



## UK Tentative List of Potential Sites for World Heritage Nomination: Application form

Please save the application to your computer, fill in and email to:  
[UKTL.Application@culture.gsi.gov.uk](mailto:UKTL.Application@culture.gsi.gov.uk)

The application form should be completed using the boxes provided under each question, and, where possible, within the word limit indicated.

Please read the [Information Sheets](#) before completing the application form. It is also essential to refer to the accompanying [Guidance Note](#) for help with each question, and to the relevant paragraphs of UNESCO's *Operational Guidelines for the Implementation of the World Heritage Convention*, (OG) available at: <http://whc.unesco.org/en/guidelines>

Applicants should provide only the information requested at this stage. Further information may be sought in due course.

### (1) Name of Proposed World Heritage Site

Jodrell Bank Observatory

### (2) Geographical Location

Name of country/region

United Kingdom

Grid reference to centre of site

SJ 798708

Please enclose a map preferably A4-size, a plan of the site, and 6 photographs, preferably electronically.

### (3) Type of Site

Please indicate category:

Natural  Cultural  Mixed  Cultural Landscape

### (4) Description

Please provide a brief description of the proposed site, including the physical characteristics. 200 words

The Jodrell Bank Observatory, which is part of the University of Manchester's School of Physics and Astronomy, is dominated by the monumental Lovell Telescope, the first large fully steerable radio telescope in the world - which still operates as the 3rd largest on the planet.

The telescope, which is a Grade 1 listed structure, is 76m in diameter and stands 89m high. Despite its age (53 years in 2010), it is now more powerful than ever and remains at the forefront of Astrophysics research, working 24 hours a day, 365 days a year to observe distant galaxies and objects such as Pulsars and Quasars, far out across the Universe.

The Lovell Telescope sits in a fenced compound on a 35 Hectare site that includes both spaces open to the general public (the 'Discovery Centre') and spaces that are used solely for Astrophysics research.

The public spaces include visitor facilities (new buildings under construction 2010/2011) and an Arboretum.

The research space is home to three other radio-telescopes (including the 25m diameter 'Mark II' telescope) and the purpose-designed 'Control Building', which is now the hub of the UK's national network of radio telescopes 'e-MERLIN'.

The site also includes several other original buildings.

## **(5) History**

Please provide a short summary statement of any significant events in the history of the site. 200 words

The radical developments in Astrophysics generated by the emergence of Radio Astronomy are overlaid on the landscape of the Jodrell Bank Observatory site.

Experiments began in 1945, using WWII radar equipment to study meteor showers. Astronomers then began building the world's largest radio telescopes in succession :

The Transit Telescope (1947), made the revolutionary first identification of a radio object outside our own galaxy – the great nebula in Andromeda (1950). Subsequently, the Lovell Telescope was built (1952-1957). Its first act was to track the carrier rocket of Sputnik I - witnessing the dawn of the Space Age - the only instrument in the world then capable of this.

Despite its major role in the Space Race (1950s/60s) and being used as an early warning system during the Cuban Missile Crisis, the Lovell Telescope in fact works predominantly on scientific research.

At the forefront of Astrophysics since its inception, it is world leading in the research of quasars, pulsars, gravitational lensing and in the development of interferometry.

Sir Bernard Lovell, its founder, recently remarked that the field of Astrophysics has evolved so much in recent years that the Observatory now studies phenomena that were unimagined at the time of its establishment.

## **(6) Why do you think this site should be inscribed as a World Heritage Site?**

Give reasons. 200 words

The Jodrell Bank Observatory is a unique site which combines the heritage of pure science, the authenticity of ongoing scientific research and accessibility to the general public.

The Lovell Telescope is a feat of master engineering, inspired by a creative scientific genius, that encapsulates the move from the lone scientist to modern 'Big Science' – cooperative endeavours that push back the frontiers of knowledge. Jodrell Bank currently does just this as it acts as the hub of the UK's e-MERLIN network of radio telescopes.

Inscribing Jodrell Bank as a World Heritage Site will allow it to be preserved as a 'live science' site for the foreseeable future and allow a supported and managed transition to its preservation as a unique icon of a revolution in world science when it finally 'retires' from active science.

The unifying framework of being inscribed as a World Heritage Site, and the World Heritage Site Management Plan that will underpin its future management, will not only uphold its current role as a unique instrument of Scientific Research, but will also allow it to draw on the support of a wide range of agencies and partners in its future management and preservation.

**(7) Please say why the site has Outstanding Universal Value and specify the main features which underpin its importance. 200 words**

For thousands of years, Humanity has looked skyward and considered our place in the Universe.

With Galileo's first use of the telescope, four hundred years ago, our view became clearer - but even with such telescopes, all we knew was what we could see with our own eyes.

Founded in 1945, Jodrell Bank Observatory was a pioneer of a completely new science: the exploration of the invisible universe using radio waves instead of visible light.

The Outstanding Universal Value in this is that it created a new awareness of the Universe of which we are a part.

The new radio telescopes discovered previously undreamt of things – quasars, pulsars, gravitational lenses and the fading glow of the Big Bang. They now allow us to see out to galaxies outside our own and back in time almost 14 billion years to the origin of the Universe itself.

This has resulted in a philosophical shift as radical as the realisation that the

Earth orbits the Sun : that our Sun is one of 100 billion stars in our own Galaxy, the Milky Way, and that our own Galaxy is one of 100 billion galaxies in the known, expanding, Universe.

### (8) Outstanding Universal Value

Please state which of the [10 UNESCO criteria for Outstanding Universal Value](#) the proposed site meets, and describe briefly why the criteria were chosen. Please see criteria note at the end of the form.

UNESCO criterion	<input checked="" type="checkbox"/>	Why was this criterion chosen? 100 words
(i)	<input checked="" type="checkbox"/>	The development of the entire Jodrell Bank Observatory, and the Lovell Telescope in particular, was an inspired leap of imagination, largely driven by one man's energy and creative scientific genius. Sir Bernard Lovell, in partnership with the engineer Sir HC Husband, created the world's first icon of 'non-optical' Astrophysics.
(ii)	<input checked="" type="checkbox"/>	The development of radio astronomy is mapped out across the Jodrell Bank Observatory site. Dominated by the Lovell Telescope, the site encapsulates the move from the lone scientist to modern 'Big Science' – cooperative endeavours that push back the frontiers of knowledge with teams that now often span the planet itself.
(iii)	<input type="checkbox"/>	
(iv)	<input checked="" type="checkbox"/>	<p>The Lovell Telescope, within the context of the Jodrell Bank Observatory, is the unique site, globally, that exemplifies the transition from optical astronomy – seeing the skies only with the human eye – to modern Astrophysics. Astrophysics now extends the range of the human eye to the radio, infra-red, gamma and x-ray areas of the electromagnetic spectrum - allowing us to see beyond our own Galaxy and out to the edges of the known Universe.</p> <p>Worldwide, only two larger steerable radio telescopes than the Lovell Telescope exist. These are in Effelsberg, Germany (built 1972) and at Greenbank, USA (built 2000).</p>

UNESCO criterion	<input checked="" type="checkbox"/>	Why was this criterion chosen? 100 words
(v)	<input type="checkbox"/>	
(vi)	<input checked="" type="checkbox"/>	The Jodrell Bank Observatory is directly associated with a very important idea of Outstanding Universal Value – the idea that our place in the Universe is defined by our position on a small rocky planet orbiting a star that is one amongst 100 billion in our Galaxy – and that our Galaxy, the Milky Way, is one amongst 100 billion in the known Universe.
(vii)	<input type="checkbox"/>	
(viii)	<input type="checkbox"/>	
(ix)	<input type="checkbox"/>	
(x)	<input type="checkbox"/>	

### **(9) Authenticity (for cultural or mixed sites only)**

Authenticity concerns the current state of conservation of a cultural or mixed site; especially whether its importance, its Outstanding Universal Value, is still obvious from its physical condition. Please outline the condition of the site. 200 words

The priority for the Jodrell Bank Observatory is research. Consequently this, its original guiding principle, takes precedence over conservation of its telescopes solely as monuments to past achievements.

Paradoxically, this has ensured that the Lovell Telescope has been preserved as a 'living' structure for over 5 decades (extremely rare for a scientific instrument).

All Jodrell Bank's radio telescopes are operated and maintained by a dedicated team of engineers, who keep them at the forefront of scientific research.

While the Outstanding Universal Value of much of the Observatory site, and its role as the hub of the e-MERLIN interferometry network, is not visible (access to parts of the site is currently restricted to scientists), the Outstanding Universal Value of the Lovell Telescope is immediately apparent.

In fact, independent market research shows that a massive 54% of the UK population already recognise Jodrell Bank as an icon of Science, which gives a strong indication of the appreciation of its authenticity.

## **(10) Integrity**

For cultural or mixed sites, please state how much original fabric is included in the proposed site, and its condition. For guidance on how the test of integrity is met for natural sites under criteria (vii) – (x), please refer to the OG 90-94. Information Sheet 6 also provides help on this point. 200 words

At Jodrell Bank, world leading scientific research sits alongside scientific history.

The location of the first experiments at the site (the 'Botany Huts'), the position of the Transit Telescope (now the site of the Mark II telescope), and the original Control Building coexist with the Lovell Telescope and the remnants of equipment long abandoned.

The fabric of the Lovell Telescope still incorporates both the original supporting framework and its first collecting dish.

Scientific developments have required the refinement of these, with the addition of further supporting girders and a new reflecting surface (nested in the original). However, with a great deal of care and commitment from Jodrell Bank staff, the primary structure has been retained throughout.

Worn out components are currently replaced with others made to original designs (in 2007, a cracked wheel was replaced by a wheel newly cast for the purpose).

As the Telescope has Grade 1 listed status, any modifications are carried out in consultation with colleagues at English Heritage.

Alongside the preservation of the fabric of the Observatory, its history is safeguarded in the Jodrell Bank National Archive at the University of Manchester's John Rylands Library.

## **(11) Are there other examples of this kind of site already on the World Heritage List?**

Yes  No

If yes, please list. 100 words

There are no sites of this type on list.

**(12) What distinguishes this site from other similar sites?**

150 words

There are currently no similar sites.

**(13) How does the site contribute to meeting UNESCO's priorities for a balanced World Heritage List?**

200 words

The site contributes to the balance of the World Heritage List by introducing a completely new type of site, where 'big science' attempts to answer the 'big questions' facing humanity - examining our place in the Universe, the origins of stars and planets, the search for life elsewhere and the starting point, and potentially the end point, of the Universe itself. Inclusion of the site would address the bias in the World Heritage List towards sites which show the cultural, artistic, architectural and industrial achievements of Humanity, rather than its achievements in pure science - and in engineering in the service of pure science.

**(14) What benefits do you think World Heritage Site inscription would bring?**

Please indicate the main opportunities and benefits.

Education	<input checked="" type="checkbox"/>	Tourism	<input checked="" type="checkbox"/>	Regeneration	<input type="checkbox"/>
Conservation	<input checked="" type="checkbox"/>	Protection	<input checked="" type="checkbox"/>	Other benefits	<input checked="" type="checkbox"/>

Please describe. 100 words.

WHS Inscription would provide an impetus for widening access to the site for visitors.  
 It would also provide a framework for the development of a Management Plan for its future conservation and protection.  
 Most importantly, inscription would support Jodrell Bank in providing a place in which school children, who are the scientists of the future, are inspired by the immense structure of the Lovell Telescope and by an authentic connection to the 'Live Science' research it carries out.  
 They are the future innovators in science and technology, who will ensure the conservation and protection of our common environment and heritage.

**(15) Are there any known threats to the proposed World Heritage Site?**

Yes  No

Please indicate any proposed developments, or other potential impacts on the site.

Impact	<input checked="" type="checkbox"/>	<b>Please describe.</b> 100 words for each issue.
Development	<input checked="" type="checkbox"/>	In 2010/2011 the site will replace its outdated visitor centre with two new buildings which will provide better facilities and stronger engagement with the 'Live Science' at the site for visitors. Consultations with English Heritage have been held throughout this process and they are fully supportive of the project.
Environmental	<input checked="" type="checkbox"/>	New tourism (including the current project) will be developed sustainably, and will minimise its environmental impacts. There will also be no negative impact on the Jodrell Bank Arboretum, which was established by Sir Bernard Lovell, the founder of the Observatory.
Other	<input type="checkbox"/>	

**(16) Legal Protection**

Please list any legal and other protections, including cultural and natural designations, which cover the whole or part of the proposed site. 200 words

The Jodrell Bank Observatory site is home to the Lovell Telescope, which is a Grade 1 listed structure.

**(17) Ownership**

Please list the main owners of the site, where possible.

The site is solely owned by the University of Manchester.

Do the owners support the application? Yes  No

A statement of support from the principle owners of the proposed site should be attached to the application, preferably electronically.

**(18) Local Authority support for the site**

Please list all Local Authorities with an interest in the proposed site.

The Local Authority with oversight for the Jodrell Bank site is Cheshire East Borough Council, which is fully supportive of this application.

Does the proposed site have local Authority support? Yes  No

Please attach a statement of support from each one in relation to the application.

Please indicate whether the site is included in the local plan/s by specific policies.

Yes  No  Partly

Please describe. 200 words.

The Lovell Telescope was awarded Grade I Listed status in 1988. It therefore enjoys full statutory protection under national policies in PPS5, Planning for the Historic Environment and saved listed building policies BH2 to BH6 in the Congleton Local Plan.

The open character of the site and the visual setting of the Telescope are protected by countryside policy PS8 of the Congleton Local Plan and similar policies GC 5 and GC6 in the Macclesfield Local Plan.

Restriction on development in the wider vicinity is provided by Policy PS10 in the Congleton Plan and GC14 in the Macclesfield Plan, reflecting the Jodrell Bank Direction made by Parliament in 1973. This sought to minimize background emissions from electrical equipment in order to maintain the technical efficiency of the telescope.

These Plans will be replaced by a new Local Development Framework for the recently formed Cheshire East Council, a document which is currently in the early stages of preparation. This is fortuitous, as the officers who will devise and inform the conservation policies in the Core Strategy have been involved in the proposal for inclusion on the UK Tentative List and will ensure that appropriate provision is made in the new policies.

## **(19) Stakeholders**

Please list the main parties with an interest in the site. 100 words

The University of Manchester  
Cheshire East Unitary Authority (Local Authority)  
NWDA (Regional Development Agency and Major Supporter)  
CWEC (Sub Regional Enterprise Commission and Supporter)  
Research Councils  
European Union (Research and Network funding)  
The University of Manchester and its Jodrell Bank Observatory also have a close working relationship with English Heritage.

## **(20) How will the Site be managed?**

Please outline the management arrangements for the proposed World Heritage Site, including where the responsibilities lie. 200 words

The University of Manchester, which is one of the UK's leading Universities, is sole owner of the site and as such has overall responsibility for its management.

Current management arrangements, which are the responsibility of University staff, include the direction of scientific operations; the maintenance of the telescope and associated buildings; the provision and management of visitor access and engagement. The whole staff team has a strong commitment not only to the current scientific research but also to the conservation of its heritage, which is a source of great pride for all who work here.

Future management arrangements will also include the wider stakeholder group, most especially in the development of a World Heritage Site Management Plan.

### **(21) Funding: the nomination**

Please indicate how the preparation of the nomination would be funded.  
100 words

The University of Manchester is in discussion with a wide range of regional partners (including the area's main economic development agencies) and other stakeholders about the inclusion of the Jodrell Bank Observatory in the UK Tentative List for World Heritage Site status.

All these bodies are very supportive of the proposal and have expressed a willingness to cooperate with the University in resourcing the nomination, contributing expertise, advice and funding where appropriate.

### **(22) Funding: management**

Please outline how the future management would be funded. 100 words

Scientific operations and maintenance are currently funded by a combination of research councils, the University of Manchester, the EU and other partners. Visitor facilities are part-funded by the University of Manchester and part-funded by revenues from ticketing etc.

The funding of the future management of the site is likely to be a similar combination of such sources.

## Name and Contact Details of Applicant

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Telephone	01477 571 339
Email	

Completed applications should be forwarded, preferably in electronic format, to the World Heritage Team, Department for Culture, Media and Sport at the following email address: [UKTL.Application@culture.gsi.gov.uk](mailto:UKTL.Application@culture.gsi.gov.uk)

Any material that cannot be sent electronically should be sent to the following address:

World Heritage Team, Department for Culture, Media and Sport  
2-4 Cockspur Street  
London  
SW1 5DH

The closing date for applications is 11th June 2010

## UNESCO's criteria for the assessment of Outstanding Universal Value (para 77 of the Operational Guidelines)

- (i) represent a masterpiece of human creative genius;
- (ii) exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;
- (iii) bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;
- (iv) be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;
- (v) be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;
- (vi) be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance.
- (vii) contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;
- (viii) be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;
- (ix) be outstanding examples representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;
- (x) contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.