THE WHITE HOUSE

WASHINGTON

August 12, 1991

MEMORANDUM FOR JOHN H. SUNUNU

FROM: D. ALLAN BROMLEY

SUBJECT: EOS Engineering Review

Background

As part of the FY 1992 budget process, OMB instructed that an external review of the NASA Mission to Planet Earth, Earth Observing Satellite (EOS) platform configuration and launch sequence should be undertaken by a group of government, industry, and academic experts.

The purpose of the review was to assess alternatives for the implementation of EOS, including size of platforms, instrument configuration, and launch requirements and sequencing.

The objectives of the review were to ensure that the recommended program: (1) meets established scientific objectives; (2) places highest priority on achieving data collection needs specifically focused on climate change and global warming issues; (3) minimizes annual funding requirement; (4) minimizes technical risk; and (5) has sufficient resiliency to be adaptable to changing requirements.

The Panel

The Panel established (March 21) to carry out the review consists of the following members:

Chairman

. Dr. Edward Frieman, Scripps Institution of Oceanography

Members

. Dr. D. James Baker, Joint Oceanographic Institutes
. Dr. Peter Banks, University of Michigan
. Dr. Greg Canavan, Los Alamos National Laboratories
. Dr. Richard Goody, Harvard University
. Dr. V. Ramanathan, Scripps Institution of Oceanography
. Dr. Warren Washington, National Center for Atmospheric Research
. Dr. Albert Wheelon, (retired Hughes)

Summary of July 18-26 Meeting

The Panel has met twice: May 30-31 and July 18-26, 1991. These meetings were open to the public and the discussions were very candid. Press accounts reflected discussions which took place early in the review and provide, at best, a distorted picture of the true nature of the review. The open meetings were concluded on July 24 and the Panel adjourned to prepare a preliminary draft of a report.

There was some very significant, new information introduced during the review which dramatically changed the nature as well as the conditions of the review. Before listing the Panel's statements/recommendations, it is important that these new conditions of the review are clear. They are as follows:

1. Three new engineering/flight options were introduced during the review which created new and different opportunities for the EOS platforms which had not previously been available to NASA (i.e., when designing the EOS-A platform):

a. Simultaneity requirements for those core instruments which need to be flown together (due to new engineering and launch options) can now be met with smaller platforms such as Atlas launched ones.

b. Pointing accuracy (improved) and formation flying make it possible to provide similar conditions to one large platform.

c. New launch options are now available (construction of a Western Test Range will open up the opportunity for utilization of the Atlas IIA platform)

Items a) and b) had been declassified by DOD and DOE and became available to the civilian section for the first time during this study. They will have important consequences in making it possible to replace very large orbital platforms with smaller units independently launched but flying in stable formation.

The new launch system made available by the Air Force gives NASA access for the first time to Atlas IIA launches from the Western Test Range - as required for the desired orbits.

2. Two new developments (just prior to the Review) also significantly influenced the nature of the EOS review:

a. Budgetary guidance from OMB and the Hill (e.g., mark by Senate) indicated that, simply put, there are not enough funds to carry out EOS the way it was currently planned. NASA and the Panel had been asked by OMB to provide a more "resilient" program, given the present and anticipated budgetary limitations.

b. There has been increased pressure for more immediate scientific results for policy-makers (i.e., global warming detection studies), from earlier missions than previously planned.

3. New EOS Options

After the new launch and engineering options had been presented in the review, NASA was asked by the Panel to present some new options which included the use of Atlas-IIASs and addressed the changing budgetary limitations. NASA developed a strategy using the Atlas for EOS-A and B, the essence of which was that the payload for both A and B would be grouped by scientific question, as defined by the IPCC and the USGCRP, and by requirements for simultaneity, and then distributed on Atlas-sized spacecraft (and Deltas as necessary).

Major Recommendations

In addition to a list of specific statements and recommendations which may be made by the committee, it appears that the Panel will recommend several options with budgetary implications which will include the following:

1. EOS could be reconfigured into a subset of the EOS A and B instruments, grouped by scientific questions, as defined by IPCC, and by requirements for simultaneity, and then flown on smaller platforms that can be launched on smaller satellites (Atlas and Delta). Two options were prepared for the Panel by NASA on the last day of the review.

2. Near-term funding (perhaps, from DOE) may be recommended to help in expediting earlier launches of generic CLIMSATs, using technology such as Remotely Piloted Vehicles (RPVs), for global warming detection.

3. There may be a recommendation for long-term funding for non-NASA agencies (e.g., DOE and DARPA) to develop new technologies for small spacecraft and instruments.

Issues

The results of the EOS review will be controversial because the Panel will be recommending a significant reconfiguration of the Earth Observing System which will have a major impact on a number of the EOS science programs, our international partners, and national and international scientists, many of whom have been preparing for this mission for years.

It, therefore, will be important for the Administration to continue to be strongly supportive of both EOS and the US Global Change Research Program, of which EOS is an essential component. EOS and the USGCRP, both Presidential initiatives, represent most of the substantive, scientific underpinning of the Administration's position on climate change. Recent budget constraints will make it impossible to fund EOS as it was originally designed so, in fact, the reconfiguration of EOS, if achievable from an engineering point of view (made possible by the new technologies and launch opportunities), provides NASA, the

scientific community, and the US with badly-needed budgetary resilience during some very difficult years. Furthermore, it appears that this can be done while still preserving the established scientific objectives of the program, including, perhaps, earlier collection of data on climate change and global warming detection.

The Panel intends to submit its report to OMB and NASA this week and it is important that the Administration has a carefully-designed strategy for announcement of the release of the report. It is a good opportunity to show that the Administration is being responsive to the country's wishes as well as those of Congress. It will also be important to generate strong backing from EOS scientists to insure success of the project and positive support by the scientific community.

OSTP STAFFING SHEET

Signed 8-13 + Sent out Red dat on 8-13

SUBJECT: Summer Memo re: EOS Review (for Signature)

ORIGINATOR: Nancy Maynard PHONE: X6203

DATE ORIGINATED: 8-12-91 DATE DUE: CORR TRACKING NO:

EXTERNAL COORDINATION:

		COMMENTS	DATE
✓	DIRECTOR		
	CHIEF OF STAFF		
	GENERAL COUNSEL		
✓	EXEC. ASST.		

ACTION REQUESTED:

	COORDINATION		DATE	COMMENTS
	Henderson, D. A.	Concur ____ Nonconcur ____		
	Phillips, W.	Concur ____ Nonconcur ____		
	Ratchford, J. T.	Concur ____ Nonconcur ____		
	Woog, E.	Concur ____ Nonconcur ____		
	NGM	Concur ✓ Nonconcur ____	7-12-91	
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