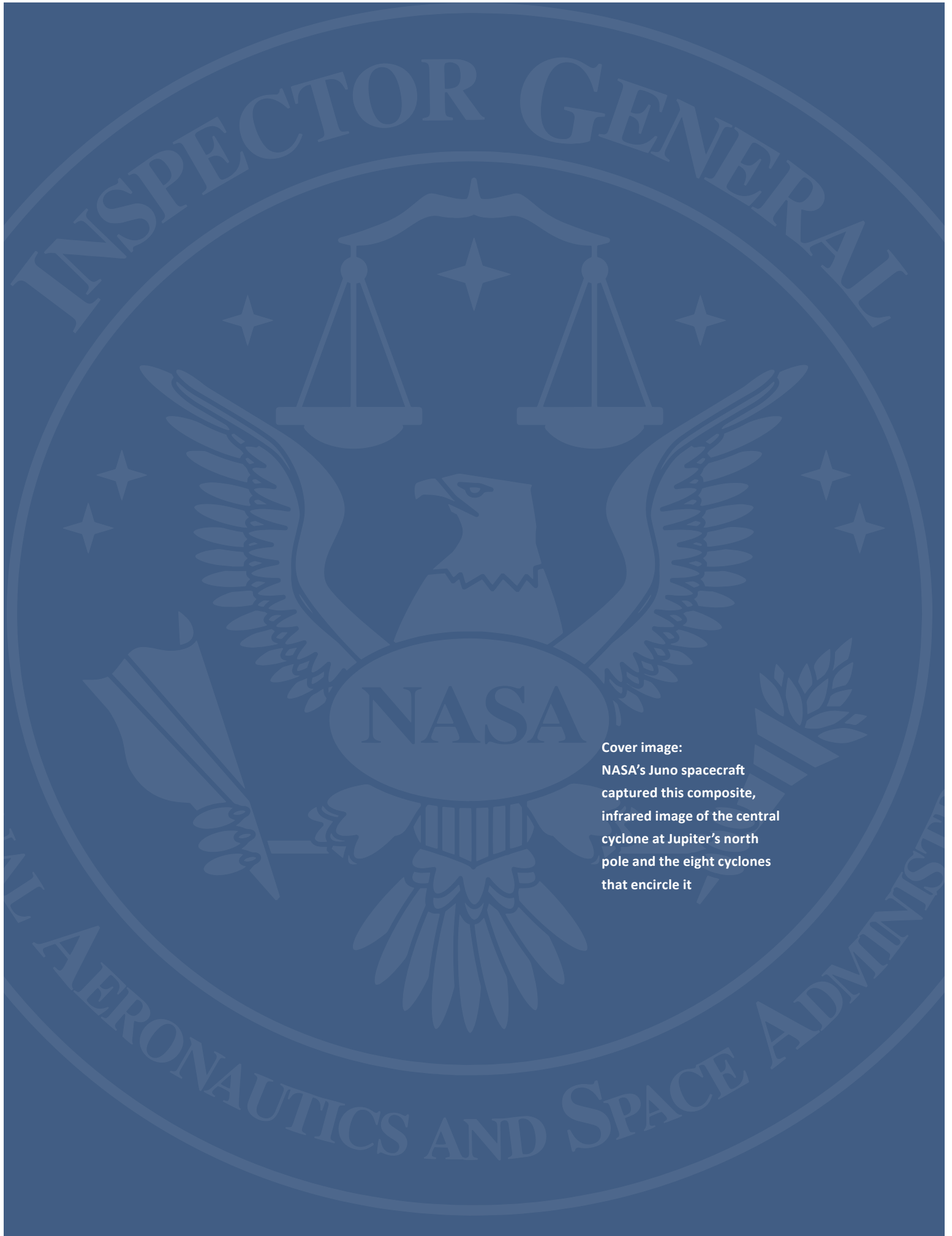




NASA OFFICE OF INSPECTOR GENERAL

SEMIANNUAL REPORT

APRIL 1–SEPTEMBER 30, 2020



Cover image:
NASA's Juno spacecraft
captured this composite,
infrared image of the central
cyclone at Jupiter's north
pole and the eight cyclones
that encircle it



FROM THE INSPECTOR GENERAL

During the entire 6-month period covered in this Semiannual Report, the NASA Office of Inspector General (OIG)—like most of the federal government—operated in 100 percent telework mode due to the COVID-19 pandemic that precipitated the closure of all NASA facilities except for mission-critical work.

Conducting independent, aggressive, and comprehensive oversight of NASA's \$22.6 billion budget and its programs is challenging in non-COVID-19 times, but even more so in a virtual environment. Consequently, I am extremely proud of our workforce of auditors, investigators, attorneys, and support staff who not only rose to the challenge but exceeded expectations under trying personal and professional circumstances. During this reporting period, the OIG issued more than a dozen audit reports and work products while maintaining an investigative caseload of more than 250 matters.

OIG employees remained extraordinarily productive in these highly unusual times by modifying their in-person audit, investigative, and support procedures and embracing information technology tools like videoconferencing for subject interviews, richer data mining for audit analysis, and virtual “onboardings” for new staff. You can see the impressive results of their efforts on the pages that follow.

This Semiannual Report summarizes the OIG's activities and accomplishments between April 1 and September 30, 2020. We hope you find it informative.

A handwritten signature in black ink that reads "PKM-A". The letters are stylized and connected.

Paul K. Martin
Inspector General
November 30, 2020

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OFFICE
OF AUDITS



An airliner crossing the nearly full Moon
on March 7, 2020 (credit Ray Tolomeo)

ACQUISITION AND PROJECT MANAGEMENT

Effective contract, grant, and project management remain top challenges for NASA. Through its comprehensive audits, the Office of Inspector General (OIG) helps ensure NASA engages in sound procurement and acquisition practices that provide the Agency and taxpayer with the best possible value.

NASA'S PLANETARY SCIENCE PORTFOLIO

NASA's Planetary Science Division (PSD) manages a series of high-profile programs such as Lunar Discovery and Exploration, Mars Exploration, Outer Planets and Ocean Worlds, Planetary Defense, and Near-Earth Object Observations. Within those programs, the planetary science portfolio consists of 30 space flight missions in various stages of operation—including orbiters, landers, rovers, and probes—that seek to advance our understanding of the solar system by exploring the Earth's Moon, other planets and their moons, asteroids and comets, and the icy bodies beyond Pluto. PSD's budget for the next 5 years is forecast to average more than \$2.5 billion a year, which is almost double its budget from 10 years ago. In this audit, we assessed NASA's management of its planetary science portfolio and examined whether it is achieving established goals and priorities set by the President, Congress, and science community stakeholders. We found that PSD has taken positive steps in response to recommendations and goals outlined by the National Academies of Sciences, Engineering, and Medicine. However, as NASA's planetary science missions become more complex, the life-cycle costs of PSD missions are increasing due to project management challenges and mission complexity. While PSD and NASA Centers are focused on meeting current mission needs, they are at risk of neglecting investments—including technical capabilities, workforce, the Deep Space Network, and technology development—that would help



In 2019, engineers installed a SuperCam on NASA's Mars Perseverance rover, which was launched to the Red Planet in July 2020

ensure long-term maintenance of NASA's unique planetary science infrastructure. Additionally, in examining discrete planetary science missions, the Lunar Discovery and Exploration Program is accepting higher risk than necessary in the Commercial Launch Provider Services project, which provides contracts to U.S. commercial entities to develop landers to deliver NASA science instruments and other payloads to the Moon's surface. Finally, Near-Earth Object Observations Program resources remain insufficient to meet the program's congressional mandate of cataloging near-Earth objects. The Agency concurred with our 11 recommendations.

NASA's Planetary Science Portfolio (IG-20-023, September 16, 2020)

(Report)

NASA'S MANAGEMENT OF THE STRATOSPHERIC OBSERVATORY FOR INFRARED ASTRONOMY PROGRAM

The Stratospheric Observatory for Infrared Astronomy (SOFIA) is an airborne observatory with a 106-inch telescope mounted onboard a Boeing 747SP that makes observations from between 38,000 and 45,000 feet, putting it above 99 percent of water vapor that interferes with ground-based infrared observations. SOFIA reached full operational capability in 2014 after a problematic 23-year development history and at a cost of \$1.1 billion—more than 300 percent over original estimates. Because SOFIA has experienced ongoing operational and technical challenges and has not met science output expectations, NASA has questioned whether its \$83 million in annual operating costs could be put to better use elsewhere. Likewise, the President's Budget Request has repeatedly proposed terminating

SOFIA, including most recently for fiscal year (FY) 2021. However, in the past, Congress has continued to fund the Program. In this audit, we examined NASA's management of the Program and found that while SOFIA is responsible for several first-of-its-kind discoveries, a 13-year development delay reduced the Program's ability to produce impactful science in a cost-effective manner, and SOFIA has not fully utilized its unique capabilities to serve as an instrument test bed or to fly anytime, anywhere. In addition, SOFIA continues to experience operational and technical challenges related to flight operations, observation completion, data processing, contractor award fees, and instrument development. Further, the lack of clear and achievable performance expectations and science output goals reduced productivity and threatens the Program's future viability. Proposed actions are unlikely to mitigate SOFIA's lack of competitiveness because of the Program's poor efficiency on a science-per-dollar basis when compared to other observatories. The Agency concurred with our nine recommendations.



Composite image of the Swan Nebula built with data from the SOFIA observatory and the Spitzer Space Telescope

NASA's Management of the Stratospheric Observatory for Infrared Astronomy Program (IG-20-022, September 14, 2020)

(Report)

MANAGEMENT OF THE LOW-BOOM FLIGHT DEMONSTRATOR PROJECT

According to the International Air Transport Association, worldwide annual commercial passenger trips are projected to increase from \$3.3 billion in 2014 to \$11 billion by 2050. To address the anticipated challenges associated with meeting this increase in demand, in April 2016, NASA announced the New Aviation Horizons Initiative with the intent to build five X-planes



Artist's concept of the Quiet SuperSonic Technology Low-Boom Flight Demonstrator

over the next 10 years. These experimental aircraft will investigate technologies for reducing fuel use, carbon dioxide emissions, and noise pollution, as well as overcoming the hurdles to efficient, low-noise supersonic flight. In March 2018, NASA contracted with the Lockheed Martin Corporation to develop the first of these X-planes—the Low-Boom Flight Demonstrator (LBFD)—a \$583 million project scheduled for completion in October 2023. The intent of the LBFD is to produce a quieter sonic boom while flying at supersonic speeds and provide data to the Federal Aviation Administration that could lead to changing regulations to allow supersonic flight overland. In this audit, we assessed NASA's management of the LBFD Project. We found that LBFD management instituted a sound acquisition strategy, provided more-than-expected amounts of government furnished equipment to save costs, implemented an innovative project management structure, and appropriately conducted the Joint Cost and Schedule Confidence Level analysis. However, challenges related to the 2018 to 2019 government furlough, reassignment of a test location, hiring qualified contractor technical personnel, and late delivery of parts contributed to cost growth and schedule delays. In addition, difficulties implementing Earned Value Management affected both the Lockheed Martin Corporation and LBFD, requiring additional time and effort to review and validate Project

performance data. Of our eight recommendations, the Agency concurred with six and did not concur with two; however, those two have since been resolved and management is taking appropriate action to address our concerns.

Management of the Low-Boom Flight Demonstrator Project (IG-20-015, May 6, 2020)
(Report)

ONGOING AUDIT WORK

COVID-19 Impact on NASA's Major Programs and Projects

In March 2020, in accordance with Centers for Disease Control and Prevention guidance, the President directed federal agencies to modify their operations, including closing facilities and requiring mandatory telework of nonessential federal and contractor workforces. In NASA's case, while maintaining vital operations such as the International Space Station (ISS or Station) and efforts to launch the first commercial flight of astronauts into space, the Agency altered—essentially overnight—how it conducts business to protect its employees and contractors. By



Astronauts Douglas Hurley and Robert Behnken of NASA's Commercial Crew Program were aboard the SpaceX Crew Dragon as it approached the ISS in August 2020

mid-April 2020, 12 of the Agency's 18 major facilities were closed and the rest had transitioned to in-person support of only "mission critical" operations that could not be accomplished remotely. Additionally, 90 percent of the Agency's workforce was working from home and all nonessential travel was canceled. NASA also made difficult decisions to prioritize which missions would continue and which would be delayed. The purpose of conducting this review is to identify the impact the COVID-19 pandemic is having on major NASA programs and projects (those with life-cycle costs of at least \$250 million), including any cost, schedule, performance, and technical challenges.

NASA's Management of Its Acquisition Workforce

NASA utilizes contracts to fund research and development and purchase services, supplies, and equipment to support every facet of its operations. In FY 2018, the Agency spent approximately \$19 billion, or 82 percent of its available resources, on procurements. Given the enormity of funding NASA devotes to procuring goods and services and the decision to accelerate plans for a lunar landing, it is essential that the Agency maintain a highly skilled acquisition workforce capable of efficiently and effectively utilizing taxpayer funds and agile enough to achieve NASA's ambitious portfolio of missions.



Work being done on the diffuser and contraction vanes in the Unitary Plan Wind Tunnel at Ames Research Center

Our audit is examining the readiness of NASA's acquisition workforce to respond to the Agency's evolving contracting needs.

NASA's Management of Its Partnership with the Universities Space Research Association

Universities Space Research Association (USRA) is one of NASA's largest research partners, accounting for \$162 million in expenditures in 2018. USRA is an independent, nonprofit research corporation chartered in 1969 by the National Academy of Sciences to enable universities to collaborate with NASA to perform space research and technology development. In this audit, we are evaluating the NASA-USRA partnership relative to meeting Agency requirements and expectations.

The SpaceX Crew Dragon Endeavour spacecraft, with NASA astronauts Robert Behnken and Douglas Hurley aboard, is lifted onto the SpaceX GO Navigator recovery ship shortly after landing in the Gulf of Mexico off the coast of Pensacola, Florida, on August 2, 2020



SPACE OPERATIONS AND HUMAN EXPLORATION

Space operations and human exploration are among NASA's most highly visible missions, with the Agency currently operating the ISS, managing the commercial crew and cargo programs that support the Station, and planning for future exploration beyond low Earth orbit, including its ambitious goals for the Artemis lunar exploration program. Through Artemis, NASA aims to complete two exploration missions to orbit the Moon in 2021 and 2023 and land humans on its surface in 2024.

NASA'S MANAGEMENT OF THE ORION MULTI-PURPOSE CREW VEHICLE PROGRAM

The Orion Multi-Purpose Crew Vehicle (Orion) is the crew capsule that will carry up to four astronauts to destinations beyond low Earth orbit on the Space Launch System. Since FY 2012, NASA has spent \$1.2 billion annually, or about 7 percent of its overall budget, on the Orion Program. Overall, the Agency has spent almost \$10 billion on the Program, which has an overall

cost baseline of \$11.3 billion. Orion faces a series of cost and technical challenges leading up to the capsule's first crewed flight, with NASA expecting the Program to exceed its cost baseline in FY 2021. In this audit, we examined NASA's management of the Orion Program. We found that NASA's exclusion of more than \$17 billion in Orion-related development costs hindered transparency into the vehicle's complete costs; Orion has continued to experience cost increases and schedule delays; NASA's award fee practices have hindered the Program's control of contract costs; and NASA has undertaken a series of development, production, and infrastructure initiatives aimed at reducing or controlling costs, which, while positive, are too early to assess their effectiveness. The Agency concurred with our three recommendations.



After 4 months of rigorous testing at NASA's Plum Brook Station, the Orion spacecraft for the Artemis I mission takes another step toward being ready for flight

NASA's Management of the Orion Multi-Purpose Crew Vehicle Program (IG-20-018, July 16, 2020)

(Report)

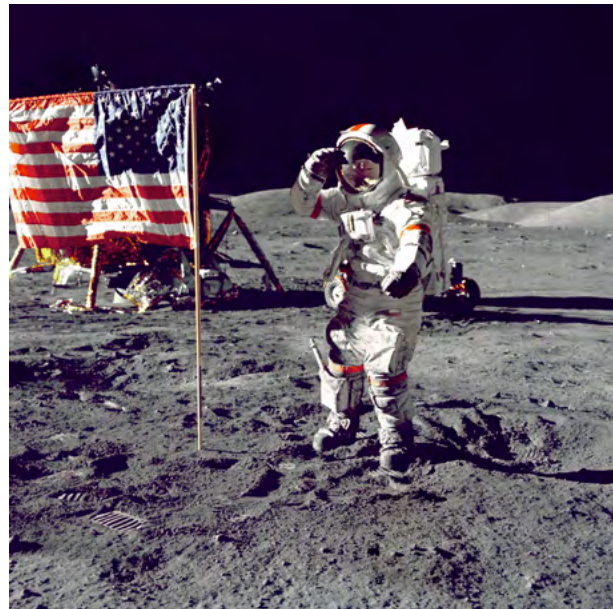
ONGOING AUDIT WORK

NASA's Efforts to Mitigate the Risks Posed by Orbital Debris

Millions of pieces of orbital debris—man-made objects in space that no longer serve a useful purpose—circle the Earth. Ranging in size from small flecks of paint or metal to decommissioned satellites the size of an automobile or larger, some of this “space junk” is large enough to potentially cause catastrophic collisions with spacecraft and astronauts. NASA’s Orbital Debris Program Office has taken the international lead in conducting measurements of the orbital environment and in developing the technical consensus for adopting mitigation measures. In this audit, we are evaluating NASA’s efforts to mitigate, address, and decrease the risks posed by orbital debris, as well as the Agency’s coordination and communication efforts with international and commercial organizations to address the orbital debris challenge.

NASA's Management of the Gateway Program for Artemis Missions

In March 2019, the Administration directed NASA to execute a plan to land astronauts on the Moon’s South Pole by 2024. In order to meet this ambitious schedule, NASA is making modifications to routine procurement and program management practices to reduce costs and accelerate the schedule. The Agency has already begun acquiring the technologies and space flight hardware needed to support the Artemis missions using a variety of acquisition methods. This is the first in a series of audits examining NASA’s Artemis program. Given the importance of the Gateway—a staging location for lunar missions and deep space operations—to NASA’s overall exploration plans, the overall objective of this audit is to assess to what extent the Power and Propulsion Element and the Habitation and Logistics Outpost (the Gateway’s initial elements) are meeting schedule, cost, and performance goals.



Eugene A. Cernan, commander of Apollo 17, salutes the flag on the lunar surface in December 1972, the last time humans landed on the Moon

NASA's Challenges to Safely Returning Humans to the Moon

Human exploration of Mars has been a long-term goal of the United States for the past five decades. To achieve this goal, NASA is once again pursuing space travel beyond low Earth orbit, and key to this effort are the Artemis missions to the Moon. While NASA originally planned a lunar landing in 2028, in March 2019, the Administration accelerated those plans to 2024. This timeline was established, in part, to create a sense of urgency regarding returning American astronauts to the Moon, and NASA senior officials have acknowledged the aggressiveness of this accelerated schedule. The overall objective of this review will be to identify the top safety-related challenges facing NASA for meeting the mandate to return humans to the Moon by 2024.

NASA's Development of Next Generation Spacesuits

For the past 13 years, NASA has been developing next generation spacesuits for astronauts to use on the ISS, Gateway, and, ultimately, a Moon landing. The new design has been dubbed the Exploration Extravehicular Mobility Unit, and NASA is currently building 5 suits in-house before issuing a production contract in early 2021 for 18 additional full suits and 24 training suits to be delivered beginning in 2024 for use on the ISS, the Human Landing System (a lunar lander that will ferry astronauts from either Orion or Gateway to the Moon's surface), and the Gateway. NASA plans to use the suits built in-house to support the Artemis III mission in 2024 while the production contract suits will support later Artemis missions. Although the Agency plans to test these spacesuits on the ISS beginning in 2023, several factors are putting the project's planned milestones at risk, including duplication of efforts, cost and schedule overruns, and schedule slips for Artemis III and demonstration flight suit deliveries due to impacts from the COVID-19 pandemic. The objective of this audit is to assess NASA's development of spacesuits for upcoming Artemis and future deep space missions.



Kristine Davis, left, wearing a ground prototype of NASA's new Exploration Extravehicular Mobility Unit, and Dustin Gohmert, right, wearing the Orion Crew Survival System suit, wave after being introduced by the Administrator on October 15, 2019, at NASA Headquarters in Washington, DC

A photograph capturing the intense moment of a rocket launch at night. The image is dominated by a massive, bright orange and yellow plume of fire and white smoke that cascades downwards from the engines. The background is dark, making the glowing exhaust stand out. The text is positioned in the upper right corner of the image.

The engines fire on
a United Launch
Alliance Atlas V
rocket with NASA's
Mars Perseverance
rover aboard during
launch from Space
Launch Complex 41
on July 30, 2020

INFORMATION TECHNOLOGY SECURITY AND GOVERNANCE

Information technology (IT) plays an integral role in NASA's space, science, and aeronautics operations. In FY 2020, the Agency spent approximately \$2.3 billion on a portfolio of IT assets that included hundreds of information systems used to control spacecraft, collect and process scientific data, provide security for its IT infrastructure, 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 and IT governance programs that adversely affect the Agency's ability to protect the information and information systems vital to its mission.

AUDIT OF NASA'S POLICY AND PRACTICES REGARDING THE USE OF NON-AGENCY INFORMATION TECHNOLOGY DEVICES

Smartphones, tablets, and laptops are integral to the work of NASA employees and their contractor, academic, federal, and international partners. However, use of this equipment to connect to NASA non-public networks and systems increases opportunities for individuals and organizations to improperly access Agency data. For years, NASA permitted personally-owned and partner-owned IT devices to access non-public data through its networks and systems, even if those devices did not have a valid authorization. In October 2018, the Chief Information Officer established new requirements allowing NASA employee and partner personally-owned mobile devices (which we collectively refer to as "non-NASA" IT devices) to securely access the Agency's enterprise email system if the user installed security software known as a Mobile Device Management application. In this audit, we evaluated whether NASA (1) addressed challenges related to non-NASA IT devices gaining unauthorized access to its networks and systems, (2) adequately monitored the connection of authorized mobile devices to its enterprise email system, and (3) adequately

implemented policy and procedures for non-NASA IT devices accessing NASA networks and systems. We found that NASA is not adequately securing its networks from unauthorized access by non-NASA IT devices, is not adequately monitoring and enforcing the business rules necessary for granting access, and has limited visibility into IT authorization practices at Centers and facilities. The Agency concurred with our five recommendations.

Audit of NASA's Policy and Practices Regarding the Use of Non-Agency Information Technology Devices (IG-20-021, August 27, 2020)

(Report)

EVALUATION OF NASA'S INFORMATION SECURITY PROGRAM UNDER THE FEDERAL INFORMATION SECURITY MODERNIZATION ACT FOR FISCAL YEAR 2019

The Federal Information Security Modernization Act of 2014 (FISMA) requires each agency's Inspector General (IG) or an independent external auditor to conduct an annual independent evaluation using the FY 2019 IG FISMA Reporting Metrics and report the results to the Office

of Management and Budget. In October 2019, we reported to the Office of Management and Budget that for FY 2019 NASA’s information security program was not fully effective and rated the program at Level 2, “Defined,” out of five levels, with Level 5, “Optimized,” being the most effective. This evaluation further examined NASA’s information security program based on the FISMA guidance by reviewing six information systems and examining system security plans, contingency plans, and IT security handbooks and other governing documents. We found numerous instances of incomplete, inaccurate, or missing information in the system security plan documentation for all six information systems. Additionally, we found that many controls inherited by those systems were classified as “other than satisfied,” indicating they had been assessed as less than effective. We also found that four of the six information systems were operating without current contingency plans. Finally, we found that 27 of 45 IT security handbooks and other governing documents had not been reviewed and approved in more than a year and that 8 had not been reviewed in over 3 years. The Agency concurred with our nine recommendations.

Evaluation of NASA’s Information Security Program under the Federal Information Security Modernization Act for Fiscal Year 2019 (IG-20-017, June 25, 2020)

(Report)

ONGOING AUDIT WORK

NASA’s Cybersecurity Readiness

NASA’s high-profile and advanced technology makes the Agency’s computer systems and networks an attractive target for cyber intruders. In this audit, we are assessing whether NASA is adequately prepared to identify and respond to cyberattacks and has the IT infrastructure in place

to deal with new and emerging threats while maintaining cyber resiliency in light of the evolving threat landscape.

Evaluation of NASA’s Information Security Program under the Federal Information Security Modernization Act for Fiscal Year 2020

In this required annual review, we will evaluate NASA’s IT security program against the FY 2020 FISMA metrics. Specifically, we will review a sample of NASA- and contractor-owned information systems to assess the effectiveness of information security policies, procedures, standards, and guidelines. Additionally, we will evaluate whether NASA has addressed the deficiencies identified in our prior FISMA reviews.

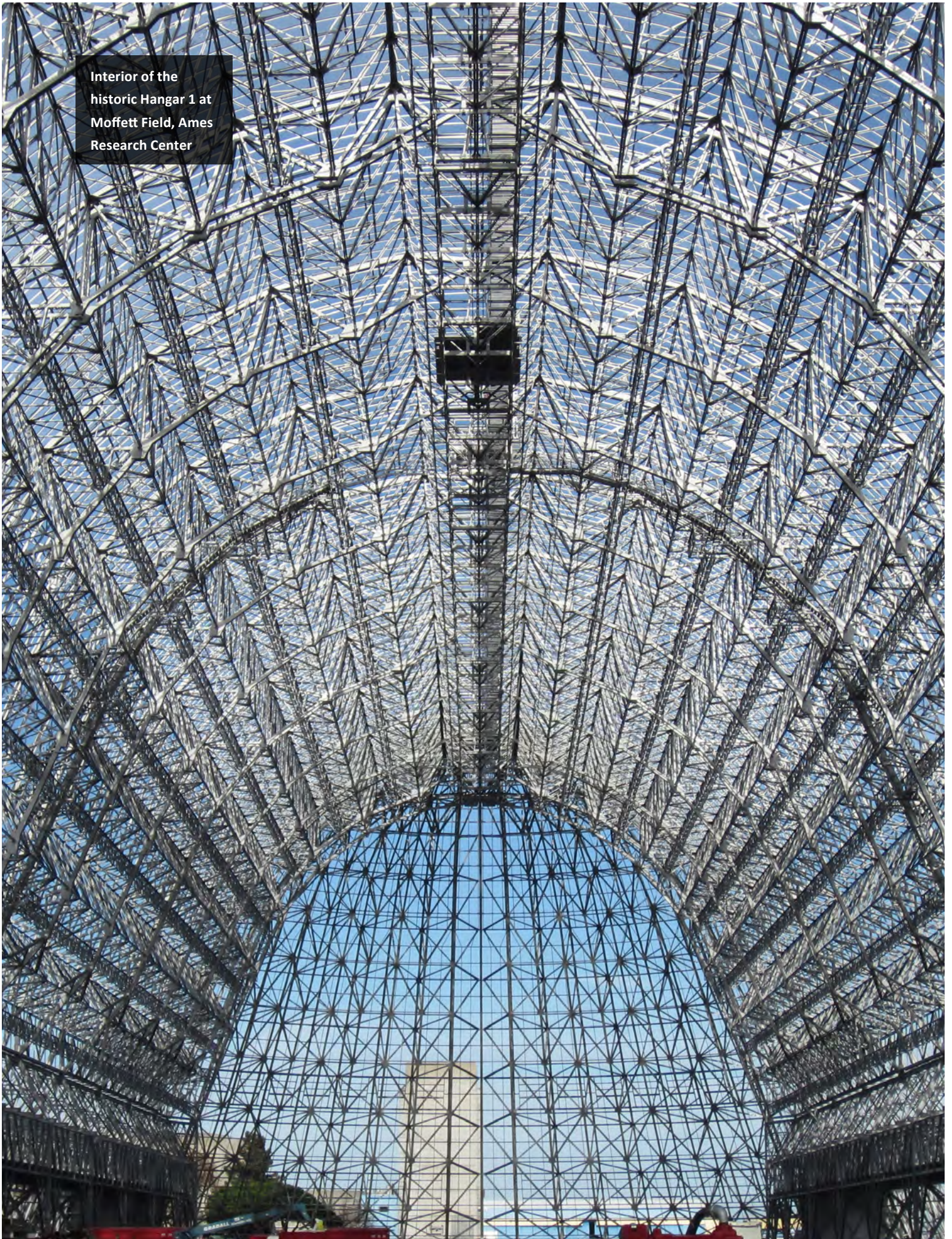
NASA’s Compliance with the Geospatial Data Act of 2018

The Geospatial Data Act of 2018 establishes responsibilities and reporting requirements for NASA and other agencies to manage their geospatial data, technologies, and infrastructure. As required, we are evaluating the extent to which NASA is managing its geospatial data in accordance with the Act.



NASA successfully launched AZURE, the Auroral Zone Upwelling Rocket Experiment, on April 5, 2019, from the Andøya Space Center in Norway

Interior of the
historic Hangar 1 at
Moffett Field, Ames
Research Center



INFRASTRUCTURE

NASA's real property includes more than 5,000 buildings and other structures—such as wind tunnels, laboratories, office buildings, launch pads, and test stands—that occupy 45 million square feet and are valued at more than \$40 billion. However, over 80 percent of NASA's facilities are more than 50 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.

ONGOING AUDIT WORK

NASA's Management of Hazardous Materials

NASA's space flight and aeronautics programs require scientists and engineers to utilize hazardous materials, defined as any item or agent (biological, chemical, radiological, or physical) that has the potential to cause harm to humans, animals, or the environment. Consequently, the management, storage, and disposal of hazardous materials are heavily regulated. Typically, a material is classified as hazardous when it exhibits at least one of four characteristics—ignitibility, corrosivity, reactivity, or toxicity—or because it has been listed by the U.S. Environmental Protection Agency as hazardous. Given the potential damage; health hazard; and long-term, costly clean-up efforts that often result from poor management of these substances, we are examining the Agency's management of hazardous materials.

Audit of NASA's Construction of Facilities

More than 83 percent of NASA's constructed infrastructure is beyond its design life, requiring significant risk management efforts to mitigate risk to current and future missions. While NASA strives to keep these facilities operational, the



The Space Launch System rocket is shown installed on the top left side of the B-2 Test Stand at NASA's Stennis Space Center near Bay St. Louis, Mississippi

Agency faces a deferred maintenance backlog of \$2.65 billion as of 2019. This has resulted in unscheduled maintenance rather than scheduled maintenance costing up to three times more to repair or replace equipment after it has failed. To address these challenges, NASA's Construction of Facilities programs focus on modernizing the Agency's infrastructure to consolidate into fewer, more efficient, sustainable facilities and repairing failing infrastructure to reduce overall maintenance costs. In this audit, we are assessing the extent to which the Agency is effectively managing its facility construction efforts.

FINANCIAL MANAGEMENT

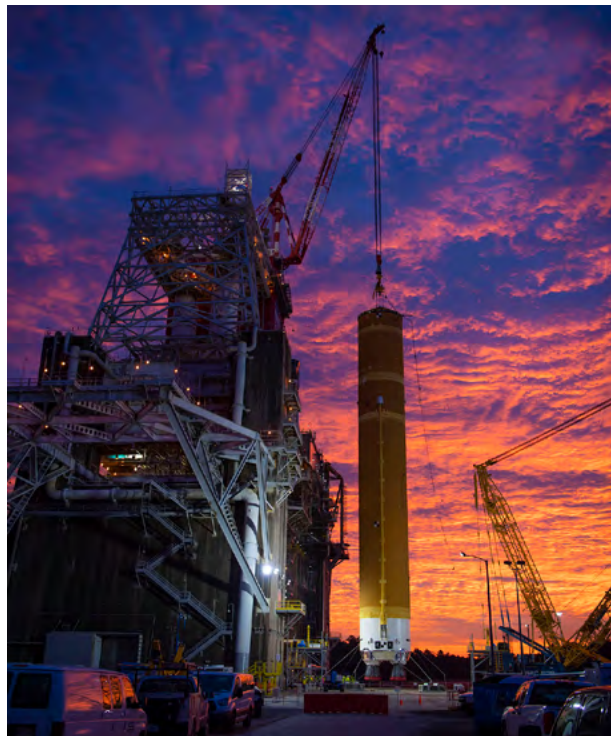
The OIG and its independent external auditor continue to assess NASA's efforts to improve its financial management practices by conducting and overseeing a series of audits to assist the Agency in addressing weaknesses, including the annual financial statement audit. We also assess single audits of NASA grantees performed by external independent public accountants. The single audits provide NASA and stakeholders with assurance that these award recipients comply with federal directives and aid the Agency in performing pre-award risk assessments and post-award monitoring efforts.

NASA'S COMPLIANCE WITH THE IMPROPER PAYMENTS INFORMATION ACT FOR FISCAL YEAR 2019

The Improper Payments Information Act of 2002 (IPIA), as amended by the Improper Payments Elimination and Recovery Act of 2010, seeks to enhance the accuracy and integrity of federal payments. As mandated, we assessed whether NASA complied with the requirements of IPIA in FY 2019. We found that NASA did not meet all criteria to achieve compliance with IPIA. Specifically, NASA failed to comply with the requirement to conduct program-specific risk assessments for each Agency program or activity when it did not identify the Space Launch System—NASA's heavy-lift rocket under development—as susceptible to significant improper payments based on available information and established criteria. We also found that NASA continues to exclude cost-type contracts from payment recapture audits and lacks a process to track and accumulate contract credits, which occur when overpayments are returned to the Agency in the form of credits against a future billing. Of our four recommendations, the Agency partially concurred with three and did not concur with one.

NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2019 (IG-20-016, May 15, 2020)

(Report)



Green Run testing of the Space Launch System being conducted on the B-2 Test Stand at Stennis Space Center in January 2020

FISCAL YEAR 2020 RISK ASSESSMENT OF NASA'S CHARGE CARD PROGRAMS

The Government Charge Card Abuse Prevention Act of 2012 requires IGs to conduct periodic assessments of agency purchase and travel card programs to analyze the risk of illegal, improper, or erroneous transactions. We conducted our risk assessment based on FY 2019 purchase and travel card data and information. Overall, we concluded that the risks of illegal, improper, or erroneous purchases and payments through NASA's purchase and travel card programs were moderate and low, respectively.

Fiscal Year 2020 Risk Assessment of NASA's Charge Card Programs (ML-20-004, August 19, 2020)

(Report)

ONGOING AUDIT WORK

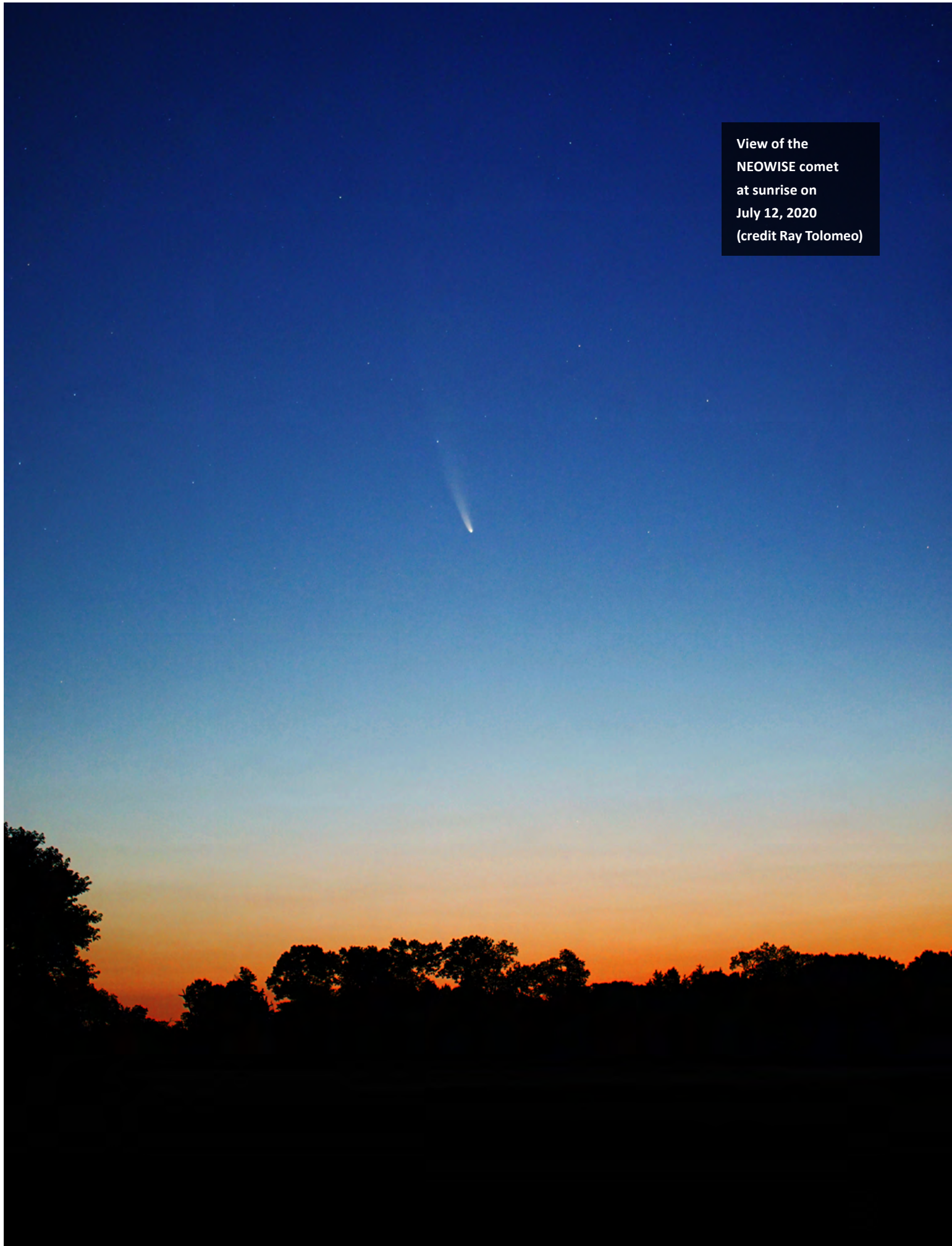
Audit of NASA's Fiscal Year 2020 Financial Statements

The Chief Financial Officers Act of 1990, as amended by the Government Management Reform Act of 1994, requires an annual audit of NASA's consolidated financial statements. We are overseeing the FY 2020 audit conducted by the independent public accounting firm CliftonLarsonAllen LLP.

Desk Reviews of NASA Exchanges' Fiscal Year 2019 Audit Reports

As a part of our continuing oversight of nonfederal audit work performed by independent public accountants under the Inspector General Act of 1978, as amended, we initiated a series of desk reviews of independent public accounting firms' FY 2019 audit reports of NASA's various Exchange and Morale Support Activities. The purpose of our review is to determine whether the audit reports met reporting standards of the Government Accountability Office's *Government Auditing Standards*.

View of the
NEOWISE comet
at sunrise on
July 12, 2020
(credit Ray Tolomeo)



STATISTICAL DATA

TABLE 1: AUDIT PRODUCTS AND IMPACTS

Report No. and Date Issued	Report Title	Impact
Acquisition and Project Management		
IG-20-023, 9/16/2020	NASA's Planetary Science Portfolio	Provided recommendations to improve NASA's management of its planetary science portfolio, reduce risks with the Commercial Lunar Payload Services project, and improve controls to prevent knowledge gaps in its technical workforce
IG-20-022, 9/14/2020	NASA's Management of the Stratospheric Observatory for Infrared Astronomy Program	Provided recommendations to improve SOFIA's productivity and meet the expectations of the Agency and astronomical community
IG-20-015, 5/6/2020	Management of the Low-Boom Flight Demonstrator Project	Provided recommendations to ensure Low-Boom Flight Demonstration Mission success, increase accountability for future X-plane developments, improve Earned Value Management-related processes and reporting, and improve Defense Contract Management Agency involvement with NASA contracts
Space Operations and Human Exploration		
IG-20-018, 7/16/2020	NASA's Management of the Orion Multi-Purpose Crew Vehicle Program	Provided recommendations to increase the sustainability, accountability, and transparency of the Orion Program
Information Technology Security and Governance		
IG-20-021, 8/27/2020	Audit of NASA's Policy and Practices Regarding the Use of Non-Agency Information Technology Devices	Provided recommendations to improve NASA's management of non-NASA IT device access to Agency networks and systems
IG-20-017, 6/25/2020	Evaluation of NASA's Information Security Program under the Federal Information Security Modernization Act for Fiscal Year 2019	Identified improvements in internal controls for IT security through the enhancement of management programs and processes
Financial Management		
ML-20-004 8/19/2020	Fiscal Year 2020 Risk Assessment of NASA's Charge Card Programs	Assessed the risk of illegal, improper, or erroneous transactions
IG-20-016, 5/15/2020	NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2019	Found NASA noncompliant with the IPIA, as amended, and provided specific areas of focus to ensure the Agency complies in subsequent years

TABLE 2: AUDIT PRODUCTS ISSUED AND NOT DISCLOSED TO THE PUBLIC, CURRENT SEMI-ANNUAL REPORT

Report No. and Date Issued	Title	Objective
IG-20-019, 8/11/2020	Limited Quality Control Review of Fiscal Year 2018 Audit of Blue Marble Space Performed by Squar Milner LLP	Determined whether the single audit reporting package and supporting documentation met auditing standards and Office of Management and Budget requirements

TABLE 3: AUDIT RECOMMENDATIONS YET TO BE IMPLEMENTED, CURRENT SEMIANNUAL REPORT

Report No. and Date Issued	Report Title	Date Resolved	Number of Recommendations		Latest Target Completion Date	Potential Cost Savings
			Open	Closed		
Acquisition and Project Management						
IG-20-023, 9/16/2020	NASA's Planetary Science Portfolio	9/16/2020	11	0	11/30/2021	\$0
IG-20-022, 9/14/2020	NASA's Management of the Stratospheric Observatory for Infrared Astronomy Program	9/14/2020	9	0	9/30/2020	\$0
IG-20-015, 5/6/2020	Management of the Low-Boom Flight Demonstrator Project	7/22/2020	6	2	6/30/2021	\$0
Space Operations and Human Exploration						
IG-20-018, 7/16/2020	NASA's Management of the Orion Multi-Purpose Crew Vehicle Program	-	3	0	5/31/2021	\$27,789,122
Information Technology Security and Governance						
IG-20-021, 8/27/2020	Audit of NASA's Policy and Practices Regarding the Use of Non-Agency Information Technology Devices	8/27/2020	5	0	12/15/2021	\$0
IG-20-017, 6/25/2020	Evaluation of NASA's Information Security Program under the Federal Information Security Modernization Act for Fiscal Year 2019	6/25/2020	8	1	10/29/2021	\$0
Financial Management						
IG-20-016, 5/15/2020	NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2019	6/11/2020	4	0	5/31/2021	\$0

TABLE 4: AUDIT RECOMMENDATIONS YET TO BE IMPLEMENTED, PREVIOUS SEMIANNUAL REPORT

Report No. and Date Issued	Report Title	Date Resolved	Number of Recommendations		Latest Target Completion Date	Potential Cost Savings
			Open	Closed		
Acquisition and Project Management						
IG-19-019, 5/29/2019	Management of NASA's Europa Mission	8/8/2019	2	8	12/31/2020	\$0
IG-19-018, 5/7/2019	NASA's Heliophysics Portfolio	5/7/2019	3	1	5/31/2021	\$0
IG-19-014, 3/26/2019	NASA's Engineering and Technical Services Contracts	3/26/2019	3	0	9/15/2021	\$0
IG-18-015, 4/5/2018	NASA's Management of GISS: The Goddard Institute for Space Studies	4/5/2018	1	7	6/30/2020	\$0
IG-18-001, 10/5/2017	NASA's Management of Spare Parts for Its Flight Projects	10/5/2017	2	5	12/31/2021	\$0
IG-17-003, 11/2/2016	NASA's Earth Science Mission Portfolio	11/2/2016	1	1	11/30/2021	\$0

Report No. and Date Issued	Report Title	Date Resolved	Number of Recommendations		Latest Target Completion Date	Potential Cost Savings
			Open	Closed		
Space Operations and Human Exploration						
IG-20-013, 3/17/2020	Audit of NASA's Development of Its Mobile Launchers	3/17/2020	4	0	5/31/2021	\$0
IG-20-012, 3/10/2020	NASA's Management of Space Launch System Program Costs and Contracts	8/21/2020	5	3	4/30/2021	\$0
IG-20-005, 11/14/2019	NASA's Management of Crew Transportation to the International Space Station	11/14/2019	3	2	12/30/2020	\$186,680,000
IG-18-021, 7/30/2018	NASA's Management and Utilization of the International Space Station	7/30/2018	3	2	12/31/2020	\$0
IG-18-016, 4/26/2018	Audit of Commercial Resupply Services to the International Space Station	8/9/2018	1	4	10/30/2020	\$0
IG-17-017, 4/13/2017	NASA's Plans for Human Exploration Beyond Low Earth Orbit	8/10/2017	1	5	12/30/2020	\$0
IG-17-012, 3/9/2017	NASA's Management of Electromagnetic Spectrum	3/9/2017	1	1	7/31/2020	\$0
IG-16-015, 3/28/2016	Audit of the Spaceport Command and Control System	3/28/2016	1	0	2/14/2021	\$0
IG-15-023, 9/17/2015	NASA's Response to Orbital's October 2014 Launch Failure: Impacts on Commercial Resupply of the International Space Station	12/2/2015	1	6	12/31/2020	\$0
IG-14-026, 7/22/2014	Audit of Space Network's Physical and Information Technology Security Risks	7/22/2014	1	3	10/30/2020	\$0
Information Technology Security and Governance						
IG-20-011, 3/3/2020	NASA's Management of Distributed Active Archive Centers	3/3/2020	2	1	3/31/2024	\$0
IG-19-022, 6/18/2019	Cybersecurity Management and Oversight at the Jet Propulsion Laboratory	12/4/2019	4	6	9/30/2021	\$0
IG-18-020, 5/23/2018	Audit of NASA's Security Operations Center	6/5/2018	2	4	1/15/2021	\$0
IG-18-019, 5/24/2018	Audit of NASA's Information Technology Supply Chain Risk Management Efforts	5/24/2018	2	5	9/17/2020	\$0
IG-12-017, 8/7/2012	Review of NASA's Computer Security Incident Detection and Handling Capability	8/7/2012	2	1	4/30/2021	\$0

Report No. and Date Issued	Report Title	Date Resolved	Number of Recommendations		Latest Target Completion Date	Potential Cost Savings
			Open	Closed		
Infrastructure						
IG-20-001, 10/21/2019	NASA's Security Management Practices	10/21/2019	6	2	1/31/2022	\$0
IG-19-013, 3/19/2019	NASA's Progress with Environmental Remediation Activities at the Santa Susana Field Laboratory	3/19/2019	1	1	12/31/2020	\$193,000,000
IG-19-002, 10/22/2018	Audit of NASA's Historic Property	2/5/2019	4	1	2/1/2021	\$0
IG-17-021, 5/17/2017	Construction of Test Stands 4693 and 4697 at Marshall Space Flight Center	10/5/2017	3	0	7/31/2021	\$17,115,009
Financial Management						
IG-20-009, 12/17/2019	Fiscal Year 2019 Financial Accounting Management Letter	12/17/2019	32	0	12/31/2020	\$0
IG-20-008, 12/13/2019	Fiscal Year 2019 Financial Statement Audit Information Technology Management Letter	12/13/2019	16	0	12/31/2020	\$0
IG-20-006, 11/15/2019	Audit of NASA's Fiscal Year 2019 Financial Statements	11/15/2019	7	0	11/30/2020	\$0
IG-20-004, 11/7/2019	Review of NASA's Fiscal Year 2019 Digital Accountability and Transparency Act Submission	11/7/2019	2	3	11/30/2020	\$0
IG-20-003, 11/5/2019	Fiscal Year 2019 Vulnerability Assessment and Penetration Testing of NASA's Financial Network	11/5/2019	9	0	11/30/2020	\$0
IG-19-020, 6/3/2019	NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2018	6/3/2019	2	1	5/31/2021	\$0
IG-18-017, 5/14/2018	NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2017	5/14/2018	2	1	5/31/2021	\$0
IG-15-015, 5/15/2015	NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2014	5/15/2015	1	9	5/31/2021	\$0

TABLE 5: AUDITS WITH QUESTIONED COSTS

	Number of Audit Reports	Total Questioned Costs	Total Unsupported Costs
Management decisions pending, beginning of reporting period	0	\$0	\$0
Issued during period	1	\$27,789,122	\$0
Needing management decision during period	1	\$27,789,122	\$0
Management Decision Made During Period			
Amounts agreed to by management	0	\$0	\$0
Amounts not agreed to by management	1	\$27,789,122	\$0
No Management Decision at End of Period			
Less than 6 months old	0	\$0	\$0
More than 6 months old	0	\$0	\$0

Notes: Questioned Costs (the Inspector General Act of 1978, as amended) are costs 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.

“Management Decision” (the Inspector General Act of 1978, as amended) 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 6: AUDITS WITH RECOMMENDATIONS THAT FUNDS BE PUT TO BETTER USE

	Number of Audit Reports	Funds to Be Put to Better Use
Management decisions pending, beginning of reporting period	0	\$0
Issued during period	0	\$0
Needing management decision during period	0	\$0
Management Decision Made During Period		
Amounts agreed to by management	0	\$0
Amounts not agreed to by management	0	\$0
No Management Decision at End of Period		
Less than 6 months old	0	\$0
More than 6 months old	0	\$0

Note: Recommendation that Funds Be Put to Better Use (the Inspector General Act of 1978 definition) is 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.)

TABLE 7: STATUS OF SINGLE AUDIT FINDINGS AND QUESTIONED COSTS RELATED TO NASA AWARDS

Audits with Findings	11	
Findings and Questioned Costs		
	Number of Findings	Questioned Costs
Management decisions pending, beginning of reporting period	10	\$0
Findings added during reporting period	16	\$9,858
Management decisions made during reporting period	(22)	—
Agreed to by management	—	\$0
Not agreed to by management	—	\$0
Management decisions pending, end of reporting period	4	\$9,858

Note: The Single Audit Act, as amended, requires federal award recipients to obtain audits of their federal awards. The data in this table is provided by NASA.

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.

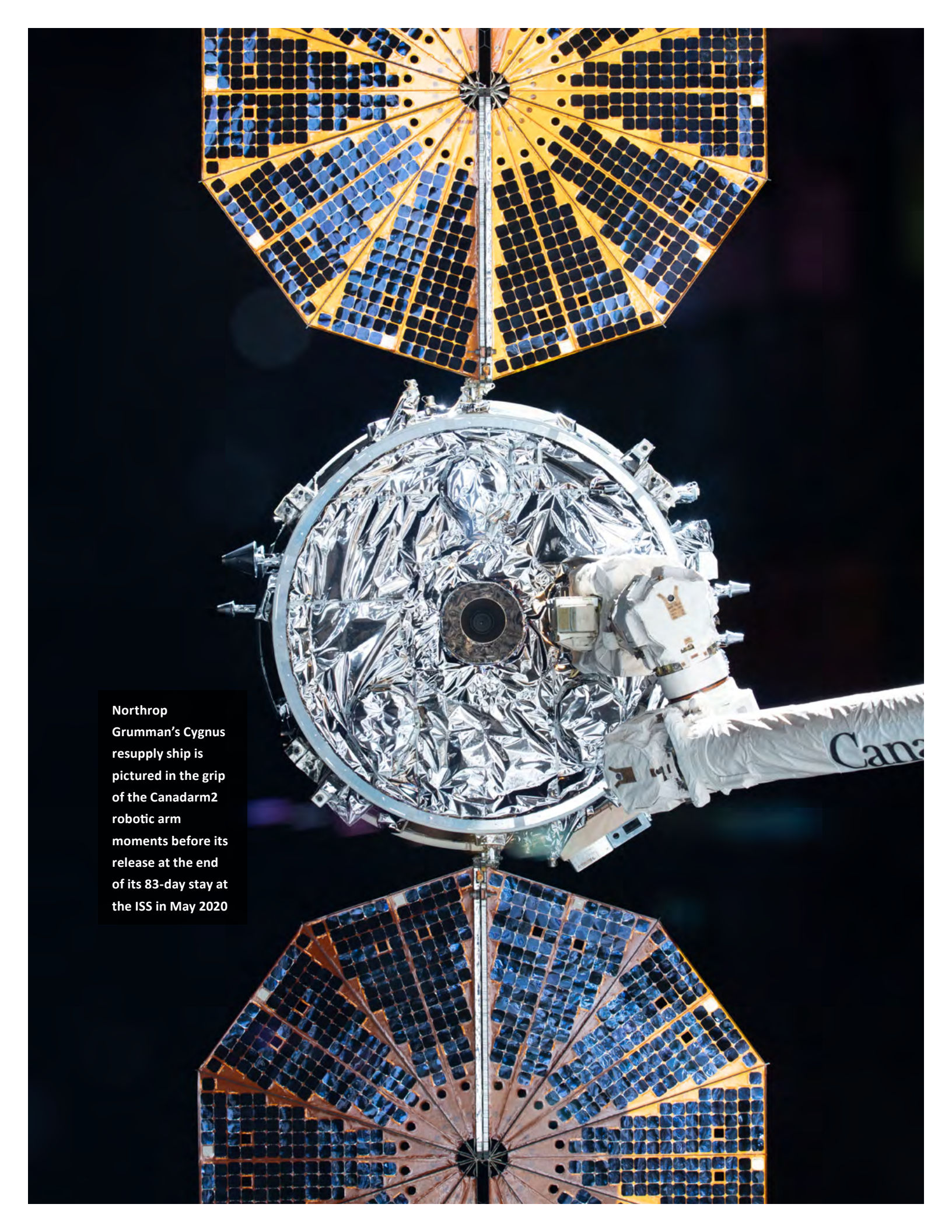
DCAA AUDIT REPORTS ISSUED

During this period, DCAA issued 18 audit reports involving contractors who do business with NASA. Corrective actions taken in response to DCAA audit report recommendations usually result from negotiations between the contractors and the government contracting officer with cognizant responsibility (e.g., the Defense Contract Management Agency and NASA). The agency responsible for administering the contract negotiates recoveries with the contractor after deciding whether to accept or reject the questioned costs and recommendations that funds 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 agreed-upon amounts.

TABLE 8: DCAA AUDIT REPORTS WITH QUESTIONED COSTS AND RECOMMENDATIONS THAT FUNDS BE PUT TO BETTER USE

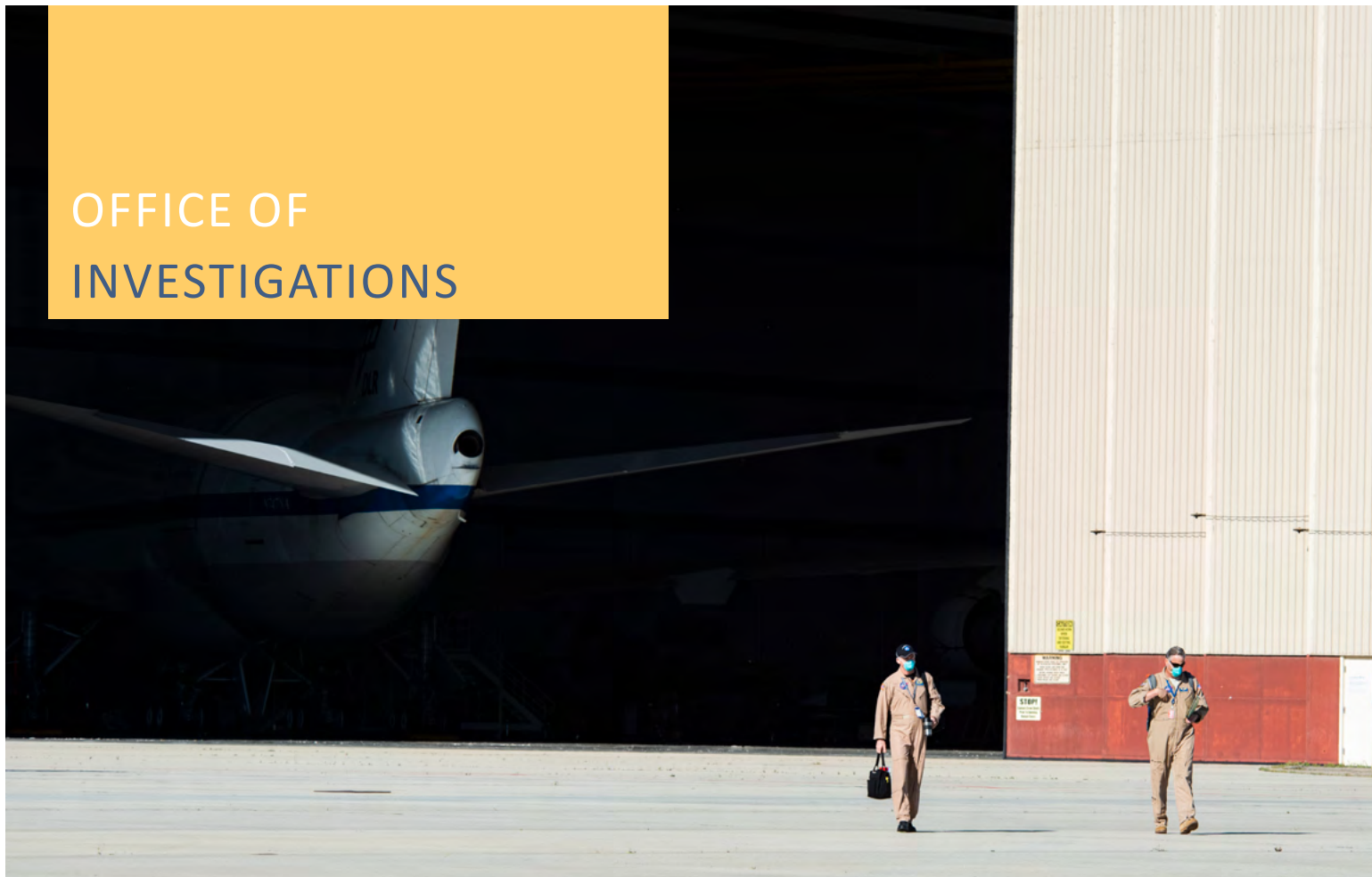
	Amounts in Issued Reports	Amounts Agreed To
Questioned costs	\$0	\$0
Funds to be put to better use	\$23,348,000	\$12,217,000

Note: This data is provided to 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.



Northrop
Grumman's Cygnus
resupply ship is
pictured in the grip
of the Canadarm2
robotic arm
moments before its
release at the end
of its 83-day stay at
the ISS in May 2020

OFFICE OF INVESTIGATIONS



A flight crew from Armstrong Flight Research Center prepares to fly staff from the Jet Propulsion Laboratory on an Armstrong G-III aircraft from California to Kennedy Space Center in Florida; JPL staff were completing critical work to ensure that NASA's Mars 2020 mission was ready on time

The Office of Investigations investigates fraud, waste, abuse, misconduct, and mismanagement involving NASA personnel and contractors.

EMPLOYEE MISCONDUCT

Former NASA Administrator and Executive Assistant Misused Agency Resources

A NASA OIG investigation found that a former NASA Administrator continued to receive significant support from a NASA executive assistant for almost 2 years after the former Administrator departed the Agency. The assistance included managing the former Administrator's personal and business appointments, making travel arrangements, and coordinating special requests. The former Administrator hired the executive assistant as an employee of his private consulting business upon the individual's retirement from the Agency. The OIG investigation also found that the executive assistant asked other NASA employees to use government time and resources to assist the former Administrator's private consulting work. In doing so, the executive assistant used government resources and official time for an unauthorized purpose.

PROCUREMENT, ACQUISITION, AND GRANT FRAUD

Contractor Agrees to Civil Settlement

A New Mexico-based contractor that provided fire protection services at Ames Research Center agreed to pay \$1.2 million to NASA to resolve allegations that it made false claims by overcharging the Agency hundreds of thousands of dollars in inflated workers' compensation rates.

University Agrees to Repay Rebate and Credit Charges

After a multi-year investigation by the NASA OIG, U.S. Department of Health and Human Services OIG, U.S. Army Criminal Investigation Command, National Science Foundation OIG, and U.S. Department of Education OIG, the University of Virginia agreed to repay the federal government \$1 million for rebates and credits it should have credited to the government across numerous contracts spanning several years. The settlement covered all claims on behalf of the government and returned the \$1 million to the U.S. Treasury.

Contractor Agrees to Civil Settlement

As the result of an investigation by NASA OIG, a Colorado Springs, Colorado, small business agreed to a settlement of \$374,184 to resolve allegations that it accepted Small Business Innovation Research (SBIR) grants from NASA and the U.S. Department of Energy that its principal investigator was not eligible to receive.

Former Contractors Agree to Civil Settlements

Based on an investigation by NASA OIG, two former contractors, one of whom previously pleaded guilty to conspiracy to commit wire fraud, reached civil settlements with the U.S. Department of Justice wherein each agreed to pay the government \$250,000. These settlements resulted from the submission of materially false statements in proposals for awards to NASA's, the National Science Foundation's, and the Department of Energy's SBIR programs.

University Agrees to Settlement to Resolve False Claims Act Allegations

A settlement agreement resolved allegations under the False Claims Act relating to SBIR grants awarded to a company owned by a former Lehigh University professor. As a result, the university agreed to pay \$200,000 and abide by compliance requirements in connection with any application seeking grant funding or cooperative agreements with any federal agency.

NASA Recovers Grant Funds

An investigation by NASA OIG determined a grant awardee was ineligible for the NASA SBIR awards it received based on its venture capital composition. As a result, the company returned the \$1 million grant to NASA.

University Resolves Potential False Claims Liability

A joint investigation by the NASA OIG, Naval Criminal Investigative Service, National Science Foundation OIG, U.S. Air Force Office of Special Investigations, and Defense Criminal Investigative Service resulted in a \$151,000 settlement under the False Claims Act. The investigation alleged that Pennsylvania State University mischarged the federal government on various grants and contracts. The university cooperated with the investigation and implemented policy changes to prevent future mischarges.

Former Subcontractor Employee Sentenced

A former subcontractor quality assurance engineer was sentenced to 3 years of supervised release and ordered to pay \$126,813 in restitution after pleading guilty to falsifying inspection reports and test certifications for flight-critical components to be used on Space Exploration Technologies Corporation (SpaceX) rocket missions for NASA, the U.S. Air Force, and the National Oceanic and Atmospheric Administration.

Seven Sentenced for Defrauding Federal Agencies

A NASA OIG investigation revealed numerous individuals and companies conspired to defraud the government by obtaining over \$15 million in contracts under programs designed to provide government contracts to disabled veterans and socially and economically disadvantaged individuals or entities. Following a guilty verdict and several plea agreements, seven individuals were sentenced in the U.S. District Court for the Northern District of Ohio. These sentences ranged from 1 to 3 years of probation and home confinement and included fines ranging from \$5,000 to \$15,000.

Small Business Owner Pleads Guilty to Defrauding Federal Agencies

A Delaware man pleaded guilty to intentionally making false representations in grant proposals and payment requests to several federal agencies, including NASA. The total loss attributable to the conduct was between \$250,000 and \$500,000. Sentencing is scheduled for November 2020.

University Researcher Indicted

A University of Arkansas researcher was indicted on 42 counts of wire fraud and 2 counts of passport fraud for concealing his affiliation with various companies based in China while simultaneously receiving grants from the U.S. government. The researcher failed to disclose these conflicts, even when required to do so by a federal law that prohibits the use of appropriated funds on collaborative projects with China or its universities. The researcher has been suspended from government contracting pending resolution of the criminal case.

Individual Charged with False Statements and Altering Records

A federal grand jury indicted the ex-spouse of a NASA civil servant for making false statements and altering records in a federal investigation. A NASA OIG investigation determined the individual altered NASA emails and fabricated threatening text messages in an effort to frame her ex-husband.

University Researcher Indicted

A Texas A&M University researcher was indicted on one count of conspiracy, seven counts of wire fraud, and nine counts of making false statements for concealing his affiliation with a university in China while receiving grants from NASA. The researcher failed to disclose his affiliation with the Chinese university when specifically required to do so by a federal law that prohibits the use of appropriated funds on collaborative projects with China or its universities.

Former Space Launch System Subcontractor Debarred

A former Kennedy Space Center subcontractor employee was debarred from federal procurement activities for a period of 3 years after being convicted on charges of mail fraud and false statements. A NASA OIG investigation determined the employee knowingly supplied to the Space Launch System Program inferior products and concealed their country of manufacture.

Former NASA Contractor Employee Debarred

A former NASA contractor employee at Kennedy Space Center was debarred from federal procurement activities for a period of 4 years after an extensive investigation substantiated the contractor employee stalked and harassed multiple female employees over the course of several years. As part of a pre-trial diversion program with the state of Florida, the employee completed 12 months of supervised release.

Former NASA Contractor Debarred

A former NASA contractor was debarred from federal procurement activities for a period of 10 years after pleading guilty to mail fraud for falsifying test results on critical rocket hardware. The contractor was previously sentenced to 37 months of incarceration and 2 years of supervised release and ordered to pay \$170,825 in restitution.

Former General Manager Suspended

The former general manager of a Titusville, Florida, engineering and construction firm was suspended from federal procurement activities after being indicted for conspiracy and wire fraud for misrepresenting his company as a woman-owned small business in order to gain an unfair competitive advantage for a subcontract at Kennedy Space Center.

STATISTICAL DATA

TABLE 9: OFFICE OF INVESTIGATIONS COMPLAINT INTAKE DISPOSITION

Source of Complaint	Zero Files ^a	Administrative Investigations ^b	Management Referrals ^c	Preliminary Investigations ^d	Total
Hotline	9	8	3	14	34
All others	27	12	3	68	110
Total	36	20	6	82	144

^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 10: FULL INVESTIGATIONS OPENED THIS REPORTING PERIOD

Full Criminal/Civil Investigations ^a	25
---	----

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

TABLE 11: INVESTIGATIONS CLOSED THIS REPORTING PERIOD

Full, Preliminary, and Administrative Investigations	102
--	-----

Note: NASA OIG uses closing memorandums to close investigations. Investigative reports are used for presentation to judicial authorities, when requested.

TABLE 12: CASES PENDING AT END OF REPORTING PERIOD

Preliminary Investigations	79
Full Criminal/Civil Investigations	129
Administrative Investigations	66
Total	274

TABLE 13: QUI TAM INVESTIGATIONS

Qui Tam Matters Opened This Reporting Period	4
Qui Tam Matters Pending at End of Reporting Period	11

Note: The number of Qui Tam investigations is a subset of the total number of investigations opened and pending.

TABLE 14: JUDICIAL ACTIONS

Total Cases Referred for Prosecution ^a	38
Individuals Referred to the Department of Justice ^b	36
Individuals Referred to State and Local Authorities ^b	2
Indictments/Informations ^c	5
Convictions/Plea Bargains	1
Sentencing/Pretrial Diversions	10
Civil Settlements/Judgments	7

^a This includes all referrals of individuals and entities to judicial authorities.

^b The number of individuals referred to federal, state, and local authorities are a subset of the total cases referred for prosecution.

^c This includes indictments/informations on current and prior referrals.

TABLE 15: ADMINISTRATIVE ACTIONS

Referrals	
Referrals to NASA Management for Review and Response	6
Referrals to NASA Management—Information Only	9
Referrals to the Office of Audits	5
Referrals to Security or Other Agencies	3
Total	23
Recommendations to NASA Management	
Recommendations for Disciplinary Action	
Involving a NASA Employee	3
Involving a Contractor Employee	4
Involving a Contractor Firm	3
Other	—
Recommendations on Program Improvements	
Matters of Procedure	4
Total	14
Administration/Disciplinary Actions Taken	
Against a NASA Employee	1
Against a Contractor Employee	4
Against a Contractor Firm	1
Procedural Change Implemented	10
Total	16
Suspensions or Debarments from Government Contracting	
Involving an Individual	10
Involving a Contractor Firm	1
Total	11

TABLE 16: INVESTIGATIVE RECEIVABLES AND RECOVERIES

Judicial	\$3,610,562
Administrative ^a	\$1,192,844
Total ^b	\$4,803,405
Total NASA	\$2,532,887

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

^b Total amount collected may not solely be returned to NASA but may be distributed to other federal agencies.

TABLE 17: WHISTLEBLOWER INVESTIGATIONS

For the reporting period, no officials were found to have engaged in retaliation.

TABLE 18: SENIOR GOVERNMENT EMPLOYEE INVESTIGATIONS REFERRED FOR PROSECUTION

Case Number	Allegation	Referral Date	Disposition
20-0006-P	Conflict of interest	2/18/2020	Declined

TABLE 19: SENIOR GOVERNMENT EMPLOYEE CASES NOT DISCLOSED TO THE PUBLIC

Case Number	Closure Date	Allegation	Disposition
20-0006-P	8/21/2020	Conflict of interest	Employee resigned from the Agency

CONGRESSIONAL TESTIMONY



This image of the United States, captured by NASA's Aqua satellite on September 15, 2020, shows fires in the West, the smoke from those fires drifting over the country, several hurricanes converging from different angles, and Hurricane Sally making landfall

CYBERSECURITY AT NASA: ONGOING CHALLENGES AND EMERGING ISSUES FOR INCREASED TELEWORK DURING COVID-19

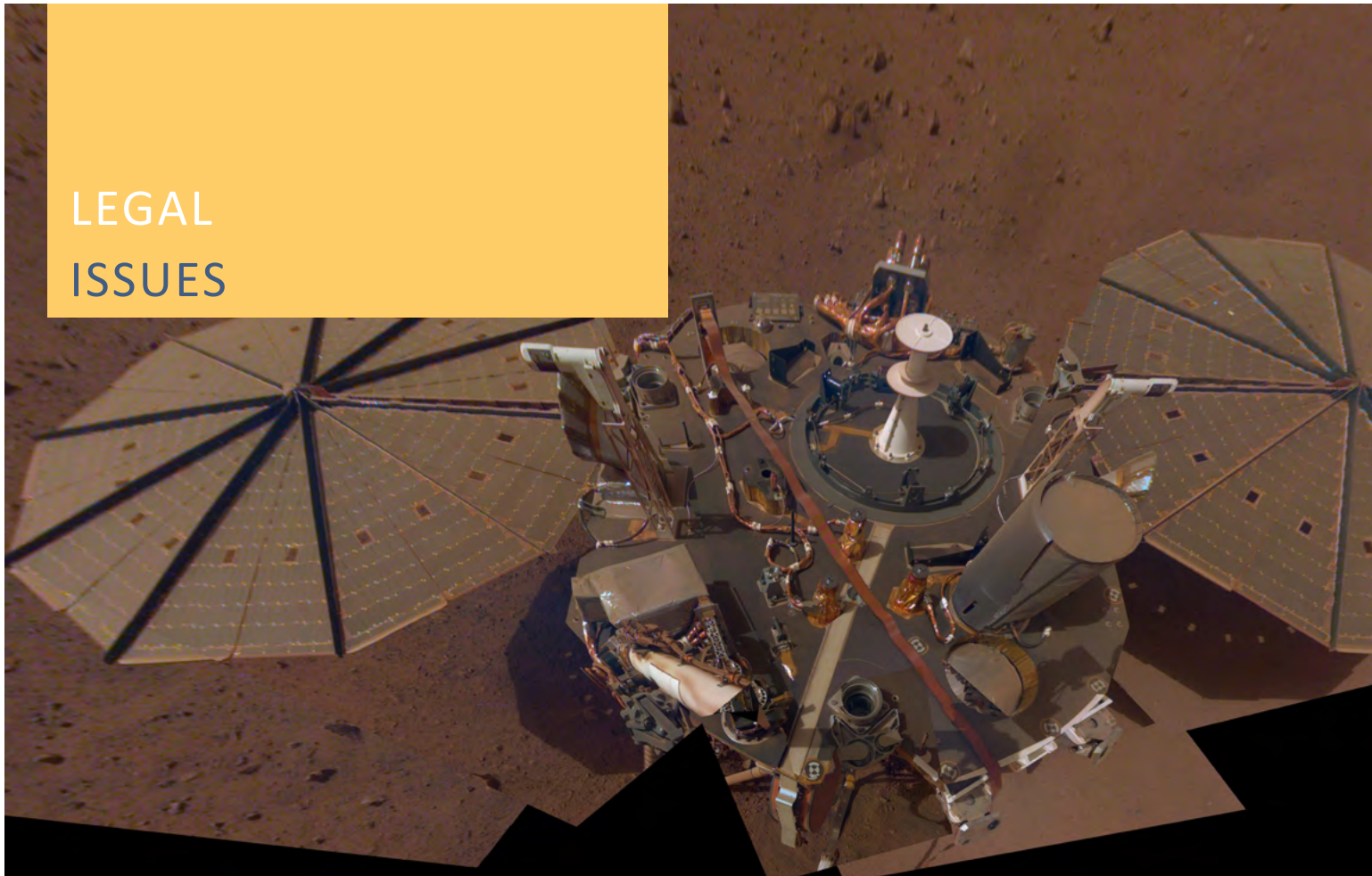
On September 18, 2020, IG Martin testified before the U.S. House Committee on Science, Space, and Technology's Subcommittee on Space and Aeronautics about the challenges NASA faces to improve its IT governance while securing its networks and systems from cybersecurity attacks. Given NASA's mission and the valuable technical and intellectual capital it produces, the Agency's IT infrastructure presents a high-value target for hackers and cyber criminals. During the hearing, IG Martin noted that concerns with NASA's IT governance and security are long-standing and reoccurring, and securing the Agency's IT systems and data has remained a top challenge for nearly the past 20 years. This year in particular, NASA's ability to manage its IT systems and maintain adequate security has been further tested as more than 90 percent of the workforce is teleworking due to the COVID-19 pandemic, and the Agency has experienced an uptick in cyber threats, including phishing attempts and malware attacks.

IG Martin also cited the OIG's work over the past 5 years, including issuing 16 audit reports with 72 recommendations related to IT governance and security, as well as over 120 investigations involving intrusions, malware, and data breaches. Although IG Martin highlighted actions that the Agency has taken to improve its IT governance structure and overall security posture, including moving to a more centralized model that consolidates IT capabilities, he also testified that consistently securing NASA's IT systems and data while facilitating innovative, user-friendly IT practices will require sustained improvements in NASA's overarching IT governance and security practices. IG Martin stated: "Without such sustained improvement, NASA will face continuing challenges in reducing the risk of cyberattacks that expose sensitive information or jeopardize intellectual property."

Cybersecurity at NASA: Ongoing Challenges and Emerging Issues for Increased Telework during COVID-19

(Testimony)

LEGAL ISSUES



NASA InSight's second full selfie on Mars is a mosaic made up of 14 images taken on March 15 and April 11, 2019

WHISTLEBLOWER MATTERS

NATIONAL WHISTLEBLOWER APPRECIATION DAY

On July 30, 2020, NASA OIG issued a memorandum to all NASA civil servant and contractor employees highlighting the history and significance of National Whistleblower Appreciation Day. The notice cited the story of 10 sailors during the American Revolution who reported wrongdoing and abuses committed by

the highest-ranking officer in the Continental Navy that included mistreatment of British prisoners. Although the whistleblowers endured scorn, ridicule, and retaliation, the courts validated their allegations and the naval officer was brought to justice. Inspired by the patriotism and selflessness of those sailors, on July 30, 1778, our Founding Fathers passed the nation's first whistleblower law.

REGULATORY REVIEW

During this reporting period, we reviewed 22 NASA regulations and policies under consideration by the Agency. The following are the more significant regulations and reviews.

NASA PROCEDURAL REQUIREMENTS (NPR) 1900.3C, ETHICS PROGRAM MANAGEMENT

NPR 1900.3C implements the Agency Ethics Program, as set forth in NASA Policy Directive 1900.9, *Ethics Program Management*, and ensures that NASA complies with applicable ethics laws, regulations, executive orders, and directives. The NPR was updated to bring it current with applicable legal law and policy, to address the degree of Headquarters oversight of the Ethics Program, and to establish processes for handling ethics matters more consistently Agency-wide. We submitted comments and recommendations intended to improve the overall readability of the document and to clarify how the roles and responsibilities specified in the NPR are to be implemented within the OIG.

NPR 3713.3, ANTI-HARASSMENT PROCEDURES

NPR 3713.3 was revised to enhance efficiency and effectiveness in the Anti-Harassment Program. Specifically, the revisions provide greater consistency in the process across the Agency and incorporate additional guidance on key process elements. The document (1) expands the definition of the term "harassment" to include non-Equal Employment Opportunity-based behaviors as a matter of policy, (2) sets specific time frames to better ensure prompt handling of allegations, (3) expands the pool of decision-makers to address concerns relating to the appearance of impartiality in the process, (4) provides for the utilization of conflict resolution techniques in limited circumstances, and (5) incorporates performance standards for Center

Anti-Harassment Coordinators. We submitted several comments intended to clarify both the fact-finding and disciplinary processes related to allegations of harassment and to improve training for those assigned as fact-finders in harassment investigations. We also recommended revisions that preserve certain aspects of the IG's independent statutory personnel authority.

NPR 4320 DRAFT 23, IDENTIFICATION AND RECOVERY OF NASA PERSONAL PROPERTY

NPR 4320 is new and establishes requirements and a standardized process for identifying, determining ownership of, and when necessary, recovering NASA property. Each year, the Office of Strategic Infrastructure's Logistics Management Division receives increasing numbers of requests to identify and establish clear lines of ownership for personal property that is known to be, or suspected to be, NASA property. In response, significant time and effort is expended. Without clear requirements and a process in place to deal with these inquiries, oversights and duplication of work is inevitable. We submitted comments intended to improve and clarify the property recovery process, particularly with respect to the roles of the Office of the General Counsel and OIG.



NASA astronaut Jessica Meir gives a thumbs-up after landing in a Soyuz spacecraft with cosmonaut Oleg Skripochka and astronaut Andrew Morgan

NPR 8715 DRAFT 25, PLANETARY PROTECTION PROVISIONS FOR ROBOTIC EXTRATERRESTRIAL MISSIONS

NPR 8715 defines roles, responsibilities, and procedural requirements to control the risk of harmful contamination, protect the integrity of the search for and study of extraterrestrial life, and prevent potentially harmful consequences for humans and the Earth's environment during the return of samples from restricted destinations. We submitted comments intended to improve the readability of the document and to ensure proper coordination occurs with other NASA functions with overlapping concerns.

STATISTICAL DATA

TABLE 20: LEGAL ACTIVITIES AND REVIEWS

Freedom of Information Act Matters	26
Appeals	1
Inspector General Subpoenas Issued	55
Regulations Reviewed	22



APPENDICES

Appendix A. Inspector General Act Reporting Requirements	43
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Radiation detectors, like this one on the ISS, search for potentially hazardous cosmic radiation penetrating the Station



APPENDIX A. INSPECTOR GENERAL ACT REPORTING REQUIREMENTS

Inspector General Act Citation	Requirement Definition	Cross Reference Page Numbers
Section 4(a)(2)	Review of legislation and regulations	37–38
Section 5(a)(1)	Significant problems, abuses, and deficiencies	4–18
Sections 5(a)(5) and 6(b)(2)	Summary of refusals to provide information	—
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	20–25
Section 5(a)(8)	Total number of reports and total dollar value for audits with questioned costs	24
Section 5(a)(9)	Total number of reports and total dollar value for audits with recommendations that funds be put to better use	24
Section 5(a)(10)(A)	Summary of audit products issued before this semiannual reporting period for which no management decision has been made	—
Section 5(a)(10)(B)	Reports issued before this semiannual reporting period for which no Agency comment was provided within 60 days	—
Section 5(a)(10)(C)	Unimplemented recommendations and associated potential cost savings for Office of Audit products issued before this semiannual reporting period	21–23
Section 5(a)(11)	Description and explanation of significant revised management decisions	—
Section 5(a)(12)	Significant management decisions with which the Inspector General disagreed	—
Section 5(a)(13)	Reporting in accordance with Section 5(b) of the Federal Financial Management Improvement Act of 1996 Remediation Plan	—
Section 5(a)(14)	Peer review conducted by another OIG	44
Section 5(a)(15)	Outstanding recommendations from peer reviews of NASA OIG	44
Section 5(a)(16)	Outstanding recommendations from peer reviews conducted by NASA OIG	44
Section 5(a)(17)(A)	Summary of investigations	28–30
Section 5(a)(17)(B)(C) and (D)	Matters referred to prosecutive authorities	32
Section 5(a)(18)	Descriptions of table metrics	31–33
Section 5(a)(19)(A) and (B)(i)(ii)	Summary of investigations involving senior government employees	33
Section 5(a)(20)	Summary of whistleblower investigations	33
Section 5(a)(21)(A) and (B)	Agency attempts to interfere with OIG independence	—
Section 5(a)(22)(A)	Closed inspections, evaluations, and audits not disclosed to the public	20
Section 5(a)(22)(B)	Closed investigations of senior government employees not disclosed to the public	33

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 or performed by the Office of Audits during this semiannual period. The date of the last external peer review of NASA OIG was August 13, 2018, and it was conducted by the U.S. Office of Personnel Management OIG. NASA OIG received a peer review rating of “pass,” and there are no outstanding recommendations from the review.

On November 25, 2019, we completed a peer review that examined the system of quality control for the Federal Deposit Insurance Corporation (FDIC) OIG’s Office of Program Audits and Evaluations and Office of Information Technology Audits and Cyber in effect for the 12-month period ending March 31, 2019. We assigned a rating of “pass” for the period reviewed. We also communicated additional findings and

recommendations that required attention by FDIC OIG managers but were not considered of sufficient significance to affect the opinion expressed in our report. FDIC OIG informed us that it has implemented or will implement the recommendations we made in our review. We have no outstanding recommendations related to this or past peer reviews that we have conducted.

OFFICE OF INVESTIGATIONS

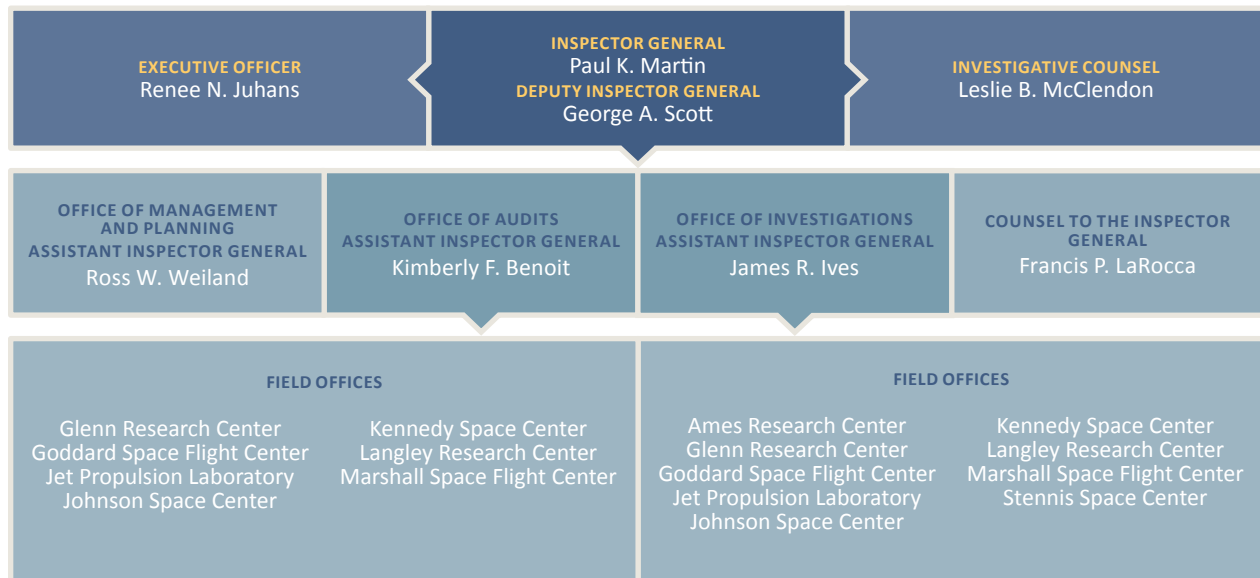
No external peer reviews were performed by the Office of Investigations during this semiannual period. In October 2017, the Office of the Special Inspector General for the Troubled Asset Relief Program reviewed the NASA OIG’s Office of Investigations and found the office to be compliant with all relevant guidelines. There are no unaddressed recommendations outstanding from this review.

APPENDIX C. ACRONYMS

DCAA	Defense Contract Audit Agency	IT	information technology
FDIC	Federal Deposit Insurance Corporation	LBFD	Low-Boom Flight Demonstrator
FISMA	Federal Information Security Modernization Act of 2014	NPR	NASA Procedural Requirements
FY	fiscal year	OIG	Office of Inspector General
IG	Inspector General	PSD	Planetary Science Division
IPIA	Improper Payments Information Act of 2002	SBIR	Small Business Innovation Research
ISS	International Space Station	SOFIA	Stratospheric Observatory for Infrared Astronomy
		USRA	Universities Space Research Association

APPENDIX D. OFFICE OF INSPECTOR GENERAL ORGANIZATIONAL CHART

The OIG is currently funded under a continuing resolution through December 11, 2020, at the FY 2020 level of \$41.7 million. This budget supports the work of 179 employees in their audit, investigative, and administrative activities.



THE NASA OFFICE OF INSPECTOR GENERAL

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 INSPECTOR GENERAL

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, Counsel, and Investigative 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 conducts independent and objective audits and reviews of NASA programs, projects, operations, and contractor activities. In addition, the Office 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 Office is responsible for educating Agency

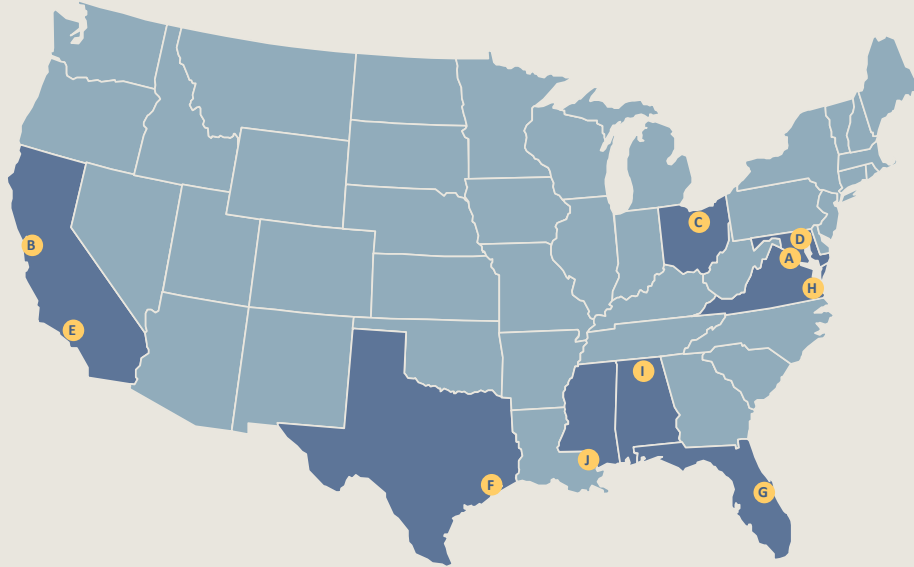
employees about prohibitions on retaliation for protected disclosures and about rights and remedies for protected whistleblower disclosures.

THE OFFICE OF INVESTIGATIONS investigates allegations of cybercrime, fraud, waste, abuse, and misconduct that may affect NASA programs, projects, operations, and resources. The Office 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, the Office 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 IT services and support to OIG staff.

APPENDIX E. MAP OF OIG 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: 650-604-3682 (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: 216-433-5414 (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: 818-354-3451

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: 562-951-5485

F JOHNSON SPACE CENTER

NASA Office of Inspector General
Johnson Space Center
2101 NASA Parkway
Houston, TX 77058-3696

Office of Audits
Mail Stop W-JS
Building 1, Room 161
Tel: 281-483-9572

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: 321-867-4093 (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
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Marshall Space Flight Center, AL
35812-0001
Tel: 256-544-0501 (Audits)
Tel: 256-544-9188 (Investigations)

J STENNIS SPACE CENTER

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Stennis Space Center, MS 39529-6000
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TDD: 1-800-535-8134

<https://oig.nasa.gov/cyberhotline.html>

If you fear reprisal, contact the
OIG Whistleblower Protection Coordinator to learn more about your rights:

<https://oig.nasa.gov/whistleblower.html>

<https://oig.nasa.gov>

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