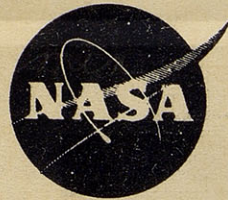


DR. VINOGRAD



# PROGRAM-PROJECT DATA SUMMARY

OCTOBER 1963

## CONTENTS:

### SECTION

A

Offices of General Staff

B

Office of Applications

C

Office of Advanced Research and Technology

D

Office of Space Sciences

E

Office of Manned Space Flight

F

Office of Tracking and Data Acquisition

FOR INTERNAL USE ONLY



November 1, 1963

MEMORANDUM to Distribution

Subject: Program/Project Data Summary

The quarterly revised attachments are forwarded for inclusion in the subject handbooks.  
Please delete those sheets replaced.

The next scheduled submittal for updating Project Data Sheets is January 10, 1964.

*Lewis P. Jones*  
for T.E. Jenkins  
Director of Management Reports  
Office of Programs

Attachment:

Revised pages of the Program/Project Data Summary Handbook



Dr. James A. Hootman, Projects OfficerBACKGROUND:

The statutory functions of the Inventions and Contributions Board as provided in Sections 305 and 306, respectively, of the National Aeronautics and Space Act are:-

1. The consideration of petitions of NASA contractors for waiver of patent rights in inventions made under NASA contracts, and
2. The evaluation of scientific and technical contributions to aeronautical and space science and technology.

In either case the recommendations of the Board are made to the Administrator, in whom the authority is vested to grant waiver of patent rights, and to make monetary awards for contributions of significant value in the conduct of aeronautical and space activities.

Additional duties assigned to the Board by Administrative Regulations relate to the consideration of all inventions made by NASA employees on which patent action is initiated, with a view to recommending monetary awards to be made by the Administrator under the provisions of Section 306 of the NASA Act, or to making monetary awards on its own authority under the provisions of the Government Employees' Incentive Awards Act of 1954.

OBJECTIVES:

1. To protect the interests of the United States by recommending that the Administrator grant the petitions of NASA contractors for waiver of patent rights when such interests would be served thereby, and,
2. To encourage and reward useful contributions to aeronautical and space science and technology.

PLAN OF OPERATION:

1. The Board will consider all of the facts presented in each case by NASA contractors who petition for waiver of rights in inventions made by their employees under NASA contracts, together with the technical evaluations made by NASA specialists, and will prepare and submit to the Administrator for



action its Findings of Fact and Recommendations for or against the granting of the requested waivers. Advisory opinions will be issued, and hearings on petitions for waiver will be granted on request of the petitioners, as provided in Section 305 of the NASA Act.

2. The Board will evaluate all contributions received and will recommend to the Administrator the granting of monetary awards to persons making contributions of significant value. The recommendation in each case will include the amount of the proposed award and the terms and conditions under which it is to be made. Each applicant for an award will be granted an opportunity for a hearing upon his application.
3. Where the contribution is an invention of a NASA employee, which is determined by the Board not to have such value in the conduct of aeronautical and space activities as to qualify for an award under Section 306 of the NASA Act, it will be considered for an award under the provisions of the NASA Incentive Awards Program as provided in NASA Administrative Regulations issued July 6, 1960, and subsequent Regulations and Management Instructions.

SCHEDULE:

1. Prompt consideration of petitions of NASA contractors, as received, for waiver of patent rights in their inventions.
2. A continuing review and evaluation of scientific and technical contributions received from all sources.
3. Review and evaluation of all inventions of NASA employees on which patent applications are filed, and of all contractors' inventions to which NASA takes title, and determination of the amount of the monetary award to be made in each case.
4. Hearings to be scheduled as required on petitions for waiver of patent rights, as provided under Section 305 of the Space Act.
5. Hearings to be scheduled as required on applications of contributors for monetary awards under Section 306 of the Space Act.



## Project Reference Sheet

OFFICE OF APPLICATIONS  
Large Meteorological Rocket Soundings

B-12

William C. Spreen - Project Officer (Hqtrs)  
Wendell Smith - Project Manager (GSFC)

### OBJECTIVE

To obtain data on the vertical distribution of winds, temperature, and density at altitudes between 30 and 100 km for the purpose of investigating the structure, behavior, and variability of the atmosphere in this region.

### DESCRIPTION

Three different experiments are used to measure the atmospheric structure. They are the grenades, the sodium vapor release, and the pitot-static tube and use Nike-Cajun class rockets.

For the grenade experiment a series of 12 grenades are ejected and exploded at intervals along the rocket's trajectory between about 30 and 90 km. The time and position in space of each grenade explosion is observed by radar and/or optical methods. The time of arrival of the resulting sound waves is precisely recorded by an array of ground microphones. These data permit the computation of the average wind and temperature through the layer between the altitudes of each explosion.

For the sodium experiment, a mixture of sodium and lithium is vaporized and released as a vapor trail along the rocket's trajectory from about 50 km to over 100 km. This vapor trail glows in the twilight sky and its deformations are recorded by two or more time-lapse cameras. Wind velocity and diffusion can be computed from the deformations recorded on the photographs.

With the pitot-static tube the ram-pressure, ambient pressure and probe temperature are measured during the flight of the rocket. These data along with the velocity and aspect of the rocket are used to compute the vertical profiles of density, temperature, and wind velocity.

### RESPONSIBILITIES

Goddard Space Flight Center is responsible for project management, vehicle and payload, assembly, and data processing.

October 10, 1963

Page 1 of 1

B-12.1



PROGRAM/PROJECT DATA SUMMARY

OFFICE OF SPACE SCIENCES

D-61

Astronomy Program

Nancy G. Roman, Program Chief

OBJECTIVES

Astronomical observations of the stars, planets, comets, asteroids, nebulae, galaxies, and interstellar and intergalactic matter in the entire electromagnetic spectrum from satellites and sounding rockets are prime objectives of this program, which also includes the use of sounding rockets and satellites for basic studies of gravity and its nature, the geodetic properties of the earth, and effects of special and general relativity. Supporting theoretical research and data analysis occupy an important place in this program.

PROGRAM ORGANIZATION

The broad area of the Astronomy Program is divided into several programs and projects:

Galactic Astronomy Program

An understanding of the origin, present state, and evolution of the universe and its component parts is the prime objective of this program. For this purpose observations of the stars, nebulae, galaxies, and planets, will be made from satellites, rockets, and high altitude aircraft in the gamma ray, x-ray, ultraviolet, visible, and infrared regions of the spectrum. Later, instrumentation on the moon may replace satellite observatories for this purpose. Principal long-range objectives include the possible detection of planets and planetary systems near other suns and the uncovering of clues to the origin of the solar system. A major project in this program is the Orbiting Astronomical Observatories Project which includes the development and flight of a series of spacecraft carrying large astronomical telescopes which can be pointed to individually selected objects within  $0''.1$ .

Gravitational Fields Project

The objective of this project is to study the nature and effects of gravitational fields. It includes the use of accurate observations of earth satellites to derive the details of the earth's gravitational field, the study of the motion of objects under the effect of complex Newtonian gravitational fields, and the performance of tests of several effects predicted by general relativity which cannot be adequately tested on the surface of the earth.



Orbiting Radio Astronomy Project

The objective of this project is to obtain basic astronomical observations from above the terrestrial atmosphere by radio techniques. This project will produce data in both the Galactic Astronomy and the Solar Physics Programs. However, the techniques are quite different from those involved in other projects in these programs. Observations of the planets, radio stars, and the galactic background will be made at radio frequencies which are absorbed by the terrestrial atmosphere and ionosphere. The work can be divided into two phases. In a low frequency phase, multiple and sweep frequency measurements will be made of the planets, and the galaxy. These measurements will not only provide data on the objects studied but also on the densities in the interplanetary and interstellar media. The high frequency phase will study the radio spectra of the atmospheres of the planets and will map the moon, planets, and galaxy in the region between the infrared and the atmospheric radio window.

Planetary Atmospheres Project

The objective of the project is to determine, from satellites and sounding rockets, the structure and composition of planetary atmospheres and to investigate the optical properties of the moon and those planets without an atmosphere. The basic structure of the Orbiting Astronomical Observatory is admirably suited to observations of the planets; ultraviolet, infrared, and microwave planetary spectrometers should be developed for use in these satellites.

STATUS

Explorer XI, launched in April 1961, provided the first observations of gamma rays from outside the solar system. Although data analysis is not complete the results have yielded the expected number of gamma rays and narrowed the field of possible cosmologies slightly.

Rocket flights have provided excellent spectra of the sun in the soft X-ray region and measurements in the gamma ray region, spectra of bright stars in the region from 3000 A to 1800 A and photometry of stars and nebula in the region from Lyman alpha to the atmospheric cut off at 3000 A. The X-15 is being used for stellar photometry and photography in the near ultraviolet.

Plans are now being made for planetary observations in the infrared from a large balloon telescope, and later, from an OAO and for observations in the ultraviolet from rockets and early OAO's.

A low frequency radio astronomy experiment is being prepared for EGO and another for POGO. In addition receiver development in the submillimeter region is underway.



PROGRAM/PROJECT DATA SUMMARY

Astronomy Program

NASA agreed to cooperate with DOD in an international effort to observe the geodetic satellite, ANNA. ANNA I was launched successfully on October 31, 1962. Useful observations of the flashing light were made on an international basis.

Finally, we have been cooperating with the Office of Manned Space Flight in assisting the astronauts in familiarizing themselves with celestial phenomena and in planning scientific experiments for later flights as well as considering uses for a manned orbiting space station.



## PROGRAM/PROJECT DATA SUMMARY

Astronomy Program

Headquarters Contracts now in effect (in millions of dollars)

NASw-66 - University of Wisconsin, "Preliminary Design Studies of Instrumentation for Measuring Ultraviolet Intensities."	0.564
NAS 5-1174 - Lockheed Aircraft Corporation (LMSC), "Rocket instrumentation and its installation in two Aerobee 150 A vehicles and study of resulting telemetered data."	0.195
NsG-287-63 - Haverford College, "Wave functions and transition probabilities for light atoms and highly ionized ions."	0.040
NsG-69-60 - Princeton University, "Astronomical research with balloon-borne telescope, including refinement of launch and recovery techniques."	0.200
NsG-171-61 - St. John's University, "Theoretical research on the collision of particles in the interstellar gas."	0.039
NsG-276-62 - University of Chicago, "Determination of future image converter requirements for orbiting observatories, methods for meeting these requirements, and experimental studies of possible image tube materials."	0.034
S-13422-G - North American Aviation, "To modify an X-15 airplane."	0.089
NASr-139 - ACA (Flight Research Center), "Stabilized platform for use with the X-15 ultraviolet experiments and related spare parts."	0.209
NASw-107 - University of Rochester, "Study, design, and construction of optical instruments for space research."	0.352
NsG-308-63 - University of Rochester, "Investigation of new methods of designing multilayer filters having specified transmission or reflectance as a function of wavelength, including experimental studies of thin-film deposition techniques."	0.031
NsG-91-60 - University of California, "Experimental research on the optical parameters of certain solids in the spectral region between 3000 and 500A."	0.086



## PROGRAM/PROJECT DATA SUMMARY

Astronomy Program

NsG-113-61 - Renesslaer Polytechnic Institute, "Theoretical research on interstellar dust and its interaction with ultraviolet radiation."	0.067
R-73 - National Bureau of Standards, "Radiometric standards for the extreme UV."	0.200
S-7964G - National Bureau of Standards, "Construction of 35-foot vacuum spectrograph."	0.150
NASw-54 - University of Michigan, "Radio astronomy from satellites and rockets."	0.404
NASw-37 - M.I.T., "Designing, constructing, and testing a high energy gamma-ray detector capable of being carried on a satellite."	0.068
R-9 - NRL, "Laboratory high temperature spectroscopy."	0.075
NsG-82-60 - Yale University, "Steady state interaction of matter and radiation in stellar atmospheres."	0.055
NASw-662 - ECI, "Development of techniques for superheterodyne receivers at frequencies above 100 Gc."	0.152
NsG-301-63 - Purdue University, "High precision spectroscopy with applications to the study of the atomic spectra of the carbon group and to secondary standards in the vacuum ultraviolet and the development of computer methods of data analysis."	0.100
NsG-328 - University of Hawaii, "Theoretical and experimental investigation of electron emission, conductivity, and luminescence of selected solids under vacuum ultraviolet excitation."	0.095
NsG-318 - University of California, LaJolla, "Experimental research on x- and gamma-radiation at high altitudes, including design and use of balloon-borne instrumentation."	0.085
R-21-NRL, "Conduct measurements of the optical constant of materials in the extreme ultraviolet, including construction of a reflectometer for use with existing vacuum monochromator."	0.090
NsG-443 - University of Illinois, "Research related to an experimental test of general relativity."	0.180



## PROGRAM/PROJECT DATA SUMMARY

## Astronomy Program

NsG-493 - University of Arizona, "Laboratory experiments and reductions of photometry and polarimetry." 0.009

NsG-503 - University of Indiana, "Steady-state interaction between radiation and matter in stellar atmospheres." 0.055

NASr-143 - Astronautics Corporation of America, "Field support personnel for stable platform equipment for the X-15 ultraviolet photography experiments." 0.059

SC #6730 - Fysika Institutionen, Upsala, Sweden, "Application for a grant for investigating the highly ionized spectra of nitrogen and oxygen." 0.015

NsG-359 - University of Maryland, "Research on measurement of atomic transition probabilities of high temperature cases." 0.040

SC #5054 - Northeastern University, "Certain theoretical antenna problems for radio astronomy." 0.019

NsG-414 - Princeton University, "Theoretical and/or experimental studies of ultraviolet phenomena of astronomical interest, and of galactic gas dynamics." 0.223

August 14, 1963

Page 6 of 6

D 61.6



PROGRAM/PROJECT DATA SUMMARY

OFFICE OF SPACE SCIENCES

D-65

Solar Physics Program

Henry J. Smith, Program Chief

OBJECTIVES

Solar physics is the specialized branch of astronomy which takes advantage of the sun's uniqueness among the stars. Like stellar astronomy, the ultimate objective of this discipline, is to acquire additional knowledge and improved understanding of the constitution and phenomena of the sun's atmosphere. Proximity of the source endows solar astronomy with observational opportunities that differentiate solar from stellar astronomy. The principal differences consist of the opportunity to study structural detail on the surface and through a range of thickness of the outer atmosphere; and the possibility of detecting very weak but highly significant non-thermal radiations. These differences persist through the solar physics part of the Space Sciences Program and generate highly specialized requirements for rocket and satellite vehicle and experimental techniques. In addition supporting laboratory development and theoretical research must occupy our important role in this program.

Observations of the sun and the solar atmosphere in the X-ray, ultraviolet, and infrared regions of the spectrum in an effort to understand the detailed behavior of typical stars are prime objectives of this program. Investigations of solar-terrestrial relationships and of the effects of solar activity on planetary atmospheres and interplanetary space will be conducted from satellites and rockets, and, possibly in advanced stages, from observations on the moon. In addition to contributing to our understanding of the sun, this program also supports many projects in the various Geophysics Programs and, through increasing our understanding of solar activity, the Manned Space Flight Program. The major project in this program at present is the Orbiting Solar Observatory. A series of these satellites will be flown to investigate and monitor the sun.



PROGRAM/PROJECT DATA SUMMARY

Solar Physics Program

Headquarters Contracts now in effect (in millions of dollars)

NsG-92-60 - University Corporation for Atmospheric Research (HAO) "Investigation of observational means of examining the solar corona, including design studies of a solar coronagraph."	0.075
NsG-311-63 - Western State College of Colorado, "Techniques for rocket-borne spectrographic studies of the solar UV spectrum in the wavelength range 950-1050 A, and use of a prototype instrument for laboratory studies of the absorption of such radiation by nitrogen and oxygen."	0.200
NASr-5 - University of Hawaii, "Conduct design studies and experimental evaluations of a stigmatic spectrograph with nominal dispersion of 1A/mm and resolution of 0.01 A, useful in the spectral range from 1000 A to 3000 A, and of sufficient compactness and speed to be suitable for use in a rocket vehicle."	0.040
NsG-288-62 - Manila Observatory, "Daily optical monitoring of solar activity from Manila."	0.100
NsG-120-61 - University of Arizona, "Generation and detection of ultra-long wavelength x-rays and quantitative studies of their interactions with matter."	0.100
NsG-438 - Harvard University, "Theoretical and experimental studies in ultraviolet solar physics, including construction of laboratory prototype flight experiments."	0.100
NASr-86 - University of Colorado, "The investigation of the solar ultraviolet radiation."	0.250
NsG-320-62 - Dominion Observatory, "Solar flare patrol: Observations of the solar chromosphere."	0.029
NsG-355 - CSIRO, "The cinematographic study of solar magnetic fields."	0.097
NAS 5-660 - American Science and Engineering, "Instrumentation for x-ray astronomy."	0.218
SC #6505 - University of Chicago, "A theoretical investigation of further consequences of the solar wind."	0.111
NASw-89 - University of Colorado, "Research on solar ultraviolet radiation."	0.122
NsG-500 - University of Pennsylvania, "Investigation and analysis of the chromosphere by means of spectrograms for cinematographic observations taken during the total solar eclipses of July 20, 1963, and February 15, 1961."	0.003



PROGRAM/PROJECT DATA SUMMARY

Solar Physics Program

R-102 - NBS, "CRPL solar activity network monitoring."	0.075
W 11054 - AFCRL, "Telemetering monochromator for measurements of solar extreme ultraviolet photon fluxes on S-57 satellite (OSO-C)."	0.056
NsG-404 - UCAR, "Investigation of observational means of examining the solar corona, including design studies of a solar coronagraph."	0.020
SC #6805 -UCAR, "Studies in flare physics and solar radio astronomy."	0.108
SC #3581 - NRL, "Follow-on experiments to be conducted in the Orbiting Solar Observatory Program."	0.548



PROGRAM/PROJECT DATA SUMMARY

SATURN I-B (Vehicle)

ESTIMATED COST:

Project funding:

FY 1963            \$14.4

SCHEDULE:

Twelve Saturn IB flights, including four vehicle development flights, are planned. The first Saturn IB flight is scheduled to take place in 1965.

MANAGERIAL:

- a. A procurement plan to modify the Saturn I contract with Chrysler (NAS8-4016) to include the Saturn I-B program was approved in February 1963. The plan called for building of eight S-I stages and twelve S-IB stages. Negotiations started in May 1963 and were completed in August 1963.
- b. A contract modification (MOD #66) to Contract NAS7-101, S-IVB, Douglas Aircraft Company, Inc. was submitted to NASA Headquarters for approval in September 1963. This modification required that the contractor deliver four additional S-IVB stages to be used in Saturn I-B R&D launches. Headquarters (ML) recommended that modification #66 be disapproved and that negotiations for fee with the Douglas Aircraft Company, Inc., be reopened. The fee of 6.65% was deemed excessive primarily because of poor management practices exhibited by Douglas. A maximum fee of 6.3% was recommended to be established.

Contract Modification #66 will provide coverage of contractor S-IVB activities subsequent to July 31, 1963.



FOR INTERNAL USE ONLY

PROGRAM/PROJECT DATA SUMMARY

OFFICE OF MANNED SPACE FLIGHT  
COMPOSITE LAUNCH OPERATIONS  
Jack Bronaugh, Project Coordinator

E-50

OBJECTIVE:

To study advanced launch operations requirements and undertake development work necessary to improve techniques and equipment in support of Manned Space Flight programs.

Also, to provide the required facilities and instrumentation to transport, receive, inspect, assemble, test, check-out, repair, and launch the vehicles and stages necessary to Manned Space Flight programs, and for other programs requiring vehicles of the Saturn I size and larger.

DESCRIPTION:

1. A continuing requirement exists to modify and improve existing launch operations equipment and to develop new devices or techniques in parallel with advances in vehicle technology. This work takes the form of hardware development and a variety of analytical studies. An extension of this effort is the procurement of ground support equipment to meet specific operational requirements. In support of these efforts, R&D funds are provided in three broad areas:

- (a) Launch Operations Supporting Technology
- (b) Launch Instrumentation
- (c) Launch Operations Support

2. Facilities, primarily in the form of launch complexes and assembly buildings and supporting facilities are to be provided for three basic vehicle types: Saturn I, Saturn IB, and Saturn V. All are planned for the NASA Merritt Island Launch Area and Launch Complexes 34 and 37 to the north of Cape Canaveral, and are funded with Construction of Facilities funds. In general, the following items are now planned:

- (a) Saturn I and Saturn IB

- (1) Complex 34, consisting of a launch control center, a launch pad, an umbilical tower, a service structure, an operations support building, fuel storage, H. P. gas facilities, handling devices, and associated equipment.

Rev. Oct. 9, 1963



- (2) Complex 37, consisting of a launch control center, two launch pads, two umbilical towers, a single service structure, an operational support building, fuel storage, H. P. gas facilities, handling devices, and associated equipment.
- (3) Unloading dock on the Banana River.
- (4) Special assembly building to receive, inspect, repair, and checkout stages.
- (5) Other support buildings and structures (Engineering & Operations Building, Antenna Platform, etc.)

(b) Saturn V

- (1) Complex 39, based on a mobile concept, consists of the following:

- a. one launch control center with four firing rooms, two launch pads, one vertical assembly building with four high, space vehicle assembly bays and four low bays for servicing each of the upper stages, one mobile arming tower, four launcher-umbilical towers, two vehicle transporters, fuel and ordnance storage, gas facilities, handling devices, and associated buildings and equipment.

- (2) Canals, access channels, and docking facilities for transportation and unloading of stages at the vertical assembly building areas.

(c) General Program Support

- (1) Purchase of approximately 87,200 acres of land designated Merritt Island Launch Area (MILA), to the north and west of the present Cape Canaveral boundaries to accommodate manned space flight programs.
- (2) Development of primary utilities by extension from the present Cape area or from external sources.
- (3) An engineering and operations building.

Oct. 9, 1963 (Rev.)

Page 2 of 3

FOR INTERNAL USE ONLY

E-50.2



- (4) A central instrumentation facility.
- (5) Various industrial, utility, and communications buildings and facilities including Merritt Island railroad extension of Florida East Coast Railroad spur line, and causeways across the Banana and Indian Rivers, and internal MTLA access and service roadways.
- (6) Operations and maintenance in the NASA areas.

Oct. 9, 1963 (Rev.)



PROGRAM/PROJECT DATA SUMMARY

OFFICE OF MANNED SPACE FLIGHT

E-70

SPACE MEDICINE

George M. Knauf, M.D., Acting Director

Objectives

To provide operational medical support of space flight missions and to conduct development and test of systems and components to insure the effective performance and safety of ground and flight crews.

Description

The Space Medicine program comprises four functionally distinct technical and managerial activities: Operational Medical Support; Crew Systems Development; Crew Systems Integration; and Space Medicine Administration and Program Coordination.

Operational Medical Support subsumes specific efforts directed toward flight crew activities, ground support activities, and the analysis of flight medical data. Flight crew medical activities begin with the medical selection of the astronauts and their training in the physiological bases for the life support systems and end with the medical debriefing and mission evaluation. The ground support is comprised of the development and implementation of the medical recovery plan and the industrial medicine aspects of the overall flight activities, including the identification and assessment of hazardous areas and products at the Centers associated with the manned space flight effort, their evaluation with respect to performance of assigned missions, the establishment of preventive measures, and the capability to provide emergency medical treatment for center and station personnel. Analysis of flight medical data provides a basis for applying the acquired data to the development program and contributes to the design of in-flight medical experiments.

Crew Systems Development in Space Medicine is directed to the solution of those biomedical problems which exist or appear as a threat to the effective performance of man throughout a space mission. The areas of investigation and interest include the biological effects of radiation, physiological stress, human performance in the space environment, flight crew requirements, bioinstrumentation, and life support systems. Tasks in the Crew Systems Development activity are categorized as either Direct Project Support or Project Supporting Development. The first group consists of those efforts designed to provide the flight hardware, including the test and evaluation of such hardware, and the physiological and medical data required for specific Manned Space Flight projects. Project Supporting Development includes tasks which support time phased product improvement programs designed to effect greater economy in reduced cost,



Description (Continued)

weight or power; increased performance range; and/or improved reliability of systems and components for use in the approved Manned Space Flight projects.

Crew Systems Integration functions to assure that current and future biomedical requirements for medical operational and development support are identified and made a part of the Space Medicine program. It is responsible for preparing the specifications establishing the space medical requirements for advanced studies and for providing to other OMSF staff elements medical data on the environmental parameters to be used in the development of the crew systems and hardware associated with manned space projects. An important function of this division is to serve as the single point of contact between Space Medicine and intra-extra OMSF offices to assure an effective exchange of integrated space medical data.

Space Medicine Administration and Program Coordination is the focal point for the review of Directorate programs and projects, for maintaining staff surveillance over the progress and accomplishment of Directorate projects, and for handling program coordination with other elements of NASA, the Department of Defense and other government agencies.

Responsibilities

The Directorate of Space Medicine provides the capability to reach policy decisions on the role and protection of man in the space program; establishes the biomedical requirements of approved projects; exercises management control within its cognizant areas of appropriate elements of the Manned Spacecraft Center and the Launch Operations Center in planning, evolving and executing the medical development, test and evaluation and the operational medical support programs; and accomplishes all coordination with other government agencies, particularly the DOD and the AEC leading to the most effective use of biomedical development and operational resources, facilities, and personnel.