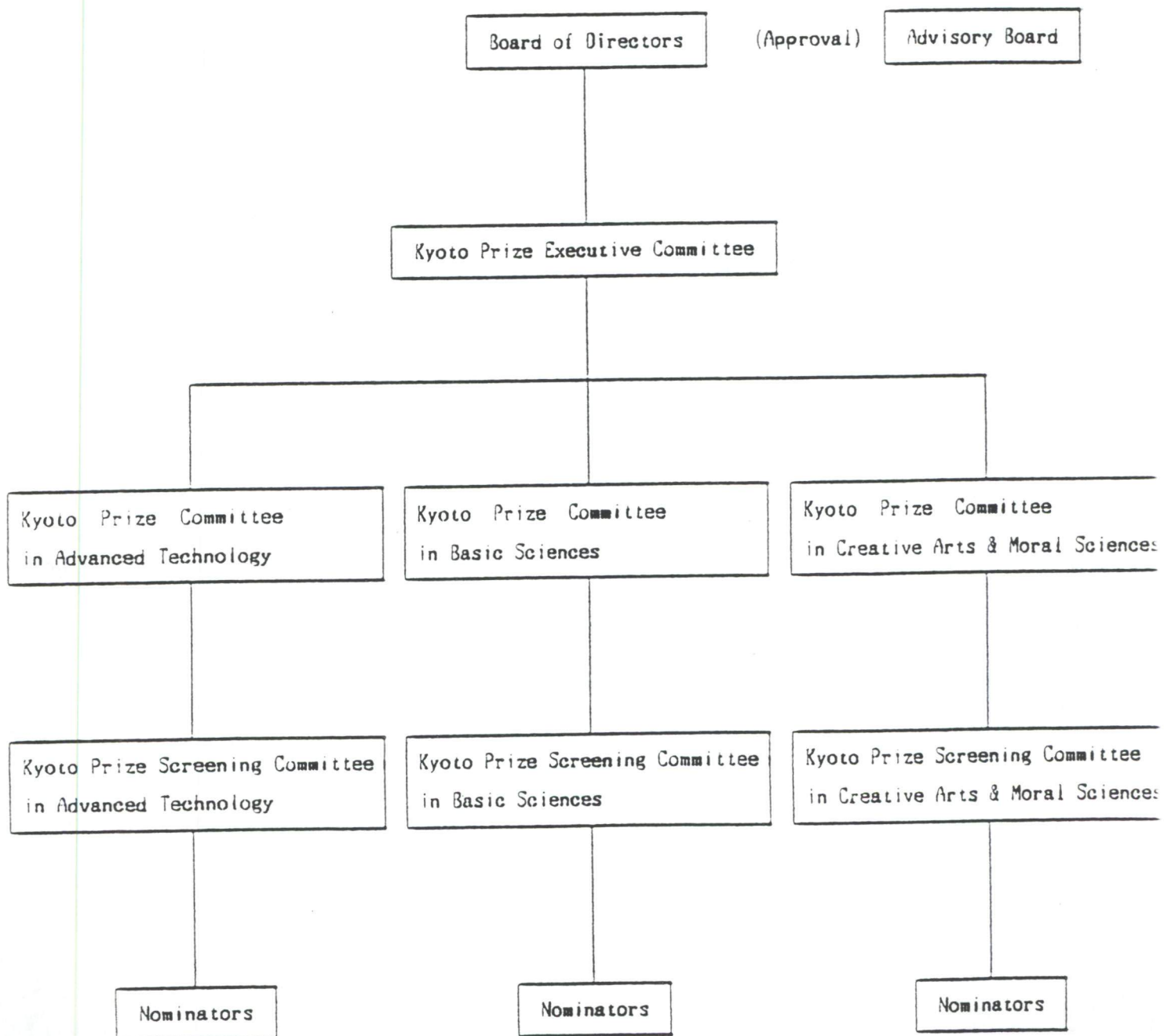
1. The Kyoto Prizes are international awards to honor some of those people who have contributed significantly to the scientific, cultural and spiritual development of mankind.
2. The Kyoto Prizes are presented annually to an individual or a group in each of the three categories, namely Advanced Technology, Basic Sciences, and Creative Arts and Moral Sciences.
3. Each winning individual or group of the Kyoto Prize is presented the Certificate of Recognition, Medal(gold), and Prize Money of 45,000,000 Japanese Yen.
4. The specific fields are selected annually from each of the three categories, followed by deciding a laureate from such fields.

The laureates for the 1991 Kyoto Prizes have been decided from the following fields:

- 1) Advanced Technology : Materials Science and Engineering
 - 2) Basic Sciences : Earth and Planetary Sciences,
Astronomy and Astrophysics
 - 3) Creative Arts and Moral Sciences : Theater, Cinema
5. The Kyoto Prizes cover the fields of Creative Arts and Moral Sciences including arts and music, etc. as well as the fields of natural sciences such as Advanced Technology and Basic Sciences. In particular, the prize for the Creative Arts and Moral Sciences is attracting world-wide interest and attention as an unprecedented and epoch-making prize.

6. The candidates for the Kyoto Prizes are nominated by the official Kyoto Prize nominators who are internationally recognized authorities. The laureates are chosen from among the candidates.
7. The Kyoto Prize Screening Organization of The Inamori Foundation, consisting of the Kyoto Prize Executive Committee, the Kyoto Prize Committee of each Prize, and the Kyoto Prize Screening Committee of each Prize scrutinizes the laureates who are not only authorities in the specific field but also have their own philosophy, have made significant contributions to the development of their respective fields, and have exerted great influence in the world.

KYOTO PRIZE SCREENING ORGANIZATION CHART



(Internationally Selected)

THE FORMER LAUREATES OF THE KYOTO PRIZES

THE 1985 KYOTO PRIZES (FIRST PRESENTATION)

* Advanced Technology

Laureate : Rudolf Emil Kalman (U.S.A.)(born in 1930)

Fields Selected : Electronics, Telecommunications Technology,
Laser Technology, Control Engineering,
Computer Sciences, Information Engineering,
Artificial Intelligence

* Basic Sciences

Laureate : Claude Elwood Shannon (U.S.A.)(born in 1916)

Field Selected : Mathematical Sciences
(including Pure Mathematics)

* Creative Arts and Moral Sciences

Laureate : Olivier Messiaen (France)(born in 1908)

Field Selected : Music

* The Special Commemorative Kyoto Prize

Laureate : The Nobel Foundation (Sweden)
Representative; Prof. Sune Bergström, Chairman

THE 1986 KYOTO PRIZES

* Advanced Technology

Laureate : Nicole Marthe LeDouarin (France)(born in 1930)

Field Selected : Biotechnologies
(Molecular Genetics, Cellular & Developmental
Biology, Cancer Research, Application of
Biological Function, and etc.)

* Basic Sciences

Laureate : George Evelyn Hutchinson (U.S.A.)(born in 1903)

Field Selected : Biological Sciences
(Behavioral and Ecological)

* Creative Arts and Moral Sciences

Laureate : Isamu Noguchi (U.S.A.)(born in 1904)

Fields Selected : Arts-Plastic Arts (Painting, Sculpture,
and Architecture)

THE 1987 KYOTO PRIZES

* Advanced Technology

Laureate : Morris Cohen (U.S.A.)(born in 1911)

Field Selected : Materials Science

* Basic Sciences

Laureate : Jan Hendrik Oort (The Netherlands)(born in 1900)

Fields Selected : Earth Sciences and Astrophysics

* Creative Arts and Moral Sciences

Laureate : Andrzej Wajda (Poland)(born in 1926)

Fields Selected : Cinema, Theater

THE 1988 KYOTO PRIZES

* Advanced Technology

Laureate : John McCarthy (U.S.A.)(born in 1927)

Fields Selected : Computer Science and Engineering,
Artificial Intelligence

* Basic Sciences

Laureate : Noam Avram Chomsky (U.S.A.)(born in 1928)

Field Selected : Cognitive Science

* Creative Arts and Moral Sciences

Laureate : Paul Thieme (West Germany)(born in 1905)

Fields Selected : Philosophy, History of Ideas
(Ancient Indian and Greek)

THE 1989 KYOTO PRIZES

* Advanced Technology

Laureate : Amos Edward Joel, Jr. (U.S.A.) (born in 1918)

Fields Selected : Electronics, Telecommunications,
Lasers and Control Engineering

* Basic Sciences

Laureate : Izrail Moiseevich Gelfand (U.S.S.R.) (born in 1913)

Fields Selected : Mathematical Sciences
(including Pure Mathematics)

* Creative Arts and Moral Sciences

Laureate : John Cage (U.S.A.) (born in 1912)

Field Selected : Music

THE 1990 KYOTO PRIZES

* Advanced Technology

Laureate : Sydney Brenner (U.K.) (born in 1927)

Fields Selected : Biotechnologies (Molecular Genetics, Cellular
and Developmental Biology, Cancer Research,
Application of Biological Function, etc.)

* Basic Sciences

Laureate : Jane Goodall (U.K.) (born in 1934)

Fields Selected : Biological Sciences
(Behavior, Ecology and Environment)

* Creative Arts and Moral Sciences

Laureate : Renzo Piano (Italy) (born in 1937)

Field Selected : Arts (Painting, Sculpture, Architecture)

THE INAMORI FOUNDATION

ADDRESS : 87 Kankoboko-cho, Shijodori-Muromachi-Higashi-iru,
Shimogyo-ku, Kyoto 600, Japan

AIMS : To contribute to peace and prosperity of human beings through honoring the people who have contributed significantly to mankind's betterment, and through providing research support and funding as well as promoting international understanding, mainly in the fields of scientific technology, creative arts, etc. which promote industrial, economic, and cultural development.

ACTIVITIES :

- 1) To honor and recognize the people who have contributed significantly to mankind's betterment mainly in the fields of scientific technology, creative arts, etc. which promote industrial, economic, and cultural development.
The Kyoto Prizes are presented annually to an individual or a group of people in each of the three categories. The Prize money for each winning individual or group will be ¥ 45,000,000.
- 2) To hold symposiums by researchers inside and outside Japan mainly in the fields of scientific technology, creative arts, etc. which promote industrial, economic, and cultural development.
- 3) To grant support for research institute or researchers mainly in the fields of scientific technology, creative arts, etc. which promote industrial, economic, and cultural development.
- 4) To grant support and to dispatch and invite researchers for international mutual understanding mainly in the fields of scientific technology, creative arts, etc. which promote industrial, economic, and cultural development.

FUNDAMENTAL ASSETS :

Stocks of Kyocera Corporation

1,680,000 stocks

Cash

¥ 4,900,000,000 (as of March 31, 1991)

FOUNDER : Kazuo Inamori

FOUNDED : April 12, 1984

COMPETENT GOVERNMENT OFFICES :

Ministry of International Trade and Industry

Science and Technology Agency

Agency of Cultural Affairs

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Kumagai, Nobuaki	President, Osaka University
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Tanabe, Tomoyuki	Mayor, Kyoto City

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Yoshikuni, Ichiro	Advisor to the President, Nippon Telegraph & Telephone Corporation

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FROM: WASSERBURG, G.J.: CALIFORNIA INSTITUTE OF TECHNOLOGY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/02/91

SUBJECT: A COPY OF A SPEECH ON SCIENCE POLICY

DIRECTORATE

STAFF

ASSIGNED:

ASSIGNED:

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STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:

STAFF DUE DATE

DATE COMPLETED:

DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

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DIVISION OF GEOLOGICAL AND PLANETARY SCIENCES 170-25

JUL 2 11:38

OFFICE OF THE
DIRECTOR

27 June, 1991

Dr. D. Allan Bromley
Science Advisor to the President
The White House
Old Executive Office Building #358
17th and Pennsylvania Avenue, N.W
Washington, D. C. 20506

Dear Allan:

Well, we heard the speech by the man. Some of us tried desperately to find the profound things you had written, but they were not terribly apparent to us. I am sorry you couldn't make it, but my wine cellar hopefully is still in good shape. I would be happy to share some of California's best with you. Thinking about the speech I was reminded of a speech I made many years ago on science policy in Washington. While packing up some junk in my house (since we are moving), this document fell out of some old carton. I am sending it to you to read while sitting on the throne. It is a bit long winded; parts may be right, parts may be wrong, and many stories are as good to me now as when I told them. I doubt anything is of use, but you might enjoy reading it when you have nothing better to do.

Very best personal regards,



G. J. Wasserburg
John D. MacArthur Professor
of Geology and Geophysics

P.S. The current tragedy of the Congressional action of butchering the space science budget is really out of sight, and is, to some extent, the consequence of erroneous actions and recommendations made earlier about which I wrote you. Now we have the devil to pay.

GJW:kv

March 2, 1983

#436

SETTING SCIENTIFIC PRIORITIES: IT CAN BE DONE

From Seminar "The Changing Structure of the U.S. Research System",
Graduate Program in Science, Technology, and Public Policy
George Washington University,
Washington, D.C., December, 1982

Dr. Gerald J. Wasserburg
Smithsonian Regents Fellow
National Air and Space Museum
and
John MacArthur Professor of
Geology and Geophysics
California Institute of Technology

Introduction

I am delighted to be in Washington as a Regents Fellow at the Air and Space Museum and am honored to be your speaker this evening. My wife and I are enjoying the numerous sites and cultural benefits of Washington. Overall, my impression of the city as temporary resident is far more favorable than I had gotten over two decades of flying in and hurridly going from federal building to federal building with a suitcase and briefcase in each hand, struggling to attend meetings and gathering more reams of paper than I could read. And then to find a taxi to get to the airport to escape back home with an aggravated case of bursitis. At best, I considered this as a place to get acid indigestion and hypertension. Well, now I have more perspective - the city is beautiful and a symbol of regularity and sanity. Last week, my wife and I walked up Capitol Hill to see the cherry trees blooming in mid-December after being evacuated from my office because some beserk man was threatening to blow up the Washington Monument because some other people were pushing dense pack. By Sunday, we went for a walk in the snow.

I also note, that the people of Washington are incredibly gracious. One day I took a taxi to an early morning meeting. After a bit, the driver was flagged by a most beautiful young lady and stopped. "Where are you going?" he asked. "To 19th and New York" she responded. I was delighted in anticipation of meeting a beautiful young lady resident and quickly slid over to sort of extend my hospitality in the back seat. The driver said, "Nope, out of my way" and drove off. I was disappointed, of course. But then, half a block away, he stopped and began backing up through heavy traffic. It took quite a while. I began to smile inside. Finally, he reached the beautiful young lady and lowering his window, he said, "Where did you say you were going?" She replied, "19th and New York." "Well," the driver responded, "There ain't no 19th and New York, you must mean 18th" and he raised the window and drove off. There it is. . . everyone is trying to help the other fellow learn here in this town.

Now I have tried to get a feeling for the technical state of the nation by visiting dentists and car rental agencies in Washington. While sitting in the dentist's chair, I noted a nice new shiny x-ray machine with with a label, "Quality instrument, made in Japan." It worked just fine. At the car rental agency, after returning with my third car, I angrily listed the broken components and vehicular failures. The clerk apologized, gave me the keys to a new, or that is, different car; however, he did not make any note of the malfunctions. As this was my third go around, I said, "Young man, why aren't you writing these problems down so that the cars can be repaired?" "Oh," said he, "It just ain't worth the trouble, if I tell them, they won't fix it anyway, it's a waste of time." I have thought this over and guess that is the trick by which we keep ahead.

Prologue

Before getting down to the topic of the evening, I would like to make some prefatory remarks. These comments may seem as much out of line as a funeral director making a speech at a wedding - I really must tell you that experimental science and engineering and technology are all in a terrible mess. The laboratories in our universities are in poor shape, equipment is outmoded or ancient, the staff to maintain and develop the equipment are vanishing, the opportunities to train people to do new things and to develop new technologies is getting to a low level. Our engineering faculties need most substantial enhancement and support and our science faculties need rejuvenation. These young people must have an opportunity to do something - a chance at bat, to seek new ideas and in creating new technologies. At the universities we will soon not be able to train people adequately in areas of modern technology. The severity of the problem is only hinted at in congressional testimony. The recent testimony¹ by Donald N. Langenberg, Deputy Director of the National Science Foundation until last week, only hinted at the national problem with regard to equipment. He even indicated verbally that possibly more studies were needed to find out what shape we are in. The bleak to desperate nature of the situation was not made evident in this testimony. The allusion by Dr. Edith Martin, the Deputy Undersecretary of Defense for Research and Technology, to substantial increments in support for enhancing experimental capabilities in the universities through ancillary DOD funding certainly does not address the issue. The total funds under consideration are very small and the largest fraction of them will go to equip laboratories which are already directly filling DOD needs. Minor investments in capital equipment for university research groups directly working on defense

¹Statements before the Subcommittee on Science, Research and Technology and the Subcommittee on Investigations and Oversight, Committee on Science and Technology, U. S. House of Representatives, September 30, 1982.

related projects does not address the issue. The support of our technical capabilities and training must be addressed with regard to the total national enterprise and not simply as an agent or resource for DOD needs. ¹ Serious steps must be taken to correct the problem of the state of experimental science and engineering. There is a need for both some enhanced funding and some real improvements in management. It may mean that there will have to be some minor but substantive revisions in the agreements between government and universities relating to the direction of resources into these areas. This could involve firmer commitments by both parties to the funding and operation of experimental facilities and capabilities. It may mean a revision in how funds are allocated by federal agencies and by universities. The universities must affirm and establish their role in experimental science and engineering, including the required technical support.² It means that industry must seek mechanisms for again participating in university-based fundamental research and in stimulating dialogue. It means that industry must recognize the importance of universities

²There are four critical questions which, I believe, should be raised. Two of them are to the funding agencies and two to the universities. An analogous set of questions could be directed toward the industrial sector with appropriate reformulation and wording.

To the federal agencies: 1) How does your agency, under usual (budgetary) circumstances, manage its resources in order to achieve a sound level of development of experimental capabilities in university laboratories? and 2) How does your agency, under usual circumstances, manage its resources in order to maintain adequate technical support of high-quality experimental facilities so that they are operational?

To the universities: 1) How does your university manage its resources in order to stimulate and maintain sound levels of experimental capabilities among the faculty and in the training of students on your campus? and 2) How does your university manage its resources in order to guarantee the presence of adequate support staff and shops to maintain laboratories and equipment already on hand at a properly functioning level?

The above questions should then be posed with regard to new funds. My opinion is that there is no real management scheme for existing funds and there will not be a scheme for new funds unless there is a recognition of the management problem and a conscious effort to establish a scheme.

in the education and development of students and support them at a substantial and not symbolic level. It means that both industry and government must appreciate the fact that the human resources in high technology are now very limited, and that our ability to design and deliver functioning complex systems on time and near estimated costs for the next decade are susceptible to serious question. We are now just shifting the same highly-skilled people around to do more difficult jobs. This pool of talent is dwindling and it must be enlarged and rejuvenated now and constantly. Therefore we must try harder to better find and support excellence and innovation; to be less broad and more selective in our institutions. The national and federal laboratories are not in the best of shape, but the universities where all of our people receive their fundamental training - they are close to disaster. It certainly means we are getting into trouble, and I want to leave you with that clear impression.

The Need for a Strategy

Carrying out scientific research in most areas involve both short-term, often spontaneous, investigations and long-term studies based on in-depth, technologically challenging efforts. These two approaches both require long-term commitments. The first requires a congenial working environment and institutions which foster and support inquiring intellectual activity. This has usually been achieved in universities through the independent activities of individuals or of small groups of scholars. Long-term institutional commitments are required to nurture and enhance capable and vigorous activity of this type. However, a clearly-defined strategy with a highly selective approach to areas of inquiry is neither desirable nor needed.

In contrast, the second category of research, which includes much of space science and high energy physics, does require a clearly-defined strategy.

A typical deep space mission may involve both substantial costs and the coordinated efforts of individuals corresponding to 10^4 high technology man-years. The time scale to carry forward such endeavors is five to ten years. The sudden inauguration of major new projects without previous development of the diverse scientific and technical capabilities leads to a substitution of lesser quality scientific work due to the absence of a capable cadre. There are several examples of this type. In consideration of various fiscal and manpower limitations, it is apparent that a strategy of scientific exploration is needed for this field and a selection of specific goals must be identified. This cannot be done rationally with a decision-making process that is controlled by an annual cycle unless it is guided by both a policy and a strategy. To carry forward such a system requires that there be a mechanism for obtaining a sound strategy for the science with a high degree of selection that establishes scientific values and priorities. It should contain a sufficient variety of alternatives with some measures of merit to permit selection and choice by the appropriate government bodies. Such a strategy and priority assignment was developed and accepted for the most part by both scientists and government officials with respect to planetary exploration. Some aspects of both the successes and the problems reflected in this experience may be relevant to strategy development and priority setting in other areas of science such as space science, high energy physics, astronomy and oceanography.

Members of the scientific community must establish both goals and priorities in their own fields of activity. Appropriate government bodies must consider such strategies on an ongoing basis (not de nova) during the decision-making process and must identify the long-term national scientific objectives that they desire to have achieved. They must then commit themselves

to those goals for a sustained period so as to carry forward regular and distinguished progress. The competition between different scientific disciplines with such a guidance system in operation may change the order in which advances are made, but the identification of goals and priorities would ensure that the agencies of government could commit resources to guarantee the proper state of readiness, and maintain the ongoing participation of outstanding scientists who could commit their careers to their fields. It might be possible to eliminate some of the annual panic and to permit fields of science to be worked on with the understanding that the average rainfall will support the crops for large scale enterprises which take long times and can only be done with Federal support in national programs. There must be a match between science and engineering time scales and the opportunities and aspirations of the young people who will do the work and make the future. This in my opinion requires relatively long-term planning and commitment. This can only be done by ameliorating the dislocations and the sudden stops and starts by using a reasoned guidance system. My thesis will be that for such areas, there should exist a long-term strategy which is used in annual budgetary and programmatic decisions. This plan should be public and provide a common resource for guidance in decision-making and should be in consonance with national policy. The time scale for such policy commitments must be about eight to ten years.

Further, the planning of a large scientific (and engineering) program must respect and take into consideration the fact that such enterprises require substantial segments of the public purse. As such, these enterprises must be of sufficient virtue and value to the society as to justify their pursuit. This principle should be respected by the scientific and engineering communities and taken into account in their deliberations.

More generally, what is needed is a strategy, available to all "parties," which is subject to review and rejection, but a part of which is accepted and used as a guideline in decisions. I believe such a common strategy would be of major assistance to all of the sectors of government and has often been separately requested by OMB and the Congress.

The plexus of decision-making in Washington lies between the elected officials of the White House and the Congress and those of the operating agencies. This is a sort of triangle which functions with vigorous, intensive and knowledgeable staff at each of the apices. OMB, OSTP, OTA and individual congressional staff and federal agency staff are the active agents. I believe that the addition of a general strategic plan to this triangle provides a fourth leg. It will not add stability but it may facilitate the decision-making process for the three apices.

Now there are historical examples of strategic documents used in policy-making over long times. I suppose a prime example is the Sibylline Oracles. There are a variety of them, all famous (in particular the one at Delphi) and some apochryphal. One of the key ones was the Cumaen Sibyl (by name Amalthea) who sold some prophecies to a Tarquin King. These advisory documents were so valued that a building was erected on the Capitoline Hill and a college of fifteen priests (the Quindecemviri) was founded to whom the care of the Sibylline Books were entrusted. These oracular works were updated with new prophecies and were regularly consulted by the Roman rulers until the major fires at the time of Sulla (84 B.C.) or Vespasian (69 A.D.). In order to do a good job and demonstrate their power of prediction, the Sibyls usually first wrote a good deal of the known history in the guise of prophecy and then went into the future. All of this is presented in a most veiled fashion.

We will more or less follow this approach. It is not evident that

either strategic or prophetic documents ought to require a college on Capitol Hill with fifteen resident priests to do the interpreting. However, the oracular statements must be generally consulted, discussed and evaluated by the concerned parties, possibly with the aid of visiting priests or consultants.

The Rain Dance: A Parable

A federal agency called together a set of science teams to evaluate and compare alternative projects in a field of science. Each team sought to bring forward the overriding merits of its particular interests in anticipation of the annual forthcoming programmatic and budgetary decision. An outside advisory committee was then brought together to analyze the scientific merits of the various possible programs that were under study inside the agency. While these activities were underway, internal agency management planning had been carried out in enough detail to outline a fully developed particular program at the \$500 million level; this planning had been done with a tight schedule and for a project with a tight absolute completion deadline. This particular project would be a key source of institutional support. After several months of in-house and external study, and while the outside group was meeting to prepare its final recommendation as to what program should be pursued, the director of the agency called the group's chairman to inform him that no project would be included in the agency's submission to the White House. The particular project that agency management had done detailed planning on would be delayed for many years. No other program in the field was selected that year. There was no commonly understood plan for what programs or projects should subsequently be selected.

Fact: IT DID NOT RAIN!

"Conventional Moral": THE RAIN DANCE MUST BE REPEATED.

An Example

In the following I will concentrate on NASA and aspects of the civil space program. I have a high regard for NASA and its enormous accomplishments and I will trust that my examples and remarks will not be mistaken for a critique of that Agency, but simply as examples of classes of problems where I have some knowledge and experience. I will use as an example the strategy for solar system exploration by the Space Science Board of the National Academy of Science. These reports provide, or were to have provided, a strategic approach to solar system exploration, an endeavor involving a total of several billions of dollars over a decade. It is reasonable to expect that this approach may be applicable to other areas.

Let me first quickly review some history. In July, 1969, the first Apollo mission to land on the moon and return to earth was successful. The completion of Apollo required that the long-term objectives of NASA be refocussed. The choice was to maintain institutional capabilities and support by choosing another major large scale objective. This was guided by the powers that had governed Apollo who then selected a manned space transportation system as the goal. This would maintain the presence of manned spacecraft in earth orbit by the U.S. This system was: (1) to provide, at low cost, high frequency launches of large payloads into low earth orbit, (2) to establish a space station, and (3) with the further capability (tug) of transporting substantial payloads from low earth orbit to geosynchronous orbit and beyond. This system was to serve as the transport system for the DOD and the civilian program including commercial and scientific payloads. In 1972, this program

was brought forward and President Nixon accepted it, but only after placing strict limits on the magnitude of the endeavor. The mythical "agreement" was to proceed on the descoped system with a constant budget in real year dollars. This resulted in substantial descoping of the final program and a low cost estimate. This system was based on a partially recoverable launch vehicle so that the individual launch costs at full operation were to have been low and economical relative to the use of expendable unmanned launch vehicles.³ In 1974, NASA closed its procurement and use of relatively high energy launch vehicles (Centaur) and sold the technology for the low energy system (Delta) to Japan. This course of action has been followed up until today.

The commercial and scientific aspects of the space program as enunciated in the 1958 Space Act have played a substantial but secondary role in determining policy. They both must use the available launch vehicles. More particularly, the whole space science program is federally based and must be a part of the total national civil space program. As a result of these circumstances, for the past ten years, all planning has been based on the presumed capability and schedule of the launches into low earth orbit and a transfer vehicle for the higher energy missions. We are marching along a path that was partially laid out over ten years ago. The high energy system, which was to provide a means of transfer to high-earth orbit and out-of-earth orbit, was not fully conceived nor committed to. The provisional system was called the Interim Upper Stage (IUS). This has become more certain and is now called the Inertial Upper Stage (IUS) or, if the Air Force's desires were fulfilled, a DOD High Energy Upper State (HEUS). A clear view of current status may be

³U.S. General Accounting Office, Report to Congress: Cost-benefit analysis used in support of Space Shuttle Program, 1972, Document #GA1.13:En 3/14; and U.S. General Accounting Office, Report to Congress: Analysis of Cost estimates for Space Shuttle and two determinate programs, 1973, Document #GA1.13:Sp 1/5.

found in the recent Congressional Record (September 15, 1982 H7020-7037) which contains a lengthy debate on the modified Centaur upper stage which may prove to be a compromise high energy upper stage for the "interim." This debate exhibits both confusion and consternation by all parties regarding both the immediate and long-term plans for the U.S. launch capability and the requirements in this area (both civil and military) for the long-term. The needs have been rather clear for a decade; however, their proper recognition and the commitment to their fulfillment vacillated widely. One Congressman said, "I hope that what we are seeing reflected in this debate today is a new indication of an awareness of the importance of better planning and better mission definition in the space program" (H7034). Some of the Congress even went so far as to ask for guidance from the White House! It is not clear that we are out of the woods in this area.

With this background, I will try to expose some efforts by the Space Science Board to develop a strategy for solar system exploration during that same period and which was intended to extend to 1990. When I served on the Board as Chairman of the Committee on Planetary and Lunar Exploration (COMPLEX), our first charge was to present an assessment of the possible choices of space missions to explore the outer solar system. At that time a spacecraft had just traversed the asteroid belt. There were some deep space missions that had been approved and were underway. We were asked to evaluate and select missions from a set of specific mission alternatives. This framework was considered to be too restrictive by the committee when it came to consideration of scientific objectives. There were also clear indications that the outcome of such deliberations would at best only result in a possible choice of one mission based almost exclusively on immediate institutional and budgetary considerations. In addition, with broader knowledge of the

circumstances as discussed below, it became evident that any evaluation of this type would be short-lived and of doubtful utility other than to support what one segment of the scientific community considered the next immediate step and which might not be supportable in the long-term by either funding, launch capability or good judgement. For years we had used a so-called "planning wedge" as a guide and constraint in order to illuminate the necessary choices. The planning wedge works like this: You have no money now, but next year (in the promised land) you will have an opening wedge of monies which may be allocated to the initiation of new activities in different fields. These are the new starts. The opening angle of the wedge is rarely well-determined. It is sort of like a Chinese fan that can be opened to the number of degrees of optimism that you have.

The committee chose to respond to this charge: by first establishing whether the field ought to be continued; by evaluating the status of existing programs; by identifying the key scientific issues; by assessing the types of instruments that would or should exist and their status. Finally, the committee sought to propose a long-term strategy and then to assess that strategy in terms of what the most reasonably anticipated scientific results might be. In addition, it was necessary for us to assess the (then) current and anticipated launch capabilities and the extent of a national policy in that area. It was well recognized that the budget would be very tight.

It was evident that the scientific exploration of the solar system was fully in accord with the policies and purposes enunciated in the National Aeronautics and Space Act of 1958, and with the sense of scientific exploration that had already been carried out with such distinction under that Act by NASA. This exciting research had been scientifically very rewarding and had made the United States the central figure in peaceful activity in space. With due

consideration of the high cost of planetary studies and in full consideration of the competition between different fields, it was the view of the full Space Science Board that "planetary exploration will be an area of major scientific importance over the next decade and that vigorous activity should continue in this field" (1975 SSB Report). This view has been affirmed repeatedly by the SSB.

The first problem that COMPLEX had to address was, how far is out? To what objects should we consider sending spacecraft as exploratory devices? It became evident that to initiate a mission when flight times become longer than six years, that in terms of professional and management experience, this was quite at the limit for a "primary" target. We even joked about hereditary experiments. So there was a reasonable limit as to how far out you wanted to go in that time frame. Of course, if a spacecraft keeps going far away, you certainly must keep acquiring the data in this newly-entered region of space.

The first major matter (settled last, of course) was to determine what the primary overall scientific goals were. This required substantial changes from what previous groups had written based on new knowledge and experience. (For example, a search for life in the solar system did not appear, but rather a study of the biochemical aspects was addressed.) The next matter was: Is there an order in which studies should be carried out in light of what has been achieved? This led to a definition of different levels of investigation. They were reconnaissance, exploration and intensive study. Reconnaissance was for a first look to see what was there, exploration was to establish on some firm basis of observation and understanding what was going on in the solar system in a deeper way, and the last was intensive study of special areas where there were well-posed questions - important questions which required answers.

After reviewing everything that we knew about the planetary body

objectives, we identified key scientific objectives and observations. They were separated into those which were of foremost importance - called primary objectives, which should be the principal basis for defining a mission - with the sense that the primary objectives should serve as the key in guiding the use of resources. Recommendations were made that this distinction be taken into account in mission management so that the primary scientific objectives were the governing factors.

Then the various mission techniques were assessed [fly-bys, orbiters, target entry (probes or landers) and sample return to earth]. The launch capabilities required for planetary exploration were assessed and reported on with due regard for the alternatives and the foreseen limitations. This included a recommendation that the direct launch capability be maintained until the development of an adequate shuttle upper stage. The desirability for a more standardized spacecraft with reduced weight and cost was emphasized.

A primer on the Space Science Board recommendations is included in the Appendix. The serious reader may wish to refer directly to the oracular documents.⁴ A concise summary of the Science of Planetary exploration may be

⁴Report on Space Science 1975, Space Science Board, Assembly of Mathematical and Physical Sciences, National Academy of Sciences, 1976; Strategy for Exploration of the Inner Planets: 1977-1987, Committee on Planetary and Lunar Exploration, Space Science Board, Assembly of Mathematical and Physical Sciences, National Academy of Sciences, 1978; and Strategy for the Exploration of Primitive Solar-System Bodies - Asteroids, Comets and Meteoroids: 1980-1990, Committee on Planetary and Lunar Exploration, Space Science Board, Assembly of Mathematical and Physical Science, National Academy of Sciences, 1980.

found in a report of the National Research Council.⁵

General Problems and Prognoses

I believe this shows that, under the right circumstances, the scientific community can filter, can assess what is innovative and what is likely to be important, what is of high scientific value. This community can indicate what, in general, is necessary to measure and observe. It can place things in priority and limit its goals to items of identifiable quality. It can do this

⁵This report presents a clear statement on the goals and constraints on planetary exploration:

"Direct exploration and study of the solar system demand a dedication of effort and resources only possible through a significant national commitment. The return, however, is comparably significant. The level of intellectual and scientific inquiry is not only an important measure of a people's vigor, but also a stimulus to progress in modern societies.

"Nevertheless, realistic constraints limit the level at which such activities can or should be conducted. These constraints are especially apparent in the exploration of planets and other, similar deep-space adventures. By their very nature, these activities involve many people, large amounts of time, and large expenditures. Spacecraft missions are limited in number and frequency, so that the empirical basis of solar-system science depends, to a large extent, on the technical and intellectual success of a relatively small number of measurement opportunities. It is important, therefore, to make optimum use of these limited opportunities, to ensure that exploration programs elucidate significant questions and that the quality of returned data makes a substantial contribution to our knowledge and understanding.

"In practice, the planning and execution of a planetary exploration mission takes five to ten years. This inhibits the normal conduct of scientific investigation, which relies on the ability to interact with experiments and to devise new measurements in response to the results. Planetary exploration inevitably reveals unanticipated and surprising facts that cause us to rethink our assumptions and that promote enthusiasm for a new generation of studies. It is important that exploration strategies chart a balanced course between responsiveness to new discoveries, continuous attention to major scientific questions, and coherence in planning on the roughly ten-year time scale necessary for designing and carrying out many of the exploratory missions. Generally, the ability to strike a balance in this kind of scientific exploration is enhanced by setting long-term goals for study. Substantial progress toward realization of these goals requires specific strategies of investigation that should rest securely on our current knowledge of solar-system bodies and should aim at testing our ideas about their behavior, origin, and evolution", from The Science of Planetary Exploration, Eugene H. Levy and Sean C. Solomon, The National Research Council, National Academy of Sciences, Washington, D.C., 1979.

in an environment that is reasonably constrained but which it conceives of as reasonably benign. An environment in which it has reason to believe that its general advice is considered and respected and where there is hope of real achievement. Under these circumstances, the community will, in my opinion, subject itself to national communal discipline, give good advice and provide regular and distinguished advances.

When the first strategic report was written, we were under the gun of many pressures, scientific and otherwise. There are the internal pressures within a federal agency among its various components. There were, in addition, institutional pressures by federal centers with a spare spacecraft or one readily available for use, a craft which could be directed to a new target with the same "old" instruments. In such cases, there was an existing constituency of scientists connected with the institution. As a result, if an objective exists with a launch window not too distant in time, then a rain dance could be provoked with lots of momentum using science and "low cost" and a short shelf-life to sell the mission. This would give direct and immediate support to the federal institution. Support from industries directly connected with the mission hardware could also be a driving force. The support of the constituent scientific community could be counted upon. However, all of these forces could be balanced by broader scientific judgement and approval with a general submission by the community to a strategic approach - when people believed that something positive would happen. In the absence of positive commitment, this self-imposed discipline may dissipate into a cacophany of different special groups arguing for some particular crumb of action. In many cases, this would provide neither high-quality science nor would it contribute to the fundamental vitality of the field. A public feeding by a sudden release from the Emperor's granary under special pressures has rarely addressed the problem of public

health and sustenance.

What must a scientific strategy contain? It must reflect long-term national goals and desires; it must represent limited scientific goals of the highest importance; it must reflect consideration and assessment of the national capabilities required to achieve these goals; it must establish priorities and a sequence for interrelated activities; it must establish a baseline of quality commensurate with achieving the goals; and lastly, it must be sufficiently resilient so that it can continue to be useful when there are short-term shifts in the annual budget cycle. A strategy document must be subject to a regular reassessment (including the need for these goals) of the degree and quality of fulfillment which has been achieved and the priorities which have been given. Last but not least, it must always respect the major and crucial role played by new contributions from small and independent groups of scholars.

It cannot be a shopping list. The scientific community must adequately filter and select those critical areas of significance and not take the view that all objectives are equal. It cannot be a document for managing a federal agency. It must not be treated as a shopping list by the White House, the Congress or the cognizant Agency. It must not be treated as a shopping list by OMB. It cannot change every year. It cannot be ignored in the annual budget cycle because it is a long-term plan.

What are the dangers of long-term planning if the above code of deportment were followed?

They are many. One is that that any concurrence based on the strategy leads to a budgetary baseline turning into a ceiling (as in the case of high energy physics). There would thus be no opportunity to expand to larger goals if a baseline were set. Another is the possibility that scientific innovation

would be strangled due to the general plan, causing changes and new ideas to be inhibited or frozen out. Perhaps the "promising land" of a strategy would enhance the chance that commitments to new starts would be deferred indefinitely and that there would be no institutional memory within the government to remember and carry forward the principles of the plan; or perhaps the strategy may generate pressures to greatly expand the resources required. Often the appearance of new policies possibly based on non-understood economic guidelines causes the national goals and policies in science and technology to be gravely altered in a major way; a strategic plan from a fourth party could usurp the authority of the directors of cognizant agencies and the Congress. Finally, the strategy could become a means of providing an institutional underwrite and a sump for federal funds independent of real national needs and goals. Some of these dangers can be easily deflected, others are most difficult and cannot be readily answered.

If the approach were adopted, a major question is - who would have the resident authority for the strategy, and how long should it last? In my view this strategy should, like the Sybilline prophecies (or songs, as they were called), be documents available to all parties. They should not, of necessity, require the forming of a college on Capitol Hill to read and understand them, but rather the authors or Sibyls (and successor Sibyls) could be called upon for consultation so that interactive discussion could take place. I do not believe that the strategies can be completely resident in a single part of government because the institutional pressures and conflicts would be too strong. A scientific strategy prepared for or by a single institution would be looked upon by others as a reflection of the special interests of that institution. Who would make up the strategy? The smartest and most knowledgeable people in the country with interest in the field and some whom

are experts in the field, all with a concern for national policy and a willingness to make judgements. I believe the desired approach should be for a strategic document to be prepared by an ad hoc body over a period of one to two years, separately from the immediate budget cycle and requested by all of the three apices of government. The agreement to request and accept the document and the frequent consultation of the document would be sufficient to guarantee its utility. The board that provided the document could always be called upon to discuss and illuminate its product.

In closing, I would like to return to the story of the Cumean Sibyl. She was described as a weird prophetess who lived in a dark cave, in the center of which was a flaming brazier. She had nine books. When King Tarquinius Priscus came to visit her, she offered them to him for 300 gold pieces. The King laughed and spurned them because of the greatness of price. Amalthea burned three of them and for the rest asked the same price. But King Tarquinius all the more thought her mad. She again destroyed three and persisted in asking the same price. The King was moved and bought the remaining three for 300 pieces of gold. The books were then moved to what would be the Capitoline Hill. As I indicated earlier, they were often consulted. However, after some emperors found the prophecies to be in conflict with their desired course of action, they were then kept secret and could only be consulted, if at all, by the fifteen priests. At such times they were undoubtedly supplemented by new prophesies by other oracles that were made readily available and more in accord with the emperor's policies.

For some short time (a few decades), the United States owned the earth's "air space." Then for a couple of decades we owned the earth's outer space - physically and sort of legally. We must now share air space and outer space physically and legally. There are questions that have been, or could have been

asked before and must be asked now. What "ports" can we afford to lose or, more positively, in terms of multi-decade U.S. strategic plans, what ports of air and space (and frequencies) and what seas of air and space do we require as a national power? How must we regulate our internal capabilities and services so as to provide the basic high-quality transportation systems of commerce (both air and space)? What and how do we maintain a strong position in activities and places - spaces in a broad world-wide sense that is consonant with long-term national goals and with a participation in a world of other nations - considering competition, cooperation and capability in this matter? What posture and commitment must we make in order to maintain a role commensurate with our basic national needs and desires over a long time? How do we include this as a part of our foreign policy as referred to in the recent statement of national space policy?⁶ We must also apply this question in the areas of commerce, science and technology. This is also referred to in that policy document. However, the commitment to fulfill this policy in the civil area has not been and is not now apparent. While the issues of both National Security and the Civil Programs are identified in the National Space Policy Statement, there is a grave possibility that the civil program will simply serve as an underwriter of the security and military programs without a vitality of its own. This will surely result in the civil program being subsumed by the military. A balance in these areas will need immediate redress. We must seek innovative ventures which expand and develop our capabilities and provoke their application. The rising sea level of technology requires that our performance must rise to meet it or we will be inundated.

A typical example of the rising level of technology and of competition

⁶The White House Fact Sheet, National Space Policy, July 4, 1982, Office of the White House Press Secretary.

and cooperation is in the area of communication satellites. About 500 million dollars have been contracted by U.S. firms to Arienne launches. The new Intelsat VI with 2.1 kW prime power is under development by Hughes Aircraft Company in a consortium with six other nations. The contract was awarded in 1982. It is a 700 million dollars fixed price contract for five spacecraft. The first launch is scheduled for late 1985 and should go at three per year. It will require three to six thousand high-technology man-years to produce. These new generation satellites may be launched by either STS or Arienne. We are in an international world involving high technology and must act accordingly. We do not own the only launching system in town.

Now that this is over I must tell you of the wonderful story by Don Marquis about Archie and Mehitabel.⁷ Archie was a cockroach and Mehitabel a libertine alley cat. In a story titled "statesmanship", a group of cockroaches are gathered around to discuss their plight - a shortage of breadcrumbs from the human types - out of this crowd a well-spoken fellow stood up and enunciated how these cockroaches could improve themselves. "go to the country and become grasshoppers if living in town is getting too difficult for you," he said. When Archie asked him, "how are cockroaches to become grasshoppers?" the fellow replied

i have outlined
the general scheme for your
salvation so do not ask
me to settle the mere
details i trust to you for
that you must do
something for yourself
we philosophers cannot do it all

⁷From, the lives and times of archy & mehitabel, Doubleday & Company, Inc., Garden City, New York, 1933, pp. 466-468.

APPENDIX

A Primer on the Space Science Reports on Planetary Exploration .

For the period 1975-1985, the approach for investigation of the outer solar system was essentially as follows. The committee adopted the view that it would be useful to present a series of goals that are independent of specific missions. Consequently, they omitted reference to specific missions in order to provide a more flexible format for program planning. However, they emphasized the urgency of initiating deep-space missions even on a long-time basis because of the restrictive launch windows, the lead times required for system development, and the long flight times. They thus responded to the request of the Space Science Board not in terms of recommending specific missions, but rather by presenting a strategy and the goals that should be accomplished over a time frame of a decade and emphasized that the urgency for action is not removed by this approach. The committee defined the primary scientific goals and classified the levels of study and established and enumerated specific scientific objectives and observations. They identified the key physical characteristics of the planets which are obtainable only from instrumented spacecraft that encounter these bodies. The scientific objectives consisted of primary objectives that are the principal basis for defining the mission and secondary objectives that greatly enhance the value of the mission. The primary objectives should be the governing factor and were to serve as the key in guiding the use of resources. The secondary objectives were not considered as parenthetical but as lesser priority insofar as spacecraft design and mission requirements are concerned.

The techniques used in deep space missions were identified and a sequence was outlined indicating where more complex mission techniques could be reasonably initiated in the context of an overall strategy. As a result of the

successful reconnaissance program carried out by NASA, the committee recommended that there should be a shift in emphasis toward systematic exploration with emphasis on selected planets, but with some continuing level of reconnaissance where our ignorance is greatest and where the opportunity of new discovery is large. They identified limited goals of the highest importance, which should be achieved within the decade and which can only be obtained with planetary encounters by spacecraft.

They recommended that:

1) A more active program be developed using earth-based and earth-orbital systems for planetary observations to complement and aid deep-space missions;

2) A significant effort in the planetary program over the next decade be devoted toward a study of the outer solar system;

3) As Jupiter is the largest planet of the solar system and demonstrates a wide range of dynamical and physical behavior, it should be the primary object of outer-solar-system exploration for the period 1975-85. In particular, determination of the chemical composition of the outer planets and satellites is considered an essential component if there is to be a significant advance in our understanding of solar-system evolution;

4) As the flight time to Uranus is about six years, it represents the most distant planetary object that was considered a worthy goal for reconnaissance for the next decade.

They considered the study of comets to be of major importance and recommended that efforts be directed toward establishing the nature and quality of scientific experiments that could yield important data in a comet encounter so that the role of a comet mission can be properly assessed.

In consideration of these scientific goals they defined the primary

objectives in the exploration of Jupiter and its satellites for the period 1975-1985 in order of importance to be (1) determination of the chemical composition and physical state of its atmosphere, (2) the chemical composition and physical state of the satellites, and (3) the topology and behavior of the magnetic field and the energetic particle fluxes, and (4) recommended that NASA vigorously pursue the study and development of entry-probe techniques and scientific instruments for the purpose of measuring the chemical composition, partial isotopic composition, temperature, and pressure down to a level of approximately 100 bars for use in the atmospheres of Jupiter and Saturn.

They also recommended that NASA promptly initiate the study and development of remote-sensing instruments to be operated from flyby or orbiter platforms to carry out such determinations of the chemical composition and state of icy and rocky satellites.

In considering launch capability and the primary objectives, they stated: The sequence given above may be too great for a single mission. In this case, the goals could be fulfilled by two missions, each having payload requirements that are readily achievable.

They recommended that basic research on the development of new instrumental capabilities be carried forward on a broad front and in a vigorous manner, consistent with the overall strategy for planetary exploration but without overriding regard for specific missions and that adequate data reduction and analysis should be carried out for a significant period beyond the flight mission.

For the period 1977-1987 the approach recommended for the inner solar system was as follows:

1. Propose a long-term science strategy and goals for exploring the inner solar system;

2. Assess the key program elements that support and implement the strategy;

3. Re-examine the role of U.S.-U.S.S.R. cooperation in the strategy for planetary exploration;

4. Evaluate the status of existing planetary and lunar programs currently under way; and

5. Assess the science content of potential missions in terms of the existing strategy and defined scientific goals. With regard to the U.S.-U.S.S.R. cooperation (Item 3), they recommend that an effective mechanism be established by the United States and the Soviet Union for:

a) The establishment of active open working relationships between Soviet and American scientists so as to discuss the scientific problems and to understand the nature and quality of the scientific experiments that might be carried out;

b) The mutual identification of important scientific goals that are of a substantial nature;

c) The early reciprocal communication between the United States and Soviet Union of the specific scientific objectives, both current and planned, in the area of planetary exploration;

d) The establishment of concurrent commitments by both nations to achieve the goals in selected areas of mutual interest utilizing the agreed-upon scientific objectives;

e) The coordination of missions to a planet with full disclosure of mission planning and objectives so as to optimize the scientific contributions of both nations;

f) The establishment of true cooperation between both nations through a

reciprocal arrangement that allows the incorporation of significant scientific experiments by both parties on the same spacecraft; and

g) The timely communication and exchange of information both during and after completion of a mission.

With regard to other nations, COMPLEX reported that there was an element of risk for any nation who may wish to cooperate with the United States in space exploration, because of the process by which space missions are defined and approved. Those nations that are cooperating with the United States to date have accepted this risk, since access to the U.S. launch capability has been a key element. [Note added: From considerations of both alternate launch capability (European and Soviet) and of the difficulties in obtaining sound commitments from the U.S. with regard to government ventures (for example the recent cancellation of the U.S. half of ISPM), it appears that the European community will not continue to accept the risk of doing space science with the U.S. in the present mode.]

They recommended that NASA adopt a policy that places the planning and development of launch capabilities for unmanned space exploration in a 10 to 20-year perspective and that focusses on the requirements of long-term objectives.

COMPLEX recommended that the triad of terrestrial planets, earth, Mars, and Venus, should receive the major focus in exploration of the inner solar system for the next decade. The ultimate goal in this exploration is to understand the present state and evolution of terrestrial planets with atmospheres. The comparative planetology of these bodies is a key to the understanding of the formation of the earth, its atmosphere and oceans, and the physical and chemical conditions that lead to the origin and evolution of life.

To accomplish the scientific objectives, they recommended that intensive

study of Mars by spacecraft be achieved within the period 1977-1987. The primary objectives in order of scientific priority for the continued exploration of Mars are (1) the intensive study of local areas (a) to establish the chemical, mineralogical, and petrological character of different components of the surface material, representative of the known diversity of the planet; (b) to establish the nature and chronology of the major surface-forming processes; (c) to determine the distribution, abundance, and sources and sinks of volatile materials, including an assessment of the biological potential of the Martian environment, now and during past epochs; (d) to establish the interaction of the surface material with the atmosphere and its radiation environment; (2) to explore the structure and general circulation of the Martian atmosphere; (3) to explore the structure and dynamics of Mars' interior; (4) to establish the nature of the Martian magnetic field and the character of the upper atmosphere and its interaction with the solar wind; (5) to establish the global chemical and physical characteristics of the Martian surface. The committee also noted a major change with regard to the role of life-seeking experiments for Martian exploration.

The primary objectives of the exploration of Venus during the period 1977-1987, beyond the Pioneer Venus mission, in order of importance, are (1) to obtain a global map of the topography and morphology of its surface at sufficient resolution to allow identification of the gross processes that have shaped the surface, (2) to determine the major chemical and mineralogical composition of the surface material, (3) to determine the concentrations of photochemically active gases in the 65-135 km altitude region, and (4) to investigate the physical and chemical interactions of the surface with the atmosphere and the composition and formation of atmospheric aerosols.

It was the view of the Committee that continued scientific exploration

of Venus offers an ideal arena for cooperation between the Soviet Union and the United States and recommended that cooperative efforts be undertaken according to the precepts set forth earlier in this report.

With regard to studies relating to the origin of the solar system and the primitive bodies (asteroids, comets and meteoroids) for the period 1980-1990 they reported as follows:

Therefore, COMPLEX views reconnaissance and initial exploration of comets by spacecraft encounter as a goal of high priority and recommends that it be accomplished in the period 1980-1990.

Therefore, COMPLEX views reconnaissance and initial exploration of asteroids by spacecraft as a goal of high priority and recommends that it be undertaken within the next decade and a half.

The primary scientific objectives of comet exploration during the next decade are, in order of priority:*

1. To determine the composition and physical state of the nucleus (determination of the composition of both dust and gas is an important element of this objective);
2. To determine the processes that govern the composition and distribution of neutral and ionized species in the cometary atmosphere; and
3. To investigate the interaction between the solar wind and the cometary atmosphere.

The primary scientific objectives for the exploration of asteroids are, in order of priority:*

- 1) To determine their composition and bulk density;

*Note: For both comets and asteroids, there was some substantial attention paid to the modes of exploration, concluding that rendezvous encounters were needed to address adequately the primary scientific objectives. Fly-bys could play a complementary role in the investigations of comets.

2) To investigate the surface morphology, including evidence for endogenic and exogenic processes and evidence concerning interiors of precursor bodies; and

3) To determine the internal properties, including states of magnetization of several carefully chosen asteroids selected on the basis of their diversity.

Because of the continuing fundamental impact of meteorite studies on the basic scientific goals enunciated in this report and their intimate relation to the study of asteroids and comets, COMPLEX recommended that a vigorous program of laboratory and theoretical investigations of meteorites be maintained.

COMPLEX considered that continued and intensive study of meteoroids is an essential and complementary element in the overall program of primitive-body investigations.

THE WHITE HOUSE

WASHINGTON

July 9, 1991

Dear Jerry:

Many thanks for sending me your 1983 talk **Setting Scientific Priorities: It Can Be Done**. I realized after I had read through this that you must have sent me a copy back about eight years ago because many of the passages had stuck firmly in my mind. It was an excellent statement then and it remains one now.

We are working manfully to try to resuscitate NASA's space science budget but I must say that there is a major misconception in the community to the effect that the competition is between space and science, or between big science and little science when, in fact, it is between investments in the future and immediate consumption.

If the scientific community becomes identified as one of the major causes of the defeat of the space station in the Senate, there are enough space buffs in the Administration and in the Congress to make my job exceedingly difficult in terms of trying to maintain the positive funding trends for science and technology that have existed during the past two years.

I was sorry that I missed the trip to CalTech when the President was out there for commencement but look forward to being there later in the year.

With warmest best wishes,

Sincerely yours,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

Professor J. G. Wasserburg
California Institute of Technology
Division of Geological and Planetary Sciences 170-25
Pasadena, California 91125

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TO: DR. D.A. BROMLEY

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AS THE NEW CHAIRMAN OF THE NUCLEAR REGULATORY
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OFFICE OF THE
DIRECTOR

The Honorable D. Allan Bromley
Science Advisor to the President
Office of Science and Technology Policy
Washington, D. C. 20506

Dear Mr. Bromley:

I would like to take this opportunity to inform you of the President's designation of Ivan Selin as the new Chairman of the Nuclear Regulatory Commission (NRC). Former Chairman Kenneth M. Carr's term ended on June 30, 1991. Correspondence to the Chairman, NRC, should now be addressed to Chairman Ivan Selin, U.S. Nuclear Regulatory Commission, Washington, D. C. 20555.

Thank you for your assistance in this matter.

Sincerely,

Samuel J. Chilk
Secretary of the Commission

"CORRESPONDENCE TRACKING"

TYPE: Information

DOCUMENT NUMBER: 9121966

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: BROZ, DR. Joseph S.: 1991-1992 WHITE HOUSE FELLOW

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/02/91

SUBJECT: DR. BROZ ACCEPTS DR. BROMLEY'S OFFER TO BECOME DR.
BROMLEY'S SPECIAL ASSISTANT AND LOOKS FORWARD TO
FINALIZING ARRANGEMENTS FOR A SEPTEMBER 3, 1991
STARTING DATE.

DIRECTORATE
ASSIGNED:

STAFF
ASSIGNED:

ACTION
REQUIRED:

STAFF
ACTION:

SENDER'S DUE DATE:

OSTP DUE DATE:
DATE COMPLETED:

STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
ADMINISTRATION

WHITE HOUSE TRACKING #:

CONTACT PERSON:
PHONE:

EXT:

REMARKS:

OSTP RECEIVED: 07/03/91
DEPT RECEIVED:

FILE: *personal* P-BROMLEY CORRESPONDENCE

UNIVERSITY OF CALIFORNIA, SAN DIEGO

UCSD

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO



SANTA BARBARA • SANTA CRUZ

INSTITUTE FOR PURE AND
APPLIED PHYSICAL SCIENCES, 0075

DIRECTOR
H. SUHL

ASSOCIATE DIRECTORS
G. ARRHENIUS
S.C. LIN

9500 GILMAN DRIVE
LA JOLLA, CALIFORNIA 92093-0075

July 2, 1991

Dr. D. Allan Bromley
Science Advisor to the President
Director of the Office of Science
and Technology Policy
The White House
Washington D.C. 20500

Dear Dr. Bromley:

Pursuant to our meeting of June 20, I am deeply honored to accept your generous offer to become your Special Assistant. In view of my background and strong interest in the functions performed by the OSTP, I feel that this assignment will allow me to make a positive contribution to the country while at the same time greatly expanding my knowledge of governmental processes at the highest level.

I sincerely thank you for this most exciting opportunity and look forward to finalizing my arrangements with your office for a September 3, 1991 starting date. With sincere regards, I remain,

Very truly yours,

Dr. Joseph S. Broz
1991-1992 White House Fellow

JSB/jc

Dr. Joseph S. Broz
INSTITUTE FOR PURE AND
APPLIED PHYSICAL SCIENCES, 0075
UNIVERSITY OF CALIFORNIA, SAN DIEGO
9500 GILMAN DRIVE
LA JOLLA, CALIFORNIA 92093-0075

Dr. D. Allan Bromley
Science Advisor to the President
Director of the Office of Science
and Technology Policy
The White House
Washington D.C. 20500

THE WHITE HOUSE
WASHINGTON

July 9, 1991

Dear Joseph:

I am delighted, as are all my colleagues, that you have decided to accept our offer to spend a year as White House Fellow and as my Special Assistant here in OSTP. All of us are looking forward with real enthusiasm to your arrival on September 3rd. I shall have my Chief of Staff, Ken Yale, get in touch with you to make sure that we have taken care of all the necessary preliminaries so that you can hit the ground running on your arrival.

Again, let me say how personally pleased and delighted I am that you have decided to join us.

With all best wishes,

Sincerely yours,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. Joseph S. Broz
Institute for Pure and Applied Physical Sciences
University of California, San Diego
9500 Gilman Drive
La Jolla, California 92093-0075

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION DOCUMENT NUMBER: 9121946
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: WILLS, George S.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/01/91

SUBJECT: RE: DR. BROMLEY'S SPEECH AT DON LANGENBERG'S
INAUGURAL LUNCHEON.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley
Steve Olson

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

CLOSED

OSTP RECEIVED: 07/01/91
DEPT RECEIVED: FILE: ^P BROMLEY ^{perusal} CORRESPONDENCE

1946

George S. Wills
36 South Charles Street
Baltimore, Maryland 21201

RECEIVED

91 JUL 1 PM 2:31

June 27, 1991

OFFICE OF THE
DIRECTOR

Dr. Allan Bromley
Assistant to the President for
Science and Technology
Old Executive Office Building
Washington, D.C. 20506

Dear Allan:

Just a note to say that I thought your talk at Don Langenberg's inaugural luncheon was first rate. I found myself "back in the classroom" - taking serious notes! Your synthesis of research and development issues affecting universities, private industries, and Federal laboratories, was as clear a policy exposition of this complex set of problems, as I have heard. You were the perfect speaker for this occasion.

Having known you for so many years, I found it a pleasant surprise that we both share a friendship and admiration for Don Langenberg. In the short time that he has been Chancellor of the University of Maryland System, he has really given a sense of strong and stable direction to a huge educational network. His style is just what this large University of Maryland System needs at this time. He is giving solid, thoughtful and knowledgeable direction - all of us who have had the opportunity to work with him. I believe that the Maryland region, including Washington, D.C. is fortunate to have him here. I am sure that his advise and counsel will be drawn upon by you - that will be a good thing for both the University of Maryland and the Federal government.

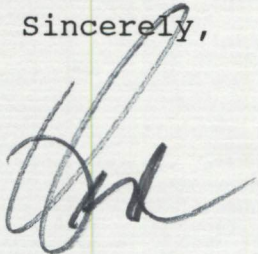
Again, thanks for sharing your busy schedule - and, particularly your good insights, with us yesterday.

I look forward to that meeting in September - and will be in touch with Marion by mid-July to target some date options for the session. As promised, I conveyed, by telephone, your good wishes to Dan Colussy. He is doing a good job and bringing UNC into strong focus - as an aviation services company.

Dr. Allan Bromley
June 27, 1991
Page 2

All the best and look forward to seeing you in the Fall.

Sincerely,

A handwritten signature in dark ink, appearing to be 'G. S. Wiis', written in a cursive style.

George S. Wiis

GSW/tw

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION DOCUMENT NUMBER: 9122002
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: SCHMOKE, Kurt L.: MAYOR FOR THE CITY OF BALTIMORE

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 07/01/91

SUBJECT: RE: THE LUNCHEON FOR DON LANGENBERG

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

OSTP RECEIVED: 07/08/91
DEPT RECEIVED:

FILE: ^p BROMLEY ^{personnel} ~~CORRESPONDENCE~~

CITY OF BALTIMORE

KURT L. SCHMOKE, Mayor



2002
OFFICE OF THE MAYOR

250 City Hall
Baltimore, Maryland 21202

91 JUL 8 A 8: 29

OFFICE OF THE
DIRECTOR

July 1, 1991

Dr. Allan Bromley
Science Advisor to the President
Old Executive Office Building
17th and Pennsylvania Avenue, NW
Washington, DC 20500

Dear Dr. Bromley:

It was good to see you again at the luncheon for Don Langenberg. I am delighted Dr. Langenberg has taken the helm of The University of Maryland, knowing of his commitment to a university's role in urban centers.

I wanted to thank you for your kind words about Baltimore and your understanding of the vision we are pursuing here. We have shown in Baltimore how public-private partnerships can transform urban decay into a vibrant revitalized city center. That same partnership has now developed the Columbus Center for Marine Research & Exploration and is providing the foundation for the strengthening of Baltimore's human resources.

I hope we will have an opportunity to work with you to "enhance America's technology leadership."

All the best to you.

Sincerely,

Kurt Schmoke
Mayor

KLS:mb

Working together, we made it happen!
Baltimore Awarded 1991 All America City

"CORRESPONDENCE TRACKING"

TYPE: INFORMATION

DOCUMENT NUMBER: 9121940

ORIGINATOR: 02

STATUS C

DIRECTORATE STATUS

FROM: THE DUBERSTEIN GROUP, INC.

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: June 1991

SUBJECT: ANNOUNCEMENT THAT NICHOLAS E. CALIO JOINED THE FIRM
AS VICE PRESIDENT OF THE DUBERSTEIN GROUP, INC.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

CLOSED

OSTP RECEIVED: 07/01/91
DEPT RECEIVED:

FILE: ^{P-} BROMLEY PERSONAL

THE DUBERSTEIN GROUP, INC.

IS PLEASED TO ANNOUNCE THAT

NICHOLAS E. CALIO

PREVIOUSLY DEPUTY ASSISTANT TO THE PRESIDENT
FOR LEGISLATIVE AFFAIRS
THE WHITE HOUSE

JOINED THE FIRM AS
VICE PRESIDENT

SUITE 350
2100 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, D.C. 20037
(202) 728-1100

JUNE 1991



Hon. D. Allan Bromley
Assistant to the President
for Science and Technology
The White House
Washington, DC 20500

RECEIVED
JUL 1 1991
DIRECTOR

01 JUL 1 1991 12:31

RECEIVED



"CORRESPONDENCE TRACKING"

TYPE: INFORMATION DOCUMENT NUMBER: 9121850
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: SCHRIESHEIM, Alan: ARGONNE NATIONAL LABORATORY

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/20/91

SUBJECT: A SLIVER FROM THE TRUE NUCLEAR CROSS.

DIRECTORATE STAFF
ASSIGNED: ASSIGNED:

ACTION STAFF
REQUIRED: ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: STAFF DUE DATE
DATE COMPLETED: DATE COMPLETED/DEPT:

COPIES TO: Damar Hawkins
D. Allan Bromley

WHITE HOUSE TRACKING #: CONTACT PERSON:
PHONE: EXT:

REMARKS:

OSTP RECEIVED: 06/24/91
DEPT RECEIVED: FILE: BROMLEY *P- personal* CORRESPONDENCE



Alan Schriesheim
Director and Chief Executive Officer

Argonne National Laboratory
9700 South Cass Avenue
Argonne, Illinois 60439
(708) 972-3872
FAX (708) 972-3679

9121850
~~RECEIVED~~

31 JUN 24 P12:27

OFFICE OF THE
DIRECTOR

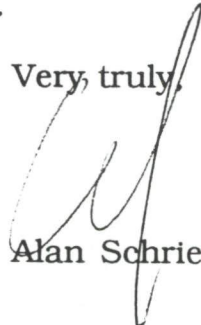
June 20, 1991

Dr. D. Allan Bromley
Executive Office of the President
Office of Science and Technology Policy
Old Executive Office Building
Washington, DC 20506

Dear Allan:

Enclosed, as I promised you, is a sliver from the True Nuclear Cross. I am pleased that you find it a fitting bit of memorabilia. To make it even more useable, I am sending you the desk-pen model, which you may consider a down payment on your postponed colloquium appearance at Argonne.

Very truly,


Alan Schriesheim

AS:Hj
Enc.

THE WHITE HOUSE
WASHINGTON

July 9, 1991

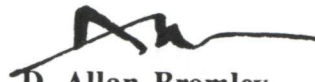
Dear Alan:

I notice that you have become CEO in addition to Director which I gather represents simply more legal responsibility rather than more pay. I believe it is known in the trade as "psychic reward."

I was absolutely delighted to get the piece of the CP-1 reactor graphite in such an attractive format. I will indeed consider it a down payment on my postponed colloquium appearance and will be happy to arrange to come out to Argonne definitely sometime this fall when it is convenient for both of us. I am looking forward to the opportunity.

Again, my warmest thanks, and thanks also for taking the time to be with us in the Soviet Union. I hope that your return was relatively painless.

Sincerely yours,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

Dr. Alan Schriesheim
Director and Chief Executive Officer
Argonne National Laboratory
9700 South Cass Avenue
Argonne, Illinois 60439

Barbara,

Do we want to give out
our tax number for
something like this?
Sounds like we'll just
get junk. Jim

Document Originally
Attached to
Following Page

"CORRESPONDENCE TRACKING"

TYPE: ACTION
ORIGINATOR: 02

DOCUMENT NUMBER: 9121812
DIRECTORATE STATUS

STATUS I

FROM: HARRISON, R. BRYAN: ASSOCIATION OF AMERICA UNIVERSITIES

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/18/91

SUBJECT: REQUEST TO COMPLETE THE ATTACHED POST CARD TO
DETERMINE OUR ACCESSIBILITY VIA ELECTRONIC MAIL AND
FAX.

DIRECTORATE
ASSIGNED: DIRECTOR'S OFFICE

STAFF
ASSIGNED:

ACTION
REQUIRED: AS APPROPRIATE

STAFF
ACTION:

SENDER'S DUE DATE: 07/08/91
OSTP DUE DATE: 07/04/91
DATE COMPLETED: STAFF DUE DATE
DATE COMPLETED/DEPT:

COPIES TO:

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

OSTP RECEIVED: 06/20/91
DEPT RECEIVED:

FILE: *P-DAB - Personal*
~~BROMLEY CORRESPONDENCE~~

No action necessary

A
A
U

Association of American Universities

One Dupont Circle • Suite 730 • Washington, DC • 20036 • 202-466-5030 • fax 202-775-9242

RECEIVED

91 JUN 20 P 4: 06

June 18, 1991

OFFICE OF THE
DIRECTOR

Dr. Allan Bromley
Assistant to the President for Science and Technology
Office of Science and Technology Policy
358 Old Executive Office Building
17th Street and Pennsylvania Avenue, NW
Washington, DC 20506

Dear Dr. Bromley:

With the aim of providing you with the timeliest possible information, AAU has updated its communications. Having enhanced our fax capability, we now are attempting to establish an electronic mail connection with your office.

The attached prepaid post card surveys your accessibility via electronic mail and fax. Your prompt response will enable us to determine those networks and services to which we should develop gateways from our own system, and the priorities to assign to their implementation.

Thank you for your assistance. If you are unsure of the information requested, or have other questions or comments, please feel free to contact me.

Sincerely,

Bryan Harrison

R. Bryan Harrison

Electronic mail and other online services by which you are accessible:

Service	Your Address/ID
---------	-----------------

_____	_____
_____	_____
_____	_____

Your internal, local office electronic mail network, if any:

cc:Mail InBox MicroSoft Mail QuickMail _____

Your fax number: Handling instructions to appear on fax cover sheet:

_____	_____
-------	-------

The name and phone number of a contact if more information is needed:

The return of this
information by
July 8, 1991
would be appreciated.

Thank you.

Bryan Harrison
Systems Analyst
Association of American Universities
One Dupont Circle
Suite 730
Washington, DC 20036-1189



Dr. Allan Bromley
Assistant to the President for Science and Technology
Office of Science and Technology Policy
358 Old Executive Office Building
17th Street and Pennsylvania Avenue, NW
Washington, DC 20506



Dr. Allan Bromley
Assistant to the President for Science and Technology
Office of Science and Technology Policy
358 Old Executive Office Building
17th Street and Pennsylvania Avenue, NW
Washington, DC 20506



Bryan Harrison
Systems Analyst
Association of American Universities
One Dupont Circle
Suite 730
Washington, DC 20036-1189

"CORRESPONDENCE TRACKING"

TYPE: ACTION DOCUMENT NUMBER: 9122151
ORIGINATOR: 02 STATUS C DIRECTORATE STATUS

FROM: SIMPSON, SCOTT: CANNON

TO: DR. D.A. BROMLEY

DATE OF
CORRESPONDENCE: 06/10/91

SUBJECT: REQUEST TO ATTEND A SMALL DINNER PARTY TO DISCUSS
THE SSC SITUATION

DIRECTORATE STAFF
ASSIGNED: D. Allan Bromley ASSIGNED:

ACTION STAFF
REQUIRED: DIRECT REPLY ACTION:

SENDER'S DUE DATE:
OSTP DUE DATE: 06/24/91 STAFF DUE DATE
DATE COMPLETED: 07/09/91 DATE COMPLETED/DEPT:

COPIES TO:

WHITE HOUSE TRACKING #: CONTACT PERSON:
REMARKS: PHONE: EXT:

CLOSED

OSTP RECEIVED: 06/10/91 FILE: P-DAB-PERSONAL
DEPT RECEIVED:

CANNON

2151
Planning
Architecture
Engineering
Project Delivery

148 State Street
Boston, MA 02109
617-742-5440

6.10.91

Dr. D. Allan Bromley
Assistant to the President for
Science & Technology
The White House
Washington, DC



Dear Allan:

While in New Haven recently for Nancy's 20th reunion, I was reminded again of the many valuable but unappreciated (at the time) aspects of the university. Despite your kind letter of last June, I still maintain to family & friends alike that I was certainly one of the least distinguished physics students ever to grace the campus. However, that did not stop me from loving the subject, and as you know I have achieved a redemption of sorts by working with Larry Sulak to build the new physics research building at Boston University. He has become not only a colleague but a close personal friend, and through Larry I have had the chance to meet several other very impressive practitioners of the art (Shelly Glashow and Norm Ramsey are both close neighbors of Larry's; Carlo Rubbia, Sam Ting, Steven Weinberg). Under Larry's tutelage I have also been doing some physics reading, and it's actually beginning to make some sense, thanks (no doubt) in part to the foundation that you laid in my head some twenty years ago. Anyway, your efforts were not entirely in vain, and sincere thanks are due.

I have also been following events in Texas very closely, and am aware of some of the recent scientific, financial and political dust swirling around the SSC. The name of Bob Matyas may be familiar to you--we are jointly engaged in a medical project in Connecticut and he keeps me pretty well informed. During visits to our Georgetown office, I keep meaning to contact your office but so far I have not been able to get free.

The purpose of this note, aside from saying thank you again for your patience when I was a student, is to see if you might be interested in attending a small dinner party with a select group here in Boston that would include Sulak, Glashow, Ramsey, Matyas and perhaps Helen Edwards. The purpose would be both convivial and also a chance to see what might be done to shed some sunlight on the SSC situation.

CANNON

I realize that your time is exceedingly tight, and I would need to get some idea of possible dates from you before other arrangements are made. If you are interested and might be free, please let me know. It would be a great pleasure to see you again, and hopefully the evening would be both enjoyable and fruitful for all concerned.

Sincerely,

A handwritten signature in dark ink, appearing to read "Scott Simpson". The signature is fluid and cursive, with the first name "Scott" being more prominent than the last name "Simpson".

Scott Simpson

318 Acton Street
Carlisle, Mass. 01741
(508) 369-1586

cc: Larry Sulak

THE WHITE HOUSE

WASHINGTON

July 9, 1991

Dear Scott:

Many thanks for your letter of June 10th which arrived while I was in the depths of Siberia, hence some of the delay in responding.

I am delighted to learn that you are getting physics by osmosis and somehow I have the feeling that your continued contact with physics suggests that you really should have stayed with it back in the early days.

Larry Sulak and his colleagues have done a fantastic job in strengthening physics research at Boston University and whenever I have the opportunity I would look forward to getting together with the group you mention in Boston. Unfortunately, I have to tell you that I am horribly overscheduled and the probability of my getting the necessary half day free anytime in the near future seems vanishingly small. During the period when Pat was ill I deferred all foreign travel so that a great many commitments piled up and I am now addressing them one by one.

You mention, however, that your work occasionally brings you to Washington and so, if you would give me a little warning, I would be delighted to invite you to have lunch at the White House Mess and we could at least begin to catch up on what has been happening over recent years.

Please do let me know when you might next be in town. My telephone number is 202/456-7116, and I will look forward to hearing from you.

With all best wishes,

Sincerely yours,



D. Allan Bromley
The Assistant to the President
for
Science and Technology

Mr. Scott Simpson
318 Acton Street
Carlisle, Massachusetts 01741