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MINUTES OF  
SURVEY APPLICATIONS COORDINATING COMMITTEE (SACC)  
SEVENTH MEETING 3 AUGUST 1967  
11:00 A.M. THURSDAY, ROOM 4C-1000, PENTAGON

Members in Attendance:

NASA  
Mr. Leonard Jaffe

NRO  
Colonel David L. Carter, USAF  
Colonel Paul E. Worthman, USAF

Secretary: F. J. Sweet

Members Absent

Mr. George Trimble  
Mr. Frank J. Sullivan



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Others in Attendance

Mr. Walter McGough, Jr., DDR&E  
Mr. Myron Krueger, NASA, LM&SS Program Manager

1. Approval of Minutes: The minutes of the Sixth Meeting were discussed and it was agreed that certain portions should be rewritten prior to formal approval.
2. Cancellation of LM&SS: Mr. Jaffe notified the Committee that on 25 July 1967 an internal decision had been made by NASA to terminate the LM&SS (UPWARD) program.
3. NASA Earth Resources Survey Program (NERSP): Mr. Jaffe tabled three groups of NASA Research and Technology Resumes (NASA Form 1122) for Committee review. The first group contained NERSP resumes considered to be of most interest to the NRO. These programs have been proposed for use of FY '68 funds. The second group of NERSP resumes is intended



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for the use of any FY '68 funds which may become available. The third group of resumes covered Apollo Applications Programs currently being funded by FY '68 money.

Mr. Jaffe called attention to a definition study with the University of Arizona which has been in progress since early 1966. This study involves a multispectral telescope. The current contract is being terminated. Mr. Jaffe cautioned that progress reports may surface on some older NASA contracts which may cause embarrassmen

4. NASA Astronomy Program: Mr. Jaffe tabled for Committee information and comment, if desired, a list of Astronomy Flight Programs, both on-going and in the planning stage, together with a listing of Supporting Research and Technology projects.

5. Calendar of Meetings: Mr. Jaffe furnished the Committee with a calendar of meetings relating to space applications and/or optics sponsored by NASA or to be attended by NASA persons. This calendar will be up-dated at each future SACC meeting.

6. UN Meeting on Peaceful Uses of Outer Space: The Department of State has requested NASA to take the leadership in organizing the U. S. participation in the meeting to be held in Vienna, Austria 14-27 August 1968. Mr. Jaffe furnished the Committee a copy of an Airgram from Ambassador Goldberg to the Department of State (dated 23 June 1967) on the subject. NASA has invited a number of papers but has withheld invitations to certain Government Agencies pending SACC review. Mr. Jaffe tabled, for Committee review, invitations to persons in Department of Agriculture, United States Geological Survey and Naval Oceanographic Office.

7. Percheron-Agena Coordination: Colonel Carter reviewed his proposed reply on the Percheron-Agena Work Statement draft which Mr. Jaffe had previously furnished for Committee review. Mr. Jaffe agreed to the text of the reply and it was then transmitted to the SACC Secretary.

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8. Mexico-Brazil Draft Agreements: Mr. Jaffe tabled for Committee review a draft copy of the proposed cooperative plan with Brazilian and U. S. Agencies for research and remote sensing for earth survey. He explained that the Mexican agreement will have approximately the same wording.

9. Spacecraft Oceanography: Mr. Jaffe tabled for Committee review an undated draft of a document on U. S. activities in spacecraft oceanography being prepared for The National Council on Marine Resources and Engineering Development. He expressed an urgency to have Committee concurrence since the document must be printed before October.

10. Proposed 6-inch Metric Space Camera: Mr. Jaffe tabled a copy of a proposed specification of a 6-inch focal length camera for NRO comment and check of existing similar DOD cameras.

11. Photo Team Minutes: Mr. Jaffe tabled for Committee review and comment a copy of the 21 June 1967 NASA Photo Team meeting minutes.

Action Items:

a. The Committee will review the documents tabled by NASA and submit its comments as soon as possible (see attachment).

b. NASA will submit such additional data as the Committee may request for clarification on the documents being reviewed.

c. NASA will submit an up-dated calendar of meetings at each future SACC meeting.

Adjourned sine die at 12:45 p.m.

*Floyd J. Sweet*  
Floyd J. Sweet  
Secretary, SACC

Attachment  
Material Tabled by  
NASA Member for Committee  
Consideration

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ATTACHMENT TO MINUTES OF SEVENTH  
MEETING OF SACC — 3 AUGUST 1967

Committee  
Material Tabled by NASA Member for ~~NNN~~ Consideration

Item 3: NASA Research and Technology Resumés (NASA Form 1122)

Group 1, FY '68 Funding (OSSA)

|                 |   |
|-----------------|---|
| 160-75-03-02-72 | Panoramic Camera, Supporting Research   |
| 160-75-03-01-72 | Metric Camera, Supporting Research  |
| 160-25-02-71-72 | (U) On Ground Data Handling for Earth<br>Resources Survey Aircraft  |
| 160-75-02-72    | (U) Procurement and Support of Remote<br>Sensor Systems   |
| 160-75-02-01-72 | (U) Aircraft Flight Operations and<br>Modifications   |
| 160-75-01-02-10 | Potential Economic Benefits to Agriculture  |
| 160-75-01-04-10 | Development of Spectral Correlation<br>Techniques in Agriculture  |
| 160-75-01-03    | Pattern Recognition of Crops and Test<br>Site Development   |
| 160-75-01-07-10 | Spectral Reconnaissance of Irrigated Region<br>Crops  |
| 160-75-01-20    | Identification and Inventory of Primary<br>Tree Species by Remote Sensing   |
| 160-75-01-24-10 | Tree Species and Vigor Identification   |
| 160-75-01-30    | Geographic Research Using Space and<br>Aircraft Acquired Data   |
| 160-75-01-37-10 | Cartographic Applications of Space and<br>Aircraft Acquired Data  |
| 160-75-01-40    | Administrative and Technical Support for<br>Geological Studies Utilizing Spacecraft<br>and Aircraft Acquired Data |
| 160-75-01-44    | Ground Truth Investigations of Geologic<br>Test Sites   |
| 160-75-01-49-10 | Earthquake investigations, San Andreas<br>Fault, California   |
| 160-75-01-60-10 | Remote Sensing Studies of Hydrologic<br>Phenomena for Aircraft & Spacecraft                                       |
| 160-75-01-80-10 | Oceanographic Program Administration,<br>Technical Support, and Documentation                                     |
| 160-75-01-83-10 | Passive Microwave Studies for Oceanographic<br>Applications   |

cont'd - Group 1

|                 |  |
|-----------------|--|
| 160-75-01-84-10 | Studies Related to Sea Surface Temperature                                 |
| 160-75-01-87-10 | Oceanographic Uses of Photography  |
| 160-75-04-02-10 | (U) Program Planning and Mission Studies                                   |
| 160-75-03-12-72 | Ultraviolet Absorption and Stimulated<br>Emission Studies of Minerals      |
| 160-75-03-19-51 | (U) Dielectric Tape Camera   |
| 160-75-03-04-51 | (U) High Resolution Return Beam Vidicon<br>Camera                          |
| 160-75-03-06-51 | (U) High Resolution Display and Film Record                                |
| 160-75-03-08-72 | (U) Infrared Spectrometry Studies in the<br>7-30 Micron Range              |
| 160-75-03-09-72 | Infrared Imagery Studies and Wide-Range<br>Spectral Scanner System Studies |
| 160-75-03-10-72 | Absorption Spectroscopy  |
| 160-75-03-07-72 | Radar Systems Studies for Earth Resources                                  |
| 160-75-03-11-72 | Microwave Imagery and Radiometry Studies                                   |
| 160-75-02-15-10 | VHF Chirp Radar  |
| 160-75-03-13-72 | Geologic Applications of Magnetic Field<br>Measurements                    |

Group 2, FY '68 Funding if funds available (OSSA)

|                 |  |
|-----------------|--|
| 160-75-02-09-72 | Radar Sensor   |
| 160-75-02-14-72 | Remote Sensor Data Support Equipment<br>ADAS Titler                  |
| 160-75-02-13-72 | (U) Ground Support Equipment for Remote<br>Sensors Systems           |
| 160-75-02-10-72 | 3.75cm Altimeter Scatterometer                                       |
| 160-75-03-16    | Investigation of radar polarization effects                          |
| 160-75-03-14-72 | Radar and Microwave Response to Terrain                              |
| 160-75-03-18-51 | (U) High Resolution Image Dissector<br>Development                   |
| 160-75-03-17-51 | (U) SEC Camera   |
| 160-75-03-05-51 | (U) Video Tape Recorder for Satellite<br>Applications                |
| 160-75-03-06-51 | (U) Multi-Spectral Camera for Satellite<br>Applications              |
| 160-75-02-07-72 | UV Imager  |
| 160-75-02-06-72 | UV Line Discriminator  |
| 160-75-01-27-10 | Forestry Data Utilization and Processing                             |
| 160-75-01-11-10 | (U) Agriculture Automatic Data Processing                            |
| 160-75-04-05-10 | Geoscience Mission Support   |
| 160-75-04-03-10 | (U) System Requirements Analyses                                     |
| 160-75-02-11-72 | Aircraft Modifications   |
| 160-75-02-02-72 | Simultaneous Aircraft Flight Operations<br>(Additional MSC Aircraft) |

cont'd Group 2

|                 |   |
|-----------------|---|
| 160-75-01-94    | Field and Laboratory Studies  |
| 160-75-01-93-10 | Satellite Sea Ice Studies   |
| 160-75-01-92-10 | Depth Contouring by Color Separation  |
| 160-75-01-91-10 | (U) Doubtful Hydrographic Data  |
| 160-75-01-90-10 | Field and Laboratory Studies  |
| 160-75-01-89-10 | Oil Slick Analyses  |
| 160-75-01-88-10 | Remote Sensing of Biological Phenomena  |
| 160-75-01-86-10 | Radar Data Acquisiton over Oceanographic<br>Test Sites  |
| 160 75-01-85-10 | Oceanographic Uses of Radar   |
| 160-75-01-82-10 | Surface Temperature Studies using Radiometry<br>Techniques                                      |
| 160-75-01-81-10 | Test Site Instrumentation   |
| 160-75-01-64-10 | Water Exploration and Mapping   |
| 160-75-01-56-10 | Automatic Data Recording and Processing   |
| 160-75-01-55-10 | Special Data Acquisiton and Processing  |
| 160-75-01-54-10 | Remote Sensing of Submarine Coastal Regions   |
| 160-75-01-53-10 | Geothermal Power Feasibility Studies  |
| 160-75-01-51-10 | Geologic Hazards - Landslides, Volcanoes,<br>Coal Mine Fires                                    |
| 160-75-01-50-10 | Satellite-Telemetry-Earthquake Monitoring   |
| 160-75-01-48-10 | Solid Fuels, Fertilizers, Construction<br>Materials   |
| 160-75-01-47-10 | Metals and Petroleum Feasibility Studies  |
| 160-75-01-46-10 | Radar and Multiband Photography Applications  |
| 160-75-01-45-10 | Temporal and Climatic Effects on Remote<br>Sensor Data  |
| 160-75-01-42-10 | Coordination and Liaison at MSC Houston   |
| 160-75-01-38-10 | Investigation of automatic imagery<br>correlation and photo-interpretation of<br>cart. features |
| 160-75-01-36-10 | Urban Census and Air Pollution Studies  |
| 160-75-01-34-10 | Feasibility of Monitoring non urban<br>Transportation systems                                   |
| 160-75-01-33-10 | Unique Geographic Test Sites and Land Erosio<br>Studies   |
| 160-75-01-31-10 | Automatic Recognition of Geographic Signatur  |
| 160-75-01-26-10 | Spectral Identification of Forest Fire,<br>Erosion and Ecological Factors                       |
| 160-75-01-25-10 | Multi-spectral Forestry Signature Indicators<br>of Insect Induced Mortality                     |
| 160-75-01-23-10 | Forest Ecology Identification and Census<br>from Imagery  |
| 160-75-01-21-10 | Technical Support for Forestry Data<br>Collection and Processing                                |

cont'd Group 2

|                 |   |
|-----------------|---|
| 160-75-01-10-10 | Real Time Line Scanner Imagery Analysis           |
| 160-75-01-09-10 | Support for Spectral Signature Investigatio       |
| 160-75-01-08-10 | Irrigated Crop Spectral Studies                   |
| 160-75-04-01    | Advanced Mission and Integration Studies          |
| 160-75-01-01-10 | Technical Support for Agriculture Data Processing |

Group 3, OMSF Funded AAP

|              |  |
|--------------|--|
| 981-60-10    | Economic Benefits and Implications of Space Station Operations |
| 981-10-10-15 | (U)Utilization of Spent Saturn IVB Stage in Earth Orbit        |
| 981-10-10-19 | (U) Orbital Astronomy Support Facility                         |

March 1966 - Objectives, Instrumentation, and Flight Time Recommendations of User Agencies and Cooperating Scientists Involve In the NASA Natural Resources Program.

Item 4: NASA Astronomy Programs, Office of Space Sciences and Applicatio

| <u>Flight Projects</u>                    | <u>Aperture</u> |
|---|-----------------|
| OA0-A2~0.5 arc sec resolution             | 8-16 inches     |
| OA0-B~2 arc sec resolution                | 38 inches       |
| OA0-C~0.2 arc sec resolution              | 32 inches       |
| OA0-D like OA0-B                          | 38 inches       |
| OSO-D&F~1.0 arc min resolution            |                 |
| Stellar Optical ATM~10 arc sec resolution | ~ 40 inches     |
| ASTRA~0.1 arc sec resolution              | ~ 40 inches     |
| Apollo objective prism spectrograph       | 6 inches        |
| Apollo mapping                            | 6 inches        |
| MOT 0.03 sec resolution                   | 120 inches      |

Item 4 - cont'd

## NOTES:

OA0 - Orbiting Astronomical Observatory

OSO - Orbiting Solar Observatory

MOT - Manned Orbiting Telescope

SUPPORTING RESEARCH AND TECHNOLOGY

- 188-38-01-05-21; Ames Research Center, M. Bader; Design & Construction of an Airborne Telescope, Spectrometer, and Associated Stabilization System. Not yet granted.
- 188-38-01-12-51; GSFC, O'Connor; Generation of Highly Accurate Aspheric Optical Elements.
- 188-38-01-50-55; Jet Propulsion Laboratory, J. Allen; Photoheliograph Study
- 188-38-01-52-10; IIT Research Institute, R. Marshall; The MELP System. (Image converter relying on electro-luminescence) Not yet obligated.
- 188-41-01-04-10; NASA Headquarters, N. G. Roman; Stratoscope II
- 188-41-01-08-51; GSFC, K. Hallam; Design of Flight Optical Systems
- 188-41-01-89-10; NASA Headquarters, N. G. Roman; Ultraviolet, Conventional Film Space Camera
- 188-41-01-61-10; NASA Headquarters, N. G. Roman; Image Tube Research and Development
- 188-41-01-83-10; NASA Headquarters, N. G. Roman; Photographic and Photoelectric Signal Detection
- 188-41-01-84-10; NASA Headquarters, E. J. Ott; Monitoring and Control of Large Telescope Performance



Item 5: Meetings Schedule - Forthcoming Meetings Relating to Application and/or Optics which NASA Personnel will Attend or Participate.

|                           |   |
|---------------------------|---|
| August 7, 1967            | ATM - Stellar Optical Planning Meeting<br>MSFC, Huntsville  |
| August 15                 | Orbital Astronomical Support Facility<br>Meeting, MSFC  |
| August 21 - 31            | IAU Meeting - Prague, Budapest, Hungary   |
| August 24                 | ATM Quarterly Review, MSFC  |
| August 28 - 30            | AIAA Space Program Issues of the 70s<br>Seattle, Washington   |
| September 4 - 7           | IAU Symposium, Budapest, Hungary  |
| September 11 - 15         | Advisory Group for Aerospace Research<br>and Development (Advanced Navigational<br>Techniques) Milan, Italy |
| September 27 - 29         | Astronomy Subcommittee  |
| ✓ October 1967            | Working Group Space Technology, Old<br>Dominion University  |
| October 3 - 4 (tentative) | NASA Image Tube Requirements, Headquar<br>Washington, D. C.   |
| October 5                 | ASTRA Ad Hoc Working Group, Headquarte<br>Washington, D. C.   |
| October 23                | AIAA 4th Annual Meeting, Annahein, Cal  |
| October 26 - 27           | NAS Large Space Telescope Committee<br>Astronomy Missions Board, MSFC, Huntsv                               |
| December 4 - 8            | International Conference on Electrical<br>Power Source Systems for Space Applics<br>Paris, France           |
| April 1968                | 5th Space Congress, Cocoa Beach, Flori  |
| May 1968                  | AGU Meeting, Washington, D.C.   |
| May 1968                  | Western European Subcommission on<br>Artificial Satellites, Germany   |
| August 1968               | UN Peaceful Uses of Outer Space,<br>Vienna, Austria   |

Item 6: UN Conference on the Exploration and Peaceful Uses of Outer Space

Message to Department of State from Ambassador Goldberg dated 23 June 1967; Attachments: 12 June 1967, Aide-Memoire, and G. A. Resolution of 24 May 1967.

Proposed letters inviting papers from Dr. Bates, Naval Oceanographic Office; Dr. Park, Department of Agriculture; Dr. Pecora and Messers. Robinove and Siebert, U. S. Geological Survey together with Instructions to U. S. Participants.

Item 8: Cooperative Programs

Plan for Cooperation Between Brazilian and U. S. Agencies on Research and Remote Sensing for Earth Survey - Draft, 10 July

Item 9: Spacecraft Oceanography

Undated draft of proposed document on "United States Activities in Spacecraft Oceanography" prepared for The National Council on Marine Resources and Engineering Development

Item 10: 6-inch Metric Camera

Basic Specifications and Design Goals for a General Purpose 6-inch Metric Space Camera - 20 July 1967

Item 11: Minutes of NASA Photo Team Meeting, June 21-22, 1967.



SURVEY APPLICATIONS COORDINATING COMMITTEE  
7th MEETING  
August 3, 1967 - Room 4C-1000, The Pentagon  
10:30 A. M.

AGENDA

1. Minutes of 6th Meeting
2. Cancellation of LM&SS
3. Earth Resources Survey Program
4. Astronomy Program
5. Calendar of Meetings
6. UN Meeting on Peaceful Uses of Outer Space
7. Percheron-Agena Coordination Progress
8. Mexico-Brazil Draft Agreements