



# Watching the Skies - by Radio



There are structures in Great Britain that are listed as Grade I, and they are not always castles, palaces, cathedrals, inns or ancient monuments. The Lovell Telescope at Jodrell Bank Observatory in Cheshire is one of world's best examples of these less conventional listed buildings.

Dr Bernard Lovell worked on the development of radar during the war years and in late 1945 he returned to Manchester University to continue his research but he needed to find a

spot where it was quiet - away from an urban location where radio interference from people like us was minimized.

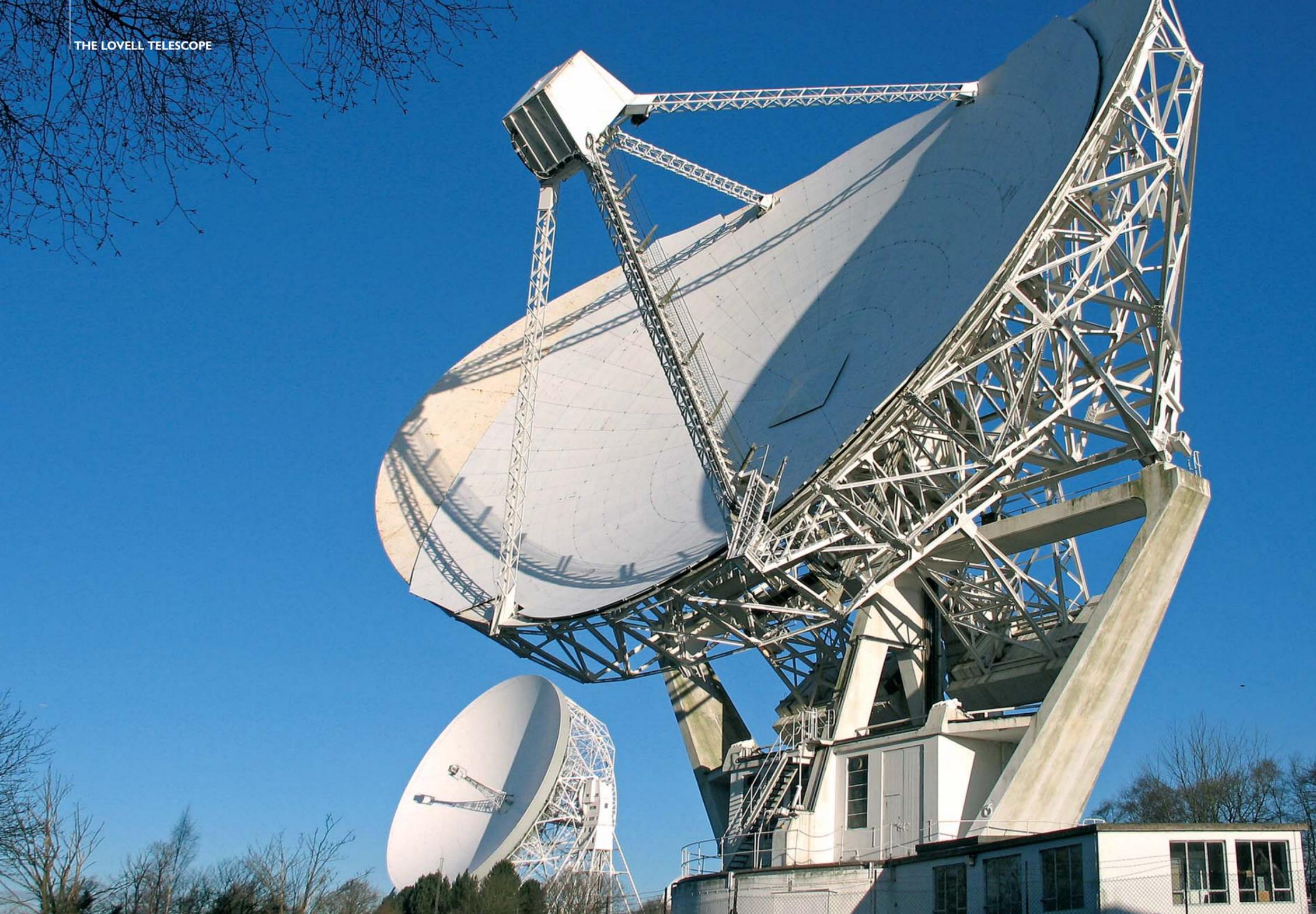
He found his site in the Botanical Grounds at Jodrell Bank that belonged to the University of Manchester about 20 miles south of the city. From experience he had a theory that he wanted to explore. By the middle of December 1945, the system was operating and his team were soon able to prove that "echoes were coming not from cosmic rays

## The Splendour of the Telescope & the Moon

but from ionized meteor trails left behind when small particles, mostly released from comets, burn up in the upper atmosphere of the Earth ".

I knew instinctively that to explore the Lovell phenomenon, words and pictures weren't going to be enough to even scratch the surface. I needed to take my questions and intrigue there to experience what was really going on.

Arriving early for my appointment with Professor Ian Morison, I parked about 300 yards away from the ➤



telescope dish and sat in silence, more than somewhat in awe. There in front of me stood a massive white 'wok' shaped structure that was the first of its kind to discover the Andromeda Galaxy.

I started to get my cameras, Dictaphone and other paraphernalia ready for the visit when I was interrupted by the noise of cows. A small herd of them had decided to introduce themselves and through the

passenger window I was greeted - peering over their hedges eating breakfast with swiping tails one of them decided to wink at me.

Welcome to the Lovell Telescope at Jodrell Bank. Communications had been established.

There was a joyful silence yet for the sound of squirrels scrambling up the fruit trees nearby. Peregrine Falcons, I was later told had also made Jodrell Bank home. Nature's

*Harmony* and our *Technology* lived here together in unison only we were in search of something more than sunshine and good pasture.

It's a credit and little wonder that Sir Bernard, OBE who still lives nearby, makes weekly visits at the youthful age of 95.

Although I should add that whilst I was there the telescope was in a stand-by mode for a brief health check and off duty from its tracking,

searching and analysing of incoming data, often from outside our Milky Way.

The Lovell Telescope is a giant and it's alive and conscious. Previously known as the **Mark 1**, it became operational in 1957. It can be moved in many directions with dish/bowl elevations (surface area of 5270 square meters) to point it accurately into the skies. It's 3200 tonnes rests on railway track that allows the telescope to

rotate and if you want to give it a new coat you'd need 5300 litres of paint.

It was fascinating to hear that during the construction, **two 15.5 inch gun turret** mountings were used on top of the tower, salvaged during the break up of a battleship from a **Rosythe** dock yard - these mountings act as big cogs to move it around and are still vital to operations today.

**Main image:**  
The Lovell & her twin at work

**Above right:**  
Jim & Crew carrying out a wheel change

#### THE SITE VISIT WITH PROFESSOR IAN MORISON 10.30 AM, 10TH OCTOBER, 2008

During my time at Jodrell Bank, Ian escorted me around the Observatory with an in-depth commentary, introducing me to the Control & Receiving Rooms, the original site of the first transit telescope (1947) and to other key members of staff.

We started getting to know each other by chatting with a Q&A session ➡



The Control Room and 'Mind' at Jodrell Bank Observatory

in one of the lecture rooms.

*Lovell Telescope (LT)  
Jodrell Bank (JB)  
Ian Morison (IM)  
John Crampton (JC)*

**IM:** The LT is so sensitive that it could detect a signal from your mobile phone if you were standing on the surface of the moon

**JC:** What's the origin of the word Jodrell ?

**IM:** It comes from the family name 'Jaudrell' and until more recent years owned a fairly large house nearby which is now the Terranova Prep school where I believe Brooklyn Beckham went to...and I think it's true to say that Jaudrell was an archer in the Black Princes' Army in France

**JC:** Sir Bernard wrote 'Echoes of War' and 'Astronomer by Accident'? I wasn't able to track them down at Waterstones even with the ISBN numbers ?

**IM:** There are places that do second hand books but there is one he has written about JB's history called 'Out of the Zenith'

**JC:** I'm asking you this next question with a sense of humour. Who or which individual would you choose to present a 'radio show' if the

LT was transmitting ? It doesn't have to be a scientist, it could even be someone like Jack Dee who sends out a distant message for mankind ?

**IM:** Patrick Moore is of course the doyen of British astronomers and he would be fine. Actually I think we should choose Stephen Hawking, next year is the International Year of Astronomy and we are hoping to get him to transmit from somewhere else and received from Jodrell Bank.

To celebrate our 50th anniversary we were getting messages of congratulations bounced off the moon which was rather fun

**JC:** I find it interesting to learn that during the Cold War, Dr Lovell was getting telegrams from Moscow and Washington DC on the same day asking for assistance in tracking their Sputniks (USSR) and Moon Probes (USA) ?

**IM:** Scientists don't take part in Cold Wars.

**JC:** Scientists through science did develop ballistic missiles and the LT/JB used radar as an early warning defence system.

**IM:** We have twice searched for NASA spacecraft and were recently asked if we would bring back the first

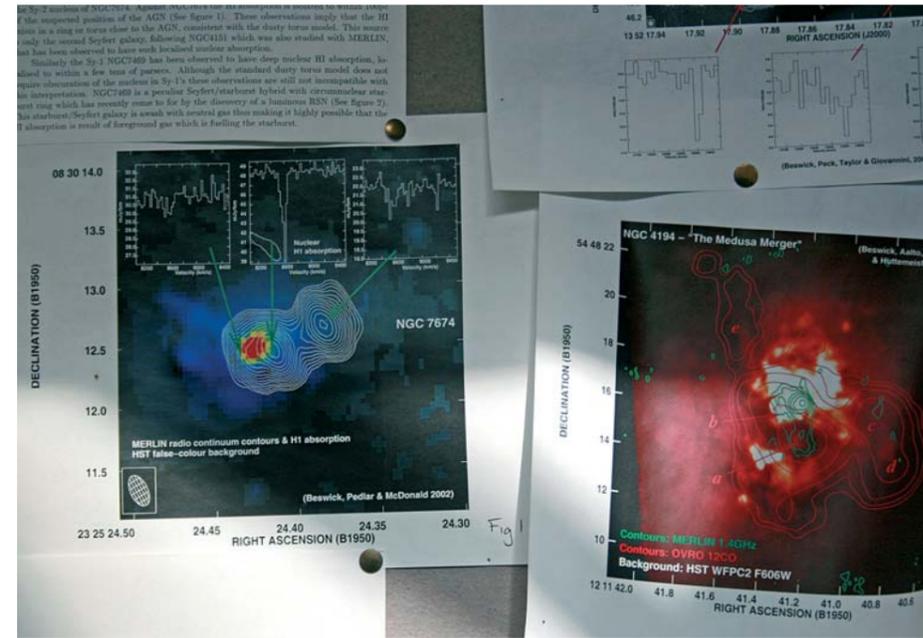
signal from the **Beagle II** on the surface of Mars. It should have landed and probably did crash land on the right trajectory on Christmas Day 2003. No one has detected any signals. It may have been that the air bags failed to deploy.

**JC:** Maybe the Beagle went out hunting ?! (I believe my attempt at humour with Beagles and fox hunting went unnoticed - after all we had also been discussing quasars, pulsars, cosmic rays and **MERLIN**)

We took a short break for a coffee refill. During those few minutes I was distracted - 200 yards away through the glass, engineers in hard hats were climbing the telescope. Ian was waiting for my next question. When Professor Morison was based at the Observatory it's the sort of thing he saw out of his office window first thing in the morning.

Ian offered to take me for a walkabout and into the fresh air to get a better sense of what was going on before we said our goodbyes.

So who is **MERLIN**? It's the name of a 7 radio telescope network which includes Jodrell Bank, Cambridge and the Welsh borders. Effectively it acts as a giant telescope with an effective



aperture of 230 kilometres. Powerful and comparable to the **Hubble Space Telescope** it was inked to the Lovell in 1992 to offer a national facility - open to all astronomers.

Back down to earth now and some of us may soon be thinking of the impending season that we call Christmas - not always my favourite time of the year but conceptually a time for rest, relaxation and over indulgence.

Stars appear more than ever in late December. They adorn greeting cards, high street decorations, sound

out through songs, carols and melodies. Christmas pageants and the West End like the occasional *etouille*. I've been hanging star shapes on my tree next to the baubles, tinsel and snowflakes since I can't remember.

This year I ask you to treat yourself to something very special. On a clear night go outside and look to the sky. Take your imagination with you because somewhere out there is a star called the HE 1523-0901.

It's seen more than a few Christmas' - it was born 13.2 billion years ago.

**Top:** 'Universal Colour'

**Bottom:** Headline Grabbers by the International Press

**Right:** Professor Ian Morison



BY JOHN R CRAMPTON

**ACKNOWLEDGMENTS:**

Sir Bernard Lovell OBE  
Gresham Professor of Astronomy – Ian Morison, University of Manchester (for photographs taken by I. Morison and supplied from Archives)  
Dr Tim O'Brien – Head of Outreach & Senior Lecturer in Astrophysics, Jodrell Bank Centre, University of Manchester

Mike Anderson CMIOASH MBIFM – Safety Advisor/Facilities Manager at Jodrell Bank Observatory

Kim Mance – Duty Controller at Jodrell Bank Observatory

Nuffield Radio Astronomy Laboratories

June M Bannister-Crampton – Support & Logistics

John R Crampton – Research, Writing & Photography at Global888@btinternet.com (direct)

Website for Jodrell Bank www.jb.man.ac.uk