HORSHAM AMATEUR RADIO CLUB

HARCNEWS

Coming Shortly

June 2 Club Night European Navigation Satellites
by Wally Blanchard G3JKV

June 16 Social Evening Bax Castle Southwater

July 7 Club Night All about Antennae
by Tony Wadsworth G3NPF

July 28 Club Event DF Hunt

June 2005

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Jodrell Bank, its history to date by Ron Polly G3PYC

In 1939 Dr Bernard Lovell of Manchester University, was requested to leave his post with the University and assist in the development of Radar.

During the 6 years working on Radar he had noticed bursts of radio which were nothing to do with enemy planes etc. In 1945 he was able to return to his academic work with the University. Still entranced by those mysterious radio echoes, he obtained an ex army Radar system and erected it in the university grounds.

The electronic noise from local trams running along the adjacent road made things difficult. Now the University had a large area of ground, for the botany students, at a place in Cheshire called Jodrell Bank.

He obtained permission to use some of the spare ground. With the relative quiet of this area they built a wire dish suspended from telegraph poles, Aracebo style, but pre dating it. This dish, 66m dia and beamed vertically upwards, was able to move its beam a little, by deflecting the central mast with the receiver in it.

This telescope made the first radio map of the Andromeda Galaxy, and it also indicated that a fully stearable telescope was required because there was evidence that they were an asset to the optical telescopes. Dr Lovell got permission to design and build a 76m fully stearable dish. To this end he gave a talk / discussion at the Royal Institute to interested parties.

I was part of the 3 man team sent by Mullards to this. We talked about stability in windage on this elevated Cheshire plain. A vote was taken to make the dish from chicken wire to start with. Mullards and a lot of other companies donated money towards this.

The 76m dish is supported on 2 high towers which are on a circular rail track, the whole being operational in 1957. The multi drive motors that rotate the dish in elevation were from the gun turrets of the obsolete Battleships Revenge and Royal Sovereign.

The dish was driven in elevation by a rack that was fixed to a semi circular beam that was attached to the edges of the dish.This dish was only acurate up to 1m wavelength and they wanted to be able to measure down to 21cm wavelength to include the emmision of Hydrogen, so in 1969 they plated the dish with 7100 sheets of 14swg mild steel plate.

This extra weight had to be supported so the elevation beam was replaced by a structure that supported the dish as well as rotating it in elevation. This also had the effect of reducing cross wind shudder on the dish edges. Lord Nuffield (William Morris of Morris motors) paid for most of this and this Mk1a telescope became known as the Nuffield Radio Astronomy Laboratories. The Mk1a telescope nearly came a cropper in a gale in 1976.

The tall support towers that carried the dish pivots had no side bracing and nearly toppled when the dish was full on to the gale. After the towers side bracing had been added along with other mods, in 1987 the telescope resumed working and was renamed the Lovell Telescope.

At the turn of the century the mild steel plated surface was badly corroded with rust and required replating.The dish of the telescope was a deep parabola with the receiver mounted on a tower in the

center of the dish. The mast was as high as the dish was deep.

This system provided a very narrow beam width but the mast made the central 16m dia of the dish unusable. They decided to change the dish to a shallower form and in 2001 they started to replate the dish with galvanised sheet metal plate.

The cental tower was removed and replaced by 3 struts mounted from the edge of the dish meeting at a point well above the edges of the dish. Special bowl excursion vehicles were designed for the workmen to accurately place the new panels in place.

Each panel also had to be cleaned and polished by hand prior to the addition of a protective film. Laser ranging and radio holography were used to try to obtain perfection. This new dish should be usable down to 10mm wavelength. The Lovell telescope is still the fourth largest in the world.

The above is details of the telescope itself. I will send another with all the details of its uses and its interferometer uses.

Foxhunt Results

7 teams entered the Foxhunt which was a very good number for a weekday evening and the weather was superb with pleasant sunshine until the last transmission.

The Fox was located at map reference TQ 099 347 in Hermongers Lane off the B2128 Rudgwick to Cranleigh Road.

The results were:-

1st	Helen & Liam M3FSA, M0EPX arriving at	20.03
2nd	John G3WZT & Jan	20.08
3rd	Andrew M0GJH & Janet	20.29
4th	Bryn G3SWC & Eva	20.37
5th	Alister G3ZBU, Helen M0DEY & friends	20.38
6th	Adrian G4LRP	20.42

G4TMC opted for the pub at 21.00.

Congratulations to Helen & Liam for coming first. It was an excellent result and judging from the whoops of joy and the leaping up in the air they both enjoyed the experience, particularly the thought of imparting the good news to M0DEY! Well done also to Andrew and Janet for coming third as it was only their third foxhunt.

After the foxhunt we enjoyed a convivial drink at the Kings Head in Rudgwick and were joined by G4EFO and G4KDR who must have smelt the beer.

Announcement

June 19th Summer Rally at Newhaven Fort, Newhaven, East Sussex.

Following the success of last year's event the Worthing and District Amateur Radio Club along with SCARF (Southern Counties Amateur Radio Forum) are holding a rally at Newhaven Fort Museum on Sunday June 19th from 10.30am to 2.30pm.

A special entrance fee of £2.50 has been agreed which will also give amateurs access to all other Fort facilities including GB2NFM and the display of radio equipment from the past.

Tables are available at £15 for traders and £10 for private sellers and clubs. Tables can be booked in advance by calling Roy G4GPX on 01903 753893, car parking is free. Any profits from the rally will go towards enhancing the radio museum display at the Fort.

Newhaven is on the Sussex Coast midway between Brighton and Eastbourne and the Fort is well signposted from the centre of the town.

June 19th is also the date of the London to Brighton charity bike ride so traffic may be heavier than normal on the A23 although the thousands of cyclists do take an alternative route.

It is also Fathers Day so what better way to spend it than with your family at the Fort Museum taking in the rally and the spectacular views across the Channel. Follow this by watching the hoards of cyclists on their last leg down the Lewes Road into Brighton, an impressive sight and great day out