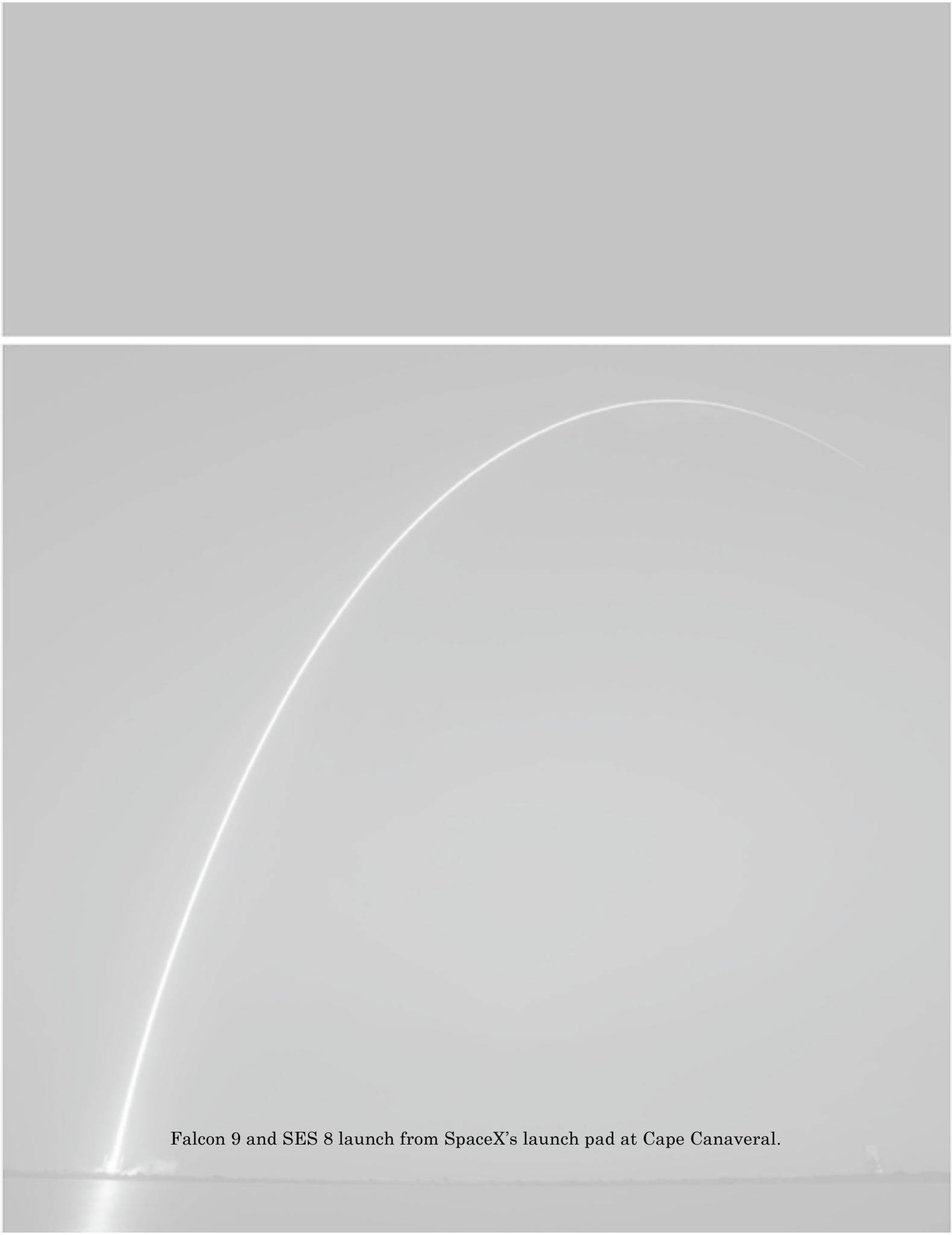
NASA OFFICE OF INSPECTOR GENERAL

SEMIANNUAL REPORT

October 1, 2013 – March 31, 2014



Falcon 9 and SES 8 launch from SpaceX's launch pad at Cape Canaveral.

FROM THE INSPECTOR GENERAL

Space exploration remains a tent-pole objective in NASA's mission portfolio, and consequently the Office of Inspector General (OIG) spends significant resources examining a wide variety of space-related programs, such as the Agency's efforts to nurture a domestic capability to transport astronauts to the International Space Station.

At the same time, the OIG issued three audits this reporting period that looked inward at NASA's contracting and spending practices, specifically the Agency's use of award-fee incentive contracts, the status of its strategic sourcing program, and its award closeout process. Such reviews, as well as the efforts of our Office of Investigations targeting contract and grant fraud, are particularly important at an agency like NASA that spends approximately 80 percent of its $17 billion annual budget on contracts, grants, and cooperative agreements.

Our findings in these three reviews illustrate that NASA has significant work to do to improve its multi-billion-dollar contracting and procurement operations. For example, we found a number of questionable practices in our review of incentive contracts (in which a predetermined amount of money is set aside for the contractor to earn based on performance), including overly complex award-fee formulas and a contract clause designed to hold contractors accountable for the quality of the final product that disregards interim performance evaluations. In particular, we believe the practice of including unearned funds from interim award periods in the final award pool circumvents Federal contracting rules and promotes a philosophy that as long as a mission provides good science NASA will overlook cost and schedule overages. Given the large sums of money at stake, we intend to continue to monitor NASA's performance in administering its contracts and grants as we work with the Agency to find solutions to the deficiencies identified in our reports.

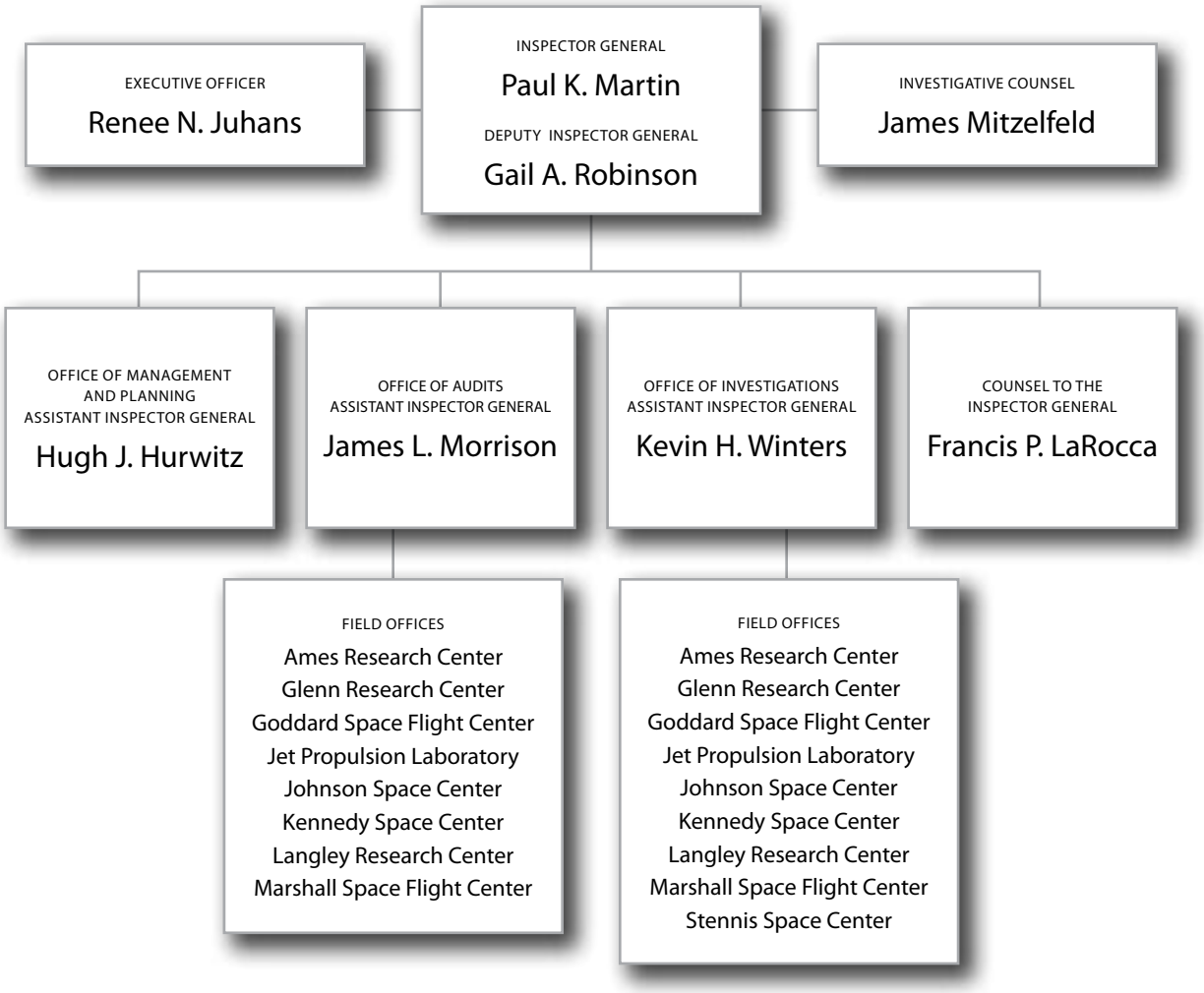
Finally, during the reporting period we issued our annual report identifying the most serious management and performance challenges facing NASA. We discuss nine challenges in this year's report ranging from developing the Space Launch System and related programs, to ensuring the continued efficacy of the networks used to communicate with vehicles and satellites in space, to overhauling the Agency's information technology governance structure.

This Semiannual Report summarizes the OIG's activities and accomplishments from October 1, 2013, through March 31, 2014. We hope that you find it informative.

Paul K. Martin
Inspector General
April 30, 2014

Contents

OFFICE OF INSPECTOR GENERAL



The NASA Office of Inspector General (OIG) conducts audits, reviews, and investigations of NASA programs and operations to prevent and detect fraud, waste, abuse, and mismanagement and to assist NASA management in promoting economy, efficiency, and effectiveness. The OIG's fiscal year (FY) 2014 budget of $37.5 million supports the work of 195 employees in their audit, investigative, and administrative activities.

The Inspector General (IG) provides policy direction and leadership for the NASA OIG and serves as an independent voice to the NASA Administrator and Congress by identifying opportunities for improving the Agency's performance. The Deputy Inspector General assists the IG in managing the full range of the OIG's programs and activities and provides supervision to the Assistant Inspectors General and Counsel in the development and implementation of the OIG's diverse audit, investigative, legal, and support operations. The Executive Officer serves as the

OIG liaison to Congress and other Government entities, conducts OIG outreach both within and outside NASA, and manages special projects. The Investigative Counsel serves as a senior advisor for OIG investigative activities and conducts special reviews of NASA programs and personnel.

The Office of Audits (OA) conducts independent and objective audits and reviews of NASA programs, projects, operations, and contractor activities. In addition, OA oversees the work of an independent public accounting firm in its annual audit of NASA's financial statements.

The Office of Counsel to the Inspector General provides legal advice and assistance to OIG managers, auditors, and investigators. The Office serves as OIG counsel in administrative litigation and assists the Department of Justice when the OIG participates as part of the prosecution team or when the OIG is a witness or defendant in legal proceedings. In addition, the IG has designated the Counsel as Whistleblower Protection Ombudsman, and in that role he educates Agency employees about prohibitions on retaliation for protected disclosures and about rights and remedies for protected whistleblower disclosures.

The Office of Investigations (OI) investigates allegations of cybercrime, fraud, waste, abuse, and misconduct that may affect NASA programs, projects, operations, and resources. OI refers its findings either to the Department of Justice for criminal prosecution and civil litigation or to NASA management for administrative action. Through its investigations, OI develops recommendations for NASA management to reduce the Agency's vulnerability to criminal activity and misconduct.

The Office of Management and Planning provides financial, procurement, human resources, administrative, and information technology services and support to OIG staff.

AUDITS AND INVESTIGATIONS

Acquisition and Project Management

In the current environment of reduced budgets for Federal agencies, effective contract, grant, and project management is more critical than ever. Through its audits and investigations, the OIG helps ensure NASA engages in sound management practices that provide the Agency and the taxpayer with the best value related to its contracts and grants.

NASA's Use of Award-fee Contracts

Since the 1960s, NASA has used award-fee contracts to motivate contractor performance and improve acquisition outcomes. An award-fee is a predetermined amount of money contractors can earn based on their performance. In FY 2012, NASA spent approximately $15.1 billion on contracts, $7.1 billion of which contained award-fee provisions.

We found that although NASA has processes designed to improve contractor performance and acquisition outcomes, shortcomings in the Agency's award-fee practices have diminished the effectiveness of its use of award-fee contracts. In 26 of the 45 contracts we reviewed, we found erroneous award-fee payments totaling $66.4 million. These errors resulted from policy requiring the use of complex mathematical formulas to calculate interim and provisional payments. Although NASA has the opportunity to fix these errors as part of the final award-fee calculation, the funds are not available for NASA's use until it corrects any errors. We also determined that NASA applies a clause to end-item contracts – for example, contracts for delivery of a part or scientific instrument – that allows the contractor to earn award-fees in the final evaluation period even though the Agency determined the contractor's performance did not merit the full award in prior evaluation periods. We believe this practice circumvents a Federal procurement rule that prohibits "rollover" of unearned fees to subsequent performance periods and promotes a "Hubble psychology" at the Agency – an understanding that as long as a project ultimately produces "good science" NASA will overlook cost and schedule overages that occurred during development.

In addition, we identified questionable evaluation and acquisition practices that resulted in NASA paying $2.4 million in award-fees that may have been unwarranted, including the combining of award-fee periods; ratings not supported by technical, cost, and/or schedule performance; and cost control criterion not evaluated as required by NASA policy. Furthermore, NASA failed to ensure that contracting officers submitted appropriate data to measure the

effectiveness of award-fee contracts. This failure affects the Agency's ability to correct deficiencies and evaluate the appropriateness of award-fee contracts in future acquisitions.

We made 12 recommendations to NASA's Assistant Administrator for Procurement, including simplifying the mathematical formulas used to calculate award-fees; implementing a process to test the accuracy of those calculations; providing additional training on award-fee payment calculations; revising policy to prevent contractors from receiving payments NASA determined their performance did not merit in previous evaluation periods; reemphasizing or issuing additional guidance to address evaluation and acquisition deficiencies; and developing a process to improve monitoring and analysis of the information provided by contracting officers on the effectiveness of award-fee contracts. NASA concurred with five of the recommendations and disagreed with seven others, including the suggestions to simplify its award-fee formulas and our concerns about rollover of unearned fees. The OIG will continue to work with the Agency to resolve these open recommendations.

NASA's Use of Award-fee Contracts (IG-14-003, November 19, 2013)
http://oig.nasa.gov/audits/reports/FY14/IG-14-003.pdf

NASA's Strategic Sourcing Program

Overall, the Federal Government spends more than $500 billion annually to buy products and services in support of its varied missions. However, historically, agencies have made many of these purchases in a highly decentralized manner, resulting in inefficient and at times wasteful spending. To address this issue, agencies have been encouraged to practice "strategic sourcing" by centralizing their contracting decisions or by using government-wide contracts to lower prices and reduce administrative duplication.

Each year NASA spends approximately 80 percent of its budget acquiring products and services or more than $15.5 billion in 2012. In 2006, NASA's Headquarters Office of Procurement established the Strategic Sourcing Program with the goal of saving money by strategically acquiring products and services common across the Agency. NASA Procurement officials expected the program to result in a better understanding of Agency spending patterns, maximize procurement efficiencies through collaborative acquisitions, and achieve better value for products and services.

We found that despite this effort, NASA has failed to develop a robust, Agency-wide strategic sourcing program and thereby missed opportunities to maximize savings. NASA has not conducted a comprehensive, Agency-wide spend analysis to identify commodities that could benefit from a more strategic procurement approach. Further, although NASA performed

limited spend analyses on individual commodities, it has not established requirements regarding how such analyses should be developed, analyzed, and used. While NASA officials said they have realized savings under specific strategic sourcing initiatives, NASA does not track its Agency-wide strategic sourcing efforts and therefore was unable to determine the extent of any efficiencies or cost savings achieved.

We made six recommendations to NASA's Assistant Administrator for Procurement to strengthen the Agency's Strategic Sourcing Program. NASA concurred or partially concurred with four of our recommendations but disagreed with our recommendations to perform a comprehensive spend analysis of all procurement activities and to incorporate into Agency policy the use of strategic sourcing initiatives to the maximum extent possible. Accordingly, these recommendations remain unresolved.

NASA's Strategic Sourcing Program (IG-14-010, January 15, 2014)
http://www.hq.nasa.gov/office/oig/hq/audits/reports/FY14/IG-14-010.pdf

NASA's Award Closeout Process

NASA spent approximately 80 percent of its $17.8 billion FY 2012 appropriation on contracts to procure goods and services and on grants and cooperative agreements with researchers, universities, and nonprofit entities to fund scientific research, fellowships, and educational activities. Once performance under these instruments is complete, NASA must review and complete a series of steps to close the associated agreement files, including deobligating any unused funds. Federal and NASA guidelines provide timeframes in which this closeout process should occur. Meeting these timeframes can help limit NASA's exposure to financial risk by promptly identifying any improper payments the Agency may have made and ensuring that contractors and grantees have satisfied the terms and conditions of the awards. Moreover, timely deobligation of unused funds frees up money for other Agency or government uses. As of October 2013, NASA had more than 15,000 expired award instruments that had not been closed. NASA contracts with a private company to assist with the closeout process.

We found that although NASA has slowed the growth of its backlog of instruments awaiting closeout, it needs to make further improvements to its closeout process. First, NASA's process is not uniform across the Agency, with Centers varying in the types of award instruments they send to the contractor and when they do so. As a result, some Centers are not optimizing the contractor's services, which contributes to the backlog. Second, contract personnel at the Centers use different guidance when closing out award instruments, impairing their ability to share information and work across the Centers. Third, although we found that NASA generally deobligates unused

funds in a timely manner, we identified $2.7 million in funds the Agency did not timely deobligate. Based on this finding, we estimated that Agency-wide, NASA has more than 4,000 instruments with $61 million in funds that were not deobligated in a timely manner. Fourth, the Agency incurred $6,699 in unnecessary service fees associated with grant accounts that remained open past the period of expiration. Statistically projected, this amounts to approximately $170,000 in unnecessary service fees. Fifth, the Agency closed some award instruments without sufficient evidence that the associated funding had been spent appropriately. Consequently, NASA has increased risk that the costs associated with more than $43 million in awards may not be allowable and reasonable. Finally, the OIG identified several best practices that, if applied across the Agency, could help NASA strengthen its closeout process.

We made four recommendations to the Assistant Administrator for Procurement to strengthen NASA's award closeout process: (1) develop and implement a policy requiring Centers to maximize use of the closeout contractor and establish a timeframe for procurement staff to turn instruments over to the contractor; (2) engage Center procurement officials to ensure contractor staff use standardized procedures across all Centers; (3) implement, as applicable, the best practices identified in our report and any other best practices the Agency identifies; and (4) review the backlog of instruments in need of closeout and transfer additional work to the closeout contractor. The Assistant Administrator concurred with all of our recommendations.

NASA's Award Closeout Process (IG-14-014, February 12, 2014)
http://oig.nasa.gov/audits/reports/FY14/IG-14-014.pdf

NASA's Management Strategy for Conducting Aeronautics Research

Over the past decade, the proportion of NASA funds dedicated to aeronautics research has declined from approximately 6 percent in FY 2005 to 3 percent today, dwarfed by the Agency's focus on space exploration and operations (44 percent) and scientific investments (22 percent). In light of this declining budget, in 2006, the Associate Administrator for the Aeronautics Research Mission Directorate established a new strategy focusing on long-term, cutting-edge research.

In this abbreviated audit, we examined NASA's plans for advancing civil aeronautics research and technology in five key areas: (1) strategic research planning, (2) monitoring and evaluation of research progress, (3) technology transfer and collaboration, (4) fundamental versus advanced research, and (5) procurement. We found that over the past few years the Aeronautics Research Mission Directorate's leadership has refined the research strategy announced in 2006 to support advancement of the nation's civil aeronautics

research and technology objectives consistent with the National Aeronautics Research and Development Plan (National Plan). Specifically, NASA conducts ongoing research aligned with requirements established in the National Plan; actively monitors progress on long-term research goals; solicits input from industry, academia, and other Federal agencies to develop its research plans, and is providing useful research products to external customers; balances fundamental research and advanced research, including flight-testing; and has refined its procurement approach to better align needs with the appropriate acquisition instrument.

Having identified no significant concerns at the conclusion of the initial phase of our review, we issued our report and discontinued the audit. Management reviewed a draft of the report and had no comments.

The Aeronautics Research Mission Directorate's Management Strategy for Conducting Aeronautics Research (IG-14-012, January 30, 2014)
http://oig.nasa.gov/audits/reports/FY14/IG-14-012.pdf

Security Firm Executive Sentenced

In February 2014, a federal judge from the U.S. District Court for the Eastern District of Virginia sentenced a former executive of MDB, Inc., a personnel services company, to 5 years in prison and 2 years' supervised release. The executive was also ordered to pay a fine of $12,500 and forfeit $2.9 million in ill-gotten gains. Previously, the executive had pled guilty to one count of major fraud for misrepresenting his firm as a disadvantaged small business in order to secure more than $2.4 million in NASA security contracts.

NASA Contractor Reaches Settlement

In November 2013, a contractor agreed to pay the United States $30,000 to settle claims that he had mischarged NASA in connection with a Small Business Innovative Research contract. The investigation found evidence that the contractor proposed fraudulent costs for NASA-sponsored research.

Mississippi Testing Company Debarred

In November 2013, Gulf Cities Testing Laboratories, LLC, a Mississippi testing firm, and its owners were debarred from participating in Government contracts for a period of 5 years. The debarment occurred after the company was found guilty of making false statements related to concrete stress tests it performed on engine test stands at the Stennis Space Center.

Ongoing Audit Work

NASA's Management of Space Act Agreements

NASA has relied on the "other transactions" authority granted by the Space Act of 1958 to enter into agreements with diverse groups of people and organizations to advance wide-ranging program objectives. NASA currently has more than 1,000 of these "Space Act Agreements" with Federal agencies, U.S. companies and educational institutions, foreign governments, and other entities. We are evaluating NASA's management of its Space Act Agreements, including whether the Agency is accurately billing and collecting fees from agreement partners and receiving fair and reasonable benefits from the agreements.

The Stratospheric Observatory for Infrared Astronomy Project – SOFIA

Following 17 years of development at a cost of more than $1 billion – a 300 percent increase over initial estimates – the Stratospheric Observatory for Infrared Astronomy (SOFIA) Project is approaching full operational capability. The SOFIA Project's life-cycle costs of approximately $3 billion, including operational costs of approximately $85 million per year, make it one of the most expensive observatories in NASA's science portfolio. We are examining NASA's management of the SOFIA Project against the backdrop of the Administration's proposed FY 2015 budget that would end funding for the program.

Audit of NASA's Mission Operations Services

Space-based mission operations have evolved over the years as both spacecraft and ground system technology have matured. As the capabilities of these systems have increased, NASA is able to collect significantly more science data and control operational satellites with greatly reduced staff, which lowers overall program costs. NASA's FY 2014 budget request includes $755.4 million for Science Mission Directorate operations and data analysis activities. We are examining whether the Science Mission Directorate is receiving mission operations services commensurate with the costs expended.

Incurred Costs in Cost-Type Contracts

As of June 2013, NASA had approximately 500 open cost-type contracts with a potential combined value of approximately $120 billion.[1] We are examining whether NASA has established adequate procedures to ensure incurred costs associated with these contracts are properly supported, allowable, reasonable, and allocable.

NASA's Use of Blanket Purchase Agreements

Blanket Purchase Agreements (BPA) are a simplified procurement method that allows Federal agencies to fill repetitive needs for supplies or simple services quickly. NASA can award a BPA under a General Services Administration contract on the Federal Supply Schedule – these awards use the General Services Administration's preestablished terms and conditions as a starting point for negotiations – or issue a BPA to the open market when the order size is under a prescribed dollar threshold. In this audit, we are examining NASA's use of BPAs.

Audits of NASA Grants and Cooperative Agreements

NASA faces the ongoing challenge of ensuring that the approximately $900 million in grants and cooperative agreements it awards annually are appropriately administered and accomplish their intended goals. We have several ongoing audits examining whether particular NASA grants and cooperative agreements are being used for their intended purposes and whether associated costs are allowable, reasonable, and in accordance with applicable laws, regulations, guidelines, and terms of the grants. Currently, we are auditing grants or cooperative agreements awarded to Rockwell Collins, Inc.; North Carolina State University; and the University of Colorado.

NASA's Implementation of Recommendations Regarding Intergovernmental Personnel Act Assignments

Under the authority of the Intergovernmental Personnel Act (IPA), Federal agencies may temporarily assign personnel to or from non-Federal organizations, including state and local governments, institutions of higher education, and Indian tribal governments, for the mutual benefit of each organization. In a July 2007 report, we made several recommendations intended to help NASA reduce costs associated with IPA assignments. In this audit, we are examining the Agency's implementation of those recommendations.

[1] Cost-type contracts are cost reimbursement contracts that provide for payment of allowable incurred costs to the extent prescribed in the contract. These contracts establish an estimate of total cost for the purpose of obligating funds and establishing a ceiling that the contractor may not exceed (except at its own risk) without the approval of the contracting officer.

Space Operations and Exploration

Space operations and human exploration are among NASA's most highly visible missions. Key challenges on the horizon include the emergence of commercial companies seeking to provide crew transportation to the International Space Station (ISS or Station), extension of the operational life of the ISS, and development of new technologies for human exploration beyond low Earth orbit.

NASA's Management of its Commercial Crew Program

Since the end of the Space Shuttle Program in July 2011, the United States has lacked a domestic capability to transport crew and – until recently – cargo to the ISS. Consequently, the Agency has relied on the Russian Federal Space Agency (Roscosmos) for crew transportation. Between 2012 and 2017, NASA will pay Roscosmos $1.7 billion to ferry 30 NASA astronauts and international partners to and from the ISS.

NASA is currently working with three companies – The Boeing Company (Boeing), Space Exploration Technologies Corporation (SpaceX), and Sierra Nevada Corporation (Sierra Nevada) – to develop commercial crew transportation capabilities using a combination of funded Space Act Agreements and procurement contracts. While Boeing, SpaceX, and Sierra Nevada are responsible for developing the vehicles, they rely heavily on NASA funding, and as of August 31, 2013, NASA has spent $1.1 billion on commercial crew development efforts. In addition, NASA is responsible for ensuring that the commercial partners' launch systems and spacecraft meet Agency safety and operational requirements. NASA's Commercial Crew Program is currently at a critical stage of development with Boeing, SpaceX, and Sierra Nevada expected to complete their spacecraft designs within the next year.

This OIG audit assessed (1) the progress of each commercial partner toward developing a certified crew capability and (2) the major challenges facing the Program. We found that although NASA's commercial partners are making steady progress in initial development of their spaceflight systems, NASA faces several obstacles that may prevent it from meeting its goal of transporting astronauts to the ISS in commercially supplied vehicles by 2017. These challenges include

- unstable funding,
- alignment of cost estimates with Commercial Crew Program schedule,
- providing timely requirement and certification guidance to commercial partners, and

- coordination with the Federal Aviation Administration (FAA) and U.S. Air Force.

Failure to address these challenges in a timely manner could significantly delay the availability of commercial crew transportation services and extend U.S. reliance on Russia for transporting U.S. crew to the ISS.

We recommended that NASA (1) revise guidance, to the extent practical, to ensure that managers of space system development programs in which Space Act Agreements are used provide detailed cost estimates for each year of the program based upon a complete analysis of the program over time before preliminary designs are completed; (2) examine whether more comprehensive cost estimates should be developed by the Commercial Crew Program before completion of the upcoming Critical Design Review; (3) routinely track adherence to the 90-day goal for responding to contractor requests for alternate requirement standards and variances and explore ways to facilitate that process; and (4) formally establish a tri-agency Safety Steering Group with NASA, the FAA, and U.S. Air Force to provide a forum for resolving crew and public safety issues during commercial spaceflight operations. NASA proposed corrective action to accomplish each of our recommendations.

NASA's Management of its Commercial Crew Program (IG-14-001, November 13, 2013)
http://oig.nasa.gov/audits/reports/FY14/IG-14-001.pdf

NASA's Decision to Test the Space Launch System Core Stage at Stennis Space Center

Test stands for large rocket propulsion systems often cost hundreds of millions of dollars to build or refurbish and may sit idle for many years after the associated programs end. On April 24, 2012, NASA's Human Exploration and Operations Directorate Program Management Council approved a plan to refurbish the B-2 test stand at Stennis to accommodate testing of the core stage of NASA's new heavy-lift rocket known as the Space Launch System (SLS).

Similar to our findings in a 2008 audit examining NASA's plan to build the A-3 test stand at Stennis to test the J-2X engine, we found that NASA failed to follow its internal policies or an applicable agreement with the Department of Defense (DOD) when it decided to spend approximately $352 million to refurbish the B-2 test stand. We also found that NASA did not adequately support its decision given that refurbishing the B-2 stand will be more costly and take longer than two other possible testing options: a U.S. Air Force test stand at Edwards Air Force Base in California and a test stand at the Marshall Space Flight Center. In addition, although SLS Program managers spent

considerable time and money studying the B-2 option, they gave the joint NASA-DOD testing board minimal time to assess the cost, schedule, and risks of the other test stand options.

To improve NASA's ability to make sound rocket propulsion testing decisions, we made four recommendations to NASA's Associate Administrator for the Human Exploration and Operations Mission Directorate, including that NASA implement a strategy for assuring timely coordination with DOD and adherence to agreed-upon policy. NASA concurred or partially concurred with our recommendations and stated that it is "confident it made the right decision in choosing to conduct SLS core stage testing at B-2" when considering all risks to the core stage and SLS Program.

NASA's Decision Process for Conducting Space Launch System Core Stage Testing at Stennis (IG-14-009, January 8, 2014)
http://oig.nasa.gov/audits/reports/FY14/IG-14-009.pdf

Lunar Materials Recovered

In January 2014, the NASA lunar curator verified that NASA OIG agents had recovered lunar materials associated with an Apollo-era mission. The OIG investigation resulted in the recovery of five samples of lunar dust taken by the NASA Photographic Team Lead during shipboard recovery efforts for the Apollo 15 crew. The Team Lead collected the dust from the spacesuits of returning Apollo astronauts using tape. Another lunar sample taken by the Team Lead had previously sold at auction for $6,000. The Team Lead's family voluntarily returned the lunar dust samples to NASA, where they will be retained as part of the Agency's lunar collection.

Ongoing Audit Work

NASA's Efforts to Extend the Operational Life of the International Space Station

In January 2014, the Administration announced its plan to extend the Station's operational life until 2024. The OIG is examining the challenges facing NASA related to this extension, including progress in certifying the Station's hardware and structure, cost and schedule estimates associated with the expansion, and progress made and plans in place to utilize the Station for both NASA and non-NASA users.

Audit of the Space Communications and Navigation Program

NASA's Space Communications and Navigation (SCaN) Program is responsible for providing communications, navigation, and scientific data delivery services to space flight missions. SCaN is comprised of three networks: the Near Earth Network, which covers low-Earth orbit and portions of geosynchronous orbit; the Space Network, which controls Tracking and Data Relay Satellites through a network of geographically diverse ground systems; and the Deep Space Network, which covers NASA mission needs beyond geosynchronous orbit. Without SCaN services, satellites could not transmit data to Earth or be controlled by people on Earth, and space hardware worth tens of billions of dollars would be little more than orbital debris. NASA has provided these tracking and communications services for more than 30 years, and many of its satellites and ground systems are aging, beginning to fail, or increasingly difficult to repair.

The OIG is examining the SCaN Program in a series of audits, the first of which will focus on the Space Network. The objective of this audit is to assess how NASA is identifying and adjusting capabilities to meet mission requirements; managing program, cost, schedule, and performance; and addressing key risks facing the project.

NASA's Efforts to Identify and Mitigate Near-Earth Object Hazards

Every day more than 100 tons of material from space enters the Earth's atmosphere. Although most of this material burns up upon entry, occasionally, large objects penetrate the atmosphere, such as the meteor that exploded in the Siberian sky and caused widespread damage in February 2013. In this audit, we are assessing the progress of NASA's Near-Earth Object Program toward meeting its goal of detecting 90 percent of near-Earth objects larger than 140 meters in diameter by the year 2020.

Information Technology Security and Governance

NASA's portfolio of information technology (IT) assets includes more than 550 information systems that control spacecraft, collect and process scientific data, and enable NASA personnel to collaborate with colleagues around the world. Through audits and investigations, the OIG has identified systemic and recurring weaknesses in NASA's IT security program that adversely affect the Agency's ability to protect the information and information systems vital to its mission. Achieving the Agency's IT security goals will require sustained improvements in NASA's overarching IT management practices and governance. During this semiannual reporting period, we continued to work with NASA to improve its IT management practices.

NASA's Agency Consolidated End-User Services Contract

In December 2010, NASA awarded the Agency Consolidated End-User Services (ACES) contract to HP Enterprise Services (HP) to provide desktop computers, laptops, mobile devices, printers, and other computing equipment and end-user services such as a help desk and data backup to NASA employees and contractors. The contract, with a maximum value of $2.5 billion, runs from November 2011 through October 2015, after which NASA may extend the contract under two 3-year options. With the ACES contract, NASA moved from a Center-based end-user services delivery model to an Agency-wide end-user services model. By adopting this enterprise model, NASA hoped to save money and enhance the security of its IT systems through leveraging economies of scale and standardizing institutional IT architecture. However, NASA and HP have encountered significant problems implementing the ACES contract, including a failed effort to replace most NASA employees' computers within the first 6 months of the contract period and low customer satisfaction.

We found that the ACES contract fell short of Agency expectations for several reasons, including a lack of technical and cultural readiness by NASA for an Agency-wide IT delivery model, unclear contract requirements, and the failure of HP to deliver on some of its promises.

NASA is fast approaching a critical decision point when it must weigh the benefits of exercising the first 3-year option period or ending the ACES contract and seeking alternatives to meet the Agency's IT needs. Regardless of its decision, NASA must ensure that its choice aligns with the Agency's overall enterprise architecture and can be executed within the current and planned

IT environment and within the expected budget. While we did not make any recommendations in this review, we urged Agency officials to consider the issues we identified when determining how best to meet NASA's future IT needs.

Review of NASA's Agency Consolidated End-User Services Contract (IG-14-013, January 30, 2014)
http://oig.nasa.gov/audits/reports/FY14/IG-14-013.pdf

Security of NASA's Mobile Devices

Mobile electronic devices, including smartphones and tablets, are key components of NASA's IT strategy to provide its employees and contractors flexibility in accessing Agency networks from anywhere at any time. Although these devices offer significant workplace flexibility, they are also susceptible to security compromise because of their size, portability, constant wireless connection, and location services. Further, the diversity of available devices, operating systems, carrier-provided services, and applications presents the Agency with additional security challenges.

In this audit, we assessed whether NASA was appropriately managing costs associated with more than 11,000 Agency-issued mobile devices and security risks associated with more than 13,000 personal smartphones and tablets that connect to NASA networks. The OIG found that weaknesses in NASA's mobile device management mean the Agency is unable to ensure that it is not paying for a significant number of unused devices. Specifically, NASA lacks a complete and accurate inventory of Agency-issued smartphones, tablets, cellphones, and AirCards (used to provide internet access) because the information system NASA uses to order equipment from its main IT contractor is not fully functional or integrated with the database the Agency uses to track IT assets. For example, in 2013, the contractor reported that 2,280 (14 percent) of Agency-issued mobile devices went unused for at least 7 months. We were unable to determine the exact amount NASA paid for these unused devices because the information needed to match individual devices with related billings was often missing, incomplete, or inaccurate. However, we estimated that from June through December 2013 these unused devices cost NASA more than $679,000. Until NASA resolves its asset inventory and data quality issues and strengthens controls over Agency-issued mobile devices, it will continue to waste money on unused devices. We also found that while NASA has taken positive steps to mitigate security risks associated with personally owned smartphones and tablets accessing Agency e-mail systems, more work is required to reduce risks when these devices connect with other NASA networks.

We made two recommendations to help improve NASA's management of mobile devices: (1) develop and maintain an accurate inventory of Agency-issued mobile devices and (2) implement a third-party tool that enables centralized management of smartphones and tablets that connect to NASA networks. NASA's Chief Information Officer agreed to implement both recommendations.

NASA's Management of its Smartphones, Tablets, and Other Mobile Devices (IG-14-015, February 27, 2014)
http://oig.nasa.gov/audits/reports/FY14/IG-14-015.pdf

Federal Information Security Management Act: Fiscal Year 2013 Evaluation

This annual report, submitted as a memorandum from the IG to the NASA Administrator, provides the OIG's independent assessment of NASA's IT security posture. For NASA's FY 2013 Federal Information Security Management Act review, the OIG adopted a risk-based approach in which we reviewed a sample of eight Agency systems and two contractor systems.

We found that NASA has established a program to address the challenges in each of the 11 areas that the Office of Management and Budget identified for this year's review:

- Continuous Monitoring Management
- Configuration Management
- Identity and Access Management
- Incident Response and Reporting
- Risk Management
- Security Training
- Plan of Action and Milestones
- Remote Access Management
- Contingency Planning
- Contractor Systems
- Security Capital Planning

However, we also found that NASA needs to enhance its efforts with regard to configuration management, risk management, and contractor systems.

Federal Information Security Management Act: Fiscal Year 2013 Evaluation (IG-14-004, November 20, 2013)
http://oig.nasa.gov/audits/reports/FY14/IG-14-004.pdf

Estonian National Sentenced for Cybercrime Scheme

In October 2013, Valeri Aleksejev was sentenced in the U.S. District Court for the Southern District of New York for his role in a cybercrime scheme that infected millions of computer systems worldwide, including NASA systems, with malicious software. The subject was sentenced to 4 years in prison and agreed to forfeit $7 million. The OIG worked with the Federal Bureau of Investigation on this investigation.

Ongoing Audit Work

Security of NASA's Public Websites

A publicly accessible website allows anyone with Internet access anywhere in the world to view its content, perform transactions, or download data. Exploiting vulnerabilities in software applications used on such websites is a common hacker technique used to gain unauthorized access to an organization's computer networks. In this review, we are examining the effectiveness of NASA's efforts to secure and reduce the number of its publicly accessible websites.

Audit of NASA's Utilization of Independent Verification and Validation Capability and Facility

NASA's Independent Verification & Validation (IV&V) Program is intended to provide assurance that the Agency is developing and deploying safe and reliable software. NASA established its IV&V facility in West Virginia after the Shuttle Challenger tragedy as part of an Agency-wide effort to provide the highest levels of safety and cost effectiveness for mission critical software. The end of the Space Shuttle Program and completion of assembly of the ISS potentially reduced the need for IV&V and utilization of the facility. We are assessing whether NASA is appropriately utilizing its IV&V capability and facility in response to changes in mission and workforce requirements.

NASA's Compliance with Federal Information Security Management Act for Fiscal Year 2014

In this required annual audit, we are evaluating NASA's information security program against FY 2014 Federal Information Security Management Act standards.

Financial Management

The OIG and the independent external auditor continue to oversee NASA's efforts to improve its financial management and make recommendations to assist the Agency in addressing weaknesses.

NASA Receives Clean Opinion on Fiscal Year 2013 Financial Statements

The Chief Financial Officers Act of 1990 requires the IG or an independent auditor chosen by the IG to annually audit NASA's financial statements. The FY 2013 consolidated financial statement audit was performed by the independent public accounting firm PricewaterhouseCoopers LLP (PwC), which issued an unmodified or "clean" opinion on December 6, 2013 (IG-14-006). An unmodified audit opinion means that the financial statements present fairly, in all material respects, the financial position and the results of the entity's operations in conformity with U.S. generally accepted accounting principles. This is the third consecutive year NASA received an unmodified audit opinion.

PwC also issued its reports on internal control and compliance with laws and regulations and reported no material weaknesses or significant deficiencies in internal control and no instances of significant noncompliance with applicable laws and regulations. In FY 2013, NASA resolved its sole remaining significant deficiency from prior years related to environmental liability estimation. However, PwC identified deficiencies of a lesser magnitude and reported them to the Chief Financial Officer and the Chief Information Officer (IG-14-008). Finally, PwC provided an unmodified opinion on NASA's closing package financial statements (IG-14-007).

The IG's transmittal letter and PWC's audit reports can be found in the Financials section of NASA's FY 2013 Agency Financial Report (IG-14-006, December 17, 2013)
http://www.nasa.gov/sites/default/files/files/FY13_NASA_AFR.pdf

Ongoing Audit Work

NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2013

The Improper Payments Information Act (IPIA), as amended by the Improper Payments Elimination and Recovery Act of 2010 (IPERA), seeks to enhance the accuracy and integrity of Federal payments. In this mandated audit, we are assessing NASA's compliance with the requirements of IPIA and IPERA. In addition, we are evaluating the completeness and accuracy of NASA's reporting of IPIA data, progress in reducing and recapturing improper payments, and implementation of recommendations we made in prior improper payments audits.

Audit of NASA's Fiscal Year 2014 Financial Statements

The OIG is overseeing the independent audit of NASA's FY 2014 consolidated financial statements.

Other Audit and Investigative Matters

Review of International Traffic in Arms Regulations and Foreign National Access Issues at Ames Research Center

Beginning in 2009, Federal law enforcement agencies received complaints that foreign nationals working as contractors at NASA's Ames Research Center (Ames) in California had been given improper access to information subject to International Traffic in Arms Regulations (ITAR), which control the transfer of military and space-related technology. Under these Federal regulations, foreign nationals are not permitted access to such export-controlled information unless they obtain a license from the U.S. Department of State.

These complaints led to a 4-year criminal investigation by the Federal Bureau of Investigation, Department of Homeland Security, and NASA OIG. In February 2013, the U.S. Attorney for the Northern District of California closed the matter without bringing criminal charges. Following this decision, the OIG continued to investigate the allegations as an administrative matter and issued a report to the Administrator in February 2014.

In sum, we did not find intentional misconduct by any Ames civil servants but believe some Ames managers exercised poor judgment in their dealings with foreign nationals who worked on Center.

With respect to ITAR issues, we found that several foreign nationals without the required licenses worked on projects that were later determined to involve ITAR-restricted information. In addition, on two occasions a senior Ames manager inappropriately shared documents with unlicensed foreign nationals that contained ITAR markings or had been identified as containing ITAR-restricted information by NASA export control personnel. However, we also found significant disagreement between scientists and engineers at Ames and export control personnel at the Center and NASA Headquarters as to whether the work the foreign nationals were performing at Ames involved ITAR-controlled technology. Moreover, the foreign nationals subsequently applied for and received licenses permitting them to access the information. We concluded that these incidents resulted more from carelessness and a genuine disagreement about whether the information qualified for ITAR protection than an intentional effort to bypass ITAR restrictions.

We also found that a foreign national working at Ames inappropriately traveled overseas with a NASA-issued laptop containing ITAR-restricted information. Even though the foreign national had an ITAR license at the time, the regulations forbid taking such export-controlled information out of the country. However, we were unable to substantiate concerns that the

foreign national shared ITAR-protected information while overseas. In addition, a senior official at Ames knew about and failed to stop a foreign national from recording conversations with Ames coworkers without their knowledge or consent, a practice that violated NASA regulations and California law.

Further, we found that security rules designed to protect NASA property and data were not consistently followed in a rush to bring foreign nationals on board at Ames. For example, contrary to NASA rules, a foreign national improperly received unescorted access privileges to Ames in 2006 prior to the completion of required background checks and worked at the Center for nearly 3 years without a required security plan.

Finally, we uncovered no evidence to support allegations that any foreign nationals at Ames were provided classified information during the period covered by our review.

In the wake of the allegations examined in our report and a March 2013 security incident at Langley Research Center, NASA has taken a series of actions to strengthen its foreign national visit process. In addition, in late January NASA received a report it commissioned from the National Academy of Public Administration assessing the effectiveness of the Agency's foreign national access and export control processes. We encouraged NASA to consider the information in our Ames report together with the National Academy of Public Administration review and previous OIG reports as it examines and adjusts its foreign national and export control programs.

Review of ITAR and Foreign National Access Issues at Ames Research Center (February 26, 2014)
http://oig.nasa.gov/Special-Review/Ames_ITAR.pdf

Chinese National's Access to NASA's Langley Research Center

In March 2013, Congressman Frank Wolf of Virginia publicly questioned whether NASA had inappropriately afforded Bo Jiang, a Chinese national working as a NASA contractor, access to the Langley Research Center (Langley) and to Agency data and IT. The Congressman's concerns were prompted at least in part by internal NASA documents suggesting it had been improper for Langley to hire Jiang as a contractor, allow him unescorted access to the Center, and provide him with data related to his research. On March 16, 2013, having been terminated from his position, Jiang was returning to China when agents from the Department of Homeland Security searched him at Dulles International Airport as part of an investigation of potential export control violations. After questioning him, agents took Jiang into custody and charged him with making a false statement to Federal

authorities because a search of his belongings revealed electronic media he had not declared. Six weeks later, Jiang pleaded guilty to a misdemeanor security offense and left the United States. The OIG conducted an administrative investigation to examine the process by which Jiang came to work at Langley and the information and IT resources to which he had access.

In 2002, Langley and the National Institute of Aerospace (NIA), a nonprofit research and graduate education organization located in Hampton, Virginia, entered into a cooperative agreement pursuant to which Langley frequently hired NIA personnel as contractors. Jiang originally came to the United States in 2007 as a Ph.D. student at Old Dominion University in Norfolk, Virginia, before becoming a postdoctoral research assistant for the NIA. Jiang began working at Langley in January 2011.

In November 2011 and again in November 2012, Jiang visited family in China taking with him a NASA-provided laptop computer. During Jiang's second visit, an export control official at Langley learned that Jiang had taken the laptop to China. The official raised concerns with Center attorneys and the Headquarters' Export Control Office about Jiang's travel and access to NASA information and claimed that Jiang's work as a NASA contractor violated funding restrictions in NASA's appropriations legislation. Jiang returned to the United States in December 2012, and Center computer security personnel examined his NASA-provided laptop to determine whether it contained export-controlled information. In January 2013, NIA terminated Jiang's employment for violating NIA policy by taking the laptop to China and because NASA had ended the agreement under which Jiang had been hired.

We found that NASA did not violate appropriations restrictions by hiring Jiang. We also found that Langley's process for requesting access for foreign nationals was overly complex and not sufficiently integrated to ensure that responsible personnel had access to all relevant information. In addition, we determined that several employees who had roles in the screening process made errors that contributed to the confusion about the proper scope of Jiang's access to Langley facilities and IT resources and the appropriateness of taking his NASA-provided laptop to China.

We made six recommendations to improve NASA's foreign visitor approval process. The NASA Administrator concurred with our recommendations and proposed corrective actions.

Bo Jiang's Access to NASA's Langley Research Center (October 22, 2013)
http://oig.nasa.gov/Special-Review/OIG_Investigative_Summary.pdf

NASA's Lease of Hangar Space and Sale of Aviation Fuel to H211

In 2007, Ames entered into an Enhanced Use Lease and an associated Space Act Agreement with H211, a private company that manages aircraft owned or leased by Google executives. Under the lease, H211 pays NASA $1.4 million annually to rent hangar space at Ames where the company stores up to nine aircraft, including a 2-seat Alpha Jet military-style aircraft. The hangar is located adjacent to Moffett Federal Airfield, a former U.S. Navy base managed by Ames less than 4 miles from Google's headquarters.

The Space Act Agreement allows NASA to use H211 aircraft – primarily the Alpha Jet – to conduct Earth science research. H211 fuels its planes for both its private and NASA-related flights with aviation fuel supplied by the Defense Logistics Agency-Energy (DLA-Energy), an arm of DOD and the sole provider of aviation fuel at Moffett. Because the rate DLA-Energy charged H211 for this fuel did not include state and local taxes or other fees H211 would have paid other local airports, the price-per-gallon was lower than comparable aviation fuel prices at those facilities.

We found that consistent with NASA policy, Ames officials based the price of the lease with H211 on the fair market value of comparable hangar space and that the lease and companion Space Act Agreement supported NASA's mission. In addition, since 2009 H211 has flown more than 200 flights to collect climate data at no cost to NASA.

We also found that a misunderstanding between Ames and DLA-Energy personnel rather than intentional misconduct led to H211 receiving the discounted fuel rate for flights that had no NASA-related mission. Even though Ames officials accurately reported to DLA-Energy the nature of the Center's agreement with H211, DLA-Energy misunderstood that H211 was drawing fuel for both personal and NASA-related missions. While this arrangement did not cause a financial loss to NASA or DLA-Energy, it resulted in considerable savings for H211. We calculated that since inception of its lease, H211 paid approximately $3.3 million to $5.3 million less in fuel costs than it would have to buy fuel at commercial market rates.

Even though we concluded that the fuel arrangement did not result in an economic loss to NASA or DLA-Energy, H211 nevertheless received a monetary benefit to which it was not entitled. Accordingly, we recommended that NASA explore with the company possible options to remedy this situation.

Review of Allegations of Improper Leasing and Provision of Aircraft Fuel at Moffett Federal Airfield (December 11, 2013)
http://oig.nasa.gov/Special-Review/NASA_H211.pdf

NASA's Compliance with Federal Export Controls

In a January 29, 2014, letter to Congress, we summarized our work over the previous year relating to NASA's compliance with Federal export control laws. Among the products discussed were a series of audits examining the Agency's security controls for its IT systems, many of which contain data subject to export control laws. In addition, we described several investigations and a special report involving the potentially unlawful disclosure of sensitive information.

The Inspector General's Annual Federal Export Control Compliance Letter to Congress (January 29, 2014)
http://oig.nasa.gov/readingRoom/LettertoCongress_ReviewofNASACompliancewithFederalExportControlLaws.pdf

NASA Manager Sentenced

In March 2014, the former program manager for NASA's Commercial Crew Program was sentenced to pay a fine of $2,000 stemming from his guilty plea to violating 18 U.S.C. § 208(a) by participating in an official capacity in a particular matter affecting his personal financial interests.

Professor Debarred for Ethics Violations

An investigation by the OIG disclosed that a Virginia Polytechnic Institute (VA Tech) professor working at Langley pursuant to an IPA agreement improperly provided a contractor with exclusive advice and proposal assistance for a pending procurement in return for the promise of future employment. The OIG's investigation also disclosed that the professor was substantially involved in the technical evaluation of a VA Tech proposal to NASA for a cooperative agreement he authored in an effort to ensure his continued employment with NASA. In October 2013, NASA debarred the professor from doing business with the Federal Government for 3 years.

Former NASA Manager Retires in Lieu of Removal for Ethics Violation

An OIG investigation disclosed that a former manager at Langley Research Center violated federal conflict of interest rules when he either personally selected or directly influenced the selection of his spouse to serve as a speaker coach for conference forums sponsored by NASA through a cooperative agreement. Although the former manager told his supervisors that his wife was acting as a volunteer, our investigation revealed that he solicited reimbursement of travel expenses for his wife from a NASA contractor. Additionally, we determined that he participated in planning a conference forum in California that led to his wife receiving $5,000 for coaching services. By taking these actions, he inappropriately participated

in official matters affecting his and his wife's financial interests. We also found that on more than 10 occasions he inappropriately used his NASA e-mail account to promote his wife's private business interests. On January 3, 2014, the former manager elected to retire from government service in lieu of administrative removal.

Former Contractor Employee Convicted of Fraudulently Obtaining Credit

In January 2014, a former contractor employee at Langley Research Center pled guilty in U.S. District Court for the Eastern District of Virginia to using credit cards she fraudulently obtained by opening accounts using personally identifying information stolen from a co-worker. Sentencing is scheduled for May 2014.

Service Company Owner Charged

In April 2013, the owner of a company that regularly serviced NASA Government vehicles was charged with theft of one of the vehicles. The owner was suspected of using the vehicle for drug sales and was caught on videotape fueling the car at a refueling station where he had no legitimate need to be.

Former Contract Employee Pleads Guilty to Theft of Government Property

In February 2014, a former logistics technician working under contract at Glenn Research Center pled guilty in Cuyahoga County State Court to breaking and entering and petty theft. The plea is being held in abeyance pending completion of a Pre-Trial Division Program. The court also ordered that the technician pay $600 in restitution to NASA, pay a fine of $1,000, and complete 50 hours of community service. The plea stemmed from an OIG investigation that disclosed the technician stole government property from Glenn's excess property warehouse. The OIG recovered and returned the property to NASA.

Civil Servant Indicted for Time and Attendance Abuse

In February 2014, a mechanical engineer at Glenn Research Center was indicted by a Cuyahoga County grand jury for grand theft and tampering with records. An OIG investigation disclosed that since 2010 he had submitted false time and attendance reports resulting in a loss to the government of approximately $61,000.

Former NASA Intern Charged

In February 2014, a former intern at the Marshall Space Flight Center was charged with violating NASA regulations for removing a portion of a NASA heat shield and sensitive documents from the Center.

Former NASA Contractor Employee Charged with Theft

In December 2013, a former NASA contractor employee was charged with felony theft for stealing tools and other maintenance-related items from the Johnson Space Center.

Former NASA Security Specialist Sentenced

In October 2013, a former NASA security specialist at Marshall Space Flight Center received a sentence of 1 year's probation after pleading guilty in U.S. Magistrate's Court to one count of simple possession of a scheduled narcotic.

Ongoing Audit Work

Audit of NASA's Launch Support and Infrastructure Modernization Efforts

NASA's Ground Systems Development and Operations Program is refurbishing and modifying existing infrastructure at the Kennedy Space Center to ready it for the SLS. Specifically, the Program is refurbishing the crawler-transporter that will carry the SLS from Kennedy's Vehicle Assembly Building to launch pad 39B and modifying the mobile launcher platform and tower, the Vehicle Assembly Building, and launch pad 39B. We are evaluating NASA's management of these efforts.

Audit of NASA's Environmental Remediation Efforts

NASA is required by law to evaluate the environmental and safety impacts of its operations as well as to properly remediate contaminants released to the environment from its past activities. As of September 30, 2013, NASA had identified approximately $1.1 billion of unfunded environmental liabilities over the next 30 years. We are examining the extent of NASA's environmental remediation needs and whether the Agency has an effective program to address those needs.

TOP MANAGEMENT AND PERFORMANCE CHALLENGES

As required by the Reports Consolidations Act of 2000, the OIG annually develops a report identifying the most serious management and performance challenges facing NASA. In deciding whether to identify an issue as a top challenge, we consider the significance of the issue in relation to the Agency's mission; its susceptibility to fraud, waste, and abuse; whether the underlying causes are systemic; and the Agency's progress in addressing the issue. In our December 2013 report, we identified nine issues as the top management and performance challenges facing NASA.

1. Considering Whether to Further Extend the Life of the International Space Station

In January 2014, the President proposed extending Space Station operations until 2024. In our management challenges document, we noted that it costs $3 billion per year to operate the Space Station and that extending ISS beyond 2020 would likely require NASA to invest additional funds to service the structure and update its equipment. Consequently, some space policy experts have expressed concern that NASA will not have enough money to make the required upgrades and operate the Station while concurrently developing other human exploration programs. At the same time, NASA needs to gauge the interest and ability of its international partners to assist in extending ISS operations for the additional 8 years.

International Space Station.

Given the high costs and extraordinary effort to build the ISS, national leaders have emphasized the importance of maximizing the Station's scientific research capabilities. Our work has shown that although NASA has made progress towards maximizing the Station's research capabilities, opportunities exist for greater utilization. However, further progress depends on the ability of the Center for the Advancement of Science in Space, Inc. to attract private funding and encourage companies and other organizations to conduct self-funded research. Historically, NASA has received little interest

from private entities to conduct research on the ISS absent a substantial infusion of Government funds.

Maximizing these capabilities also relies on the success of the Agency's Commercial Cargo and Crew programs. NASA's Commercial Cargo Program is essential to ensuring the capacity to ferry experiments and supplies to and from the Station. The vehicles currently under development as part of NASA's Commercial Crew Program are expected to increase the amount of crew time available for research by making it possible to staff the ISS with a full complement of seven rather than the current six. According to the ISS Program Office, a seventh crew member could add an average of 33 hours per week of research time – a 94 percent increase over current rates.

2. Developing the Space Launch System and its Component Programs

Successful development of the SLS and the accompanying Orion Multi-Purpose Crew Vehicle (MPCV) is critical to the overall success of NASA's human exploration goals. NASA faces challenges in concurrently developing a launch system and crew vehicle and modifying the necessary supporting ground systems while also meeting the Administrator's mandate that exploration systems be affordable, sustainable, and realistic. Moreover, achieving successful integration will require effective management of the Programs' integrated cost and schedule.

Looming over the daunting technical and schedule challenges for NASA's human exploration program is a foreboding budget scenario. For example, the MPCV Program anticipates receiving a flat budget of approximately $1 billion per year into the 2020s. Given this budget profile, NASA is using an incremental development approach, which allocates funding to the most critical systems necessary to achieve the next development milestone rather than developing multiple systems simultaneously. Prior work by our office has shown that delaying critical development tasks increases the risk of future cost and schedule problems. Although we believe MPCV Program officials are managing the Program as efficiently as they can within their constrained budget, we are concerned about the future of the Program given the risks associated with incremental development.

Artist's concept of SLS launch.

Even after the SLS and MPCV are fully developed and ready to transport crew, NASA will continue to face significant challenges concerning the long-term sustainability of its human exploration program. For example, unless NASA begins a program to develop landers and surface systems, NASA astronauts will be limited to orbital missions. In the current budget environment, however, it appears unlikely that NASA will obtain significant funding to begin development of this additional exploration hardware anytime soon, delaying such development into the 2020s. Given the time and money necessary to develop landers and associated systems, it is unlikely that NASA would be able to conduct any manned surface exploration missions until the late 2020s at the earliest.

3. Securing Commercial Crew Transportation Services

Since the conclusion of the Space Shuttle Program in July 2011, the United States has lacked a domestic capability to transport crew and, until recently, cargo to and from the ISS. Consequently, NASA has relied on a series of barter agreements with Japanese and European partners to transport cargo to the Station and the Russian Soyuz program to transport its astronauts. Between 2012 and 2017, NASA is scheduled to pay Russia $1.7 billion to ferry 30 NASA astronauts and international partners to and from the ISS at prices ranging from $47 million to more than $70 million per round trip. The Agency is currently working with three companies – Boeing, SpaceX, and Sierra Nevada – using a combination of funded Space Act Agreements and more traditional contracts based on the Federal Acquisition Regulation to develop commercial crew transportation capabilities. NASA's goal is to secure commercial transportation for its astronauts to the ISS by 2017, and as of August 31, 2013, NASA has spent $1.1 billion on its commercial crew development efforts.

As we have previously reported, NASA's commercial crew development program faces several challenges: (1) unstable funding, (2) integration of cost estimates with the Program schedule, (3) challenges in providing timely requirement and certification guidance, and (4) spaceflight coordination issues with other Federal agencies. For example, for the past several years, the Commercial Crew Program has received significantly less funding than NASA requested. The reduction in funds has resulted in delays of the expected completion of the commercial crew development phase until 2017.

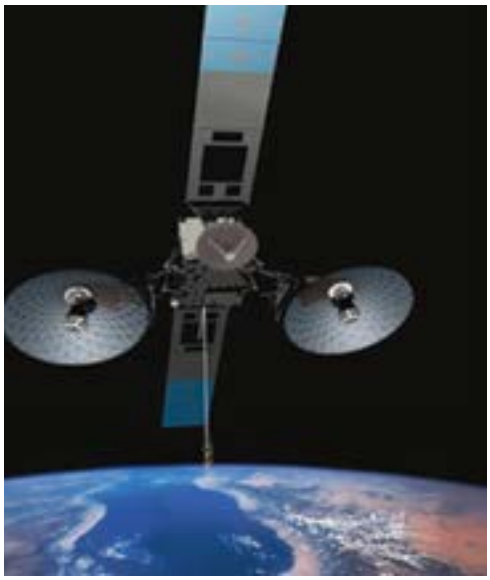
Moreover, NASA has yet to project the total amount of funding required by year, which makes it difficult for the Agency to manage its wider portfolio of spaceflight programs and reduces the transparency of the Program's budget submissions. Further, the process for providing timely guidance to partners for satisfying NASA's human rating and certification requirements could be

improved. If NASA is unable to confirm design requirements and provide certification guidance in a timely manner, the companies could face costly and time-consuming redesign work late in system development. Finally, coordination of important safety issues with FAA and the U.S. Air Force is progressing, but has yet to be fully resolved. Resolution of issues such as approval processes for in-flight changes and reentry and emergency diversions require formal agreement between NASA, FAA, and the Air Force.

Failure to resolve the challenges facing NASA's Commercial Crew Program could significantly delay the availability of commercial transportation services and extend U.S. reliance on the Russians for crew transportation to the ISS.

4. Ensuring Continued Efficacy of the Space Communications Networks

In 2006, NASA initiated the SCaN Program to create an integrated Agency-wide space communications and navigation architecture. SCaN is comprised of three networks: (1) the Near Earth Network, which covers low Earth orbit and portions of geosynchronous orbit; (2) the Space Network, which controls the Tracking and Data Relay Satellites (TDRS) through a network of geographically diverse ground systems; and (3) the Deep Space Network, which covers NASA mission needs beyond geosynchronous orbit.



Artist's concept of TDRS-K satellite.

While NASA has been responsible for providing communications, navigation, and delivery of scientific data to space flight missions for more than 30 years, many of its current satellite communications systems are aging and increasingly difficult to repair. SCaN is adding new capabilities that will extend the functionality of the three networks and be incorporated into the integrated architecture:

- NASA has plans to upgrade its Space Network through an $860 million Space Network Ground Segment Sustainment Project, which will implement a modern ground station to deliver high quality services to the Space Network community while significantly reducing operations and maintenance costs. Without the upgrades, the ground system will become increasingly unreliable and more expensive to maintain.

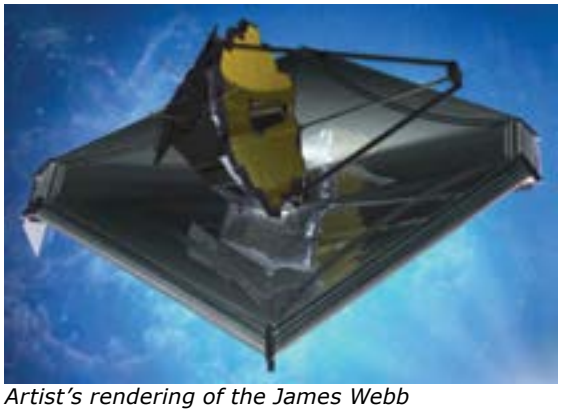
- The Space Network is also in the process of upgrading and replenishing failing TDRS, many of which are operating well beyond their planned lives. The TDRS replenishment efforts are major components of maintaining Space Network capabilities.
- NASA will replace the aged 70-meter antennas at all three Deep Space Network sites (Goldstone, California; Madrid, Spain; and Canberra, Australia) with arrays of new 34-meter antennas by 2025 at an estimated cost of $369 million. The upgrades will support a greater number of missions and spacecraft as well as the increased complexity and data transfer requirements of those missions.

The OIG is examining the SCaN Program through a series of audits, the first of which will focus on the Space Network, to assess how NASA is identifying and adjusting capabilities to meet mission requirements; managing program, cost, schedule, and performance; and addressing key risks. Future audits will examine the Deep Space Network, Near Earth Network, and Spectrum Management, and conclude with a capping report on the entire SCaN Program.

5. Maintaining Cost and Schedule for the James Webb Space Telescope

Designed to help understand the origin of the universe, evolution of stars, and formation of our solar system, the James Webb Space Telescope (JWST) is anticipated to be the premier space-based observatory of the next decade. Unlike the Hubble Space Telescope, which orbits relatively close to Earth (570 kilometers) and was refurbished by NASA five times since its 1990 launch, JWST will be positioned 1.5 million kilometers from Earth and therefore will be unserviceable should it malfunction.

Like many NASA projects, JWST has faced challenges meeting cost, schedule, and performance goals. We have previously identified the Agency's optimistic culture, a tendency to underestimate technical complexity, and funding instability as major drivers of cost and schedule growth for its projects, including JWST. Over the years, the Program's life-cycle costs have increased and the expected launch date has been pushed back numerous times. Late 1990s and early 2000s cost estimates for the JWST Program ranged from $1 billion to $3.5 billion, with expected launch dates between 2007 and 2011. By November 2011, after a review by the Independent Comprehensive Review Panel at the request of Congress, NASA restructured the JWST Program and established a revised baseline life-cycle cost estimate of $8.8 billion and an October 2018 launch date.



Artist's rendering of the James Webb Space Telescope.

Although JWST Program management has made progress, significant challenges remain for the Program to meet its revised baseline. A Government Accountability Office report found that the Program's cost estimate could be improved, schedule reserve for required test and integration activities was limited, and two of four instruments had yet to be delivered. Program managers have had to adjust the testing schedule to accommodate these delays. In addition, NASA has identified challenges related to the Program's budget. For example, having spent more than expected in the past year to address several unanticipated technical challenges, the Program's contingency reserves are less than planned and Headquarters-level reserves for the Program are limited in FY 2014.

Historically, NASA has taken funds from other programs when highly visible flagship missions experience significant cost growth. Because JWST is the largest science project in NASA's portfolio, any future budgetary and programmatic challenges will reverberate throughout the Agency.

6. Managing NASA's Infrastructure and Facilities

NASA has been unable to fully fund required maintenance for its approximately 4,900 buildings and structures, of which more than 80 percent are 40 or more years old and beyond their design life. In 2012, NASA estimated its deferred maintenance costs at $2.3 billion. A 2012 NASA study estimated that the Agency may have as many as 865 unneeded facilities with associated maintenance costs of more than $24 million annually.

Over the past 4 years, the OIG has conducted 10 audits examining various aspects of NASA's efforts to manage its aging infrastructure. We found that efforts by NASA to reduce its underutilized facilities have been hindered by four longstanding and interrelated factors: (1) fluctuating and uncertain strategic requirements, (2) Agency culture and business practices, (3) political pressure, and (4) inadequate funding. We concluded that the combination of these forces has frustrated NASA's efforts over the years to make meaningful reductions in the size of its real property portfolio. Moreover, without sustained commitment by top NASA leaders and the authority from

Congress to make the "tough calls" when it comes to what facilities to close or consolidate, meaningful downsizing of the Agency's infrastructure will continue to be elusive.

NASA officials readily acknowledge that the Agency has more infrastructure than it needs to carry out current and planned missions, and the Agency has several promising initiatives underway to manage its infrastructure, including organizational changes, a new facilities strategy, an analytical framework for making infrastructure decisions, and improvements in managing its real property data. While we view these initiatives as positive steps, most are in the early stages of development and NASA has attempted infrastructure reduction initiatives in the past with only limited success. Absent strong and sustained leadership to see its current efforts through and incorporate them into Agency policy, we are concerned that these latest efforts will meet a similar fate. Specifically, Agency leaders must ensure that these initiatives are institutionalized, coordinated, and communicated both inside and outside the Agency. In addition, they must be willing to make the difficult decisions to divest unneeded infrastructure; effectively communicate those decisions to stakeholders; and withstand the inevitable pressures from Federal, state, and local officials.

We acknowledge that NASA's best efforts to address these challenges may ultimately be insufficient to overcome the cultural and political obstacles that have impeded past efforts to eliminate Agency facilities. Accordingly, an outside process similar to DOD's Base Realignment and Closure Commission may be necessary to make the difficult but necessary infrastructure decisions.

7. Overhauling NASA's Information Technology Governance Structure

For more than 2 decades, NASA has struggled to implement an effective IT governance approach that appropriately aligns authority and responsibility commensurate with the Agency's overall mission. Since at least 1990, the OIG and the Government Accountability Office have highlighted a series of challenges stemming from the limited authority of NASA's Chief Information Officer (CIO), decentralization of Agency IT operations, ineffective IT governance, and shortcomings in the Agency's IT security. Because IT is intrinsic and pervasive throughout NASA, the Agency's IT governance structure directly affects its ability to attain its strategic goals. For this reason, effective IT governance must balance compliance, cost, risk, security, and mission success to meet the needs of internal and external stakeholders.

We have found that the decentralized nature of NASA's operations and its longstanding culture of autonomy hinder its ability to implement effective IT governance. The Agency CIO has limited visibility and control over a majority of the Agency's IT investments, operates in an organizational structure that marginalizes the authority of the position, and cannot enforce security measures across NASA's computer networks. Moreover, the current IT governance structure is overly complex and does not function effectively. As a result, Agency managers tend to rely on informal relationships rather than formalized business processes when making IT-related decisions. While other Federal agencies are moving toward a centralized IT structure under which a senior manager has ultimate decision authority over IT budgets and resources, NASA continues to operate under a decentralized model that relegates decision making about critical IT issues to numerous individuals across the Agency, leaving such decisions outside the purview of the NASA CIO. As a result, NASA's current IT governance model weakens accountability and does not ensure that IT assets across the Agency are cost effective and secure.

With mission critical assets at stake and in an era of shrinking budgets, NASA must take a holistic approach to managing its portfolio of IT systems that will require strong leadership by the CIO and Office of the CIO staff. However, the CIO cannot make these changes alone. Rather, the NASA Administrator must be the driving force behind such sweeping organizational change.

8. Ensuring Security of Agency Information Technology Systems

NASA's high profile and the relatively large number of Agency networks, coupled with its statutory mission to share scientific information, present unique IT security challenges. In FYs 2012 and 2013, NASA reported 5,143 computer security incidents resulting in the installation of malicious software on or unauthorized access to its computers. These intrusions have affected thousands of NASA computers, caused disruption to mission operations, and resulted in the theft of export-controlled and otherwise sensitive data.

To protect the Agency against inevitable cyber attacks, NASA must ensure that its IT systems and associated components are regularly safeguarded, assessed, and monitored. Over the past 5 years, we have issued 20 audit reports containing 63 recommendations designed to improve NASA's IT security. We have identified systemic and recurring weaknesses in NASA's IT security program that adversely impact the Agency's ability to protect the information and information systems vital to its missions. For example, the Agency continues to experience challenges as it transitions from its previous "snapshot" approach for certifying the security of its IT systems to a continuous monitoring program in which it maintains ongoing awareness of information security, vulnerabilities, and threats to support

organizational risk management decisions. Although NASA has made progress in transitioning to continuous monitoring, the Agency still needs to (1) create and maintain a complete, up-to-date record of IT components connected to Agency networks; (2) define the security configuration baselines that are required for its system components and develop an effective means of assessing compliance with those baselines; and (3) use best practices for vulnerability management on all its IT systems.

In addition, NASA increasingly has become a target of sophisticated cyber attacks known as advanced persistent threats. In FY 2012, NASA reported 55 advanced persistent threat attacks, 7 of which successfully compromised Agency computers. OIG investigators have conducted more than 120 investigations of breaches of NASA IT networks over the past 5 years, several of which have resulted in the arrests or convictions of foreign nationals. The OIG will continue to work with its counterparts in both the law enforcement and the intelligence communities to help protect NASA's IT systems.

9. Ensuring Integrity of the Contracting and Grant Process

NASA spent approximately 80 percent of its $17.7 billion FY 2012 budget on contracts to procure goods and services and on funding to grant and award recipients. Accordingly, Agency managers are constantly challenged to ensure that the Agency pays contractors in accordance with contract terms and receives fair value for its money. During the past year, the OIG continued to uncover fraud and other problems related to NASA contracts. For example, as a result of our investigative work, six executives of two Virginia security firms were sentenced for fraudulently obtaining more than $31 million in Government contract payments set aside for disadvantaged small businesses, which generated more than $6 million in salary and other payments to the executives. The executives were sentenced to prison for up to 6 years, received fines totaling more than $1 million, and were ordered to make $7.8 million in restitution.

Similarly, the OIG's audit work identified weaknesses in NASA's management of contracts. For example, we found that although NASA had implemented processes intended to improve contractor performance and acquisition outcomes, a number of questionable practices, including overly complex award formulas and a contract clause designed to hold contractors accountable for the quality of the final product that disregards interim performance evaluations, have diminished the effectiveness of award-fee contracts at the Agency. In addition, NASA failed to collect required data on award-fee contracts, thereby reducing its ability to measure their effectiveness.

With respect to grant management, NASA faces the ongoing challenge of ensuring that the approximately $500 million in grants awarded annually are administered appropriately and that recipients are accomplishing stated goals. Over the past 5 years, the OIG conducted 30 grant fraud investigations resulting in 4 prosecutions and $13.2 million in restitution and recoveries and an additional $15 million in civil settlements.

One area that continues to be a challenge to protect from fraud is NASA's Small Business Innovation Research (SBIR) program. NASA awarded approximately $154 million to small businesses under this program during FY 2013 to stimulate technological innovation, increase participation by small businesses in federally funded research and development, and increase private sector commercialization of innovations derived from federally funded research and development efforts. In multiple investigations and audits over the years, the OIG has identified significant fraud, waste, and abuse in NASA's SBIR Program. For example, this past year two executives of a scientific research company were indicted for wire fraud, conspiracy to commit wire fraud, and money laundering in California for defrauding NASA and the National Science Foundation by creating the false impression they had not applied for overlapping SBIR contracts with both agencies.

LEGAL ISSUES

Iraqi Inspectors General Study Tour

In January 2014, the Council of the Inspectors General for Integrity and Efficiency (CIGIE) hosted a study tour for approximately 20 IGs from the Republic of Iraq. The visit was facilitated by the United Nations Development Program in Iraq and held at the U.S. Department of State in Washington, D.C. The event included multiple sessions focusing on the establishment of CIGIE, the concept of oversight, and OIG processes and protocols that facilitate coordination among the OIGs and with other entities, including Congress and the Government Accountability Office. The Iraqis also visited several IG offices in Washington, D.C., including the Department of Education and U.S. Postal Service.

NASA OIG Counsel participated on a panel with counsels from two other OIGs to discuss the legal framework of the Inspector General Act. Counsel discussed the history of the IG Act, independent personnel and funding authorities, and access to Agency records. The Iraqi IGs were especially interested in the OIG budget process, particularly negotiations with the Office of Management and Budget and the visibility of OIG budget requests before Congress.

IG Authorities Training

On February 12, 2014, a NASA OIG Associate Counsel taught the one-day IG Authorities course presented by the CIGIE Training Institute to 46 members of the IG community. Attendees included auditors, investigators, and attorneys from across the Federal Government, as well as one Acting Inspector General. The IG Authorities course surveys the legal sources of IG authority as well as practical application of that authority. Topics covered included the history of the IG Act, IG independence, IG access to information, legal limits of IG authority, IG law enforcement authority, and relations with Congress. Our Associate Counsel was one of several members of the OIG legal community who developed the original curriculum for the course.

REGULATORY REVIEW

During this reporting period, the OIG reviewed and commented on NASA directives and regulations. Significant directives and regulations reviewed included the following:

Draft 14 C.F.R. 1204, Subpart 11, NASA Protective Services Enforcement

NASA drafted amendments to 14 C.F.R. 1204, Subpart 11, *NASA Protective Services Enforcement*, that would expressly adopt and make applicable on NASA Centers and component facilities the vehicular and pedestrian traffic laws of the state in which the installation is located. In addition, the proposal provides that violators of such state laws while on a NASA facility may be issued Federal District Court Violation Notices for the offenses and potentially be subject to fines of not more than $500 or imprisonment for not more than 30 days, or both, for each violation. The OIG shared with NASA management its concerns about the legal underpinnings of the proposed regulatory change and the practical challenges of implementing the new enforcement system.

NPR 4310.1A, Identification and Disposition of NASA Artifacts

This proposal is a rewrite and restructuring of the NASA policy providing guidance for identifying, reporting, and transferring NASA artifacts. NASA artifacts are items of personal property related to the history of aeronautics and astronautics. Artifact significance stems mainly from the item's relationship with historic flights, programs, activities, incidents, achievements, technology, understanding of the universe, and important or well-known personalities. Consistent with NASA's policy to educate the public about accomplishments achieved in NASA's aeronautics and space programs, the Agency encourages the donation of appropriate artifacts to museums, schools, universities, libraries, and planetariums. The OIG recommended changes to the revised policy intended to clarify roles and responsibilities with respect to implementation of the NPR.

NPR 8820.2G, Facility Project Requirements

This NPR provides the minimum requirements for planning, approving, designing, building, and acquiring all NASA real property facility projects. It covers the repair, modification, renovation, or new construction on NASA real property with an estimated cost greater than or equal to $100,000, excluding maintenance work. This update and revision adds a new chapter on demolition or disposal of real property, makes changes to what is considered allowable costs for the construction of facilities, and addresses other items including enhanced use leasing, energy savings performance contracts, and utility energy savings contracts. The OIG has recommended that the NPR be further revised to more clearly address the recommendations made in the December 19, 2011, NASA OIG audit report entitled "NASA's Infrastructure and Facilities: An Assessment of the Agency's Real Property Master Planning" (IG-12-008). In that report, we recommended that the Associate Administrator for Mission Support update NASA policy to better reflect the risk-based process for prioritizing the construction of facilities projects.

OUTREACH ACTIVITIES

During this reporting period, the OIG engaged in outreach activities that involved coordination with NASA and other OIGs and Federal agencies.

- OA's IT Directorate coordinated with representatives from other Federal OIGs in connection with a CIGIE initiative pursuant to which more than 20 OIGs will audit their agencies' cloud computing efforts. The audits are modeled on our office's July 2013 audit of NASA's cloud computing activities.

- In October 2013, the OA Financial Management Director attended the Single Audit Roundtable at KPMG's offices in Washington, D.C. Representatives from the American Institute of Certified Public Accountants, Office of Management and Budget, other Federal OIGs, other Government and nonprofit entities, the Federal Audit Clearinghouse, and independent public accountant firms met to discuss current issues and share ideas.

- On January 13 – 14, 2014, OA's Science and Aeronautics Research Director and JPL Project Manager presented information at the first meeting of the United Nations-initiated International Asteroid Warning Network Steering Committee held at the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts.

- Personnel from OA's Mission Support Directorate coordinated with the National Science Foundation OIG to compare efforts to use data analytics to better understand where material risks exist within NASA's grant universe.

- OA's Financial Management Directorate participated in monthly meetings of the Financial Statement Audit Network to discuss current issues in financial management, including impacts of accounting and auditing standards, and reporting requirements affecting Federal agency and Government-wide financial statements.

AWARDS

CIGIE Awards Ceremony

CIGIE held its 16th Annual Awards Ceremony on November 15, 2013, to recognize the work of OIG employees across the Federal Government.

OA's Science and Aeronautics Research Directorate received an Award for Excellence for exceptional performance in identifying unsafe conditions and practices in NASA's Explosives Safety Program.

From left: IG Paul Martin; Raymond Tolomeo, Director Science and Aeronautics Research Directorate; and James Morrison, Assistant Inspector General for Audits.

OI received an Award for Excellence in recognition of their exceptional performance on a multi-agency complex fraud investigation.

From left: IG Martin; Patricia Searle, Resident Agent-in-Charge; Norman Conley Jr., Special Agent; and Kevin Winters, Assistant Inspector General for Investigations.

OMP's former Director of Human Resources received an Award for Excellence in recognition of her exceptional administrative support.

From left: IG Martin; Janice L. Chiverton, Director of Human Resources (former), Office of Management and Planning; and Hugh Hurwitz, Assistant Inspector General for Management and Planning.

Appendixes

Appendix A. Inspector General Act Reporting Requirements

INSPECTOR GENERAL ACT CITATION	REQUIREMENT DEFINITION	CROSS-REFERENCE PAGE NUMBERS
Section 4(a)(2)	Review of Legislation and Regulations	37-39
Section 5(a)(1)	Significant Problems, Abuses, and Deficiencies	3-26
Section 5(a)(2)	Recommendations for Corrective Actions	3-26
Section 5(a)(3)	Prior Significant Audit Recommendations Yet to Be Implemented	48-49
Section 5(a)(4)	Matters Referred to Prosecutive Authorities	51
Sections 5(a)(5) and 6(b)(2)	Summary of Refusals to Provide Information	None
Section 5(a)(6)	OIG Audit Products Issued – Includes Total Dollar Values of Questioned Costs, Unsupported Costs, and Recommendations that Funds Be Put to Better Use	50
Section 5(a)(7)	Summary of Significant Audits and Investigations	3-26
Section 5(a)(8)	Total Number of Reports and Total Dollar Value for Audits with Questioned Costs	50
Section 5(a)(9)	Total Number of Reports and Total Dollar Value for Audits with Recommendations that Funds Be Put to Better Use	50
Section 5(a)(10)	Summary of Prior Audit Products for which No Management Decision Has Been Made	50
Section 5(a)(11)	Description and Explanation of Significant Revised Management Decisions	None
Section 5(a)(12)	Significant Management Decisions with which the Inspector General Disagreed	None
Section 5(a)(13)	Reporting in Accordance with Section 5(b) of the Federal Financial Management Improvement Act of 1996 Remediation Plan	None
Section 5(a)(14)	Peer Review Conducted by Another OIG	54
Section 5(a)(15)	Outstanding Recommendations from Peer Reviews of the NASA OIG	None
Section 5(a)(16)	Outstanding Recommendations from Peer Reviews Conducted by the NASA OIG	None

Debt Collection

The Senate Report accompanying the supplemental Appropriations and Rescissions Act of 1980 (Public Law 96-304) requires Inspectors General to report amounts due the Agency as well as amounts that are overdue and written off as uncollectible. NASA's Financial Management Division provides these data each November for the previous fiscal year. For the period ending, September 30, 2013, the receivables due from the public totaled $2,510,608, of which $1,742,400 is delinquent. The amount written off as uncollectible for the period October 1, 2012, through September 30, 2013, was $107,873.

Appendix B. Statistical Information

During the period October 1, 2013, through March 31, 2014, the Office of Audits issued 14 products (see Table 1).

Table 1: Audit Products and Impact

REPORT NO. AND DATE ISSUED	TITLE	IMPACT
Acquisition and Project Management		
IG-14-014, 2/12/2014	NASA's Award Closeout Process	Identified process improvements to enhance the Agency's closeout efforts and ensure funding unnecessarily tied to untimely closure action is available for other Agency or government uses
IG-14-012, 1/30/2014	Review of NASA's Management Strategy for Conducting Aeronautics Research	Affirmed that NASA's strategy for conducting aeronautics research aligned and supported the nation's civil aeronautics research and technology objectives
IG-14-010, 1/15/2014	NASA's Strategic Sourcing Program	Identified areas for programmatic improvement that should enhance the Agency's strategic sourcing efforts
IG-14-003, 11/13/2013	NASA's Use of Award-fee Contracts	Identified internal control deficiencies that resulted in inaccurate award-fee payments and failure to follow Federal and NASA policies resulting in questioned and unsupported costs
Space Operations and Human Exploration		
IG-14-009, 1/8/2014	Core Stage Testing of NASA's Space Launch System	Identified internal control deficiencies that resulted in decisions being made without complete and comparable data
IG-14-001, 11/13/2013	NASA's Management of its Commercial Crew Program	Assessed progress of the commercial crew program and provided suggestions to NASA to improve the program's effectiveness, efficiency and transparency
Information Technology Security and Governance		
IG-14-015, 2/27/2014	NASA's Management of its Smartphones, Tablets, and Other Mobile Devices	Improved management and security of Agency Consolidated End-user Services-supplied, NASA-supplied, and personally owned mobile devices that connect to NASA networks
IG-14-013, 2/4/2014	Review of NASA's Contract for Computer Equipment and Services	Identified concerns that NASA management should consider as the Agency moves forward in determining how best to meet its future IT needs
IG-14-004, 11/20/2013	Federal Information Security Management Act: Fiscal Year 2013 Evaluation	Improvements in internal controls for IT security through the establishment of management programs and processes

REPORT NO. AND DATE ISSUED	TITLE	IMPACT
Financial Management		
IG-14-008, 12/19/2014	FY 2013 Financial Statement Audit Management Letter	Improvements in the effectiveness of the controls over financial reporting and the IT control environment
IG-14-007, 12/12/2013	FY 2013 NASA Closing Package Financial Statement Audit (IG Transmittal Letter and IPA Report)	Improvements in NASA's ability to provide auditable closing package financial statements and sufficient evidence to support the financial statements throughout the FY and at year end
IG-14-006, 12/17/2014	Audit of the National Aeronautics and Space Administration's Fiscal Year 2013 Financial Statements	Improvements in NASA's ability to provide auditable financial statements and sufficient evidence to support the financial statements throughout the FY and at year end
Other Audit Matters		
No number, 1/29/2014	Review of NASA's Compliance with Export Control Laws	Notified Congress of security weaknesses that may affect NASA's compliance with export control laws
No number, 12/11/2013	NASA's Lease of Hangar Space and Sale of Aviation Fuel to H211	Identified an improper financial arrangement under a lease agreement between NASA and a private entity

As shown in Table 2, 164 of 215 recommendations, from 29 audit reports, remain open. Of these open recommendations, 95 are from 7 reports issued during this semiannual reporting period.

Table 2: Audit Recommendations Yet to Be Implemented

a. New Since Last Reporting Period

REPORT NO. AND DATE ISSUED	TITLE	DATE RESOLVED	NUMBER OF RECOMMENDATIONS		LATEST TARGET CLOSURE DATE
			OPEN	CLOSED	
Acquisition and Project Management					
IG-14-014, 2/12/2014	NASA's Award Closeout Process	—	4	0	8/11/2014
IG-14-010, 1/15/2014	NASA's Strategic Sourcing Program	—	6	0	7/30/2014
IG-14-003, 11/13/2013	NASA's Use of Award-fee Contracts	—	11	1	8/29/2014
Space Operations and Human Exploration					
IG-14-009, 1/8/2014	Core Stage Testing of NASA's Space Launch System	1/8/2014	4	0	9/30/2014
IG-14-001, 11/13/2013	NASA's Management of its Commercial Crew Program	11/13/2013	3	1	12/31/2014
Information Technology Security and Governance					
IG-14-015, 2/27/2014	NASA's Management of its Smartphones, Tablets, and Other Mobile Devices	2/27/2014	2	0	2/28/2015
Financial Management					
IG-14-008, 12/19/2014	FY 2013 Financial Statement Audit Management Letter	—	65	0	12/31/2014

b. Reported in Previous Semiannual Reports

REPORT NO. AND DATE ISSUED	TITLE	DATE RESOLVED	NUMBER OF RECOMMENDATIONS		LATEST TARGET CLOSURE DATE
			OPEN	CLOSED	
Information Technology Security and Governance					
IG-13-021, 7/29/2013	NASA's Progress in Adopting Cloud-Computing Technologies	7/29/2013	4	2	9/30/2014
IG-13-015, 6/5/2013	Audit of NASA's Information Technology Governance	6/5/2013	8	0	11/30/2014
IG-13-006, 3/28/2013	NASA's Process for Acquiring Information Technology Security Assessment and Monitoring Tools	3/15/2013	4	0	9/30/2015
IG-12-017, 8/7/2012	Review of NASA's Computer Security Incident Detection and Handling Capability	7/17/2012	3	0	9/30/2014
IG-11-017, 3/28/2011	Inadequate Security Practices Expose Key NASA Network to Cyber Attack	3/28/2011	1	2	9/30/2014
IG-10-013, 5/13/2010	Review of the Information Technology Security of [a NASA Computer Network]	5/13/2010	1	1	9/30/2014[a]
IG-10-013-a, 7/1/2010	Addendum				
Infrastructure and Facilities Management					
IG-13-014, 4/8/2013	NASA's Management of Energy Savings Contracts	4/8/2013	3	1	9/22/2014
IG-13-008, 2/12/2013	NASA's Efforts to Reduce Unneeded Infrastructure and Facilities	2/12/2013	5	0	9/1/2014
IG-12-020, 8/9/2012	NASA's Infrastructure and Facilities: An Assessment of the Agency's Real Property Leasing Practices	8/9/2012	8	0	7/31/2014
Infrastructure and Facilities Management					
IG-12-008, 12/19/2011	NASA's Infrastructure and Facilities: An Assessment of the Agency's Real Property Master Planning	12/19/2011	1	2	6/30/2014
IG-11-024, 8/4/2011	NASA Infrastructure and Facilities: Assessment of Data Used to Manage Real Property Assets	8/4/2011	1	2	9/30/2013[a]

REPORT NO. AND DATE ISSUED	TITLE	DATE RESOLVED	NUMBER OF RECOMMENDATIONS		LATEST TARGET CLOSURE DATE
			OPEN	CLOSED	
Financial Management					
IG-13-020, 7/18/2013	Audit of Selected NASA Conferences	7/18/2013	4	1	4/30/2014
IG-13-011, 3/14/2013	Audit of NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2012	3/14/2013	3	0	9/30/2013[b]
IG-12-015, 5/1/2012	NASA's Efforts to Identify, Report, and Recapture Improper Payments	7/26/2012	4	5	11/30/2013
IG-12-010, 2/16/2012	Audit of NASA's Purchase and Travel Card Programs	8/31/2012	2	13	6/30/2014
Acquisition and Project Management					
IG-13-023, 9/26/2013	Evaluation of NASA's Implementation of Executive Order 13526, Classified National Security Information	—	2	1	4/30/2015
IG-12-019, 8/3/2012	Audit of NASA Grant Awarded to HudsonAlpha Institute for Biotechnology	9/20/2012	2	6	3/1/2014
IG-12-018, 7/26/2012	Audit of NASA Grants Awarded to the Philadelphia College Opportunity Resources for Education	7/26/2012	4	4	5/1/2014
IG-12-016, 6/22/2012	Audit of NASA Grants Awarded to the Alabama Space Science Exhibit Commission's U.S. Space and Rocket Center	6/22/2012	1	0	5/1/2014
IG-12-013, 3/1/2012	Audit of NASA's Process for Transferring Technology to the Government and Private Sector	3/1/2012	2	4	4/30/2014
IG-09-017, 7/27/2009	Opportunities to Improve the Management of the Space Flight Awareness Honoree Launch Conference Event	7/27/2009	1	0	8/1/2014
Other Audit Matters					
IG-11-026, 9/12/2011	NASA's Grant Administration and Management	3/8/2012	5	4	12/1/2014

[a] The OIG is working with management to determine a revised target closure date.
[b] The OIG is reviewing management's request for closure.

Table 3: Audits with Questioned Costs

	NUMBER OF AUDIT REPORTS	TOTAL QUESTIONED COSTS
No management decision made by beginning of period	0	n/a
Needing management decision during period	1	$3,236,530
Management decision made during period		
Amounts agreed to by management	0	n/a
Amounts not agreed to by management	1	$2,401,060
No management decision at end of period		
Less than 6 months old	1	$835,470
More than 6 months old	0	n/a

Table 4: Audits with Recommendations that Funds Be Put to Better Use

	NUMBER OF AUDIT REPORTS	TOTAL FUNDS TO BE PUT TO BETTER USE
No management decision made by beginning of period	0	n/a
Issued during period	2	$111,022,019
Needing management decision during period	2	$111,022,019
Management decision made during period		
Amounts agreed to by management	1	$169,401
Amounts not agreed to by management	1	$44,429,678
No management decision at end of period		
Less than 6 months old	1	$66,422,940
More than 6 months old	0	n/a

Table 5: Status of A-133 Findings and Questioned Costs Related to NASA Awards

Total audits reviewed	5
Audits with findings	3

FINDINGS AND QUESTIONED COSTS		
	NUMBER OF FINDINGS	**QUESTIONED COSTS**
Management decisions pending, beginning of reporting period	278	$14,982,602
Findings added during the reporting period	7	$0
Management decision made during reporting period	(103)	
Agreed to by management		($9,740)
Not agreed to by management		($578,532)
Management decisions pending, end of reporting period	182	$14,394,330

Note: Office of Management and Budget Circular A-133, "Audits of States, Local Governments, and Non-Profit Organizations," requires Federal award recipients to obtain audits of their Federal awards.

Table 6: Legal Activities and Reviews

FOIA matters	14
Appeals	0
Inspector General subpoenas issued	53
Regulations reviewed	11

Table 7: Office of Investigations Activities

a. Complaint Intake Disposition

SOURCE OF COMPLAINT	ZERO FILES[a]	ADMINISTRATIVE INVESTIGATIONS[b]	MANAGEMENT REFERRALS[c]	PRELIMINARY INVESTIGATIONS[d]	TOTAL
Hotline	26	11	6	11	**54**
All others	44	25	1	51	**121**
Total	**70**	**36**	**7**	**62**	**175**

[a] Zero files are complaints for which no action is required or that are referred to NASA management for information only or to another agency.

[b] Administrative investigations include noncriminal matters initiated by OI as well as hotline complaints referred to OA.

[c] Management referrals are complaints referred to NASA management for which a response is requested.

[d] Preliminary investigations are complaints where additional information must be obtained prior to initiating a full criminal or civil investigation.

b. Full Investigations Opened this Reporting Period

Full criminal/civil investigations[a]	18

[a] Full investigations evolve from preliminary investigations that result in a reasonable belief that a violation of law has taken place.

c. Cases Pending at End of Reporting Period

Preliminary investigations	66
Full criminal/civil investigations	106
Administrative investigations	73
Total	**245**

d. Qui Tam Investigations

Opened this reporting period	0
Pending at end of reporting period	6

Note: A Qui Tam is a civil complaint filed by an individual on behalf of the U.S. Government under the Civil False Claims Act. The number of Qui Tam investigations is a subset of the total number of investigations opened and pending.

e. Judicial Actions

Cases referred	45
Indictments/criminal informations	15
Convictions/plea bargains	6
Sentencing	7
Civil settlements/judgments	1

f. Administrative Actions

Referrals to NASA management for review and response	7
Referrals to NASA management – information only	3
Referrals to the Office of Audits	1
Referrals to Security or other agencies	8
Recommendations to NASA management for disciplinary action	
Involving a NASA employee	6
Involving a contractor firm	2
Involving a contractor employee	1
Other	1
Total	**10**
Administrative/disciplinary actions taken	
Against a NASA employee	4
Against a contractor employee	1
Procedural change implemented	1
Total	**6**
Recommendations to NASA management on program improvements	
Matters of procedure	1
Total	**1**
Suspensions or debarments from Government contracting	
Involving an individual	7
Involving a contractor firm	2
Total	**9**

g. Investigative Receivables and Recoveries

Judicial	$4,258,500
Administrative[a]	$10,009,772
Total	**$14,268,272**
Total to NASA	**$4,130,490**

[a] Includes amounts for cost savings to NASA as a result of investigations.

Defense Contract Audit Agency Audits of NASA Contractors

The Defense Contract Audit Agency (DCAA) provides audit services to NASA on a reimbursable basis. DCAA provided the following information during this period on reports involving NASA contract activities.

DCAA Audit Reports Issued

During this period, DCAA issued 74 audit reports on contractors who do business with NASA. Corrective actions taken in response to DCAA audit report recommendations usually result from negotiations between the contractors doing business with NASA and the Government contracting officer with cognizant responsibility (e.g., the Defense Contract Management Agency and NASA). The cognizant agency responsible for administering the contract negotiates recoveries with the contractor after deciding whether to accept or reject the questioned costs and recommendations for funds to be put to better use. The following table shows the amounts of questioned costs and funds to be put to better use included in DCAA reports issued during this semiannual reporting period and the amounts that were agreed to during the reporting period.

Table 8: DCAA Audit Reports with Questioned Costs and Recommendations that Funds Be Put to Better Use; Amounts Agreed To

	AMOUNTS IN ISSUED REPORTS	AMOUNTS AGREED TO[a]
Questioned costs	$11,763,000	$12,771,000
Funds to be put to better use	$0	$20,350,000

Notes: This data is provided to the NASA OIG by DCAA and may include forward pricing proposals, operations, incurred costs, cost accounting standards, and defective pricing audits. Because of limited time between availability of management information system data and legislative reporting requirements, there is minimal opportunity for DCAA to verify the accuracy of reported data. Accordingly, submitted data is subject to change based on subsequent DCAA authentication. The data presented does not include statistics on audits that resulted in contracts not awarded or in which the contractor was not successful.

[a] Amounts agreed to include amounts from reports issued in previous semiannual reporting periods.

Appendix C. Peer Reviews

The Dodd-Frank Wall Street Reform and Consumer Protection Act requires the OIG to include in their semiannual reports any peer review results they provided or received during the relevant reporting period. Peer reviews are required every 3 years. In compliance with the Act, we provide the following information.

Office of Audits

No external peer reviews were conducted of or by the Office of Audit during this semiannual period. The date of the last external peer review of the NASA OIG was September 26, 2012, and was conducted by the Department of Commerce OIG. NASA OIG received a peer review rating of pass. There are no outstanding recommendations from this external peer review.

No external peer reviews of another federal audit organization were conducted by our office during this semiannual reporting period. There are no outstanding recommendations from the previous peer review conducted by our office. That peer review was conducted on the Small Business Administration OIG's audit organization and was completed September 27, 2012.

Office of Investigations

No external peer reviews were conducted of or by the Office of Investigations during this semiannual period. In November 2011, the Federal Deposit Insurance Corporation's OIG reviewed NASA OIG and found our office to be in compliance with all relevant guidelines. There are no unaddressed recommendations outstanding from this review.

Appendix D. Glossary

Administrative Investigation. An administrative investigation is an inquiry into allegations of misconduct, wrongdoing, or administrative matters, the results of which could lead to disciplinary action.

Disallowed Cost (the IG Act of 1978 definition). A questioned cost that management, in a management decision, has sustained or agreed should not be charged to the Government.

Investigative Recoveries. Investigative recoveries are the total dollar value of (1) recoveries during the course of an investigation (before any criminal or civil prosecution); (2) court (criminal or civil) ordered fines, penalties, and restitutions; and (3) out-of-court settlements, including administrative actions resulting in non-court settlements.

Investigative Referrals. Investigative referrals are cases that require additional investigative work, civil or criminal prosecution, or disciplinary action. Those cases are referred by the OIG to investigative and prosecutive agencies at the Federal, state, or local level or to agencies for management or administrative action. An individual case may be referred for disposition to one or more of these categories.

Judicial Actions. Investigative cases referred for prosecution that are no longer under the jurisdiction of the OIG, except for cases on which further administrative investigation may be necessary. This category comprises cases investigated by the OIG and cases jointly investigated by the OIG and other law enforcement agencies. Prosecuting agencies will make decisions to decline prosecution; to refer for civil action; or to seek out-of-court settlements, indictments, or convictions. Indictments and convictions represent the number of individuals or organizations indicted or convicted (including pleas and civil judgments).

Latest Target Closure Date. Management's current estimate of the date it will complete the agreed-upon corrective action(s) necessary to close the audit recommendation(s).

Management Decision (the IG Act of 1978 definition). The evaluation by management of the findings and recommendations included in an audit report and the issuance of a final decision by management concerning its response to such findings and recommendations, including actions that management concludes are necessary.

Questioned Cost (the IG Act of 1978 definition). A cost that is questioned by the OIG because of (1) alleged violation of a provision of a law, regulation, contract, grant, cooperative agreement, or other agreement or document governing the expenditure of funds; (2) a finding that, at the time of the audit, such cost is not supported by adequate documentation; or (3) a finding that the expenditure of funds for the intended purpose is unnecessary or unreasonable.

Recommendation Resolved. A recommendation is considered resolved when (1) management agrees to take the recommended corrective action, (2) the corrective action to be taken is resolved through agreement between management and the OIG, or (3) the Audit Followup Official determines whether the recommended corrective action should be taken.

Recommendation that Funds Be Put to Better Use (the IG Act of 1978 definition). A recommendation by the OIG that funds could be more efficiently used if management took actions to implement and complete the recommendation, including (1) reductions in outlays; (2) deobligation of funds from programs or operations; (3) withdrawal of interest subsidy costs on loans or loan guarantees, insurance, or bonds; (4) costs not incurred by implementing recommended improvements related to the operations of the establishment, a contractor, or grantee; (5) avoidance of unnecessary expenditures noted in pre-award reviews of contract or grant agreements; or (6) any other savings that are specifically identified. (Note: Dollar amounts identified in this category may not always allow for direct budgetary actions but generally allow the Agency to use the amounts more effectively in the accomplishment of program objectives.)

Qui Tam. Latin for "who as well." A lawsuit brought by a whistleblower on behalf of the Government under the civil False Claims Act, where a share of recoveries can be awarded to the whistleblower.

Unsupported Cost (the IG Act of 1978 definition). An unsupported cost is a cost that is questioned by the OIG because the OIG found that, at the time of the audit, the cost was not supported by adequate documentation.

Appendix E. Acronyms

ACES	Agency End User Services Contract
BPA	Blanket Purchase Agreement
CIGIE	Council of the Inspectors General on Integrity and Efficiency
CIO	Chief Information Officer
DCAA	Defense Contract Audit Agency
DLA	Defense Logistics Agency
DOD	Department of Defense
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FY	Fiscal Year
HP	HP Enterprise Services
IG	Inspector General
IPA	Intergovernmental Personnel Act
IPERA	Improper Payments Elimination and Recovery Act
IPIA	Improper Payments Information Act
ISS	International Space Station
IT	Information Technology
ITAR	International Traffic in Arms Regulation
IV&V	Independent Verification & Validation
JWST	James Webb Space Telescope
MPCV	Multi-Purpose Crew Vehicle
NAPA	National Academy of Public Administration
NIA	National Institute of Aerospace
NPR	NASA Procedural Requirement
OA	Office of Audits
OI	Office of Investigations
OIG	Office of Inspector General
OMB	Office of Management and Budget
PwC	PricewaterhouseCoopers LLP
SBIR	Small Business Innovation Research
SCaN	Space Communications and Navigation
SLS	Space Launch System
SOFIA	Stratospheric Observatory for Infrared Astronomy
TDRS	Tracking and Data Relay Services

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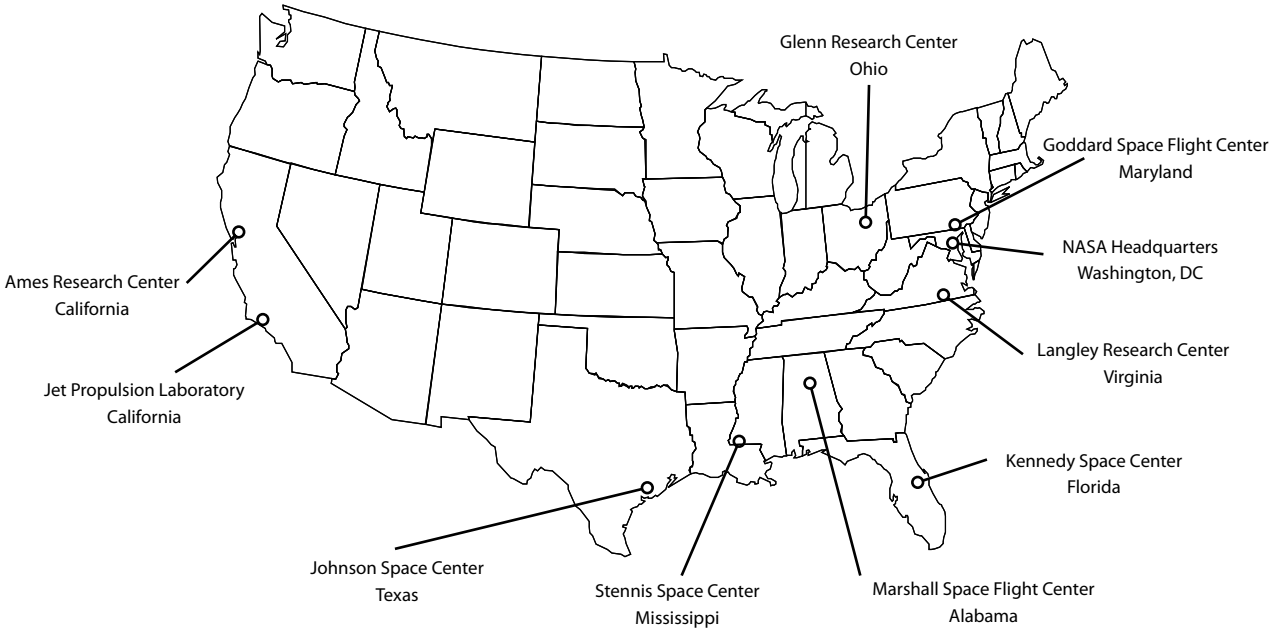

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