

# **Canadian Space Agency**

## **2023–24**

### Departmental Plan

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The Honourable François-Philippe Champagne, P.C., M.P.  
Minister of Innovation, Science and Industry



Canadian Space  
Agency

Agence spatiale  
canadienne

**Canada** 

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## From the Minister

In 2023–24, the Canadian Space Agency (CSA) will continue working with the Innovation, Science and Economic Development portfolio and other federal partners to position Canada as a global innovation leader by fostering competitive, sustainable and inclusive growth. The 2023–24 Departmental Plan lays out the key priorities the CSA is advancing for the benefit of all Canadians.



Throughout 2023–24, the CSA will undertake a wide range of projects and initiatives that will build on Canada’s proud heritage in space and contribute to a flourishing space environment that creates and maintains high-quality jobs, leverages the full potential of space data to deepen our understanding of global challenges, and delivers inspirational learning experiences for young Canadians.

Work will continue on Canada’s flagship contribution to the US-led [Gateway](#)<sup>i</sup> lunar space station, [Canadarm3](#),<sup>ii</sup> a highly autonomous robotic system that will use a cutting-edge software to perform tasks while orbiting the Moon, without human intervention. Along with its maintenance and repair duties, Canadarm3 will be able to catch incoming spacecraft, such as those that will eventually carry crewed missions. To prepare for these journeys farther into space than humanity has ever travelled before, the CSA will continue to get ready for the launch of the [Artemis II mission](#),<sup>iii</sup> in which the first Canadian astronaut will fly around the Moon. Canada’s lunar endeavours will create unique opportunities for the Canadian space sector to build lunar infrastructure, such as a greenhouse, communications networks and rovers, while its Earth-bound undertakings will expand the frontiers for its expertise to capture its share of the global space economy.

To address the ever-increasing interest in and use of satellite data, the [2022–30 Satellite Earth Observation \(SEO\) Strategy](#)<sup>iv</sup> will continue to be advanced through activities that foster collaboration, talent development and increased access to data — the building blocks for solving today and tomorrow’s challenges. Whether by harnessing the synergy between space and Earth through initiatives in sustainable food production, universal healthcare or ecosystem monitoring, by reinforcing its partnerships to create a thriving environment for the next generation of pioneers, or by going to the Moon and beyond, the CSA will keep delivering the far-reaching benefits of space to Canadians in 2023–24. These are just some of the exciting developments that the year will bring. I invite you to read about these and the CSA’s other activities in this report.

Together with Canadians of all backgrounds, generations, and in every corner of the country, we are building a strong culture of innovation to prepare Canada for the economy of the future.

To that end, I am pleased to present the 2023–24 Departmental Plan for the CSA

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## Plans at a glance

This section highlights the core priorities that the CSA will focus on in 2023–24. These priorities were designed to ensure Canada’s investments in space create opportunities for Canadians and help tackle challenges here on Earth.

### **Propelling space exploration through the Lunar Program**

The future of space exploration is bright, and the CSA is working hard to ensure that Canada can harness available opportunities now and over the coming years. The US-led [Gateway](#),<sup>i</sup> a small space station in lunar orbit, represents the next giant leap for mankind. Canada is contributing to the Gateway with the development of [Canadarm3](#),<sup>ii</sup> a highly autonomous robotic system that will be installed on the space station. Canadarm3 will transform the future of space robotics and will earn Canada two astronaut flights, the first being aboard [Artemis II](#).<sup>iii</sup> Canada’s [first rover](#)<sup>v</sup> to explore the Moon is also under development.

Canada’s participation in these lunar endeavours provides a springboard to create highly interactive learning opportunities that capture the hearts and minds of a new generation of young Canadians, encouraging them to pursue studies in science, technology, engineering, and math (STEM) fields. To this end, the CSA will continue to support educators through the [Objective: Moon](#)<sup>vi</sup> learning materials.

### **Adapting to climate change with space-based data**

Space-based data is an indispensable tool for learning about our planet and its complex dynamics. This data is the cornerstone on which government departments, industry, and academia rely for monitoring vulnerabilities, assessing natural disasters, and engineering cutting-edge solutions to withstand today’s environmental challenges and those to come. By ensuring the continuous delivery of data from its [Earth Observation \(EO\) satellites](#)<sup>vii</sup> to its national and international partners, the CSA contributes to an adaptation to climate change supported by scientific knowledge, information and projections, an approach that is necessary for understanding and managing climate risks and extreme weather events.

### **Leveraging deep-space health and food innovations**

The circumstances that astronauts experience in deep space have similarities to the challenges faced in Canada’s remote Northern regions. Whether it is growing food in harsh environments or delivering healthcare from afar, the CSA is committed to ensuring that technological advancements made in space are transferred here on Earth.

In 2023–24, the CSA will advance the [Deep Space Food Challenge](#)<sup>viii</sup> to develop sustainable, low-input food production systems here on Earth and eventually in deep space. Central to the [Health Beyond initiative](#)’s<sup>ix</sup> ambition to make Canada the world leader in remote health care, the first prototypes of the [Connected Care Medical Modules](#)<sup>x</sup> (C<sup>2</sup>M<sup>2</sup>) will be completed in 2023–24,

introducing a healthcare model where the capacity, quality and continuity of care will be increased. The CSA will also continue advancing space health sciences to help protect astronaut health against the adverse effects of space, while advancing knowledge of similar health issues on Earth.

### **Building a resilient economy**

The CSA’s investments in space research and development (R&D) help drive innovation, advance technological maturity, and create and sustain high-quality jobs here in Canada. To expand the capabilities of its space sector and place it in the forefront of the bustling space economy, the CSA will work in close collaboration with other federal departments and agencies in 2023–24 towards a robust regulatory framework to enable [commercial space launch activities in Canada](#).<sup>xi</sup> Meanwhile, the CSA will continue to run its signature investment vehicles — the [Space Technology Development Program](#)<sup>xii</sup> (STDP) and the [Lunar Exploration Accelerator Program](#)<sup>xiii</sup> (LEAP).

The [STDP](#)<sup>xii</sup> supports the advancement and growth of the Canadian space industry. Investments are issued to Canadian organizations for the development of technologies to support the future needs of the Canadian Space Program and to support the development of innovative technologies with strong commercial potential.

[LEAP](#)<sup>xiii</sup> provides a wide range of opportunities for Canadian science and technology activities in lunar orbit, on the Moon’s surface and beyond. LEAP fosters innovation in areas of strength for Canada, like artificial intelligence, robotics, science and health. It supports the commercialization of innovative ideas from Canadian industry, including small and medium-sized businesses, helping them become an integral part of the growing new-space economy.

The CSA will also launch a pilot project for SpaceHub, a collaborative platform designed to position the CSA as a pivotal player in the procurement of space-based services and solutions. SpaceHub will drive transformational change in Canada’s space ecosystem by connecting scientists and entrepreneurs, enabling innovative SMEs to adapt and capture the opportunities of the rapidly evolving global space economy.

For more information about the CSA’s plans, see the “[Core responsibilities: planned results and resources, and key risks](#)” section of this plan.

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## Core responsibilities: planned results and resources, and key risks

This section contains information on the department’s planned results and resources for each of its core responsibilities. It also contains information on key risks related to achieving those results.

### Canada in space

#### Description

The CSA coordinates the space policies and programs of the government of Canada; ensures that other government departments and agencies have access to space data, information, and services to deliver on their mandate; plans, directs and manages projects relating to scientific or industrial space research and the development of space science and technology; promotes the transfer and diffusion of space technology to and throughout the Canadian industry; and encourages the commercial exploitation of space capabilities, technology, facilities and systems. The CSA also aims to build Canada’s capacity, engage the next generation of space scientists and engineers, and provide opportunities to inspire young people to develop the required skills and to pursue studies and careers in science, technology, engineering and math.

#### Planning highlights

### Result 1 — Canada remains a leading spacefaring nation

Through its leadership in space exploration, its investments in R&D, its STEM educational opportunities, as well as its support of Canadian expertise, the CSA is committed to upholding Canada’s position as a leading spacefaring nation and will continue to deliver the benefits of space to Canadians.

In 2023–24, [Canadarm3](#)<sup>ii</sup> design work is progressing. The development of [Canadarm3](#)<sup>ii</sup> will drive innovation in emerging technologies in Canada through the application of the *Industrial Technological Benefits Policy*. This highly autonomous robotic system will build upon the heritage of its predecessors and use a state-of-the-art software to perform tasks around the Moon, without human intervention. In the meantime, the CSA will continue to operate its robotic arm, [Canadarm2](#), on the [International Space Station](#)<sup>xiv</sup> (ISS).

The contribution of [Canadarm3](#)<sup>ii</sup> to the [Lunar Gateway](#)<sup>i</sup> has earned Canada a range of opportunities for lunar science, technology demonstration and commercial activities, as well as the opportunity to fly two astronauts around the Moon, one onboard the [Artemis II mission](#)<sup>iii</sup> the first crewed mission to the Moon since 1972, and one on the Gateway. To prepare the Canadian astronaut and their family for Canada’s first crewed mission, Artemis II’s preliminary planning is

expected to be completed in 2023–24, which involves coordinating the training, medical support, and logistics activities with other crew members, so that the selected Canadian astronaut can safely and successfully participate in the mission.

Canada's contribution to the [Gateway](#)<sup>i</sup> also provides a generational opportunity to capture the hearts and minds of young Canadians and encourage them to pursue education in STEM fields. To help leverage this opportunity, the CSA will support teachers and educators through [Objective: Moon](#)'s<sup>vi</sup> curriculum-linked online resources, activities and speaker events. Grants and contributions (G&Cs) will also be awarded to support innovative ideas from post-secondary institutions, schools and not-for-profit organizations for the development and delivery of STEM awareness activities focused on lunar exploration topics.

Scheduled to launch between 2024 and 2025, the CAN4 mission will be Canada's fourth long-duration mission of a Canadian astronaut on the [ISS](#).<sup>xiv</sup> Project planning and requirements will occur in 2023–24 to support the Canadian astronaut and science missions.

Since the successful commissioning of the [James Webb Space Telescope](#)<sup>xv</sup> in July 2022, extraordinary images of the cosmos have been released. Canadian astronomers will continue to receive the CSA's support to explore the depths of the universe, such as the teams using the Canadian [Near-Infrared Imager and Slitless Spectrograph](#)<sup>xvi</sup> (NIRISS) instrument to study the atmosphere of exoplanets and the formation of the very first galaxies. In 2023–24, new science projects will be selected and receive the CSA's financial support to use the [guaranteed observation time](#)<sup>xvii</sup> that was secured thanks to Canada's contributions to the most powerful space telescope ever built.

Through its partnerships, the CSA enables Canadian scientists to contribute to world-class science by supporting their participation in numerous international missions. Future research opportunities on the science and technology platform of the [Gateway](#)<sup>i</sup> will be made available primarily through the new Research Opportunities in Space Science (ROSS) initiative. Created in 2022–23, ROSS combines numerous CSA funding initiatives into a single, harmonized program for the scientific community.

Scientists selected in international missions will also receive the CSA's financial support: those participating to NASA's [Mars Science Laboratory](#)<sup>xviii</sup> (MSL) will keep searching for the red planet's ancient signs of life along with the [Curiosity rover](#)<sup>xix</sup> and the Canadian instrument [Alpha-Particle X-ray Spectrometer](#)<sup>xx</sup> (APXS) onboard, which will continue to deliver its sample analysis during the mission's fourth extension. Astronomers selected to study the violent birth and death of stars and galaxies on Japan's [X-ray Imaging and Spectroscopy mission](#)<sup>xxi</sup> (XRISM) will continue to benefit from the CSA's commitment to science, which plays a vital role in ensuring Canada remains a leading spacefaring nation.

The meteorological conditions of space, such as the level of radiation emitted by the Sun or coming from outside of the solar system, are one of the main health hazards during spaceflights and can cause catastrophic loss of critical satellites and impact human lives in significant ways. With its proximity to the magnetic North Pole, Canada has a privileged viewpoint from which to observe space weather. The CSA will continue to help Canadian universities and other government organizations in developing Canada’s capacity to mitigate the impacts of space weather and broaden the transcontinental network for observing space. Collaborative projects such as RADICALS will observe how radiation is transported in space and how it affects climate on Earth, while the [Geospace Observatory \(GO\) Canada initiatives](#)<sup>xxii</sup> will continue to develop measurement instruments, combining both ground and space data to monitor the magnetic disturbances, radio waves or by observing space weather’s most grandiose manifestation, the auroras.

Research on satellites, space debris and asteroids orbiting the Earth as well as exoplanets will continue through the ongoing operations of the [Near-Earth Object Surveillance Satellite](#)<sup>xxiii</sup> (NEOSSat) and through the CSA’s support for its observation program. Advanced analyses and collision avoidance strategies will continue to be provided for Canada’s satellites and those of its international partners through the use of the space debris Conjunction Risk Assessment and Mitigation System (CRAMS), a key tool for maintaining space situational awareness in support of satellite operations and the sustainability of the space environment. Also contributing to Canadians’ security and cybersecurity is the capability demonstration mission [Quantum Encryption and Science Satellite](#)<sup>xxiv</sup> (QEYSSat) that will demonstrate quantum key distribution in space.

Since 2018, the [Canadian CubeSat Project](#)<sup>xxv</sup> has provided post-secondary institutions with the opportunity to design, build, launch and operate their own miniature satellite, a [CubeSat](#).<sup>xxvi</sup> While continuing to support the remaining projects under the CubeSat Project in 2023–24, the CSA will start implementing the successor initiative: [CUBICS](#).<sup>xxvii</sup> It will introduce two streams where students will be able to engage in real space missions while focusing on their interests, as well as their particular expertise and readiness. Under the first stream, participants will develop scientific instruments and experiments that can be used on the CubeSats. The second stream will provide the selected teams the opportunity to develop their own satellite. CUBICS will not only provide the Canadian academic community with significant opportunities to advance science and technologies but will also contribute to developing the expertise of the academic community and consolidate Canada’s critical mass of highly qualified personnel.

Before a technology can be integrated into a system, it needs to be tested and validated numerous times, from conception to evaluation in a real-life setting. Initiatives such as the CSA’s 2023–24 stratospheric balloon campaign [STRATOS](#),<sup>xxviii</sup> a decade-long collaboration with France’s Centre national d’études spatiales (CNES), will continue to provide the next generation of Canadian innovators with the opportunity to test and validate novel technologies and to perform scientific

experiments in a near-space environment. Through multiple investments, the CSA will continue analyzing options for future development of the [High-altitude Aerosols, Water vapour and Clouds<sup>xxix</sup>](#) (HAWC) by reducing technological risks and elaborating the Canadian contribution to the NASA-led [Atmosphere Observing System<sup>xxx</sup>](#) (AOS) mission. The AOS will provide unprecedented observations for weather monitoring, and improve the capacity to predict long-term climatic conditions and air quality. Foreseen as a Canadian-led mission implemented with international partners, the CSA and Environment and Climate Change Canada (ECCC) will oversee the execution of different contracts related to the AOS mission design, scientific studies and anticipated socio-economic impacts in 2023–24.

Collected in 2020 by the [OSIRIS-REx<sup>xxxii</sup>](#) spacecraft, the samples from [Bennu<sup>xxxii</sup>](#)'s surface, a carbon-rich near-Earth asteroid, will land in Utah's desert in fall 2023. Marking Canada's first participation in an asteroid-sample return mission, the CSA contributed the [OSIRIS-REx Laser Altimeter<sup>xxxiii</sup>](#) (OLA) instrument, enabling sample collection with the most-detailed 3D map of a celestial object ever made. As Canada will receive a portion of the asteroid material, engineers and curation specialists will adapt the CSA's laboratories, so that the outer space fragments can be studied by Canadian scientists under optimal conditions for conservation and contamination prevention.

Canada's [SCISAT<sup>xxxiv</sup>](#) satellite will celebrate 20 years of operations in 2023–24, resulting in long-term datasets used to assess and improve our understanding of ozone depletion and recovery, ozone-depleting substances and the impact of greenhouse gases (GHG) on Earth's climate. A new dataset is anticipated to be released and additional hydrofluorocarbon (compounds primarily used in air conditioning and refrigeration) data products will be developed. Since it was launched in 2003, SCISAT data has been used by over 1,600 researchers from 347 institutions in 36 countries. The CSA's continued commitment to SCISAT in 2023–24, as well as the numerous other opportunities it provides for scientific research, will help strengthen the research network for Canadian science and ensure it remains on the forefront of the international stage.

## Result 2 — Space information and technologies improve the lives of Canadians

Since the [Alouette I<sup>xxxv</sup>](#) launch in 1962, Canadian satellites have provided information that is integral to our daily lives and essential for evidence-based decision-making. As our capacity to monitor the planet and use of the data has increased, Canada invested in Earth Observation (EO) capabilities and in technologies that harness the synergy between space and Earth. This has enabled the country to build a world-class expertise. Industry, researchers and governments develop and deliver solutions not only for deep space exploration, but also for a myriad of terrestrial challenges, such as food security, healthcare delivery, weather forecasts, cultural preservation, water and air quality, national defence, wildfires and emergency responses.

In support of Canada’s [Satellite Earth Observation \(SEO\) Strategy<sup>iv</sup>](#), the CSA will further enhance its collaboration and consultation with the national and international EO community.

The CSA will continue implementing the [SEO Strategy<sup>iv</sup>](#) with ECCC and Natural Resources Canada (NRCan). The CSA will play a significant role in coordinating a whole-of-government approach by developing sustained relationships with over 17 departments, allowing for an agile adaptation of EO priorities and optimal coordination of government needs. The [WildFireSat<sup>xxxvi</sup>](#) mission will be the first satellite mission specifically designed to monitor wildfires over Canada. Operating for five years and possibly more, it will give fire managers the ability to predict fire behaviour and assess the greatest threats. WildFireSat will also improve our ability to protect Canadian communities and provide more accurate information on the smoke coming from wildfires, thus improving forecasts on air quality conditions. To ensure best value and rapid deployment of this capability, the CSA will employ agile competitive procurement methods issuing up to four contracts to companies for solutions meeting requirements within a firm-fixed price.

Launched in December 2022, the [Surface Water and Ocean Topography<sup>xxxvii</sup>](#) (SWOT) will provide new and detailed information on one of the most important resources we share — water. Led by NASA and France’s space agency CNES, SWOT will survey 90% of Earth’s surface water, observe the fine details of the ocean’s surface topography, and measure how lakes, rivers, reservoirs and oceans are changing over time. The CSA accepted NASA’s invitation to participate in the SWOT mission by providing a key component of the wide-swath radar instrument — a set of extended interaction klystrons (EIKs). The EIKs will amplify the power needed by the wide-swath instrument to generate the microwave pulses that will be used to measure water surface elevation. The CSA will work with other Canadian government organizations in 2023–24 to calibrate and validate SWOT’s *in situ* observations over multiple sites across Canada.

Without proper information on the impact that a disaster such as an earthquake, a flood or an oil spill has on affected areas, relief efforts can be undermined, leaving local populations in an even

more vulnerable situation. Emergency response teams benefit significantly from the unique perspective of satellite data to save lives, protect natural resources and prevent costly damage to essential infrastructure. In 2023–24, Canada’s expertise in EO and [synthetic aperture radar](#)<sup>xxxviii</sup> (SAR) data processing will continue to be put at the service of disaster management and relief efforts through the [International Charter “Space and Major Disasters”](#)<sup>xxxix</sup> by responding to calls for help from all over the globe with data from the [RADARSAT Constellation Mission](#)<sup>xl</sup> (RCM) and [RADARSAT-2](#).<sup>xli</sup> In October 2023, the CSA will assume the role of the Charter Leading Agency for six months, together with the [European Organisation for the Exploitation of Meteorological Satellites](#).<sup>xlii</sup>

Open, unrestricted and universal access to EO data is essential for finding innovative solutions to local and global challenges that are adapted to the needs of communities, academia, industry and governments. While continuing to operate [RCM](#),<sup>xl</sup> the CSA will pursue its work with government departments, regulatory organizations and user communities to increase [RCM data access](#),<sup>xliii</sup> to augment RCM data services and to maintain the support for existing services to Canadians. Greater access to this data will allow more value-added companies to develop applications and services for Canadians, fostering research and discoveries from academic institutions and strengthening international collaboration.

Taking full advantage of the 15 years of [RADARSAT-2](#)<sup>xlii</sup> archived data — which reached the milestone of one million images in September 2022 — the CSA will continue to support government departments by providing RADARSAT data access and processing services.

As climate change continues to be an increasingly pressing issue, the CSA is making an unprecedented number of [RADARSAT-1](#)<sup>xliv</sup> synthetic aperture radar (SAR) images of Earth freely available to researchers, industry and the public. In line with the Open Government Directive, the CSA will continue to repatriate long-time series of RADARSAT-1 data archived on foreign servers and develop a multi-year solution to process the data, to be shared freely with the public through the [Earth Observation Data Management System](#).<sup>xlv</sup> Beyond its contribution to the CSA’s digital transformation and its efforts to make legacy data available, the repatriation of the archives of Canada’s first [SAR](#)<sup>xxxviii</sup> satellite will increase the capacity for historical analysis. Comparisons of these unique images from RADARSAT-1’s 17 years of operation are invaluable for climate change research through features such as sea ice cover, seasonal changes and climate change effects, particularly in Canada’s North. Beyond climate change, the data is also applicable to geology, coastal monitoring, agriculture, disaster management, monitoring land use changes over time and more.

Numerous Government of Canada applications and services rely on the data currently provided by [RCM](#).<sup>xl</sup> As is the case with all satellites, RCM has a predetermined mission life. To ensure the continuity of these services when RCM goes into its well-earned retirement the CSA has initiated concept studies to find cost-effective solutions to minimize disruptions in EO data. In 2023–24,

the CSA will report on the exploratory work for RCM’s successor under the Earth Observation Service Continuity (EOSC) initiative.

Preparatory studies will also be conducted to ensure the continuity of [SCISAT data](#),<sup>xlvi</sup> whose 20 years of atmospheric data is used for monitoring Canada’s air quality, ozone recovery, and the Earth’s climate through the [Canadian Environmental Protection Act](#)<sup>xlvii</sup> (CEPA), the [UN Montreal Protocol](#)<sup>xlviii</sup> and the [Paris Agreement](#).<sup>xlix</sup> The studies will focus on a potential satellite that would complement international partners’, while addressing the various needs of SCISAT’s data user base. The combination of Canada’s strategic industrial capabilities and technical leadership will cement its enduring heritage in the development of solutions that meet the future EO needs of governments, industry and academia, as well as those of its partners around the world.

The CSA is working with NASA on the [Deep Space Food Challenge](#),<sup>viii</sup> a competition to develop new technologies to produce food for future space missions while expanding opportunities for food production on Earth. The challenge seeks to create novel food production technologies that require minimal inputs (materials, energy, water, etc.) and maximize safe, nutritious, and palatable food. These innovations will not only be used for long-duration space missions but also have the potential to benefit people on Earth, particularly in remote and harsh environments, such as Canada’s North. In 2023–24, the four finalist teams will develop and operate their prototypes, and a grand prize winner will be selected in spring 2024.

Many healthcare challenges faced by astronauts in deep space are also encountered by people living in remote communities: the needs of both can be addressed with predictive, proactive and increased on-site medical capacity and autonomy. Aiming to become a key player in healthcare delivery in deep space and to bring the benefits back on Earth in the coming decades, the CSA has, through its [Health Beyond](#)<sup>ix</sup> initiative, selected five Canadian companies to build prototypes for the [Connected Care Medical Module](#)<sup>x</sup> (C<sup>2</sup>M<sup>2</sup>). These scalable units will contain state-of-the-art medical technologies that can be deployed in a timely and cost-efficient manner. The first prototypes of C<sup>2</sup>M<sup>2</sup> will be completed in 2023–24, paving the way for deployment and testing in remote communities.

The autonomous tools needed by astronauts and healthcare workers in remote communities to detect and diagnose medical conditions quickly and efficiently can come from innovators across society. By calling upon innovators through the [Impact Canada](#)<sup>i</sup> platform, the CSA aims to find these ground-breaking solutions through a competitive process, the [Deep Space Healthcare Challenge](#),<sup>ii</sup> that will enter its final stages in 2023–24. After the five finalists build their prototypes and demonstrate their remote healthcare technology concept in a simulated remote environment, the grand prize winner of the challenge will be announced in winter 2024.

The extent and rapidity with which microgravity (when astronauts and objects “float”) affects the body makes the [ISS](#)<sup>xiv</sup> an invaluable experimentation field for scientists: what takes decades to

learn on Earth can be accomplished in a few months in space. The terrestrial benefits of space experiments will be reaped through studies such as [TBone2](#),<sup>lii</sup> which could help doctors predict who is at higher risk of fractures by investigating bone loss in astronauts, and [SANSORI](#),<sup>liii</sup> which will contribute to our understanding of conditions, such as glaucoma, and of the impact of cardiovascular disease on eyesight by studying vision changes experienced by astronauts. [Wayfinding](#)<sup>liv</sup> has the potential to help people with balance disorders by observing how astronauts' brains create new pathways to navigate their surroundings in a weightless environment, where the sense of orientation cannot rely on its usual landmarks — in other words, how the brain adapts to space motion sickness.

Astronauts stay active to mitigate the adverse effects of spaceflight on the body, and their hours on the stationary bike could improve the health of elderly patients. Studies like [CARDIOBREATH](#)<sup>lv</sup> monitor how the cardiac and respiratory systems adapt to a weightless environment, which lowers blood pressure and has many effects. These studies, along with those of the [Vascular series](#)<sup>lvi</sup> such as Vascular Aging and Vascular Calcium, could improve our understanding of cardiovascular diseases, the number one cause of death on Earth.

These experiments will also help define new strategies for astronauts to stay healthy during future extended stays in space. Expected to be completed and demonstrated on the [ISS](#)<sup>xiv</sup> in 2023–24, the new astronaut health protocol could also translate into guidelines to address the effects of sedentary lifestyles for all here on Earth.

## Result 3 — Canada’s investments in space benefit the Canadian economy

The opportunities provided by an innovative and productive economy contribute to Canadians’ quality of life in numerous ways. The CSA’s investments on Earth and in space help position the Canadian industry to benefit from the rapidly growing international space economy by encouraging our businesses to start up and scale up, our industrial capabilities to become resilient and create and cement our international partnerships, while creating quality and skilled jobs.

Through the [STDP](#),<sup>xii</sup> the CSA funds organizations and businesses to develop technologies with a strong commercial potential and reduces technological unknowns on future potential Canadian missions. Having committed close to \$200M and supported over 100 organizations since 2008, the STDP will continue to strengthen core Canadian capabilities with its 2023–24 wave of investments and continued support for ongoing projects. For example, the five companies working on concepts for Canadian infrastructure on the Moon — such as greenhouses, rovers for transporting humans, communications networks or power systems for generating energy — will move to prototyping their solutions in the fall of 2023. Out of the [seven proposed concepts](#),<sup>lvii</sup> five will be selected, further increasing the Canadian space sector’s expertise, commercial and industrial capabilities.

Further benefiting the Canadian economy by expanding its medium and long-term capabilities, for the first time in history, a Canadian rover will explore the Moon and help in the international effort to search for water ice, a key component needed for the future of human space exploration. Following a competitive procurement process, a Canadian company will design and build the very first [Canadian Lunar Rover Mission](#)<sup>v</sup> (LRM) to explore the South Pole of the Moon and analyze its soil by 2026–27. Having defined the requirements and selected the team responsible for developing the technology that must survive at a chilly  $-250^{\circ}\text{C}$  lunar polar night (which lasts about 14 Earth days), LRM’s preliminary design is planned to be completed in 2023–24. The CSA will also call for proposals for two of the Canadian science instruments to embark on this journey to the Moon.

In the era of big data, greater and more efficient data storage, analysis and sharing solutions must be developed to fully harness the richness and the breadth of applications that can be implemented with such information — especially regarding EO data. The CSA’s [smartEarth](#)<sup>lviii</sup> initiative, which supports the Canadian space sector in developing solutions through the use and application of satellite data, will launch a new funding opportunity in 2023–24 for fundamental and applied research in the academic community. This opportunity is designed to further the knowledge and capacity of Canadian EO experts, while building the critical mass of researchers and highly qualified personnel in the EO field. Outreach activities will also be conducted in 2023–24 to engage with the EO community in developing the proposed Canadian EO exploitation platform Digital Earth Canada (DEC). Since DEC aims to be an open, free and accessible networked system that provides innovative solutions to address major challenges such

as adaptation to climate change, these enhanced coordination efforts with EO stakeholders will help integrate their needs and solutions to the platform, increasing its range of potential users, applications, and services.

The 45 years of cooperation between Canada and the European Space Agency (ESA) are a testimony to the ability of enduring international partnerships to provide the seedbed in which ideas, technologies and expertise can flourish and bring mutual economic benefits. Through the [2020–30 Canada-ESA Cooperation Agreement](#),<sup>lix</sup> this mutually beneficial relationship will be reinforced in 2023–24 with Canada’s new participation to the ESA’s [Space Safety Programme](#).<sup>lx</sup> This will not only reaffirm Canada’s commitments to its international partners, but also to its businesses to participate in world-class projects related to space weather, planetary defence and provide solutions for a sustainable space environment.

In 2023–24, a pilot project will evaluate the feasibility for SpaceHub, a collaborative innovation space for the Canadian space sector. With its objective of making the CSA the primary actor in the procurement of space services, SpaceHub could provide space demonstration opportunities for SMEs’ science and technology solutions to Canadian challenges and partnerships to develop collaborative R&D spaces at its headquarters with academia, industry and partners in the government. Startups, SMEs and academia will be able to connect through this innovation network, facilitating their integration into global supply chains, positioned for success in the new space era and as Canada welcomes commercial space launch capabilities.

### **Gender-based analysis plus**

The action plan set out in the [Evaluation of the implementation of Gender-Based Analysis Plus \(GBA Plus\) at the CSA](#)<sup>lxi</sup> will continue to be implemented in 2023–24 to further integrate GBA Plus into its internal processes and decision-making. For example, activities related to the promotion of staffing practices will contribute to advance a diverse workforce, and initiatives will increase the CSA’s capacity to measure progress and report on the outcomes of its organizational policies.

### **United Nations (UN) 2030 Agenda for Sustainable Development and the UN Sustainable Development Goals**

One of the CSA’s main contributions to achieving the [UN Sustainable Development Goals](#)<sup>lxii</sup> (SDGs) is building resilience and adaptive capacity to climate-related hazards and natural disasters in all countries, thanks to the data collected and delivered through [RCM](#),<sup>xl</sup> [SCISAT](#)<sup>xxxiv</sup> and, starting in 2023, [SWOT](#).<sup>xxxvii</sup>

The numerous contributions made by the space sector create tangible and long-term economic growth that draws from all layers of society. The CSA promotes sustainable levels of economic productivity by supporting a diversity of value-added projects from SMEs through initiatives such as [LEAP](#)<sup>lxiii</sup> and [smartEarth](#),<sup>lviii</sup> and also provides opportunities for youth to gain an

education and training, regardless of their gender, physical limitations or socio-economic background.

The CSA’s space [food](#)<sup>lxiii</sup> and [healthcare](#)<sup>lxiv</sup> initiatives provide unique solutions for ensuring the well-being of all Canadians. By harnessing space’s potential for autonomous and resilient food production and healthcare delivery, the CSA is contributing to universal healthcare coverage, preventing and treating illnesses and diseases and strengthening its capacity to reduce risks associated with lack of healthcare.

To learn more about how the CSA contributes to the [UN 2030 Agenda for Sustainable Development](#)<sup>lxv</sup> and its 17 goals, see the [Supplementary Information Tables](#).

### **Innovation**

Entering its third year in 2023–24, the “From Ideas to Action to Innovation” (I<sup>2</sup>A) challenge will build on lessons learned from previous editions. I<sup>2</sup>A is an organizational initiative where CSA employees bring to life their solutions to challenges faced by all in the public service by applying rigorous experimentation methods to find out what works and what does not. Focused on areas such as the future of work and service management, selected projects will benefit from strengthened support to ensure their experimentation process produces high-quality data that enables enlightened decision-making.

### **Key risk(s)**

In its Corporate Risk Profile, the CSA identified three key risks facing the organization related to talent, cybersecurity and innovation. Measures were put in place to mitigate these risks: their effectiveness will be evaluated in 2023–24 and appropriate updates will be made to ensure the risks remain managed.

## Planned results for Canada in space

The following table shows, for Canada in space, the planned results, the result indicators, the targets and the target dates for 2023–24, and the actual results for the three most recent fiscal years for which actual results are available.

Departmental result	Departmental result indicator	Target	Date to achieve target	2019–20 actual result	2020–21 actual result	2021–22 actual result
Canada remains a leading spacefaring nation	Ranking of Canadian government civilian space budget as a share of GDP among OECD <sup>1</sup> and BRIC <sup>2</sup> nations	25	March 31, 2023	N/A New indicator	N/A New indicator	N/A New indicator
	Canada's rank among Organization for Economic Co-operation and Development nations on the citation score of space-related publications	13	March 31, 2023	16 (2018)	17 (2019)	15 (2020)
Space information and technologies improve the lives of Canadians	Number of Canadian space technologies adapted for use on Earth or re-use in space	34	March 31, 2023	22 (2018)	23 (2019)	25 (2020)
	Number of services offered to Canadians dependent on space data	111	March 31, 2023	109 (2019)	111 (2020)	101 (2021)
Canada's investments in space benefit the Canadian economy	Number of employees in the Canadian space sector	11,500	March 31, 2023	9,567 (2018)	10,541 (2019)	Data TBD
	Value of gross domestic product (GDP) of the Canadian space sector	\$2.7B	March 31, 2023	\$2.5B (2018)	\$2.5B (2019)	Data TBD

The financial, human resources and performance information for the CSA's program inventory is available on [GC InfoBase](#).<sup>lxvi</sup>

<sup>1</sup> Organization for Economic Co-operation and Development

<sup>2</sup> Brazil, Russia, India and China

### Planned budgetary spending for Canada in space

The following table shows, for Canada in space, budgetary spending for 2023–24, as well as planned spending for that year and for each of the next two fiscal years.

2023–24 budgetary spending (as indicated in Main Estimates)	2023–24 planned spending	2024–25 planned spending	2025–26 planned spending
476,342,693	476,342,693	265,605,491	203,502,941

Financial, human resources and performance information for the CSA’s program inventory is available on [GC InfoBase](#).<sup>lxvi</sup>

### Planned human resources for Canada in space

The following table shows, in full-time equivalents, the human resources the department will need to fulfill this core responsibility for 2023–24 and for each of the next two fiscal years.

2023–24 planned full-time equivalents	2024–25 planned full-time equivalents	2025–26 planned full-time equivalents
466.1	458.8	453.0

Financial, human resources and performance information for the CSA’s program inventory is available on [GC InfoBase](#).<sup>lxvi</sup>

## Internal services: planned results

### Description

Internal services are the services that are provided within a department so that it can meet its corporate obligations and deliver its programs. There are 10 categories of internal services:

- ▶ management and oversight services
- ▶ communications services
- ▶ legal services
- ▶ human resources management services
- ▶ financial management services
- ▶ information management services
- ▶ information technology services
- ▶ real property management services
- ▶ materiel management services
- ▶ acquisition management services

### Planning highlights

The CSA will continue the transition to a flexible, hybrid workplace, where employees have the tools and environment to succeed from both the office and home. This approach will optimize office and laboratory space through the implementation of activity-based solutions and shared workstations, enabling employees and collaborators from across government and the space sector to perform their functions in a productive, secured and safe work environment.

The CSA will continue its digital transformation efforts aimed at adopting emerging technologies, automating processes and exploring the possibilities that artificial intelligence can offer in support of the organization’s activities and projects. [Open Government](#)<sup>lxvii</sup> initiatives will continue to be championed, notably through increasing access to open scientific data as well as tools to encourage citizen science. With the work done to optimize its hybrid work environment and provide a suite of accessible, modern, and secure cloud-based tools, the CSA continue to offer greater flexibility, openness, accessibility and user-friendliness to its staff while encouraging greater productivity, optimization and collaboration.

Achieving the Government of Canada’s socio-economic and environmental objectives relies on the effective management of its properties, including land and buildings: to this end, the CSA will initiate the development of a modern real property portfolio strategy in 2023–24 that is aligned with the new [Directive on the Management of Real Property](#)<sup>lxviii</sup> and best practices. Supporting its journey to net-zero facilities and operations, the CSA will continue to deliver on its [Greening Government](#)<sup>lxix</sup> initiatives with an internal Green Procurement Directive, a carbon-neutral facilities implementation roadmap, and a GHG inventory report.

In conjunction with the [2023–25 Accessibility Plan](#)<sup>lxx</sup> and the Diversity and Inclusion Action Plan, the CSA will roll out its new triennial Recruitment Strategy which describes the work and targets to support hiring and promotions for women, Indigenous people, persons with disabilities and members of visible minorities. This strategy will contribute to attract and retain talented people and to build a diverse, inclusive workforce.

The priorities of the 2021–2024 Workforce Management Strategic Plan will continue to be implemented in 2023–24. To foster learning as well as the development of talent and skills, the CSA will develop and implement a new Leadership Framework. Anchored by the Character-Based Leadership model, the framework aims to elevate character as a central element of leadership, alongside competence and commitment to ensure leadership excellence in meeting present and future objectives. To maintain and promote organizational health, wellness and a sound workplace, the CSA will implement a three-year Mental Health Strategic Plan and launch a new Mental Health Ambassadors program. In addition, a CSA-wide engagement network will be deployed to support a collaborative approach, where a strong culture of innovation encourages everyone to take initiative.

With the objective to provide solutions to adequately manage the main organizational security risks, a new three-year Departmental Security Plan will be approved in 2023–24, with a special emphasis on space security and cybersecurity.

To support effective decision-making, a multi-year modernization plan will be undertaken, leveraging automation, business intelligence, and updated processes. Moreover, this plan will guide the updating of procurement processes related to complex space projects around an agile methodology that increases flexibility and collaboration with stakeholders.

### **Planning for Contracts Awarded to Indigenous Businesses**

The CSA is committed to renewing and strengthening its economic relationship with Indigenous entrepreneurs and communities by providing increased economic opportunities to First Nations, Inuit and Métis businesses through the federal procurement process. To this end, a [Procurement Strategy for Indigenous Business](#)<sup>lxxi</sup> (PSIB) has been developed: aimed at developing the capacity of Indigenous businesses in the space and R&D sectors, this strategy will harness procurement planning to capitalize on existing buying power and the development of Indigenous business capacity in relevant commodities, including contracts issued on behalf of the CSA. The following outlines the key actions to be taken in 2023–24 to ensure that at least 5% of the total value of contracts are held by Indigenous businesses.

An analysis of the CSA's procurement data will be conducted to identify the existing tools that can be leveraged to increase Indigenous procurement as soon as possible. Using contract information as the basis of the calculation to achieve the 5% target, the CSA will assess the capacity of Indigenous business based on trends observed in previously awarded contracts. This will include contracts already at the planning stage identified as being subject to a

[comprehensive land claims agreement](#)<sup>lxxii</sup> or the PSIB. For 2023–24, the CSA expects that Indigenous business capacity will remain consistent with past contracting data, with exemptions continuing to be granted and gradually reduced as capacity increases.

In collaboration with industry, Indigenous businesses and Indigenous Services Canada, the CSA is developing long-term strategies to increase Indigenous business capacity over time, including requirements to subcontract to Indigenous businesses and build supply chains involving Indigenous businesses.

Through the Grants and Contributions Program, the CSA will ensure that Indigenous youth across Canada are included in its STEM youth program, contributing to greater awareness, knowledge and experience of Indigenous youth and educators in these fields.

Based on this procurement plan, the CSA plans to award 5% of its contracts (excluding deputy-head approved exceptions<sup>3</sup>), representing 2% of regular contracts and 3% for Set-Asides, to Indigenous businesses.

5% reporting field description	2021-22 actual % achieved	2022-23 forecasted % target	2023-24 planned % target
Total percentage of contracts with Indigenous businesses	N/A	N/A	5%

<sup>3</sup> Based on Indigenous business capacity, commodities falling under Space Projects and Research and Development are temporarily exempt from the CSA's 2022–23 target calculations.

Planned budgetary spending for internal services

The following table shows, for internal services, budgetary spending for 2023–24, as well as planned spending for that year and for each of the next two fiscal years.

2023–24 budgetary spending (as indicated in Main Estimates)	2023–24 planned spending	2024–25 planned spending	2025–26 planned spending
61,059,544	61,059,544	62,759,000	68,004,000

Planned human resources for internal services

The following table shows, in full-time equivalents, the human resources the department will need to carry out its internal services for 2023–24 and for each of the next two fiscal years.

2023–24 planned full-time equivalents	2024–25 planned full-time equivalents	2025–26 planned full-time equivalents
362.2	363.8	363.7

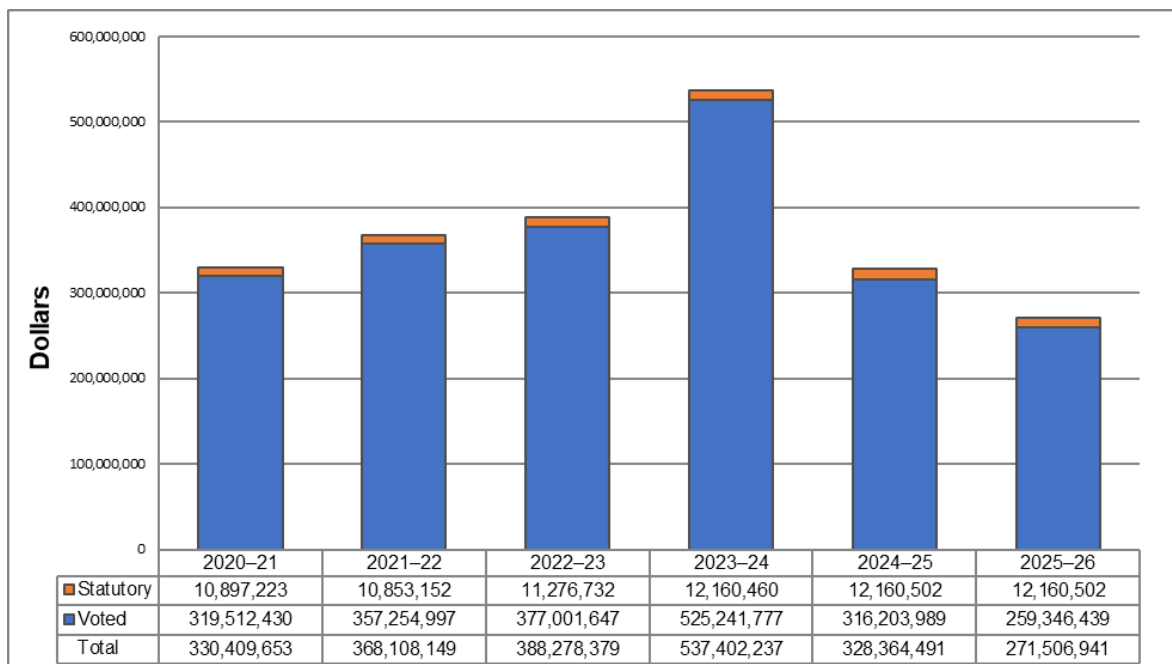
## Planned spending and human resources

This section provides an overview of the department’s planned spending and human resources for the next three fiscal years and compares planned spending for 2023–24 with actual spending for the current year and the previous year.

### Planned spending

#### Departmental spending 2020–21 to 2025–26

The following graph presents planned spending (voted and statutory expenditures) over time.



## Budgetary planning summary for core responsibilities and internal services (dollars)

The following table shows information on spending for each of the CSA’s core responsibilities and for its internal services for 2023–24 and other relevant fiscal years.

Core responsibilities and internal services	2020–21 actual expenditures	2021–22 actual expenditures	2022–23 forecast spending	2023–24 budgetary spending (as indicated in Main Estimates)	2023–24 planned spending	2024–25 planned spending	2025–26 planned spending
Canada in space	271,954,249	307,943,051	329,883,029	476,342,693	476,342,693	265,605,491	203,502,941
<b>Subtotal</b>	<b>271,954,249</b>	<b>307,943,051</b>	<b>329,883,029</b>	<b>476,342,693</b>	<b>476,342,693</b>	<b>265,605,491</b>	<b>203,502,941</b>
Internal services	58,455,404	60,165,098	58,395,350	61,059,544	61,059,544	62,759,000	68,004,000
<b>Total</b>	<b>330,409,653</b>	<b>368,108,149</b>	<b>388,278,379</b>	<b>537,402,237</b>	<b>537,402,237</b>	<b>328,364,491</b>	<b>271,506,941</b>

The variance between 2023–24 and 2025–26 in the “[Departmental spending 2020–21 to 2025–26](#)” graph and the “Budgetary planning summary” table above is mainly attributable to the net decrease of investments in [Canadarm3](#)<sup>ii</sup> announced in the 2019 budget. The CSA’s project and mission funding profile may vary from year to year, depending on the status of each mission, which has an impact on expenditures, forecast spending and planned spending.

## Planned human resources

The following table shows information on human resources, in full-time equivalents (FTEs), for each of the CSA’s core responsibilities and for its internal services for 2023–24 and the other relevant years.

### Human resources planning summary for core responsibilities and internal services

Core responsibilities and internal services	2020–21 actual full-time equivalents	2021–22 actual full-time equivalents	2022–23 forecast full-time equivalents	2023–24 planned full-time equivalents	2024–25 planned full-time equivalents	2025–26 planned full-time equivalents
Canada in space	391.2	434.1	415.6	466.1	458.8	453.0
<b>Subtotal</b>	<b>391.2</b>	<b>434.1</b>	<b>415.6</b>	<b>466.1</b>	<b>458.8</b>	<b>453.0</b>
Internal services	317.5	332.1	408.4	362.2	363.8	363.7
<b>Total</b>	<b>708.7</b>	<b>766.2</b>	<b>824.0</b>	<b>828.3</b>	<b>822.6</b>	<b>816.7</b>

The variance in the number of FTEs since 2020–21 is mainly due to the additional resources required to fill certain gaps and priorities, including new departmental requirements for internal services, such as:

- new obligations from the new Policy on Service and Digital, as well as increased personnel for information technology capabilities, including user support services, business intelligence and automation, and setting up a Data Expertise Centre;
- increased personnel for financial expertise to empower management with financial information for decision-making, including costing expertise, analytics and innovation for the future of financial management;
- new service and experimentation group, increased human resource capacity and policy resets;
- additional changes as a result of increased requirements of salaries related to STEM, the [Gateway<sup>i</sup>](#) Science and Technology Utilization, including the [Canadarm3<sup>ii</sup>](#) mission; and
- increased investments to recruit the next generation of public servants, which includes the student programs.

## Estimates by vote

Information on the CSA’s organizational appropriations is available in the [2023–24 Main Estimates](#).<sup>lxxiii</sup>

## Future-oriented condensed statement of operations

The future-oriented condensed statement of operations provides an overview of the CSA's operations for 2022–23 to 2023–24.

The forecast and planned amounts in this statement of operations were prepared on an accrual basis. The forecast and planned amounts presented in other sections of the Departmental Plan were prepared on an expenditure basis. Amounts may therefore differ.

A more detailed future-oriented statement of operations and associated notes, including a reconciliation of the net cost of operations with the requested authorities, are available on the [CSA's website](#).<sup>lxxiv</sup>

Future-oriented condensed statement of operations for the year ending  
March 31, 2024 (dollars)

Financial information	2022–23 forecast results	2023–24 planned results	Difference (2023–24 planned results minus 2022–23 forecast results)
Total expenses	579,942,319	576,567,895	(3,374,424)
Total revenues	19,755	19,755	
Net cost of operations before government funding and transfers	579,922,564	576,548,140	(3,374,424)

### Expenses

Total expenses, estimated on an accrual basis, are planned to be \$576,567,895 in 2023–24, a slight decrease of \$3,374,424 (0.6%) from the 2022–23 forecast.

Expenses are mainly related to amortization, professional and special services, salaries and fringe benefits and transfer payments. Expenses include planned spending presented in this Departmental Plan as well as expenses not mentioned, such as amortization, services provided without charge by other government departments, severance benefits and vacation pay liability adjustments.

### Revenues

Total revenues are projected to be \$1,226,627 in 2023–24. Most of these revenues are generated from the sale of goods and services, such as testing services provided at the [David-Florida Laboratory](#)<sup>lxxv</sup> and are not spendable. The CSA's spendable revenues are projected to be \$19,755 and represent revenues from Crown Assets Disposal.

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## Corporate information

### Organizational profile

**Appropriate minister(s):** The Honourable François-Philippe Champagne, P.C., M.P.

**Institutional head:** Lisa Campbell, President

**Ministerial portfolio:** Innovation, Science and Economic Development

**Enabling instrument(s):** [Canadian Space Agency Act, S.C. 1990, c. 13](#)<sup>lxxvi</sup>

**Year of incorporation / commencement:** Established in March 1989

**Other:** The CSA was established in 1989. Approximately 84% of its employees work at the headquarters located at the John-H.-Chapman Space Centre, in Saint-Hubert, Québec. The remaining personnel serve the CSA at the [David-Florida Laboratory](#)<sup>lxxv</sup> in Ottawa, Ontario, and its policy and planning offices in Gatineau, Québec, with officials in Houston, Washington, and Paris.

### Raison d'être, mandate and role: who we are and what we do

Information on the CSA's raison d'être, mandate and role is available on the [CSA's website](#).<sup>lxxvii</sup>

Information on the CSA's mandate letter commitments is available in the [Minister's mandate letter](#).<sup>lxxviii</sup>

### Operating context

Information on the operating context is available on the [CSA's website](#).<sup>lxxiv</sup>

## Reporting framework

The CSA’s approved departmental results framework and program inventory for 2023–24 are as follows.

<b>Departmental Results Framework</b>	<b>Core Responsibility: Canada in Space</b>		<b>Internal Services</b>
	Departmental Result: Canada remains a leading space-faring nation	Indicator: Ranking of Canadian Government civil space budget as a share of GDP among OECD <sup>4</sup> and BRIC <sup>5</sup> nations	
		Indicator: Canada’s rank among OECD nations on the citation score of space-related publications	
	Departmental Result: Space information and technologies improve the lives of Canadians	Indicator: Number of Canadian space technologies adapted for use on earth or re-use in space	
		Indicator: Number of services offered to Canadians dependent on space data	
	Departmental Result: Canada’s investments in space benefit the Canadian economy	Indicator: Number of employees in the Canadian space sector	
Indicator: Value of GDP of the Canadian space sector			
<b>Program Inventory</b>	<b>Program: Space Capacity Development</b>		
	<b>Program: Space Exploration</b>		
	<b>Program: Space Utilization</b>		

<sup>4</sup> Organization for Economic Co-operation and Development

<sup>5</sup> Brazil, Russia, India and China

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## Supporting information on the program inventory

Supporting information on planned expenditures, human resources, and results related to the CSA’s program inventory is available on [GC InfoBase](#).<sup>lxxvi</sup>

## Supplementary information tables

The following supplementary information tables are available on the [CSA’s website](#).<sup>lxxiv</sup>

- ▶ Details on transfer payment programs
- ▶ Gender-based analysis plus
- ▶ United Nations 2030 Agenda for Sustainable Development and the Sustainable Development Goals

## Federal tax expenditures

The CSA’s Departmental Plan does not include information on tax expenditures.

Tax expenditures are the responsibility of the Minister of Finance. The Department of Finance Canada publishes cost estimates and projections for government-wide tax expenditures each year in the [Report on Federal Tax Expenditures](#).<sup>lxxix</sup> This report provides detailed information on tax expenditures, including objectives, historical background and references to related federal spending programs, as well as evaluations, research papers and gender-based analysis plus.

## Organizational contact information

### Mailing address

6767, route de l’Aéroport  
Saint-Hubert, Québec  
J3Y 8Y9

**Telephone:** (450) 926-4800

**Fax:** (450) 926-4352

**Email:** [asc.info.csa@canada.ca](mailto:asc.info.csa@canada.ca)

**Website:** [www.asc-csa.gc.ca](http://www.asc-csa.gc.ca)

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## Appendix: definitions

**appropriation (crédit)**

Any authority of Parliament to pay money out of the Consolidated Revenue Fund.

**budgetary expenditures (dépenses budgétaires)**

Operating and capital expenditures; transfer payments to other levels of government, organizations or individuals; and payments to Crown corporations.

**core responsibility (responsabilité essentielle)**

An enduring function or role performed by a department. The intentions of the department with respect to a core responsibility are reflected in one or more related departmental results that the department seeks to contribute to or influence.

**Departmental Plan (plan ministériel)**

A document that sets out a department's priorities, programs, expected results and associated resource requirements, covering a three-year period beginning with the year indicated in the title of the report. Departmental Plans are tabled in Parliament each spring.

**departmental result (résultat ministériel)**

A change that a department seeks to influence. A departmental result is often outside departments' immediate control, but it should be influenced by program-level outcomes.

**departmental result indicator (indicateur de résultat ministériel)**

A factor or variable that provides a valid and reliable means to measure or describe progress on a departmental result.

**departmental results framework (cadre ministériel des résultats)**

A framework that consists of the department's core responsibilities, departmental results and departmental result indicators.

**Departmental Results Report (rapport sur les résultats ministériels)**

A report on a department's actual performance in a fiscal year against its plans, priorities and expected results set out in its Departmental Plan for that year. Departmental Results Reports are usually tabled in Parliament each fall.

**full-time equivalent (équivalent temps plein)**

A measure of the extent to which an employee represents a full person-year charge against a departmental budget. Full-time equivalents are calculated as a ratio of assigned hours of work to scheduled hours of work. Scheduled hours of work are set out in collective agreements.

**gender-based analysis plus (GBA Plus) (analyse comparative entre les sexes plus [ACS Plus])**

An analytical tool used to support the development of responsive and inclusive policies, programs and other initiatives. GBA Plus is a process for understanding who is impacted by the issue or opportunity being addressed by the initiative; identifying how the initiative could be tailored to meet diverse needs of the people most impacted; and anticipating and mitigating any barriers to accessing or benefitting from the initiative. GBA Plus is an intersectional analysis that goes beyond biological (sex) and socio-cultural (gender) differences to consider other factors, such as age, disability, education, ethnicity, economic status, geography, language, race, religion, and sexual orientation.

**government-wide priorities (priorités pangouvernementales)**

For the purpose of the 2023–24 Departmental Plan, government-wide priorities are the high-level themes outlining the Government’s agenda in the 2021 Speech from the Throne: building a healthier today and tomorrow; growing a more resilient economy; bolder climate action; fighting harder for safer communities; standing up for diversity and inclusion; moving faster on the path to reconciliation and fighting for a secure, just, and equitable world.

**high impact innovation (innovation à impact élevé)**

High impact innovation varies per organizational context. In some cases, it could mean trying something significantly new or different from the status quo. In other cases, it might mean making incremental improvements that relate to a high-spending area or addressing problems faced by a significant number of Canadians or public servants.

**horizontal initiative (initiative horizontale)**

An initiative in which two or more federal organizations are given funding to pursue a shared outcome, often linked to a government priority.

**non-budgetary expenditures (dépenses non budgétaires)**

Net outlays and receipts related to loans, investments and advances, which change the composition of the financial assets of the Government of Canada.

**performance (rendement)**

What an organization did with its resources to achieve its results, how well those results compare to what the organization intended to achieve, and how well lessons learned have been identified.

**plan (plan)**

The articulation of strategic choices, which provides information on how an organization intends to achieve its priorities and associated results. Generally, a plan will explain the logic behind the strategies chosen and tend to focus on actions that lead up to the expected result.

**planned spending (dépenses prévues)**

For Departmental Plans and Departmental Results Reports, planned spending refers to those amounts presented in the Main Estimates.

A department is expected to be aware of the authorities that it has sought and received. The determination of planned spending is a departmental responsibility, and departments must be able to defend the expenditure and accrual numbers presented in their Departmental Plans and Departmental Results Reports.

**program (programme)**

Individual or groups of services, activities or combinations thereof that are managed together within a department and that focus on a specific set of outputs, outcomes or service levels.

**program inventory (répertoire des programmes)**

An inventory of a department's programs that describes how resources are organized to carry out the department's core responsibilities and achieve its planned results.

**result (résultat)**

An external consequence attributed, in part, to an organization, policy, program or initiative. Results are not within the control of a single organization, policy, program or initiative; instead, they are within the area of the organization's influence.

**statutory expenditures (dépenses législatives)**

Expenditures that Parliament has approved through legislation other than appropriation acts. The legislation sets out the purpose of the expenditures and the terms and conditions under which they may be made.

**target (cible)**

A measurable performance or success level that an organization, program or initiative plans to achieve within a specified time period. Targets can be either quantitative or qualitative.

**voted expenditures (dépenses votées)**

Expenditures that Parliament approves annually through an Appropriation Act. The vote wording becomes the governing conditions under which these expenditures may be made.

## Endnotes

- i Gateway, <https://www.asc-csa.gc.ca/eng/astronomy/moon-exploration/lunar-gateway.asp>
- ii Canadarm3, <https://www.asc-csa.gc.ca/eng/canadarm3/about.asp>
- iii Artemis II, <https://www.asc-csa.gc.ca/eng/astronomy/moon-exploration/artemis-missions.asp#artemis-ii>
- iv SEO Strategy, <https://www.asc-csa.gc.ca/eng/publications/canada-strategy-for-satellite-earth-observation/>
- v LRM, <https://www.asc-csa.gc.ca/eng/astronomy/moon-exploration/first-canadian-rover-to-explore-the-moon.asp>
- vi Objective: Moon, <https://www.asc-csa.gc.ca/eng/astronomy/moon-exploration/first-canadian-rover-to-explore-the-moon.asp>
- vii EO satellites, <https://www.asc-csa.gc.ca/eng/satellites/earth-observation/>
- viii Deep Space Food Challenge, <https://impact.canada.ca/en/challenges/deep-space-food-challenge>
- ix Health Beyond initiative, <https://www.asc-csa.gc.ca/eng/health/health-beyond-initiative.asp>
- x C<sup>2</sup>M<sup>2</sup>, <https://www.asc-csa.gc.ca/eng/funding-programs/health-beyond-canadian-flagship-c2m2.asp>
- xi News release: “GC supports commercial space launches in Canada”, <https://www.canada.ca/en/transport-canada/news/2023/01/government-of-canada-supports-commercial-space-launches-in-canada.html>
- xii STDP, <https://www.asc-csa.gc.ca/eng/funding-programs/programs/stdp/about.asp>
- xiii LEAP, <https://www.asc-csa.gc.ca/eng/funding-programs/programs/leap/about.asp>
- xiv ISS, <https://www.asc-csa.gc.ca/eng/iss/about.asp>
- xv Webb, <https://www.asc-csa.gc.ca/eng/satellites/jwst/about.asp>
- xvi NIRISS, <https://www.asc-csa.gc.ca/eng/blog/2022/06/16/modes-of-niriss-canada-instrument-on-webb.asp>
- xvii Webb: science observation programs, <https://www.asc-csa.gc.ca/eng/satellites/jwst/programs.asp>
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