



ARMAGH  
OBSERVATORY &  
PLANETARIUM

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STRATEGIC PLAN 2021-26

#staycurious





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# FOREWORD

by Archbishop John McDowell,  
Chair of the Board of Governors



As I complete my first year as Chair of the Board of Governors of Armagh Observatory and Planetarium, I am compelled to reflect on what an extraordinary and momentous twelve months it has been. In such trying times for the organisation, are there positives to be found? I believe so.

Emerging from the 2018–21 corporate plan for the newly merged AOP, the Ministerial Advisory Group for Architecture and the Built Environment engagement with plans for the joint development of an AOP science and education park and Council plans for a leisure village could bring very positive outcomes for the citizens of Armagh.

There is much still to be done, and the Board of Governors has delegated authority for engaging with partners and stakeholders to progress this vision to a Management Committee, chaired by John Briggs. It is no easy task, and the ability to identify and harness funding opportunities will be key to the success of this plan. However, it is clear that the need for a centre of excellence in science education has never been greater.

We have already come so far, and collectively we are fully committed to the future of this bold and essential project.

I chaired my first Board meeting in May 2020 – remotely, of course – and I have been deeply impressed with the drive and enthusiasm of Professor Burton and his team and the manner in which they embraced the challenges of lockdown.

Furthermore, I am impressed by the scale and ambition of the plan to ensure AOP's long-term viability and sustainability – as well as the valuable outcomes the plan can potentially deliver in terms of economic, educational and community benefits.

There is no shortage of enthusiasm and dedication among the team.

The Board is also confident that the Management Committee has the collective skill set to provide the governance required to steer the organisation on the right path. The Board is thankful for this support, mindful that these are voluntary positions and each member of the Management Committee is there because of a genuine commitment to the success of AOP and its unique contribution to civic society. That is matched by the Board's commitment to ensuring that the unique culture and character, history and patrimony of AOP will remain protected, preserved – and shared far beyond the years envisaged in this plan.

# INTRODUCTION

by Professor Michael Burton,  
Director & Chief Executive

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The Armagh Observatory and Planetarium (AOP) is a truly special place, one that brings together research and education, history and heritage. It is an exemplar for Northern Ireland on the world stage.

This is the second strategic plan for the combined organisation. The first (2018–2021) set out a three-year route to achieve stability following the merger of the Observatory and Planetarium in 2016 and build a firm foundation for the future. Having realised this, we are now embarking on a five-year strategy (2021–26) focused on achieving our full potential and establishing a new iconic facility for Armagh – providing a destination we can all be proud of.

This plan is written at a particularly challenging time, in the second year of Covid-19, an adversity that saw the Planetarium closed for over a year. We are also in the early post-Brexit days, and for an international organisation, the long-term impacts of this are, as yet, unknown. Undoubtedly there will be fiscal constraints arising from these two causes.

Nevertheless, as an organisation we have risen to the challenges over the past year. We have had to re-invent ourselves in many ways: in how we do business, how we engage with our audiences, and indeed how we find new ones since no-one could physically visit us. We have also taken the opportunity to undertake a makeover of our estate, refurbishing the Planetarium and grounds and much of the underlying infrastructure.

While unknown challenges could, of course, derail future ambitions, on reflection, however, I believe the opposite is in fact true for AOP, as there are now new opportunities to pursue. Applying lessons we have learnt in dealing with Covid-19, we all now appreciate more than ever the vital importance of science and the public's understanding of it. We need to focus on the contribution that AOP can make to





long-term societal and economic recovery, including exploring innovative funding models and opportunities for a shared approach to development. We are confident in our ability to succeed. We have been working with partners since the foundation of the Observatory in the Age of Enlightenment at the end of the 18th century. So, collaboration truly is in our very DNA, and it remains vital for realising our future ambitions.

In the 21st century we want to be at the forefront in embracing a shared society and in creating conditions that remove barriers to accessibility and providing opportunities for using our facilities and participating in outreach activities. We also aim to do so within our organisational structures and employment practices. We are

proud to be part of Project Juno, an Institute of Physics programme that recognises and promotes gender balance and an inclusive working environment. We see the opportunity for AOP to not only promote equitable working practices within our workforce but also to ensure that our public-facing and outreach activities promote diversity and inclusion as a fundamental principle in all that we do.

Building upon a reputation earned over four centuries of research into the nature of the cosmos, our ambition is to be known internationally as a centre for the public understanding of science. We need to be able to demonstrate and explain the importance of science for addressing many of the challenges facing society beyond the current challenge of Covid-19.

Of these, none is more pressing and more critical than climate change. Our heritage and international standing make AOP particularly well-equipped to contribute here. In doing so, we will undoubtedly need to reflect on our own practice in some areas, ensuring we operate both sustainably and environmentally soundly into the future.

This five-year strategy presents a programme aimed at realising this potential based on contributions centred on four themes, those of Enduring Relevance, National & International Standing, Offering More and Pursuing our Priorities. We expand upon these themes in this strategic plan.

**Professor Michael Burton**  
*Director, AOP*



# Executive Summary

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This strategic plan is a roadmap for achieving AOP's remarkable potential.

AOP is a truly unique institution – and an outstanding exemplar of what Northern Ireland can offer everyone, from local communities to international researchers.

We are more relevant than ever. And more ambitious than ever.

In developing this strategic plan, we have engaged in substantial stakeholder discussions. These have included membership organisations to which we are affiliated, potential funders, partners and collaborators across a range of sectors. The plan reflects that collective input.

It is based on four themes:

- Enduring Relevance
- National & International Standing
- Offering More
- Pursuing Our Priorities

Collaboration and partnership working have been at the core of AOP's success since its inception. They remain crucial to our vision.





# Science Park & Armagh Leisure Village

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In 2018 a Department for Communities Ministerial Advisory Group (MAG) for Architecture and the Built Environment for Northern Ireland engaged with AOP and the Armagh City, Banbridge and Craigavon Borough Council (ABC) to carry out a preliminary review of proposed projects by AOP to develop:

- a Science and Education park within its estate
- an Armagh Leisure Village (ALV) on an adjacent site.

With reference to the AOP proposal, the panel said:

*We believe the potential to establish an AOP Science Park in this location which fully exploits the heritage assets and provides an attractive educational offer, in addition to maintaining its research activities, could provide a significant City asset.*

And went on to conclude that both the Leisure Village and the AOP estate individually represent development of great significance, but together offer an opportunity much greater than the sum of its component parts.

AOP remains committed to working in partnership with the ABC Council on this ambitious and collaborative project that will maximise benefits for the local community as well as provide state of the art regional and national research and educational facilities.

The future development of Armagh is something that can only be achieved through a shared vision and a commitment by invested stakeholders in the city.

As part of this collective intent, Council is delighted to be working in partnership with Armagh Observatory and Planetarium (AOP) to support its ambitious plan for the future.

**Alderman Glenn Barr,**  
Lord Mayor of Armagh City, Banbridge and Craigavon



## Armagh Observatory & Planetarium

# An Overview

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Founded in 1790, the Armagh Observatory is today both the oldest scientific institution in Northern Ireland and the longest continuously operating astronomical research institute in the UK and Ireland. That extraordinary legacy was supplemented in 1968 by the addition of the Planetarium, making it now the longest-operating facility of its type in these islands.

The presence of these two establishments on the same site is truly unique, bringing together vibrant research along with exceptional education and public outreach activities – set within a heritage environment where the history of the development of the field of astronomy can be experienced.

This strengthens our national and international status, and positions AOP on a global world stage as an example of the best of Northern Ireland.





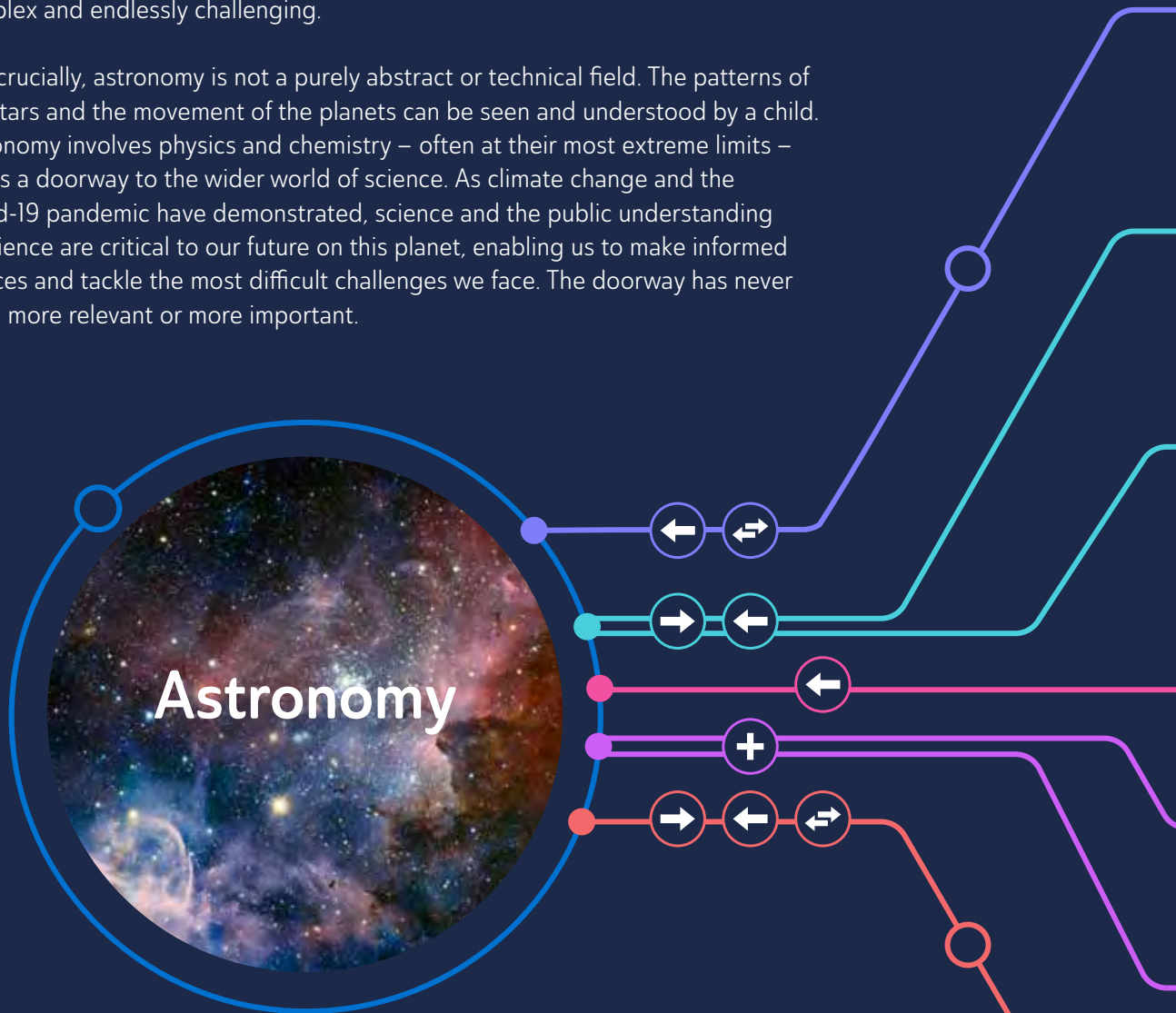
“ The Dublin Institute of Advanced Studies (Dunsink) has been collaborating with the Armagh Observatory since the 18th Century and look forward to exciting future opportunities following in the footsteps of our pioneering forebears. We are pleased to be represented on the AOP Management Committee by Professor Caitriona Jackman. ”

**Dr Eucharía Meehan**, Registrar & CEO Dublin Institute for Advanced Studies

# What We Do – and Why It Matters

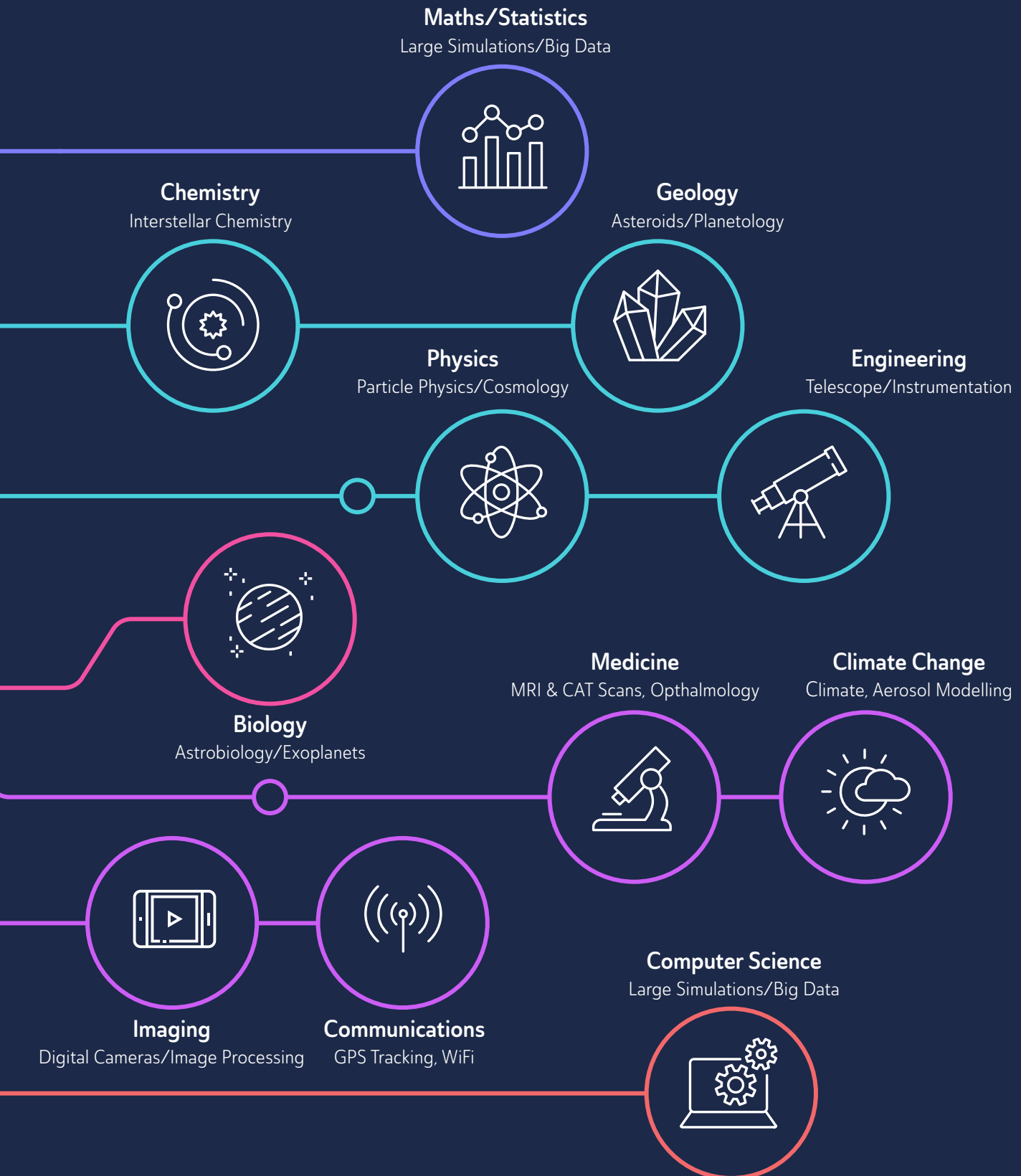
Astronomy is civilisation’s oldest intellectual pursuit. Humankind has always looked to the skies to be inspired by its wonder and to learn from what it could see. Today of course, we can observe vastly more than our ancestors could have imagined, but the essential impulse, the desire to know, remains unchanged. The work of understanding the universe can never be complete. It is endlessly complex and endlessly challenging.

But, crucially, astronomy is not a purely abstract or technical field. The patterns of the stars and the movement of the planets can be seen and understood by a child. Astronomy involves physics and chemistry – often at their most extreme limits – and is a doorway to the wider world of science. As climate change and the Covid-19 pandemic have demonstrated, science and the public understanding of science are critical to our future on this planet, enabling us to make informed choices and tackle the most difficult challenges we face. The doorway has never been more relevant or more important.



**ASTRONOMY:**

-  Promotes advances in
-  Draws from
-  Transferrable skills in
-  Technology transfer to



Like any science, astronomy advances by theories and predictions being tested by precision observations, many of which use, or drive forward, advances in technology. In its earliest days astronomy yielded precious practical information about the seasons, about how to mark time, predict tides and navigate the oceans. In other words, astronomy has always offered answers to big questions. And it still does today. Satellites provide essential communication technology for our connected, digital age while also monitoring weather and helping us understand climate change, as well as helping us comprehend the cosmos and our place within it.

Astronomy today is an essential part of “Big Science” and “Big Data” – offering a global perspective necessary to help us preserve life on our precious yet fragile planet.

And what matters  
more than that?





“ I would like to extend my support and endorsement of the strategic plan to upgrade the Armagh Observatory and Planetarium visualisation facilities. Data visualisation is at the heart of trying to understand the complex data sets that define astronomy today. I am excited by the plans for the development of a data visualisation laboratory in Armagh, and look forward to working with the researchers there in developing new tools for bringing these amazing data sets before the public and for other scientists to explore. I will be following closely the progress of the upgrades and hope to visit Armagh in the near future. ”

**Prof Thomas Jarrett,**

South Africa Research Chair in Astrophysics and Space Science and Director of the IDIA Visualisation Lab

# Our Research

Armagh Observatory has been at the forefront of the development of astronomy since the Age of Enlightenment. There are few institutions anywhere in the world that can make the same claim. Our contributions to science now span four centuries and have provided fundamental insights that still resonate today.

In 2021 an external review panel recognised our work as world leading and internationally excellent, contributing significantly to our field of astronomy and related specialisms.

## Some Research Highlights

Our previous PhD students continue to play significant roles in academia and in industry. Examples include various post-doctoral research assistants around the world including, university professors, posts with NASA and ESO, industry roles with leading pharmaceutical, optics technology and financial sector firms and close to home Head Teacher of ICT at an Armagh school. Collectively, this represents substantial reputational value for the region and offers potential for technology partnerships.

In 2020 alone AOP staff and students have published 67 articles in peer-reviewed international journals, which have already been cited over 400 times.

AOP plays an active and prominent role within the field of international astronomy. 70% of our senior researchers hold executive positions within the International Astronomical Union, in addition to playing key roles in several international research projects.



Key collaborations and partnerships where AOP has contributed funding to telescope projects:





# Our Heritage

Heritage enriches individual lives. It is a driving force for the cultural and creative sectors and plays a role in creating and enhancing social capital.

- Within that context, AOP has a remarkable scientific heritage, still retaining three generations of historic telescopes in situ – pioneering instruments that were at the forefront of astronomy in their day, and providing an enduring legacy of the pursuit of understanding of our place in the cosmos.
- It was in Armagh that a standard system for cataloguing astronomical objects such as nebulae and galaxies was developed, the New General Catalogue of Nebulae and Clusters of Stars. That system is used internationally to this day.
- AOP is truly a special place, whose remarkable scientific heritage represents an important resource for economic and tourism growth, education, outreach and engagement.



- 1,2: The Grubb 10 Inch telescope, installed in 1885 under Director J.L.E. Dreyer.
- 3: The Grubb 15 Inch telescope circa 1934/35 housed in the 1827 dome.
- 4: Tour guests viewing "Atlas Photographique De La Lune" a large format photographic atlas of the moon published in 1910 in Paris.
- 5: The Mural Circle, 1831, used to compile the 2nd Armagh Star Catalogue by Director T. R. Robinson.
- 6: An original Fourth Edition of Sir Isaac Newton's ground-breaking book 'Opticks' held in the AOP collection.



# Mission & Vision

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## Our mission

Our mission is the pursuit of knowledge and understanding of the cosmos, and the sharing of that knowledge in order to inspire future generations and enrich the intellectual, economic, social and cultural life of all.

## Our vision

Our vision is to be recognised as an international centre of scientific excellence for the pursuit of astronomy and the public understanding of science, for our capacity for innovation and our extraordinary heritage, a place our community can be proud of.



# The Pillars that support us

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## Knowledge

We are dedicated to science and rational enquiry for all – as expressed in our strapline: stay curious.

## Legacy

We are a national asset with a distinguished history that we cherish, where research, education and outreach are entwined with heritage.

## People

We are each driven by the pioneering spirit on which our institution was founded, and which has kept us exploring the cosmos since 1790.

## Engagement

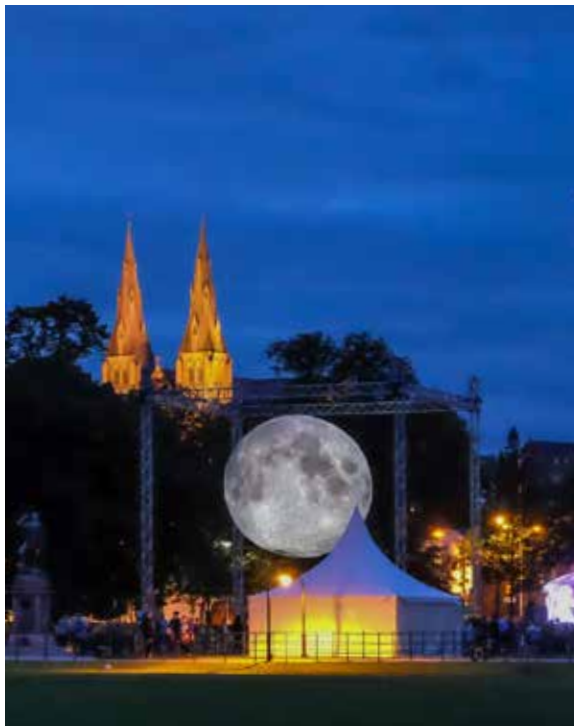
The knowledge we acquire only gains value when it is shared. Our work is about connecting, through education from pre-school to post-graduate, and with educators, researchers, life-long learners and the community. We are the place for space.



Einstein famously considered art and science to be branches of the same tree. They share a common endeavour and aspiration, namely enhancing human life beyond the physical towards something greater. That is our founding purpose, and it remains as valid today.



## The Values that Shape Us



### Enlightenment

Every fresh insight is a new glimmer against the dark; there is a **spirit of enquiry** at our core.

### Collaboration

We thrive on **collaboration** and we work to make our expertise accessible.

### Credibility

Our knowledge and **expertise** have brought us respect and made us an acknowledged leader in our field.

### Accessibility

We are open, **approachable** and welcoming, and we're genuinely happy to share our knowledge.

We stay true to these founding values through our enduring passion, pioneering drive and a truly extraordinary spirit.



# Developing the Strategy

In 2016, the Department for Communities (DfC) set out a vision for AOP as an institution excelling in education and outreach, while remaining a world-class research institute and building on its unique heritage. AOP has fully engaged with that plan, and remains committed to achieving it.



DfC's statement recognised the need for investment, and in January 2019 a Strategic Outline Case (SOC) was approved. This sets out options to be evaluated that may – partially or in full – support the realisation of the vision.

The SOC was revisited in 2020 giving particular consideration to the potential implications of Covid-19, Brexit, the climate crisis and the emerging recession.

This exercise confirmed that the vision for AOP remains both valid and viable.

In October 2020 AOP representatives met (remotely) with the DfC Minister to reaffirm our commitment to delivering the 2016 Vision, and outlined its continued relevance in a post-Covid world. The drive is now to pursue funding opportunities and achieve approval of an Outline Business Case to allow the project to move onto the DfC Capital Programme, with a target date for project completion of 2030.

“ I like to learn.  
That's an art  
and a science. ”

**Katherine Johnston,**  
NASA mathematician with the Apollo programme

We operate on four independent yet inter-connected fronts:

### 1. Scientific

Conducting frontline astronomical research

Benchmarking new technologies and methods

Gathering climate data every day since 1795

### 2. Educational

Providing programmes tailored for schools throughout the island of Ireland

Promoting STEM and STEAM education from pre-school to post-graduate level

Providing PhD supervision – nearly 80 awarded so far

### 3. Social

Supporting inclusion and wellbeing for diverse audiences and needs

Delivering outreach and engagement

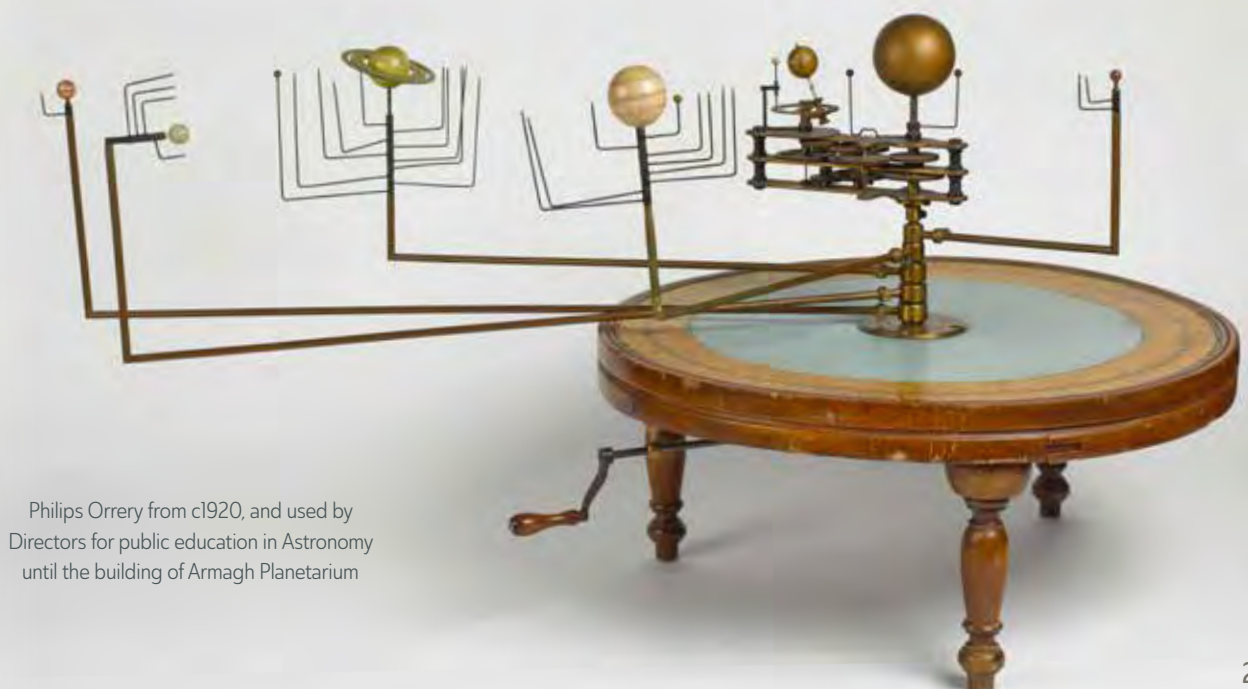
Protecting and promoting our remarkable heritage

### 4. Economic

Developing stakeholder partnerships

Contributing significantly to the local economy

Attracting local, national and international tourism



Philips Orrery from c1920, and used by Directors for public education in Astronomy until the building of Armagh Planetarium

Inspired by this vision our five year strategy is built around four strategic themes of:



They are independent yet interlocking, and over the course of the next decade provide a secure framework for viability; sustained growth; continued scientific progress and enhanced cultural offering.

In developing this strategy, we have taken significant account of the January 2021 Draft Programme for Government (PfG) Outcomes Framework.

The diagram opposite illustrates a high-level mapping of our themes against the PfG draft Outcomes Framework. In addition, within the overview of each theme, we provide examples of how we add value in the context of the overarching NI Public Sector Strategy.

AOP's Strategic Themes support the delivery of a number of PfG Outcomes and have potential for synergies with multiple departmental strategies and objectives.

For example, the Themes support the Department for the Economy's (DfE) Skills Strategy for a 10x Economy that includes driving increased participation in the STEM subjects that will underpin economic success.

The Themes also support DfE's tourism objectives and the Department of Education's work to deliver improved outcomes from the education system for children and young people.





# Contributing to Departmental Core Values



As an arm's-length body of the Department for Communities (DfC), we seek to underpin our objectives with actions that contribute to the Department's core values, namely of Supporting People; Building Communities; and Shaping Places, particularly in our public-facing activities.

Recent examples where AOP, working in partnership with DfC has sought to embed the Inclusive Communities Ethos, include:

- Promoting AOP grounds as a Shared Space for the local community to enjoy.
- 'Your Observatory and Planetarium' campaign in 2021–22.
- Removing barriers to access through investment in:
  - Changing Places Facility and;
  - Sensory Room.
- Enhanced accessibility via:
  - Dedicated relaxed show times, which include subtitling and early entry;
  - Staff training in British Sign Language and Irish Sign Language;
  - Staff trained in JAM (Just a Minute) card and World Host for customer service;
  - Induction loop in Digital Theatre and exhibition area; and
  - Tactile exhibits using many different senses.

Future plans will be underpinned by embedding equality and inclusion in everything we do, in line with DfC commitments by:

- Contributing to well-being and inclusion through supporting cultural and community confidence and removing barriers to access in our events and programming.
- Through our ambitions for future regeneration, contributing directly to the local economy, enhancing civic pride, providing value for our citizens; supporting green growth.
- By listening to our staff and service users and sharing our facilities and expertise within a centre of excellence renowned throughout the world.
- Through partnerships and collaboration with a focus on science, education, shared facilities and innovative solutions.



CHANGING PLACES



NOT ALL  
DISABILITIES  
ARE VISIBLE

“ We thoroughly enjoyed our visit to Armagh Observatory and Planetarium and found a wide variety of activities on offer which were both educational and fun. The visitor experience was inclusive for our disabled daughter who enjoyed the sensory room, the mesmerising dome show and the wonderful new changing places toilet facility. The AOP's commitment to providing a welcoming and inclusive visitor experience for everyone is to be commended and sets an fantastic example to be followed by others. ”

Christine McClements





Since its inception in 2003 Armagh History Group has sought to promote Armagh's rich history and heritage mainly through monthly talks and lectures on relevant topics which are open to the general public. We greatly appreciate being able to avail of the facilities of the Observatory library for our talks. We see this as a very positive step because not only is the venue more accessible than what we had previously, it is in one of Armagh's most prestigious institutions which could well attract a bigger audience to our events.

Mary T. McVeigh Chairperson, Armagh and District History Group



The Planetarium is completely accessible and inclusive for everyone and it's literally on my doorstep. There is plenty of space for prams and wheelchairs to get about - they have thought of everything. The sensory room is a fantastic new addition and Oisín loved how interactive it was. The most amazing bit that made such a difference to our trip was the fully fitted changing area. Regular facilities often make our days out more challenging. Also, Oisín was able to participate in all aspects; he wasn't left on the side lines. He was fully immersed in all the activities and the staff were such a great help. We loved the trip so much that we went back two days later!

Seanin Traynor





## THEME: Enduring Relevance

Our extraordinary heritage makes us a valued asset in terms of tourism and education, and a much-cherished presence in our community. We will continue to deepen and enhance that unique combination, ensuring that AOP's continued role in promoting science retains local, national and international significance.



Pictured: (l-r) Roddy Hegarty (Cardinal Ó Fiaich Memorial Library), Prof Michael Burton (AOP), Archbishop John McDowell, Sean Barden (Armagh County Museum), Lord Mayor, Councillor Kevin Savage, Archbishop Eamon Martin, Dr Robert Whan and Carol Conlin (Robinson Library), at the launch of Bishops and Buildings publication.

### Adding Value

- We contribute to realising potential: as part of government strategies for skills and for young people; by delivering outreach for arts and culture; by empowering personal development, and by building capability and resilience.
- We contribute to local and national economies through our distinctive tourism, education and research products.
- We promote innovation and enhance the public understanding of science – including the scientific underpinning of climate change.
- Ours is a shared, welcoming, inclusive place that is open to all. We're motivated by our passion to share our knowledge of space, our planet our place in the cosmos.
- Our research contributes significantly, not just to astronomy, but to Earth system science and satellite technology.
- We're helping to create a unique destination of which Northern Ireland can be truly proud – a place with enduring local impact and genuinely global reach.



## How We'll Get There

We will work on two fronts, designing and driving our own programmes and engaging with partner organisations to develop new visitor experiences.

- Developing new tourism products to attract new/diverse audiences across a range of interests including heritage, the history of astronomy, education and niche conferencing.
- Raising awareness and engagement with local audiences as a valued and treasured asset.
- Creating a 'space for all', with accessibility and equality of access at the forefront of development and as a contributor to the mental health awareness and wellbeing of all.
- Communicating the value of science, including astronomy, and increasing understanding linked to major current issues in society such as climate change and the importance of informed decision making based on the best available science.



## What Will Success Look Like?

## How will we Measure it?

A must-visit tourist destination

Visitor targets by demographic.  
 Visitor Feedback and reviews.  
 Increased income targets.  
 Successful funding applications for event and marketing support.  
 A Top 10 Visitor Attraction in NI / ROI on Trip Advisor and similar sites.  
 Contribution to the local economy (e.g. bed nights, use of local suppliers).  
 Achievement of Tourism Industry accreditation and awards.

A vibrant community hub valued by and accessible to all

Increased footfall in shared outdoor space.  
 Increased corporate room bookings by community groups.  
 Feedback surveys and reviews.  
 Achievement of recognised standards for equality and accessibility.  
 Achievement of Diversity Recognition Awards such as Diversity Mark, Autism NI Impact Award.

Recognised as a significant Astronomical Heritage site

Inclusion in the International Astronomical Union's Register of Outstanding Astronomical Heritage.  
 Shortlisted as a potential UNESCO world heritage site as one of Ireland's historic world-leading astronomical observatories.

Recognised as a key player in international research

Published papers and citations.  
 Annual target of contributed and invited talks at international conferences.  
 Key positions on international bodies, collaborations and grant panels.  
 Annual target of PhD intake and funding applications from Early Career Researchers.



THEME:

# National & International Standing

AOP enjoys a reputation as a distinguished national and international research institute. That reputation is key to our goals of developing new research partnerships, securing research funding and contributing to scientific knowledge and engagement.

We will continue to create opportunities and partnerships to enhance our standing as an education provider and a key contributor to the goal of giving children the best start in life.

Working in conjunction with education authorities, we will maintain and enhance our role as a key institution in local STE(A)M curricula, becoming a regional/national hub for public outreach and explaining Big Data science.

AOP researchers  
Dr Maritza Lara-Lopez (centre), Dr Erin Higgins (right) and PhD student Zuri Gray (left)



AOP astronomers elected to International Astronomical Union committees. From left to right: Prof Simon Jeffery, Prof Jorick Vink, Prof Michael Burton, Dr Tolis Christou, Dr Stefano Bagnulo



## Adding Value

- Continuing to deliver exceptional research of international value.
- Contributing to science education from pre-school to post-graduate level.
- Contribute substantially to skills and attainment – especially in the area of STE(A)M.
- Our weather data gathering enhances understanding of climate change – and, by extension, contributes to the shaping of the green economy.

# How We'll Get There

AOP is a highly active research institute, producing work of significance that contributes not just to astronomy and astrophysics, but also to related fields such as climatology, STE(A)M education and the public understanding of science.

As such, we will continue both to pursue knowledge and to share it as widely as possible. Activities will include:

- Positioning ourselves as a unique venue for national and international scientific conferences, seminars and other events – adding value not available in mainstream venues.
- Reaching out to educators, employers and interested voluntary organisations to encourage visits and use of our facilities in the pursuance of promoting STEM education and the understanding of science.
- Developing our links with professional organisations to become a regional/national hub for promoting the latest developments in astronomical research and understanding of current issues in society such as climate change.
- Growing and diversifying our research programme to maximise funding opportunities and attract the best talent.



## What Will Success Look Like?

## How will we Measure it?

Recognition as a centre for the public dissemination of science for national and international observatories.

Introduction of new public outreach programmes and events.

Increased profile measured by PR profile and recognised marketing value indicators.

Profile of individual researchers within International bodies such as IAU and their research groups (e.g. lead author on papers).

Periodic public and customer sentiment surveys.

A valued resource used by a range of professional organisations for STE(A)M education.

Private hire of facilities for delivery of STEM education by schools, colleges and other educators.

Collaboration with partners to introduce new STEM programmes using AOP facilities.

Collaboration with partners to introduce new programmes and activities incorporating science and arts.

In partnership with an awarding body delivering an accredited NVQ or similar qualification for AOP Education Officers.

A reputation that attracts high-profile international scientific conferences and events.

Number of scientific events and conferences held.

Contribution to local economy (e.g. bed nights).



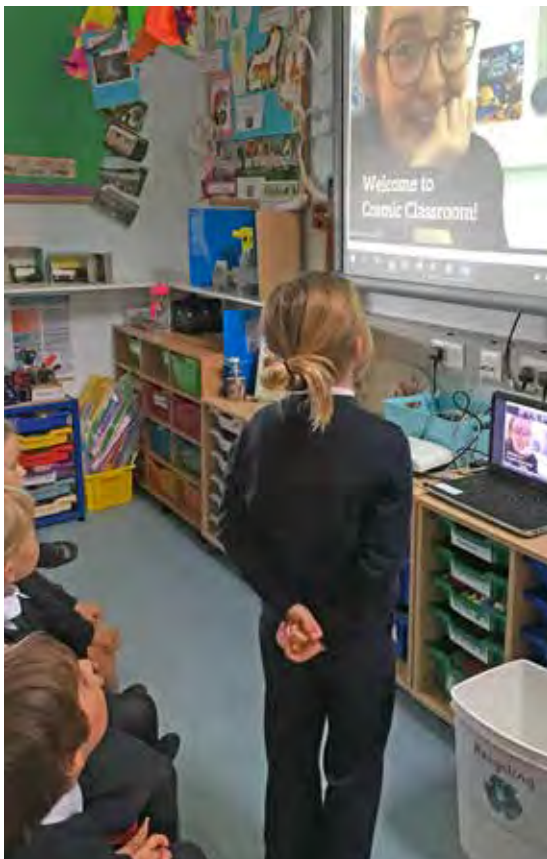


## THEME: Offering More

Science and technology go hand in hand. Throughout history, so-called ‘pure’ scientific research has given birth to technology that was hitherto unimagined.

For AOP to pursue its mandate of public engagement, we are committed to an ambitious plan for state-of-the-art data visualisation facilities. These will allow us to explain and explore ideas in stunning new and engaging ways. For us, technology is not the goal: it is the means to deliver, share and inspire.

With this, the Planetarium will be offering a truly world-leading immersive visitor experience, which will further enhance and secure our position as a cultural and educational destination.



### Adding Value

- By delivering a greater ‘wow factor’, we are cementing our position as a key contributor to education at every stage and as a STEM ambassador, encouraging skills and attainment.
- We will also be delivering enhanced virtual platforms for schools and learners nationally – and, theoretically, worldwide.
- Our data visualisation facilities will help make the science of climate change immediate – greatly enhancing public understanding of the crucial issue of our time. This has clear implications for the green economy and the drive to a carbon-neutral future.
- AOP will become a beacon for Northern Ireland’s commitment to science and technology; to excellence in STEM education; to a trailblazing approach to the public understanding of science and climate change. Together, those factors stand to enhance our national standing and appeal.



## How We'll Get There

Our immersive technology will transform the way visitors will experience the wonders of the cosmos. It will also help underscore our position as both a leading-edge destination and research institution.

Our plans for this theme include:

- Continuing to invest in emerging technology to offer excellent research facilities and educational experiences.
- Engaging with other scientific organisations to share ideas and use our facilities to bring a wider range of STEM education and understanding of science to new and diverse audiences.
- Pursuing opportunities to engage with new partners and funding opportunities to support delivery of our objectives.



## What Will Success Look Like?

AOP will be a leading-edge cultural and educational destination; a prestigious research institution and a regional hub for a shared state of the art data visualisation facilities and immersive visitor experience.

## How will we Measure it?

Level of investment in DVL facilities.

New income streams and investment in new staff with skills to support and deliver diverse offerings.

Increased school visits broken down by primary and post primary visits.

New educational offerings.

Number of arts crossover events.

Use of facilities by non-astronomer researchers and analysts.

Inclusion in programming for Armagh signature events.

Educational programmes to include new technology such as VR and AR.

To provide a range of activities that offer communities and schools more i.e. inspiring schools competitions, community health competitions that promote inclusion and STEAM learning by stealth.





## THEME: Pursuing our Priorities

Our institution was founded on a pioneering spirit, a restless curiosity. With that desire to know comes an equal impetus: a desire to share. We have followed those twin pursuits across four centuries.

To realise our plans and achieve the goals articulated here builds the rationale for three key priorities:

- state of the art Research and Planetarium facilities;
- the need to grow our capacity;
- the need to add skills across the organisation.

Together these will help us broaden our reach, deepen our resilience and enhance our economic sustainability.

AOP estate



## Adding Value

- Education and skills development are crucial aspects of how we contribute to STEM/STEAM and our role in the public understanding of science – especially on climate change.
- Additionally, AOP has a role to play in the Arts and broader cultural life of society, promoting social cohesion and delivering distinctive cultural experiences both within the Planetarium and more broadly across our campus – helping to dispel the myth that science and the arts are unrelated human activities and acknowledging the creativity inherent in science.
- We contribute to the international standing of Northern Ireland as a place in which to invest; a place with a highly skilled workforce, a place that is benchmarking the sustainability, placemaking and stewardship that underpin the drive to carbon-neutrality.



## How We'll Get There

Crucial to delivering this theme will be filling skill gaps, growing capacity and most importantly, pursuing the development of our estate and facilities to meet our future needs.

- Engaging with DfC and other stakeholders to implement a project for the redevelopment of AOP to meet its future needs and safeguard its built and natural heritage for future generations.
- Pursuing partnerships and collaborations to identify and bring in skills and resources required to deliver our objectives.
- Developing our environmental strategy and targets for reducing our carbon footprint and encouraging our visitors to consider their own impacts.



Hyper Cube located in AOP Astropark which demonstrates logarithmic scale, where each interval of the scale increases on the base of ten. This means each cube is ten times bigger than the one inside it and extrapolates out to demonstrate the scale of the universe using the Hill of Infinity behind it where the visitor can take a journey through the Cosmos from the Earth to the Big Bang.

## What Will Success Look Like?

## How will we Measure it?



Agreed Integrated Masterplan and Capital Development Plan for collaborative development of the AOP site and surrounding area as a centre of Research, Education and Leisure – enhancing opportunities for local people and contributing to the renaissance of the City.

Successful co-design process with ABC Council and DfC bringing increased opportunity for the AOP estate and surrounding area.

Approved OBC and inclusion as a priority development project within the NI Executive.

Successful funding bids with relevant partners.



# Making it Happen

## On budgets

Currently public sector budgets are confirmed annually and there is no provision for multi-year budget planning. AOP has continued to develop ambitious delivery plans and has demonstrated resilience and flexibility to maximise opportunities to bid for in year monitoring round funding.

During the last 3 financial years (2018-2021) AOP has successfully delivered £3,146,600 of Capital investment and £2,157,000 additional resource allocation. This investment has assisted AOP to improve its buildings, grounds and public offering and further its investment in international research projects.

In addition AOP has successfully delivered research projects funded by the Science and Technology Facilities Council (STFC). In the period 2018-2021 £871,720 grant funding was received and £754,511 to further specific research projects for the period 2021 – 2024 has been awarded to date. The majority of this funding supports additional highly skilled research posts and PhD scholarships.

## On resourcing skills

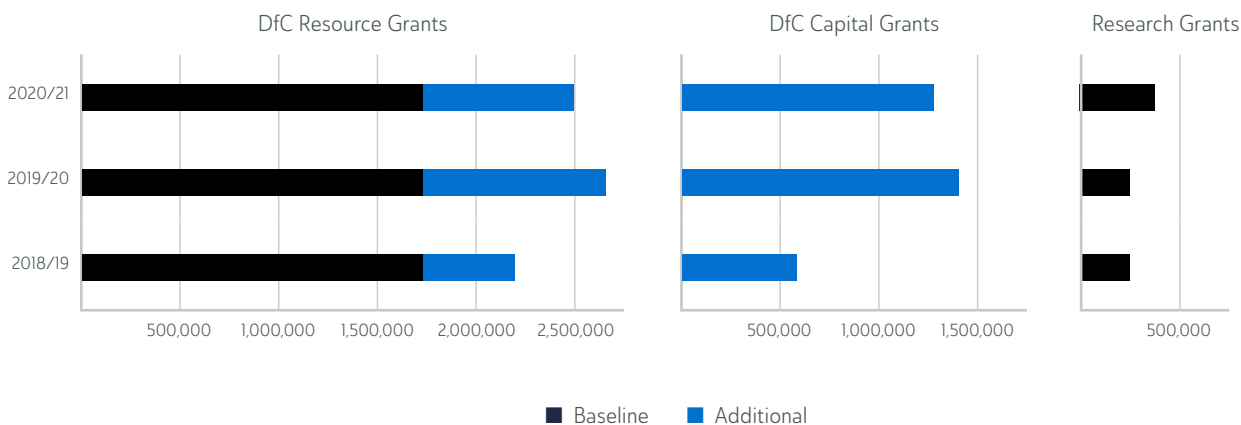
The effective use of resources is of course crucial to the planning and successful implementation of this strategy. This includes not just infrastructure but the people with the range of skills to deliver.

‘Making it happen’ covers everything from recruiting, developing and retaining the best talent, to managing our buildings and estate; from environmental policies and governance structures to generating income from the general public as well as through partnerships with business and investors.

AOP has identified the range of additional skills and resource needs required to deliver this strategy and has revised its Risk Register to take account of how failure to secure these could impact delivery. These include, in particular, critical technical skills that are needed to support and continue the delivery of our science, education, heritage and tourism programmes. Without filling these skills gaps AOP will not have the capacity to adequately undertake some programmes described in this strategic plan.

Continually reviewing our operating models to ensure we can adapt and deliver best value for money

Maintaining a fit-for-purpose organisational structure focused on delivering our objectives



## AT A GLANCE: Key Elements

Delivering the highest standards in everything we do

Employing and investing in motivated and engaged staff

Maximising our budgets, prioritising available funding and targeting expenditure where it will have greatest impact on delivering objectives

Developing a comprehensive donations plan

Making the best use of available and emerging technology and investing in the continuing development of our ICT infrastructure

Filling identified skill gaps across AOP, including through partnerships with educational, scientific and business providers

Launching a 'Friends of AOP' volunteer programme

Working with our sponsor department DfC to maximise opportunities and contribute to defined outcomes and priorities

Ensuring that our public buildings are safe, accessible and welcoming to all

Fair and Equitable Employment Policies and Procedures

## OUTCOMES & ACTIONS: Delivering our Objectives



### Strategy:

themes and high-level strategic objectives



### Annual Business Plan:

actions and targets we need to achieve in that year



### KPIs:

reported regularly to AOP Management Committee and DfC



### Staffing & Skills:

personal goals and targets to contribute to achievement of goals





Pictured: Corporate Team (above), Education Team (below).



## Critical success factors/enablers:

### People

(including customers, community, stakeholders and partners)

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### Financials

(including budget, grants, income generation, donations)

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### Talent

(attracting and retaining the best staff)

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### Technology

(investment in DVL, ICT systems etc)

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### Governance

(processes, transparency, value for money, sustainability)

## SECTION C: Governance

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Armagh Observatory was founded in 1790 by Archbishop Robinson and enshrined in statute in 1791 through an Act passed by the Irish Parliament for “settling and preserving a Public Observatory and Museum in the City of Armagh for ever”. The Planetarium was opened in 1968 to enhance the organisations public face and outreach activities.

Armagh Observatory and Planetarium became a single Statutory Corporation through the Armagh Observatory and Planetarium (NI) Order 1995. Although a single governance structure was created the Observatory and Planetarium acted as two separate bodies with independent management structures up until 2016 when a new management structure was created under one Chief Executive who retains the title ‘Director’ to ensure continuation of the institution’s illustrious heritage.

The 1995 Order places a statutory duty on “the Governors of Armagh Observatory and Planetarium” to maintain and manage Armagh Observatory and Planetarium (AOP) with the purpose of “developing and improving the knowledge, appreciation and practice of astronomy and related sciences.” In accordance with paragraph 8(1) of Schedule 1 of the Order, the Governors have delegated primary responsibility for the governance and management of AOP to a Management Committee.

The Board of Governors has retained a role to ensure that the culture and character, history and patrimony embodied in AOP are protected and preserved and that the institution is managed in line with the statutory purpose outlined in the Order. This role will normally be fulfilled through an Annual Review meeting (visitation) where the Board will receive assurance as to the management and performance of AOP from the Management Committee.



AOP is grant-funded by the Northern Ireland Executive, with the Department for Communities (Northern Ireland) (DfC) acting as the sponsor department. It is classified as an executive Non-Departmental Public Body and has charitable status.





# Board of Governors

Name	Representing
His Grace, The Most Reverend John McDowell, Archbishop of Armagh, Chair	Church of Ireland Archbishop of Armagh
Very Reverend Shane Forster	Dean of the Chapter of the Church of Ireland Cathedral of Armagh
The Venerable Archdeacon Terry Scott The Venerable Archdeacon Elizabeth Cairns The Reverend Canon Dr Peter Thompson The Reverend Canon Joyce Moore The Reverend Canon W J Andrew Dawson The Reverend Canon David Hilliard The Reverend Canon William M Adair The Reverend Canon R J Norman Porteus The Reverend Canon Barry Paine	Member of the Chapter of the Church of Ireland Cathedral
Professor Alan Fitzsimmons	Nominated by Queen’s University Belfast
Mr Greg Cox	Nominated by Department for the Communities
His Grace, The Most Reverend Eamon Martin, Archbishop of Armagh Mr Roger Wilson Ms Sammy Leslie	Nominated by the Governors



Pictured (l-r): John Briggs, Chair Management Committee, Carol Corvan, Leonard Knox, centre Archbishop John McDowell, Chair of Board of Governors, Marc Sarzi, Sinead Mackle, Prof. Michael Burton.



# Management Committee

Name	Appointed/Nominated by
Mr John Briggs, Chair	Chair of the Board of Governors Board of Governors
Mr Roger Wilson Mr Greg Cox Canon William M Adair	Board of Governors
Dr Caitriona Jackman	Dublin Institute for Advanced Studies (DIAS)
Dr Matt Darnley	Science and Technology Facilities Council (STFC)
Prof Mihalis Mathioudakis	Queen's University Belfast (QUB)
Mr Stan Brown Prof. Louise Harra Mr Patrick McGurgan Mr Paul Kennedy Dr Kirstin Lemon Mr Eugene Rooney	Department for Communities (DfC)

# Senior Management Team

Name	Title
Professor Michael Burton	Director and Chief Executive
Dr Marc Sarzi	Head of Research
Mrs Carol Corvan	Head of Corporate Services
Mr Leonard Knox	Head of Finance and Income Generation
Mrs Sinead Mackle	Education and Outreach Manager



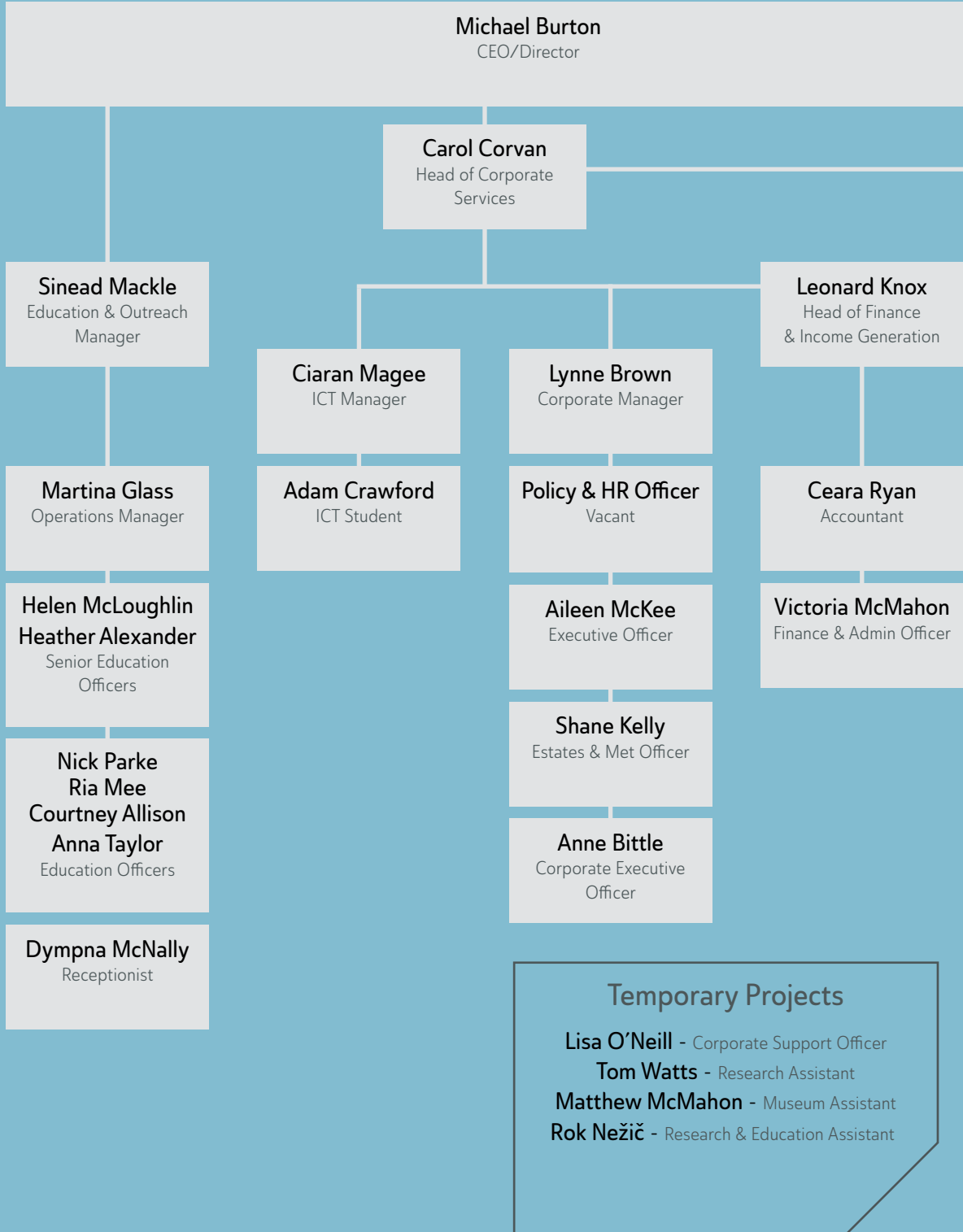
# AOP Staff - 2021

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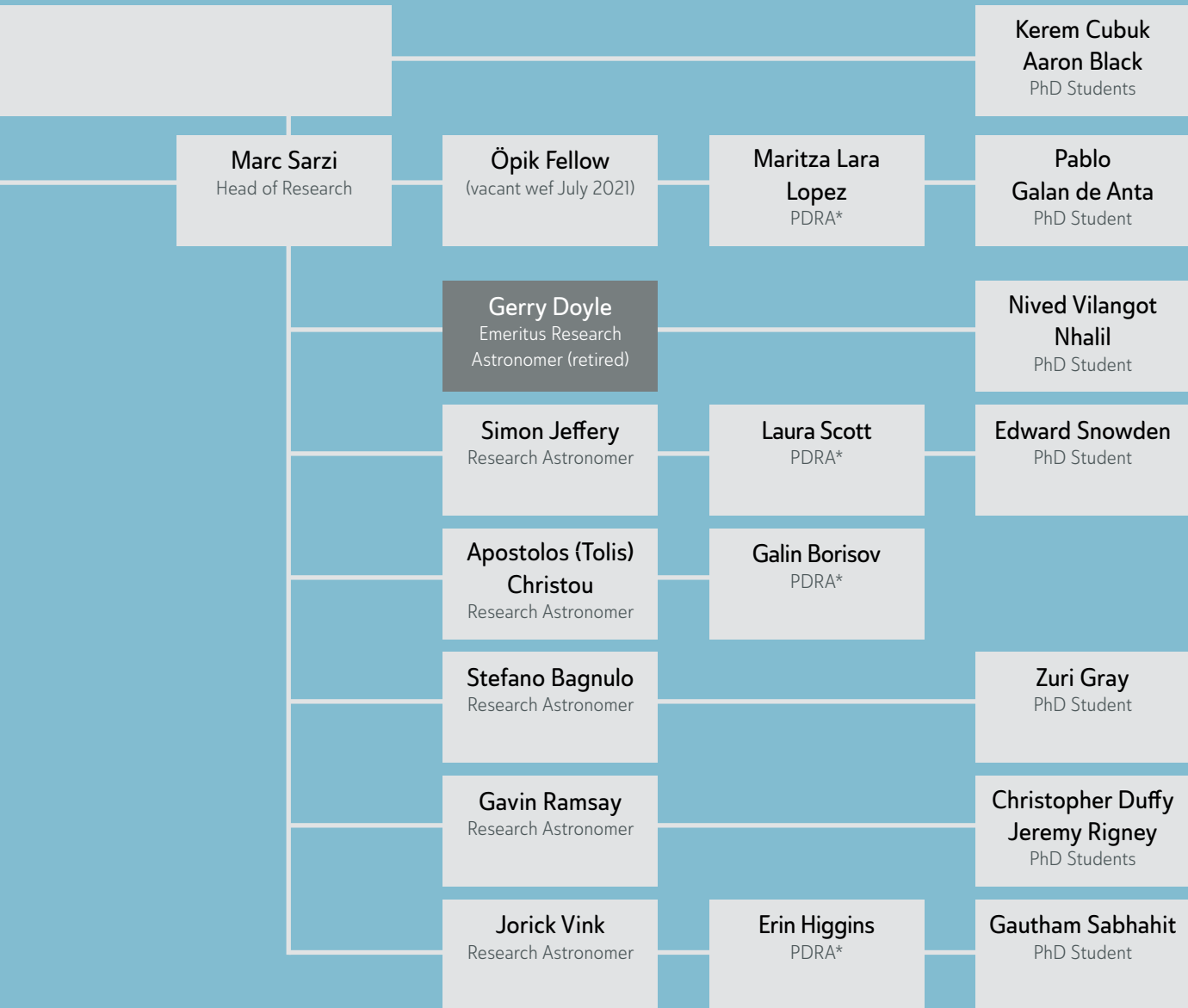




# AOP Structure - June 2021



# AOP Research Structure - June 2021



\* PDRA - Post Doctoral Research Assistant

# AOP Official Research Visitors

Name	Activities	End Date
Bill Napier	Research on cometary dynamics and QSO statistics; and public outreach	30 Sep 2021
Naslim Neelamkodan	Research collaboration on heavy metal-rich stars.	30 Sep 2021
Pilar Montañés Rodríguez	Collaboration on pulsations in dwarf stars; and public outreach.	30 Sep 2021
Emma Reilly	Research activities including polarimetry of solar system bodies.	30 April 2022
Juie Shetye	Research project and public outreach	31 May 2023
Hannah Dalglish	Research project into Dark Skies and Tourism	09 June 2023
Gerry Doyle	Research activities and PhD Supervisory activities	30 June 2023
Mark Bailey	Lectures, outreach and public lectures, history and heritage, meteorological record.	31 July 2023
John Butler	Work in relation to spectra of late type stars, calibration of Armagh meteorological data series and history and heritage.	31 July 2023
Eric Houdebine	Dynamo mechanisms; teaching staff and research students; and engagement with EOs on stellar atmospheres.	31 July 2023
John Landstreet	Seminars and public lectures; and collaboration on stellar magnetism.	31 July 2023
Aswin Sekhar	Research projects; public outreach; and work experience.	31 July 2023
Andreas Sander	Research collaboration on massive stars, their evolution and impact	31 July 2024

# A NEW GENERAL CATALOGUE

OF

# NEBULÆ AND CLUSTERS OF STARS

BEING THE CATALOGUE OF THE LATE  
SIR JOHN F. W. HERSCHEL, BART.

REVISED, CORRECTED, AND ENLARGED

BY

J. L. E. DREYER, PH.D.

ASTRONOMER OF THE ARMAGH OBSERVATORY

Reprinted from



ETY, Vol. XLIX.



ETY

AT A GLANCE:

# Delivering On Key PfG Outcomes

Enduring Relevance 		
AOP Theme	PfG Outcome	DfC Outcome
<p>Significant contribution to a must-visit tourist destination and thriving local economy.</p> <p>A vibrant community hub valued by the local community and accessible to all.</p> <p>Recognition in the UNESCO / International Astronomical Union’s register of Outstanding Astronomical Heritage.</p>	<p>We live and work sustainably – protecting the environment.</p> <p>We have an equal and inclusive society where everyone is valued and treated with respect.</p> <p>We all enjoy long, healthy, active lives.</p> <p>Everyone can reach their potential.</p> <p>Our economy is globally competitive, regionally balanced and carbon-neutral.</p> <p>Everyone feels safe – we all respect the law and each other.</p> <p>We have a caring society that supports people throughout their lives.</p> <p>People want to live, work and visit here.</p>	<p>Wellbeing and Inclusion.</p> <p>Sustainability and Inclusive Growth.</p> <p>Agility and Innovation.</p>
National and International Standing 		
AOP Theme	PfG Outcome	DfC Outcome
<p>Recognition as a centre for the public dissemination of science for national and international observatories.</p> <p>A valued resource used by a range of professional organisations for STEM education.</p> <p>A reputation that attracts international students and high-profile researchers to work at AOP or to attend international scientific conferences and events in Armagh.</p>	<p>Our children and young people have the best start in life.</p> <p>Everyone can reach their potential.</p> <p>Our economy is globally competitive, regionally balanced and carbon-neutral.</p> <p>People want to live, work and visit here.</p>	<p>Wellbeing and Inclusion.</p> <p>Sustainability and Inclusive Growth.</p> <p>Agility and Innovation.</p>



## Offering More

**AOP Theme**

Leading-edge cultural and educational destination.

A prestigious research institution.

A regional hub for a shared state of the art data visualisation facilities and immersive visitor experience.

**PfG Outcome**

Our children and young people have the best start in life.

We live and work sustainably – protecting the environment.

Everyone can reach their potential.

Our economy is globally competitive, regionally balanced and carbon-neutral.

People want to live, work and visit here.

**DfC Outcome**

Wellbeing and Inclusion.

Sustainability and Inclusive Growth.

Agility and Innovation.

## Pursuing our Priorities

**AOP Theme**

Agreed Integrated Masterplan and Capital Development Plan for collaborative development of the AOP site and surrounding area as a centre of Research, Education and Leisure – enhancing opportunities for local people and contributing to the renaissance of the City of Armagh.

**PfG Outcome**

Our children and young people have the best start in life.

We live and work sustainably – protecting the environment.

We have an equal and inclusive society where everyone is valued and treated with respect.

We all enjoy long, healthy, active lives.

Everyone can reach their potential.

Our economy is globally competitive, regionally balanced and carbon-neutral.

Everyone feels safe – we all respect the law and each other.

We have a caring society that supports people throughout their lives.

People want to live, work and visit here.

**DfC Outcome**

Wellbeing and Inclusion.

Sustainability and Inclusive Growth.

Agility and Innovation.





SOMEWHERE,  
SOMETHING  
INCREDIBLE IS  
WAITING TO  
BE KNOWN

CARL SAGAN

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# EXPLORING THE COSMOS SINCE 1790