NASA OFFICE OF INSPECTOR GENERAL

SEMIANNUAL REPORT

APRIL 1–SEPTEMBER 30, 2014

INSPECTOR G
NASA

FROM THE INSPECTOR GENERAL

NASA faces ongoing challenges in sustaining its exploration and science missions, including such high-profile initiatives as the Space Launch System, its commercial cargo and crew programs, the James Webb Space Telescope, and the International Space Station (ISS). And like all Federal agencies, NASA has begun another fiscal year without a full-year appropriation, making the long-range planning necessary to carrying out its missions more difficult.

However, neither starting the fiscal year under a continuing resolution nor the expectation of static "top-line" funding are new scenarios for NASA. Accordingly, even with effective program management, NASA leaders will need to make choices that result in the continuation of some programs and the delay or cancellation of others. Case in point: the Stratospheric Observatory for Infrared Astronomy (SOFIA) – the Boeing 747SP NASA fitted with a 9-foot telescope to study the universe. After a $1.1 billion investment and 23 years of effort, SOFIA reached full operational capability earlier this year. But SOFIA faces an uncertain future because the President's fiscal year (FY) 2015 budget proposed placing the observatory in storage unless NASA could identify partners to help subsidize its $80 million annual operating cost.

We reviewed the SOFIA Program and found that the Administration's proposal presents immediate challenges, including decisions about whether to delay planned aircraft maintenance and concerns about the potential loss of key personnel during the period of congressional debate over the FY 2015 budget. At the same time, appropriations legislation considered in the House of Representatives and Senate contained between $70 and $87 million to continue funding the Program.

During this reporting period, we also examined NASA's use of Space Act Agreements and questioned the Agency's decision to refrain from including more specific information about program objectives and key safety elements in the $1.2 billion in funded Agreements it entered into with several private companies to develop commercial crew spaceflight capabilities. We recommended that in the future NASA consider being more prescriptive when using funded agreements to develop spaceflight technology.

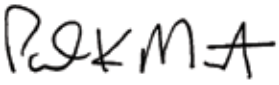
In another review that examined extending the ISS until 2024, we found assumptions underlying NASA's cost projections overly optimistic. While NASA projects its annual ISS budget to grow from its current $3 billion to nearly $4 billion by FY 2020, we questioned the validity of the Agency's estimates for transportation costs. For example, NASA developed its transportation estimates using a $70.7 million average cost for a seat on Russia's Soyuz spacecraft for a total cost of approximately $282 million per

mission for four astronauts rather than projected costs for using commercial companies to transport astronauts, which NASA expects to be higher.

We also examined NASA's efforts to modernize its Space Network, a constellation of eight satellites and three ground stations used to communicate with spacecraft operating in low Earth orbit. Without this Network, space hardware worth tens of billions of dollars would be little more than orbital debris. We found that key components of the Network are not meeting planned cost, schedule, and performance goals, and the delays and cost growth increase the risk that the Network will be unable to continue to provide adequate communication services to NASA missions and other customers.

Finally, our Office of Investigations continues to actively pursue allegations involving misuse of NASA funds and misconduct by NASA employees, contractors, and grant recipients. During the past 6 months, the Office of Inspector General (OIG) investigated dozens of cases of bribery, wire fraud, and falsification of records – the latter by two scientists who fraudulently obtained $1.5 million in research contracts with NASA.

This Semiannual Report summarizes the OIG's activities and accomplishments between April 1 and September 30, 2014. We hope you find it informative.



Paul K. Martin
Inspector General
November 28, 2014


OR GENERAL
NASA
RMINISTRATION

INSPECTOR G
NASA

TABLE OF CONTENTS

OFFICE OF AUDITS

Stratospheric Observatory for Infrared Astronomy (SOFIA) Aircraft

ACQUISITION AND PROJECT MANAGEMENT

In the current environment of constrained 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.

NASA'S USE OF SPACE ACT AGREEMENTS

We examined NASA's use of Space Act Agreements – the broad authority granted under the National Aeronautics and Space Act of 1958 – that enables the Agency to enter into agreements other than traditional contracts, grants, and cooperative agreements with individuals and organizations to advance its mission. NASA has entered into thousands of these agreements over the years to promote scientific research and new technology, stimulate industry to undertake new endeavors, and encourage companies that have not pursued more traditional agreements with the Agency because of regulatory requirements and costs. Space Act Agreements may be reimbursable (the partner reimburses NASA's costs in full or in part), nonreimbursable, or funded (NASA transfers appropriated funds to the partner). In each case, the Agreements establish a set of legally enforceable promises requiring a commitment of NASA resources, such as personnel, funding, equipment, expertise, information, or facilities.

We found the number of Space Act Agreements increased more than 28 percent between fiscal years (FY) 2008 and 2012, with reimbursable Agreements showing the largest growth at 39 percent. In addition, during this 5-year period NASA entered into 13 funded Agreements with private companies worth nearly $1.2 billion to support the development of commercial cargo and crew spaceflight capabilities.

NASA cannot identify the cost incurred or effectively measure the benefits derived from nonreimbursable Space Act Agreements because the Agency lacks a close-out process or similar mechanism to document results. Although nonreimbursable Agreements involve no exchange of funds, NASA nevertheless bears the expense associated with any personnel, facilities, expertise, or equipment the Agency contributes. Consequently, objectively assessing the value nonreimbursable Space Act Agreements bring to the Agency and to the broader aeronautical, scientific, and space exploration communities is important.

In addition, NASA could better ensure equal access to its facilities and capabilities and increase interest in Space Act Agreement opportunities by expanding its efforts to solicit a broader number of potentially interested parties. The Agency has unclear guidance regarding when it is appropriate to use Space Act Agreements as opposed to leases and how the Agreements must align with the Agency's missions. Most Centers have interpreted NASA's policy to mean the covered activity must directly relate to a NASA mission, while others have taken the position that

as long as the proceeds from the Agreement help maintain a needed facility or capability, the actual activity performed need not directly relate to a NASA mission. Under the latter interpretation, the Kennedy Space Center received $392,000 from NASCAR and other organizations for use of its Shuttle Landing Facility for aerodynamics testing of automobiles. In addition, the Michoud Assembly Facility received an estimated $2.9 million from movie production studios, engineering firms, and manufacturing companies that utilized excess office and warehouse space at the Facility.

While there are no indications that NASA has failed to collect fees associated with reimbursable Space Act Agreements, the Agency cannot readily separate amounts billed and collected for these Agreements from proceeds of other types of reimbursable agreements because its accounting system does not have a common identifier to separate Space Act Agreements from other types of reimbursable activity. Finally, we questioned NASA's decision to refrain from including more specific information about Agency objectives and key safety elements in funded Space Act Agreements and believe it should consider being more prescriptive in the future when using funded Agreements to develop spaceflight technology.

To address these issues, we recommended NASA establish policy and procedures to increase awareness of Space Act Agreement opportunities, clarify when it is appropriate to use Space Act Agreements rather than other types of agreements, better account for costs expended supporting nonreimbursable Agreements, establish a close-out process to track the costs and benefits of nonreimbursable Agreements, and complete its ongoing effort to improve the reimbursable process and correct its current inability to combine financial and nonfinancial information in the Agency's accounting system. We also recommended NASA consider including high-level program objectives and key safety elements in funded Agreements to develop spaceflight capabilities. NASA agreed to take actions to address each of our recommendations.

NASA's Use of Space Act Agreements (IG-14-020, June 5, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-020.pdf (report);
http://oig.nasa.gov/Video/JMorrison_070114.html (video)

SOFIA – NASA'S STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY

The Stratospheric Observatory for Infrared Astronomy (SOFIA) Program uses a Boeing 747SP fitted with a 2.7-meter telescope to study the formation of massive stars and planets. SOFIA's telescope is exposed to the night sky through a uniquely designed cavity door at the rear of the plane at altitudes exceeding 40,000 feet – above 99 percent of water vapor that interferes with ground-based infrared observations.

The SOFIA Program, which in 2014 reached full operational capability after 23 years of formulation and development and at a cost of $1.1 billion, faces an uncertain future because the President's FY 2015 budget proposed placing the observatory in storage unless NASA could identify outside partners to subsidize the Program's $80 million annual operating costs. We examined the long-term demand and viability of SOFIA over its planned 20-year operational life given that the Program is one of the most expensive in NASA's science portfolio.

We found that despite substantial delays and a cost increase of more than 300 percent over original estimates, SOFIA is capable of adding to the scientific body of knowledge and many in the research community view the observatory as a valuable resource. However, the SOFIA Program is competing for limited funding and policymakers need to decide whether other NASA projects are of higher scientific and budgetary priority. If the decision is made to continue SOFIA, we identified several challenges NASA managers need to address to ensure the best possible return on investment.

First, the Program must take steps to ensure demand for the observatory, particularly from top-tier researchers, continues over SOFIA's planned 20-year life. NASA's current plans envision new technology updates to the observatory approximately every 4 years. However, some managers we spoke with expressed the view that a 2-year cycle would better ensure the Program maintains the research community's interest and participation.

Moreover, given the complexity of SOFIA observations, the grants NASA provides to researchers may not be sufficient to complete projects and publish results. We also found that SOFIA's current requirement to fly 960 annual research hours may not be optimal and that the Program lacks procedures to assess its scientific "return on investment." Failure by NASA to address these issues could reduce demand for the observatory and affect the quality of its science.

In addition, the SOFIA Program's proposed organizational structure for its operational phase does not provide adequate Government oversight of mission critical functions. Specifically, the current contract does not meet Federal guidelines for providing civil servant oversight of mission critical functions, such as management, direction, and control over SOFIA's science operations. Additionally, this cost-plus-fixed-fee contract (in place since January 2007 and expiring in 2016) may not be the most cost-efficient contract type for the Program's operational phase.

Finally, the SOFIA Program faces challenges due to the Administration's proposed budget cuts, the delay of planned aircraft maintenance, and the possible loss of key personnel during the period of congressional debate over the FY 2015 budget. As of September 2014, SOFIA Program management had not identified additional partners to offset funding lost through the President's budget. Conversely, appropriations legislation moving in both the House of Representatives and Senate contained between $70 and $87 million in funding to continue the Program.

In order to ensure long-term demand for and viability of SOFIA if it continues in operation, we made 10 recommendations, including that NASA formulate plans for new instruments and technology, outreach, and research funding; reassess planned annual research flight hour requirements; establish a timeline for reviewing SOFIA's return on investment; and reassess the appropriateness of SOFIA's planned organizational restructuring. NASA concurred with all of the recommendations and proposed corrective actions.

SOFIA: NASA's Stratospheric Observatory for Infrared Astronomy
(IG-14-022, July 9, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-022.pdf (report);
http://oig.nasa.gov/Video/07_08_14.html (video)

NASA'S INDEPENDENT VERIFICATION AND VALIDATION PROGRAM

NASA develops and operates a variety of space systems, including the International Space Station and the Hubble and James Webb Space Telescopes, each of which require increasingly complex computer software. As part of the Agency's quality control process, NASA's Independent Verification and Validation (IV&V) Program assesses whether software associated with Agency science and spaceflight activities will meet program cost, schedule, and safety requirements. Because software developers have an inherent conflict of interest in proving their software works as intended, the IV&V process must be performed by an organization that is technically, managerially, and financially independent from the program under review.

Each year, NASA's Office of the Chief Engineer selects Agency software projects for IV&V with the greatest likelihood and worst potential consequences of failure. However, in most years

NASA does not have sufficient funds to finance IV&V for all selected projects. For example, in FY 2014, NASA identified 17 projects for IV&V but was able to fund only 13, leaving the remaining projects to either accept software-related risks or find other ways to mitigate those risks.

More than 20 years ago, NASA was directed in appropriations legislation to send $10 million to West Virginia University to establish an IV&V facility. Consequently, in January 1992, NASA awarded the West Virginia University Research Corporation (Corporation) a $10 million grant, which the Corporation used to build a computer operations and research facility near the University's campus. According to the grant, upon completion of construction the Corporation would take title to the facility and become responsible for associated operations and maintenance (O&M) expenses.

We found NASA is paying more than necessary in O&M expenses by continuing to occupy and maintain the West Virginia facility. We estimated NASA could save as much as $9.7 million between FYs 2015 and 2018 if the IV&V Program took steps to reduce O&M expenses associated with the facility – money that could be used to evaluate more Agency software.

While NASA appropriately identifies and selects projects needing IV&V services, the Agency does not manage projects that qualify for but do not receive IV&V in accordance with NASA's risk management guidance. In January 2013, the Aerospace Safety Advisory Panel recommended NASA establish a formal waiver process for projects that qualify for but do not receive IV&V services. Although NASA revised its risk management guidance in response, in our judgment the revision only partially addressed the Panel's concerns because it did not explicitly address documenting the reason for risk acceptance in accordance with Agency policy.

In order to make additional funds available for review of mission-critical software, we recommended NASA analyze alternatives for reducing occupancy costs associated with the West Virginia facility, including abandoning the facility and moving staff to an existing NASA Center or relocating the staff to a nearby office building that would cost significantly less. In addition, to better assess risks associated with projects not selected for IV&V services, we recommended NASA ensure that the waiver process includes documentation of the increased risk in the appropriate risk database that can serve as a key communication tool for project management across the Agency. Inclusion of these risks in the database will ensure that software safety specialists consider whether additional verification and validation is required or the risk can be accepted without mitigation. The Agency agreed to take corrective action to address our recommendations.

NASA'S Independent Verification and Validation Program (IG-14-024, July 16, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-024.pdf (report);
http://oig.nasa.gov/Video/Hawkins_072314.html (video)

NASA'S EFFORTS TO IDENTIFY NEAR-EARTH OBJECTS AND MITIGATE HAZARDS

Comets and asteroids that pass within 28 million miles of Earth's orbit are classified by scientists as near-Earth objects (NEO). Asteroids that collide and break into smaller fragments are the source of most NEOs, and the resulting fragments bombard the Earth at the rate of more than 100 tons a day. Although the vast majority of these objects disintegrate before reaching the planet's surface, some survive and cause significant damage. For example, in February 2013 an 18-meter (57-foot) meteor exploded 14.5 miles above the city of Chelyabinsk, Russia, with the force of 30 atomic bombs, blowing out windows, destroying buildings, and injuring more than 1,000 people.

In 2005, Congress tasked NASA to implement a program to track NEOs greater than 140 meters in diameter (460 feet) to assess their threat to the Earth and set a goal for the Agency to catalog 90 percent of these NEOs by 2020. We examined NASA's NEO Program to assess the Agency's progress toward meeting statutory and other Program goals, and we reviewed NASA's allocation and use of resources and plans for the future of the Program.

We found that since the NEO Program's inception, NASA has organized the Program under a single Program Executive who manages a loosely structured, nonintegrated conglomerate of research activities with little coordination, insufficient Program oversight, and no established milestones to track progress. While the Program has discovered, categorized, and plotted the orbits of more than 11,000 NEOs since 1998, NASA estimates that it has identified only 10 percent of all NEOs 140 meters or larger and will not meet the 2020 deadline.

We also found that NASA is undertaking NEO-related activities, such as the Asteroid Redirect Mission, that are not managed by the Program and not sufficiently integrated into Program activities. Furthermore, because of the NEO Program Executive's involvement with all major elements of the award process, NASA has inadequate controls to ensure proper accounting of Agency-funded grants and task orders. In addition, although NASA has established two formal partnerships with domestic, nongovernmental research organizations along with several other informal partnerships, a lack of planning and resources has prevented the NEO Program from developing additional agreements that could help achieve Program goals. For example, establishing formal partnerships with the Department of Defense, the National Science Foundation, and international agencies could give the NEO Program access to additional Earth-based telescopes and thereby increase its ability to detect, track, and characterize a greater number of NEOs. In sum, the Program would be more efficient, effective, and transparent if it was organized and managed in accordance with standard NASA research program requirements.

Finally, the NEO Program devotes about $1 million annually – or 7 percent of its $40 million in FY 2014 funding – to studying mitigation strategies to defend the Earth from the effects of NEO impacts. Mitigation may include civil defense strategies such as emergency evacuations or attempting to destroy or deflect the trajectory of an Earth-bound NEO.

To improve NASA's efforts to discover, characterize, and catalog NEOs and develop mitigation strategies, we made five recommendations, including that NASA develop a formal NEO Program with a strategic plan, integrated master schedule, and cost estimates; and perform an analysis to determine the number of staff required to administer the Program. NASA concurred with each of the recommendations and proposed corrective actions.

NASA's Efforts to Identify Near-Earth Objects and Mitigate Hazards (IG-14-030, September 15, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-030.pdf (report); *http://oig.nasa.gov/Video/Tolomeo_091514.html* (video)

COOPERATIVE AGREEMENT AWARDED TO ROCKWELL COLLINS

We reviewed a $2.45 million cooperative agreement awarded to Rockwell Collins for further development and demonstration of unmanned aircraft control communications systems and found the company managed the agreement in accordance with applicable laws, regulations, guidelines, and the terms and conditions of the award. Specifically, Rockwell Collins had a strong system of accounting and internal controls, adequately accounted for expenditures, properly managed its cooperative agreement budget, and fulfilled performance goals. In addition, NASA's level of commitment to the agreement was adequate and Agency personnel contributed to successful completion of performance goals. However, we identified several administrative errors in pre-award and award documentation and noted NASA had not received a required information technology security plan from Rockwell Collins or documented a reason for waiving that requirement. Because NASA initiated corrective action responsive to our findings prior to completion of our audit, we did not make any recommendations.

Audit of NASA's Cooperative Agreement Awarded to Rockwell Collins (IG-14-025, July 14, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-025.pdf

SPACE GRANT AWARDED TO NORTH CAROLINA STATE UNIVERSITY

The NASA Authorization Act of 1988 established the Space Grant Program to coordinate efforts to help maintain America's preeminence in aerospace science and technology. The Program established 52 consortia – one in each state, the District of Columbia, and Puerto Rico – composed of colleges and universities, associations, government agencies, industries, and informal education organizations with interests and capabilities in aeronautics, space, and related fields. Using NASA grants, each of the 52 consortia funds fellowships and scholarships for students pursuing careers in science, technology, engineering, and mathematics (STEM), as well as curriculum enhancement and faculty development in those fields.

In April 2010, NASA awarded a 5-year, $2.87 million training grant to the North Carolina State University (NC State), the lead institution for the North Carolina Space Grant Consortium. We audited this grant to determine whether NC State used award funds for their intended purpose and whether costs claimed were allowable and in accordance with applicable laws, regulations, guidelines, and terms and conditions of the grant award.

We found NC State managed the grant in accordance with applicable laws, regulations, guidelines, and the terms and conditions of the award. Specifically, NC State had a strong system of accounting and internal controls, adequately accounted for expenditures, properly managed its grant budget, and was on track to meet the majority of its program goals. Moreover, we did not identify any unallowable costs or claims and found NC State used the grant funds for their intended purpose and met cost sharing requirements. Finally, NASA properly administered the grant award and appropriately monitored grant performance.

Audit of Grant Award to North Carolina State University (IG-14-027, July 23, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-027.pdf

COOPERATIVE AGREEMENT WITH BIOSERVE SPACE TECHNOLOGIES - UNIVERSITY OF COLORADO AT BOULDER

NASA awarded BioServe Space Technologies - University of Colorado at Boulder (BioServe) a cooperative agreement valued at $600,000 to conduct research on the International Space Station's National Laboratory examining the effects of microgravity on the plant species Jatropha curcas. Thereafter, NASA modified the agreement for BioServe to provide hardware and payload integration and operations services for the National Laboratory. Through February 2014, NASA issued 13 modifications to the agreement, increasing the total award to approximately $3.6 million. Two of these modifications related to development of a Space Automated Bioproduct Laboratory (bio lab) to enable commercial research and development aboard the Station and a multi-well plate (multi-well) for research on microorganisms.

We found BioServe spent cooperative agreement funds for their intended purposes and identified no questioned costs. However, the bio lab and multi-well projects are running over budget and behind schedule. We also identified weaknesses in BioServe and NASA internal controls as they relate to the administration and management of the cooperative agreement. Specifically,BioServe requires an additional $520,000, or about 36 percent, more than the approved budget in order to complete development, delivery, integration, operations, and launch of the bio lab units and $75,000 (15 percent) more to complete the multi-well plates. In addition, current project plans have BioServe delivering the products about 16 and 10 months, respectively, beyond the original schedules. These cost overruns and delays occurred because BioServe and NASA underestimated the complexity of the development effort and failed to identify all technical requirements when negotiating the cooperative agreement and because BioServe did not track and compare actual expenditures to approved project budgets.

To reduce the risk of further cost and schedule overruns, we made three recommendations to the Associate Administrator for Human Exploration and Operations. NASA concurred with our recommendations and proposed corrective actions.

NASA's Cooperative Agreement with BioServe Space Technologies - University of Colorado at Boulder (IG-14-028, August 4, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-028.pdf

Rosetta Comet

ONGOING AUDIT WORK

NASA's Joint Cost and Schedule Confidence Level

To improve the accuracy of its cost and schedule estimates, in 2009, NASA implemented a policy requiring programs and projects to be funded at a level that ensures a 70 percent probability they will be completed at or lower than the estimated amount and on or before schedule. In this audit, we are reviewing NASA's Joint Cost and Schedule Confidence Level process.

Audit of NASA's Engineering Services Contract at Kennedy Space Center

Kennedy Space Center has one of NASA's largest engineering services valued at approximately $1.9 billion. The contract provides Kennedy with engineering and technology development, space flight systems engineering support, and laboratory operational services. The objective of this audit is to determine whether NASA is appropriately managing the contract to accomplish mission goals in a timely and cost-effective manner.

NASA's Use of Blanket Purchase Agreements

Blanket Purchase Agreements are a simplified procurement method that allows Federal agencies to quickly meet the need for common supplies and simple services. In this audit, we are reviewing NASA's use of these agreements.

Audit of NASA's Cooperative Agreements Awarded to Wise County Circuit Court

Through the use of cooperative agreements, NASA works with state and local government agencies and other organizations to support its DEVELOP Program, a national initiative that addresses environmental and public policy issues through research projects that utilize NASA's Earth observations. We are currently examining two such cooperative agreements NASA awarded to the Wise County, Virginia, Circuit Court totaling approximately $8.1 million. The Circuit Court is responsible for managing program activities for the county.

Incurred Costs in Cost-Type Contracts

NASA spends over 75 percent of its approximately $17 billion annual appropriation acquiring goods and services, more than half of which is associated with cost-type contracts. These contracts obligate NASA to provide for payment of the contractors' allowable incurred costs to the extent prescribed in the contract. We are examining whether NASA has established adequate procedures to ensure incurred costs associated with cost-type contracts are properly supported, allowable, reasonable, and allocable.

Audit of NASA's Cooperative Agreement Awarded to the City of New Orleans

In 2011, NASA awarded a cooperative agreement to the City of New Orleans to fund support services provided by the City Fire Department to NASA's Michoud Assembly Facility. We are examining this $2.15 million cooperative agreement.

SPACE OPERATIONS AND HUMAN EXPLORATION

Space operations and human exploration are among NASA's most highly visible missions. Key challenges facing the Agency include supporting extension of the ISS until 2024, bringing to fruition the effort to develop commercial crew transportation to the ISS, and developing new technologies and infrastructure for human exploration beyond low Earth orbit.

AUDIT OF NASA'S EFFORTS TO EXTEND THE OPERATIONAL LIFE OF THE INTERNATIONAL SPACE STATION UNTIL 2024

In November 2013, the ISS completed 15 years of continuous operation in low Earth orbit, marking a significant achievement in the history of human spaceflight. Two months later, the President announced his intent to extend Station operations until 2024. Originally designed and tested for a 15-year life span, the ISS may now operate for 26 years. Since 1994, the United States has invested nearly $75 billion in the ISS, and NASA will continue to spend between $3 and $4 billion per year to maintain and operate the Station going forward. While Russia, Japan, the European Union, and Canada have contributed to ISS operations and helped share associated expenses by providing astronauts, ground facilities, launch vehicles, and other items and services, the level of their participation beyond 2020 is uncertain.

In this audit, we found that while NASA has identified no major obstacles to extending ISS operations to 2024, it must address several areas of risk. Specifically, the ISS faces a risk of insufficient power generation due in part to faster-than-expected degradation of its solar arrays. Second, although most replacement parts have proven more reliable than expected, sudden failures of key hardware have occurred, requiring unplanned spacewalks to repair or replace this hardware. Third, with the retirement of the Space Shuttle fleet, NASA has a limited capacity to transport large replacement parts to the Station if they are needed. While the ISS Program is actively working to mitigate these risks, anticipating the correct amount of replacement parts and transporting them to the ISS presents major challenges to extending Station operations 10 or more years beyond its original expected service life.

We also found the assumptions underlying the Agency's budget projections for the ISS are overly optimistic and that its actual costs may be higher. NASA projects its annual budget for the ISS Program to grow from $3 billion in FY 2014 to nearly $4 billion by FY 2020. Much of this projected cost increase is attributable to higher transportation costs, and we found NASA's current estimate for transportation costs unrealistic. For example, NASA based transportation estimates on Russian Soyuz costs – $70.7 million per seat for a total cost of approximately $282 million per mission for four astronauts – rather than those of planned commercial crew transportation services, which the Program projects to be significantly higher. In addition, the Agency's international partners have yet to commit to participating in Station operations beyond 2020 and a decision by one or more to end their participation would likely mean greater

expense for NASA. Moreover, ISS Program costs rose 26 percent between FYs 2011 and 2013. While ISS Program officials have been seeking ways to reduce costs and consolidate resources, it is unclear whether these efforts will be sufficient to address anticipated cost increases.

Additionally, while utilization of the ISS for research continues to increase, NASA and the Center for the Advancement of Science in Space (CASIS) – its partner responsible for attracting private research to the Station – continue to face challenges. CASIS officials reported that provisions in its agreement with NASA requiring researchers to assign certain patent licenses and data rights to the Government are deterring commercial stakeholders from conducting research on the ISS. In addition, to date, the organization has raised just $14,550 in cash and received pledges of $8.2 million to supplement NASA's $15 million annual contribution. Failure to address these challenges in a timely manner could significantly affect the functionality, cost, and value of extending the operational life of the Station until 2024.

Finally, NASA paid Boeing Company (Boeing) between $6.7 and $13.2 million in award fees we could not validate. We found discrepancies between the established guidance in the contract's award-fee plan and the fees awarded to Boeing. Specifically, the award-fee plan provides for evaluations to be conducted using weighted scores with grades in four categories; however, NASA performed this evaluation for only two of the four categories. In our judgment, NASA would gain a more accurate assessment of contractor performance and provide the Fee Determination Official with recommended award fees that match actual performance by using weighted and numerical scores in each category.

To help address these issues we recommended NASA (1) continue to solicit commitments from international partners to improve cost sharing and reduce cost growth; (2) track, manage, and mitigate human health risks to long-term exploration and identify and prioritize the risks that must be mitigated prior to decommissioning of the ISS; and (3) continue to pursue legislative options that will address patent license and data rights. NASA agreed with our recommendations.

Audit of NASA's Efforts to Extend the Operational Life of the International Space Station until 2024 (IG-14-031, September 18, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-031.pdf (report);
http://oig.nasa.gov/Video/RBowman_091814.html (video)

SPACE COMMUNICATIONS AND NAVIGATION: NASA'S MANAGEMENT OF THE SPACE NETWORK

In this audit, we examined NASA's efforts to modernize its Space Network, a constellation of eight satellites and three ground stations by which NASA, other Government agencies, and commercial companies communicate with spacecraft operating in low Earth orbit. Without these Network services, space hardware worth tens of billions of dollars would be little more than orbital debris.

NASA has provided space tracking and communications services for more than 30 years, and in FY 2014 the Space Network plans to perform more than 175,000 hours of service to support 25–30 missions. However, many of the Network's tracking and data relay satellites (TDRS) and ground systems are aging and increasingly difficult to repair. Moreover, the recent decision to extend ISS operations until 2024 will add to the demand for Network services. Recognizing the Network's maintenance, replenishment, and modernization needs, over the past 7 years NASA initiated the TDRS Replenishment Project to replace the satellites and the Space Network Ground Segment Sustainment (SGSS) Project to upgrade the ground stations.

We found key components of NASA's Space Network necessary for the Agency to continue providing services are not meeting planned cost, schedule, and performance goals. Taken together, the delays and cost growth increase the risk that the Space Network will be unable to continue to provide adequate communication services to NASA missions and its other customers.

By 2016, three of the satellites currently used by NASA to communicate with and track spacecraft will reach the end of their expected operational lives. Further, a NASA study indicates that one of the spare satellites the Agency has in on-orbit storage is already operating 15 years past its design life and could fail as soon as 2014. However, NASA currently has only two new third-generation satellites in orbit to replace four aging satellites. Although NASA had planned to launch another TDRS as early as December 2015, it now expects to delay that launch by as much as 6 years because the Agency lacks funding for the necessary launch vehicle. Moreover, the Agency's decision not to exercise the option to purchase a fourth satellite at a favorable price will result in NASA paying considerably more for a replacement satellite in the future.

In addition, the SGSS Project may cost $329 million, or 38 percent, more than NASA's baseline commitment agreement of $862 million, and the schedule for completion will likely be delayed by more than 1.5 years. The cost overrun will require SGSS Project managers to reassess their original requirements, and the schedule slip means Space Network officials will have to reprioritize and mitigate the Network's obsolescence risks longer than planned, tasks that will also require additional funding. Moreover, any operations and maintenance savings NASA expected to achieve through implementation of the SGSS Project will be delayed for several years.

Further, because of budget reductions and the loss of other expected revenue, in FY 2016 the Space Network will not have sufficient funding to meet all planned service commitments. Although NASA agreed to provide free access to Space Network services for some customers beginning in FY 2014 in exchange for their contributions to the design and development of two satellites several years earlier, the Agency failed to adequately plan for the resulting approximately $70 million per year in lost revenue. Consequently, the Space Network has a projected $63 million budget shortfall in FY 2016 and even larger estimated shortfalls in subsequent years.

Finally, as was the case in our prior audit of the program, we found NASA has not kept up to date the rate it charges customers for use of the Space Network and, as a result, may be absorbing costs for services used by other Federal agencies and commercial customers.

We recommended the Agency (1) require the SGSS Project Office to revise its cost estimate and, based on those results, adjust the Project baseline and Agency baseline commitment as necessary; (2) report the appropriate baseline commitment or status to Congress; (3) ensure the SGSS Project passes a termination review prior to any rebaselining; and (4) examine options to increase funding for the Space Network. Finally, we recommended NASA document the cost factors and formulas used for reimbursable rates and ensure those rates are reevaluated and new rates set on an annual basis. NASA concurred or partially concurred with our recommendations.

Space Communications and Navigation: NASA's Management of the Space Network (IG-14-018, April 29, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-018.pdf (report);
http://oig.nasa.gov/Video/Bowman_4_28_14.html (video)

AUDIT OF THE SPACE NETWORK'S PHYSICAL AND INFORMATION TECHNOLOGY SECURITY RISKS

In April 2014, we completed an audit of NASA's Space Network Project. During the course of our work, we identified IT security, IT resource, and physical security issues associated with the Space Network and NASA's White Sands Test Facility. To address these issues, we made four recommendations to the Agency, which generally agreed with our recommendations and proposed corrective actions. The full report was not released publicly because it contains information NASA believes could pose a security threat to Agency computer systems if distributed widely.

Audit of the Space Network's Physical and Information Technology Security Risks (IG-14-026, July 22, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-026.pdf

ONGOING AUDIT WORK

Audit of NASA's Launch Support and Infrastructure Modernization Efforts: Commercial Space Launch Activities at Kennedy Space Center

NASA is transitioning Kennedy Space Center from a complex used solely for Government launches to a multi-user spaceport hosting both government and commercial launches. The intent of this effort is to reduce the costs of maintaining assets associated with the Space Shuttle Program for which the Agency has no immediate need while encouraging expansion of the commercial space industry. In this audit, we are evaluating Kennedy's progress in becoming a multi-user spaceport.

Audit of NASA's Launch Support and Infrastructure Modernization Efforts

NASA's Ground Systems Development and Operations (GSDO) Program is refurbishing and modifying the infrastructure at the Kennedy Space Center that NASA previously used to launch the Space Shuttle. Specifically, the GSDO Program is refurbishing a crawler-transporter that will carry the Space Launch System (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 to support the SLS. We are evaluating the work performed by the GSDO Program.

Audit of NASA's Efforts to Manage Health and Human Performance Risks for Space Exploration

Human spaceflight inherently involves a high degree of risk and, accordingly, NASA must make numerous decisions that balance health and safety risks, technological feasibility, and financial costs against mission necessity. We are currently examining NASA's efforts to achieve these objectives for human exploration beyond low Earth orbit.

Audit of NASA's Management of the Deep Space Network

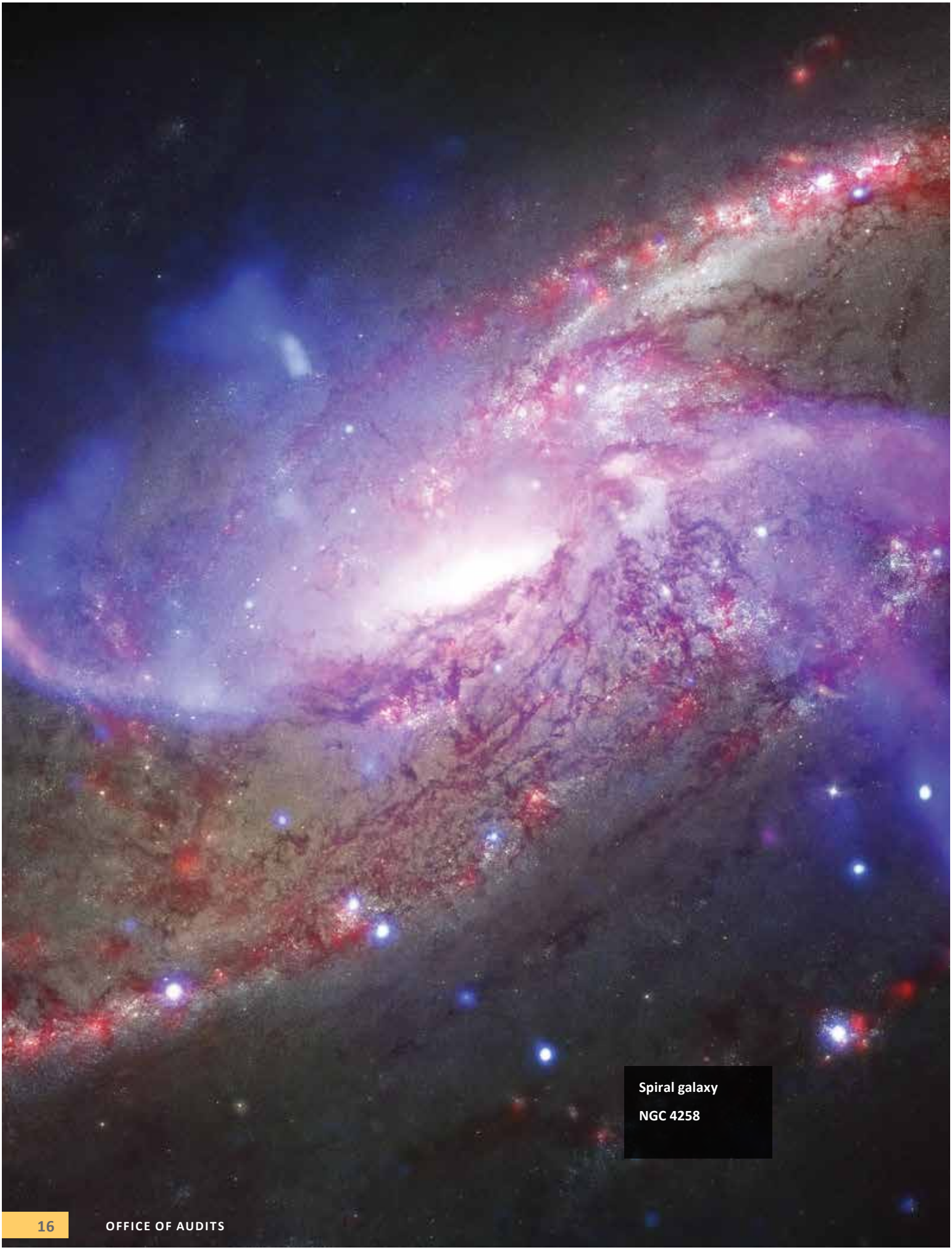
A critical element of NASA's solar system exploration program, the Deep Space Network (DSN) supports approximately 35 missions valued at more than $31 billion. DSN consists of three large-scale antenna complexes in Goldstone, California; Madrid, Spain; and Canberra, Australia, ensuring constant mission coverage as the earth rotates. Over time, DSN officials have increasingly had to maintain an aging infrastructure while managing coverage time for a growing number of missions. The audit will assess how the DSN Project is managing risks and adjusting capabilities to meet cost, schedule, and performance goals.

Audit of NASA's Management of Space Technology Projects

To enable crewed missions to reach destinations beyond the Moon beginning in 2025 and crewed missions to orbit Mars by the mid-2030s, NASA has invested in a large number of exploration technology projects. This audit will evaluate NASA's management of these projects.

Audit of NASA's Management of International Space Station Contracts

ISS operations cost almost $3 billion in 2013 and are expected to increase to nearly $4 billion by 2020. The ISS Program either completely or significantly funds 29 major NASA contracts valued at approximately $32 billion. It is imperative that NASA has adequate management processes, oversight, and internal controls to identify cost savings on ISS contracts whenever possible. The audit will assess whether NASA's contract administration and oversight processes are sufficient to avoid incurring unnecessary costs on ISS contracts.



Spiral galaxy

NGC 4258

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.

SECURITY OF NASA'S PUBLICLY ACCESSIBLE WEB APPLICATIONS

NASA's publicly accessible web applications are under constant attack, with the frequency and sophistication of these attacks increasing dramatically over the past several years. Thus, it is imperative that the Agency identify and mitigate vulnerabilities in NASA web applications before attackers can exploit them.

In this audit, we evaluated the security of NASA's publicly accessible web applications. Specifically, we evaluated the efficacy of NASA's Agency-wide initiative – the Web Application Security Program (WASP) – to identify and assess vulnerabilities on publicly accessible web applications and NASA's efforts to reduce the number of its publicly accessible web applications.

We found NASA's ongoing efforts to reduce its web presence and to identify and scan for vulnerabilities on its publicly accessible web applications have improved Agency IT security. However, NASA needs to close remaining security gaps, strengthen Program oversight, and reduce even further the number of these web applications. WASP developed a complete inventory of all such web applications maintained by NASA Headquarters and Centers and, consistent with best practices, identified vulnerabilities through automated scanning coupled with manual testing. In addition, during the 15-month period ending March 2014, NASA decreased the number of publicly accessible web applications to approximately 1,200.

Despite this progress, we found deficiencies in WASP's design and implementation that leave NASA at risk of compromise. These deficiencies occurred because WASP failed to prioritize identification of security vulnerabilities by seriousness of potential impact, identify the underlying cause of vulnerabilities, identify weaknesses associated with unsound IT security practices, and implement an effective process to ensure timely mitigation of identified vulnerabilities. Finally, while NASA has made strides in reducing its web presence, the Agency's remaining 1,200 publicly accessible web applications continue to present a large target for hackers.

To improve the effectiveness of WASP, we made five recommendations to the Agency: (1) modify WASP protocols to prioritize vulnerability discovery and mitigation resources on the highest impact systems first; (2) require that all publicly accessible web applications, including login portals and management consoles, be registered and pass a vulnerability test prior to deployment; (3) remove from the Internet or secure with a web application firewall all Agency web applications in development or testing mode; (4) ensure that critical and high-severity web application vulnerabilities are mitigated within 10 business days of discovery, as required by Agency policy; and (5) grant Center Chief Information Security Officers and officials from the Office of the Chief Information Officer access to the Agency vulnerability tracking system to ensure adequate monitoring of the status of vulnerabilities. NASA concurred with our recommendations.

Security of NASA's Publicly Accessible Web Applications (IG-14-023, July 10, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-023.pdf (report); *http://oig.nasa.gov/Video/BMullins071014.html* (video)

Orion Crew Module

ONGOING AUDIT WORK

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

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

Vehicle Assembly Building, NASA Kennedy Space Center

Hanger 1
at Moffett
Field

INSTITUTIONAL AND FACILITY MANAGEMENT

NASA's real property includes more than 4,900 buildings and other structures, such as wind tunnels, laboratories, launch pads, and test stands, that occupy 44 million square feet and are valued at more than $30 billion. However, over 80 percent of NASA's facilities are more than 40 years old and reaching the end of their design life spans. Managing its expansive portfolio is an ongoing challenge for the Agency, and one we continue to monitor.

AUDIT OF NASA'S ENVIRONMENTAL RESTORATION EFFORTS

Decades of rocket testing, research, and other activities by NASA and the Department of Defense have resulted in significant environmental contamination at several NASA Centers. Federal and state laws require NASA to evaluate the environmental and safety impacts of Agency operations and clean up pollutants released into the environment from past activities.

The Environmental Management Division (EMD) at NASA Headquarters manages the Agency's Environmental Compliance and Restoration Program and provides guidance on how to comply with Federal, state, and local environmental laws and regulations. Officials in the Division's Environmental Compliance and Restoration Program sample, monitor, and oversee Agency restoration and cleanup efforts.

To facilitate the budget planning and project management process, Agency officials input information regarding funding requirements for environmental restoration projects into a database known as the NASA Environmental Tracking System (NETS). As of April 2013, NETS included 142 environmental projects ranging from periodic monitoring of sites for which cleanup is complete to ongoing projects estimated to cost hundreds of millions of dollars.

We found that NASA faces significant challenges to appropriately prioritize and manage Agency environmental restoration projects with the limited funds available for this purpose. Since 2006, NASA has spent or budgeted an average of $62 million per year to address an estimated $1.1 billion in unfunded environmental liabilities. One project – the Santa Susana Field Laboratory cleanup – has a fast approaching deadline and an associated cost that could consume NASA's entire restoration budget. While NASA has developed a process to allocate restoration funds to address the most serious environmental hazards first, this process is susceptible to influences from public and political interests and legal agreements with regulators.

In addition, we identified significant issues with the accuracy of the data in NETS that caused us to question the usefulness of the system as a management tool and oversight mechanism. We also found a decided lack of interest on the part of EMD officials to encourage Centers to explore cost-sharing cleanup efforts with other agencies. While some NASA Centers engage in small-dollar cost-sharing activities, we remain concerned that the Agency is not maximizing opportunities to

share the cost of expensive cleanup projects when liability for the contamination is shared. Given NASA's limited environmental budget, we believe NASA should increase its efforts to pursue cost-sharing opportunities as a means of maximizing Agency restoration funding.

To assist NASA in strengthening Agency environmental restoration efforts, we recommended the EMD Director revise Agency implementation guidance for scoring environmental restoration projects to clarify the methodology used and improve transparency in the scoring process; establish a mechanism at Headquarters to centrally track Agency- and Center-level agreements to ensure they receive appropriate consideration in Agency funding and management decisions; expand NETS capabilities or develop an alternate system and require Centers to use the system for tracking and reporting on restoration projects, require Centers and Headquarters to periodically update the information in the system, and establish a process to periodically verify the accuracy of the data; and strengthen Agency guidance to actively promote cost sharing when appropriate. NASA agreed to take actions to address each of our recommendations.

Audit of NASA's Environmental Restoration Efforts (IG-14-021, July 2, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-021.pdf

ONGOING AUDIT WORK

Audit of NASA's Plum Brook Station

Plum Brook Station is a 6,400 acre test installation about 50 miles west of NASA's Glenn Research Center in Sandusky, Ohio, and the home of four Glenn test facilities. We are assessing the cost of operating and maintaining Plum Brook relative to utilization and future requirements for the site.

NASA's Pressure Vessels and Systems Program

A pressure vessel is a storage tank or cylinder designed to deliver compressed gasses or liquids. NASA uses a wide variety of these systems and the Agency's associated investment is estimated to exceed $10 billion. Because of the large amounts of energy they store, pressure vessels and systems can be extremely hazardous, and over the years, NASA has experienced a number of failures. In this audit, we are assessing whether NASA is effectively managing its pressure vessel and pressurized systems program to protect lives and assets and ensure reliable operation.

FINANCIAL MANAGEMENT

The OIG continues to assess NASA's efforts to improve its financial management practices and works closely with the independent external auditor conducting the Agency's annual financial statement audit.

NASA'S COMPLIANCE WITH THE IMPROPER PAYMENTS INFORMATION ACT FOR FISCAL YEAR 2013

The Improper Payments Information Act (IPIA) requires heads of Executive Branch agencies to annually review and identify programs and activities that may be susceptible to significant improper payments and, when cost-effective, conduct recapture audits for each program and activity with at least $1 million in annual disbursements. For each susceptible program and activity, agencies must estimate the annual amount of improper payments and report those estimates to Congress.

We reviewed whether NASA complied with the requirements of IPIA in FY 2013 and identified opportunities to improve both the methodology the Agency uses for its IPIA and recapture audit programs and its annual reporting. Specifically, NASA's IPIA contractor did not clearly document the factors it considered when assessing the risk of significant improper payments involving NASA programs or the basis for its conclusions. In addition, NASA's recapture audits were limited to fixed-price contracts, which represented only 28 percent of procurement-related disbursements during the reporting period, and excluded cost-type contracts (representing 69 percent) and grants and cooperative agreements (representing 3 percent) because it claimed recapture audits on these vehicles were not cost-effective. As a result, the Agency may be missing an opportunity to recover additional improper payments.

Moreover, the documentation supporting NASA's conclusion for excluding grants and cooperative agreements was not comprehensive, and the Agency did not make proper notification and disclosure of its decision. In addition, NASA did not account for or use a small amount of recovered improper payments in accordance with IPIA requirements and as a result may have inappropriately augmented its appropriations. Finally, we identified errors and omissions in NASA's recapture audit reporting.

We made 10 recommendations to NASA's Chief Financial Officer (CFO), including the Agency consider a quantitative evaluation based on a statistical sample as the basis for its risk assessment or restructure the current risk assessment process to ensure all required risk factors are included; implement a consistent methodology to identify programs; reconsider including cost-type contract payments in recapture audit efforts or, if that is not cost-effective, document the cost-benefit analysis and justification for excluding them; develop a comprehensive analysis and justification for the determination that including grants and cooperative agreements in recapture audit efforts is not cost effective and make the required notifications and disclosures; develop a procedure for the treatment of recaptured funds and

communicate this procedure to the parties responsible for posting the funds; consult with the Office of the General Counsel regarding the potentially inappropriate augmentation of its appropriations; refine the existing process to collect the data necessary to complete required reporting and take appropriate steps to ensure the accuracy of the data; determine the appropriate universe of other sources of overpayments, identify the parties who would possess that information, and communicate with all parties to ensure they are aware of NASA's reporting requirements and their responsibility for tracking and communicating the information to the Office of the CFO; and determine how best to obtain this data and ensure it is accurately reported. The CFO concurred or partially concurred with our recommendations.

NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2013 (IG-14-016, April 15, 2014)

http://oig.nasa.gov/audits/reports/FY14/IG-14-016.pdf

ONGOING AUDIT WORK

Audit of NASA's Fiscal Year 2014 Financial Statements

The Chief Financial Officers Act of 1990, as modified by the Government Management Reform Act of 1994, requires an annual audit of NASA's consolidated financial statements. We are overseeing the FY 2014 audit conducted by the independent public accounting firm PricewaterhouseCoopers.

Audit of NASA's Premium Travel

The General Services Administration's Federal Travel Regulation provides that travelers must use coach-class accommodations for both domestic and international air travel except in limited circumstances. In March 2014, NASA's reporting and approval of premium-class air travel was called into question in several media reports. At the request of the Senate Committee on Appropriations, we initiated an audit of NASA's use of premium air travel to evaluate whether NASA has appropriate policies in place for approving premium travel and for ensuring it is accurately reported.

OTHER AUDIT MATTERS

ONGOING AUDIT WORK

Audit of NASA's Education Program and Activities

NASA supports efforts to improve the quality and depth of teaching and education in science, technology, engineering, and mathematics (STEM). NASA's Office of Education coordinates with the Department of Education, the National Science Foundation, and the Smithsonian Institution on STEM issues to maximize NASA's unique educational and research resources. In this audit, we are assessing NASA's implementation of its strategic education objective and Federal STEM education priorities.

Astronaut Karen Nyberg helping to inspire future astronauts

View of the U.S. Gulf Coast at night from the International Space Station

AUDITS STATISTICAL DATA

TABLE 1: AUDIT PRODUCTS AND IMPACTS

Report No. and Date Issued	Title	Impact
Acquisition and Project Management		
IG-14-020, 6/5/2014	NASA's Use of Space Act Agreements	Identified issues that NASA must address to ensure the transparent and effective use of Space Act Agreements
IG-14-022, 7/9/2014	NASA's Stratospheric Observatory for Infrared Astronomy	Identified challenges to ensure viability of the Program over its 20-year operational life and immediate challenges due to near-term budget uncertainty
IG-14-024, 7/16/2014	NASA's Independent Verification and Validation Program	Increased program productivity by making recommendations to use IV&V funding more effectively
IG-14-030, 9/15/2014	NASA's Efforts to Identify Near-Earth Objects and Mitigate Hazards	Identified issues that need to be addressed to improve efficiency, effectiveness, and transparency of the NEO Program
IG-14-025, 7/14/2014	Audit of NASA's Cooperative Agreement Awarded to Rockwell Collins	Identified internal control deficiencies NASA should address to ensure sound management of cooperative agreements
IG-14-027, 7/23/2014	Audit of Grant Awarded to North Carolina State University	Determined the award was properly managed by North Carolina State University and administered by NASA
IG-14-028, 8/4/2014	Audit of NASA's Cooperative Agreement with BioServe Space Technologies - University of Colorado at Boulder	Identified internal control deficiencies that caused cost and schedule overruns and increased the risk of additional overruns in any future cooperative agreements with BioServe
Space Operations and Exploration		
IG-14-031, 9/18/2014	Audit of NASA's Efforts to Extend the Operational Life of the International Space Station Until 2024	Identified issues and challenges NASA must address to extend the operational life of the International Space Station until 2024
IG-14-018, 4/29/2014	Space Communications and Navigation: NASA's Management of the Space Network	Identified significant issues and challenges NASA must address to ensure the Space Network meets planned cost and schedule goals and continues to provide adequate communication services to NASA missions and customers
IG-14-026, 7/22/2014	Audit of the Space Network's Physical and Information Technology Security Risks	Identified issues NASA must address to improve the Agency's ability to manage information technology controls and physical security risks

Report No. and Date Issued	Title	Impact
Information Technology Security and Governance		
IG-14-023, 7/10/2014	Security of NASA's Publicly Accessible Web Applications	Improved security of web applications and reduced web presence of publicly accessible web applications
Institutional and Facility Management		
IG-14-021, 7/2/2014	Audit of NASA's Environmental Restoration Efforts	Identified issues NASA must address to effectively utilize its limited environmental restoration program resources
Financial Management		
IG-14-016, 4/15/2014	NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2013	Provided specific areas of focus to ensure the Agency complies with the Improper Payments Information Act (IPIA) of 2002 and the Improper Payments Elimination and Recovery Act (IPERA) of 2010

TABLE 2: AUDIT RECOMMENDATIONS YET TO BE IMPLEMENTED, CURRENT SEMIANNUAL REPORT

Report No. and Date Issued	Title	Date Resolved	Number of Recommendations		Latest Target Closure Date[a]
Acquisition and Project Management					
IG-14-020 6/5/2014	NASA's Use of Space Act Agreements	6/5/2014	7	0	9/30/2015
IG-14-022 7/9/2014	SOFIA: NASA's Stratospheric Observatory for Infrared Astronomy	7/9/2014	10	0	6/30/2015
IG-14-024 7/16/2014	NASA's Independent Verification and Validation Program	7/16/2014	3	0	6/30/2015
IG-14-030 9/15/2014	NASA's Efforts to Identify Near-Earth Objects and Mitigate Hazards	9/15/2014	5	0	9/1/2015
IG-14-028 8/4/2014	Audit of NASA's Cooperative Agreement with BioServe Space Technologies – University of Colorado at Boulder	8/4/2014	2	1	3/31/2015
Space Operations and Exploration					
IG-14-031 9/18/2014	Audit of NASA's Efforts to Extend the Operational Life of the International Space Station until 2024	9/29/2014	3	0	1/30/2015
IG-14-018 4/29/2014	Space Communications and Navigation: NASA's Management of the Space Network	-	5	0	12/31/2014
IG-14-026 7/22/2014	Audit of the Space Network's Physical and Information Technology Security Risks	7/21/2014	4	0	11/2/2015

Report No. and Date Issued	Title	Date Resolved	Number of Recommendations		Latest Target Closure Date[a]
			Open	Closed	
Information Technology Security and Governance					
IG-14-023 7/10/2014	Security of NASA's Publicly Accessible Web Applications	7/10/2014	5	0	1/31/2015
Institutional and Facility Management					
IG-14-021 7/2/2014	Audit of NASA's Environmental Restoration Efforts	7/2/2014	4	0	6/30/2015
Financial Management					
IG-14-016 4/15/2014	NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2013	4/15/2014	10	0	5/30/2015

[a] Management's current estimate of the date it will complete the agreed-upon corrective action(s) necessary to close the audit recommendation(s).

TABLE 3: AUDIT RECOMMENDATIONS YET TO BE IMPLEMENTED, PREVIOUS SEMIANNUAL REPORTS

Report No. and Date Issued	Title	Date Resolved	Number of Recommendations		Latest Target Closure Date[a]
			Open	Closed	
Acquisition and Project Management					
IG-14-014 2/12/2014	NASA's Award Closeout Process	2/12/2014	4	0	8/11/2014[b]
IG-14-010 1/15/2014	NASA's Strategic Sourcing Program	7/15/2014	6	0	7/30/2014[b]
IG-14-003 11/19/2013	NASA's Use of Award-fee Contracts	-	8	4	8/29/2014[b]
IG-12-019 8/3/2012	Audit of NASA Grant Awarded to HudsonAlpha Institute for Biotechnology	9/20/2012	2	6	3/31/2015
IG-12-018 7/26/2012	Audit of NASA Grants Awarded to the Philadelphia College Opportunity Resources for Education	7/26/2012	4	4	3/31/2015
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	3/31/2015
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	9/30/2014

Report No. and Date Issued	Title	Date Resolved	Number of Recommendations		Latest Target Closure Date[a]
Space Operations and Exploration					
IG-14-009 1/8/2014	Core Stage Testing of NASA's Space Launch System	1/8/2014	3	1	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	4/30/2015
IG-13-021 7/29/2013	NASA's Progress in Adopting Cloud-Computing Technologies	7/29/2013	4	2	9/30/2014[c]
IG-13-015 6/5/2013	Audit of NASA's Information Technology Governance	6/5/2013	8	0	3/6/2015
IG-13-006 3/18/2013	NASA's Process for Acquiring Information Technology Security Assessment and Monitoring Tools	3/15/2013	3	1	9/30/2015
IG-12-017 8/8/2012	Review of NASA's Computer Security Incident Detection and Handling Capability	7/17/2012	3	0	10/14/2015
IG-11-017 3/28/2011	Inadequate Security Practices Expose Key NASA Network to Cyber Attack	3/28/2011	1	2	9/16/2015
IG-10-013 5/13/2010	Review of the Information Technology Security of [a NASA Computer Network]	5/13/2010	1	1	9/30/2015
IG-10-013-a 7/1/2010	Addendum				
Institutional and Facility Management					
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	6	2	12/15/2014

Report No. and Date Issued	Title	Date Resolved	Number of Recommendations		Latest Target Closure Date[a]
			Open	Closed	
Institutional and Facility Management					
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
Financial Management					
IG-14-008 12/19/2013	FY 2013 Financial Audit Statement Letter	5/22/2014	65	0	12/31/2014
IG-13-020 7/18/2013	Audit of Selected NASA Conferences	7/18/2013	4	1	10/31/2014

[a] Management's current estimate of the date it will complete the agreed-upon corrective action(s) necessary to close the audit recommendation(s).

[b] Working to determine revised estimate of target closure date.

[c] Reviewing request for closure.

TABLE 4: AUDITS WITH QUESTIONED COSTS

	Number of Audit Reports	Total Questioned Costs[a]
No management decision made by beginning of period	1	$835,470
Needing management decision during period	1	$835,470
Management decision made during period[b]		
Amounts agreed to by management	0	n/a
Amounts not agreed to by management	1	$835,470
No management decision at end of period[b]		
Less than 6 months old	0	n/a
More than 6 months old	0	n/a

[a] Questioned Cost (the IG Act of 1978 definition) is 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.

[b] Management Decision (the IG Act of 1978 definition) is 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.

TABLE 5: AUDITS WITH RECOMMENDATIONS THAT FUNDS BE PUT TO BETTER USE

	Number of Audit Reports	Total Questioned Costs
No management decision made by beginning of period	1	$66,422,940
Issued during period	1	$9,653,020
Needing management decision during period	2	$76,075,960
Management decision made during period		
Amounts agreed to by management	1	$66,422,940
Amounts not agreed to by management	0	n/a
No management decision at end of period		
Less than 6 months old	1	$9,653,020
More than 6 months old	0	n/a

TABLE 6: STATUS OF A-133 FINDINGS AND QUESTIONED COSTS RELATED TO NASA AWARDS

Total audits reviewed	55
Audits with findings	12

Findings and Questioned Costs		
	Number of Findings	**Questioned Costs**
Management decisions pending, beginning of reporting period	182	$14,394,330
Findings added during the reporting period	21	$3,085
Management decision made during reporting period	(107)	
Agreed to by management		($39,081)
Not agreed to by management		($8,342,389)
Management decisions pending, end of reporting period	96	$6,015,945

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.

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 7: DCAA AUDIT REPORTS WITH QUESTIONED COSTS AND RECOMMENDATIONS THAT FUNDS BE PUT TO BETTER USE

	Amounts in Issued Reports	Amounts Agreed To
Questioned costs	$45,697,000	$28,147,000
Funds to be put to better use	$0	$5,000

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 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. (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.)

OFFICE OF INVESTIGATIONS

Artist concept of NASA's Space Launch System (SLS)

FORMER BOEING PROCUREMENT OFFICER AND OTHERS PLEAD GUILTY TO FEDERAL FRAUD CHARGES

In July 2014, a former Boeing procurement official was convicted of taking bribes from companies seeking to sell parts for military aircraft to Boeing in exchange for providing them with a competitor's confidential bid information. The official admitted to three counts of mail fraud, one count of wire fraud, and one count of currency structuring for his role in the scheme. As part of the criminal scheme, an accomplice received confidential financial information through coded language in phone calls and e-mails and used this information to win Government contracts from Boeing worth more than $1.5 million.

CEO OF NASA CONTRACTOR PLEADS GUILTY

In September 2014, the Chief Executive Officer (CEO) of a NASA contractor pled guilty to one count of making false statements on his personal tax returns. As part of his plea agreement he will be required to repay NASA for the indirect costs charged as consulting fees to NASA on the company's invoices. In July 2014, the CEO was indicted on four counts of making false statements on his tax returns. The indictment and plea was the result of a joint investigation by the NASA OIG and the Internal Revenue Service. Sentencing is scheduled for December 2014.

GRAND JURY INDICTS TWO SCIENTISTS FOR FRAUD

In May 2014, two scientists were indicted by a grand jury in the Middle District of Florida on conspiracy to commit wire fraud, aggravated identity theft, and falsification of records. According to the indictment, the scientists fraudulently obtained approximately $10 million in research contracts from NASA and other Federal agencies. The indictment further alleges that from 2004 to 2014 they used stolen identities to create false endorsements for their proposed contracts.

SMALL BUSINESS OWNER AND CONTRACTOR INDICTED

In July 2014, a NASA contractor and its president were indicted on eight counts of wire fraud and three counts of false claims related to contracts with NASA and the National Science Foundation (NSF). The joint NASA OIG and NSF OIG investigation established that the contractor submitted proposals and was awarded contracts totaling approximately $800,000. However, it appears the money was used for personal rather than Government purposes. The president and the contractor have also been suspended from entering into contracts with the Federal Government.

TWO UNIVERSITY OF HOUSTON PROFESSORS INDICTED

In April 2014, two professors at the University of Houston were indicted for wire fraud and making false statements in connection with obtaining Federal funds for research grants. The indictment alleges 1 count of conspiracy, 7 counts of making false statements, and 21 counts of wire fraud related to the Small Business Innovation Research Program.

CIVIL SERVANT AND CONTRACTOR INDICTED FOR TAMPERING WITH RECORDS

In August 2014, a Branch Chief in Glenn Research Center's Fabrication Support Office and a machinist working under contract at the Center were indicted by a Cuyahoga County, Ohio, grand jury for tampering with records. An OIG investigation

led to the indictment, which alleges the contractor falsified manufacturing inspection records for NASA's Space Flight Fire Safety Demonstration (SAFFIRE) project at the direction of the Branch Chief. SAFFIRE is experimental hardware scheduled to fly on The Orbital Sciences Corporation's Cygnus unmanned spacecraft. The individual's actions caused NASA to re-inspect all SAFFIRE safety critical parts at a cost of $18,052.

BANK FRAUD UNCOVERED

In September 2014, a contractor employee at the Marshall Space Flight Center pled guilty to misprision of a felony after admitting his participation in a bank fraud scheme using Government resources and his NASA e-mail account. The OIG's investigation, which included several search warrants and a review of the contractor's bank accounts, determined he used banking facilities at Marshall to cash more than $100,000 in counterfeit checks.

CIVIL SERVANT ENTERS PRE-TRIAL DIVERSION FOR TIME AND ATTENDANCE FRAUD

In July 2014, a civil servant at Glenn Research Center pled guilty in Cuyahoga County State Court to grand theft and tampering with records. The court ordered the employee to pay $22,500 in restitution to NASA. The plea was based on an OIG investigation that found the employee submitted false time and attendance reports resulting in a loss to the government of approximately $56,616. The plea is being held in abeyance pending completion of a pre-trial division program.

FORMER CONTRACT EMPLOYEE SENTENCED FOR THEFT

In August 2014, a former NASA contract employee pled guilty to two counts of theft and was sentenced in U.S. District Court for the District of Maryland to 2 years' supervised probation and 100 hours' community service and ordered to pay restitution totaling $11,017. The plea resulted from an OIG investigation that found the employee had auctioned stolen NASA toner cartridges on eBay and improperly charged over $11,000 to NASA's FedEx account for delivery of the cartridges.

FORMER CONTRACT EMPLOYEE SENTENCED FOR FRAUD

In May 2014, a former contractor at Langley Research Center was sentenced in U.S. District Court for the Eastern District of Virginia to 7 days' imprisonment and 3 years' supervised release and ordered to pay $1,194 in restitution. The former contractor had previously pled guilty to using credit cards she opened with personally identifying information stolen from a coworker.

ESTONIAN NATIONAL SENTENCED FOR CYBER CRIME SCHEME

In July 2014, an Estonian National was sentenced in the U.S. District Court for the Southern District of New York for his role in causing malicious software to infect millions of computer systems worldwide, including NASA systems. The subject was sentenced to 31 months in prison and consented to an order of forfeiture for $14 million. The NASA OIG worked this case jointly with the Federal Bureau of Investigation.

FORMER CONTRACTOR INDICTED FOR UNAUTHORIZED ACCESS TO NASA COMPUTERS

In May 2014, a former contractor was indicted by a Baltimore County, Maryland, Grand Jury on one count of unauthorized access to a computer and five counts of unauthorized possession of a valid access code. The OIG investigation led to the indictment that alleges the contractor used a key-logger to gain unauthorized access to another NASA contractor's personal and work e-mail accounts.

INVESTIGATIONS STATISTICAL DATA

TABLE 8: OFFICE OF INVESTIGATIONS COMPLAINT INTAKE DISPOSITION

Source of Complaint	Zero Files[a]	Administrative Investigations[b]	Management Referrals[c]	Preliminary Investigations[d]	Total
Hotline	25	19	2	21	67
All Others	40	25	3	64	132
Total	**65**	**44**	**5**	**85**	**199**

[a] Zero Files are those 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 non-criminal matters initiated by the Office of Investigations as well as Hotline Complaints referred to the Office of Audits.

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

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

TABLE 9: FULL INVESTIGATIONS OPENED THIS REPORTING PERIOD

Full Criminal/Civil Investigations	24

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

TABLE 10: CASES PENDING AT END OF REPORTING PERIOD

Preliminary Investigations	76
Full Criminal/Civil Investigations	118
Administrative Investigations	71
Total	**265**

TABLE 11: QUI TAM INVESTIGATIONS

Qui Tam Matters Opened this Reporting Period[a]	4
Qui Tam Matters Pending at End of Reporting Period[b]	7

[a] A Qui Tam is a civil complaint filed by an individual on behalf of the United States Government under the Civil False Claims Act.

[b] Number of Qui Tam investigations is a subset of the total number of investigations opened and pending.

TABLE 12: JUDICIAL ACTIONS

Cases Referred for Prosecution	38
Indictments/Criminal Informations	22
Convictions/Plea Bargains	9
Sentencing/Pre-Trial Diversions	9
Civil Settlements/Judgments	1

TABLE 13: ADMINISTRATIVE ACTIONS

Referrals to NASA management for review and response	21
Referrals to NASA management – information only	12
Referrals to the Office of Audits	3
Referrals to Security or other agencies	4
Recommendation to NASA management for disciplinary action	
Involving a NASA employee	1
Involving a contractor firm	1
Involving a contractor employee	2
Other	2
Total	**6**
Administrative/disciplinary actions taken	
Against a NASA employee	7
Against a contractor employee	4
Procedural change implemented	6
Total	**17**
Recommendations to NASA management on program improvements	
Matters of procedure	5
Total	**5**
Suspensions or Debarments from Government Contracting	
Involving an individual	4
Involving a contractor firm	3
Total	**7**

TABLE 14: INVESTIGATIVE RECEIVABLES AND RECOVERIES

Judicial	$14,608,556
Administrative[a]	$714,774
Total	**$15,323,330**
Total NASA	**$415,267**

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


OR GENERAL
NASA
RMINISTRATION

CONGRESSIONAL TESTIMONY

Inspector General Paul Martin

INSPECTOR GENERAL MARTIN DISCUSSES TOP MANAGEMENT AND PERFORMANCE CHALLENGES FACING NASA

In May, IG Paul Martin submitted written testimony to the U.S. Senate Subcommittee on Commerce, Justice and Science, and Related Agencies discussing the top challenges facing NASA.

"Accordingly, we continue to view declining budgets and fiscal uncertainties as the most significant external challenges to NASA's ability to successfully move forward on its many projects and programs," Martin wrote.

Referencing the Administration's proposal to extend ISS operations to 2024, Martin said, "Some space policy experts have expressed concern that NASA will not have enough money to operate the Station while concurrently developing the Space Launch System, the Orion capsule, and other components of its human exploration program."

The written submission noted that over the past 12 months, NASA has achieved a number of milestones that advanced its space exploration and scientific discovery goals, including a third commercial resupply mission to the ISS, delivery of the final three primary mirrors for the James Webb Space Telescope, and deployment of an Earth-observing weather satellite developed jointly with the Japan Aerospace Exploration Agency.

However, while acknowledging these and other achievements, Martin noted that NASA will continue to be challenged to effectively manage its varied programs in the current budget and political environment: "We agree with the observation made by the National Research Council in its 2012 report examining NASA's strategic direction and management that, in effect, too many programs are chasing too few dollars at NASA."

In his statement, Martin also highlighted securing commercial crew transportation services, ensuring continued efficacy of the space communications networks, and overhauling NASA's information technology governance structure as other significant management and performance challenges facing NASA.

Testimony before the Subcommittee on Commerce, Justice and Science, and Related Agencies Committee on Appropriations, The National Aeronautics and Space Administration's FY 2015 Budget Request, *http://oig.nasa.gov/congressional/NASAIGMARTIN_05_01_14.pdf*

DEPUTY INSPECTOR GENERAL ROBINSON TESTIFIES ON NASA'S MANAGEMENT OF FOREIGN NATIONAL ACCESS TO ITS INFORMATION AND FACILITIES

On June 20, Deputy Inspector General Gail Robinson testified before the U.S. House of Representatives Subcommittees on Space and Oversight regarding NASA's management of foreign national access to its information and facilities and related security issues.

DIG Robinson, third from left, testifies before the U.S. House of Representatives Subcommittees on Space and Oversight regarding NASA's management of foreign national access to its information and facilities and other related security issues.

During the hearing, Robinson highlighted OIG audits examining security controls for NASA's information technology assets, many of which contain data subject to export control laws; a special review examining a Chinese national's access to the Langley Research Center; and a special review involving foreign nationals and export issues at the Ames Research Center.[1]

"Our audit and investigative work lead us to conclude that NASA needs to take a more standardized and systematic approach to both foreign national access and export control management. In the Langley matter, we were struck by the highly bureaucratic nature of NASA's process for reviewing foreign visit requests," said Robinson. "We noted that the many individuals involved in the process appeared to view their roles in isolation, with little consideration or understanding of the role played by others."

Similarly, in the Ames review NASA lacked early coordination between project and export control personnel, and there was deep disagreement between these two groups regarding whether work performed by foreign nationals involved technology subject to the International Traffic in Arms Regulations that control the transfer of military and space-related technology. This issue only surfaced when the Ames scientists sought to publish a paper many months after work on the project had begun. In addition, it appeared that NASA lacked an efficient mechanism to resolve the dispute between the two groups, which dragged on for months.

"We believe that NASA needs to work toward a model that encourages Agency scientists and engineers to consult with export professionals when projects involving foreign nationals are initiated and develop a mechanism for resolving disputes in a timely manner," said Robinson.

Finally, Robinson reiterated that NASA needs to improve and expand training to provide its scientists and engineers with a deeper understanding of the importance of complying with rules and regulations governing export control and foreign national access.

Testimony before the Subcommittee on Space Committee on Science, Space, and Technology: NASA Security: Assessing the Agency's Efforts to Protect Sensitive Information
http://oig.nasa.gov/congressional/GRobinson062014.pdf (report);
http://oig.nasa.gov/Video/GRobinson062014.html (video)

1 NASA OIG, "NASA's Information Technology Governance" (IG-13-015, June 5, 2013); "NASA's Process for Acquiring Information Technology Security Assessment and Monitoring Tools" (IG-13-006, March 18, 2013); "Bo Jiang's Access to NASA's Langley Research Center" (October 22, 2013); and, "Review of ITAR and Foreign National Access at Ames Research Center" (February 26, 2014).


OR GENERAL
NASA
RMINISTRATION

LEGAL ISSUES

Low-Density Supersonic Decelerator lifted aboard the Kahana recovery vessel

ETHICS TRAINING

In August, the Office of Counsel conducted mandatory ethics training for OIG employees required to file financial disclosure forms. The training focused on conflicts of interest, use of Government resources, improper political activity, merit principles, and prohibited personnel practices.

2302(C) CERTIFICATION PROGRAM

The Office of Counsel worked with NASA's Offices of General Counsel and Human Resources to apply for 2302(c) certification from the United States Office of Special Counsel (OSC). Congress enacted 5 U.S.C. § 2302(c) in response to reports of limited understanding in the Federal workforce concerning employees' rights to be free from prohibited personnel practices, especially retaliation for whistleblowing. Section 2302(c) requires agency heads to ensure employees are informed of the rights and remedies available to them under the Whistleblower Protection Act and related laws. In 2002, OSC established a "2302(c) Certification Program" to provide agencies and agency components with a process for meeting this statutory requirement. In 2014, the White House directed agencies to take affirmative steps to complete OSC's program.

WHISTLEBLOWER PROTECTION AND NON-DISCLOSURE AGREEMENTS

Last year, Congress passed legislation to encourage whistleblowers to come forward with concerns and issues related to their work for Federal agencies. Specifically, Section 827 of the National Defense Authorization Act for Fiscal Year 2013 established wide-ranging protections for employees of Government contractors who disclose information to various Government entities, including officials at NASA. Under this statute, an individual is protected from retaliation when making a protected disclosure to certain officials, including the NASA contracting officer and employees of the OIG, related to fraud, waste, and abuse. In addition, NASA's policies encourage its contractor workforce to bring allegations of perceived wrongdoing, particularly when they relate to safety concerns, expeditiously to the attention of NASA.

We are concerned that certain contractor non-disclosure policies may conflict with the intent of the recent whistleblower protection law and NASA policy. These policies may stifle whistleblower disclosures and may have a chilling effect on employees who have concerns about possible wrongdoing, but fail to bring it to NASA's attention for fear of termination of employment. We have asked that these policies be discontinued or conform to the whistleblower protection laws.

OFFICE OF INVESTIGATIONS IN-SERVICE TRAINING

The Office of Counsel provided legal training for criminal investigators at their regional in-service meetings during this 6-month period. The training focused on criminal and civil law updates, emphasizing search and seizure in an office environment, the Program Fraud Civil Remedies Act (PFCRA), and use of force exercises. This periodic training is required by the Attorney General's guidelines for OIGs with statutory law enforcement authority.

CIGIE INSPECTOR GENERAL CRIMINAL INVESTIGATOR ACADEMY

In April and July of this year, associate OIG counsels served as guest instructors for the Council of the Inspectors General on Integrity and Efficiency (CIGIE) Inspector General Criminal Investigator

Academy, co-presenting the 3-hour session on Civil and Administrative Remedies at the periodic refresher training held in Chicago, Illinois, and Austin, Texas. Topics covered included Inspector General subpoenas, PFCRA, the False Claims Act, suspension and debarment, and coordination of remedies.

REGULATORY REVIEW

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

NPD 9800.1B, NASA OFFICE OF INSPECTOR GENERAL PROGRAMS

During this reporting period, NASA revalidated and republished NASA Policy Directive (NPD) 9800.1, "NASA Office of Inspector General Programs." NPD 9800.1 implements the Inspector General Act within NASA and ensures that all allegations of violations of Federal criminal and civil law and all allegations pertaining to other crimes, fraud, waste, abuse, and mismanagement are reported to the OIG and that NASA Headquarters, Centers and Component Facilities, contractor facilities, the facilities of any other entity receiving NASA funds, or any other NASA-related entity fully cooperate in the conduct of audits, investigations, reviews, and other OIG activity. The new expiration date for the revalidated NPD is June 9, 2019.

The NPD is available at *http://nodis3.gsfc.nasa.gov/displayDir.cfm?t=NPD&c=9800&s=1B.*

NASA FEDERAL ACQUISITION REGULATION SUPPLEMENT (NFS) CONCERNING CONTRACTOR WHISTLEBLOWER PROTECTIONS

NASA published changes to the NASA Federal Acquisition Regulation Supplement (NFS) concerning Contractor Whistleblower Protections. In particular, it amended Title 48 Code of Federal Regulations (CFR) Parts 1803, 1816, and 1852 to implement a policy providing whistleblower protections for contractor and subcontractor employees. This rule implements 10 U.S.C. 2409 as amended by section 846 of the National Defense Authorization Act for Fiscal Year 2008 (Pub. L. 110-181) and section 827 of the National Defense Authorization Act for Fiscal Year 2013 (Pub. L. 112-239). Section 846, entitled "Protection of Contractor Employees from Reprisal for Disclosure of Certain Information," and Section 827, entitled "Enhancement of Whistleblower Protections for Contractor Employees," made extensive changes to 10 U.S.C. 2409, entitled "Contractor employees: protection from reprisal or disclosure." The OIG plays a significant role in investigating allegations of whistleblower reprisal, and the Counsel to the Inspector General serves as NASA's Whistleblower Protection Ombudsman. Accordingly, the OIG reviewed NASA's proposed changes to the CFR and recommended revisions to ensure the new regulation effectively implements the enhanced statutory whistleblower protections.

The regulations are now in effect and were published on July 29, 2014, in the Federal Register at *http://www.gpo.gov/fdsys/pkg/FR-2014-07-29/pdf/2014-17728.pdf.*

NPR 7500.1, NASA TECHNOLOGY TRANSFER REQUIREMENTS

NASA significantly revised NASA Procedural Requirements (NPR) 7500.1, "NASA Technology Transfer Requirements," which provides guidance for implementing the processes, requirements, and responsibilities for its technology transfer activities. The NPR directly supports the technology transfer mission in the NASA Strategic Plan and in NASA's Strategic Space Technology Investment Plan (SSTIP). The OIG recommended the NPR be further revised to more clearly address recommendations made in our March 1, 2012, audit report entitled "Audit of NASA's Process for Transferring Technology to the Government and Private Sector" (IG-12-013). Our recommendations in that report were intended to address our finding that project managers were not aware of certain requirements of the former NPR 7500.1, particularly the requirement to develop Technology Commercialization Plans.

NPR 1441.1, NASA RECORDS MANAGEMENT PROGRAM REQUIREMENTS

The OIG reviewed proposed changes to NPR 1441.1, "NASA Records Management Program Requirements," which aligns Agency procedures with Title 36, Code of Federal Regulations, Chapter XII, "Records Management," and is a critical means of ensuring that NASA meets Federal records management requirements. We recommended revisions to the NPR to ensure information system owners have the same responsibility as owners of paper records to implement disposition of NASA records in accordance with the NPR. In addition, we recommended adding a requirement that known or suspected instances of illegal possession, alteration, or unlawful destruction of NASA records be reported directly to the OIG.

LEGAL STATISTICAL DATA

TABLE 15: LEGAL ACTIVITIES AND REVIEWS

FOIA matters	21
Appeals	1
Inspector General subpoenas issued	59
Regulations reviewed	26

INSPECTOR G
NASA
NATIONAL AE

APPENDIXES

Appendixes

Testing of James Webb Telescope Technology

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	46–47
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	29–31
Section 5(a)(4)	Matters Referred to Prosecutive Authorities	38
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	31–32
Section 5(a)(7)	Summary of Significant Audits and Investigations	3–36
Section 5(a)(8)	Total Number of Reports and Total Dollar Value for Audits with Questioned Costs	31
Section 5(a)(9)	Total Number of Reports and Total Dollar Value for Audits with Recommendations that Funds Be Put to Better Use	32
Section 5(a)(10)	Summary of Prior Audit Products for which No Management Decision Has Been Made	31–32
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	52
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

APPENDIX B: PEER REVIEWS

The Dodd-Frank Wall Street Reform and Consumer Protection Act requires the OIG to include in its semiannual reports any peer review results 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 it 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.

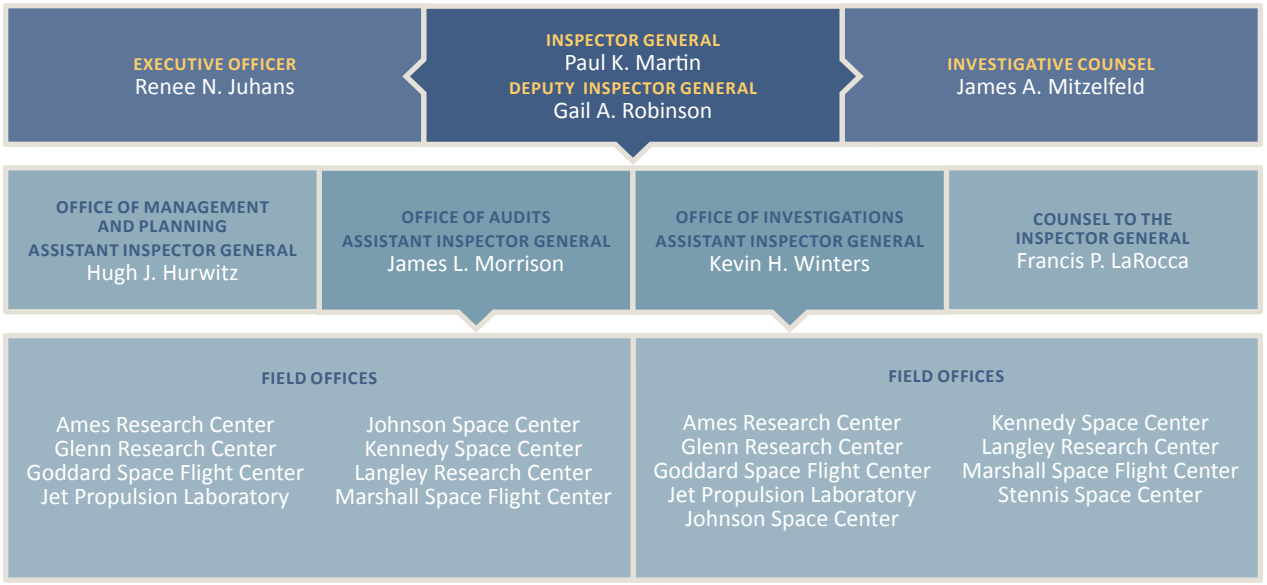
OFFICE OF INVESTIGATIONS

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 C: ACRONYMS

CASIS	Center for the Advancement of Science in Space
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CFR	Code of Federal Regulations
CIGIE	Council of Inspectors General on Integrity and Efficiency
DSN	Deep Space Network
EMD	Environmental Management Division
FY	Fiscal Year
GSDO	Ground Systems Development and Operations
IG	Inspector General
IPIA	Improper Payments Information Act
ISS	International Space Station
IT	Information Technology
IV&V	Independent Verification and Validation
NEO	Near-Earth Objects
NETS	NASA Environmental Tracking System
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
NSF	National Science Foundation
OIG	Office of Inspector General
O&M	Operations and Maintenance
OSC	Office of Special Counsel
PFCRA	Program Fraud Civil Remedies Act
SAFFIRE	Space Flight Fire Safety Demonstration
SGSS	Space Network Ground Segment Sustainment
SLS	Space Launch System
SOFIA	Stratospheric Observatory for Infrared Astronomy
STEM	Science, Technology, Engineering, and Mathematics
TDRS	Tracking and Data Relay Satellites
WASP	Web Application Security Program

APPENDIX D: OFFICE OF INSPECTOR GENERAL ORGANIZATIONAL CHART



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.

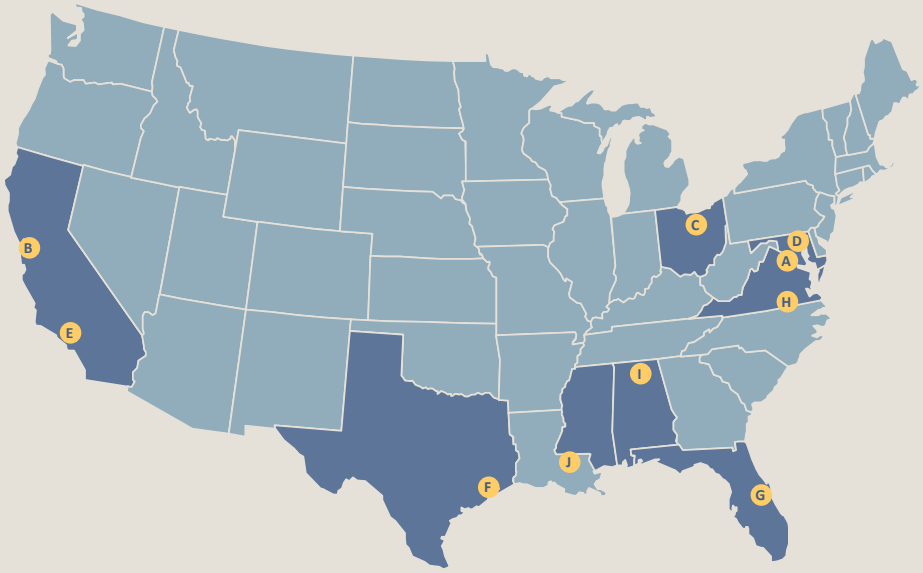
THE OFFICE OF COUNSEL TO THE INSPECTOR GENERAL provides legal advice and assistance to OIG managers, auditors, and investigators. The Office serves as OIG counsel in administrative litigation and assists the Department of Justice when the OIG participates as part of the prosecution team or when the OIG 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.

APPENDIX E: MAP OF FIELD OFFICES

NASA OIG OFFICES OF AUDITS AND INVESTIGATIONS



A NASA OIG HEADQUARTERS
300 E Street SW, Suite 8U71
Washington, DC 20546-0001
Tel: 202-358-1220

B AMES RESEARCH CENTER
NASA Office of Inspector General
Ames Research Center
Mail Stop 11, Building N207
Moffett Field, CA 94035-1000
Tel: 650-604-2679 (Audits)
Tel: 650-604-3682 (Investigations)

C GLENN RESEARCH CENTER
NASA Office of Inspector General
Mail Stop 14-9
Glenn Research Center
at Lewis Field
Cleveland, OH 44135-3191
Tel: 216-433-9714 (Audits)
Tel: 216-433-2364 (Investigations)

D GODDARD SPACE FLIGHT CENTER
NASA Office of Inspector General
Code 190
Goddard Space Flight Center
Greenbelt, MD 20771-0001
Tel: 301-286-6443 (Audits)
Tel: 301-286-9316 (Investigations)

NASA Office of Inspector General
Office of Investigations
402 East State Street
Room 3036
Trenton, NJ 08608
Tel: 609-656-2543 or
609-656-2545

E JET PROPULSION LABORATORY
NASA Office of Inspector General
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91109-8099

Office of Audits
Mail Stop 180-202
Tel: 818-354-3360

Office of Investigations
Mail Stop 180-203
Tel: 818-354-6630

NASA Office of Inspector General
Office of Investigations
Glenn Anderson Federal Building
501 West Ocean Boulevard
Suite 5120
Long Beach, CA 90802-4222
Tel: 562-951-5480

F JOHNSON SPACE CENTER
NASA Office of Inspector General
Lyndon B. Johnson Space Center
2101 NASA Parkway
Houston, TX 77058-3696

Office of Audits
Mail Stop W-JS
Building 1, Room 161
Tel: 281-483-0483

Office of Investigations
Mail Stop W-JS2
Building 45, Room 514
Tel: 281-483-8427

G KENNEDY SPACE CENTER
NASA Office of Inspector General
Mail Stop W/KSC-OIG
Post Office Box 21066
Kennedy Space Center, FL 32815
Tel: 321-867-3153 (Audits)
Tel: 321-867-4714 (Investigations)

H LANGLEY RESEARCH CENTER
NASA Office of Inspector General
Langley Research Center
9 East Durand Street
Mail Stop 375
Hampton, VA 23681
Tel: 757-864-8562 (Audits)
Tel: 757-864-3263 (Investigations)

I MARSHALL SPACE FLIGHT CENTER
NASA Office of Inspector General
Mail Stop M-DI
Marshall Space Flight Center, AL
35812-0001
Tel: 256-544-1149 (Audits)
Tel: 256-544-9188 (Investigations)

J STENNIS SPACE CENTER
NASA Office of Inspector General
Office of Investigations
Building 3101, Room 119
Stennis Space Center, MS
39529-6000
Tel: 228-688-1493


OR GENERAL
NASA
RMINISTRATION

OIG HOTLINE

1–800–424–9183 / TDD: 1–800–535–8134

http://oig.nasa.gov/hotline.html

NASA Office of Inspector General
P.O. Box 23089, L'Enfant Plaza Station
Washington, DC 20026

http://oig.nasa.gov