

Bulletin

of the Rutherford Appleton Laboratory

2 Aug. 1982 No.11

Making a Good Showing

'Physics at Work'

An exhibit showing the development of techniques for nuclear particle detection and how these detectors have been applied to aid medical research, was RAL's contribution to an Institute of Physics exhibition "Physics at Work" held on 6-8 July at Coventry.

"Physics at Work" Exhibitions are organised by the Institute of Physics at different venues in the country so that school children, typically of 'O' level standard, can get an appreciation of how physics is put to work. In this way they can see physics in action rather than having to consider it as a subject which only appears in text-books and school laboratories and has little or no apparent relationship with the real world.

This, the third to be held at Coventry (Lanchester) Polytechnic, was the latest in a highly successful series founded by the Institute in 1968. Its aim was to show how physics is applied in industry, the home, hospitals and research - in fact how physics is put to work.

Each demonstration in the exhibition showed how a physical principle had been put to practical use. The demonstrations were given by men and women who were actually involved in those applications and the hope was that a more practical view of physics would be gained than that usually got from normal school work.

The RAL exhibit consisted of a spark chamber set up to detect cosmic rays and display boards showing the forces in nature and explaining particle physics and the detection of nuclear particles. A medical application for multiwire proportional detectors demonstrated the "spin-off" principle.

An advance party went up to Coventry on the Friday and Monday before the exhibition to commission the spark chamber and make sure everything was ready. On Tuesday the hard part started - in three days, from 9.30 to 4.30 each day, three members of the Laboratory talked non-stop to nearly a thousand school children, delivering the same talk with minor variations



Derek Cragg explaining the workings of Spark Chambers to an attentive audience.

(Photo: Coventry (Lanchester) Polytechnic)

every twenty minutes. Wednesday evening was spent talking to parents and teachers and it was estimated that eighty people or thereabouts came in to see the RAL exhibit.

At the end of it all the demonstrators were glassy eyed, but happy that everything had gone well and they had

got the message across. Feed-back from the schools that came to see us and from Lanchester Polytechnic who hosted the whole show indicates that we had a very appreciative audience, and that the exercise was extremely worthwhile.

Computing for Sixth Forms

Work by local Sixth Forms, resulting from an RAL project to provide facilities for students studying 'A' level computing was on show in the Atlas Centre Colloquium on 14 July.

The exhibition stimulated great interest, attendance figures being gratifyingly high, making the exercise well worth the obvious effort the students had put into displaying their projects.

A lively, informed and informative group, the students made it clear that while minicomputers provide a satisfactory introduction to computing, the main-frame computers are able to provide a much richer environment, including a number of high level languages such as Fortran 77 and Pascal, and a number of large packages such as the Ginographic system. The high level languages enable the student to design better structured programmes and thereby acquire skills that are closer to that of professional programmers.

Continued over

Computing *Cont'd from p.1*

The project now in its fourth year and extended to include five local sixth forms, has already involved 200 students and the numbers of students studying 'A' level computing courses continues to grow. Interest by local teaching staff, at present not included in the project, was very evident from the many who attended the evening session of the exhibition. Parents also took the opportunity to see the results of the scheme and its future possibilities.

Harwell 'Science Festival'

The annual Science Festival at St Matthews Church Harwell took place at the weekend, 3-5 July, with RAL's contribution, this year, centred on the forthcoming "Giotto" mission.

The Giotto spacecraft is to be launched in 1985 to encounter Halley's Comet when it appears at its fourth predicted apparition. Designed to answer many questions about the composition and behaviour of comets, Giotto will pass through the Nucleus of Halley.

The exhibit gave a brief history of Edmund Halley's discovery of the periodicity of comets (Halley's comet appears every 76 years), and pointed out the interesting facts that the Comet had been noticed and depicted in works of art, before its scientific "discovery". What is now known to be Halley's Comet is shown on the Bayeux Tapestry (the 1066 appearance) and in Giotto's "The Adoration of the Magi" where he included a representation of the 1301 apparition. The aims of the mission, and the part RAL has to play in the experiment was also displayed. A model of Giotto completed the exhibit.

On Sunday Professor John Houghton gave the sermon entitled "Why the Physicist's Description of the Universe is incomplete" a fascinating topic, which gave the congregation much to talk over on the way home.

A letter received from the Rector of Harwell with Chilton, Normal Russell, thanked RAL for once again participating in this community event.

Sales to Employees

The sale of scrap metal and plastics as set out in RLN 12/73 will take place on 6 and 20 August in the R40 Scrap Compound from 1200-1230 hrs.

ESCAMPIG '82

The Europhysics Sectional Conference on the Atomic and Molecular Physics of Ionised Gases will be held this year in Oxford on 1, 2 and 3 September.

Talks by invited speakers will include

"Recent Developments and Trends in the Application of Atomic Processes to Magnetic Fusion Research" by D E Post of Princeton.

"Spectral Line Profiles in Turbulent Plasmas" by H-J Kunze of Bochum.

"Kinetic Processes in Rare Gas Halide Lasers" by M J Shaw of RAL.

"Broadening and Shift of Atomic Spectral Lines" by E A Yukov of the Lebedev Institute.

"Atomic Physics Diagnostics of the Solar Atmosphere" by A E Kingston of Queens University Belfast.

"Atomic and Molecular Processes in Interstellar Space" by A Dalgarno of Harvard.

"Ion Transport to the Wall in Nonthermal Plasma" by H G Lergon of Essen.

In addition, contributed papers will be presented as posters.

Late registrations for the Conference are still acceptable, and forms may be obtained from Scientific Administration, RAL Ext. 553.

To lighten the hard work of the occasion we have arranged a river-trip from Culham Lock to Oxford, aboard one of Salters' boats, complete with food, drink and jazz band, on the evening of 2 September. Tickets £10.

Library Notice

The Library is offering its readers a unique opportunity for them to empty their shelves and create more office space! Books that have been on loan for longer than 3 MONTHS are in the process of being recalled and will not be renewed. Individuals having such books will receive recall slips along with a covering letter. If books are required for longer than 3 months we would suggest that they are bought on project numbers and can therefore be retained on a permanent basis within a group. The Library staff will order books on project numbers if given the bibliographic details and a suitable project number.

Film Badge Notice

It is Period 8. Colour strip RED. Please check that you are wearing the correct dosimeter and all old ones are returned.

Next Film Issue

Monday 16 August.

Left Hand Down a Bit

People sitting in the Restaurant may have been puzzled and possibly alarmed, to see the IRAS antenna performing drunken random sweeps across the sky recently - they may have suspected untested, bug ridden hardware or software or else confused operators. However these antics were all for a good cause.

One of the most critical tasks for the Operations Control Centre will be to pick up IRAS on its first pass over Chilton after launch, so that contact can be made and the first steps taken towards checking out the satellite and starting its scientific mission. Much has to be done in the first few days to point the spacecraft accurately and set up the complex cryogen system which will keep the detectors at 2° absolute for the rest of the mission. It is vital that this starts straight after launch.

It sometimes happens (not too often) that the launcher fails to put the satellite in quite the correct orbit and hence IRAS's track in the sky might not be as predicted. Our automatic acquisition system can only cope with a certain degree of error and anything greater could mean a "lost" satellite. We have therefore just qualified a manual steering mode for the antenna and Alan Stevens has recently been getting his hand in ready for a real test of the system when Landsat-D was due over Chilton some 70 minutes after its launch on Friday July 16.

In the event he did not have to do a thing. Launch was only 850 milliseconds late, the trajectory was almost perfect, the OCC equipment picked up the satellite when it was less than 1° above the horizon and tracked it automatically throughout its pass of just over 11 minutes. We were very pleased with this performance as we beat the Madrid NASA station by three minutes despite their advantage of being further south. It augurs well for the launch of IRAS, which we expect to be at the turn of the year. Meanwhile much testing and training is still going on and no doubt more excuses will be found for using that joy-stick to drive the antenna round the sky!

We thank Eric Dunford for this amusing and interesting insight into the operation of IRAS control.

Who's for Verowire?

All those of you who have been dying to contact the author of the piece on Verowire featured in the Bulletin No. 10 dated 12 July now have your chance. John Hardaker on Ext.6530/6514 will be delighted to hear from you.

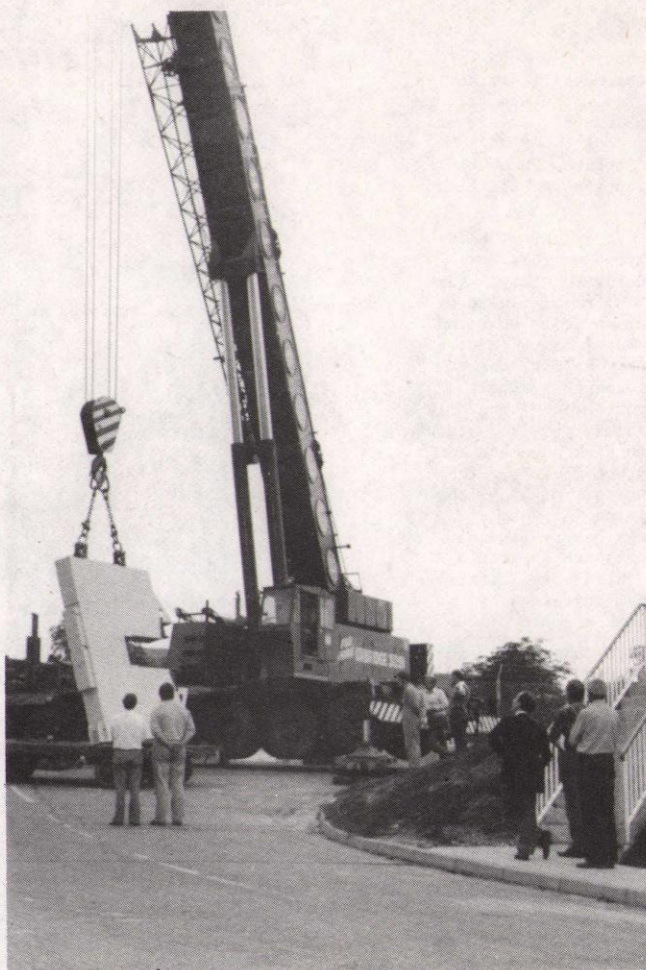
(Your editor has put in for a brain transplant!).

Nimrod

Remembered

The last magnet sector to be removed from the Nimrod ring was erected outside the new SNS control centre on 15 July. A 2-sector section is to be rebuilt as a memorial to a unique machine and it is planned that a plaque commemorating its achievements will be affixed in due course.

A similar section resides in the Royal Scottish Museum in Edinburgh and it seemed fitting that RAL should also have a tangible reminder of this era of its history.



The 'Other' Soccer Competition

On Sat 19 June, in spite of competition from another soccer tournament, a large number of spectators and players participated in the 1982 Annual National Bubble Chamber Group Soccer Competition.

This year the event was hosted by University College, London and we enjoyed the excellent facilities of their Sports ground.

Teams were fielded from Birmingham University; Imperial College, London; Oxford University; Rutherford Appleton Lab and University College, London. Eight mens' teams and four ladies' teams soccered their way through the afternoon.

The mens semi-finals featured Birmingham 'A' against I.C. 'A' and RAL 'A' against RAL 'B'. The RAL 'A' team squeaked to the final by a single goal. However, the final, which was a hard and eventful game, ended with Birmingham 'A' the victors with a 2-1 score line. As if to confirm Birmingham soccer dominance their team of ladies won the ladies competition.

The RAL 'A' team comprised: Ken Paler (Capt.), Nigel Angold, Bob Brown (his spectacular goal keeping kept the team in the competition), Alan Michette (a special guest appearance) and Dave Stanley. RAL 'B' consisted of: Dick Roberts (Capt.), Frank Close, Malcolm Goddard, Robin Marshal, Graham Smith and Steve Yarker.

After everyone had recovered from their hectic activity all retired to the pavilion and enjoyed an excellent buffet meal accompanied by the services of a well equipped bar! There then followed the customary presentation of trophies interrupted by many a good humoured comment and suggestion.

Thus ended a very enjoyable day and the organisers are to be congratulated on the success of the 1982 competition.

Thanks from--

Linda Gilbert, who writes Thank you all very much for my lovely gifts. I certainly had a memorable last day. I am enjoying being at home. It is lovely being able to go for a leisurely walk at 3 p.m. instead of 7 a.m. every morning.

Tony Morris would like to thank his friends for the overwhelming send off he received upon his retirement, and for the very generous gifts. He says 'cherrio' to all those he was unable to see.

Hugh Roskell wishes to be remembered to all his old colleagues. He has now moved to Dorset and so wishes you all farewell and thank you for his six happy years at Chilton.

In a postscript he makes the plea for the "Admiralty Navigation Manuals" he lent to 'someone' a year ago to be passed on to Tony Wardle, R2.

SERC Golf Tournament

The Dalmahoy Country Club near Edinburgh was the magnificent setting for this year's golf tournament. On Friday the 25th June 48 players in 8 teams from most of the SERC's establishments fought a 36 hole medal competition for the Sir Brian Flower Trophy.

For the fourth year running the trophy has been won by this Laboratory, and for the third year running by our 'B' team. There were several suggestions as to what the 'B' stood for, but I leave that to your imagination. However the Rutherford Appleton 'B' Team, captained by Geoff Manning and well supported by Rob Witty, Mike Watson, Ken Louch, Brian Parkinson and Ken Quinton clearly won the day with a combined best 4 score of 558. The Rutherford Appleton 'A' Team captained by John Delury also did well to be the runners up with a score of 580. Third were Rutherford Appleton 'C' Team captained by Gordon Walker with a score of 606.

Congratulations to John Delury for winning the Chairman's Trophy for the best gross score over 36 holes, to Bob Wilson of ROE for winning the R.G.O. Trophy for the best net score over 36 holes, to Mike Watson for the Best Morning Round and to Rob Witty for the Best Afternoon Round.

This is the first time we have crossed the border to play in the Tournament and we heartily thank our hosts, the members of the Royal Observatory Edinburgh, for the excellent organisation. We can't blame them for the rain!.

Roy Bell



The winning team surrounding their Captain, Geoff Manning (from left to right) Ken Quinton, Rob Witty, Mike Watson, Ken Louch and Brian Parkinson. (Photo: ROE)

R20 Lament

"Is it for us?" we cry,
as lily limbed workmen, shouting
obscenities, burn red in the sun.
Amid the clamour of cement mixer,
the nerve shattering screams of
drill,
we are hopeful,
we have waited long,
our pitiful office dwarfed by
smart super edifices, double
glazed and free from draught, silent,
warm,
It must be ours,
but no!
As a salve to Their consciences,
They have given us BLACK WINDOWS!!!

Table Tennis

The new Evening League table tennis season starts in September and lasts until April. The club enters teams in both the Didcot and District and Oxford and District Leagues.

Any RAL RecSoc member who is interested in playing and would like more information should contact Bryan Wyborn, R1, Ext 589 as soon as possible and by 13 August. All standards of player are most welcome.

Harlequin Ads

Although the date for receipt of advertisements is published in *Harlequin* as alternate Tuesdays, it has been found that these advertisements must actually arrive at the RAL Cash Office on the MONDAY to ensure inclusion in the correct edition.

Bulletin

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