

GLOW 2.0: British Association of Planetaria Conference & OM Dark Sky Park & Observatory

Period 2



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Introduction

This report provides an overview of our participation in the British Planetarium Conference 2023, hosted at Armagh Planetarium, and our visits to OM Dark Sky Park and Observatory, as well as Sperrinview Glamping site.

The British Planteria Conference 2023 held in Armagh brought together experts and researchers in the field of astronomy, space exploration, and planetarium technology. Armagh Planetarium was one of the founding members of BAP.

Throughout the conference, various themes were explored, topics such as the promotion of dark skies tourism, technological advancements like Virtual Reality (VR), and the innovative concept of a mobile planetarium. Additionally, we gained insights into an ongoing heritage community project at Sherwood Planetarium and Observatory.

Furthermore, we will also provide details about our comprehensive tour of the OM Dark Sky Park and Observatory.

Armagh Planetarium & Observatory

Armagh Observatory and Planetarium stands as the foremost institution for astronomical research and education in Ireland. The Planetarium, was established in 1968 and commemorated its 50th anniversary in 2018, marking it as the longest-running planetarium in the British Isles.

Planetarium

It has a 12-meter diameter Dome, initially featuring a 'starball' Goto Mars projector, Armagh took a pioneering role in introducing video technology to planetariums during the 1970s. Today, Armagh Planetarium boasts a cutting-edge digital projector system that delivers an immersive experience beneath the expansive dome.

Exhibition Space

The exhibition space allows you to get up and close with an actual meteorite, you can craft your very own solar system, or even simulating a black hole. Explore the rich history of astronomy in Armagh, explore the Solar System, study the celestial realms, stars, galaxies, and a space exploration in their new Sensory Room.



Astropark

There is large area of landscape at the Armagh Observatory and Planetarium that is dedicated to the Astropark, a representation of the Universe, which is integrated into the natural environment. As you wander through this space, you can walk through our Solar System, Galaxy, and the broader Universe, all set in a beautiful natural environment. They also have an augmented reality app, offering an even more immersive experience of this unique setting. "AOP look around". Click [here](#)

THE ARMAGH OBSERVATORY & PLANETARIUM GROUNDS AND ASTROPARK

The Armagh Observatory is a modern astronomical research institute, founded by Archbishop Richard Robinson in 1790 as part of his vision to see the creation of a university in the City of Armagh. The Observatory's principal function is to undertake original research of a world class academic standard that broadens and expands our understanding of astronomy and related sciences.

The Armagh Planetarium was founded by Dr Eric Mervyn Lindsay, the seventh director of the Armagh Observatory, and was officially opened on 1 May 1968. The Planetarium's primary activity is to disseminate scientific and technical knowledge of a wide range of scientific and STEM subjects, and to promote public understanding of astronomy and science through its programme of educational services for schools and the wider public.

The Armagh Observatory and Planetarium Grounds and Astropark include scale models of the Solar System and the Universe, two sundials and two historic telescopes, as well as telescope domes and other outdoor exhibits. A public outreach facility, the Human Orrery, is located south of the Observatory building. The Observatory's Library and Archives, and its specialist collection of scientific instruments illustrating the development of astronomy over more than two hundred years, rank amongst the leading collections of their kind in the British Isles.

To book a group tour or for more information

Telephone: 028 3752 3689

Email: reception@armagh.ac.uk

www.armagh.space



Data Visualization Laboratory:

The Data Visualization Laboratory (DVL) extends the immersive planetarium dome experience to researchers, equipping them with tools for visualizing three-dimensional datasets. They have a system with a panoramic display, an expansive wall screen, and virtual reality (VR) capabilities. This section is only open to Public on certain occasions or events.

NSC Creative is a successful studio that makes amazing content for Immersive Storytelling Studios. XR, Domes, Theme Parks, Attractions and Museums. With more than 20 years of experience, they can create unique and impressive shows. They are the biggest maker of digital planetarium shows globally, they explained how they create shows and share them within the network of planetariums and dark sky parks. They work on adapting content to different platforms, some of the trailers for their experiences are available on YouTube @ NSC creative.

Digistar software company have experiences that can be used with virtual reality headsets to watch or produce full-dome content. Support is included for OpenVR-enabled virtual reality headsets (such as the HTC Vive and Oculus Rift)

The Value of Planetarium in Education August 2023: When communities are looking to build a planetarium or purchase a mobile planetarium, they have a struggle in explaining why they're important to decision-makers and potential supporters due to the costs involved. To help with this, the IPS Education Committee made a useful document called the "Value of the Planetarium in Education White Paper." It's six pages long and was written by experts. This document explains all the good things about planetariums in education. It's great for talking to people outside your planetarium, like funders/grant applications or politicians. You can also use it as a starting point for more research on planetarium education. Click to [here](#) to download paper.

Sherwood Planetarium Observatory

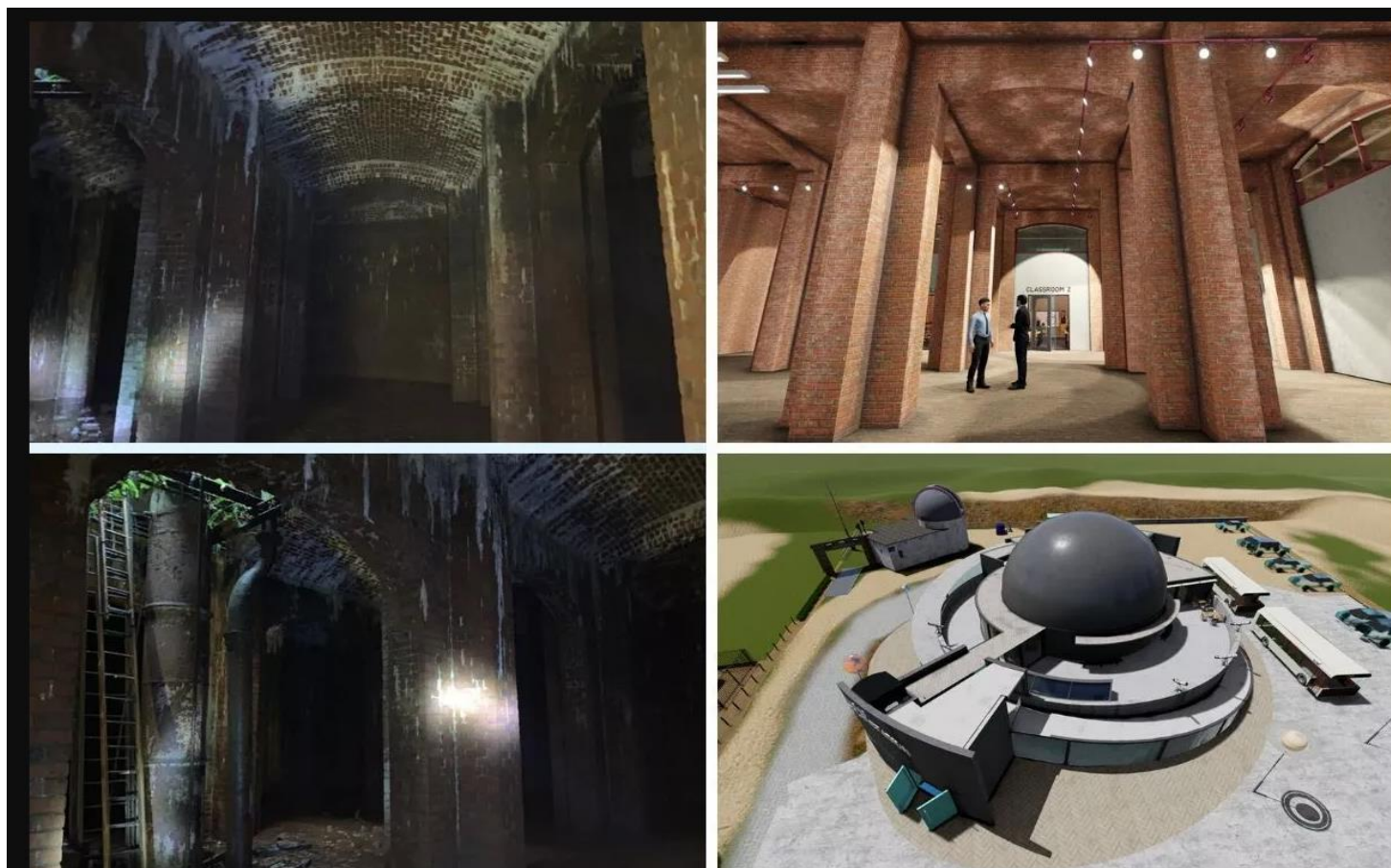
During the conference there was a section on the following community development project: In Sutton, there's a community project underway at Sherwood Observatory. They're building a new Planetarium and Science Discovery Centre, and it's set to be finished by late 2024. This project is part of a bigger plan called the Towns Deal, which got £62.6 million in funding from the UK Government back in 2021.

They're taking an old Victorian underground reservoir on the site and turning it into a space for education and exhibitions. They're preserving its historic features, like the intricate brick arches. On top of this reservoir, they're putting the Planetarium, which will give people an immersive experience of space.

The Mansfield and Sutton Astronomical Society run the observatory, and they're already doing outreach and educational programs.

They have stated "This won't be just for schools or groups; it's for everyone. It will boost the local economy in Ashfield by attracting visitors. Plus, it's going to make Ashfield known as a place where innovation and education thrive".

Most importantly they're doing all of this while preserving and repurposing an old heritage site, which is great for sustainability and keeping history alive. Click [here](#) to see YouTube video.



Planetarium without a Dome: Mobile Planetarium:



Incorporating a mobile planetarium into a community's dark skies tourism strategy can create a win-win situation, offering educational, economic, and environmental benefits while preserving the natural wonder of a dark night sky. They are designed for interactive exploration of science, astronomy, geology, and geography. They use advanced Full Dome 360° 3D digital projection technology, stunning graphics, and computer simulations. Dome diameter: 6 meters, Seating capacity: Up to 45 people, Easy setup, a takedown with a vertical zippered doorway for convenient entry and exit.

Introducing a mobile planetarium to an area can significantly enhance the dark sky tourism industry and elevate the tourist experience:

- **Educational Opportunities:** Mobile planetariums provide a platform for educational outreach, helping both residents and tourists learn about astronomy, the night sky, and the importance of preserving dark skies.
- **Stargazing Events:** Organizing stargazing events with a mobile planetarium attracts tourists interested in experiencing the beauty of a dark, star-filled sky.
- **Cultural and Recreational Attraction:** A mobile planetarium can become a cultural and recreational attraction, drawing tourists who appreciate both the natural and cultural aspects of dark skies. It can be integrated into community festivals, offering a unique and memorable experience.
- **Economic Benefits:** Sustainable dark skies tourism can stimulate the local economy by increasing visitor numbers and extending their stay in the area.
- **Environmental Conservation:** Promoting dark skies through a mobile planetarium supports environmental conservation efforts. Reduced light pollution benefits local wildlife and ecosystems, contributing to the preservation of the natural environment.
- **Community Engagement:** The presence of a mobile planetarium encourages community engagement and participation in astronomy and environmental initiatives. Residents can become ambassadors for dark sky preservation, fostering a sense of community pride and responsibility.
- **Long-term Sustainability:** Encouraging dark skies tourism aligns with long-term sustainability goals, promoting responsible tourism practices and environmental stewardship.

Why a Mobile Planetarium is a Smart Financial Choice:

Different Revenue Streams	Flexibility & Mobility	Low Initial Investment	Cost-Effective Outreach
Low Overhead Costs	Adaptability to Market Demand	Cost Sharing & Community Support	Seasonal & Event-Based Opportunities

In summary, a mobile planetarium can make financial sense by offering multiple revenue streams, cost-effective operations, adaptability to market demands, and the flexibility to reach different audiences. Its ability to provide educational and entertainment services while minimizing overhead costs can make it a financially sustainable venture.



OM Dark Sky Park & Observatory



During our visit to OM Dark Sky Park and Observatory, we had a great experience. We had the chance to explore the concept of a dark sky park visitor centre, and we also had the opportunity to see the advanced telescopes. OM Dark Sky Park is in a tranquil setting in the stunning Sperrin Mountains, right next to Davagh Forest and Beaghmore Stone Circles.

They shared their journey with us on how they achieved the dark sky status. The area has minimal light pollution, making it an ideal spot for stargazing. To collect data, they deployed special instruments called 'Unihedron Sky Quality Meters' strategically throughout Davagh Forest, and the measurements they recorded exceeded an impressive 21.75 magnitudes per square arcsecond.

We were also delighted to learn about OM Dark Sky Park's "Stars and Stones Experience," which takes you on a journey back in time. This experience allows visitors to explore an ancient stone site within walking distance of the park, complete with storytelling and guided tours. This was a great concept of linking to a heritage site to enhance the visitor's experience.

They have built an outside viewing area where they deliver Odessey Screenings, the images are projected onto the side of the dark sky park building. They are actively working on making their shows more sustainable, including special Halloween and Christmas shows, as part of their commitment to responsible tourism.

Furthermore, OM Dark Sky Park has attracted large volumes of tourists this year, they advised that new coffee docks, mountain bike hires and Airbnbs have all opened in the surrounding area.

Images from inside the Centre:



The Observatory area



VR headset: Two are available for this experience, however at present they are not working due to update issues.



OM Odyssey Screening: outdoor seating space where they project shows onto the side of the Dark Sky Observatory wall.



Nature trails & Guided Tours.

Sperrinview Glamping

We visited this stargazing glamping site, A special place at the bottom of the Sperrin Mountains, it is located beside OM Dark Sky Park, the pods, are in a great location for stargazing, they don't interrupt the natural beauty of the area. Each pod has its own little kitchen and a bathroom with a shower. The most unique part is that these pods have a special window, allowing you to lie in bed and look at the stars. This is a very interesting concept that could be adapted in many regions.



Click [here](#) to view website.

Conclusion

In conclusion, our participation in the British Planetarium Conference 2023, along with our visits to Armagh Planetarium & Observatory, OM Dark Sky Park & Observatory, and Sperrinview Glamping site, provided us with a wealth of knowledge and experiences relating to our project.

Armagh Planetarium & Observatory, with its rich history and innovative technology, showcased the significance of educational and immersive experiences.

The Astropark & Sperrinview Glamping site are a great concept that could potentially enrich stargazing experiences in various regions. The augmented reality app at the Astropark, added another layer of immersion to this unique space.

At Sherwood Planetarium Observatory, we learned about an exciting community development project that aims to transform an old heritage site into a hub for education and innovation around Dark Skies Tourism.

Our visit to OM Dark Sky Park & Observatory highlighted the significance of dark sky status and the exceptional stargazing opportunities it offers. The "Stars and Stones Experience" added depth to the visitor experience, allowing visitors to connect with the region history.

OM Dark Sky Park emphasized dark sky significance, sustainable tourism, and economic contributions, notably with seasonal experiences.

Overall, our findings highlighted the impact of astronomy on education, tourism, and community development, revealing potential for regional tourism growth.