

MANCHESTER
1824

Jodrell Bank Observatory



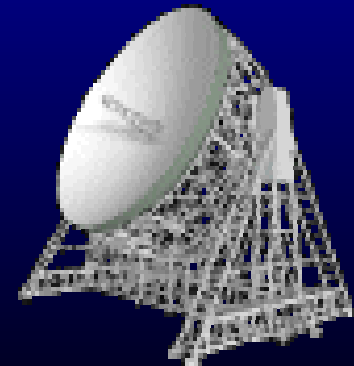
GRESHAM COLLEGE

The Story of Jodrell Bank

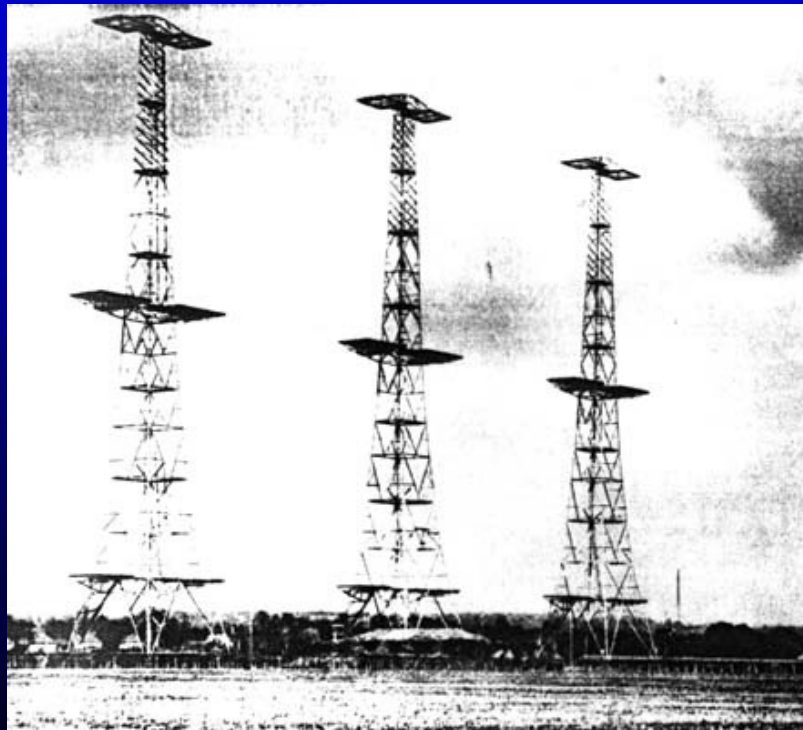
Ian Morison

Gresham Professor of Astronomy

Jodrell Bank Observatory

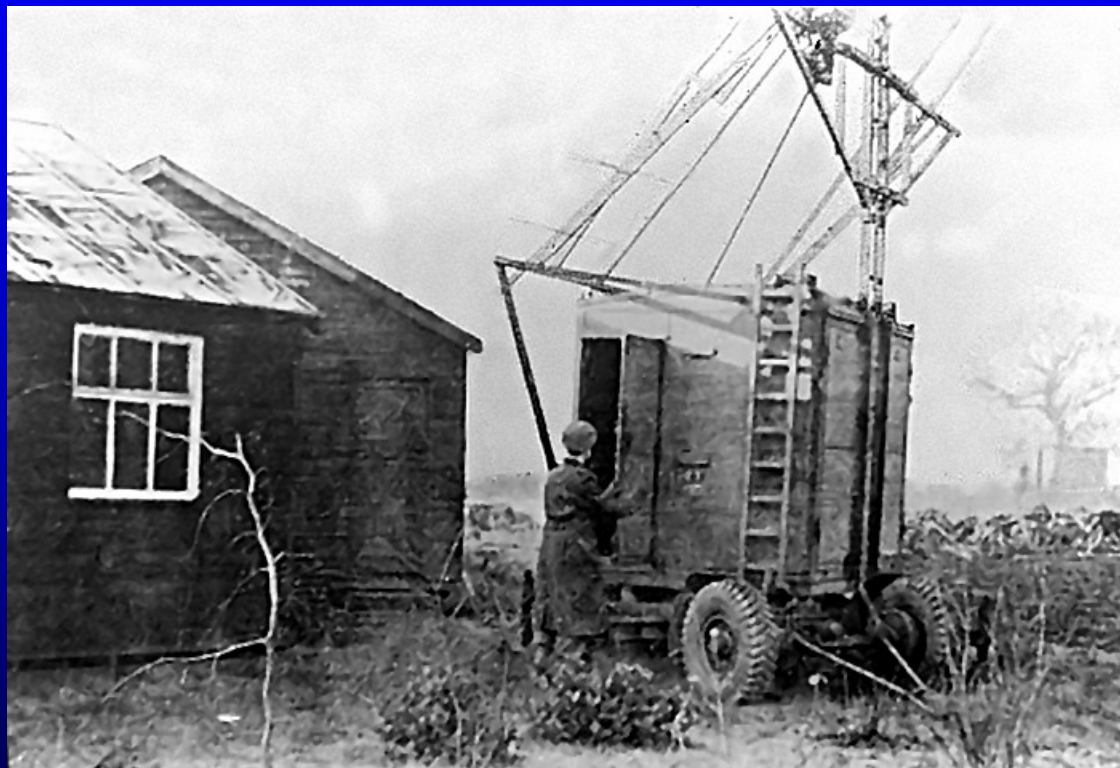


Chain Home Radar Station Staxton Wold



The First Days at Jodrell Bank

December 1945



- First Echoes 14th December



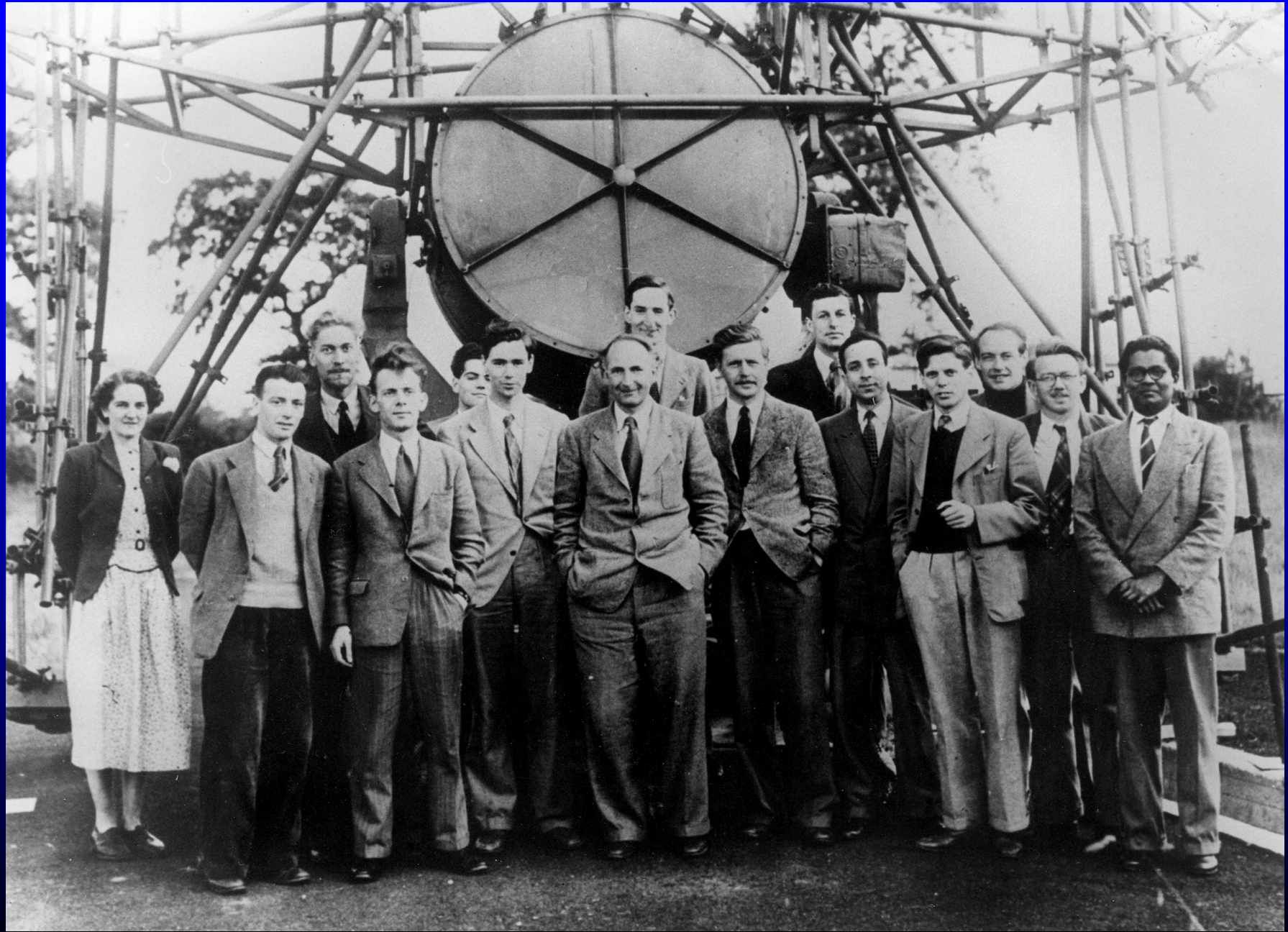
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www.skylook.net



Jodrell Bank Experimental Station





Jodrell Bank Experimental Station



218 ft Telescope

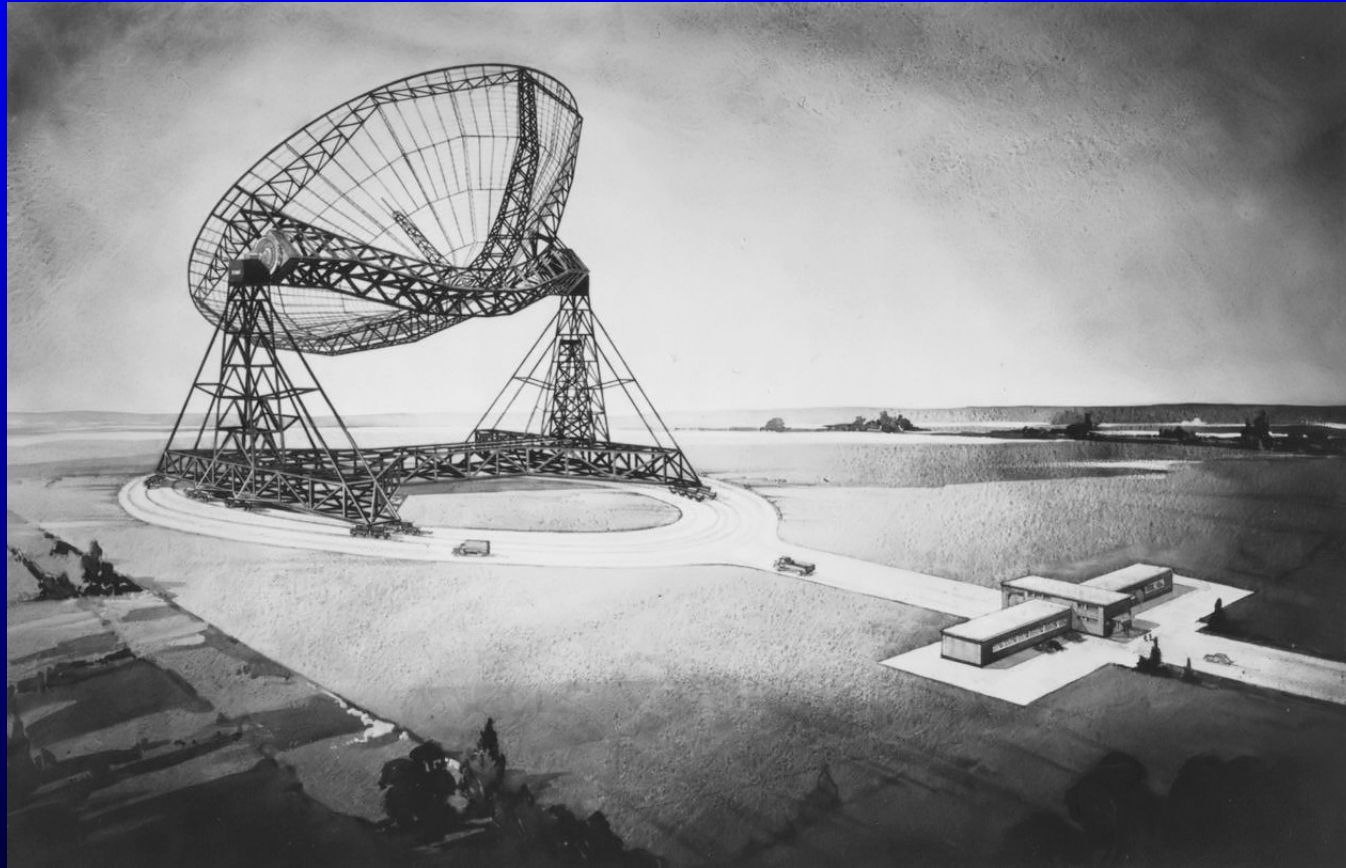


The Andromeda Galaxy

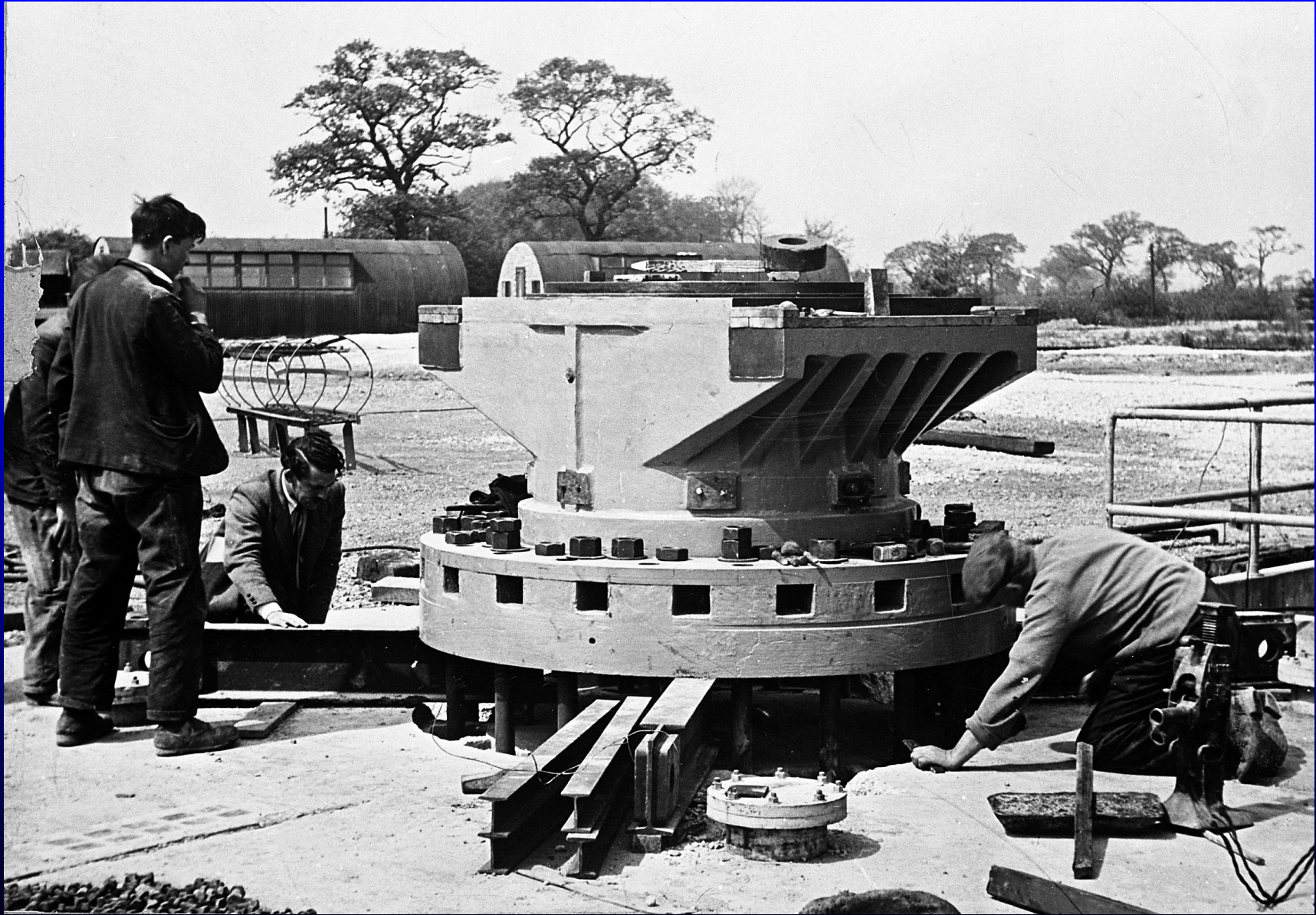




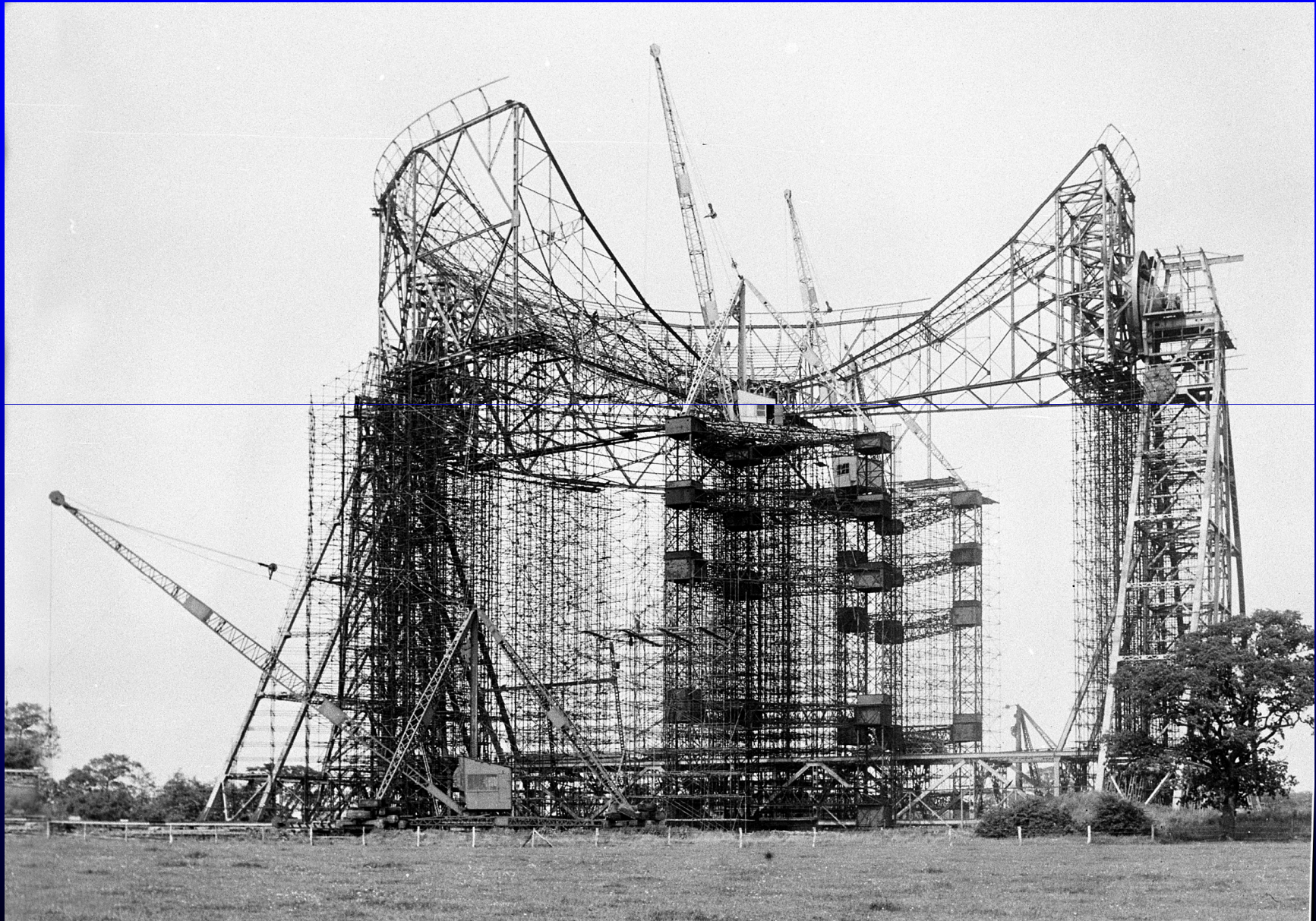
Plans for the Mk I Radio Telescope



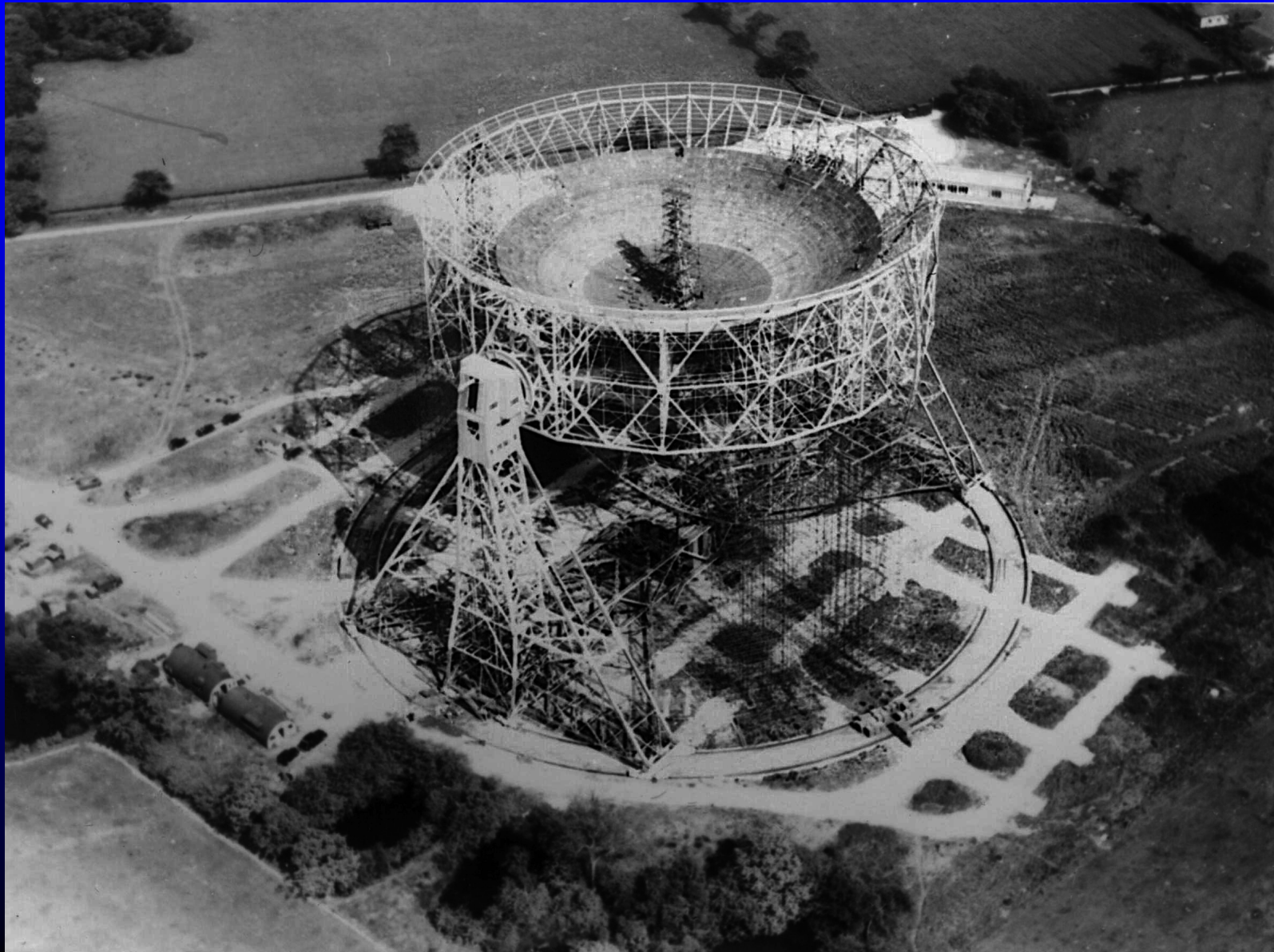












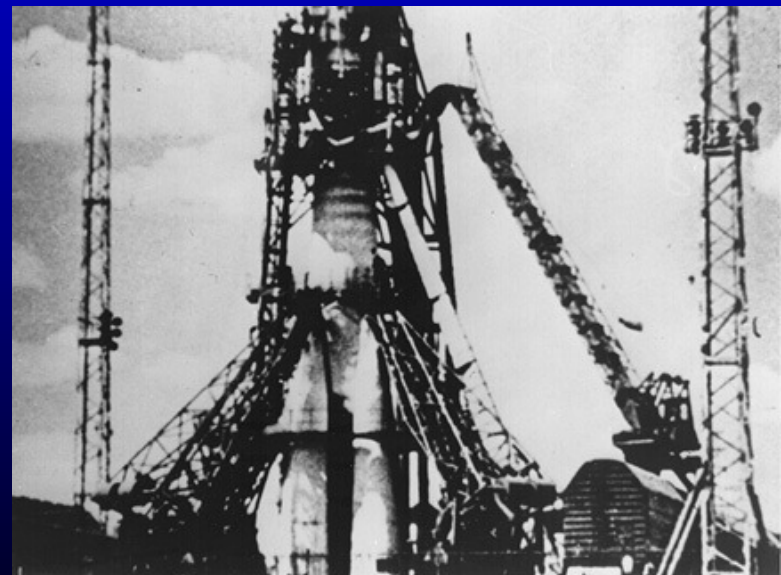


The Control Room



Sputnik 1

- The Mark 1 telescope first moved in azimuth under computer control on Oct 1st 1957. A few days later Russia launched Sputnik 1.
- A crash programme completed the commissioning of the telescope drive system and 150 kW transmitters at 120 and 36 MHz were mounted on the telescope.



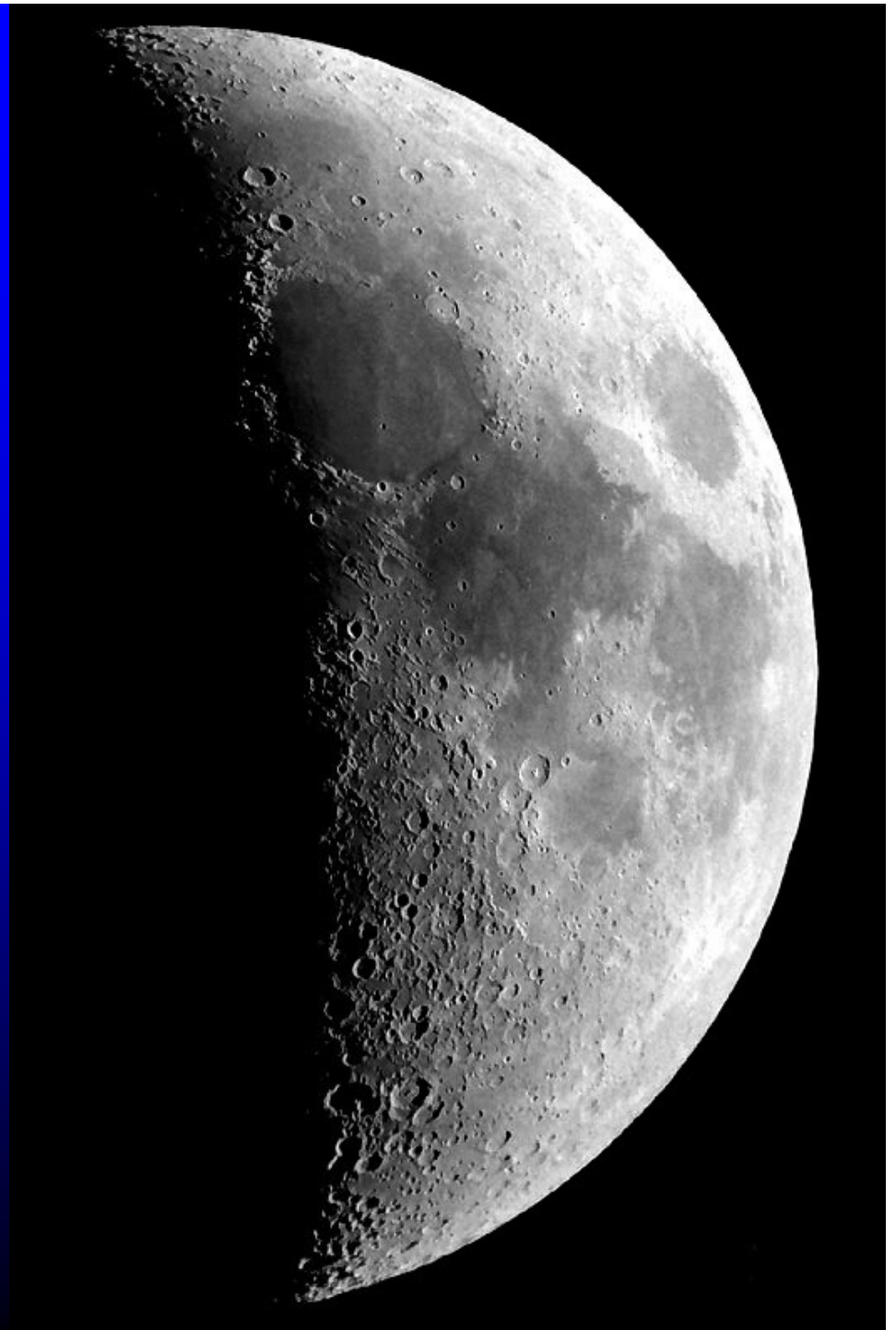
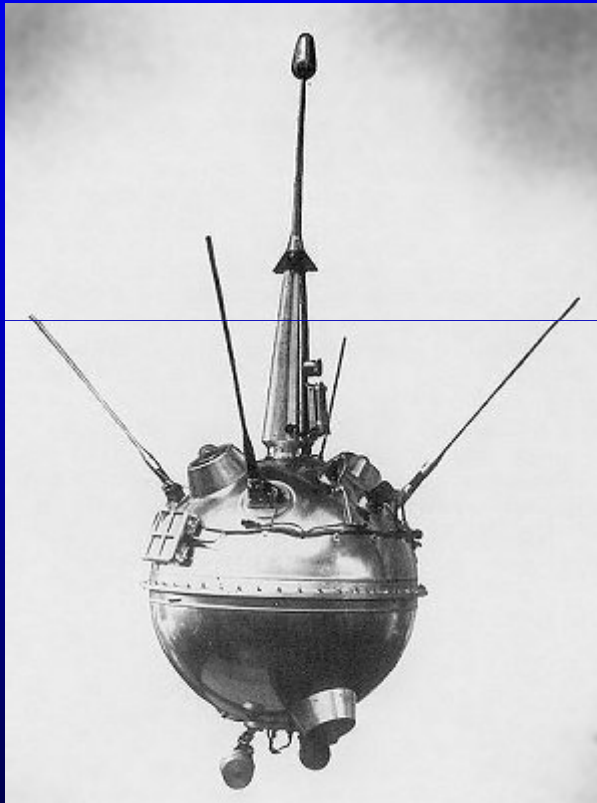
Sputnik 1

- On 12th Oct the 3rd stage rocket that put Sputnik into orbit (and which was itself in orbit) was conclusively detected.

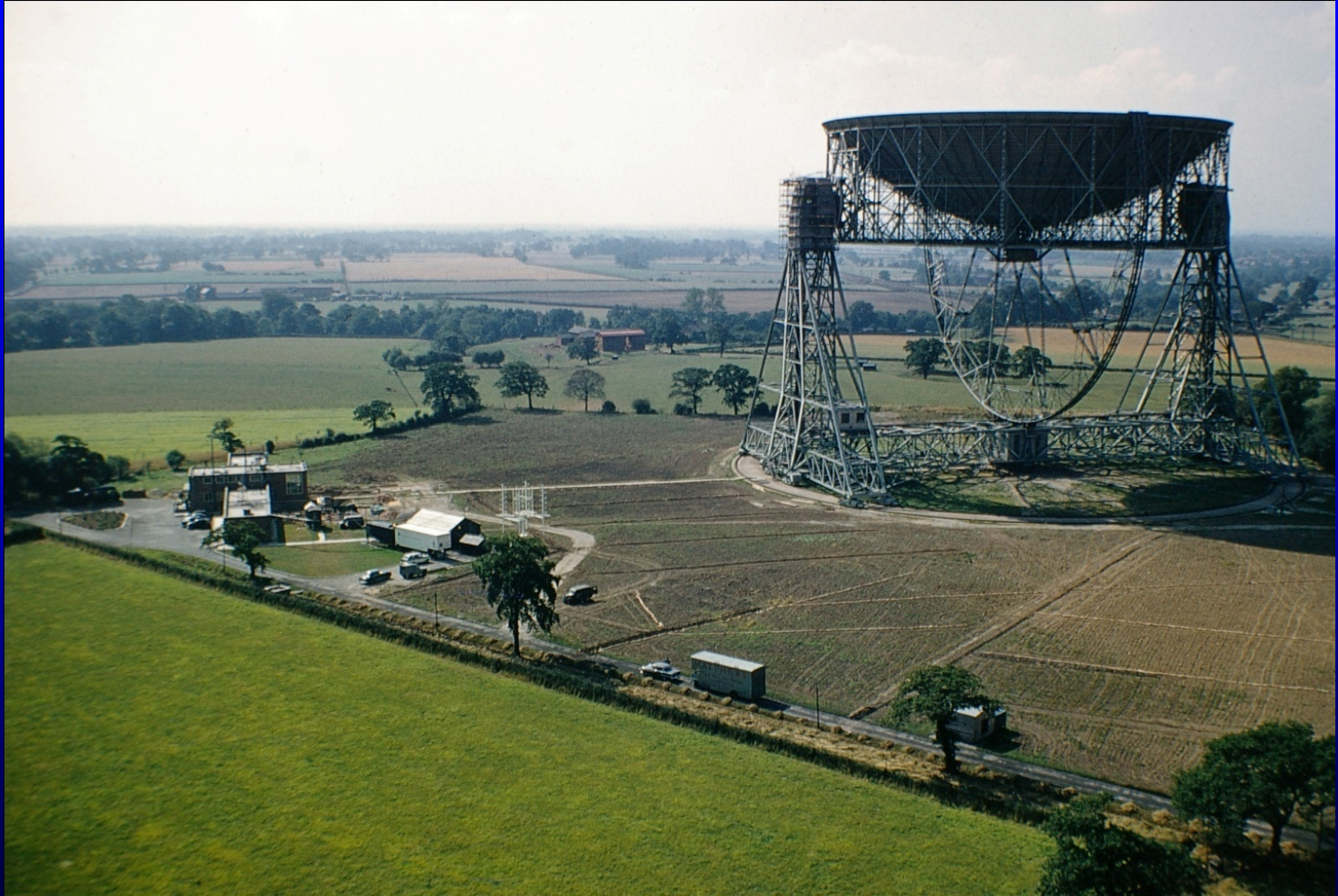




Luna 2



Helping the Americans



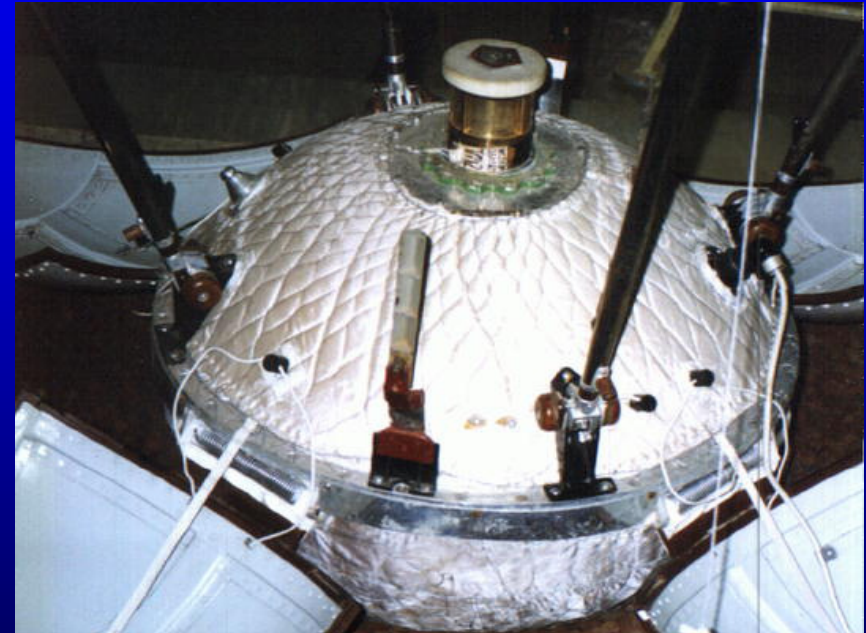
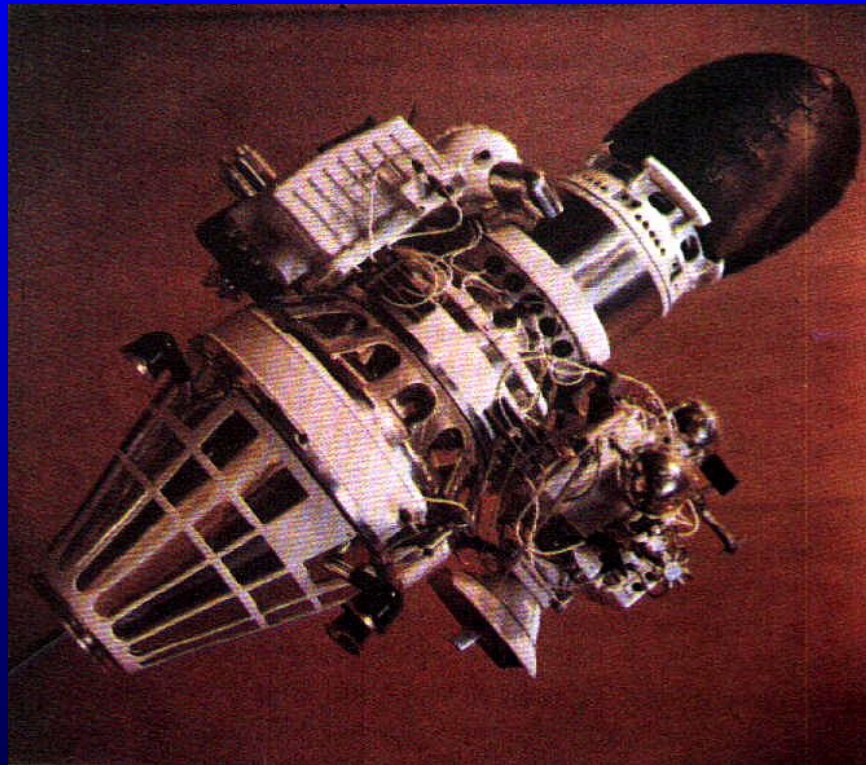


www.britishpathe.com



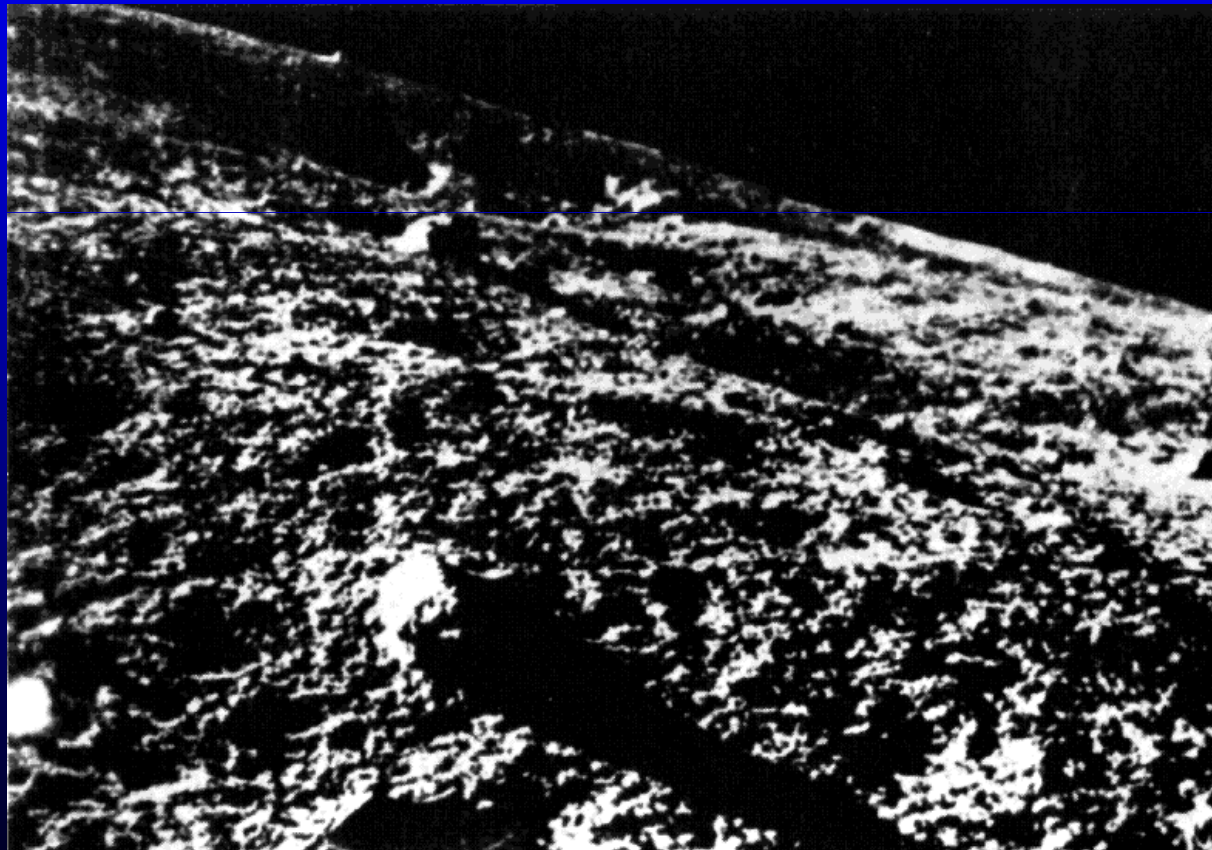
www.britishpathe.com

Lunar 9 Spacecraft



Lunar 9

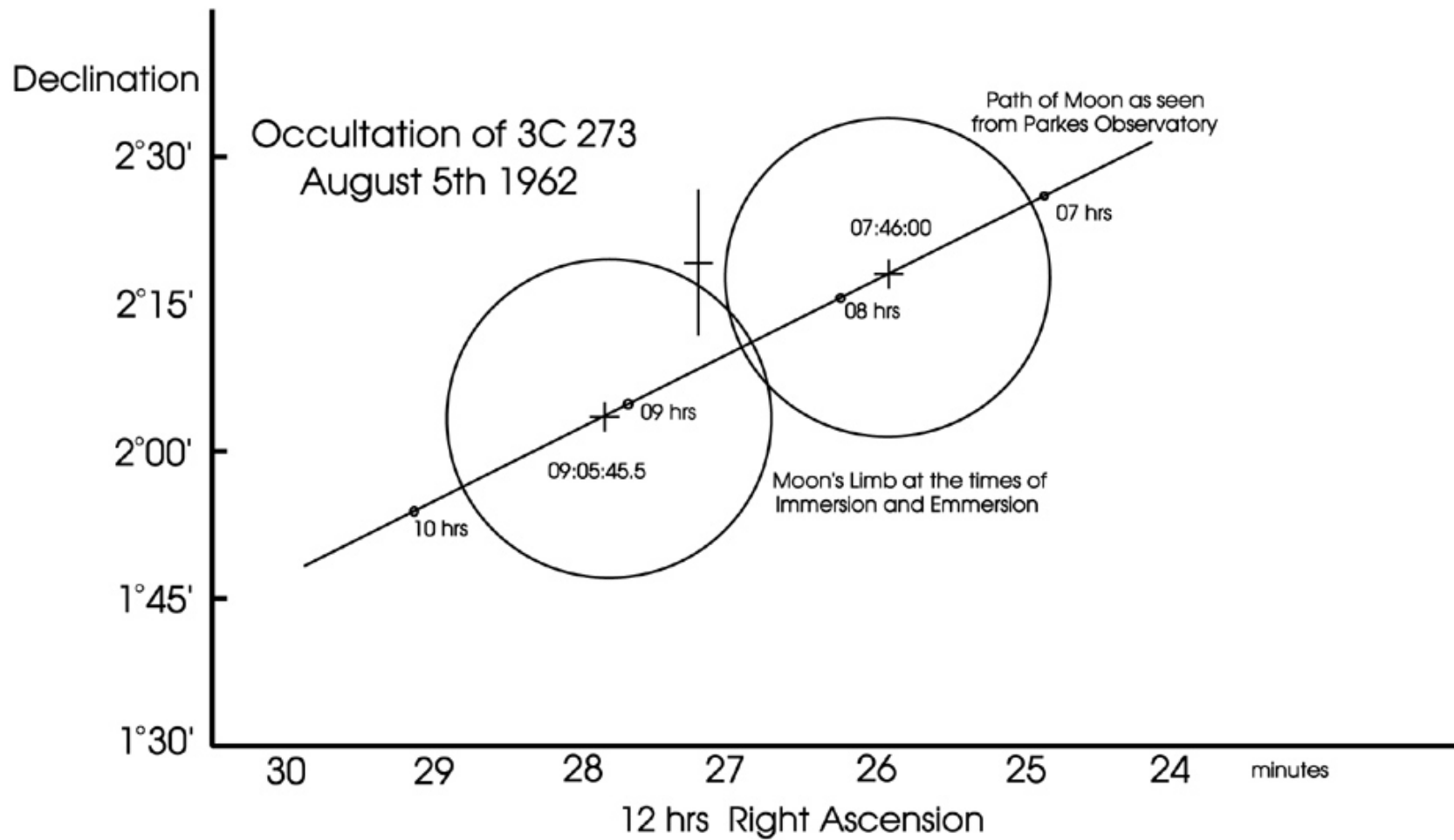
- We received the close up images of the lunar surface.



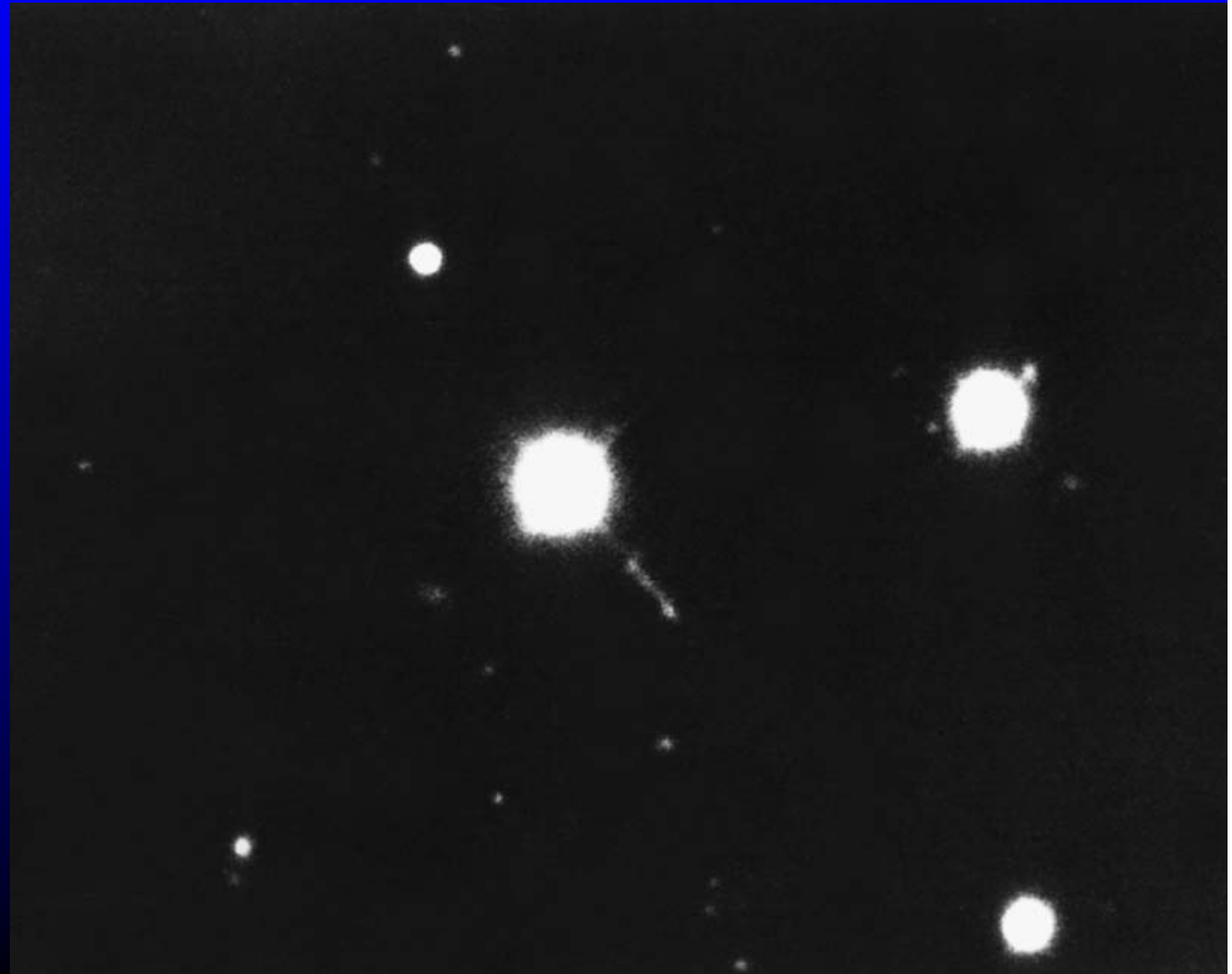
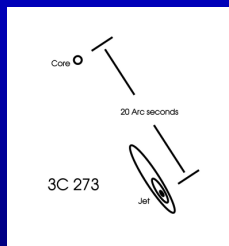
Radio Linked Interferometry

- Signals from a remote telescope were brought back to Jodrell Bank by a microwave radio link

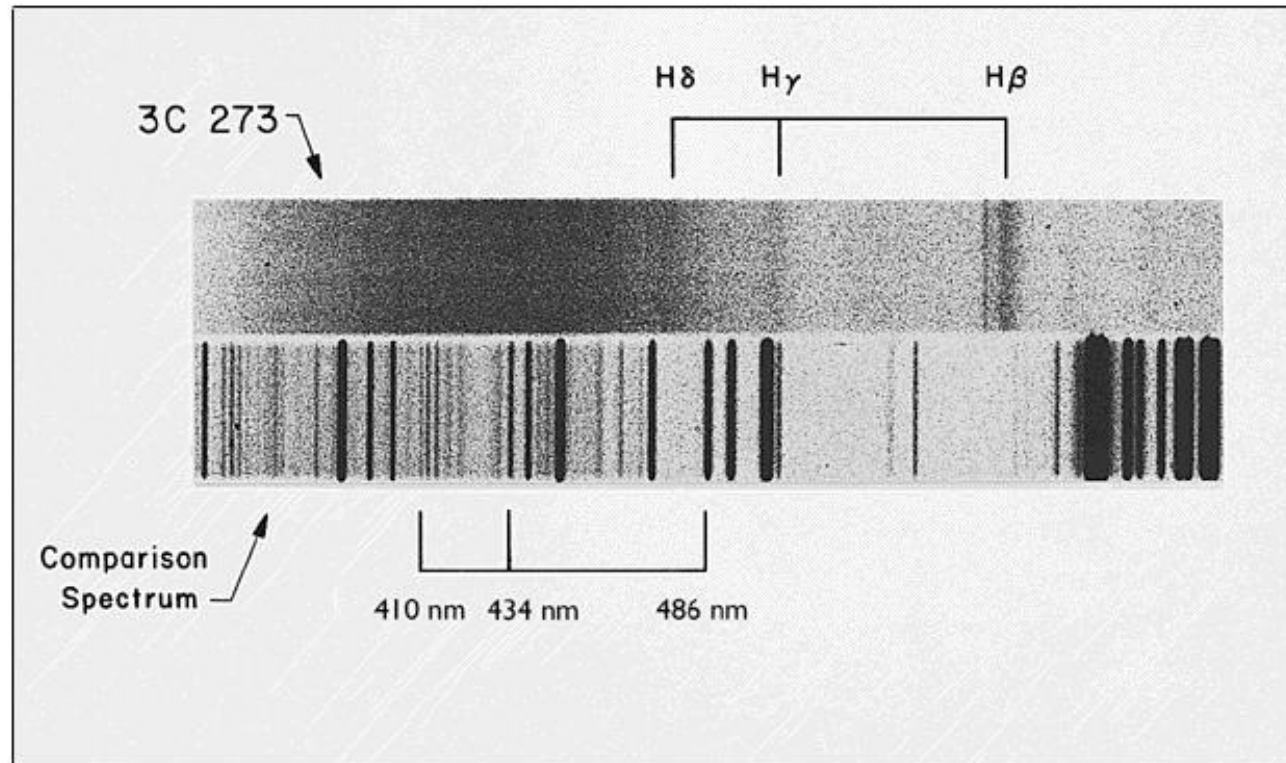




The Quasar 3C 273



3C273 Redshift



~1972 – The MK IA





November 1972: 966 MHz Survey

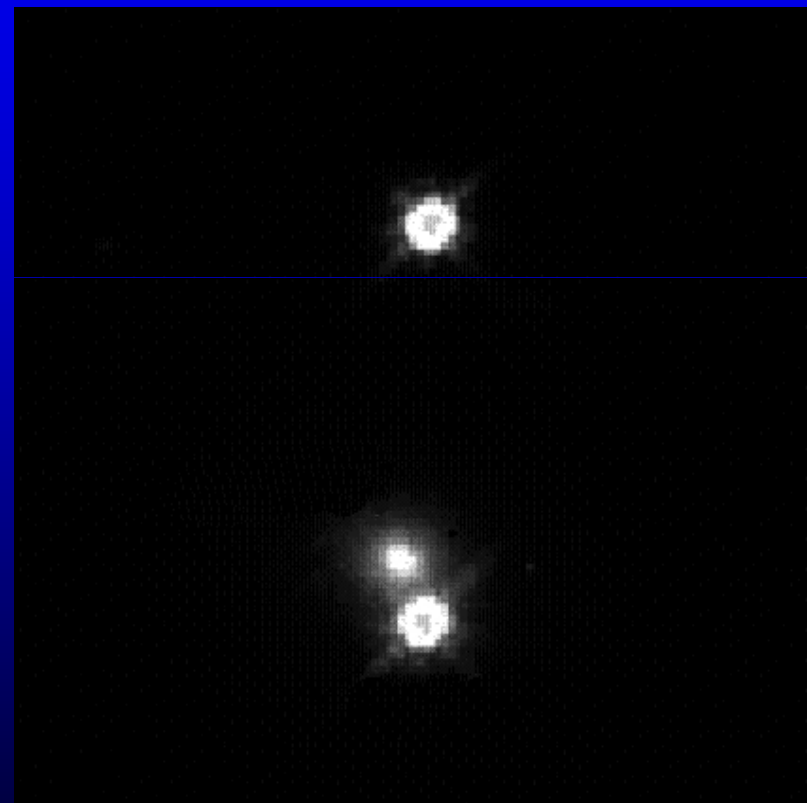
The Double Quasar



“Two” Quasars and a Galaxy



Quasar 0957+561 mirage www.astr.ua.edu



Jan 2nd 1976 – a close call



Jocelyn Bell

- Tony Hewish's Student at Cambridge

S. Jocelyn Bell Burnell was born in northern Ireland in 1943. After receiving a B.S. degree in physics from Glasgow University, Scotland, she went to Cambridge University, England, where she earned her doctorate in radio astronomy in 1969. Since then she has done research in the newest branches of astronomy involving gamma-rays and x-rays. In 1978 she received the American Tentative Society Award for her pulsar research. Currently she is a research scientist at the Mullard Space Science Laboratory of the University College London.

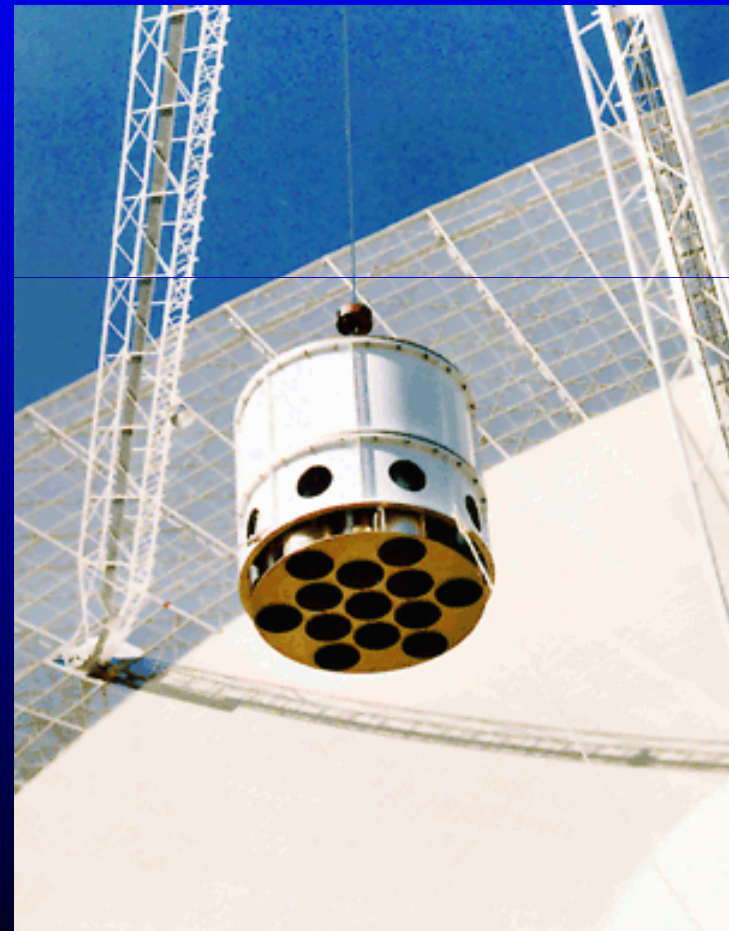


Burnell

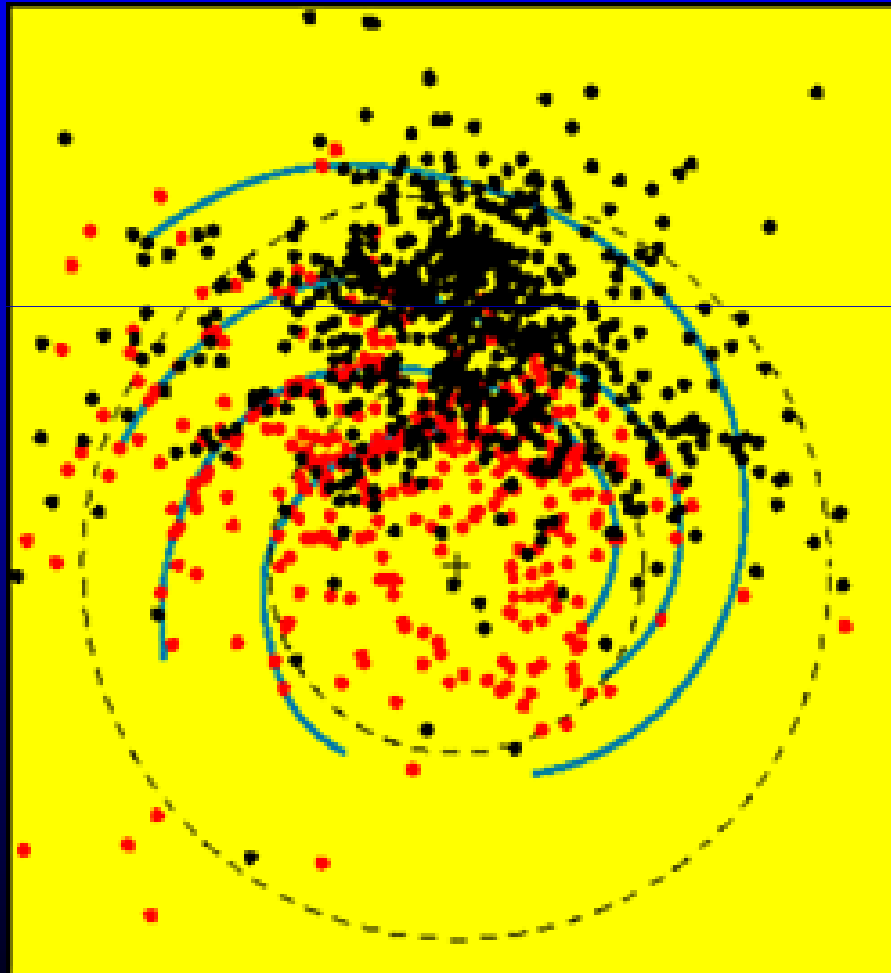
Cambridge University

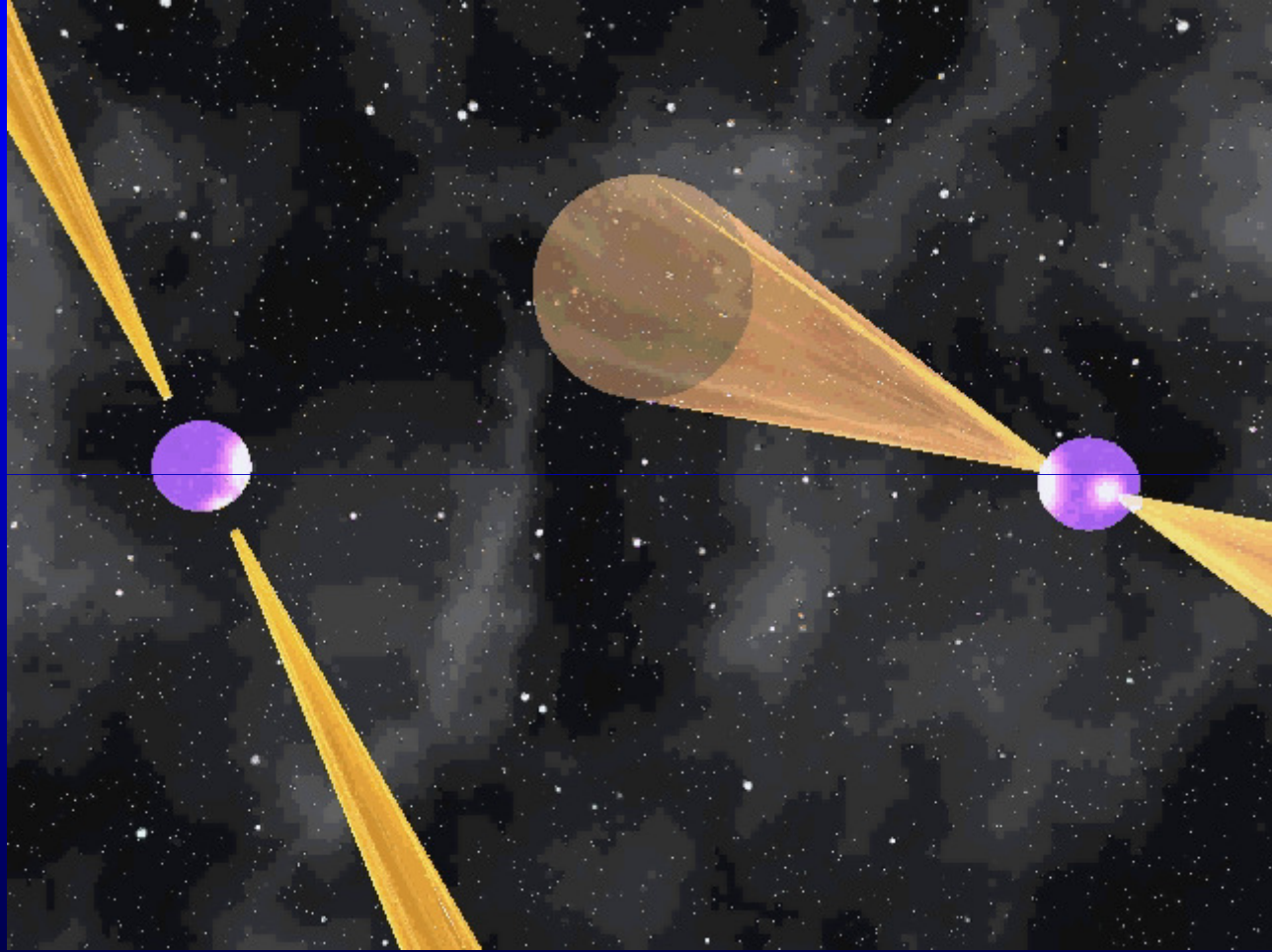
"We put up over a thousand posts and strung more than 2000 dipoles between them."

Parkes Multi-Beam Survey

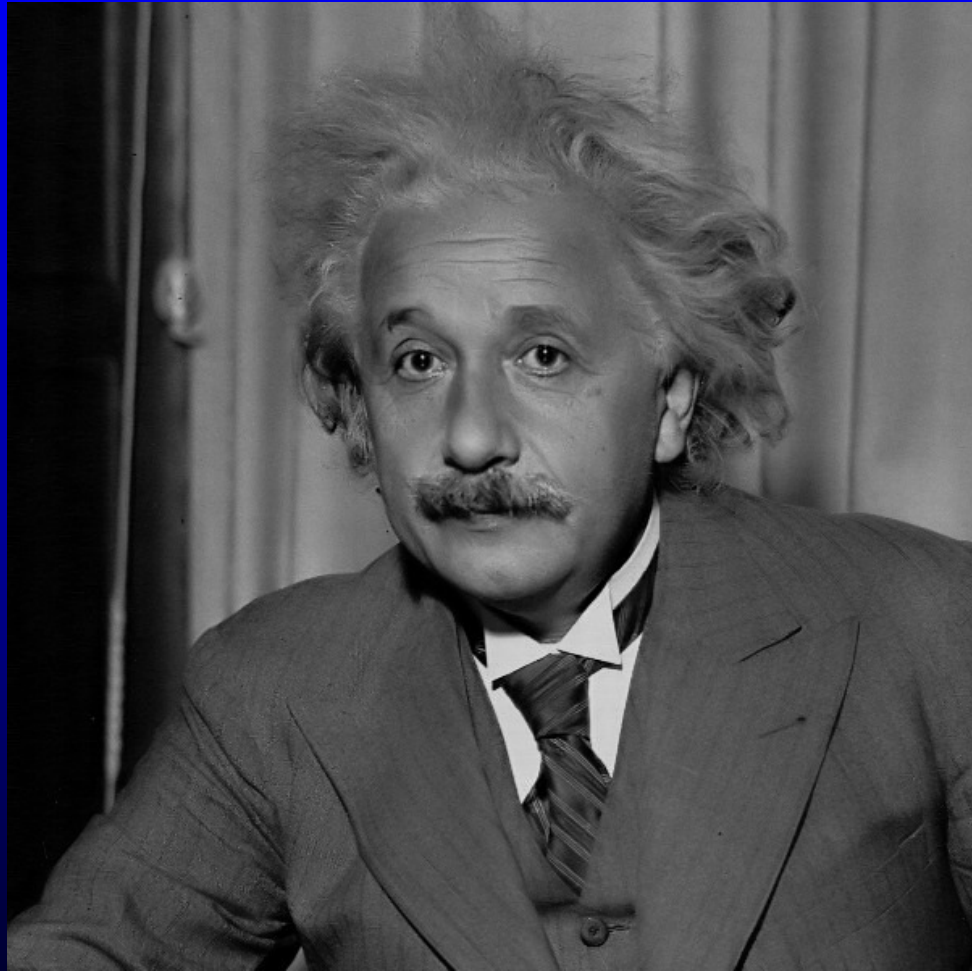


New Pulsars in RED

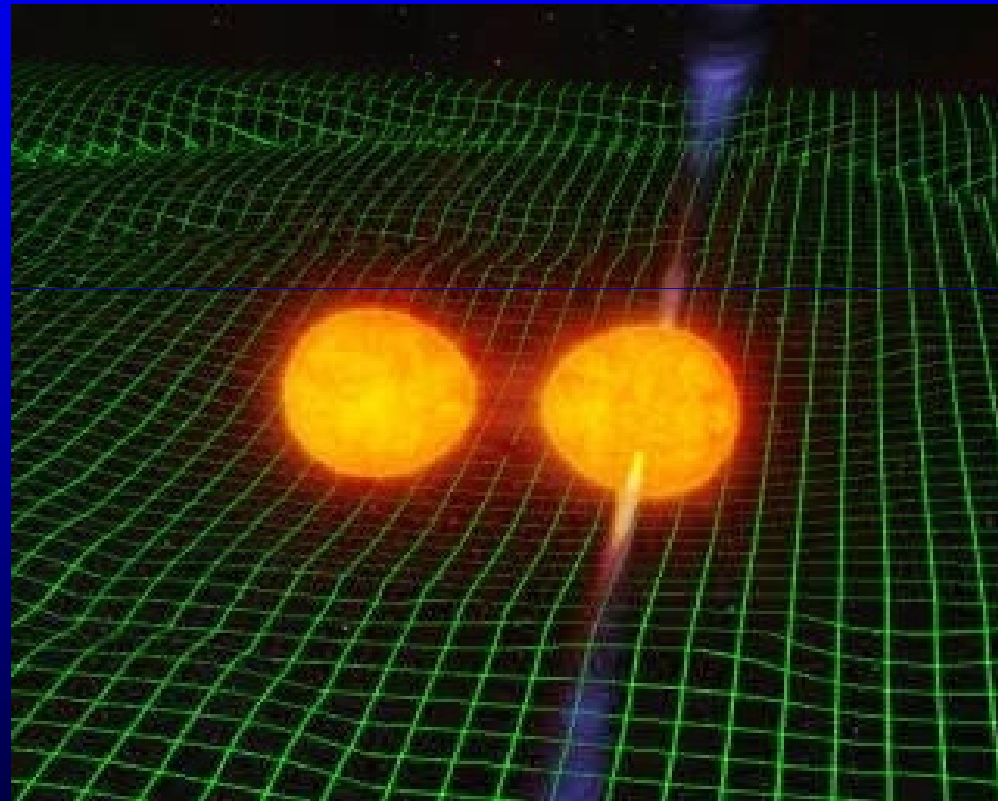




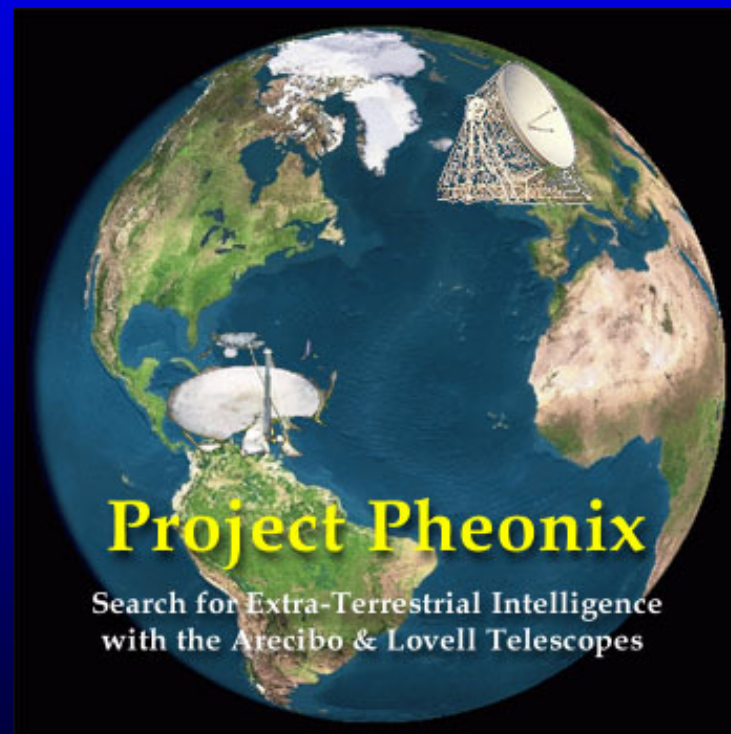
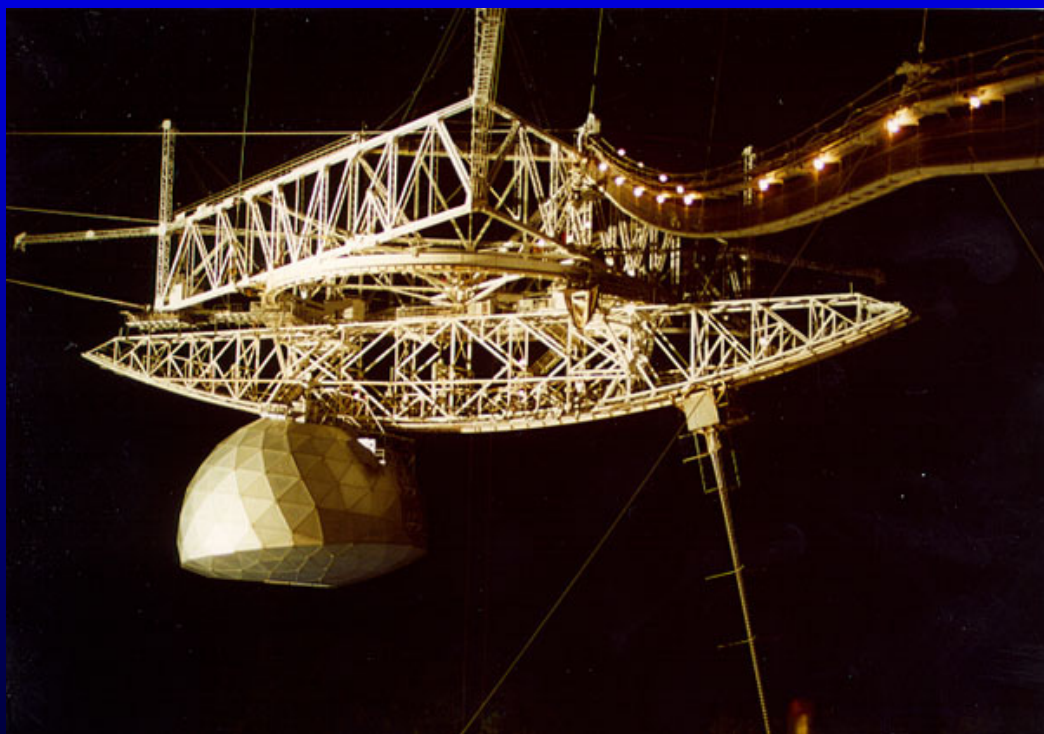
Albert Einstein



A dance to oblivion!



Project Phoenix



Equipment was installed at Jodrell Bank in June 1998 and the first observations made in September.

820 sun-like stars observed out to ~200 light-years.



The Lovell Upgrade

The Lovell Upgrade

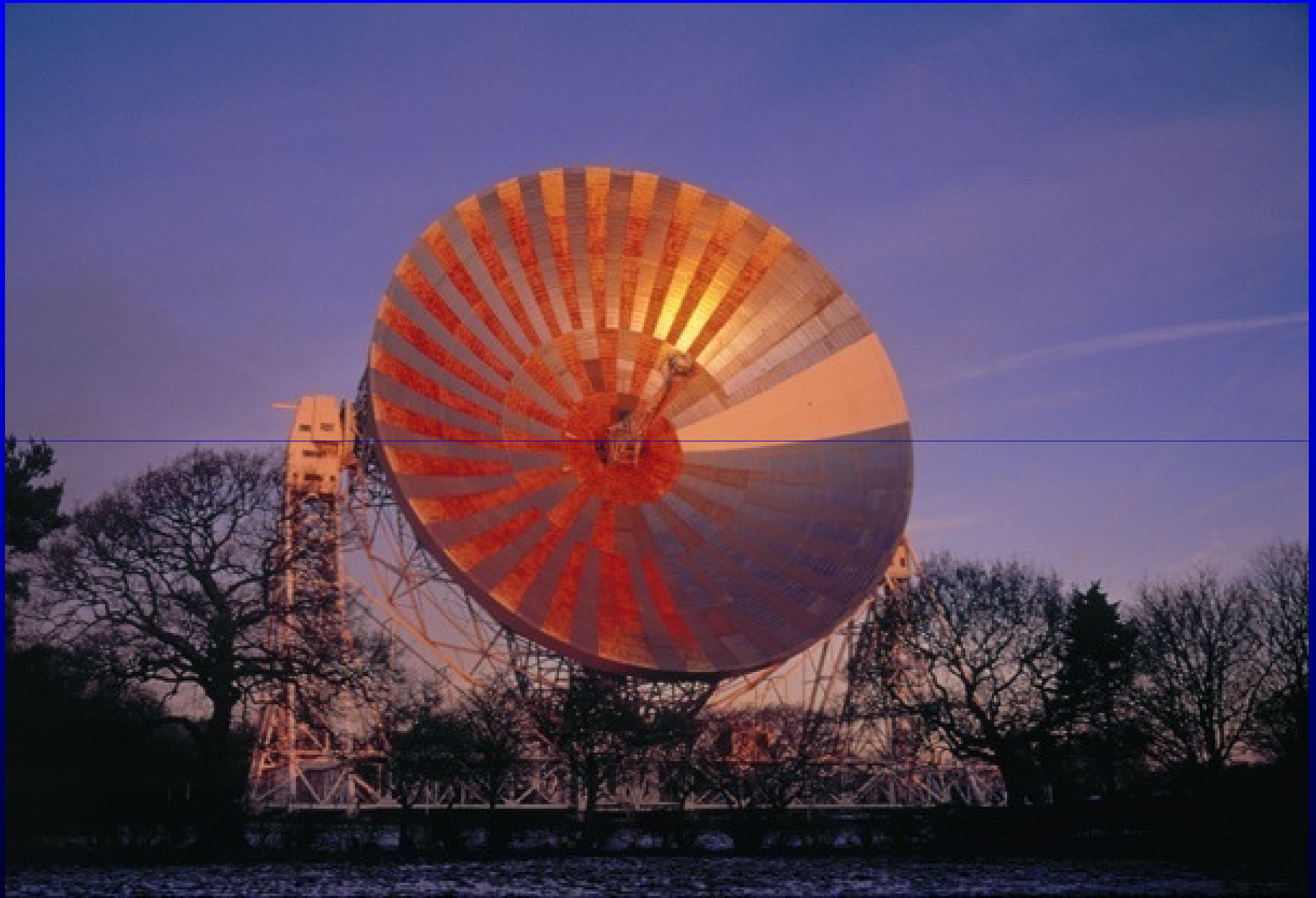
- The surface was in quite a state!



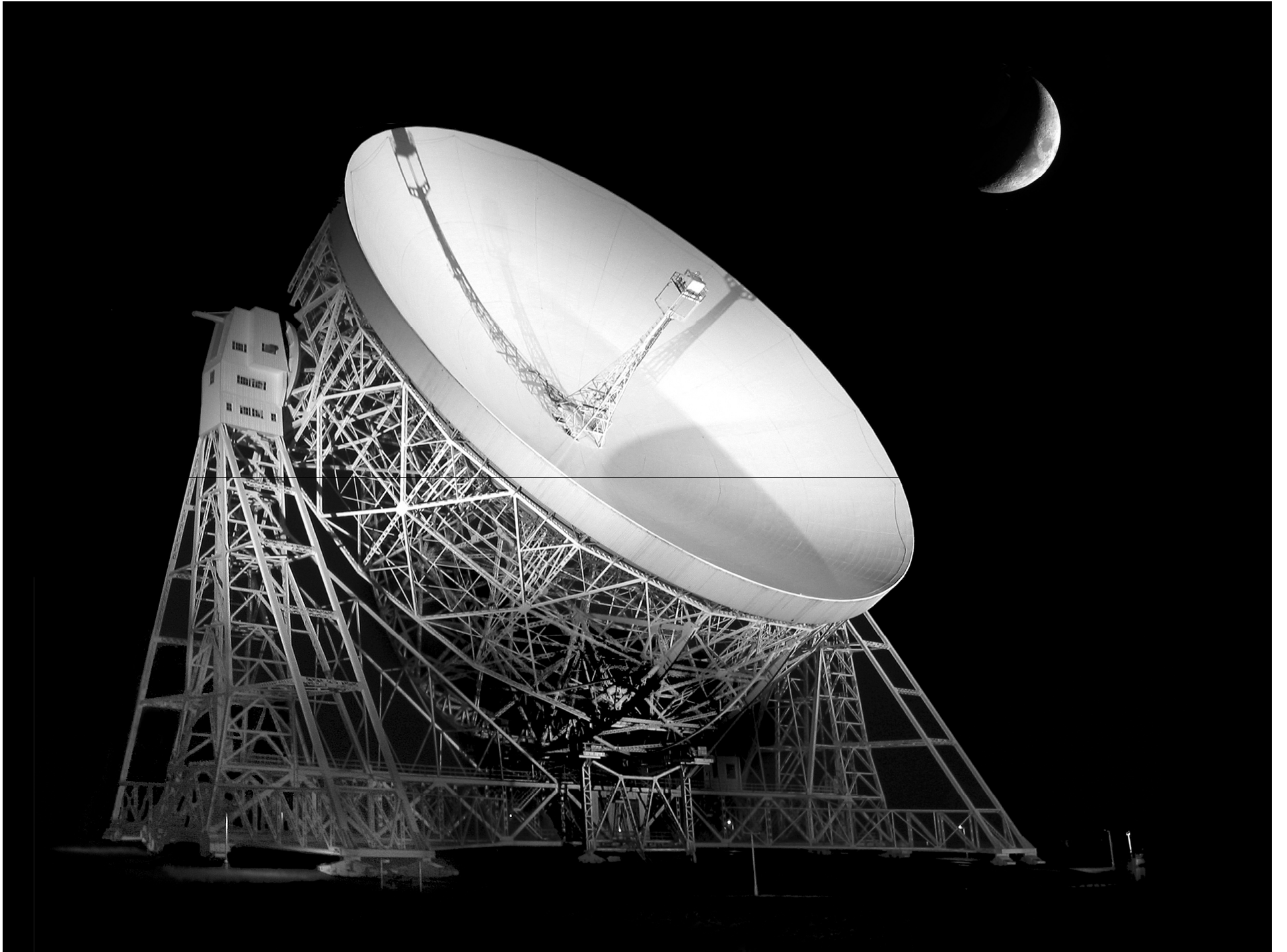








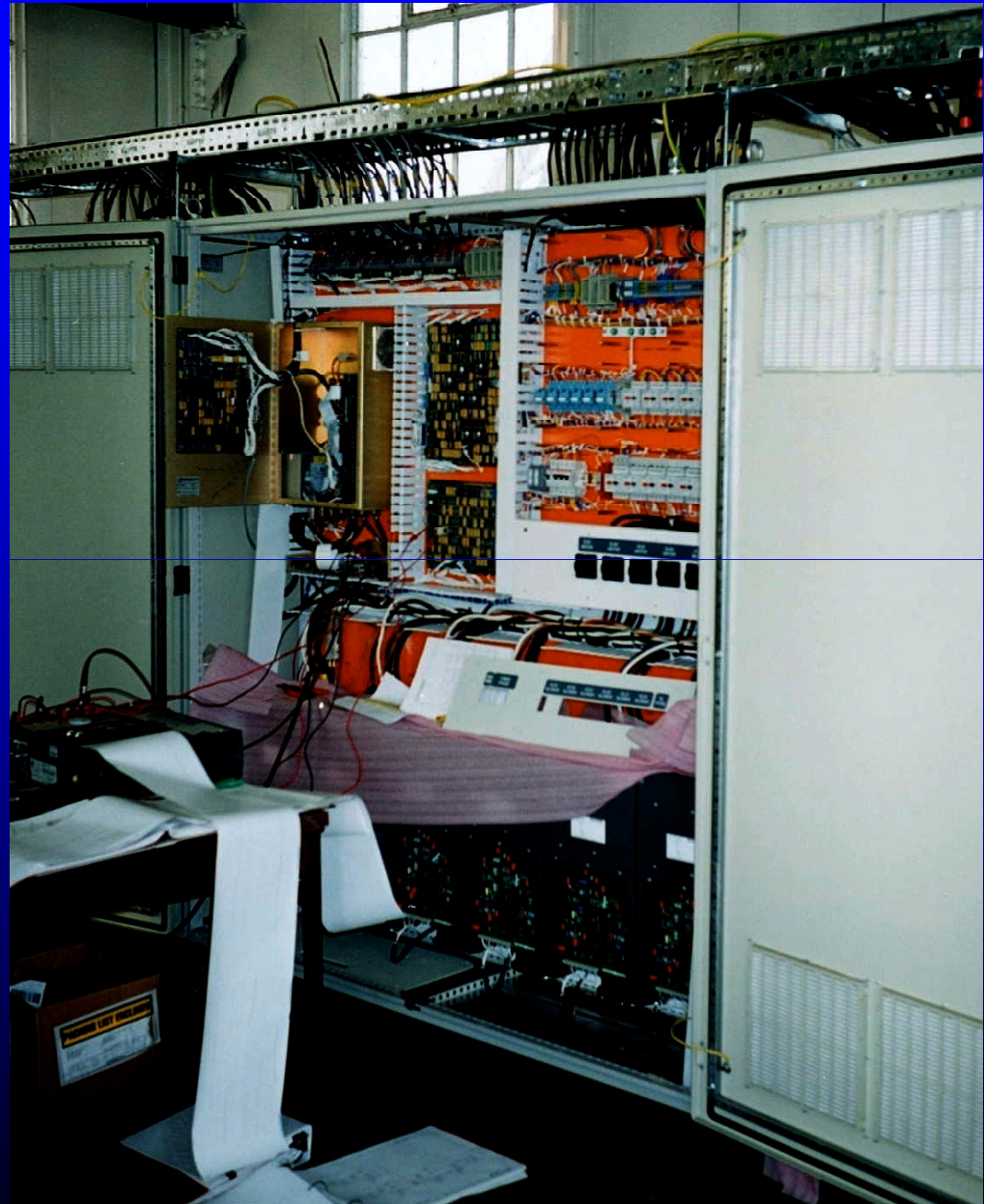




New Drive and Control System



Drive Cabinets



The Lovell Telescope's
role in MERLIN

MERLIN



Jodrell Bank



Tabley



Knockin



Cambridge



Darnhall

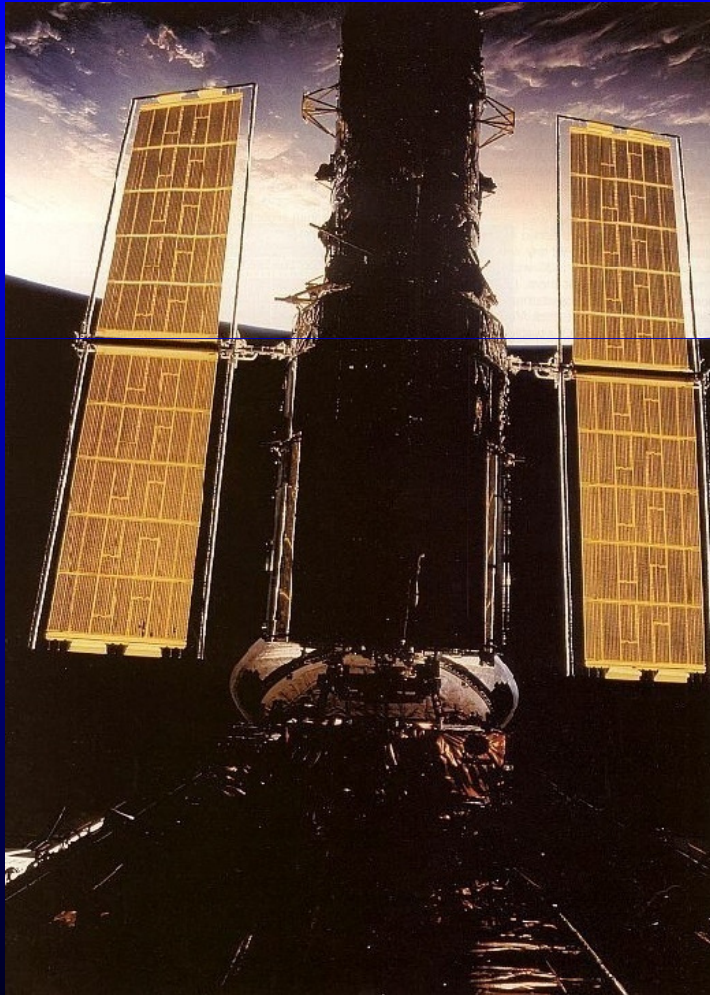


Defford

The Lovell
Telescope
doubles the
collecting
area!

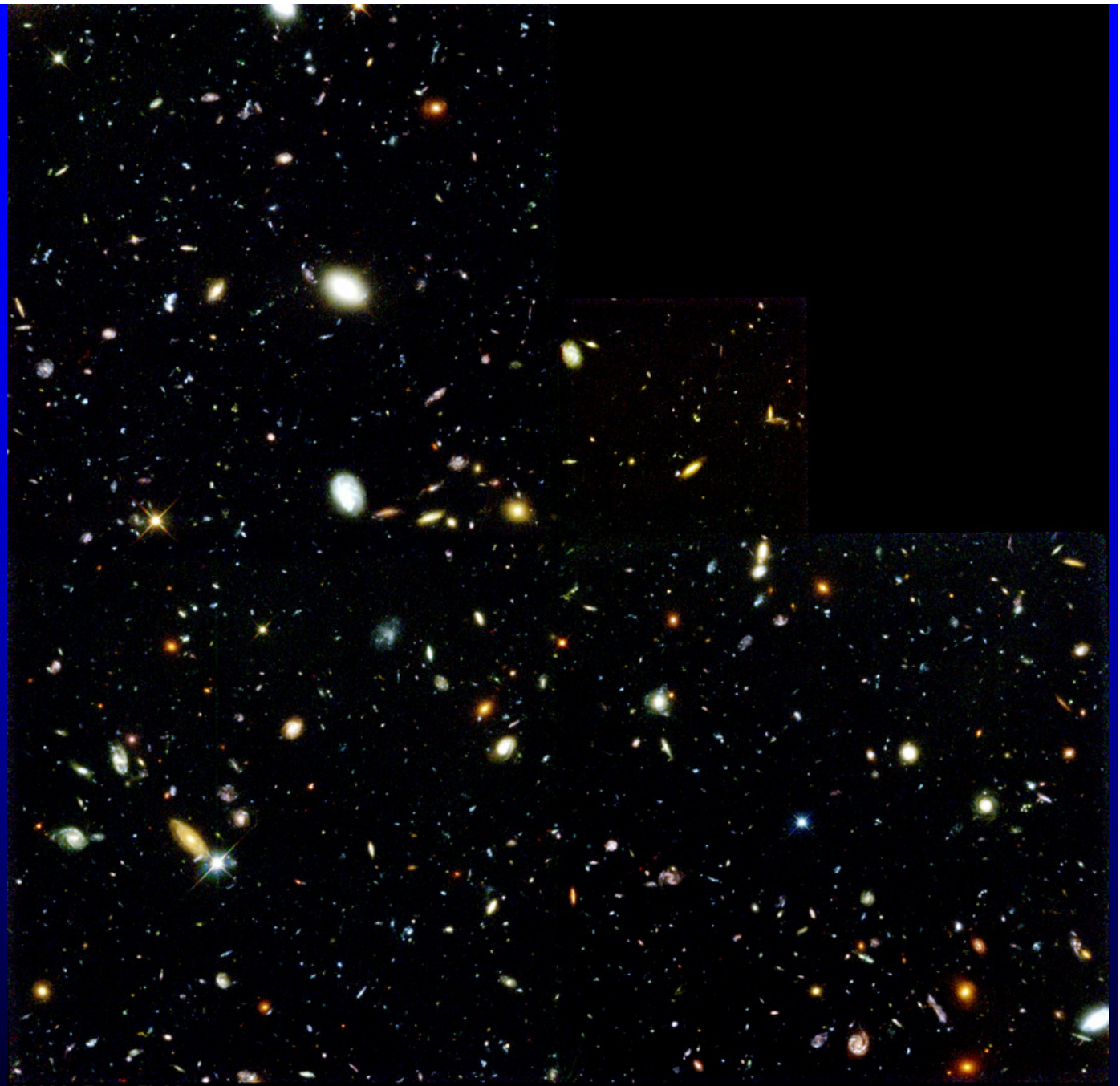


The Hubble Space Telescope



- MERLIN has matched angular resolution at radio wavelengths.
- MERLIN and HST images can be compared directly.

Hubble Deep Field



Hubble Deep Field
ST ScI, OPO, January 15, 1996, R. Williams and the HDF Team (ST ScI) and NASA

HST WFC2

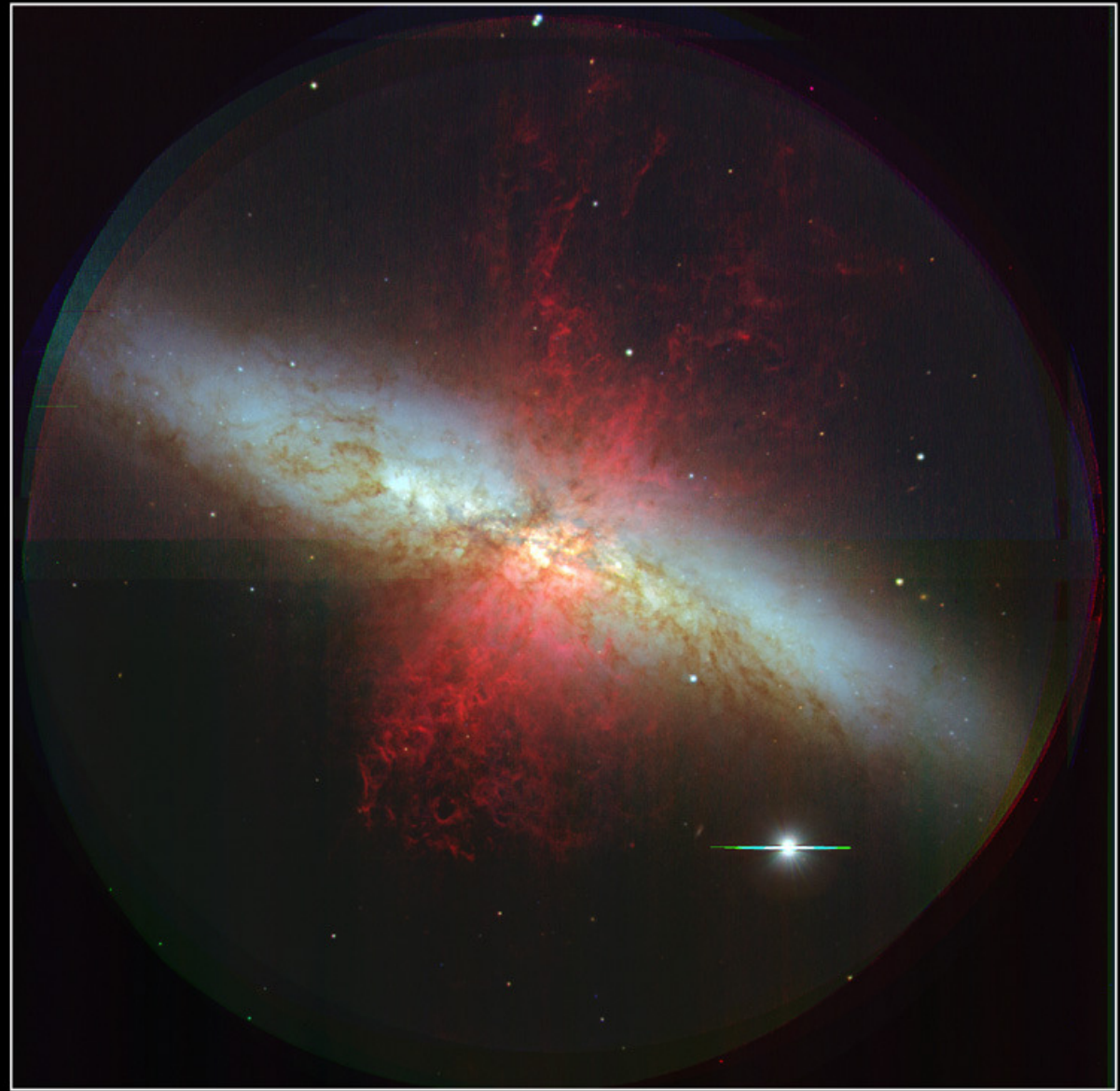
Lovell Telescope's role in European VLBI

M81 – M82 Interacting Group



- M81 – the southerly galaxy – has passed close to M82 and triggered a massive burst of Star formation.
- M82 is thus called a **Starburst Galaxy**.

M82



M 82 (NGC 3034)

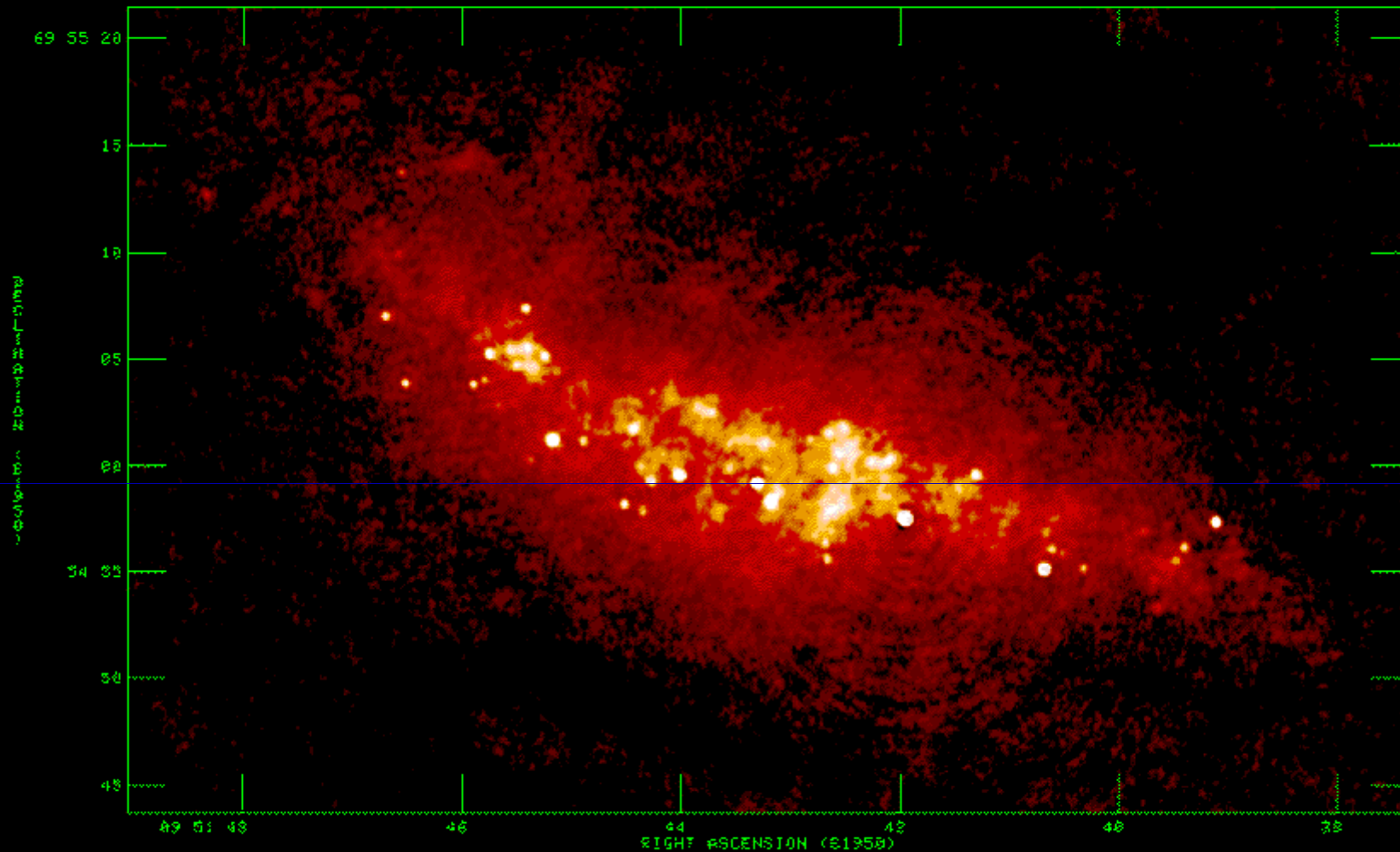
Subaru Telescope, National Astronomical Observatory of Japan

FOCAS (B, V, H α)

March 24, 2000

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M82 - MERLIN & VLA (20cm)



- MERLIN and VLA image of the 1.4 GHz emission from M82. Compact components are all supernova remnants

European VLBI Network (EVN)

VLBI (Very Long Baseline Interferometry) is a technique to allow telescopes across continents to form a giant array.



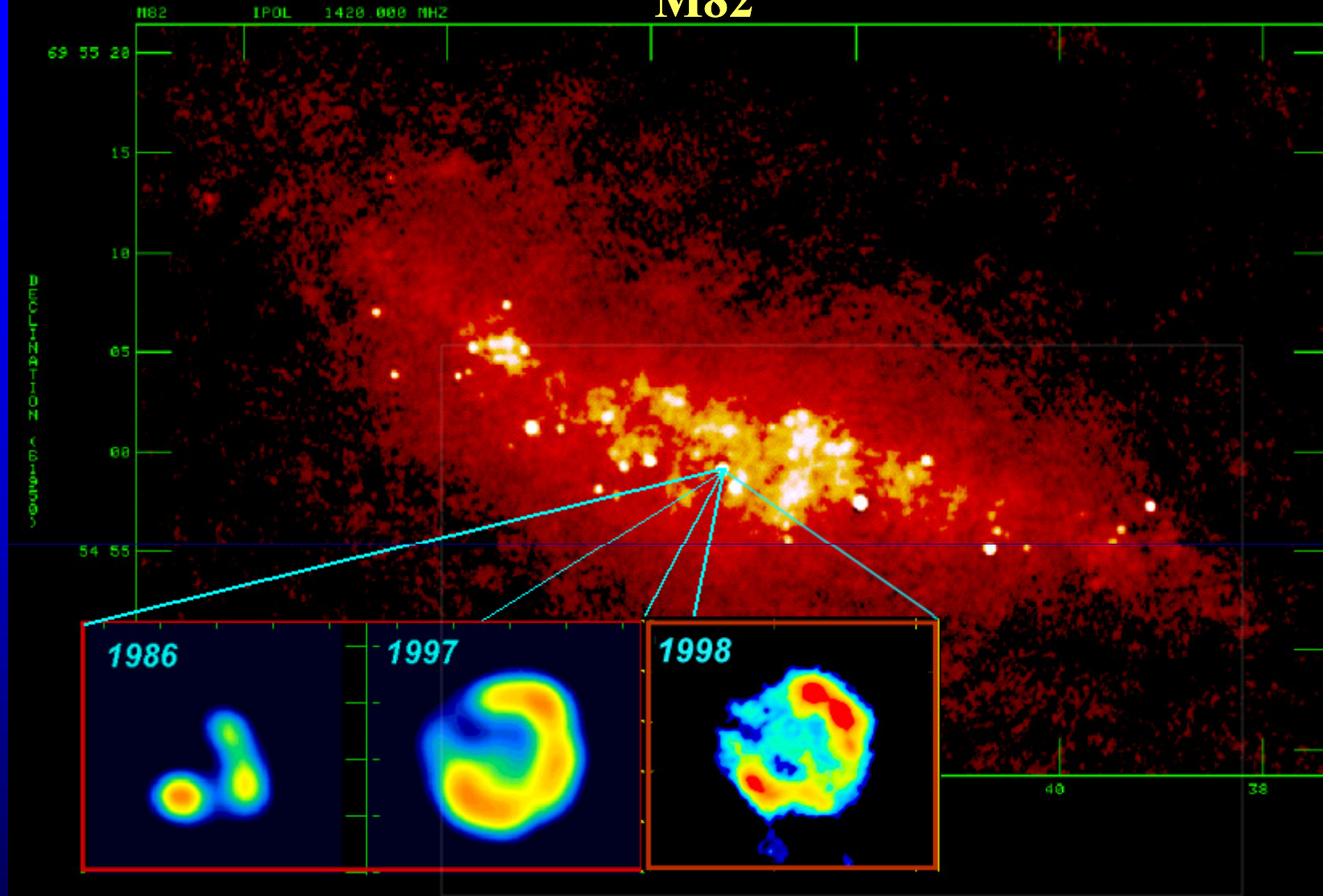
The EVN, with the world's largest telescopes, is the most sensitive VLBI array on Earth.

VLBI provides the highest spatial resolution of **any** astronomical technique.

The EVN



M82

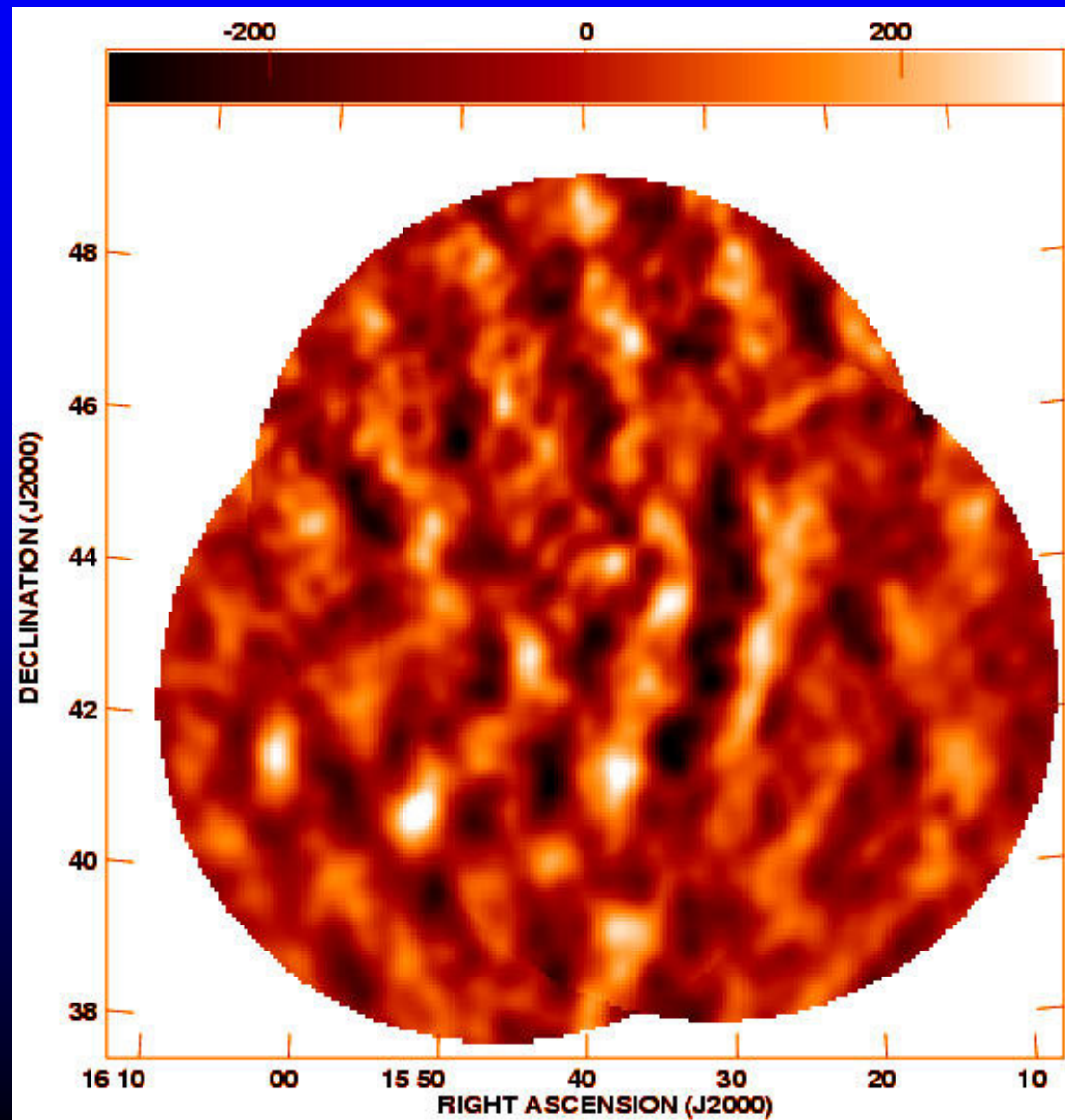


- European and Global VLBI observations of individual Supernova remnants (SNR's) reveal expanding shells. The shell of this SNR is expanding at ~ 9500 km/s.

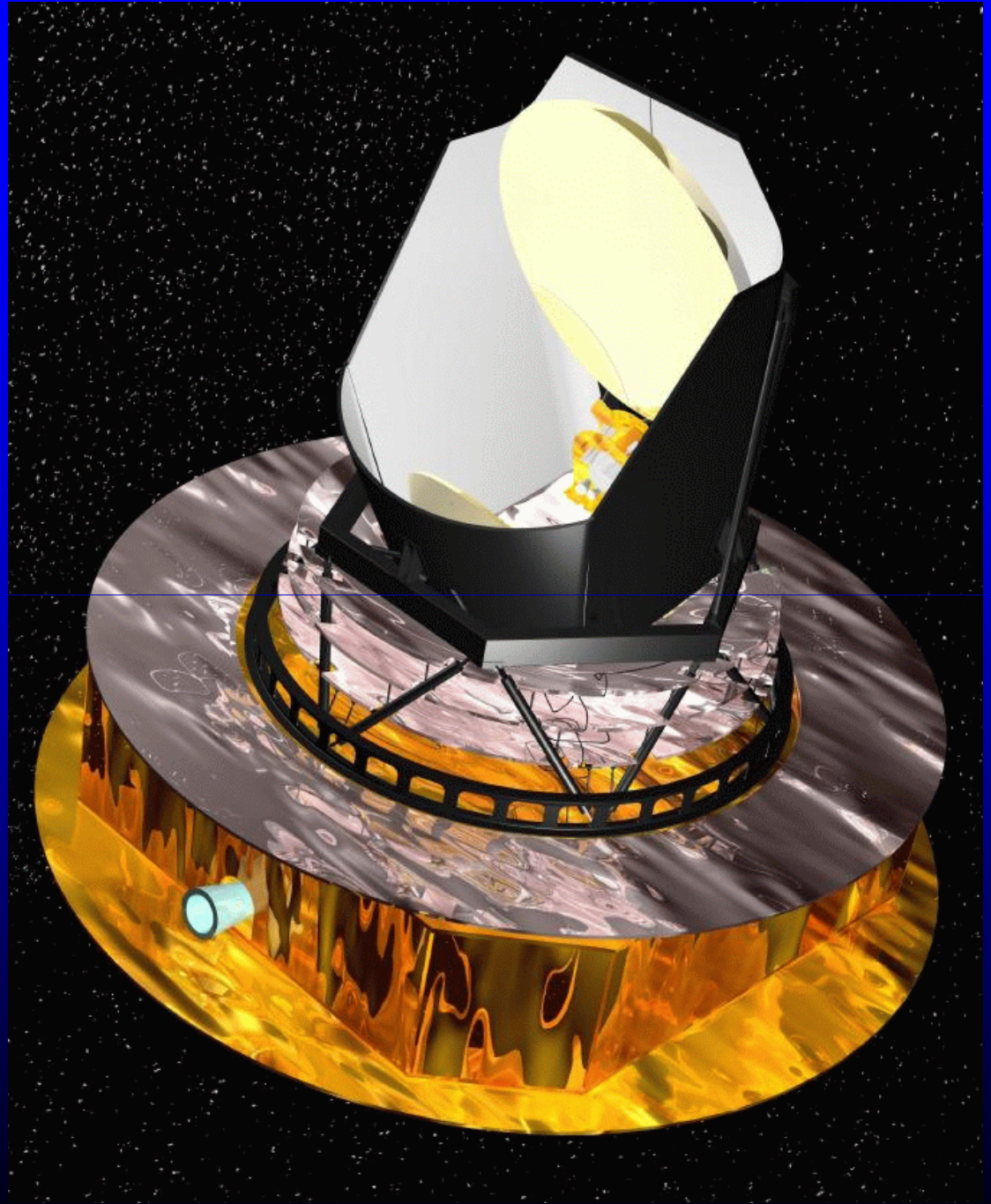
VSA on Mount Teide

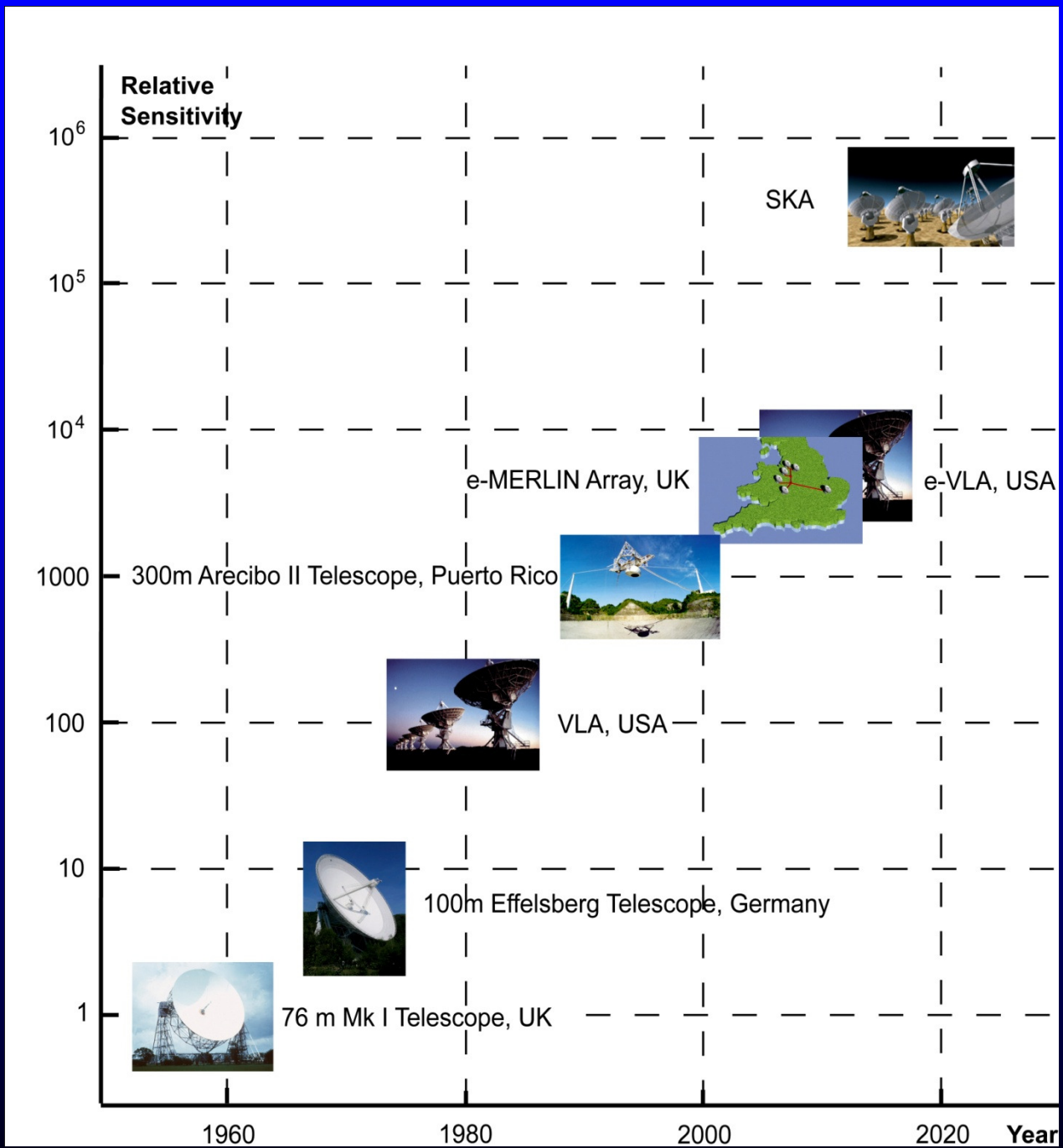


VSA Map



Planck
was
launched
in May
2009





Our thanks
to
Sir Bernard

