



NASA OFFICE OF INSPECTOR GENERAL

SEMIANNUAL REPORT

APRIL 1–SEPTEMBER 30, 2022



The background of the entire page is a large, semi-transparent seal of the NASA Inspector General. The seal features a central eagle with wings spread, perched on a shield. Above the eagle are the scales of justice and a five-pointed star. The words "INSPECTOR GENERAL" are arched across the top, and "NATIONAL AERONAUTICS AND SPACE ADMINISTRATION" is arched across the bottom.

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Cover image:

NASA's Space Launch System (SLS) rocket with the Orion spacecraft aboard is seen atop a mobile launcher at Launch Pad 39B as preparations for launch continue on August 31, 2022, at NASA's Kennedy Space Center in Florida.



FROM THE INSPECTOR GENERAL

The NASA Office of Inspector General (OIG) moved this reporting period from operating in an exclusively telework mode due to the COVID-19 pandemic to an experimental hybrid workplace that stresses teamwork while maximizing the telework flexibilities that served the office well over the past 2 years. Whether onsite in NASA offices or at home, OIG auditors, investigators, attorneys, and support staff continue to conduct comprehensive oversight of NASA programs and personnel. I remain extremely proud of the OIG staff for their professionalism and resilience as we seek to determine the optimal mix of in-office collaboration, operational travel, and telework.

During the past 6 months, the OIG released reports examining specific Agency programs such as development of a second Mobile Launcher (needed to launch larger variants of the Agency's Artemis rocket and capsule) and broader NASA project management issues with a report that examined the Agency's processes for estimating, tracking, and reporting life-cycle cost and schedule for major programs like Artemis. In addition, we reported on Ames Research Center's lease management practices and audited NASA's Earth Science Disasters Program to assess whether its data helps predict, prepare for, respond to, and recover from disasters.

On the investigations side of the house, NASA OIG special agents, investigative auditors, and our data analytics and forensic information technology staff continue to investigate fraud, waste, abuse, misconduct, and mismanagement involving NASA personnel and contractors. For example, a former NASA contract employee and their spouse were sentenced this reporting period to 20 months and 17 months, respectively, in prison for steering contracts to a former NASA subcontractor in exchange for money and gifts. The couple also was ordered to pay \$165,472 in restitution and forfeit more than \$700,000 in assets. In another case, the parent company of a NASA subcontractor and its chief executive officer, chief operating officer, and former general manager were debarred from federal government contracting for 3 years as a result of their fraud convictions in a scheme in which the company misrepresented its socioeconomic status to secure more than \$84 million in government contracts.

This Semiannual Report summarizes the OIG's activities and accomplishments between April 1, 2022, and September 30, 2022. We hope you find it informative.

A handwritten signature in blue ink that reads "PKM-A".

Paul K. Martin
Inspector General
October 31, 2022

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OFFICE OF AUDITS



The solar panels on the International Space Station make it the brightest human-made object in the night sky. This photo by Ray Tolomeo captures the Station's roughly 4-minute, 30-second trek across the eastern sky over Bristow, Virginia, on the evening of July 11, 2022, before it disappears in Earth's shadow beyond the horizon.

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 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 land on the Moon. Our oversight of this area typically involves missions and operations within the Agency's Exploration Systems Development Mission Directorate, Space Operations Mission Directorate, and Space Technology Mission Directorate.

NASA'S MANAGEMENT OF THE MOBILE LAUNCHER 2 CONTRACT **IG-22-012, JUNE 9, 2022**

Key to NASA's goals of sustaining a human presence on the Moon and future exploration of Mars is the Agency's development of two mobile launchers that will serve as the ground structure to assemble, process, transport to the pad, and launch various iterations of the integrated Space Launch System (SLS)/Orion Multi-Purpose Crew Vehicle (Orion) system into space. In 2019, NASA awarded a \$383 million contract to Bechtel National, Inc. (Bechtel), to design, build, test, and commission a second mobile launcher (ML-2) to support larger variants of the SLS, beginning with Artemis IV. This audit examined the extent to which NASA is meeting cost, schedule, and performance goals for the ML-2 contract. We found that to complete contract requirements and deliver an operational ML-2, Bechtel estimates an additional \$577.1 million will be needed, for a total cost of \$960.1 million, and an October 2025 rather than March 2023 delivery date as initially planned. As a result, the earliest Artemis IV can launch is November 2026—3 months after the mission's current estimated launch date—but further delays are likely as construction on the launcher had yet to begin. These cost increases and schedule



The mobile launcher for the Artemis I mission, atop crawler-transporter 2, arrives at the Vehicle Assembly Building at NASA's Kennedy Space Center in Florida on October 30, 2020.

delays can be attributed primarily to Bechtel's poor performance on the contract but were also compounded by NASA's management practices and decision to award the contract before Exploration Upper Stage requirements were finalized. Further, NASA's usage of award fees has not improved Bechtel's performance. As a result, given the ML-2 project's cost overages and schedule delays, we questioned nearly \$3 million of award fees already earned by the contractor. After the completion of our audit work, the Agency rated Bechtel's performance for the award fee period ending in

March 2022 as “unsatisfactory,” resulting in no award fee for this period, and Bechtel developed a revised interim cost and schedule estimate that projected even higher contract costs and delivery of the ML-2 to NASA in late 2026—more than 3.5 years later than originally promised. We made five recommendations, with which the Agency concurred.

NASA’S COST ESTIMATING AND REPORTING PRACTICES FOR MULTI-MISSION PROGRAMS IG-22-011, APRIL 7, 2022

NASA has a long history of groundbreaking accomplishments but has struggled to establish credible cost estimates for some major acquisitions. As a result, Congress and other stakeholders lack meaningful visibility into the complete costs of NASA’s major acquisitions. Without adequate transparency, it is difficult for stakeholders to hold the Agency accountable for these large, years-long expenditures of taxpayer funds. This audit examined whether NASA’s program management approach provides the necessary transparency and accountability for performance to the Agency’s external stakeholders and whether NASA’s processes for estimating, tracking, and reporting life-cycle

cost and schedule are adequate for these major program acquisitions. We found that Congress is not receiving the federally mandated cost and schedule information it needs to make fully informed funding decisions for NASA’s multi-mission programs. Additionally, we raised questions with the Agency’s recent update to NASA Procedural Requirements (NPR) 7120.5F, NASA Space Flight Program and Project Management Requirements, which establishes the requirements, life-cycle processes, and procedures by which NASA formulates and implements space flight programs and projects. Rather than resolving the major shortcomings with the Agency’s cost-estimating and reporting practices, the recent policy amendments formalized known deficiencies as acceptable management practices. We made seven recommendations; the Agency concurred with two, partially concurred with one, and did not concur with four.

ONGOING AUDIT WORK

NASA’s Management of the Artemis Program’s Supply Chain

Consisting of multiple programs and projects, more than a dozen prime contractors, and thousands of subcontractors, vendors, and suppliers, the Artemis mission is an ambitious and costly effort that will return humans to the Moon and eventually allow them to travel to Mars. However, the recent supply chain issues and threats—exasperated by the COVID-19 pandemic—have already negatively impacted mission goals. This audit will examine NASA’s management of the Artemis program’s supply chain.



A volunteer from NASA’s Artemis Extravehicular Activity training group moves a 30-pound object through a boulder field while in a spacesuit connected to NASA’s Active Response Gravity Offload System.

NASA's Management of the Space Launch System Engine Contracts

The Artemis program is projected to be enormously expensive and unsustainable. Key to this effort is the development of the SLS—a two-stage, heavy-lift rocket and boosters that will launch Orion into space. In prior audit work, we estimated that between 2020 and 2025, NASA will spend \$10 billion on the SLS, bringing the total amount spent on the rocket system to \$29.5 billion since its start in fiscal year (FY) 2012. This audit will examine NASA's management of its SLS engine contracts.



The four RS-25 engines on NASA's SLS rocket—as pictured above during the March 2021 SLS core stage Green Run hot fire test at Stennis Space Center—produce more than 2 million pounds of thrust.

Review of NASA's Partnerships with International Space Agencies for Artemis Missions

While NASA is leading the Artemis program, international partnerships will play a key role in achieving a sustainable and robust presence on the Moon throughout this decade while also preparing to conduct a historic human mission to Mars. To this end, in October 2020, NASA and several partner countries signed the Artemis Accords, establishing a practical set of principles to guide space exploration cooperation among nations participating in NASA's 21st-century lunar exploration plans. This audit will examine NASA's efforts to partner with international space agencies for the Artemis missions.

Review of NASA's Space Technology Mission Directorate Portfolio

NASA's Space Technology Mission Directorate invests in transformational technologies that may offset future mission risk, reduce cost, advance capabilities that enable NASA's missions, and support growth in the industry, with a greater focus on supporting lunar landing goals. From 2010 to 2020, the Directorate completed almost 8,000 projects, and, in 2022, it is managing about 1,400 active projects. This audit will examine the Agency's management of its Space Technology Mission Directorate portfolio.

Painting of the NASA
logotype is complete
on the SLS solid rocket
boosters for the
Artemis I mission.



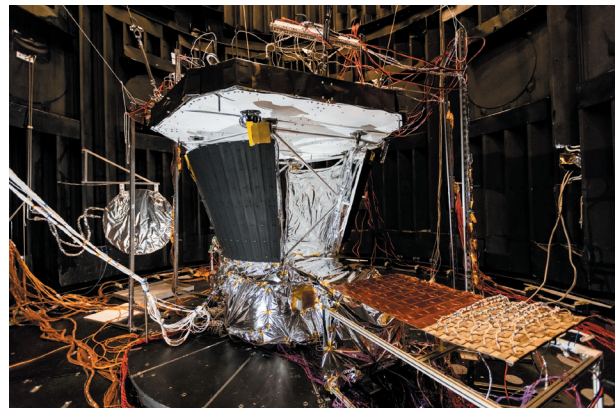
Science missions like the Mars 2020 Perseverance Rover, Parker Solar Probe, and James Webb Space Telescope further our understanding of the solar system and the universe. Meanwhile, NASA's Earth-observing missions shed light on climate change, severe weather and other natural hazards, wildfires, and global food production. And, as it has since its earliest days, the Agency continues to conduct research in pursuit of improvements and efficiency in aviation technology. Our oversight of these areas generally corresponds to efforts housed in the Agency's Science Mission Directorate and Aeronautics Research Mission Directorate.

NASA'S MANAGEMENT OF ITS JOHNS HOPKINS UNIVERSITY APPLIED PHYSICS LABORATORY PORTFOLIO

IG-22-017, SEPTEMBER 29, 2022

The Johns Hopkins University Applied Physics Laboratory (APL) participates in multiple NASA missions, such as Europa Clipper, Parker Solar Probe, New Horizons, and the upcoming Dragonfly mission to Titan, Saturn's largest moon. NASA manages two Agency-wide contracts with APL for robotic space missions and supporting research—the Aerospace Research, Development, and Engineering Support Services (ARDES) contract, ARDES I, and the follow-on ARDES II contract—which have a combined potential value not to exceed \$3.8 billion. This audit examined APL's management of its portfolio of NASA projects relative to cost and schedule performance and assessed NASA's management of the ARDES contracts and associated task orders. Based on our review of 16 NASA projects at APL, we found APL is appropriately managing its NASA portfolio and is not the primary factor for any cost or schedule performance issues identified with those projects. Additionally, we found that NASA's decision to end two task orders on the ARDES I contract and move the remaining in-scope work on these projects to ARDES II was unnecessary and costly. Specifically, the ARDES II contract charges a higher

fixed-fee rate for projects than ARDES I, resulting in cost increases of at least \$3.88 million for the same scope of work originally covered by the ARDES I contract. This decision also increased the likelihood that the ARDES II contract's maximum value will be reached sooner. We made two recommendations, with which the Agency partially concurred.



The solar array cooling systems for the Parker Solar Probe spacecraft—designed, built, and operated by APL—is shown undergoing thermal testing at NASA's Goddard Space Flight Center.

NASA’S MANAGEMENT OF THE EARTH SCIENCE DISASTERS PROGRAM

IG-22-013, JUNE 14, 2022

In 2021, the United States experienced a historic year for weather and climate disasters that resulted in the deaths of 688 people and cost the nation a combined \$145 billion in damages. With the number of major disasters increasing throughout the world, NASA’s Earth Science Disasters Program (ESDP) is focused on using space- and ground-based observations to provide disaster-related data and information products to domestic and international partners and stakeholders. This audit assessed NASA’s management of ESDP, specifically whether the Agency effectively provides data and information products to predict, prepare for, respond to, and recover from disasters and evaluates the output and outcomes of its efforts to assist entities with disasters. We found ESDP provided domestic and international partners and stakeholders with useful and effective products to predict, prepare for, respond to, and recover from disasters. However, the Program does not have clearly documented mission priorities or objectives to achieve success, has not received clear and consistent messaging from senior leadership, and has an inadequate allocation



Hurricane Florence is pictured from the ISS as a category 1 storm as it was making landfall near Wrightsville Beach, North Carolina, on September 14, 2018.

of budget and personnel resources. Further, internal ESDP guidance documents for providing support to entities addressing disaster events is incomplete and inconsistently used by ESDP staff, creating communication, prioritization, and workflow inefficiencies. Finally, ESDP rarely conducts and documents after-action activities for its disaster responses, which would include lessons learned and recommendations that would allow the Program to identify inefficiencies and develop improvements for future responses. We made seven recommendations, with which the Agency concurred.

NASA’S VOLATILES INVESTIGATING POLAR EXPLORATION (VIPER) MISSION

IG-22-010, APRIL 6, 2022

As a precursor to landing on the Moon, NASA is developing a number of new science instruments, systems, and capabilities, including the Volatiles Investigating Polar Exploration Rover (VIPER), a mobile robot that will survey the concentration of water ice at the Moon’s South Pole. This audit assessed NASA’s management of VIPER relative to achieving technical objectives, meeting established milestones, and controlling costs. In June 2020, NASA awarded a task order to Astrobotic Technology, Inc., 1 of 14 providers on contract under the Agency’s Commercial Lunar Payload Services, for VIPER launch and lunar delivery services. We found that the VIPER mission carries higher costs, criticality, and schedule risks compared to other current Commercial Lunar Payload Services task orders, and NASA’s modifications to Astrobotic’s task order have increased its value by \$36.1 million, with more modifications possible. Further, NASA’s Agency Baseline Commitment for the VIPER mission includes costs only for development of the rover, science instruments, lunar operations, and applicable cost reserves, and not those associated with Astrobotic’s contract to launch and deliver VIPER to the Moon, valued at \$226.5 million when the baseline was completed. Additionally, leading

project management tools were not implemented. As a result, NASA and other stakeholders may not have full visibility into the risks and their potential costs to the mission and may not be accurately monitoring mission cost and schedule performance to make timely risk-informed decisions. We made four recommendations, of which the Agency concurred with one, partially concurred with one, and did not concur with two.



Encapsulation of NASA's Orbiting Carbon Observatory-2, or OCO-2, into the Delta II payload fairing nears completion in the mobile service tower at Space Launch Complex 2 on Vandenberg Air Force Base in California.

ONGOING AUDIT WORK

NASA's Earth System Science Pathfinder Program

Climate change continues to turbocharge severe storms, wildfires, hurricanes, droughts, and floods, which threaten millions of people. NASA's Earth System Science Pathfinder Program—composed of small, relatively inexpensive missions—seeks to address the ever-changing situation by leveraging regularly competitively selected Earth science research opportunities that accommodate new and emerging scientific priorities and measurement capabilities. This audit will evaluate NASA's management of the Earth System Science Pathfinder Program, assessing the Program's ability to meet goals, control costs while meeting milestones, and address science and climate research priorities.

NASA's Electrified Aircraft Propulsion Research and Development Efforts

To meet aggressive climate goals, including the Biden Administration's and aviation industry's objective to improve aircraft fuel efficiency, NASA launched the Sustainable Flight National Partnership in 2021. Under this partnership, NASA intends to demonstrate, among other things, the first-ever high-power hybrid-electric propulsion systems for large transport aircraft. This audit will assess the progress of NASA's Electrified Aircraft Propulsion research and development effort and whether NASA's current development strategy is effective to meet the new demand.

Review of NASA's Management of the Radioisotope Power Systems Program

NASA has long used Radioisotope Power Systems—sometimes referred to as a nuclear battery—for spacefaring missions such as Voyager, Cassini, and Perseverance, where solar power or chemical batteries would be impractical. This audit is assessing the Radioisotope Power Systems Program regarding plutonium-238 production,

technology development maturation, and space flight project mission planning.

NASA's On-orbit Servicing, Assembly, and Manufacturing-1 Mission

NASA's On-orbit Servicing, Assembly, and Manufacturing-1 (OSAM-1) mission intends to demonstrate first-of-its-kind technology by grappling with a U.S. government-owned satellite, Landsat 7, to refuel it and demonstrate the capability of potentially extending the operational life of satellites on orbit. This audit is assessing NASA's overall management of the mission relative to cost, schedule, and technological goals.



Artist's concept of OSAM-1.



This time-lapse image of the Milky Way Galaxy taken from the ISS also captured a lightning strike on Earth so bright that it lit up the Station's solar panels.

Institutional services such as human capital management, procurement, infrastructure, and security are organized under NASA's Mission Support Directorate. Our oversight of these functions covers a wide array of topics, including the Agency's procurement of goods and services, operations and maintenance of facilities and infrastructure, workforce management, and physical security. We also monitor and evaluate NASA's information technology (IT) management, which is led by the Agency's Chief Information Officer, and we continue to pay specific attention to the Agency's efforts to improve its IT management practices and cybersecurity.

AMES RESEARCH CENTER'S LEASE MANAGEMENT PRACTICES IG-22-015, AUGUST 4, 2022

Located at Moffett Field in California's Silicon Valley, NASA's Ames Research Center conducts research and development in aeronautics, exploration technology, and science. Ames utilizes leases to transform the Center into a shared-use research and development campus and establish collaborations with private industry, academia, government, and nonprofits. This audit assessed the effectiveness of Ames' management of its lease process to further the goal of developing a collaborative research and development campus; whether the process complied with federal laws and NASA requirements; and the benefits, costs, and risks associated with Ames' leasing approach. We found that Ames' lease process lacks adequate controls to ensure accountability, does not adequately protect NASA's interests, and is not

in compliance with NASA policies and federal laws. Ames' actions have resulted in the Agency forgoing millions of dollars in leasing revenue that it could have used to improve its aging facilities and infrastructure. Further, the Center lacks an effective strategic and programmatic approach to manage and measure its progress in achieving its vision of creating a collaborative research and development campus. Instead, the Center is issuing individual leases piecemeal that are not part of a clear overall strategy, that generally are not financially advantageous to the government, and that do not result in a collaborative agreement between Ames and its tenants. As a result, Ames is forgoing partnership opportunities with other entities that are interested in collaborating with NASA while draining institutional resources and increasing security risks to the Center. The Agency concurred with our 10 recommendations.

ONGOING AUDIT WORK

Audit of NASA's Management of Its Artificial Intelligence Capabilities

NASA deploys artificial intelligence applications to conduct space research—such as automating image analysis for galaxy, planet, and star classifications—and for developing autonomous space probes that can avoid space junk without human involvement. This audit will review NASA's progress in developing its artificial intelligence governance frameworks and policies and will assess whether security controls have been implemented to protect artificial intelligence data and technologies.

NASA's Efforts to Advance Diversity, Equity, Inclusion, and Accessibility

The success of NASA's projects and missions relies on the Agency attracting and retaining a highly skilled and diverse workforce. Federal agencies are required to work towards removing barriers to employment, services, and successful progression into leadership positions. To this end, NASA established inclusion as one of its core values and, like all federal agencies, is working to meet federal requirements while also advancing its efforts in diversity, equity, inclusion, and accessibility. This audit is evaluating the Agency's efforts in this area.

Audit of NASA's Software Asset Management

More than 49,000 desktop, laptop, and engineering computers carrying thousands of unique software products from hundreds of vendors, enable NASA scientists and engineers to drive advances in science, technology, aeronautics, space exploration, and stewardship of Earth. This audit is examining whether NASA is managing its software assets in an effective and efficient manner while complying with security best practices.

NASA's Space Communication Infrastructure Upgrade and Modernization Projects

NASA's space communication infrastructure is composed of a series of ground terminals, antennas, and satellites located around the world. Spacecraft operating in low Earth orbit rely on the Near Space Network to provide continuous tracking and command connectivity; those traveling to farther destinations such as the Moon or other planets use the Deep Space Network. This audit is assessing NASA's progress toward upgrading the Near Space Network and Deep Space Network ground stations and the ability of the networks to support current and future mission requirements.



A powerful new antenna called Deep Space Station 56 has been added to the NASA Space Communications and Navigation Deep Space Network, which connects us to the space robots exploring our solar system.

Audit of NASA’s Compliance with the Geospatial Data Act for Fiscal Year 2022

The Geospatial Data Act of 2018 seeks to foster efficient, government-wide management of geospatial data—objects, events, or phenomena that have a location on the surface of Earth. This mandated audit is examining whether NASA has fulfilled its responsibilities for managing geospatial data.

Evaluation of NASA’s Information Security Program under the Federal Information Security Modernization Act for Fiscal Year 2022

In this required annual review, we will evaluate NASA’s IT security program against the Federal Information Security Modernization Act of 2014 metrics for 2022. 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 Federal Information Security Modernization Act reviews.



Webb NIRCam composite image of Jupiter from three filters— F360M (red), F212N (yellow-green), and F150W2 (cyan)— and alignment due to the planet's rotation.

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 help the Chief Financial Officer and the Agency address 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 assist the Agency in performing pre-award risk assessments and post-award monitoring efforts.

NASA'S COMPLIANCE WITH THE PAYMENT INTEGRITY INFORMATION ACT FOR FISCAL YEAR 2021

IG-22-014, JUNE 28, 2022

In FY 2021, agencies across the federal government made an estimated \$281.4 billion in improper and unknown payments. 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 2021 and the Agency's implementation of recommendations made in previous audits. We found that NASA was not in compliance with PIIA for FY 2021 because it did not publish improper

payment estimates for the SLS Program in the accompanying materials to the Agency Financial Report as required by the statute. We made eight recommendations; the Agency concurred with three and did not concur with five.

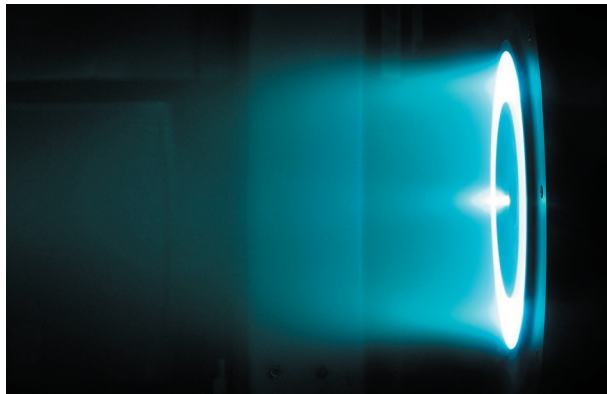
ONGOING AUDIT WORK

Audit of NASA's Fiscal Year 2022 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 2022 audit conducted by the independent public accounting firm Ernst & Young LLP.

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.



A 6-kilowatt Hall thruster in operation at NASA's Jet Propulsion Laboratory.

NASA's James Webb Space Telescope has revealed details of the Southern Ring planetary nebula that were previously hidden from astronomers.



STATISTICAL DATA

TABLE 1: AUDIT PRODUCTS AND IMPACTS

Report No. and Date Issued	Report Title	Impact
Human Exploration		
IG-22-012 6/9/2022	NASA's Management of the Mobile Launcher 2 Contract	Provided recommendations to improve management of the ML-2 contract and contractor performance.
IG-22-011 4/7/2022	NASA's Cost Estimating and Reporting Practices for Multi-Mission Programs	Provided recommendations to ensure the transparency and accountability of all major programs and activities are reported to Congress in accordance with Title 51.
Science and Aeronautics		
IG-22-017 9/29/2022	NASA's Management of Its Johns Hopkins University Applied Physics Laboratory Portfolio	Provided recommendations to strengthen NASA's insider threat program.
IG-22-013 6/14/2022	NASA's Management of the Earth Science Disasters Program	Provided recommendations to improve overall management of the Program.
IG-22-010 4/6/2022	NASA's Volatiles Investigating Polar Exploration (VIPER) Mission	Provided recommendations to improve mission management and ensure consistency with major project development best practices.
Mission Support and Information Technology		
IG-22-015 8/4/2022	Ames Research Center's Lease Management Practices	Provided recommendations to improve the lease process and implementation of the NASA Ames Development Plan.
Financial Management		
IG-22-014 6/28/2022	NASA's Compliance with the Payment Integrity Information Act for Fiscal Year 2021	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 SEMI-ANNUAL REPORT

Report No. and Date Issued	Report Title	Objective
IG-22-016 9/28/2022	Vulnerability Assessment and Penetration Testing Report for the Fiscal Year 2022 Financial Statement Audit	Identified improvements in the security of the Agency's financial systems.
ML-22-013 9/7/2022	Desk Review of the WGBH Educational Foundation's Fiscal Year 2021 Single Audit Reporting Package	Determined whether the audit report met generally accepted government auditing standards and the Uniform Guidance audit requirements.
ML-22-012 8/24/2022	Desk Review of the Earth & Space Research's Fiscal Year 2021 Single Audit Reporting Package	Determined whether the audit report met generally accepted government auditing standards and the Uniform Guidance audit requirements.
ML-22-011 8/12/2022	Desk Review of For Inspiration and Recognition of Science and Technology's Fiscal Year 2021 Single Audit Reporting Package	Determined whether the audit report met generally accepted government auditing standards and the Uniform Guidance audit requirements.
ML-22-010 7/8/2022	Desk Review of the Sciencenter Discovery Museum'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-22-009 6/17/2022	Desk Review of The Institute for Global Environmental Strategies, Inc.'s Fiscal Year 2021 Single Audit Reporting Package	Determined whether the audit report met generally accepted government auditing standards and the Uniform Guidance audit requirements.

Report No. and Date Issued	Report Title	Objective
ML-22-008 5/27/2022	Desk Review of the Consortium for Ocean Leadership'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-22-007 4/13/2022	Desk Review of the Gulf of Maine Research Institute's Fiscal Year 2021 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		
Human Exploration						
IG-22-012 6/9/2022	NASA's Management of the Mobile Launcher 2 Contract	6/9/2022	6	0	1/31/2023	\$2,939,667
IG-22-011 4/7/2022	NASA's Cost Estimating and Reporting Practices for Multi-Mission Programs	unresolved ^a	7	0	12/31/2023	\$0
Science and Aeronautics						
IG-22-017 9/29/2022	NASA's Management of Its Johns Hopkins University Applied Physics Laboratory Portfolio	9/29/2022	2	0	6/30/2023	\$3,876,979
IG-22-013 6/14/2022	NASA's Management of the Earth Science Disasters Program	6/14/2022	7	0	5/1/2023	\$0
IG-22-010 4/6/2022	NASA's Volatiles Investigating Polar Exploration (VIPER) Mission	4/6/2022	4	0	12/31/2023	\$0
Mission Support and Information Technology						
IG-22-015 8/4/2022	Ames Research Center's Lease Management Practices	8/4/2022	10	0	6/30/2025	\$0
Financial Management						
IG-22-016 9/28/2022	Vulnerability Assessment and Penetration Testing Report for the Fiscal Year 2022 Financial Statement Audit	9/28/2022	10	0	12/31/2023	\$0
IG-22-014 6/28/2022	NASA's Compliance with the Payment Integrity Information Act for Fiscal Year 2021	unresolved ^b	8	0	10/31/2023	\$0

a Of the seven open recommendations, four remain unresolved as of the end of this reporting period.

b Of the eight open recommendations, five remain unresolved as of the end of this reporting period.

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		
Human Exploration						
IG-22-007 1/11/2022	NASA's Management of Its Astronaut Corps	1/11/2022	2	2	1/31/2023	\$0
IG-22-005 11/30/2021	NASA's Management of the International Space Station Efforts to Commercialize Low Earth Orbit	11/30/2021	1	0	5/31/2022	\$0

Report No. and Date Issued	Report Title	Date Resolved	Number of Recommendations		Latest Target Completion Date	Potential Cost Savings
			Open	Closed		
IG-22-003 11/15/2021	NASA's Management of the Artemis Missions	11/15/2021	8	1	3/31/2023	\$0
IG-21-025 8/10/2021	NASA's Development of Next-Generation Spacesuits	8/10/2021	2	2	1/31/2023	\$0
IG-21-011 1/27/2021	NASA's Efforts to Mitigate the Risks Posed by Orbital Debris	1/27/2021	6	1	12/31/2025	\$0
IG-21-004 11/20/2020	NASA's Management of the Gateway Program for Artemis Missions	11/10/2020	4	4	3/31/2023	\$0
IG-20-018 7/16/2020	NASA's Management of the Orion Multi-Purpose Crew Vehicle Program	10/2/2020	1	2	3/31/2023	\$0
IG-20-013 3/17/2020	Audit of NASA's Development of Its Mobile Launchers	3/17/2020	2	2	3/31/2023	\$0
IG-20-012 3/10/2020	NASA's Management of Space Launch Program Costs and Contracts	8/21/2020	4	4	3/31/2023	\$0
IG-20-005 11/14/2019	NASA's Management of Crew Transportation to the International Space Station	11/14/2019	1	4	7/31/2023	\$0
IG-17-012 3/9/2017	NASA's Management of Electromagnetic Spectrum	3/9/2017	1	1	12/31/2022	\$0
Science and Aeronautics						
IG-21-022 7/14/2021	NASA's Management of USRA's Cooperative Agreements	7/14/2021	1	11	11/30/2022	\$0
IG-21-002 10/27/2020	NASA's Management of Its Acquisition Workforce	10/27/2020	3	1	12/1/2023	\$0
IG-20-023 9/16/2020	NASA's Planetary Science Portfolio	9/16/2020	3	8	11/30/2021	\$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	2	1	4/28/2023	\$0
IG-18-015 4/5/2018	NASA's Management of GISS: The Goddard Institute for Space Studies	4/5/2018	1	7	9/30/2022	\$0
IG-17-003 11/2/2016	NASA's Earth Science Mission Portfolio	11/2/2016	1	1	11/30/2021	\$0
Mission Support and Information Technology						
IG-22-009 3/14/2022	NASA's Insider Threat Program	3/14/2022	2	0	12/1/2023	\$0
IG-21-027 9/8/2021	NASA's Construction of Facilities	9/8/2021	6	0	1/31/2023	\$0
IG-21-019 5/18/2021	NASA's Cybersecurity Readiness	5/18/2021	5	0	7/29/2023	\$0
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-21-006 12/3/2020	NASA's Management of Hazardous Materials	12/3/2020	2	6	10/1/2023	\$0
IG-21-001 10/2/2020	Audit of NASA's Compliance with the Geospatial Data Act	10/2/2020	3	1	10/28/2022	\$0

Report No. and Date Issued	Report Title	Date Resolved	Number of Recommendations		Latest Target Completion Date	Potential Cost Savings
			Open	Closed		
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	1	8	7/29/2022	\$0
IG-20-011 3/3/2020	NASA's Management of Distributed Active Archive Centers	3/3/2020	1	2	3/31/2024	\$0
IG-20-001 10/21/2019	NASA's Security Management Practices	10/21/2019	2	6	12/31/2023	\$0
IG-19-002 10/22/2018	Audit of NASA's Historic Property	2/5/2019	3	2	12/31/2022	\$0
IG-17-021 5/17/2017	Construction of Test Stands 4693 and 4697 at Marshall Space Flight Center	10/5/2017	3	0	9/30/2022	\$17,115,009
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
Financial Management						
IG-22-006 12/15/2021	Fiscal Year 2021 Management Letter	12/15/2021	33	0	12/30/2022	\$0
IG-22-004 11/15/2021	Audit of NASA's Fiscal Year 2021 Financial Statements	11/15/2021	3	0	11/30/2022	\$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	1	4	7/29/2022	\$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	2	\$6,816,646	\$0
Needing management decision during period	2	\$6,816,646	\$0
Management Decision Made During Period			
Amounts agreed to by management	1	\$2,939,667	\$0
Amounts not agreed to by management	1	\$3,876,979	\$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: OTHER MONETARY SAVINGS

Report No. and Date Issued	Report Title	Description	Amount
IG-22-015, 8/4/2022	Ames Lease Management Practices	Our audit report identified that Ames' lease process did not ensure that an effective fair market value assessment of the leased property was obtained prior to negotiation or that fair market value was used to set a tenant's rent as required by the enhanced use lease authority. The monetary savings we are claiming is forgone revenue—the amount Ames could have received if it had obtained fair market value rent.	\$494,000,000

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

Audits with Findings	12	
Findings and Questioned Costs		
	Number of Findings	Questioned Costs
Management decisions pending, beginning of reporting period	5	\$255,510
Findings added during reporting period	15	\$54,199
Management decisions made during reporting period	(10)	
Agreed to by management		\$0
Not agreed to by management		\$0
Management decisions pending, end of reporting period	10	\$309,709

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 63 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 9: DCAA AUDIT REPORTS WITH QUESTIONED COSTS AND RECOMMENDATIONS THAT FUNDS BE PUT TO BETTER USE

	Amounts in Issued Reports	Amounts Agreed To
Questioned costs	\$20,132,000	\$8,924,000
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 U.S. 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 Interior Business Center issued 10 audit reports that involved contractors who do business with NASA. The auditors questioned \$149,046 in costs.

TABLE 10: AUDIT REPORTS OF NASA CONTRACTORS WITH QUESTIONED COSTS AND RECOMMENDATIONS THAT FUNDS BE PUT TO BETTER USE

	Amounts in Issued Reports	Amounts Agreed To
Questioned costs	\$149,046	\$0
Funds to be put to better use	\$0	\$0

Astronaut Matthias Maurer is pictured during a spacewalk on March 23, 2022, to install thermal gear and electronics components on the orbiting ISS.



OFFICE OF INVESTIGATIONS



A dusty lunar landscape as envisioned by
NASA's Advanced Concepts Laboratory.

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

PROCUREMENT, ACQUISITION, AND GRANT FRAUD

Small Business Innovation Research Investigation Results in Multiple Criminal Convictions

As the result of a joint investigation by the NASA OIG, the U.S. Army Criminal Investigation Division, the Department of Energy OIG, and the U.S. Department of Homeland Security, two individuals, their corporation, and a fictitious shell company they created pleaded guilty to aiding and abetting unauthorized computer access, possession of false identification documents, and wire fraud. The individuals entered into plea agreements of behalf of the corporation and shell company, whereby they agreed to pay \$4,652,762 in restitution, of which \$1,406,250 was attributable to NASA Small Business Innovation Research contracts awarded to the company.

Former NASA Contract Employee and Spouse Sentenced for Kickback Scheme

As a result of a joint investigation among the NASA OIG, Federal Bureau of Investigation (FBI), and Internal Revenue Service Criminal Investigation, a former NASA contract employee and their spouse were sentenced to 20 months and 17 months, respectively, for steering contracts to a former NASA subcontractor in exchange for monies and gifts. The couple was also sentenced to 30 hours of community service, \$165,472 in restitution, \$707,331 in asset forfeiture, a \$100 assessment fee, and 36 months' probation upon their release from prison.

Contractors Agree to Settlement

In June 2022, two contractors entered into a Settlement Agreement with a Qui Tam relator. The relator alleged the contractors misrepresented

whether or to what extent they complied with contractual cybersecurity requirements, in violation of the False Claims Act. The government declined to intervene in this Qui Tam. Under the terms of the Settlement Agreement, the contractors agreed to pay to the United States \$9,000,000. NASA's share of the settlement agreement was \$1,770,943, while the remainder went to the U.S. Army, U.S. Air Force, Missile Defense Agency, and relator.

Georgia Contractor Agrees to Settle Fraud Allegations

A Georgia company agreed to resolve allegations under the False Claims Act. The company agreed to pay \$524,404 to the United States, of which \$313,484 will be returned to NASA. The company also agreed to waive payment of \$137,652 for work performed under a Department of Defense contract. The investigation found the company misrepresented itself under the Women-Owned Small Business program to obtain almost \$3 million in federal contracts set aside for small businesses owned and controlled by women.

Contractor Agrees to Civil Settlement

In August 2022, a settlement agreement for \$625,000 was reached with a laboratory equipment manufacturer in Boulder, Colorado, and its owner, after a joint investigation between the NASA OIG, Defense Criminal Investigative Service, U.S. Army Criminal Investigation Division, and Department of Energy OIG. The settlement resolved allegations of False Claims Act violations by a failure to comply with the requirements of the Buy American Act when selling scientific instruments to federal agencies and national laboratories, to include the NASA Goddard Space Flight Center and Jet Propulsion Laboratory.

Parts Supplier Convicted

In April 2022, an aircraft parts supplier in Riverside, California, was arrested for violations of Fraud Involving Aircraft or Space Vehicle Parts based upon a joint investigation between the FBI, Defense Criminal Investigative Service, Department of Transportation OIG, Office of Export Enforcement, and NASA OIG. The individual allegedly engaged in fraudulent transactions resulting in suspect parts being supplied to both the North Atlantic Treaty Organization and NASA, among other entities. The subject pled guilty and was sentenced to 46 months' imprisonment and ordered to pay \$1.5 million in restitution.

Four Companies Suspended for Fraud

Three Maryland companies, a Virginia company, and three Chief Executive Officers were indefinitely suspended by the NASA Acquisition and Integrity Program due to their conduct related to a NASA contract and other factors.

Parent Company and Executives Debarred

As the result of a joint investigation by the NASA OIG and the Small Business Administration OIG, the parent company of a NASA subcontractor and its chief executive officer, chief operating officer, and former general manager were debarred from federal government contracting for a period of 3 years. The debarments occurred as the result of multiple convictions in a woman-owned small business fraud scheme whereby the company misrepresented its socioeconomic status to secure more than \$84 million in government contract awards.

Former University Professor Pleads Guilty to Concealing Ties to Chinese Entities

A former professor at a Texas university pled guilty to not disclosing his association with entities in China while receiving NASA grant funds, which violated the NASA China Funding Restriction. The professor was sentenced to time served

(approximately 12 months) and ordered to pay a \$20,000 fine and \$86,876 in restitution to NASA.

EMPLOYEE MISCONDUCT

Civil Servant Pleads Guilty to Pandemic Relief Fraud

A former civil servant engaged in a scheme in which he fraudulently represented he had an active business with employees eligible for relief under the Paycheck Protection Program. Utilizing NASA information systems, he furthered his scheme and received \$150,000 in Paycheck Protection Program funds. The former civil servant has pleaded guilty and resigned from his employment.

Former Contractor Employee Pleaded No Contest to Battery on an Elderly Person

In July 2022, a former Kennedy Space Center (Kennedy) contractor employee pled no contest to state violations of Battery and Leaving the Scene of a Crash with Property Damage. The former employee was involved in a vehicular accident with another contractor employee on Kennedy property after which he physically assaulted her and made a racial slur. As a result, he was sentenced to 12 months' probation, fined \$787, and ordered to attend 10 weeks of anger management classes.

Former NASA Contractor and Accomplice Charged for Gasoline Thefts

A former NASA Kennedy contractor employee and an accomplice with no NASA nexus were arrested and charged with felony grand theft by the State of Florida in July 2022 for repeatedly using government fuel cards to steal more than \$12,000 worth of gasoline over a 2-year period.

NASA Civil Servant Suspended After Timecard Violations

As the result of a NASA OIG investigation, a NASA Kennedy civil servant was suspended for 14 days without pay after admitting to substantial timecard violations. The employee was also required to forfeit 163 hours of annual leave, or the equivalent of \$8,875 in salary. Kennedy management subsequently sent out a directorate-wide email communicating timecard protocols for hybrid work environments, as well as general timecard reminders to its entire engineering workforce.

Former Chief Scientist Debarred

A former Chief Scientist for Exploration Technology was debarred by the NASA Acquisition Integrity Program for a period of 3 years. The former Chief Scientist previously pled guilty and was sentenced to 30 days of imprisonment and ordered to pay a \$100,000 fine for making false statements to the FBI and NASA OIG regarding their employment by a Chinese government-funded program that recruited individuals with access to foreign technologies and intellectual property.

Two Senior Employees Disciplined for Nepotism

Two senior NASA employees at Goddard Space Flight Center were disciplined for nepotism and prohibited personnel practices due to hiring the child of one of the senior NASA employees as an intern. As a result, the parent of the child received a 1-day suspension and their supervisor received a written reprimand.

Senior Official Misuse of Position

A senior NASA official at Goddard Space Flight Center received a letter of counseling for misuse of their position due to their involvement in an excessive speeding incident on a NASA Center.

Senior Program Manager Counseled

A Headquarters senior program manager received verbal counsel due to their unauthorized release of sensitive and internal agency information to their personal email address.

OTHER CASES

University of Arkansas Professor Sentenced

A University of Arkansas professor was sentenced to 12 months in prison, 12 months' supervised release, and a \$5,000 fine on one count of making a false statement to the FBI about the existence of patents for his inventions in China.

Two Sentenced in Forgery Scheme

As the result of an extensive NASA OIG investigation, two individuals were fined, with one sentenced to 12 months of probation for forging the signature of a Kennedy contracting officer in order to facilitate a third-party sale of Kennedy tour buses. The individuals pled guilty to offering a false instrument for filing under the Assimilative Crimes Act.

Former Florida Police Officer Charged for Conspiring with Ex-Spouse of NASA Civil Servant


In June 2022, a former Florida police officer was arrested and charged with multiple felonies for his role in assisting the ex-spouse of a NASA civil servant to frame her ex-husband for making terroristic threats against her. The investigation found the former police officer misused official computer systems and engaged in other misconduct while on duty. The civil servant had previously pled guilty and was sentenced in federal court to 6 months of imprisonment for her role in the conspiracy.

North Carolina Resident Sentenced for Felony Weapon Violation

In May 2022, a North Carolina resident was charged with carrying a concealed weapon without a permit following a routine traffic stop on Kennedy property. The individual was arrested by the NASA OIG and the Brevard County Sheriff's Office when he returned to Florida to retrieve his firearm. In June 2022, the individual entered into a 12-month pre-trial intervention agreement whereby he was ordered to pay \$923 in court costs and serve 50 hours of community service.

Florida Resident Sentenced in Marijuana Distribution Case

A Florida resident was fined and placed on one year of probation after pleading guilty to marijuana possession. Over 1 pound of marijuana and distribution equipment were found in the individual's vehicle while on NASA property. The Florida State Attorney's Office prosecuted the matter.



This landscape of “mountains” and “valleys” speckled with glittering stars is actually the edge of a nearby, young, star-forming region called NGC 3324 in the Carina Nebula. Captured in infrared light by NASA’s new James Webb Space Telescope, this image reveals for the first time previously invisible areas of star birth.

STATISTICAL DATA

TABLE 11: OFFICE OF INVESTIGATIONS COMPLAINT INTAKE DISPOSITION

Source of Complaint	Zero Files ^a	Administrative Investigations ^b	Management Referrals ^c	Preliminary Investigations ^d	Total
Hotline	5	11	1	17	34
All others	14	14	1	42	71
Total	19	25	2	59	105

^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 12: FULL INVESTIGATIONS OPENED THIS REPORTING PERIOD

Full Criminal/Civil Investigations ^a	30
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^a Full investigations evolve from preliminary investigations that result in a reasonable belief that a violation of law has taken place.

TABLE 13: INVESTIGATIONS CLOSED THIS REPORTING PERIOD

Full, Preliminary, and Administrative Investigations	71
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Note: The NASA OIG uses closing memorandums to close investigations. Investigative reports are used for presentation to judicial authorities, when requested.

TABLE 14: CASES PENDING AT END OF REPORTING PERIOD

Preliminary Investigations	50
Full Criminal/Civil Investigations	140
Administrative Investigations	84
Total	274

TABLE 15: QUI TAM INVESTIGATIONS

Qui Tam Matters Opened This Reporting Period	4
Qui Tam Matters Pending at End of Reporting Period	13

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

TABLE 16: JUDICIAL ACTIONS

Total Cases Referred for Prosecution ^a	35
Individuals Referred to the Department of Justice ^b	31
Individuals Referred to State and Local Authorities ^b	4
Indictments/Informations ^c	14
Convictions/Plea Bargains	10
Sentencing/Pretrial Diversions	16
Civil Settlements/Judgments	3

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

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

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

TABLE 17: ADMINISTRATIVE ACTIONS

Referrals	
Referrals to NASA Management for Review and Response	4
Referrals to NASA Management—Information Only	3
Referrals to the Office of Audits	0
Referrals to Security or Other Agencies	9
Total	16
Recommendations to NASA Management	
Recommendations for Disciplinary Action	
Involving a NASA Employee	4
Involving a Contractor Employee	3
Involving a Contractor Firm	3
Safety Issues or Concerns	0
Recommendations on Program Improvements	
Matters of Procedure	3
Total	13
Administration/Disciplinary Actions Taken	
Against a NASA Employee	10
Against a Contractor Employee	3
Against a Contractor Firm	1
Other	
Procedural Change Implemented	3
Total	17
Suspensions or Debarments from Government Contracting	
Involving an Individual	8
Involving a Contractor Firm	5
Total	13

TABLE 18: INVESTIGATIVE RECEIVABLES AND RECOVERIES

Judicial	\$17,148,264
Administrative ^a	\$14,853
Total ^b	\$17,163,117
Total NASA	\$3,093,247

^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 19: WHISTLEBLOWER INVESTIGATIONS

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

TABLE 20: SENIOR GOVERNMENT EMPLOYEE INVESTIGATIONS REFERRED FOR PROSECUTION

For this reporting period, no cases were reported.

TABLE 21: SENIOR GOVERNMENT EMPLOYEE CASES NOT DISCLOSED TO THE PUBLIC

Case Number	Allegation	Closure Date	Disposition
20-0212-HL-S	Misuse of Purchase Card	4/12/22	Written Reprimand/Removal of Purchase Card Authority and Contracting Warrant
21-0204-S	Misuse of Position	7/20/22	Letter of Counseling



NASA's James Webb Space Telescope has delivered the deepest and sharpest infrared image of the distant universe so far. Webb's First Deep Field is galaxy cluster SMACS 0723, and it is teeming with thousands of galaxies—including the faintest objects ever observed in the infrared portion of the spectrum.

LEGAL ISSUES



A full Moon in view on June 14, 2022, behind the Space Launch System and Orion spacecraft atop the mobile launcher at Launch Complex 39B at NASA's Kennedy Space Center in Florida.

Following the retirement and departure of a number of staff during the past year and a half, OIG Legal completed its recruitment of attorneys to fully staff the Office of Counsel. At Legal’s off-site business meeting in Salt Lake City in June, the attorneys re-shuffled legal portfolio management. Sashka Mannion was designated by the Inspector General as the new Whistleblower Protection Coordinator. Her appointment coincided with National Whistleblower Appreciation Day on July 30, 2022. In addition, we appointed a new manager for the OIG ethics program. We also have a new subject matter expert on legal issues associated with federal law enforcement. The counsels in the field also adopted a new working title of Regional Counsel to reflect the myriad areas of legal issues associated with the geographic regions for which they are responsible.

LEGAL TRAINING

OIG Legal addressed OIG managers at a meeting in West Palm Beach, Florida, in May 2022. Among items discussed were legal aspects of the vaccine mandate, telework and remote work, reasonable accommodation, performance management, and outside activity requests.

At the Office of Investigation All Hands in Denver, Colorado, in July 2022, the legal team presented on

the new Executive Order on accountable Federal Policing and criminal justice practices, including the new Department of Justice policy on legal use of force. OIG Legal also presented on relationships with state and local prosecutive authorities, NASA’s debarment and suspension process, and the use of Inspector General subpoenas under the Right to Financial Privacy Act.

REGULATORY REVIEW

During this reporting period, we reviewed 14 NASA regulations and policies under consideration by the Agency. The following are several of the more significant regulations and reviews.

NASA Policy Directive (NPD) 1800.2E, NASA Occupational Health Program, establishes NASA policy that ensures all NASA work environments, on Earth and in space, are safe, healthy, environmentally sound, and secure through compliance with all applicable Occupational Health

laws and regulatory requirements, professional standards, and NASA program requirements across all program disciplines (i.e., Occupation Medicine, Industrial Hygiene, Health Physics, Health Promotion Wellness and Fitness, Federal Workers’ Compensation, Food Safety, and

Employee Assistance). The OIG recommended changes to the NPD intended to ensure inclusion of specific references to applicable professional standards and program requirements, clarification of Office of the Chief Health and Medical Office responsibilities, and inclusion of position description and responsibilities for the Director, Health and Medical Systems.

NPR 1800.1E, NASA Occupational Health Program Procedures, describes Occupational Health Program procedural requirements necessary to effectively carry out the mission of the Office of the Chief Health and Medical Officer and ensure the scope and quality of services provided by program employees at Centers are optimal. It provides direction to Occupational Health Program and allied health professionals throughout the Agency in accomplishing their daily tasks to ensure the health of employees and a safe work environment while allowing flexibility for establishment and implementation of local procedures and processes to meet needs specific to Center operations. This NPR also establishes minimum requirements for conducting Occupational Health Program services, which encompass eight discipline-specific areas: occupational medicine, industrial hygiene, health physics, health promotion, wellness and fitness, federal workers' compensation, food safety, and employee assistance program. The OIG recommended changes to the NPR intended to ensure that the Agency takes prompt remedial action to address existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees.

NPR 9250.1D, Property, Plant, and Equipment and Operating Materials and Supplies, establishes financial management requirements identification, valuation, recognition, and reporting of capitalized Property, Plant, and Equipment, including contractor-acquired

property, and Operating Materials and Supplies. The proposed revision is for clarification purposes and introduces changes, including recognizing and recording donated property, updating the definition of alternative future use, and updating terminology and appendices to improve consistency. The OIG recommended changes to the NPR intended to ensure that it is consistent with the accounting standards.

14 C.F.R. § 1216.10, NASA Procedures for Implementing National Environmental Policy Act (NEPA), sets forth NASA's policies and procedures for the early integration of environmental considerations into planning and decision making. The revised C.F.R. updates NASA's NEPA regulations to better align with the Agency's current and near-future actions, adjust the level of NEPA review and documentation required for certain actions, and provide more concise descriptions of NASA actions. Additionally, consistent with NASA's own requirement to review existing categorical exclusions at least every 7 years to determine whether modifications, additions, or deletions are appropriate, the proposed C.F.R. incorporates updates to NASA's categorical exclusions based on that review. The OIG recommended changes to the C.F.R. intended to ensure that, among other things, a categorical exclusions is established to enable NASA to track proactive measures taken as part of its sustainability initiatives to replace existing energy sources with alternative energy sources.

14 C.F.R. § 1212.6, Social Security Number Fraud Prevention Act of 2017 Implementation, provides NASA's general policy for advising individuals on any specific system of records maintained by NASA that contains records pertaining to them; preventing records from being used or made available for another purpose without the individual's consent; and permitting access to information about themselves in a NASA system of records. This C.F.R. is amended to implement


the Social Security Number Fraud Prevention Act of 2017, which restricts the inclusion of Social Security numbers on documents sent by mail by the federal government. The Act restricts federal agencies from including individuals' Social Security numbers on documents sent by mail unless the head of the agency determines that

the inclusion of the numbers on the document is necessary. The Act requires agency heads to issue regulations specifying the circumstances under which inclusion of Social Security numbers on a document sent by mail is necessary. The OIG reviewed the C.F.R. and concurred in the proposed revisions.

STATISTICAL DATA

TABLE 22: LEGAL ACTIVITIES AND REVIEWS

Freedom of Information Act Matters	28
Appeals	0
Inspector General Subpoenas Issued	22
Regulations Reviewed	14



This shot from the NASA–European Space Agency Hubble Space Telescope shows a maelstrom of glowing gas and dark dust within one of the Milky Way’s satellite galaxies, the Large Magellanic Cloud.



APPENDICES

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APPENDIX A. INSPECTOR GENERAL ACT REPORTING REQUIREMENTS

Inspector General Act Citation	Requirement Definition	Cross Reference Page Numbers
Section 4(a)(2)	Review of legislation and regulations	37–39
Section 5(a)(1)	Significant problems, abuses, and deficiencies	—
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	4–24
Section 5(a)(8)	Total number of reports and total dollar value for audits with questioned costs	22
Section 5(a)(9)	Total number of reports and total dollar value for audits with recommendations that funds be put to better use	23
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	20–22
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	45
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	27–30
Section 5(a)(17)(B)(C) and (D)	Matters referred to prosecutive authorities	27–30
Section 5(a)(18)	Descriptions of table metrics	32–34
Section 5(a)(19)(A) and (B)(i)(ii)	Summary of investigations involving senior government employees	34
Section 5(a)(20)	Summary of whistleblower investigations	34
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	19–20
Section 5(a)(22)(B)	Closed investigations of senior government employees not disclosed to the public	34

APPENDIX B. AWARDS

The Council of Inspectors General on Integrity and Efficiency recognizes the outstanding accomplishments of OIGs across the federal government. The following NASA OIG team was honored this year.

Barry R. Snyder Joint Award

Members of the Office of Investigations were recognized for their exceptional achievement in uncovering a 22-year scheme that defrauded NASA, the Department of Defense, and the Small Business Administration of \$84 million through misrepresentation of a company's socioeconomic status.

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

The Legal Services Corporation OIG completed a peer review of the NASA OIG Office of Audits in December 2021. NASA OIG received a peer review rating of “pass” and has taken all corrective actions to address the recommendations included in the Letter of Comment. We performed an external peer review of the Federal Housing Finance Agency OIG for the 3-year period ending March 31, 2022, and issued our report on September 21, 2022.

OFFICE OF INVESTIGATIONS

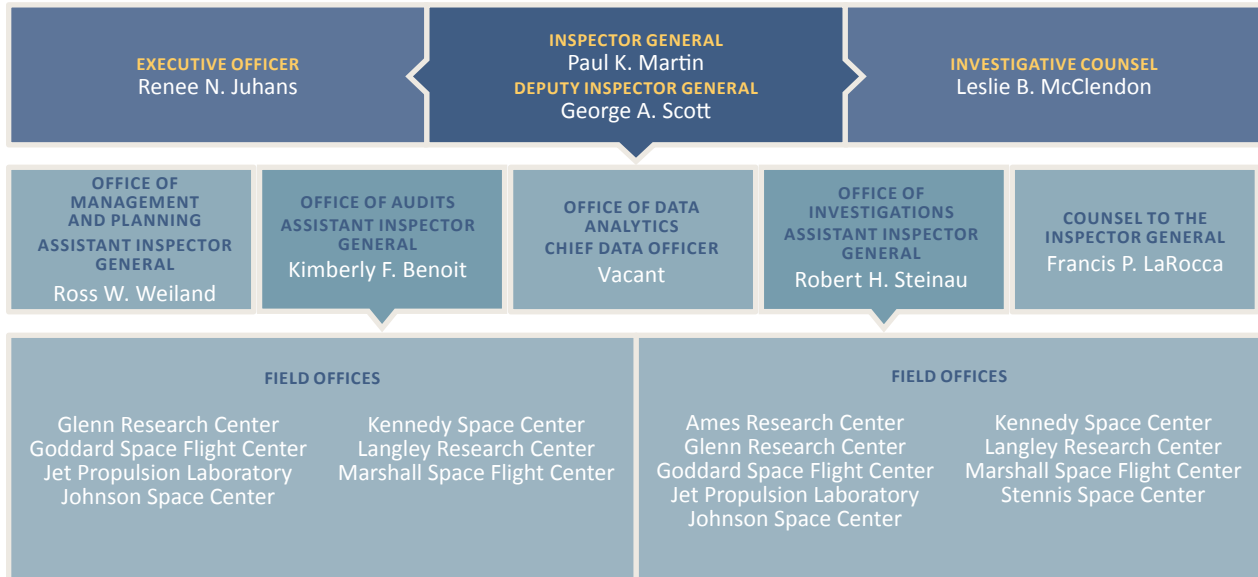
No external peer reviews were performed by the Office of Investigations during this semiannual period. In October 2017, the Office of the Special Inspector General for the Troubled Asset Relief Program reviewed the NASA OIG’s Office of Investigations and found the office to be compliant with all relevant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

APPENDIX D. ACRONYMS

APL	Applied Physics Laboratory	NEPA	National Environmental Policy Act
ARDES	Aerospace Research, Development, and Engineering Support Services	NPD	NASA Policy Directive
DCAA	Defense Contract Audit Agency	NPR	NASA Procedural Requirement
ESDP	Earth Science Disasters Program	OIG	Office of Inspector General
FY	fiscal year	PIIA	Payment Integrity Information Act of 2019
ISS	International Space Station	SLS	Space Launch System
IT	information technology	VIPER	Volatiles Investigating Polar Exploration Rover
ML-2	Mobile Launcher-2		

APPENDIX E. OFFICE OF INSPECTOR GENERAL ORGANIZATIONAL CHART

The OIG's FY 2022 budget of \$45.3 million supports the work of 177 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.

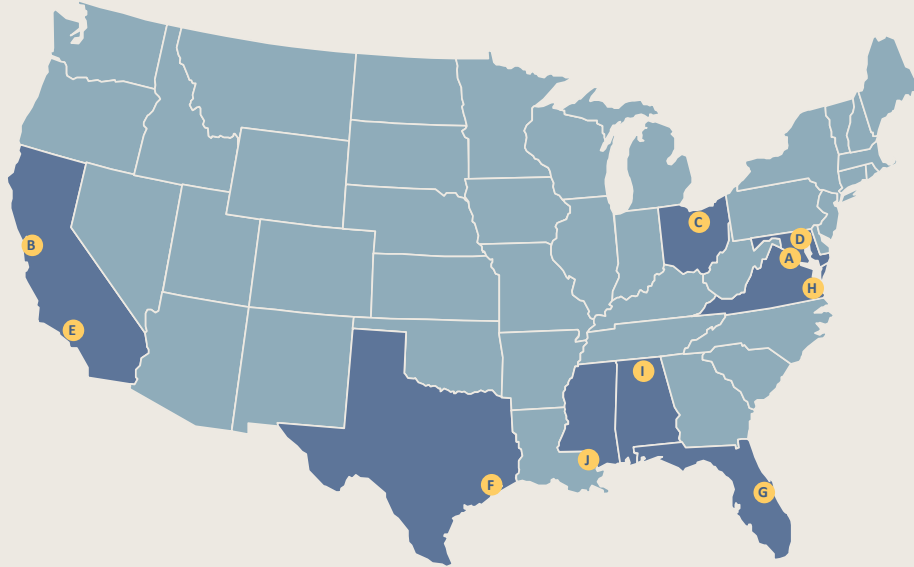
THE OFFICE OF INVESTIGATIONS investigates allegations of cybercrime, fraud, waste, abuse, and misconduct that may affect NASA programs, projects, operations, and resources. The office refers its findings either to the Department of Justice for criminal prosecution and civil litigation or to NASA management 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



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
Mail Stop M-DI
Marshall Space Flight Center, AL
35812-0001
Tel: 256-544-0501 (Audits)
Tel: 256-544-9188 (Investigations)

J STENNIS SPACE CENTER

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



The two interacting galaxies making up the pair known as Arp-Madore 608-333 seem to float side by side in this image from the Hubble Space Telescope.





NASA OFFICE OF INSPECTOR GENERAL

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1-800-424-9183

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>

Office of Inspector General

National Aeronautics and Space Administration

P.O. Box 23089

L'Enfant Plaza Station

Washington, DC 20026