NASA OFFICE OF INSPECTOR GENERAL

SEMIANNUAL REPORT

APRIL 1–SEPTEMBER 30, 2021

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Cover image:
Artist conception of the James Webb Space Telescope.

FROM THE INSPECTOR GENERAL

During this reporting period, the NASA Office of Inspector General (OIG) operated exclusively in a telework mode due to the COVID-19 pandemic that has closed NASA facilities except for mission-critical work. Nevertheless, NASA OIG auditors, investigators, attorneys, and support staff continued to conduct impactful, independent, and comprehensive oversight of NASA programs and personnel.

The impressive results of their efforts detailed in this report include:

- An audit that examined NASA's development of next-generation spacesuits for International Space Station (ISS or Station) and Artemis missions. The team found that multiple challenges developing these next-generation spacesuits will preclude the Agency from meeting its goal of a 2024 Moon landing. Moreover, with the Agency's plans to invest $625 million more in spacesuit development, the program will spend more than $1 billion through 2025 to develop the first two flight-ready spacesuits.

- An investigation by our Special Agents and Cyber Crimes Division staff, which resulted in a guilty plea by a former NASA senior executive for fraudulently applying for and receiving three Coronavirus Aid, Relief, and Economic Security (CARES) Act pandemic relief loans totaling more than $285,000. The former official was sentenced to 18 months of imprisonment and 3 years of supervised release, and was ordered to pay $285,449 in restitution.

- An infographic by our graphics and audit team that illustrates the U.S. fleet of launch vehicles NASA relies on to support satellite launches to Earth orbit, cargo and crew missions to the ISS, lunar exploration, and interplanetary science missions.

- An audit report that examined the state of NASA's cybersecurity readiness, given the Agency's advanced technology that makes its computer systems and networks an attractive target for cyber intruders. The team found that NASA's ability to prevent, detect, and mitigate cyberattacks is limited by a disorganized approach to Enterprise Architecture and that its assessment and authorization of information technology (IT) systems are inconsistent and ineffective.

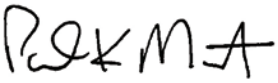
- A case by our Office of Investigations that resulted in the conviction at trial of a former general manager of a Florida small business on multiple counts of conspiracy and wire fraud for misrepresenting the company as a woman-owned small business in a scheme to secure government contracts. The company had received more than $6 million in fraudulently obtained contract payments, to include $1 million during the former general manager's tenure. Three other company executives previously pleaded guilty to felony charges related to the long-running conspiracy.

- An audit that reviewed how the Agency addresses its aging infrastructure and maintenance backlog. The team found that the process for selecting and prioritizing facilities projects is largely driven by NASA Centers, regardless of their importance to the Agency's overall mission needs. In addition, Agency policy does not distinguish between the use of institutional and programmatic funds, resulting in specialized facilities for testing and development being built with institutional funds, which dilutes the funds available for critical repairs and support of more traditional institutional requirements.
- An audit that examined NASA's expenditure of $60 million in emergency funds provided by the CARES Act to respond to the coronavirus. The team found the Agency appropriately managed the funds to meet congressional mandates as well as federal and Agency guidance.
- An investigation that led to the ex-spouse of a Kennedy Space Center (Kennedy) contracting officer pleading guilty to felony charges for altering official government records in order to implicate her ex-husband. The investigation revealed the woman altered government emails and fabricated text messages to make it appear that her ex-husband had made death threats toward her.

I remain extremely proud of the NASA OIG staff for their continued professionalism and resilience during these challenging times.

Finally, we note with deep sadness the passing of Special Agent Wade M. Krieger from our Kennedy office who died in August 2021 from complications related to COVID-19. Wade—who served 21 years with the NASA OIG—was a highly skilled criminal investigator with a remarkable ability to communicate complex engineering and contractual concepts in his cases. He is greatly missed by his family and OIG friends and colleagues.

This Semiannual Report summarizes the OIG's activities and accomplishments between April 1 and September 30, 2021. We hope you find it informative.



Paul K. Martin
Inspector General
November 29, 2021

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NASA
AERONAUTICS AND SPACE ADMINISTRATION

OFFICE OF AUDITS

August marked the 50th anniversary of the Apollo 15 mission. In this photo, astronaut James B. Irwin, Lunar Module pilot, walks away from the Lunar Roving Vehicle at the Hadley-Apennine landing site.

ACQUISITION AND PROJECT MANAGEMENT

Effective contract, grant, and project management remain top challenges for NASA. Through its 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 MANAGEMENT OF UNIVERSITIES SPACE RESEARCH ASSOCIATION'S COOPERATIVE AGREEMENTS

Universities Space Research Association (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. USRA is one of NASA's largest research partners and conducts much of its work with the Agency through cooperative agreements. In this audit, we evaluated NASA's management of USRA cooperative agreements relative to meeting Agency requirements. We focused on NASA's management and oversight of 21 active cooperative agreements valued at approximately $476 million that the Agency had with USRA from fiscal year (FY) 2017 through April 2020. We found that NASA needs to take additional steps to improve management and financial oversight of cooperative agreements. Of our 12 recommendations, the Agency concurred with 9, partially concurred with 1, and did not concur with 2, all of which have since been resolved given that management is taking appropriate action to address our concerns.

NASA's Management of USRA's Cooperative Agreements (IG-21-022, July 14, 2021)

Report

ONGOING AUDIT WORK

Audit of NASA's Earth Science Disasters Program

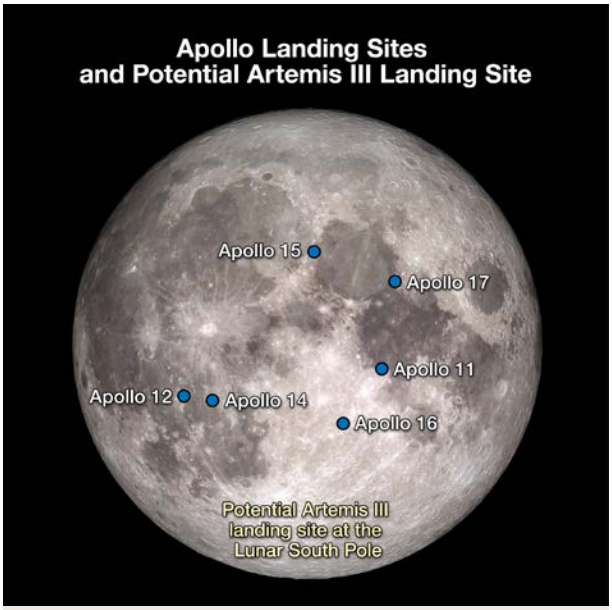
NASA's Earth Science Disasters Program uses satellite data to support the human response to hurricanes, floods, earthquakes, volcanoes, and landslides. With an annual budget of $6.2 million, the program provides Earth observation data to decision makers at the Federal Emergency Management Agency, the National Oceanic and Atmospheric Administration, the Environmental Protection Agency, and local disaster-response organizations. In this audit, we are evaluating NASA's management of the Earth Science Disasters Program to determine whether the

Tropical Storm Henri, viewed from NASA's Terra satellite, August 2021.

Agency is effectively providing data to entities to predict, prepare for, respond to, and recover from disasters.

NASA's Volatiles Investigating Polar Exploration Rover (VIPER) Mission

Since NASA announced that it would attempt to land astronauts on the South Pole of the Moon in late 2024, the Agency has been developing and acquiring a significant number of new systems and capabilities as precursors to a lunar landing. One of those lunar projects is VIPER. With an estimated cost of $433 million, VIPER is a mobile robot that will travel to the Moon for a close-up view of the polar landing site to gauge the concentration of water ice that might eventually be harvested to sustain human exploration. NASA's plan is to deliver VIPER to the Moon under the Commercial Lunar Payload Services (CLPS) initiative. However, in previous audits we have found that the Agency has taken on significant risks managing CLPS, including deficient contractor oversight, lack of common interfaces between instruments and landers, and reliance on unproven vendors. Given VIPER's importance to future sustained human lunar operations and the potential schedule and integration risk, we are reviewing NASA's management of the VIPER mission relative to achieving technical objectives, meeting milestones, and controlling costs.



Apollo landing sites as well as a potential Artemis III landing site are shown on the Moon.

NASA's Oversight of Its Contracts with Johns Hopkins University Applied Physics Laboratory

The Applied Physics Laboratory (APL) is the scientific and engineering research and development division of Johns Hopkins University. It was founded in 1942 and for more than 75 years has provided contributions to critical challenges with systems engineering and integration and technology research and development. APL participates in some capacity from project management to instrument contributions in 25 NASA missions, including the Double Asteroid Redirection Test and the Parker Solar Probe. Most of APL's work for NASA is awarded via Aerospace Research, Development, and Engineering Support contracts as task orders. Given the breadth of APL's involvement in important NASA missions, we are evaluating NASA's oversight of its contracts with APL.

The Space Launch System (SLS) vehicle stage adapter is integrated with the rocket's core stage at Kennedy Space Center's Vehicle Assembly Building, June 2021.

SPACE OPERATIONS AND HUMAN EXPLORATION

Space operations and human exploration are among NASA's most highly visible missions, with the Agency currently operating the International Space Station (ISS or Station), managing the commercial crew and cargo transportation programs that support the Station, and planning for future exploration beyond low Earth orbit, including ambitious goals for the Artemis program. Through Artemis, NASA aims to complete exploration missions to orbit and eventually land on the Moon.

NASA'S DEVELOPMENT OF NEXT-GENERATION SPACESUITS

This audit examined NASA's development of next-generation spacesuits for ISS and Artemis missions. Specifically, we examined the extent to which NASA is addressing challenges related to cost, schedule, and performance of the next-generation spacesuit system. We found that multiple challenges developing next-generation spacesuits preclude the Agency from its goal of a 2024 Moon landing. While NASA has spent $420 million developing next-generation spacesuits, the Agency still lacks a flight-ready suit for exploration missions, including Artemis.

A Space Exploration Technologies Corporation (SpaceX) Falcon 9 lifts off from Launch Complex 39A at Kennedy Space Center on a Commercial Resupply Services mission to the ISS, June 2021.

With NASA's plans to invest $625 million more in spacesuit development, the total cost will come to over $1 billion through 2025, when the first two flight-ready spacesuits are expected. NASA management concurred with our four recommendations and described actions they plan to take to address them.

NASA's Development of Next-Generation Spacesuits (IG-21-025, August 10, 2021)

Report

INFOGRAPHIC: NASA'S U.S. LAUNCH VEHICLE FLEET

NASA uses a fleet of launch vehicles to support satellite launches to Earth orbit, cargo and crew missions to the ISS, lunar exploration, and interplanetary science missions. Having a variety of vehicles in the fleet enables the Agency to select an appropriate launch vehicle for each mission and encourages competitive pricing among the contracted launch vehicle providers. Our infographic detailed the Agency's U.S. launch vehicle fleet.

NASA's U.S. Launch Vehicle Fleet (July 2021)

Infographic

ARTEMIS STATUS UPDATE

Preparations continue for the first, uncrewed Artemis mission scheduled for launch in late 2021. The last major test for the Space Launch System (SLS) occurred in March 2021, when the core stage's four RS-25 engines were hot-fired at Stennis Space Center. Meanwhile, at Kennedy Space Center NASA has assembled the solid rocket boosters and the Orion Multi-Purpose Crew Vehicle (Orion), and the SLS core stage arrived on site in July. Once mated with the core stage, the launch system will undergo final testing in preparation for the uncrewed launch of Artemis I. In addition, the Agency is making progress on the Gateway and designing the Human Landing System—key elements in NASA's Artemis plans. In this report, we provided a status update on the Agency's progress toward achieving these and other milestones for the major programs that support Artemis as of April 2021. Although we made no formal recommendations in this report, we continue to monitor the Agency's efforts toward achieving a lunar landing and eventually sending a crewed mission to Mars.

Artemis Status Update (IG-21-018, April 19, 2021)
Report

ONGOING AUDIT WORK

NASA's Management of the Artemis Missions

To meet a lunar landing target date of late 2024, NASA is making modifications to routine procurement and program management practices. In addition to SLS, Orion, and the Human Landing System, NASA's lunar strategy includes the development of the orbiting Gateway, delivery of commercial landers carrying numerous science experiments, and development of several lunar rovers. In this audit—the second in a series about management of the Artemis missions—we are examining NASA's strategy for meeting cost, schedule, and performance objectives in returning astronauts to the Moon.

NASA astronauts Stephanie Wilson, Jonny Kim, and Randy Bresnik take a look at the Orion spacecraft simulator that recently arrived at the Agency's Johnson Space Center.

NASA's Management of Its Astronaut Corps

The United States has been launching astronauts into space for 60 years. Since its inception, NASA's astronaut corps has fluctuated in size, technical expertise, and training emphasis based on program demands. For instance, NASA's increasing reliance on commercial crew partners for ISS transportation has required revised astronaut training and protocols. Further, the Agency's ambitious plan to send humans back to the Moon by 2024 and on to Mars by the 2030s has required selecting and training a new generation of astronauts who will spend more time and travel further in space than ever before. In this audit, we are examining NASA's management of its astronaut corps in the face of the Agency's current priorities and future challenges.

NASA's Utilization, Management, and Commercialization of Low Earth Orbit

Orbiting roughly 250 miles above Earth's surface, the ISS has enabled humans to live and work in space for more than 20 years. With an annual operating cost of about $3 billion, NASA's venture

in low Earth orbit consumes about half of its annual human space flight budget. While current plans call for the Station's retirement in 2024, a congressional extension of ISS operations to 2030 is pending. In the long term, NASA has committed to replacing the Station with a commercially owned and operated space destination. In this audit, we are examining NASA's efforts to utilize, manage, and commercialize low Earth orbit.

Northrop Grumman's Cygnus space freighter, carrying over 8,200 pounds of cargo to resupply the Expedition 65 crew, approaches the ISS, August 2021.

NASA's Cost Estimating and Reporting for Major Programs with Multiple Deliverables

NASA faces ongoing challenges with providing credible, complete, and timely cost and schedule estimates to stakeholders for Artemis missions and component programs. In this audit, we are examining whether NASA's current estimating policies and procedures are effective for establishing a basis for making informed executive and congressional decisions, as management tools, and as a means of monitoring program performance. In addition, we are assessing the potential impact of proposed policy changes and determining whether alternate approaches could address concerns reported by the NASA OIG and the Government Accountability Office.

NASA's Management of the Mobile Launcher 2 Contract

For the Artemis missions, NASA is developing two mobile launchers at Kennedy Space Center that will serve as the ground structures to assemble, process, transport, and launch the SLS and Orion. The first mobile launcher (ML-1), originally constructed in 2010 under the since-canceled Constellation Program, underwent large-scale modifications to support the SLS for the first three Artemis missions. The Agency is now developing a second mobile launcher (ML-2) for future, larger variants of the SLS beginning with the Artemis IV mission. Given NASA's history of cost and schedule challenges related to the development of ML-1, which we reported on in March 2020, this audit will examine the extent to which the Agency is meeting cost, schedule, and performance goals for the ML-2 contract.

Colorful displays of phytoplankton in the Barents Sea observed by the Suomi National Polar-orbiting Partnership, a joint mission between NASA and the National Oceanic and Atmospheric Administration (NOAA), August 2021.

INFORMATION TECHNOLOGY SECURITY AND GOVERNANCE

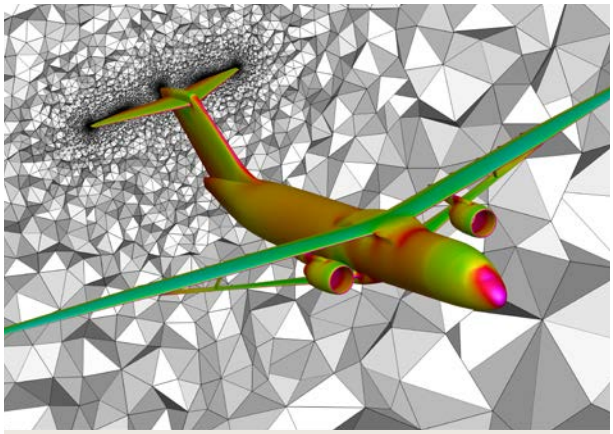
Information technology (IT) plays an integral role in NASA's space, science, and aeronautics operations. In FY 2021, the Agency spent approximately $2.2 billion on a portfolio of IT assets that included hundreds of information systems used to control spacecraft, collect and process scientific data, provide security for 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 governance programs that adversely affect the Agency's ability to protect information and information systems vital to its mission.

NASA'S CYBERSECURITY READINESS

NASA's high-profile and advanced technology makes its computer systems and networks an attractive target for cyber intruders. In this audit, we assessed whether the Agency is adequately prepared to identify and respond to inevitable cybersecurity attacks and whether it has the IT infrastructure in place to deal with new and emerging threats while maintaining cyber resiliency in light of the evolving threat landscape. We found that NASA's ability to prevent, detect, and mitigate cyberattacks is limited by a disorganized approach to Enterprise Architecture and that the Agency conducts assessment and authorization of IT systems inconsistently and ineffectively, with the quality and cost of the assessments varying widely across the Agency. NASA concurred with our five recommendations.

NASA's Cybersecurity Readiness (IG-21-019, May 18, 2021)

Report



This image shows the aerodynamic properties of NASA's Transonic Truss-Braced Wing concept: red and violet show areas of higher drag, while green and blue show areas of lower drag. The geometric formations represent airflow around the aircraft, helping scientists understand the vehicle's aerodynamics and improve its efficiency.

ONGOING AUDIT WORK

NASA's Insider Threat Program

Threats posed by an organization's employees and contractors are commonly referred to as "insider threats," and detecting those threats is one of the biggest challenges that cybersecurity programs face. Space is both a collaborative and competitive business; given its high-profile mission and broad connectivity with the public, educational institutions, research facilities, and other outside organizations, NASA's potential insider threats are as varied as its missions. This audit will examine to what extent NASA has implemented an effective insider threat program in accordance with federal policies, Agency policies, and best practices.

Evaluation of NASA's Information Security Program under the Federal Information Security Modernization Act (FISMA) for Fiscal Year 2021

In this required annual review, we are evaluating NASA's IT security program against the 2021 FISMA metrics. Specifically, we are reviewing a sample of NASA- and contractor-owned information systems to assess the effectiveness of information security policies, procedures, standards, and guidelines. We are also evaluating whether NASA has addressed deficiencies identified in our prior FISMA reviews.

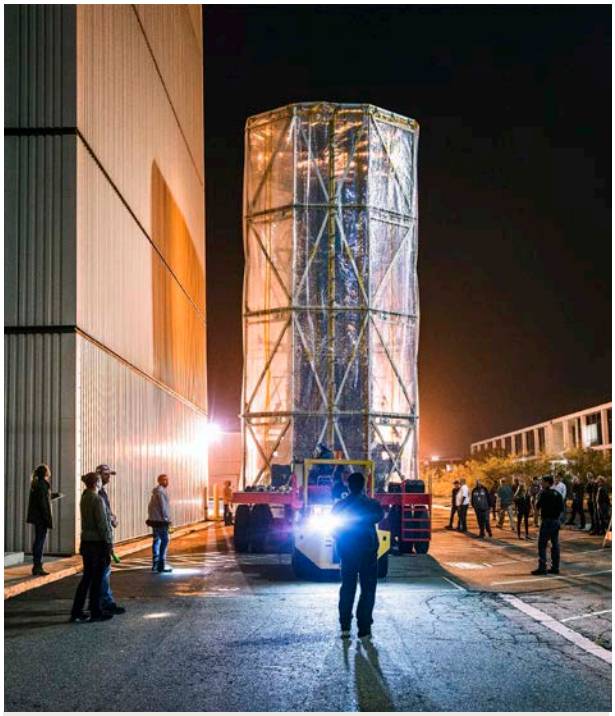
The core stage of NASA's SLS rocket departs Stennis Space Center following completion of the Green Run series of tests of its design and systems, April 2021.

INFRASTRUCTURE

NASA facilities and infrastructure—including offices, laboratories, launch complexes, test stands, and wind tunnels—are necessary components for exploring the Moon and Mars, facilitating the commercial space industry, conducting aeronautics research, and studying Earth and space sciences. NASA manages $40 billion in facility assets with an inventory of more than 5,000 buildings and structures; however, over 75 percent of this infrastructure is beyond its design life, and the Agency faced a deferred maintenance backlog of $2.77 billion as of 2021. Managing this expansive portfolio is an ongoing challenge for the Agency and one we continue to monitor.

NASA'S CONSTRUCTION OF FACILITIES

NASA's Construction of Facilities program focuses on modernizing infrastructure through consolidation into fewer, more efficient, sustainable facilities and repairing failing infrastructure to reduce overall maintenance costs. In this audit, we assessed the extent to which the Agency is effectively managing its facility construction efforts. We found that NASA's process for selecting and prioritizing facilities projects is largely driven by Centers regardless of importance to the Agency's overall mission needs. In addition, Agency policy does not distinguish between the use of institutional and programmatic funds, resulting in specialized facilities for testing and development being built with institutional funds, which dilutes the funds available for critical repairs and supporting more traditional institutional requirements. Consequently, several construction projects we reviewed led to expansion rather than consolidation of facilities. Agency guidance does not require programs to identify facility needs or funding sources early in the development and implementation phases, increasing the risk that facility requirements will not be identified until later, when it is more costly to address those issues. We also noted that NASA lacks an Agency-wide facility master plan that considers consolidation of activities between Centers. Finally, 6 of the 20 facilities projects we reviewed incurred significant cost overruns



The James Webb Space Telescope is enclosed in a protective clamshell that serves as a mobile clean room while in transport.

ranging from $2.2 million to $36.6 million, and 16 of the projects were behind schedule. We found that NASA did not provide effective oversight to determine whether the Agency's portfolio of facilities projects met cost, schedule, and performance goals. NASA concurred or partially concurred with our four recommendations.

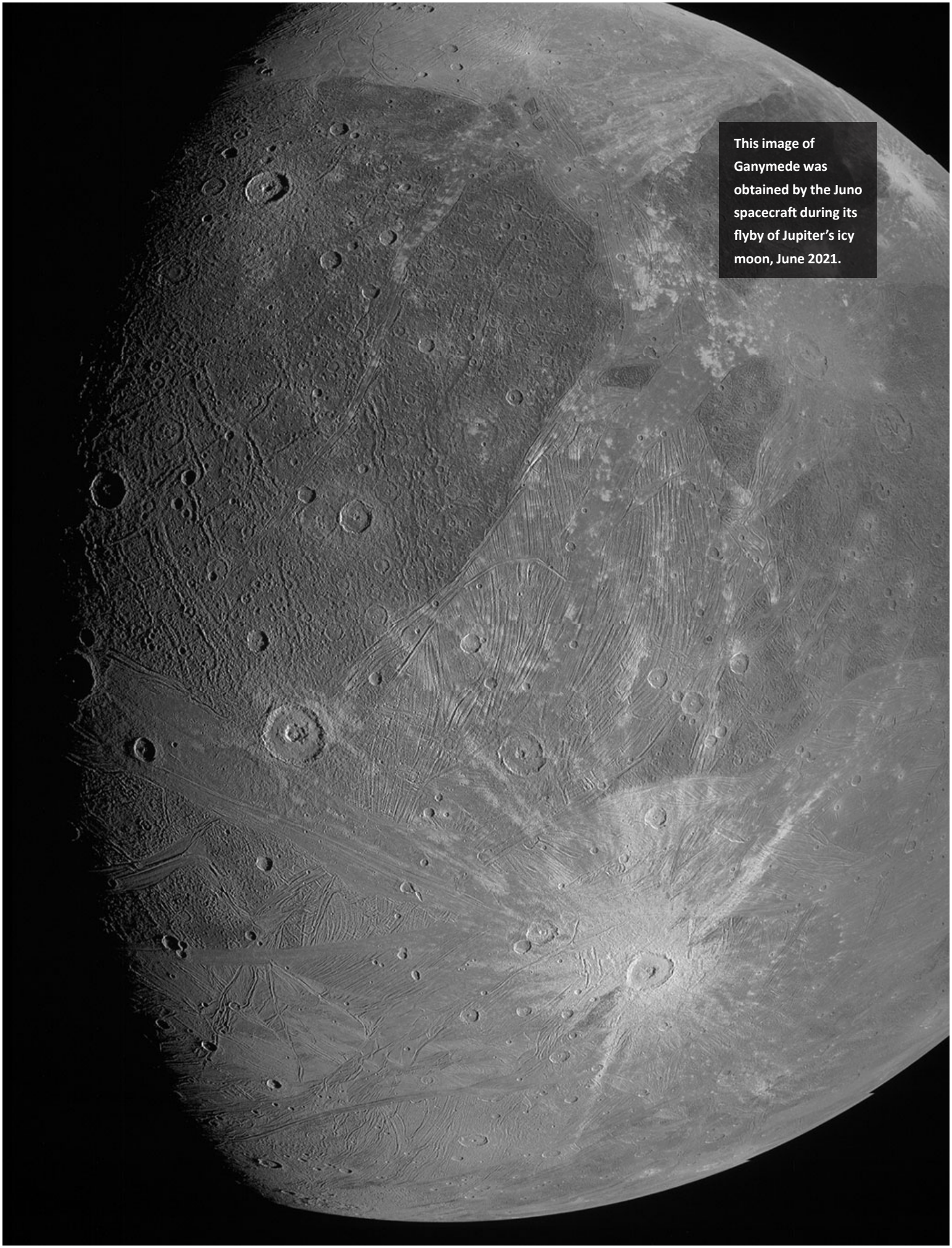
NASA's Construction of Facilities (IG-21-027, September 8, 2021)

Report

ONGOING AUDIT WORK

Ames Research Center's Lease Management Practices

Ames Research Center, located at Moffett Federal Airfield in California's Silicon Valley, leases Center facilities to further its goal of developing a world-class, shared-use research and development and education campus. Ames uses revenue from the leases to revitalize aging facilities and provide various infrastructure support services. This audit is assessing the effectiveness of Ames Research Center's implementation and management of its lease agreements.



This image of Ganymede was obtained by the Juno spacecraft during its flyby of Jupiter's icy moon, June 2021.

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—including the annual financial statement audit—to assist the Agency in addressing weaknesses. 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.

REVIEW OF CORONAVIRUS AID, RELIEF, AND ECONOMIC SECURITY (CARES) ACT FUNDING

The CARES Act was enacted in March 2020 to respond to the COVID-19 pandemic by funding loans, grants, and other forms of assistance for individuals, businesses, and state and local governments. NASA received $60 million in CARES Act funding to prevent, prepare for, and respond to the coronavirus. In this audit, we examined NASA's spending of CARES Act funds and found that the Agency appropriately managed its $60 million to meet congressional mandates as well as federal and Agency guidance. We also found that the sample of CARES Act transactions—totaling approximately $12.8 million—that we reviewed were procured for pandemic-related expenses and were supported with sufficient and appropriate documentation. While NASA utilized a portion of its $60 million CARES Act appropriation to pay for contractor leave authorized under the Act, the Agency is incurring additional costs, and we plan to continue our oversight work in this area.

Review of Coronavirus Aid, Relief, and Economic Security (CARES) Act Funding
(IG-21-024, August 9, 2021)

Report

NASA'S COMPLIANCE WITH THE PAYMENT INTEGRITY INFORMATION ACT FOR FISCAL YEAR 2020

The Payment Integrity Information Act of 2019 (PIIA) seeks to enhance the accuracy and integrity of federal payments. As mandated, we evaluated whether NASA complied with the requirements of PIIA in FY 2020 and how the Agency implemented recommendations made in previous audits. We found that NASA complied with PIIA. However, the Agency failed to report FY 2020 data on the improper payment estimate developed for disaster relief programs to the Office of Management and Budget (OMB) for publication on the paymentaccuracy.gov website. NASA mistakenly believed that because the programs' improper payment rates were zero, it was not required to submit the information. In addition, overpayments reported in FY 2020 were incomplete and inaccurate. The Agency concurred with our three recommendations.

NASA's Compliance with the Payment Integrity Information Act for Fiscal Year 2020
(IG-21-020, May 18, 2021)

Report

ONGOING AUDIT WORK

Audit of NASA's Fiscal Year 2021 Financial Statements

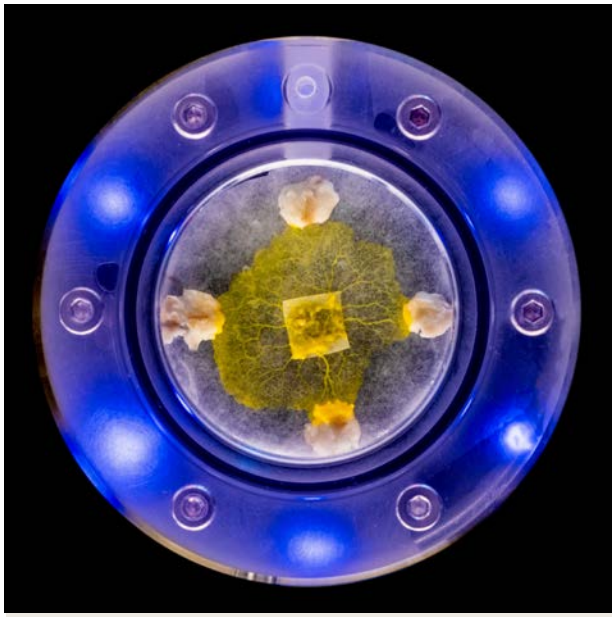
The Chief Financial Officers Act of 1990, as amended by the Government Management Reform Act of 1994, requires an annual audit of NASA's consolidated financial statements. We are overseeing the FY 2021 audit, which is being conducted by the independent public accounting firm Ernst & Young LLP.

Review of NASA's Fiscal Year 2020 Digital Accountability and Transparency Act Submission

The Digital Accountability and Transparency Act of 2014 expanded the reporting requirements for federal agencies to report financial and award data in accordance with the established government-wide financial data standards. As mandated, we are assessing the completeness, timeliness, quality, and accuracy of NASA's data.

Desk Reviews of Select NASA Grantee Single Audit Reporting Packages

We are reviewing single audit reports issued by independent public accounting firms and the related data collection form for NASA grantees. The purpose of these reviews is to determine whether the single audit reporting packages met generally accepted government auditing standards and requirements in the Code of Federal Regulations.



An experiment analyzing slime mold growth was among the scientific studies delivered to the ISS on a Northrop Grumman commercial resupply services mission, August 2021.

Technicians at Vandenberg Space Force Base in California remove protective blankets from the payload fairing for the Landsat 9 spacecraft, August 2021.

STATISTICAL DATA

TABLE 1: AUDIT PRODUCTS AND IMPACTS

Report No. and Date Issued	Report Title	Impact
Acquisition and Project Management		
IG-21-022 7/14/2021	NASA's Management of USRA's Cooperative Agreements	Provided recommendations to increase management and financial oversight accountability for cooperative agreements and to increase accountability over NASA agreements.
Space Operations and Human Exploration		
IG-21-025 8/10/2021	NASA's Development of Next-Generation Spacesuits	Provided recommendations to ensure the successful development and implementation of the xEMU.
IG-21-018 4/19/2021	Artemis Status Update	Provided a status update on the Agency's progress on achieving milestones for the major programs that support Artemis.
Information Technology Security and Governance		
IG-21-019 5/18/2021	NASA's Cybersecurity Readiness	Provided recommendations to strengthen NASA's cybersecurity readiness and provide process continuity and improved security posture for NASA's systems.
Infrastructure		
IG-21-027 9/8/2021	NASA's Construction of Facilities	Provided recommendations to ensure NASA's Construction of Facilities projects are supported by Agency needs and deliver what was promised within cost, schedule, and performance goals.
Financial Management		
IG-21-024 8/9/2021	Review of Coronavirus Aid, Relief, and Economic Security (CARES) Act Funding	Provided an analysis of NASA's spending of CARES Act funds.
IG-21-020 5/18/2021	NASA's Compliance with the Payment Integrity Information Act for Fiscal Year 2020	Provided recommendations to enhance NASA's efforts related to the Payment Integrity Information Act of 2019.

TABLE 2: AUDIT PRODUCTS ISSUED AND NOT DISCLOSED TO THE PUBLIC, CURRENT SEMIANNUAL REPORT

Report No. and Date Issued	Report Title	Objective
ML-21-005 9/30/2021	Desk Review of the Space Science Institute's Fiscal Year 2020 Single Audit Reporting Package	Determined whether the audit report met generally accepted government auditing standards and the Uniform Guidance audit requirements.
ML-21-003 9/10/2021	Desk Review of the Smithsonian Institution's Fiscal Year 2020 Single Audit Reporting Package	Determined whether the audit report met generally accepted government auditing standards and the Uniform Guidance audit requirements.
ML-21-004 9/8/2021	Desk Review of the Southwest Research Institute's Fiscal Year 2020 Single Audit Reporting Package	Determined whether the audit report met generally accepted government auditing standards and the Uniform Guidance audit requirements.
ML-21-002 8/5/2021	Desk Review of the California Association for Research in Astronomy's Fiscal Year 2020 Single Audit Reporting Package	Determined whether the audit report met generally accepted government auditing standards and the Uniform Guidance audit 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-21-022 7/14/2021	NASA's Management of USRA's Cooperative Agreements	7/14/2021	11	1	12/31/2021	$246,060
Space Operations and Human Exploration						
IG-21-025 8/10/2021	NASA's Development of Next-Generation Spacesuits	8/10/2021	4	0	6/30/2022	$0
Information Technology Security and Governance						
IG-21-019 5/18/2021	NASA's Cybersecurity Readiness	5/18/2021	5	0	12/30/2022	$0
Infrastructure						
IG-21-027 9/8/2021	NASA's Construction of Facilities	9/8/2021	6	0	12/30/2022	$0
Financial Management						
IG-21-020 5/18/2021	NASA's Compliance with the Payment Integrity Information Act for Fiscal Year 2020	5/18/2021	3	0	9/30/2021	$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-21-002 10/27/2020	NASA's Management of Its Acquisition Workforce	10/27/2020	3	1	1/31/2022	$0
IG-20-023 9/16/2020	NASA's Planetary Science Portfolio	9/16/2020	9	2	11/30/2021	$0
IG-20-022 9/14/2020	NASA's Management of the Stratospheric Observatory for Infrared Astronomy Program	9/14/2020	1	8	10/9/2021	$0
IG-19-019 5/29/2019	Management of NASA's Europa Mission	8/8/2019	1	9	11/12/2021	$0
IG-19-018 5/7/2019	NASA's Heliophysics Portfolio	5/7/2019	3	1	12/30/2021	$0
IG-19-014 3/26/2019	NASA's Engineering and Technical Services Contracts	3/26/2019	3	0	1/31/2022	$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-17-003 11/2/2016	NASA's Earth Science Mission Portfolio	11/2/2016	1	1	11/30/2021	$0
Space Operations and Human Exploration						
IG-21-011 1/27/2021	NASA's Efforts to Mitigate the Risks Posed by Orbital Debris	1/27/2021	7	0	12/31/2025	$0
IG-21-004 11/10/2020	NASA's Management of the Gateway Program for Artemis Missions	11/10/2020	6	2	12/31/2021	$0

Report No. and Date Issued	Report Title	Date Resolved	Number of Recommendations		Latest Target Completion Date	Potential Cost Savings
			Open	Closed		
IG-20-018 7/16/2020	NASA's Management of the Orion Multi-Purpose Crew Vehicle Program	10/2/2020	1	2	12/31/2021	$0
IG-20-013 3/17/2020	Audit of NASA's Development of Its Mobile Launchers	3/17/2020	2	2	4/29/2022	$0
IG-20-012 3/10/2020	NASA's Management of Space Launch System Program Costs and Contracts	8/21/2020	4	4	1/30/2022	$0
IG-20-005 11/14/2019	NASA's Management of Crew Transportation to the International Space Station	11/14/2019	1	4	7/31/2022	$0
IG-17-017 4/13/2017	NASA's Plans for Human Exploration Beyond Low Earth Orbit	8/10/2017	1	5	9/30/2021	$0
IG-17-012 3/9/2017	NASA's Management of Electromagnetic Spectrum	3/9/2017	1	1	12/31/2022	$0
IG-16-015 3/28/2016	Audit of the Spaceport Command and Control System	3/28/2016	1	0	1/31/2022	$0
IG-14-026 7/22/2014	Audit of Space Network's Physical and Information Technology Security Risks	7/22/2014	1	3	10/29/2021	$0
Information Technology Security and Governance						
IG-21-014 3/2/2021	Fiscal Year 2020 Federal Information Security Modernization Act Evaluation – A Center Command and Control System	3/2/2021	1	1	8/31/2022	$0
IG-21-010 12/22/2020	Fiscal Year 2020 Federal Information Security Modernization Act Evaluation – An Agency Common System	12/22/2020	2	3	3/31/2022	$0
IG-21-001 10/2/2020	Audit of NASA's Compliance with the Geospatial Data Act	10/2/2020	3	1	10/29/2021	$0
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	6	3	1/28/2022	$0
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	1	9	9/30/2021	$0
IG-12-017 8/7/2012	Review of NASA's Computer Security Incident Detection and Handling Capability	8/7/2012	2	1	9/29/2023	$0
Infrastructure						
IG-21-006 12/3/2020	NASA's Management of Hazardous Materials	12/3/2020	4	4	10/1/2023	$0
IG-20-001 10/21/2019	NASA's Security Management Practices	10/21/2019	4	4	12/31/2023	$0
IG-19-002 10/22/2018	Audit of NASA's Historic Property	2/5/2019	3	2	6/30/2022	$0
IG-17-021 5/17/2017	Construction of Test Stands 4693 and 4697 at Marshall Space Flight Center	10/5/2017	3	0	1/31/2022	$17,115,009

Report No. and Date Issued	Report Title	Date Resolved	Number of Recommendations		Latest Target Completion Date	Potential Cost Savings
			Open	Closed		
Financial Management						
IG-21-009 12/16/2020	Fiscal Year 2020 Financial Statement Audit Information Technology Management Letter	12/16/2020	21	0	12/31/2021	$0
IG-21-008 12/14/2020	Fiscal Year 2020 Financial Accounting Management Letter	12/14/2020	18	0	12/31/2021	$0
IG-21-005 11/16/2020	Audit of NASA's Fiscal Year 2020 Financial Statements	11/16/2020	7	0	11/30/2021	$0
IG-21-003 11/16/2020	Vulnerability Assessment and Penetration Testing of NASA's Financial Network	11/16/2020	5	0	11/30/2021	$0
IG-20-016 5/15/2020	NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2019	6/11/2020	1	3	5/15/2022	$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	9/30/2021	$0
IG-18-017 5/14/2018	NASA's Compliance with the Improper Payments Information Act for Fiscal Year 2017	5/14/2018	1	2	5/31/2022	$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	$246,060	$0
Needing management decision during period	1	$246,060	$0
Management Decision Made During Period			
Amounts agreed to by management	1	$246,060	$0
Amounts not agreed to by management	0	$0	$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: OTHER MONETARY SAVINGS

Report No. and Date Issued	Report Title	Description	Amount
IG-19-019, 5/29/2019 Letter to Congress	Management of NASA's Europa Mission Follow-up to May 2019 Audit of Europa Mission—Congressional Launch Vehicle Mandate August 27, 2019	Our 2019 audit report highlighted issues with a congressional directive that NASA use an SLS rocket for the planned Europa mission. In a follow-up letter to Congress, we emphasized that the directive should be removed, allowing the Agency to decide whether to use SLS or a commercial vehicle based on cost, schedule, vehicle availability, and impact on science requirements. In 2020, Congress removed the SLS requirement, and in July 2021, NASA proceeded with procuring a SpaceX Falcon Heavy for the launch. The monetary savings we are claiming is based on the difference in cost to the Agency between the SLS and the commercial provider.	$2.06 billion

Note: Savings resulting from actions taken by NASA due to conclusions or information disclosed in an OIG audit report that were not identified as questioned costs or funds to be put to better use in Tables 5 and 6, respectively.

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

Audits with Findings	10	
Findings and Questioned Costs		
	Number of Findings	Questioned Costs
Management decisions pending, beginning of reporting period	5	$0
Findings added during reporting period	16	$440,333
Management decisions made during reporting period	(10)	
Agreed to by management		$0
Not agreed to by management		($43,755)
Management decisions pending, end of reporting period	11	$396,578

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 24 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	$9,621,000	$25,462,000
Funds to be put to better use	$0	$0

Note: 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.

AUDITS OF NASA CONTRACTORS

NASA contracts with independent public accounting firms and the Department of the Interior's Interior Business Center to perform a broad range of contract audits on the companies that conduct business with the Agency. The purpose of the audits is to assist procurement officials with financial information and advice relating to contractual matters and to assess the effectiveness, efficiency, and economy of contractor operations. Contract audits also assist NASA in the negotiation, award, administration, and settlement of contracts. During the period covered in this Semiannual Report, independent public accounting firms and the Department of the Interior's Interior Business Center issued 11 audit reports that involved contractors who do business with NASA. The auditors questioned over $4 million in costs.

Additionally, the OIG procured audit services for four NASA contractors and subcontractors who were not included in the Agency's annual audit procurement plan. We utilized NASA's pre-established, Agency-wide audit support services contract with certified public accounting firms as well as interagency agreements with the Defense Contract Audit Agency and the Department of the Interior's Interior Business Center. These audits were intended to identify potential gaps and risks in audit coverage of NASA prime and subcontract costs. Based on the established memorandums of agreement and statements of work, the objective of each audit was to examine the costs claimed on NASA contracts and to express an opinion as to whether the costs were allowable under the Federal Acquisition Regulations and Cost Accounting Standards (if applicable), reasonable, applicable to the contract, and not prohibited by statute or regulation.

The auditors questioned approximately $1 million related to unallowable travel costs and unsupported material and subcontract costs. The auditors made recommendations to NASA's contracting officers, who will make determinations on whether to recover the questioned costs from the individual contractors. Going forward, we plan to continue our effort and procure additional audits to examine systemic issues identified in those reports to the Office of Procurement.

TABLE 9: AUDIT REPORTS WITH QUESTIONED COSTS AND RECOMMENDATIONS THAT FUNDS BE PUT TO BETTER USE

	Amounts in Issued Reports	Amounts Agreed To
Questioned costs	$5,301,341	$0
Funds to be put to better use	$0	$0

NASA's Lucy spacecraft undergoes testing at Lockheed Martin Space's facility in Littleton, Colorado, March 2021.

OFFICE OF INVESTIGATIONS

NASA's airborne Oceans Melting Greenland (OMG) is completing a 6-year mission that is helping to answer how fast sea level is going to rise in the coming years.

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

PROCUREMENT, ACQUISITION, AND GRANT FRAUD

Jury Convicts Former NASA Subcontractor of Fraud

In August 2021, a federal jury convicted the former general manager of a Florida small business on multiple counts of conspiracy and wire fraud for his role in misrepresenting the company as a woman-owned small business in a scheme to secure government contracts. The company received more than $6 million in fraudulently obtained contract payments, to include $1 million during the former general manager's tenure. The former general manager will be sentenced in December 2021 and is the fourth employee convicted in the fraud scheme.

Small Business Agrees to Civil Settlement

A former Small Business Innovative Research company agreed to a civil settlement of $192,586 for charging for work by individuals who performed little or no activity under the contracts and for substituting contract personnel without permission. As part of its settlement, the company agreed to implement enhanced compliance measures to resolve claims arising from its questionable administration of federal grants and contracts.

Former Kennedy Contractor Employees Plead Guilty to Conspiracy

Three executives of a Titusville, Florida, engineering company pleaded guilty to conspiracy to commit wire fraud and misprision of felony charges related to a 22-year conspiracy to defraud NASA and its contractors by misrepresenting the company as a woman-owned small business. As a result of the scheme, the company was fraudulently awarded more than $84 million in NASA contracts. The CEO was ordered to pay $893,062 as part of a criminal forfeiture; sentencing will occur in September and October 2021. The company had previously agreed to a $250,000 civil settlement.

Former California City Mayor Sentenced

Following a joint investigation by the NASA OIG and the Los Angeles County District Attorney's Office, the former mayor of Palmdale, California, pleaded guilty and was sentenced for his part in a scheme by a contractor to misuse NASA funds. The former mayor was sentenced to 24 months of probation and ordered to pay $189,800 in restitution to NASA. A former executive at the company was debarred from working with the federal government following a prior criminal conviction for her part in the scheme.

Former NASA Contractor Employee Indicted

A former NASA contractor employee was indicted by an Ohio grand jury on one count of theft for stealing numerous personal computers from Glenn Research Center.

Former Federal Contractors Debarred for Defrauding Federal Agencies

Based on a multi-agency investigation led by the NASA OIG, 7 individuals and 15 companies were debarred from federal procurement activities for periods of up to 5 years after pleading guilty to

or being convicted on wire fraud, major fraud, and conspiracy charges. The subjects and their companies conspired to defraud NASA and other federal agencies by obtaining over $15 million in government contracts while posing as disabled veterans and socially and economically disadvantaged people or entities.

Former Contractor Barred from Center Access Due to IT Security Violations

A former Langley Research Center contractor used an Australian firm for data processing without obtaining proper approvals from NASA and willfully circumvented export control regulations to do so. A NASA OIG investigation resulted in Langley management indefinitely suspending the contractor's Center access and taking remediation steps to prevent similar incidents from occurring.

Contract Firefighter Terminated for Misuse of Position

A NASA OIG investigation resulted in the termination of a Kennedy Space Center contract firefighter for misusing his official position and NASA resources to arrange a training class at a local fire department, for which he was paid.

Former NASA Collaborative Partner Suspended

A former NASA collaborative partner with Ames Research Center was suspended from federal procurement activities pending the outcome of criminal and civil proceedings. A NASA OIG investigation determined that, from approximately 2013 to 2020, he defrauded investors of at least $12.2 million in investments in various corporate stocks and/or promissory notes.

EMPLOYEE MISCONDUCT

Former NASA CFO Policy Director Pleads Guilty to Bank Fraud

As a result of a joint NASA OIG and Internal Revenue Service investigation, a former NASA Office of the Chief Financial Officer senior executive pleaded guilty to one count of bank fraud for fraudulently applying for and receiving three CARES Act loans under the Paycheck Protection Program totaling $272,284. As a result, the former official was sentenced to 18 months of imprisonment, 3 years of supervised release, and ordered to pay $285,449 in restitution.

Senior NASA Scientist Sentenced for Making False Statements Related to Chinese Thousand Talents Program Participation

A former chief scientist at Ames Research Center was sentenced to 30 days of imprisonment and ordered to pay a $100,000 fine for making false statements to the FBI and the NASA OIG regarding his employment by a Chinese government–funded program that recruited individuals with access to foreign technologies and intellectual property.

Former NASA Employee Pleads Guilty to Making False Statements

A former Glenn Research Center employee pleaded guilty to one count of making false statements on his background investigation questionnaire that concealed his close and continuing relationships with foreign nationals, ownership of a foreign bank account, and the nature and extent of the financial support he provided to foreign nationals. In September 2021, the retiree was sentenced to 1 year of probation and ordered to pay a $9,500 fine.

Northwestern University Researcher Pays Civil Settlement

As a result of a multi-year investigation by the NASA OIG, Air Force Office of Special Investigations, Defense Criminal Investigative Service, Naval Criminal Investigative Service, and Small Business Administration OIG, a Northwestern University professor who was also an Illinois small business contractor paid a civil settlement of $1 million in order to settle allegations that she submitted false time sheets and false certifications for work performed under multiple Small Business Innovative Research contracts.

OTHER CASES

Ex-Spouse of NASA Kennedy Contracting Officer Pleads Guilty

Following a NASA OIG investigation, the ex-spouse of a Kennedy contracting officer pleaded guilty to felony charges for altering official government records in order to implicate her ex-husband. The investigation revealed the ex-spouse altered government emails and fabricated text messages to make it appear that her ex-husband had made death threats toward her. Sentencing is set for November 23, 2021.

Florida Resident Sentenced for State Violations

A Florida resident was sentenced to one year of probation and fined $672 for felony drug possession and driving with a suspended license while on Kennedy Space Center property. The OIG was assisted on this case by the Kennedy Office of Protective Services, and the case was prosecuted by the Florida State Attorney's Office.

STATISTICAL DATA

TABLE 10: OFFICE OF INVESTIGATIONS COMPLAINT INTAKE DISPOSITION

Source of Complaint	Zero Files[a]	Administrative Investigations[b]	Management Referrals[c]	Preliminary Investigations[d]	Total
Hotline	4	5	2	11	**22**
All others	23	20	1	53	**97**
Total	**27**	**25**	**3**	**64**	**119**

[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 11: FULL INVESTIGATIONS OPENED THIS REPORTING PERIOD

Full Criminal/Civil Investigations[a]	14

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

TABLE 12: INVESTIGATIONS CLOSED THIS REPORTING PERIOD

Full, Preliminary, and Administrative Investigations	95

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

TABLE 13: CASES PENDING AT END OF REPORTING PERIOD

Preliminary Investigations	61
Full Criminal/Civil Investigations	133
Administrative Investigations	75
Total	**269**

TABLE 14: QUI TAM INVESTIGATIONS

Qui Tam Matters Opened This Reporting Period	0
Qui Tam Matters Pending at End of Reporting Period	9

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

TABLE 15: JUDICIAL ACTIONS

Total Cases Referred for Prosecution[a]	20
Individuals Referred to the Department of Justice[b]	16
Individuals Referred to State and Local Authorities[b]	4
Indictments/Informations[c]	10
Convictions/Plea Bargains	11
Sentencing/Pretrial Diversions	9
Civil Settlements/Judgments	2

[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 16: ADMINISTRATIVE ACTIONS

Referrals	
Referrals to NASA Management for Review and Response	11
Referrals to NASA Management—Information Only	6
Referrals to the Office of Audits	1
Referrals to Security or Other Agencies	5
Total	23
Recommendations to NASA Management	
Recommendations for Disciplinary Action	
Involving a NASA Employee	6
Involving a Contractor Employee	4
Involving a Contractor Firm	1
Other	
Recommendations on Program Improvements	
Matters of Procedure	2
Total	13
Administration/Disciplinary Actions Taken	
Against a NASA Employee	6
Against a Contractor Employee	3
Against a Contractor Firm	
Procedural Change Implemented	2
Total	11
Suspensions or Debarments from Government Contracting	
Involving an Individual	6
Involving a Contractor Firm	6
Total	12

TABLE 17: INVESTIGATIVE RECEIVABLES AND RECOVERIES

Judicial	$2,674,910
Administrative[a]	$4,429
Total[b]	**$2,679,339**
Total NASA	**$629,285**

[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 18: WHISTLEBLOWER INVESTIGATIONS

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

TABLE 19: SENIOR GOVERNMENT EMPLOYEE INVESTIGATIONS REFERRED FOR PROSECUTION

Case Number	Allegation	Referral Date	Disposition
19-0106-O	Export Violations	4/12/2021	Declined for Prosecution—Employee Retired

TABLE 20: SENIOR GOVERNMENT EMPLOYEE CASES NOT DISCLOSED TO THE PUBLIC

Case Number	Allegation	Closure Date	Disposition
20-0199-S	Employee Misconduct and Mismanagement	5/24/2021	Unsubstantiated—New Policy and Procedures Were Enacted
20-0319-HL-S	Questionable Social Media Behavior	4/22/2021	Employee Was Verbally Counseled
21-0104-P	Program Management Irregularities	8/31/2021	Unsubstantiated

LEGAL ISSUES

The Europa Clipper spacecraft takes shape as engineering components and instruments are prepared for delivery to the main clean room at NASA's Jet Propulsion Laboratory.

HR 2988—WHISTLEBLOWER PROTECTION IMPROVEMENT ACT OF 2021

The bill would make retaliatory investigations in the civil service a prohibited personnel act. For example, it would be illegal if an investigation was referred or undertaken against an individual because that individual made a protected whistleblower disclosure. Investigations that are nondiscretionary or ministerial do not fall within the prohibition. We have commented to the Council of the Inspectors General on Integrity and Efficiency (CIGIE) legislation committee and to NASA Legislative Affairs that the bill should be clarified to define "nondiscretionary" and "ministerial." In addition, the bill should clarify that the Inspector General (IG) can still investigate allegations of misconduct even if the referrals are made by managers with a retaliatory animus. That seems to be the intent of the bill, but the language is unclear. Whistleblowers who engage in misconduct should be investigated, even if the individual making the investigative referral has engaged in retaliatory behavior sanctionable by the Office of Special Counsel (OSC). Finally, the current version of the bill allows for potential violations of the retaliatory investigation prohibition by any OIG personnel to be referred by the Special Counsel to the CIGIE. We suggest the bill be amended to allow OSC to refer allegations of misconduct involving an employee or officer of an OIG to CIGIE only if that person is a *designated* person under the Integrity Committee's procedures (usually the IG or a direct report to the IG), but also allow OSC to refer a misconduct allegation involving an OIG officer or employee who is not covered by the Integrity Committee's procedures *to the IG* for investigation. This will help ensure efficiency and consistency in the processing of OSC requests for investigation involving OIG personnel while protecting IG independence by no longer requiring OSC to refer credible allegations of misconduct to the OIG's agency for investigation. Many IGs have their own internal affairs component to handle such allegations of misconduct.

DRAFT PROPOSAL ON 10 USC § 2409, CONTRACTOR AND GRANTEE WHISTLEBLOWER PROTECTION

We commented on a proposal to amend 10 USC § 2409 to conform it with its companion statute at 41 USC § 4712. This would enable employees of subcontractors and subgrantees who have been retaliated against because of whistleblower disclosures to have a remedy that could be effected by the agency head, such as reinstatement after termination, back pay, and legal fees. It is contemplated that the draft would be incorporated into an upcoming National Defense Authorization Act.

HR 2994—ACCOUNTABILITY FOR ACTING OFFICIALS ACT

This bill would reform the Federal Vacancies Act. As applied to Inspectors General, the bill would require that an Acting IG position be filled by a first assistant of such office. If that position is unavailable, the Acting IG could be appointed from another IG organization, provided that individual has been in an IG organization for at least 90 days and is paid at the minimum pay of a GS-15.

HR 4125—KEEP THE WATCHDOGS RUNNING ACT

The bill would amend the Inspector General Act of 1978 to authorize OIGs to continue operating during a lapse in appropriations. The bill reflects a legislative priority of the CIGIE legislation committee.

REGULATORY REVIEW

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

NASA POLICY DIRECTIVE (NPD) 1600.9A, NASA INSIDER THREAT PROGRAM

This NPD establishes and maintains the requirement in Executive Order 13587, *Structural Reforms to Improve the Security of Classified Networks and the Responsible Sharing and Safeguarding of Classified Information*, to implement an insider threat detection and prevention program. Under the NPD, it is NASA policy to deter, detect, and mitigate the trusted insider who may represent a threat to national security in accordance with the Presidential Memorandum, *National Insider Threat Policy and Minimum Standards for Executive Branch Insider Threat Programs* (November 21, 2012). These threats encompass potential espionage, violent acts against the government or the nation, and unauthorized disclosure of classified information. A comprehensive insider threat program is essential to the safety and security of our NASA employees, contractors, property, infrastructure, and information. The Office of Inspector General recommended changes to the NPD intended to ensure that relevant information developed by the OIG concerning potential insider threats will be provided to the Insider Threat Program in a timely manner, while also ensuring compliance with the OIG's other legal responsibilities regarding the maintenance and safekeeping of investigative information.

NASA astronaut Mark Vande Hei works on Celestial Immunity, an ISS investigation into how gravity affects immune response.

NASA PROCEDURAL REQUIREMENTS (NPR) 7100.1C, PROTECTION OF HUMAN RESEARCH SUBJECTS

This NPR outlines the implementing procedures and requirements for the Agency to conduct and support research involving human subjects. The NPR follows the regulations on the same topic set forth at 14 CFR Part 1230 and permanently implements changes set forth in NASA Interim Directive 7100.133, *Protection of Human Research Subjects*, to include the implementation of a single NASA Institutional Review Board. The NASA Institutional Review Board under the Office of the Chief Health and Medical Officer (OCHMO) has been established to increase accountability and adherence to federal regulations and NASA policy. The Office of Inspector General recommended

changes to the NPR to ensure that any evidence of alleged criminal wrongdoing, waste, or abuse of processes or procedures related to NASA Institutional Review Board activities shall be reported to the OIG in a timely manner.

NPR 8715 DRAFT 35, NUCLEAR FLIGHT SAFETY

This NPR was rewritten to reflect current NASA organization, directives, and processes, and to ensure compliance with National Security Presidential Memorandum (NSPM)-20, *Presidential Memorandum on Launch of Spacecraft Containing Space Nuclear Systems*, dated August 20, 2019. The NPR defines the roles and responsibilities for managing and overseeing NASA's nuclear flight safety activities to protect the public, Agency workforce, high-value equipment and property, and the environment from potential harm as a result of NASA activities and operations. It describes NASA's implementation of federal requirements under NSPM-20, as well as Agency-specific activities relating to ensuring safety and mission success for NASA-sponsored payloads containing space nuclear systems or other radioactive material. The Office of Inspector General made recommendations intended to ensure that the NPR provides adequate guidance, and sufficient specificity, to cover situations in which non-NASA entities support future nuclear/radioactive projects utilizing NASA assets, such as the International Space Station or the planned NASA Gateway orbiting the Moon.

LEGAL TRAINING

GIGLIO TRAINING

In April of this year, OIG legal staff trained investigative personnel on the *Giglio* policies in our investigations manual. The *Giglio* case (Giglio v. United States, 405 U.S. 150, 1972) requires the disclosure of potential impeachment evidence when such evidence is material to the question of guilt or punishment. Our policy addresses the timing and scope of such disclosures, as well as internal procedures on the handling of *Giglio* disclosures.

LEGAL USE OF FORCE TRAINING

The legal office provided use-of-force training to one of our West Coast offices this past spring. In addition to the regular legal use-of-force briefing and case law, we discussed the duty to intervene and the future of qualified immunity for law enforcement personnel.

STATISTICAL DATA

TABLE 21: LEGAL ACTIVITIES AND REVIEWS

Freedom of Information Act Matters	16
Appeals	0
Inspector General Subpoenas Issued	44
Regulations Reviewed	16


INSPECTOR GENERAL
NASA
AERONAUTICS AND SPACE ADMINISTRATION

APPENDIXES

The SpaceX Crew Dragon Endeavour approaches the ISS, April 2021.

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	35–37
Section 5(a)(1)	Significant problems, abuses, and deficiencies	4–20
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	20–26
Section 5(a)(8)	Total number of reports and total dollar value for audits with questioned costs	23
Section 5(a)(9)	Total number of reports and total dollar value for audits with recommendations that funds be put to better use	—
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	—
Section 5(a)(16)	Outstanding recommendations from peer reviews conducted by NASA OIG	—
Section 5(a)(17)(A)	Summary of investigations	28–30
Section 5(a)(17)(B)(C) and (D)	Matters referred to prosecutive authorities	28–30
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	29
Section 5(a)(20)	Summary of whistleblower investigations	—
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. AWARDS

The Council of the Inspectors General on Integrity and Efficiency recognizes the outstanding accomplishments of OIGs across the federal government. The following NASA OIG individuals and teams were honored this year with CIGIE awards.

AWARD FOR EXCELLENCE—AUDIT

Members of the Office of Audits received an Award for Excellence in recognition of exceptional achievement and outstanding teamwork in reviewing NASA's management of the Gateway Program for Artemis missions. The team included Ridge Bowman, Kevin Fagedes, Susan Bachle, Scott Bruckner, Tyler Martin, Wayne Emberton, Lauren Suls, and Cedric Campbell.

AWARD FOR EXCELLENCE—EVALUATION

Members of the Office of Audits received an Award for Excellence in recognition of exceptional achievement assessing NASA's efforts to mitigate the significant risks posed to spacecraft and astronauts by orbital debris. Team members included Raymond Tolomeo, Tekla Colón, Mona Mann, Cynthia Collado, Lauren Suls, and Theresa Thompson.

AWARD FOR EXCELLENCE—INVESTIGATION

Members of the Office of Investigations received an Award for Excellence in recognition of exceptional achievement and outstanding teamwork in a major procurement fraud investigation concerning the Small Business Innovation Research program. NASA members of the multi-agency team included David Kennedy and Lee Gibson.

APPENDIX C. 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

At the time of this report, the Legal Services Corporation Office of Inspector General was conducting a peer review of the NASA OIG Office of Audits. The results of that review will be published in our next Semiannual Report. The last previous external peer review, in 2018, 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.

No external peer reviews were conducted by the Office of Audits during this semiannual period. The most recent review we conducted was completed on November 25, 2019, when we examined the system of quality control for the Federal Deposit Insurance Corporation (FDIC) OIG. We have no outstanding recommendations related to this or past peer reviews that we have conducted.

OFFICE OF INVESTIGATIONS

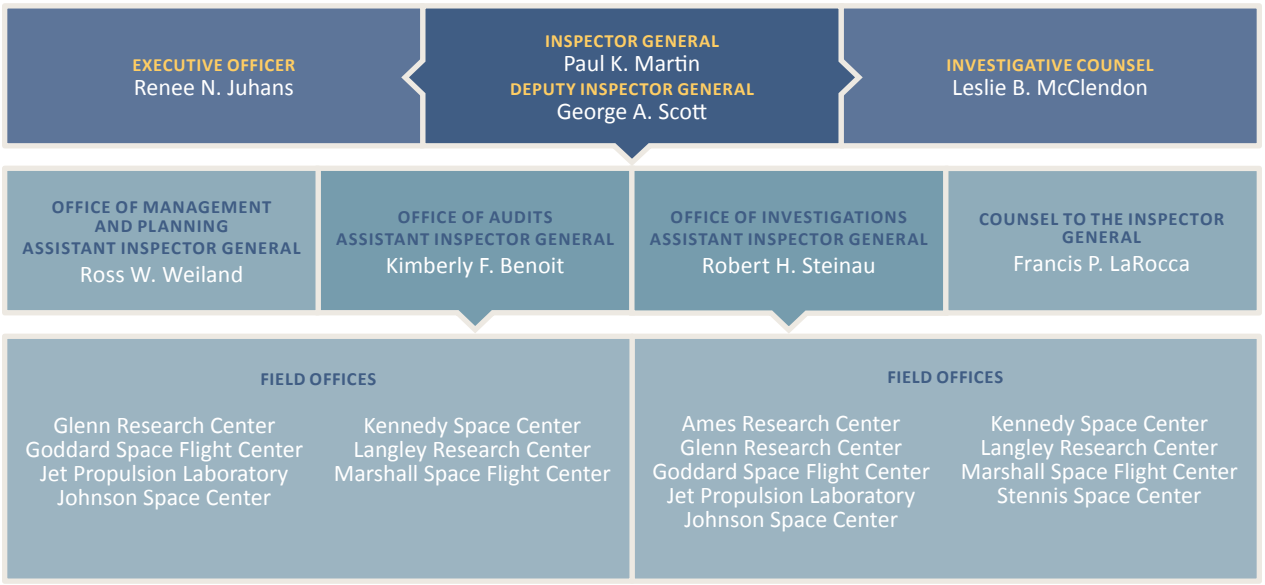
No external peer reviews were performed by the Office of Investigations during this semiannual period. In October 2017, the Office of the Special Inspector General for the Troubled Asset Relief Program reviewed the NASA OIG's Office of Investigations and found the office to be compliant with all relevant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

APPENDIX D. ACRONYMS

APL	Applied Physics Laboratory
CARES Act	Coronavirus Aid, Relief, and Economic Security Act
CIGIE	Council of the Inspectors General on Integrity and Efficiency
CLPS	Commercial Lunar Payload Services
DCAA	Defense Contract Audit Agency
FBI	Federal Bureau of Investigation
FISMA	Federal Information Security Modernization Act of 2014
FOIA	Freedom of Information Act
FY	fiscal year
IG	Inspector General
ISS	International Space Station
IT	information technology
ML-1	Mobile Launcher 1
ML-2	Mobile Launcher 2
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
OIG	Office of Inspector General
OMB	Office of Management and Budget
OSC	Office of Special Counsel
PIIA	Payment Integrity Information Act of 2019
SLS	Space Launch System
USRA	Universities Space Research Association
VIPER	Volatiles Investigating Polar Exploration Rover

APPENDIX E. OFFICE OF INSPECTOR GENERAL ORGANIZATIONAL CHART

The OIG is currently funded under a continuing resolution through December 3, 2021, at the FY 2021 level of $44.2 million. This budget supports the work of 185 full-time 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.

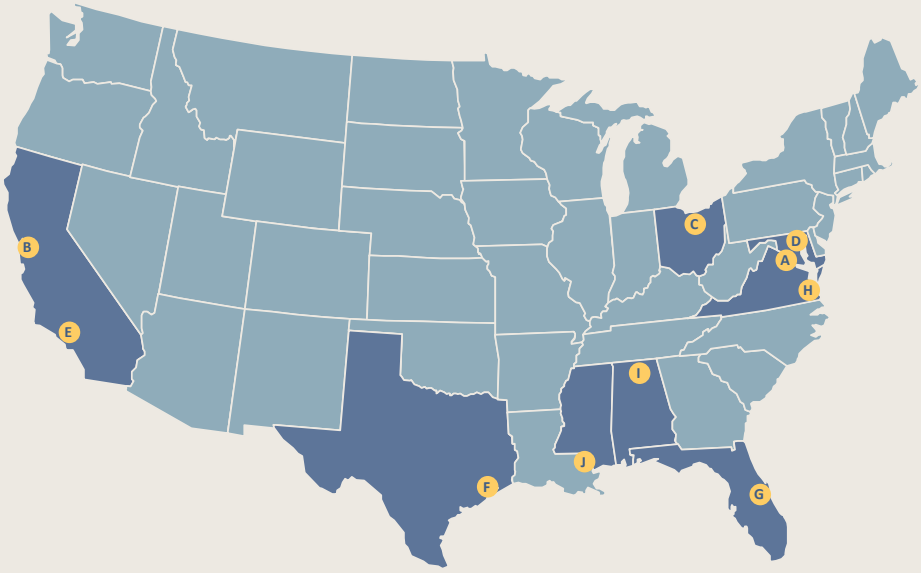
THE OFFICE OF COUNSEL TO THE INSPECTOR GENERAL provides legal advice and assistance to OIG managers, auditors, and investigators. The Office serves as OIG counsel in administrative litigation and assists the Department of Justice when the OIG participates as part of the prosecution team or when the OIG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

NASA OIG OFFICES OF AUDITS AND INVESTIGATIONS



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

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