Executive Summary

State Party

United Kingdom

State, Province or Region

England (Cheshire East administrative authority)

Name of Property

Jodrell Bank Observatory

Geographical Coordinates to the nearest second

N 53° 14′ 05″ W 2° 18′ 18″

Textual description of the boundary of the nominated property

The boundary of the nominated property has been drawn so that it encompasses all of the areas and attributes that are a direct and tangible expression of its Outstanding Universal Value.

The property is 17.38 hectares in size and encompasses the site of the Jodrell Bank Observatory, which is wholly owned by the University of Manchester. The University owns further land around the boundary of the nominated property, which allows it control of its immediate surroundings. The Buffer Zone has been established using the pre-existing radio silence zone (similar to a 'dark night sky' zone around an optical observatory), which is an area of 18569.22 hectares around the property.

A4 or A3 size map(s) of the nominated property, showing boundaries and buffer zone (if present)

See maps enclosed in dossier.

Criteria under which property is nominated (itemize criteria)

(i), (ii), (iv), (vi)

Draft Statement of Outstanding Universal Value

a. Brief Synthesis

Jodrell Bank Observatory is the earliest radio astronomy observatory in the world that is still in existence.

It is the one remaining site, worldwide, that includes evidence of every stage of the post-1945 emergence of radio astronomy, and, as such, played a pioneering role in a revolution in our understanding of the Universe.

Radio astronomy showed that there is far more to the Universe than meets the human eye, and that entirely new information can be obtained by using radio waves – a revolution exemplified by a range of features across the site.

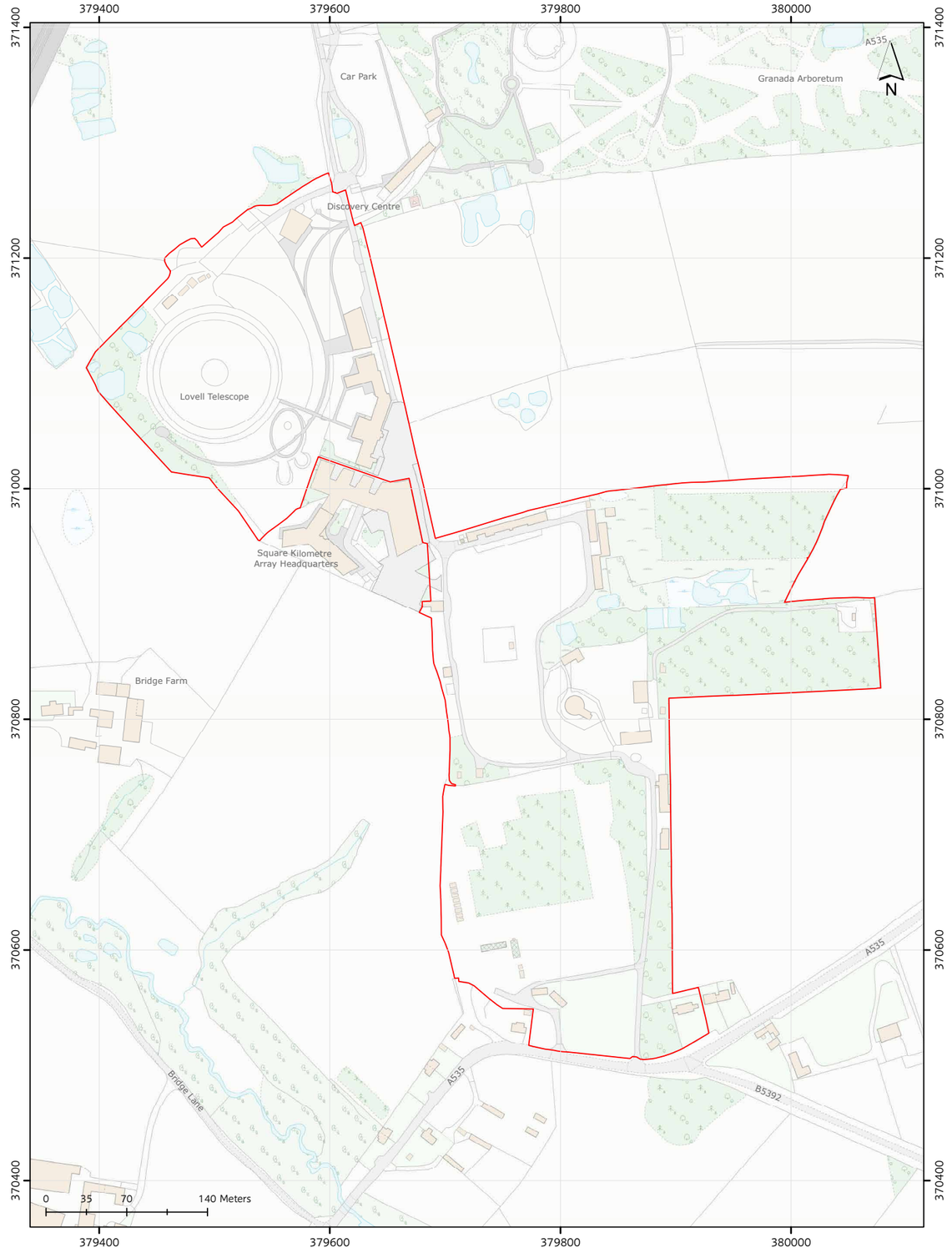
Located in rural Cheshire in northwest England, the Observatory, which is part of the University of Manchester, is dominated by the iconic Lovell Telescope, the first very large fully-steerable radio telescope in the world. Constructed between 1952 and 1957, its first act was to track the carrier rocket for Sputnik 1, the first satellite ever launched into orbit and humanity's first step into space. The Telescope was the largest of its kind in the world for 15 years and inspired the construction of many other instruments worldwide.

The property encompasses a number of other radio telescopes, including the Mark II Telescope, and functional buildings on a 17.38-hectare site. Many of these are original structures and instruments, while remnants of earlier structures also persist, some of them below ground.

The character of the Observatory has been determined by the evolution of radio astronomy. Scientists first arrived at the southern boundary of the site in 1945, and then moved northwards as they made new discoveries, creating new equipment and experiments, thereby imprinting the development of the science on the landscape of the site.

The Observatory is not solely a scientific monument as it still carries out world-leading research. It currently hosts the UK's national array of 7 radio telescopes, and collaborates with many other radio telescopes worldwide.

The scientific importance of the property is demonstrated by the influence of its work, evidenced by the data and scientific publications in its archive, and its continuing research.



Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Scale: 1:3,000 at A3

KEY:

Nominated Property Boundary

Map of the Nominated Property

b. Justification for Criteria

Criterion (i) represents a masterpiece of human creative genius
Jodrell Bank Observatory is an outstanding example of supreme scientific and technical achievement, which revolutionised our understanding of the Universe. The post-1945 emergence of the science of radio astronomy was a turning point in the progress of 20th century astronomy. At Jodrell Bank, evidence of every stage of this is present in the property. This includes: the early use of recycled radar equipment; the construction in 1947 of the Transit Telescope (then the world's largest telescope); and the creation of the iconic Lovell Telescope in 1957 (superseding the Transit Telescope as the world's largest). The development of the Observatory, as a whole, was driven by the vision, determination and creative scientific genius of Sir Bernard Lovell and the team that gathered around him.

Criterion (ii) exhibits an important interchange of human values
The Jodrell Bank Observatory contains numerous examples of physical evidence of the international interchange of ideas at a significant time in history, as the new science of radio astronomy and the space age developed during the 1940s-60s. This is epitomised by the structures of the iconic Lovell Telescope and the Mark II Telescope, which dominate the site and effectively 'bracket' the property. It is also embodied in the character of the landscape itself and the structures that housed and exemplify the work that was at the heart of this unique flowering of international cooperation and exchange of values and ideas. These included developments in astronomy, but also extended more widely to include, for example, quantum optics; interferometry; spacecraft tracking and satellite communications.

Criterion (iv): an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history
Jodrell Bank Observatory is the unique technological and landscape ensemble, globally, that exemplifies, through its surviving physical evidence, the transition from traditional optical astronomy to modern multi-wavelength astrophysics that took place during the 1940s and the years that followed. Developments at all stages of this history took place within its boundaries, with many of the earliest features, or their locations, extant and recognisable. This was a significant stage in the history of understanding our place in the Universe.

It was also a significant stage in the peacetime development of 'Big Science', which followed the Second World War, and was characterised by a leap in the scale of projects, paralleled by a leap in scale of funding and in numbers of collaborating scientists and engineers. While the size of the Lovell Telescope means that it is the most obvious feature of the site, it is, in fact, the Observatory as an ensemble that is at the heart of the property. The character of the landscape and the interrelation between buildings and structures speaks of the revolutionary developments that took place there, and represent this significant stage in human history.

Criterion (vi) directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance
Jodrell Bank Observatory is inextricably linked to the fundamental concept underpinning modern astronomy: that we live on a planet orbiting a star, one in a galaxy of several hundred billion stars, itself only one of a hundred billion galaxies in the observable universe.

When radio telescopes were first pointed at the sky, it became apparent that there were whole aspects of the Universe, including exotic objects previously unimagined, which ordinary (optical) telescopes cannot see.

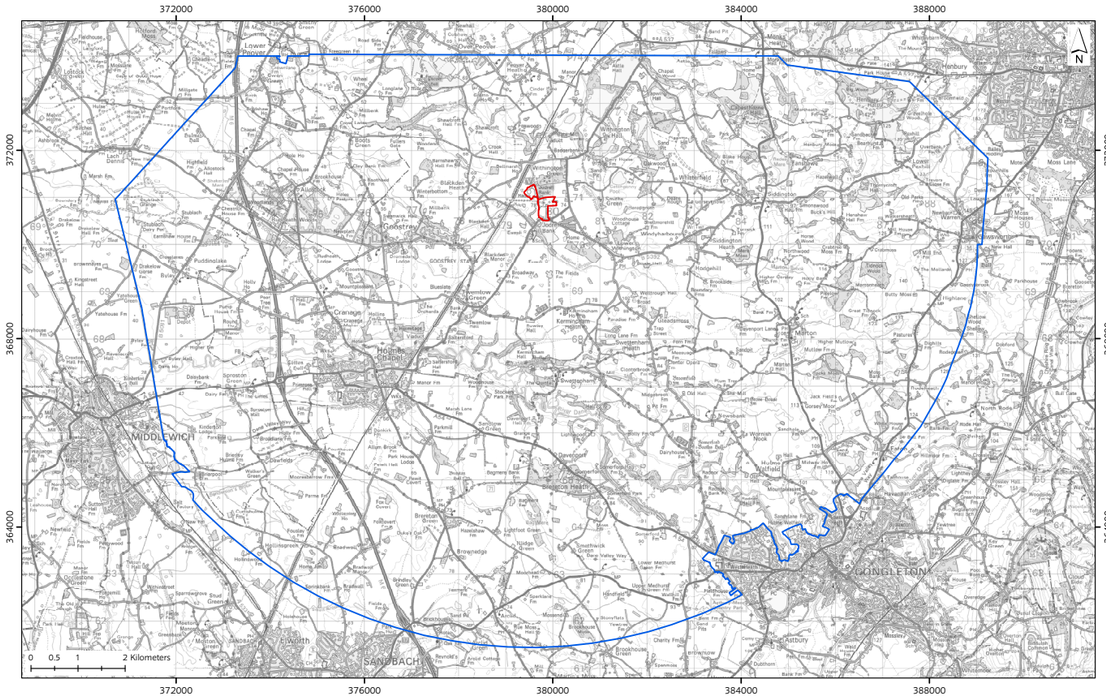
Jodrell Bank Observatory is intrinsically linked to this discovery – that there is far more to the Universe than meets the human eye, and that entirely new information can be obtained by using 'invisible' light, beyond the usual 'rainbow' of visible colours. Modern astrophysics now uses this 'invisible light' as a matter of course, to examine the Universe, but the first major step towards this was taken by radio astronomy.

c. Statement of Integrity

All the tangible attributes of the property sit within the site boundaries. The nominated property is solely owned by the University of Manchester, and the boundaries of the site are clearly identifiable in the Deeds of Ownership of the land. The property is generally in a good state of conservation. The integrity of some elements of the property is compromised (for example, only 5-10% of some of the original scientific instruments remain, as traces below ground). However, most of the buildings in the property are in good condition and the Grade 1 listing and continued research use of the Lovell Telescope and the Mark II Telescope has ensured that the integrity and function of the most iconic elements of the property have been retained.

d. Statement of Authenticity

Despite the rapid and continuing developments at Jodrell Bank, the site preserves good evidence for the emergence of the science of Radio Astronomy and retains a high level of authenticity due to its function as an observatory. The character of the Observatory landscape persists, major structures are preserved in working order and sites of all the major phases of development survive, even if in some cases only as archaeological evidence. The authenticity of this is supported by a very strong body of associated documentation, including many thousands of international research papers, a variety of archives and a huge number of archived media reports. The contributions of the property to the science of astronomy are documented extensively in scientific literature from its emergence to the present day.



Map showing the Nominated Property and Buffer Zone

e. Requirements for Protection and Management

The Lovell Telescope was awarded Grade 1 Listed status in 1988 and therefore enjoys full statutory protection under this and other planning regulations. In 2017, the Mark II Telescope was also Grade I listed and five other historical structures at the site were also listed at Grade II.

The Buffer Zone for the property (which is 18569.28 hectares in area) has been set up using the radio telescope protection zone around the Observatory , which was established by the Jodrell Bank Radio Telescope Direction (1973). (This is similar to an area protecting a 'dark night sky' around an optical observatory, and has acted as a de facto buffer zone since 1973).

The Jodrell Bank property is relatively small (17.38 hectares), has clear boundaries and a single owner. All elements expressing the OUV of the site sits within the boundaries of the property.

The property benefits from being solely owned by The University of Manchester, which has a robust and successful management system in place, including a site Governance Group, that takes oversight of all activities.

A Steering Group including all stakeholders will oversee the management of the World Heritage Site. It is also planned to establish a deemed strategy of consent with all relevant stakeholders in 2018/19.

The University of Manchester, owner of the property, is investing £15million in conservation of the property, in order to provide a good basis for future management.

The property also benefits from a very successful visitor facility, the Jodrell Bank Discovery Centre, which already attracts 185,000 visitors each year, including 26,000 school pupils on educational visits. The visitor facility has plans in place for the sustainable management of future visitation levels and recently secured funding of £20.5million (from various sources) for a new visitor gallery that will be constructed in the buffer zone.

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