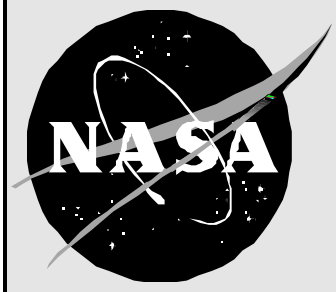

NASA DESK GUIDE on the NASA SUPPLEMENTAL CLASSIFICATION SYSTEM

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SECTION 1. Purpose

This document is intended to provide guidance on policies and procedures related to NASA's Supplemental Classification System.

SECTION 2. References

A. 5 U.S.C., Part III, Subpart D, Chapters 51 and 53

B. 5 CFR, Parts 511 and 532

C. Introduction to the Position Classification Standards, Office of Personnel Management, July 1999

D. The Classifier's Handbook, Office of Personnel Management, July 1999

E. Handbook of Occupational Groups & Families, Office of Personnel Management, August 2001

F. Position Classification Appeals, Office of Personnel Management, June 1998

G. NPD 3000, Management of Human Resources, dated May 7, 1999.

H. NPG 3510.5B Position Classification, dated May 7, 1999

I. NPG 3300.1 Appointment of Personnel To/From NASA, dated May 7, 1999, Chapter 2, AST Rating Procedures

SECTION 3. NASA Supplemental Classification System – Overview

A. Why Developed

NASA developed and implemented the NASA Supplemental Classification System (NSCS) in the early 1960's. The purpose of the NSCS was to permit more meaningful recognition of the distinctive aspects of NASA's work—particularly aerospace work-- than the more broadly defined categories of work and occupations defined within the Government-wide position classification system. NASA found that the occupational series used within the Office of Personnel Management's (OPM) system, such as electrical engineering, aerospace engineering, and physics, were much too broad to meet NASA needs and did not recognize the interdisciplinary nature of the work. In addition, the OPM series did not permit the ready identification and tracking of the agency's personnel resources to a degree of specificity desired by NASA management.

Therefore, in order to meet its needs, NASA identified its own work groups and specializations within these groups. Each specialty was assigned a NSCS code number and title, then aligned with an Office of Personnel Management (OPM) series and title. Because the range of work encompassed by an OPM series was often much broader than an NSCS specialty, a single OPM series typically is matched to multiple NASA specialties.

B. Structure of the NSCS

The NSCS is divided into 10 occupational groups, with seven currently being used, based on the nature of work performed and knowledges required. These groups are identified as follows:

000 Group	Reserved
100 Group	Federal Wage System trade and craft jobs for which compensation is based on the prevailing locality wage rates.
200 Group	Scientific, engineering, and other technical positions performing professional work not directly related to NASA's mission of carrying out aerospace and aeronautical research and development.
300 Group	Technical or support positions engaged in nonprofessional technical and/or support work requiring primarily application of an intensive practical knowledge of the techniques and theories of a subject-matter area and/or the characteristics and capabilities, and operation of a variety of specialized equipment associated with that functional area.
400 Group	Reserved
500 Group	Clerical/assistant and related support positions engaged in work requiring application of established clerical or administrative systems, procedures, and techniques of a subject-matter area or program.
600 Group	Administrative and professional positions engaged in work requiring application of analytical ability, judgment, and knowledge of the principles, concepts, methodology, and objectives of a complex administrative or management subject-matter or program area.

700 Group	Professional engineering, scientific, or other technical positions engaged in professional research, development, operations and related work pertaining to the basic NASA mission.
800 Group	Reserved
900 Group	Life sciences positions engaged in scientific and/or health-oriented work not directly related to aerospace research and development, and requiring application of knowledges, skills, and techniques of health science, nursing, or biological science.

The work encompassed by four of these groups (300, 500, 600, and 700) is subdivided into subgroups, based on relatedness of work and needed knowledges. Each of these subgroups is further subdivided into specialties. However, three occupational groups (100, 200, and 900) are subdivided directly into specialties, thereby omitting the intermediate subgroups. The table below summarizes these differences. See Appendix A for the structure of the NSCS groups and subgroups.

Subgroup	Structure
000	*Reserved*
100	Divided directly into specialties
200	Divided directly into specialties
300	Divided into subgroups and specialties
400	*Reserved*
500	Divided into subgroups and specialties
600	Divided into subgroups and specialties
700	Divided into subgroups and specialties Specialties have definitions
800	*Reserved*
900	Divided directly into specialties

The 700 Group encompasses the professional scientific and engineering positions that accomplish and direct the basic NASA mission. The acronym "AST" –Aerospace Technology—is used to denote these positions. The 700 Group is unique among the occupational groups in that the specialties within the subgroups have precise definitions. Each specialty definition describes a specific area of NASA unique work, and most also identify the subject-matter knowledges associated with the work. The 700 Group, with its subgroups and specialties, are found at Appendix B.

The NSCS schematic and definitions are established and maintained by the Director, Personnel Division, Office of Human Resources and Education, NASA

Headquarters. The NSCS is periodically updated to ensure that it reflects changes resulting from OPM issuances or changes resulting from emerging work or evolving programs and missions within NASA. Section 3.C. addresses updating the occupational groups other than the 700 Group. Section 4.C. addresses updating the 700 Group.

C. Revision and Addition of NSCS Codes—Occupational Groups Other Than the 700 Group

Changing circumstances may require adding new specialties and corresponding codes or abolishing unneeded specialties. This may occur in response to new OPM issuances (such as new classification standards) or in response to needs identified by Centers. In the case of OPM-influenced changes, the Agency Personnel Division (Code FP, NASA Headquarters) typically initiates the required action. Center-initiated proposals to add new specialties should follow these procedures:

1. Temporarily code the position in the "pending classification" code (i.e., -01) at the beginning of the appropriate hundred group.

2. Refer the case to the Director, Personnel Division, NASA Headquarters with a copy of a representative full performance-level position description, or description of the work, the needed qualifications, and other relevant background information.

If the documentation substantiates creating a new NSCS code, the Personnel Director will authorize the code and coordinate adding it to the NASA Personnel Payroll System tables.

SECTION 4. The Aerospace Technology (AST) or 700 Group

A. Definition of NASA 700 Group Work.

The 700 Group encompasses the professional scientific and engineering positions that accomplish and direct the basic NASA mission—the AST positions. A NASA position is appropriately assigned to the 700 Group and designated "AST" if it is engaged in one or more of the "Areas of Work" and meets at least one of the "Working Conditions" identified below.

AST positions are characterized by:

Areas of Work

- The study of space phenomena, or
- Work affected by known or unknown conditions in space or simulated space environments, or
- The science of aeronautics; and/or
- the application of research findings in space and aeronautics

Working Conditions

- Many of these positions are interdisciplinary, bringing into play combinations of academic disciplines which are dictated by the unique problems in the field, or
- Positions reflecting extensions of the traditional disciplines to meet the space environment or advanced flight regimes, and/or
- Positions wherein the duties require an understanding of problems peculiar to space and advanced flight regimes.

B. Structure of the AST System

The NASA 700 Group is divided into 12 subgroups representing functional areas of work found throughout the Agency. These subgroups are further divided into specialties representing discrete areas of work within the broader subgroup. These specialty definitions describe the specific nature of the work; define the skills, knowledge, and qualification requirements for these positions; and become a key tool in recruitment and hiring of scientists and engineers. The schematic for the 700 Group is found at Appendix B

Since the use of OPM series and titles is required for official classification and reporting purposes, each AST specialty has the appropriate OPM series and title aligned with it on the "schematic". The OPM series are much broader, or more general, than the AST specialties since they normally are based on the academic degree or curriculum typically associated with the work.

The 710 Fluid and Flight Mechanics Subgroup illustrates this point. Within this subgroup are 11 specialty areas describing discrete areas of work associated with research, development, test and evaluation of fluid and flight mechanics pertaining to aerospace and aeronautical vehicle. Ten of these specialties (including areas such as aerothermodynamics, fluid mechanics, flight vehicle acoustics, heat transfer, stability, control and performance) are aligned with a single OPM occupational series: Aerospace Engineering (series 0861). The OPM classification standard for Aerospace Engineering, by contrast, does not

have specialty areas within that discipline corresponding to aerothermodynamics work, fluid mechanics work, etc.

Classification of positions to the 700 Group specialties is made on the basis of the work which management intends the incumbents to perform and the qualifications the work requires. The establishment of functions and the assignment of duties to positions are the responsibility of management. It is the responsibility of classifiers to advise and assist management in this process and to reflect in the classification process management's intent when establishing positions. In case of doubt as to which AST specialty is appropriate, classifiers should discuss with management the various alternatives so that the classifier will have the most current information and a correct determination can be made.

C. The –09 Specialties

Each subgroup in the 700 Group, with the exception of the 770 Management Subgroup, has an –09 specialty. This specialty is reserved for entry-level positions (GS-7 or GS-9 levels only) that are in a formal development program of the Center or Agency. However, the use of this specialty for such positions is optional. If another specialty more appropriately describes the work being performed, the Center may assign the position to that specialty.

D. Titling

NSCS titles are assigned to positions based on the NSCS classification code. The titles and codes are maintained by the Personnel Director, Headquarters.

For positions classified to NSCS occupational groups other than the 700 Group, the Office of Personnel Management classification is determined first. After this determination is made, the appropriate NSCS code is determined by reference to the schematic for the non-700 groups.

For positions in the 700 Group, the titling process is different at Appendix E. Assigning titles to AST positions involves first determining which AST specialty definition best describes the work of the position. This determination then dictates the NSCS title and NASA Class Code. The Office of Personnel Management series and title for the position is then identified by reference to the 700 Group Schematic. The diagram at Appendix E illustrates the different approaches used in classifying AST positions and non-AST positions.

OPM may authorize the use of a prefix or suffix in a title, such as Supervisory, Research, Lead. In such cases, the prefix or suffix may be added to the official title. For example, a position that meets the definition of specialty 709-22, would be titled AST-Biological Studies and be aligned with the OPM title Biologist. However, it may also be assigned the titles of Research Biologist or Supervisory Biologist, as appropriate.

When a position in the 700 Group is classified to a series for which the matching OPM series has no prescribed title, the NSCS title also becomes the official OPM title. An example would be NSCS 730-25, Control Systems. This is aligned to OPM series 0801, and the designated OPM title is "Control Systems".

Whether used as the official NASA or OPM title, the NASA title assigned to a position always begins with AST-.

For purposes other than official records, NASA Centers may use organizational titles or functional titles in addition to the OPM and NSCS titles.

Information about titling practices within the OPM classification system can be found in the Introduction to the Position Classification Standards, Section III. H and within each OPM Series Classification Standard.

E. The Management Subgroup (770)

As the subgroup definition indicates, the Management Subgroup includes positions engaged in program development, direction, and coordination of aerospace and aeronautical research, development, design, test, and operations efforts. The work includes determining and evaluating project/program requirements; long and short range planning; formulating and implementing project/program management systems and controls; managing resources; and identifying and resolving problems.

The work must clearly influence management considerations with respect to research, development, or operations in the aerospace field, be directly related staff work, and/or provide direct technical support to management.

Note that specialty 770-01, Executive Management, is not linked with a definition describing the nature of work or scope of responsibilities. Instead, it is defined as a category including all AST positions in the Senior Executive Service (pay system ES) and the AST positions that are subject to Presidential appointment with Senate confirmation (pay system EX). No specific OPM title or series is assigned to this specialty on the schematic; the title and series are assigned to the individual position description at the time it is established.

Several specialties within the 770 Management Subgroup involve program management or project management responsibilities. Human resources specialists classifying AST positions within these specialties should be familiar with key policies and concepts associated with program and project management within NASA. See Appendix C for additional information.

F. Revision and Addition of Specialties

The specialties and their corresponding codes in the 700 Group are changed in response to emerging work or changing NASA programs and missions. The principal criteria for establishing a specialty is the existence of a significant amount of Agency work, normally representing ten positions, and the expectation that the work will continue for a reasonable period. Whenever a Center wishes to propose a change to this Group, it should follow the procedures outlined below.

1. Review the 700 Subgroup definitions to determine the appropriate subgroup for the work. Review the NASA classification website to verify that another Center has not already established a "pending" specialty within that subgroup that appropriately fits your work. (If there is an appropriate pending code/specialty established, assign that NASA Class Code number to your position.)

2. If no proposed specialty fits the work, temporarily code the position with a pending classification code from the appropriate subgroup. Use the next available number in that subgroup, following the normal sequential order. If necessary, contact Headquarters, Personnel Policy Branch, to confirm the next number available for use.

3. Develop a proposed specialty definition and forward to NASA Headquarters, Code FP, for posting on the Agency classification web site. At this point, the definition need not have the level of detail characteristic of the established specialties; it may be a statement of the major duties extracted from the position description that was written.

4. NASA Headquarters, Agency Personnel Division, will periodically review the number of employees in each pending code specialty. Generally, when the number of positions assigned to a specific 90's pending code reaches 10, Headquarters will initiate action with the appropriate Centers to determine whether a new specialty should be incorporated into the subgroup.

Typically, this determination is accomplished by consulting with affected Centers to identify a Lead Center to initiate a review. The Lead Center will meet with subject matter experts (SME's) to request that they review, evaluate, and comment on the proposed specialty definition and qualification requirements. The results of the SME review are then shared with other appropriate Centers and SME's at those Centers are afforded an opportunity to comment. If the consensus is to establish a new specialty, a specialty definition is developed and the Director, Personnel Division takes action to have it incorporated into the appropriate human resources systems and posted on the website.

Documentation of the review process that resulted in establishing the new specialty is accomplished by completing the Specialty Review Form (Appendix

E). This form is signed by three or more subject-matter experts (SME's) certifying that (a) the definition describes a legitimate and discrete area of work; (b) the recommended subgroup is appropriate; and (c) the propriety of the current list of approved college majors for the subgroup to which the proposed specialty would be assigned. If the SME's recommend changes, i.e., additions or deletions to that list, rationales should be included.

The Centers complete the Subject Matter Expert Personal Data Sheet (see Appendix F) for the SMEs who developed the definition. The Specialty Review Form and the SME Personal Data Sheets are forwarded to Headquarters to be reviewed and filed with the official records.

The Headquarters will review new specialty proposals for adequacy of documentation, ensure that they meet OPM classification and NASA qualification requirements, assign an NSCS Class Code and OPM series to the specialty (if not previously done) and coordinate adding the specialty to the current human resources databases. These changes normally are announced through NASA Headquarters Personnel Bulletins.

G. AST Rating Guide

Chapter 2, AST Rating Procedures, of NPG 3300.1, Appointment of Personnel To/From NASA, describes the qualifications and rating requirements for AST positions. These requirements constitute NASA's single agency qualification standards for AST positions.

SECTION 5. Position Documentation

The duties and responsibilities constituting all NASA positions at the GS-15 and below levels are officially documented on a NASA Form 692, "Position Description". An adequate position description will provide all the information needed to determine the series, title, and grade of the position when the appropriate classification criteria are applied.

Position descriptions are written in one of two basic formats: a narrative format, or the Factor Evaluation System (FES) format. Chapter 3 of The Classifier's Handbook provides background information on writing position descriptions.

The reasoning upon which the job classification was made is documented in the *evaluation statement*. Evaluation statements are required for the following categories of positions:

1. Supervisory positions
2. Positions that exceed the published grade-level criterial in the governing standard.
3. Positions for which there are no specific published grade-level criteria (e.g series 301, 341, 345)
4. Positions whose classifications reflect in some measure the impact of the incumbent on the position.
5. Positions that are borderline GS/FWS.

Copies of evaluation statements should be filed with the official position description retained in the classification office.

The office responsible for classification should maintain the official files of original positions descriptions. These files may also include charts of organizational segments.

Section 6. Classification Appeals

NASA's policies regarding classification appeals for General Schedule (GS) positions and job-grading appeals of Federal Wage System (FWS) jobs are found in sections 2.8 and 2.9, respectively, of NPG 3510.1.

OPM provides information on appeals in the Introduction to the Position Classification Standards, Appendix 4. Comprehensive information on the appeals process, decisions, and related information may be found on their website at http://www.opm.gov/classapp/index.htm.

APPENDIX A The Structure of the NSCS

The Groups and Subgroups within the NSCS are defined below. The complete schematic, including occupational series and titles (and definitions for the 700 Group specialties), can be found on the website.

NASA 100 GROUP

Trades and Labor positions: Includes positions found in the Federal Wage System (FWS). FWS is the basic classification and compensations system for Trades and Labor Occupations in the Federal Government. The FWS was established by Public Law 92-392.

There are no subgroups within the 100 Group.

NASA 200 GROUP

Professional scientific and engineering positions not involved in aerospace work: Includes positions engaged in scientific and engineering work requiring application of professional knowledge of the principles, methods, procedures, and techniques of physical science, engineering, and mathematics. (Those positions whose work is directly related to aerospace activities are excluded from this group—refer to the NSCS 700 Group.)

There are no subgroups within the 200 Group.

NASA 300 GROUP SCHEMATIC

Technical or support positions: Includes positions engaged in nonprofessional one or two-graded interval technical and/or support work requiring primarily application of an intensive practical knowledge of the techniques and theories of a subject-matter area and/or the characteristics, capabilities, and operation of a variety of specialized equipment associated with that area.

Within the 300 Group are the following subgroups:

- Engineering Technician
- Electronics Technician
- Engineering Draftsmen

(300 Group, continued)

- Equipment Specialist
- Mathematics Technician
- Physical Science Technician
- Miscellaneous Technician
- Sciences Aid
- Student Trainee (Technical)
- Illustrator
- Photographer
- Quality Assurance
- Inspection, Security, and Telecommunications
- Production Planning and Control
- Miscellaneous

NASA 500 GROUP

Clerical/Assistant and related support positions: Includes positions engaged in routine one-grade interval clerical and support work requiring application of a practical knowledge of the established clerical or administrative systems, procedures, and techniques of a subject-matter area or program.

Within the 500 Group are the following subgroups:

- Miscellaneous Clerical/Assistant
- Human Resources and Education
- Specialized Administrative Clerical
- Office Assistant and Secretarial
- Office Machine Operation
- Communication Operations and Clerical
- Office Methods Support
- Accounting and Budget Support
- Procurement and Supply
- Transportation Operation and Clerical
- Legal Administrative and Clerical
- Library

NASA 600 GROUP

Professional administrative positions: Includes positions normally performing two-grade interval (but occasionally may be one-grade interval) administrative/professional work requiring application of analytical ability, judgment, and knowledge of the principles, concepts, policies, methodology, and objectives of a complex management subject matter or program area.

Within the 600 Group are the following subgroups:

- Administration
- Information Technology
- Contract and Procurement
- Property and Supply
- Transportation and Traffic
- Financial Operations
- Human Resources
- Public Affairs
- Technical Publications
- Legal, Legislative, and Patent
- Education
- Technical Exhibits and Presentations
- Security, Investigation, and Safety
- Management
- Business and Industry
- Equipment, Facilities, and Services
- Miscellaneous

NASA 700 Group (see Appendix B)

NASA 900 GROUP

Life Sciences Positions: Includes positions engaged in scientific and/or health-oriented professional work unrelated to aerospace research and development and requiring application of knowledge, skills and techniques of health science, nursing, or biological science.

There are no subgroups within the 900 Group.

APPENDIX B The 700 Group Schematic

The NASA 700 Group is divided into subgroups that represent a functional area of work found throughout the Agency. Each subgroup is subdivided into specialties representing discrete areas of work within the subgroup. The Subgroups are:

701	Space Sciences Subgroup
702	Earth Sciences Subgroup
709	Life Sciences and Systems Subgroup
710	Fluid and Flight Mechanics Subgroup
715	Materials and Structures Subgroup
720	Propulsion and Power Subgroup
725	Flight Systems Subgroup
730	Measurement and Instrumentation Subgroup
735	Data Systems and Analysis Subgroup
740	Facilities and Environmental Factors Subgroup
745	Operations Subgroup
770	Management Subgroup

The following pages indicate the specialties within each of these subgroups, as of October 31, 2001.

701 SPACE SCIENCES SUBGROUP

DEFINITION: Includes positions engaged in the study of the Earth and planetary atmospheres and ionospheres; field and particles in the interplanetary space environment; the Sun and extra-solar objects and radiation emitted by them; the chemical, physical, and morphologic properties of moons, planetary bodies, and other solid materials in the solar system and of their samples; data obtained from the above investigations and/or the development of instrumentation for these purposes.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
701-05	Atmospheres and Ionospheres	Astrophysicist	GS-1330
701-09	Space Sciences (GS-7/9 entry-level positions only)	Space Scientist	GS-1330
701-15	Fields and Particles	Astrophysicist	GS-1330
701-20	Stellar, Galactic, and Extragalactic Astrophysics	Astrophysicist	GS-1330
701-25	Planetary Studies	Space Scientist	GS-1330
701-35	Solar and Solar Terrestrial Studies	Astrophysicist	GS-1330
701-40	Solar Systems Analysis	Physical Scientist	GS-1301

702 EARTH SCIENCES SUBGROUP

DEFINITION: Includes positions that are involved in the development of future remote sensing missions and aircraft experiments; defining new or modifying aerospace sensing instrumentation used in obtaining data on the characteristics and phenomena of the Earth and its atmosphere, including the utilization and operational control of such instrumentation; and analysis, interpretation, and application of data obtained through remote sensing in the biological and physical science disciplines.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
702-02	Earth Sciences Remote Sensing	Physical Scientist	GS-1301
702-03	Climate and Radiation Studies	Physical Scientist	GS-1301
702-04	Atmospheric Chemistry and Dynamics	Physical Scientist	GS-1301
702-05	Earth Biosphere Studies	Chemist	GS-1320
702-06	Atmospheric Measurements	Physical Scientist	GS-1301
702-07	Applications Data Management	Physical Scientist	GS-1301
702-08	Science Missions	Physical Scientist	GS-1301
702-09	Earth Sciences (GS-7/9 entry-level positions only)	Physical Scientist	GS-1301
702-10	Oceanographic Studies	Oceanographer	GS-1360
702-11	Meteorological Studies	Meteorologist	GS-1340
702-12	Solid Earth Geophysical Studies	Geophysicist	GS-1313

709 LIFE SCIENCES AND SYSTEMS SUBGROUP

DEFINITION: Includes positions engaged in research, development, and application of human-system integration technology for use in the aerospace environment and in research pertaining to humans and other life forms in the universe. Also includes, their interaction with their natural and space environments; including psycho-physiological attributes of human functioning as part of a human-machine system, countermeasures for problems that result when humans are exposed to the space flight environment, determining requirements for life support and environmental control systems, flight investigations, and experiment payloads; origin and evolution of biological processes, systems, structures, and species; and means for detection of life and life-related molecules beyond Earth.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
709-09	Life Sciences and Systems (GS-7/9 entry-level positions only)	Physical Scientist	GS-1301
709-22	Biological Studies	Biological Studies	GS-0401
709-31	Chemical and Biological Evolution	Physical Scientist	GS-1301
709-42	Human Performance Studies	Psychologist	GS-0180
709-43	Medical Studies	Medical Officer	GS-0602
709-44	Life Support Studies	Physical Scientist	GS-1301
709-45	Human/Machine Systems	Human/Machine Systems	GS-0801
709-50	Life Sciences Research	Life Sciences Research	GS-0401

710 FLUID AND FLIGHT MECHANICS SUBGROUP

DEFINITION: Includes positions engaged in research, development, test, and evaluation of fluid and flight mechanics pertaining to aerospace and aeronautical vehicles. Includes investigations of the force and motion mechanics of vehicles in various atmospheric and celestial environments, wind tunnel testing, and computational analysis of aircraft and spacecraft fluid flow phenomena and flight mechanics problems; studies of the aerothermodynamics of vehicles entering planetary atmospheres including dissociation and ionized gas effects; the development of systems to control, navigate, and guide flight vehicles in planetary atmospheres and in space including trajectory analysis; investigations into the effects of structural vibrations and noise on the design and operation of vehicles; studies of space flight vehicle design and mission analyses; and research on the characteristics of electrically conducting fluids under the action of magnetic and electric fields.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
710-02	Aerothermodynamics	Aerospace Engineer	GS-0861
710-09	Fluid and Flight Mechanics (GS-7/9 entry-level positions only)	Aerospace Engineer	GS-0861
710-10	Aerospace Vehicle Design and Mission Analysis	Aerospace Engineer	GS-0861
710-15	Navigation, Guidance, and Control Systems	Aerospace Engineer	GS-0861
710-30	Fluid Mechanics	Aerospace Engineer	GS-0861
710-45	Flight Vehicle Acoustics	Aerospace Engineer	GS-0861
710-55	Heat Transfer	Aerospace Engineer	GS-0861
710-60	Stability, Control, and Performance	Aerospace Engineer	GS-0861
710-65	Flight Vehicle Atmospheric Environments	Aerospace Engineer	GS-0861
710-68	Basic Properties of Gases	Physicist	GS-1310
710-70	Flight Vehicle Space Environments	Aerospace Engineer	GS-0861

715 MATERIALS AND STRUCTURES SUBGROUP

DEFINITION: Includes positions engaged in research, developing, designing, manufacturing, fabricating, processing, testing and/or evaluating work on various kinds of metallic and non-metallic materials for use in aerospace and aeronautical vehicles; into the effects of space environments, loads, and stresses on the structures and materials of aerospace and aeronautical vehicles and support systems; and on the problems of tribology (lubrication, friction, and wear) in relation to these systems.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
715-02	Structural Dynamics	Aerospace Engineer	GS-0861
715-03	Mechanics of Materials and Structures	Materials Engineer	GS-0806
715-09	Materials and Structures (GS-7/9 entry-level positions)	Aerospace Engineer	GS-0861
715-15	Structural Materials	Materials Engineer	GS-0806
715-17	Aerospace Metallic Materials	Materials Engineer	GS-0806
715-20	Basic Properties of Materials	Physicist	GS-1310
715-25	Aerospace Polymeric Materials	Chemical Engineer	GS-0893
715-35	Aerospace Ceramic Materials	Chemical Engineer	GS-0893
715-40	Tribology	Materials Engineer	GS-0806
715-50	Structural Mechanics	Aerospace Engineer	GS-0861
715-55	Flight Structures	Aerospace Engineer	GS-0861
715-60	Aerospace Materials	Materials Engineer	GS-0806
715-65	Aeroelasticity	Aerospace Engineer	GS-0861

720 PROPULSION AND POWER SUBGROUP

DEFINITION: Includes positions engaged in research, development, design, test, and evaluation of aircraft and aerospace propulsion systems (such as liquid, solid, electrical, chemical, beamed energy, solar sails, antimatter and nuclear, etc., separately or in combination) and aerospace power generation systems and their component parts and subsystems, including processes and systems for the direct and indirect conversion of energy into power for aerospace and aeronautical application.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
720-02	Electric Propulsion Systems	Electrical Engineer	GS-0850
720-03	Electrical Power Systems	Electrical Engineer	GS-0850
720-04	Airbreathing Propulsion Systems	Aerospace Engineer	GS-0861
720-05	Liquid Propulsion Systems	Aerospace Engineer	GS-0861
720-06	Mechanical Components	Mechanical Engineer	GS-0830
720-09	Propulsion and Power (GS-7/9 entry-level positions)	Aerospace Engineer	GS-0861
720-10	Solid Propulsion Systems	Aerospace Engineer	GS-0861
720-19	Aerospace Propulsion Systems	Aerospace Engineer	GS-0861
720-25	Direct Energy Conversion	Electrical Engineer	GS-0850
720-50	Fuels and Combustion Processes	Chemical Engineer	GS-0893
720-60	Propulsion Flow Dynamics	Aerospace Engineer	GS-0861
720-70	Pyrotechnic Systems	Aerospace Engineer	GS-0861
720-80	Propulsion Systems and Technologies	Aerospace Engineer	GS-0861

725 FLIGHT SYSTEMS SUBGROUP

DEFINITION: Includes positions engaged in safety, reliability, quality assurance, risk management, research, development, design, test, and evaluation of aerospace and aeronautical vehicles and component systems (including stages, propulsion, control and guidance, data management and software, structures, payloads, etc.) or of an aerospace or aeronautical vehicle and the related external systems (e.g., ground support and telemetry).

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
725-04	Reliability and Quality Assurance	Aerospace Engineer	GS-0861
725-05	Reliability	Aerospace Engineer	GS-0861
725-09	Flight Systems (GS-7/9 entry-level positions)	Aerospace Engineer	GS-0861
725-10	Flight Systems Test	Aerospace Engineer	GS-0861
725-11	Flight Systems Safety	Aerospace Engineer	GS-0861
725-12	Aerospace Flight Systems	Aerospace Engineer	GS-0861
725-13	Flight Systems Design	Aerospace Engineer	GS-0861
725-15	Electronic Systems Failure Analysis	Electronics Engineer	GS-0855
725-16	Crew Station Systems	Aerospace Engineer	GS-0861
725-17	Environmental Control Systems	Aerospace Engineer	GS-0861
725-20	Experimental Manufacturing Techniques	Aerospace Engineer	GS-0861
725-22	Quality Assurance	Aerospace Engineer	GS-0861
725-30	Electrical Systems	Electrical Engineer	GS-0850
725-31	Automation and Robotics Systems	Aerospace Engineer	GS-0861
725-40	Safety and Mission Assurance	Aerospace Engineer	GS-0861
725-41	Fluid Systems Test	Aerospace Engineer	GS-0861
725-42	Flight Systems Engineering	Aerospace Engineer	GS-0861

730 MEASUREMENT AND INSTRUMENTATION SUBGROUP

DEFINITION: Includes positions engaged in research, development, design, fabrication, test, and evaluation of equipment, systems, or techniques for detecting, referencing, computing, recording, and measuring physical conditions and environment, as well as communication, control, test, and calibration operations related to space and ground systems.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
730-05	Sensors and Transducers	Electronics Engineer	GS-0855
730-09	Measurement and Instrumentation (GS-7/9 entry-level positions)	Electronics Engineer	GS-0855
730-10	Electronic Instrumentation Systems	Electronics Engineer	GS-0855
730-15	Optical Physics	Physicist	GS-1310
730-16	Electro-optical Sensor Systems	Electronics Engineer	GS-0855
730-25	Control Systems	Control Systems	GS-0801
730-37	Tracking and Telemetry Systems	Electronics Engineer	GS-0855
730-55	Telecommunications	Electronics Engineer	GS-0855
730-57	Electronics of Materials	Physicist	GS-1310
730-65	Microwave Physical Electronics	Physicist	GS-1310
730-70	Nanotechnology Systems	Physical Scientist	GS-1301
730-71	Experimental Electrical Equipment and Techniques	Electrical Engineer	GS-0850
730-72	Optical Engineering	Electronics Engineer	GS-0855

735 DATA SYSTEMS AND ANALYSIS SUBGROUP

DEFINITION: This includes positions engaged in research, development, design, test, analysis, and evaluation of data handling and computing equipment for aerospace and aeronautical purposes (hardware) and the research and development of systems for reducing and computing data (software), or simulating aerospace and/or flight conditions by use of mathematical models, automation, and robotics. This subgroup also includes information technology work that is directly linked to aerospace flight and/or ground data systems.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
735-02	Data Systems	Computer Engineer	GS-0854
735-03	Software Systems	Computer Engineer	GS-0854
735-05	Data Analysis	Computer Engineer	GS-0854
735-06	Data Systems Analysis	Computer Engineer	GS-0854
735-07	Flight Data Systems	Computer Engineer	GS-0854
735-08	Ground Data Systems	Computer Engineer	GS-0854
735-09	Data Systems and Analysis (GS-7/9 entry-level positions)	Computer Engineer	GS-0854
735-10	Theoretical Simulation Techniques	Aerospace Engineer	GS-0861
735-13	Data Hardware Systems	Electronics Engineer	GS-0855
735-16	Computer Research and Development	Computer Scientist	GS-1550
735-17	Avionics Systems	Electronics Engineer	GS-0855
735-20	Aerospace Information Technology	Computer Engineer	GS-0854
735-25	Engineering Optimization	Mathematician	GS-1520

740 FACILITIES AND ENVIRONMENTAL FACTORS SUBGROUP

DEFINITION: Includes positions engaged in research, development, design, test, evaluation, and construction of facilities, systems, equipment, controls, and support facilities for use in aerospace and aeronautical research, development, testing and operational activities. Also included are positions involved in planning, developing, coordinating and directing operations for assessing the impact of aerospace and aeronautical operations on the environment.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
740-02	Experimental Facilities Development	Experimental Facilities Development	GS-0801
740-03	Facility Systems Safety	Facility Systems Safety	GS-0801
740-09	Facilities and Environmental Factors (GS-7/9 entry-level positions)	Facilities and Environmental Factors	GS-0801
740-10	Mechanical Experimental Equipment	Mechanical Engineer	GS-0830
740-15	Gas and Fluid Systems	Gas and Fluid Systems	GS-0801
740-20	Electrical Experimental Equipment	Electrical Engineer	GS-0850
740-25	Experimental Facilities Techniques	Experimental Facilities Techniques	GS-0801
740-30	Aerospace Environmental Control Techniques	Aerospace Environmental Control Techniques	GS-0801
740-35	Aerospace Experimental Facilities and Test Technologies	Aerospace Experimental Facilities and Test Technologies	GS-0801

745 OPERATIONS SUBGROUP

DEFINITION: Includes positions responsible for developing and analyzing operational concepts and planning space flight operations; management and integration of the operations activities required to support space flight missions; and positions that develop and validate flight procedures and activity plans, establish requirements for and conduct training of space flight crews. Also covered are members of space flight crews, pilots of research and development aircraft, and robotic operations.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
745-02	Flight Training	Flight Training	GS-0801
745-03	Flight Systems Operations	Flight Systems Operations	GS-0801
745-04	Mission Support Requirements and Development	Mission Support Requirements and Development	GS-0801
745-05	Mission Operations Integration	Mission Operations Integration	GS-0801
745-06	Management Astronaut	*	*
745-07	Mission Specialist Astronaut	*	*
745-08	Pilot Astronaut	Aerospace Engineer	GS-0861
745-09	Operations (GS-7/9 entry-level positions)	Operations	GS-0801
745-10	Research Pilot	Aerospace Engineer	GS-0861
745-11	Launch and Flight Operations	Launch and Flight Operations	GS-0801
745-12	Aircraft Mission Operations	Aircraft Mission Operations	GS-0801
745-20	Payload Processing Operations	Payload Processing Operations	GS-0801

*This is an interdisciplinary specialty that includes positions that may be incumbered by either engineers or scientists. The final OPM series/title of a specific position is determined by the qualifications of the individual who fills it, and is recorded on the position description.

770 MANAGEMENT SUBGROUP

DEFINITION: Includes positions engaged in program development, direction, and coordination of aerospace and aeronautical research, development, design, test, and operations efforts. The work includes determination and evaluation of project/program requirements; overall long- and short-range planning, formulation and implementation of project/program management systems and controls, management of resources, identification and resolution of interface, integration, and technical problems, conduct of or participation in status reviews and documentation and reporting the status results, problems, concerns, etc., and assessment of contractor performance.

NASA Class Code	NASA Specialty Title	OPM Title	OPM Series
770-01	Senior Executive	*	*
770-10	Engineering Project Management	Engineering Project Management	GS-0801
770-11	Science Project Management	Physical Scientist	GS-1301
770-29	Physical Science Technical Management	Physical Scientist	GS-1301
770-30	Technical Management	Technical Management	GS-0801
770-32	Technical Resources Management	Technical Resources Management	GS-0801
770-33	Physical Science Technical Resources Management	Physical Scientist	GS-1301
770-34	Technical Engineering Operations Management	Technical Engineering Operations Management	GS-0801
770-40	Engineering Technology Utilization and Commercialization	Engineering Technology Utilization and Commercialization	GS-0801
770-41	Science Technology Utilization and Commercialization	Physical Scientist	GS-1301
770-56	Launch Site Support Management	Launch Site Support Management	GS-0801
770-60	Engineering Program Management	Engineering Program Management	GS-0801
770-61	Science Program Management	Physical Scientist	GS-1301
770-77	Logistics Engineering Management	Logistics Engineering Management	GS-0801

* The Agency Executive Personnel Office approves the OPM title and series. Positions in this specialty are restricted to professional series within the OPM engineering and science groups.

NOTE: Specialties in the 770 Subgroup are to be used only when no other specialty appropriately describes the work being performed. Also, the work must clearly influence management considerations with respect to research, development, or operations in the aerospace field, be directly related staff work, and/or provide direct technical support

795-00	Expert
796-00	Consultant
799-00	Graduate Co-op

APPENDIX C Program and Project Management Concepts

References:

a. NPG 1000.2,NASA Strategic Management Handbook "The Red Book", February 2000.
b. NPD 7120.4B, Program/Project Management, December 6, 1999.
c. NPG 7120.5A, NASA Program and Project Management Processes and Requirement, April 3, 1998.
d. NASA Project Management Development Process (PMDP) Handbook.

Within the 770 Management Subgroup are specialties referring to program and project management responsibilities. Human resources specialists classifying AST positions within these specialties should be familiar with key policies and concepts associated with program and project management within NASA. The PMDP Handbook provides, among other things, a framework for continuing professional development in project management. The PMDP career development model may be helpful in preparing and classifying AST project/program management positions descriptions. This model has four career levels, reflecting increased responsibilities as employees develop in their careers:

Level 1 – Project Team Member

1) Performs fundamental, basic, and routine activities, while gaining subject matter expertise in requirements definition, using a Work Breakdown Structure (WBS) in project planning, estimating project risk, cost and schedule estimation, and reporting of work elements, budgeting concepts, scheduling concepts, configuration management, and baseline control, and/or
2) Contributes to project activities such as annual POP inputs, configuration management reviews, specific contributions, as specified in a project WBS, and the schedule and cost reporting process.

Level 2 – Subsystem Manager

1) Performs in management of a simple project (for example, in terms of a smaller and simpler number of internal/external interfaces, smaller team, simpler contracting processes, smaller budget, and short duration)
2) Contribute to a larger system effort by assisting in project requirements definition, planning and budgeting, WBS

development and use, project schedule development and use, risk planning, establishment of project cost/schedule/technical baselines, selection and use of appropriate reports, application of configuration management, hardware/software integration, testing and evaluation, contract management process and review, and work under the teams facilitated leadership.

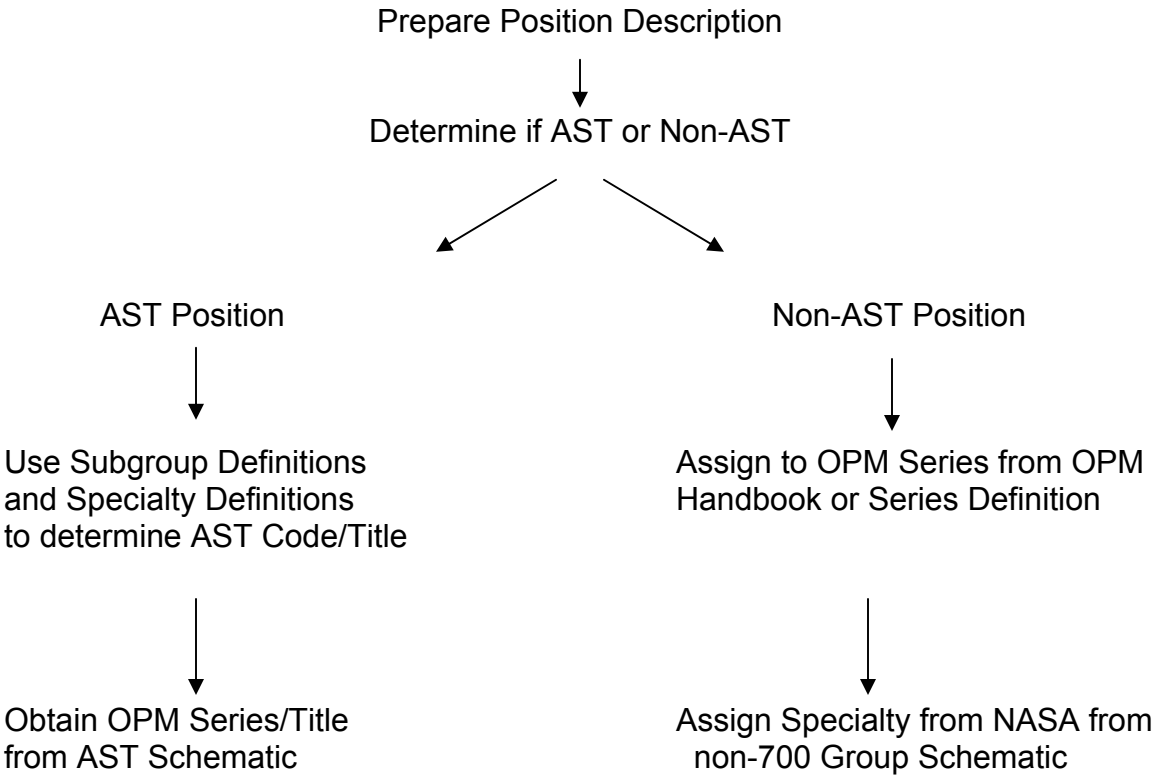
Level 3 –/Systems Manager

1) Performs in management of a more complex project (possibly three distinct subsystems/parts/pieces, or other defined services, capabilities or product) with associate interfaces, or
2) Contribute to larger project or program by taking leadership responsibility and management in the initiation and/or development of content/skill areas specified in the PMDP model, and demonstrate successful top-level management of subordinate elements that are developing in parallel.

Level 4 – Program Manager

1) Performs management of a complex program or a set of complex projects with multiple associated interfaces, or
2) Sets the organizational climate for the overall program effort, and effectively adapts to political and strategic realities so that the overall effort remains viable.

APPENDIX D Classifying AST vs. Non-AST Positions



APPENDIX E SPECIALTY REVIEW FORM

Title and Code:_____

I. Action

_____ The current definition of this specialty and the Approved College major in the AST Rating Schedule accurately encompass a discrete body of work at this Center.

_____ Proposed Modification or Elimination of Specialty (If checked, complete II below)

_____ Proposed New Specialty (If checked, complete III below)

II. Modification of Existing Specialty

_____ The attached proposed modified definition is recommended for inclusion in the 700 Group.

_____ No change to list of Approved College Majors recommended

_____ The changes indicated in the attached list should be made to the list of Approved College Majors for the subgroup to which this Specialty belongs. State reasons in terms of knowledges required.

III. New Specialty

_____ The attached proposed Specialty is recommended for inclusion in the 700 Group.

_____ No change to list of Approved College Majors recommended. State reasons in terms of knowledge required.

_____ The changes indicated in the attached list should be made to the list of Approved College Majors for the Subgroup to which this Specialty belongs. State reasons in terms of knowledges required.

IV. Certification

SME_____ SME_____

SME_____ SME_____

SME_____ SME_____

APPENDIX G Subject Matter Expert Personal Data Sheet

Name _____ Series/Grade _____

Office Address _____ NASA Specialty _____

_____ Office Phone _____

_____

Center _____

This employee is selected as a subject matter expert (SME) for the following Subgroup and Specialty _____

Description of experience in this Subgroup/Specialty and related Specialties:

_____

_____

_____

_____

_____

Optional Remarks: _____

_____

_____

Prepared by: _____

Date: _____