Bulletin
of the Rutherford Appleton Laboratory 24 Sept 1984 No.14

First Ion Release from AMPTE

The AMPTE mission, just twenty six days into its 15 month exploration of the solar wind and magnetosphere, made its first lithium release on Tuesday 11 September at 0825 hrs BST.

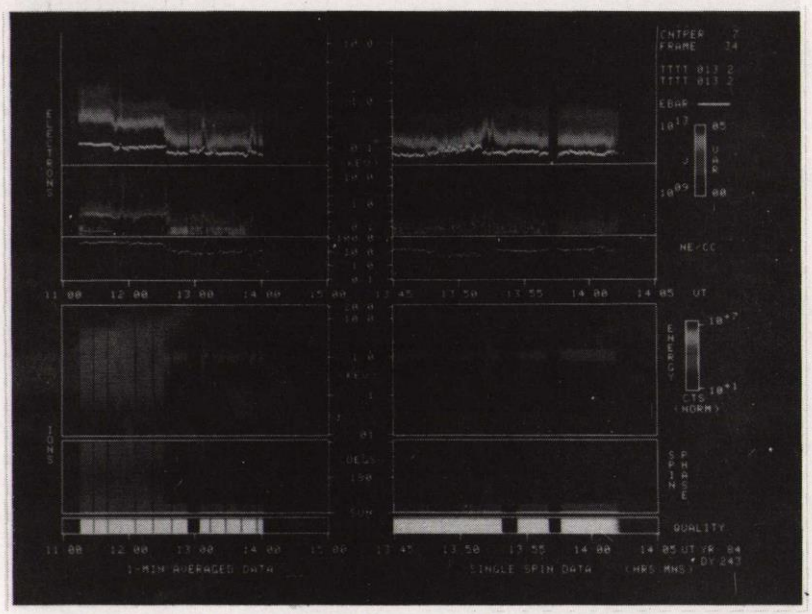
With an early start to the day, at 0500 hrs, data received at the NASA tracking centre at Canberra was relayed via the Deep Space Network (DSN) to the UK Operations Control Centre at RAL so that the UKS, having been switched on by timer, could be checked to be working in the correct mode.

At 0600 hrs, when the missions three spacecraft were in suitable positions for the release, the network link was handed over to the Ion Release Module (IRM) while the UKS data continued to be received and recorded at Canberra. These data were replayed to UKOCC via the DSN Canberra later the same day. Conditions in the solar wind, as relayed from the UKS between 0500 hrs and 0600 hrs and continuously thereafter by IRM, were discussed and evaluated in a three-way link-up between the operations centres in the USA, Germany and at RAL. Computer programmes were run at Johns Hopkins Applied Physics Laboratory to show whether or not ions released, under the prevailing solar-wind speed and density and magnetic field direction, would be expected to pass through the bow-shock to reach the magnetopause (the outer surface of the magnetosphere), and therefore stand a chance of finding their way into the radiation belts within the magnetosphere where the Charge Composition Explorer (CCE) was waiting to detect them.

At 0812 hrs conditions were deemed to be suitable and Professor Haerendel, at the German control centre, announced that he had sent the command for the release. At 0815 two of the IRM's sixteen cannisters were released and after a suitable interval, when they had reached a distance of 1 kilometre from IRM, the reaction between Li and CuO was activated to release an expanding cloud of lithium atoms which were photoionised by solar ultra-violet.

Data Evaluation

Measurements made at the IRM itself, at the UKS 35 kilometres away at the time of release, and at the CCE some 80,000 kilometres away, are currently being examined very closely, (especially in the cases of IRM and UKS those obtained within the first few tens of seconds of the event) in order to evaluate them to the point which will allow a second release to be embarked upon within the remaining section of the window, which closes 28 September giving six opportunities for release.



RAL and MSSL particle measurements as the spacecraft entered the solar wind from the magnetosheath, crossing the Earth's bow shock at 12.30 GMT on 30 August. (original in colour).

Meanwhile, the three spacecraft are continuing their studies of the natural magnetosphere and solar-wind . All five UKS experiments are continuing to provide high resolution information about the speed and composition of solar-wind ions and of the scattering caused as they penetrate the bow-shock. Heating of solar wind electrons and the formation of jets both at the bow shock and at the boundary of the magnetosphere have also been observed particularly clearly. Changes in ion and electron behaviour are accompanied by growth of waves in the local electric field and periodic pulsing of the particle streams themselves. Measurements of the local magnetic field serve to co-ordinate the other observations and clearly reveal the nature of the transition from the Earth's dipole-like field to the Sun's magnetic field embedded within the solar wind.

In the AMPTE control centre (UKOCC) at the RAL, these observations are given considerable dramatic impact by appearing as colour displays, only moments after being made by the satellite instruments, to give continuously forming images of the medium through which the satellite is moving. This permits optimisation of experiment modes and enables rapid comparisons to be made between conditions at the UKS and at the IRM.

All three satellites are reported by their respective authorities to be functioning well in orbit. The UKS is working faultlessly and its control and data reception using antennae at RAL and Chilbolton and processing by UKOCC are very effective.

For further information contact Dr Duncan Bryant, Ext 6515.

Apprenticed at RAL

Alan, Stephen, Ron Russell, Adam, Dave and Geoff Manning. 84RB 3764.

The first ever group of RAL trained electronic apprentices received their indentures from Dr Geoff Manning on Friday 24 August.

Since the Laboratory was originally formed we have used the Harwell Apprenticeship Scheme to train our mechanical, electrical and electronic craftsmen but in 1980 an increase in our allocation for apprentice training could not be coped with by Harwell and it was decided that we should start our own scheme for electronics apprentices.

So far the scheme has proved very successful, achieving 100% pass rate in exams, none of the apprentices having left and all having taken jobs at RAL.

Presenting the indentures to Stephen Deane who will join Peter Wilde's group and to Adam Johnson, David Rippington and Alan Saxby who are to join the R18 workshop, Dr Manning congratulated all four students and wished them success in their careers. Following the Harwell tradition their deeds were presented in tankards which the apprentices had provided. Dr Manning hoped that in future these could be provided by the Lab.

Also present to wish them well were, the originator of the scheme Ron Russell who was head of SNS Division at the time, Brian Claxton former apprentice supervisor, and Vic Thorp, apprentice manager.

We are also pleased to report that nine more RAL apprentices have successfully completed their training in the Harwell Engineering Scheme and have also accepted craft appointment with the Laboratory. These are P Bailey, J C Elgar, W Pollock, P J Tonner, S Lees, M J Miles, P Self and T J Whelan.

Congratulations and welcome to you all.

Cash Point

The long-promised cashpoint is due to be installed outside the main entrance to the R1 foyer in the next week or two, and to open for business on Monday 8th October.

The cashpoint will be available to all Lloyds customers between 6.30 am and 11.30 pm, Monday to Friday. It will dispense up to £100 per account per day, and report balances on accounts to close of business on the previous day.

'100' Club

Prizewinners for

June:

£125 A Forster
£ 25 L Claringbold

July:

£25 J Gilbert

August:

£25 C Bruce

CONDENSED MATTER SEMINARS
R3 CONF RM - 1330 hrs

2 Oct B T M Willis/Harwell
'Neutron Diffraction Studies and Perfect Silicon Crystals and Imperfect Uranium Oxide Crystals'

9 Oct R K Heenan/RAL
'Everything You Wanted to Know About Gas Electron Diffraction, But Were Afraid to Ask'

16 Oct T Hicks/Monash & Southampton
'Flipping Neutrons'

Library Notice

"The Hamlyn Guide to Astronomy" has been mistakenly returned to the Library in R61. Would the owner please claim it at the reception desk.

Obituary

Dr Brian Duff

Dr Brian Duff of University College London died suddenly and completely unexpectedly of an aortic aneurism on Monday, 27 August. He was at home, having driven back over the weekend from CERN with his wife and two teenage children after a few weeks of running on the WA78 experiment.

Brian Duff began high energy particle research when he joined the UCL counter group after graduating in 1959. He was involved in the first generation of NIMROD experiments at Rutherford Laboratory, and in others throughout the NIMROD programme, as well as working on experiments at the CERN PS, the ISR and the SPS. He was closely concerned with the development of the combined emulsion-spark chamber technique by UCL physicists in the late 1960 s, which led eventually to the first direct observation of charmed particle decays and to a whole series of important experiments on short lived particles. Perhaps his most important work on the ISR was on inclusive production in an experiment which helped to lay the basis for quark-parton models of hadron-hadron collisions.

As a teacher he combined mastery of his subject matter with clear and often witty presentation. Despite the demands on his time which were made by experimental work and committee work at CERN and elsewhere, he carried a significant share of departmental responsibilities at UCL including a recent stint as admissions tutor for Physics undergraduates. He was a member of the ISR committee at CERN from 1974 and in 1976 he acted as secretary to a Royal Society committee which investigated future UK policy on nuclear energy. From 1978 to 1980 he was the director of the Rutherford summer school for experimental particle physics postgraduate students.

His colleagues will miss him most for his effectiveness as an administrator and leader of research. He will also be missed as a musician both at UCL, where he sometimes conducted ensembles for the chamber music club, and especially by his neighbours in Surbiton where he had been choirmaster at St Matthew's church and was still a regular organist.

We profer our deepest sympathy to his wife Marjorie and to his children Oliver and Harriet.

Film Badge Notice

It is period 10 Film strip BLUE.

Please be sure you are wearing the current dosimeter and return all old ones.

Next film issue - Monday 8 October

David's Farewell

David Salter is what is known in the trade as an "enabler", that is to say he has always understood the real priority - which is to do good science - and has used his skills, dedication and tact to promote this. Knowing the science involved, knowing the system backwards, knowing how to get things done and knowing the rules and regulations but never letting them get in the way, several hundred University users will attest to his success in enabling them to get on with their science which is why so many of those he had helped were gathered together on Friday 7 September to wish him well in his retirement.

David joined Harwell in 1949; transfered to NIRNS/Rutherford in 1959 and after very successful work on development of the polarised proton source for the PLA became involved with the Nimrod experimental programme. In 1963 he began his liaison work between Nimrod experimental teams and support groups. The year 1971 brought both promotion and a change of job with transfer to Neutron Beam Research Unit where throughout the seventies and up to the present time he set up, developed and continued to run very efficiently the University Liaison Group which looks after all aspects of user support for neutron experiments at Harwell, ILL and various places around the world. Since 1976 he has also served as joint secretary of the Neutron Beam Research Committee.

"I have known David since the early seventies when he became involved with neutron activities", said Alan Leadbetter who was making the presentation on behalf of all David's friends and colleagues. "I knew him first as a University user and lately as his Division Head and therefore feel especially well qualified to make this presentation. He has always done a quite superb job and it is a great tribute to his efficiency and that of the group he has set up and nurtured that the handover to his successor is going so smoothly. He has been a tower of strength to me - whatever information, statistics or advice I needed was always prompt and right and we will miss him but hope to see him back on a visit from time to time".

David, Alan and Mrs Salter 84RB 3937

News of David's early retirement had brought a flood of donations from his friends and colleagues at RAL, Harwell, ILL and the Universities, enabling Alan to have the pleasure of presenting David with a cheque to buy a garden cultivator, a gift from ILL (a framed photograph from Gerry Briggs and Berndt Maier), a set of cards with many signatures and finally a bottle of Champagne. "This must not be squirted over the audience in the manner of the motor racing drivers", said Alan. "I suggest that you drink it in bed on Monday morning on the first real day of your retirement when all your colleagues are going to work!"

In reply a rather bemused David expressed his delight with the gifts. He was, he said, overwhelmed and really touched by the generosity and good wishes of so many people. He had been priviledged to work with some marvellous people and had really enjoyed it. "My one regret is that I will not be here when SNS gets going" he continued, "but I shall think of you all, every time I use my rotavator!"

Homeward Bound

Jim says farewell to Glenys

84RB 3759.

Glenys Landy, RAL's Travel major domo, was given a warm farewell on Thursday 23 August and such is the esteem and affection in which she is held, that a fair fraction of the Laboratory was present at the parting ceremony.

Glenys was retiring after 16 years at RAL, initially working in the Library, but subsequently, and more memorably to most of us, becoming the lady who got us where we wanted to go and, perhaps more importantly, also got us back.

"This", said Dr Jim Valentine, who was making the presentation on behalf of Glenys' myriad friends and colleagues, "was an excessive zeal! A perfect employee should have lost a few. On a carefully selected basis, of course", he joked. "Now we hope you will be able to do a bit of travelling on your own account" he continued as he invited Glenys to open the gift parcels spread before her.

The pages and pages of her farewell card were a testimonial in themselves; topped up with a high-technology food-mixer and a radio-cassette player these tokens of our appreciation showed how much she will be missed by staff and university visitors. Even British Airways chipped in with a free-flight for two.

In a charming thank you speech, Glenys thanked everyone for the happy time she had spent at RAL. "I came feeling I should be lost amongst so many" she said "but I was made so welcome I quickly felt part of RAL. My thanks are due to so many people, but I should like especially to thank my colleagues in Travel Section without whom ....", she smilingly ended.

Trade Exhibitions

PHILIPS TEST & MEASURING INSTRUMENTS are to hold an exhibition of their oscilloscopes, generators, etc. in their demonstration bus by Building R20 on Thursday, 27 September from 14.30 to 16.30hrs.

MICROLOG LTD are exhibiting on Tuesday, 2 October in R12 Conference Room from 10.00 to 16.00hrs. Come along to learn how to reduce your board space, do fast number crunching and see the future in programmable logic arrays. Monolithic Memories are giving a seminar.

Travels with a Bike

Richard Lawrence-Wilson (Finance & Accounts) would like to thank the many colleagues who sponsored his cycle ride from England to Spain in August.

As a result of their generosity, over £1000 was raised for the St Paul's Project, which aims to convert the former St Paul's church in Walton Street, Oxford, into a multi-purpose auditorium for musical, dramatic and other events opening on May 1 next year.

Richard covered over 1300km, and has some photographs to prove it, showing him wet and miserable in the pouring rain which he cycled through every day in the Spanish Pyrenees, while we were basking in the sun!

The Dave Craddock Memorial Cup

This is a 6-a-side cricket competition open to all Rec Soc members. Dave played cricket for the Lab for many years and it was felt by all his friends that this competition should be named in memory of him.

We began the tournament with 7 teams but due to an apathetic attitude 2 teams withdrew so we were left with SNS, ATLAS, STORES, LASERS and APPRENTICES.

The Cup

STORES (the favourites) were sweeping all before them when they were surprisingly beaten by LASERS in a very high scoring game. This ended the league with STORES and SNS tied at 3 wins and 1 defeat apiece so a final playoff was arranged. Due to holidays this wasn't played until 31st August.

The Final

SNS won the toss and put STORES into bat. Six-a-side cricket is a game of tactics because any player scoring more than 35 runs must retire (except last man in) and 5 of the team must bowl 3 overs each. As every side has weak and strong players, a cat and mouse game can develop - if a weak batsman is in, use your weak bowlers. Every captain has his own way of playing.

STORES opened with R Owen and T Ward and as they also have the world's no 1 batsman J Denly, R Newman (SNS Capt) decided to open with his slower bowlers. The wind was quite blustery and caused the ball to swing a lot. Terry Ward was soon in action scoring with ease as J Culley struggled to find line and length (he did however produce one good ball which bowled R Owen). Terry in fact retired on 38 n.o. (he hit a four when on 34). The next two STORES batsmen went cheaply, so with 4 overs left Andy Napper and Jim Denly came together, and moved the score along with ease to 113.

In these games a score over 100 is very hard to get so STORES must have felt confident especially as they bowled SNS out for 45 in the league game.

SNS opened with R Newman and M Yates who were determined to show that the STORES league result was a fluke. As in all their league matches Mike Yates attacked the bowling from the start, hammering 4s all over the place. Neither batsman was troubled in the opening overs. An over from Rich Owen slowed things down somewhat because he was swinging the ball a lot but Jim Denly was trying to fit in his slower bowlers so he took a risk and brought them on. Having to score at nearly 8 an over became a bit easier as R Newman opened out a bit. The SNS openers then reached their 4th '50' partnership of the competition. Even an over of pace from A Napper didn't slow things up.

Mike Yates retired on 37 n.o. and K Patel came in, though being injured he didn't last long, being bowled 3rd delivery. This brought Malc Edwards to the crease. Edwards and Newman fell slightly behind the run rate due to a good over from T Ward. Russ Newman then hit a 4 to retire on 36 n.o.

At this stage 32 runs were required from 4 overs, so a tight finish was in view. In came Nick Myer (our cricketing poet) who has more ducks this year than London Zoo. This time however, in his last game for SNS (he's moving to C.O. for sports day), he was determined to prove he can play cricket - and did he prove it! He only faced 8 balls but he clobbered 18 runs. When Malc hooked T Ward for 4 the scores became level with 2 overs to go. Andy Napper bowled Nick first ball leaving John Culley 11 balls in which to score one run, which he did 4 balls later.

So SNS won with one over to go and after a short speech D A Gray presented the cup to R Newman. Some say it was won on the toss, others say SNS had a slightly better all round ability. Perhaps next year we can have more teams.

Final Scores

STORES 113 for 3		SNS 114 for 2	
T Ward	38 n.o. rtd	M Yates	37 no rtd
J Denly	30 n.o.	R Newman	36 n.o. rtd
A Napper	18 n.o.	N Myer	18
		T Edwards	16 n.o.

Thanks

Glenys Landy sends her best wishes and thanks to all her friends and colleagues that she didn't manage to see before she left and to wish them all Bon Voyage.

She ends - 'Diolch yn Fawr'.

Leslie Yearling, now Duff, would also like to thank everyone for the generous wedding and farewell gift she received. She will miss her friends and colleagues very much, she writes.

Alan Thorp would like to thank his friends and colleagues for the wonderful retirement gift and the presentation. He says goodbye and best wishes to all those colleagues he was unable to see personally.

Golf Tourney

After five years of success we have lost the Brian Flowers Trophy to Daresbury Laboratory.

This year it was Daresbury's turn to organise the Tournament and nine teams of golfers from most of our establishments gathered at Upton-by-Chester Golf Club for the annual battle.

The Daresbury 'B' Team, captained by Brian Yates, pipped Geoff Manning's 'B' Team by 286 points to 282 points. Was it local knowledge or was it because our committee decided to rearrange our teams? Some say the committee should be sacked. However we have only to look at the results to see that Daresbury would have taken some beating, with Brian Yates scoring the best individual total of 80 points, this winning the RGO Trophy. The Best Morning and Best Afternoon prizes were also won by members of his team namely D Kinder and J Worgen. Once again though, our three teams put up a good show with Geoff Manning's team coming second, Gordon Walker's third with 276 points and John Delury's fourth with 268 points. The Chairmans Trophy for the best individual scratch score was won by Dale Faircloth. Dale is the youngest and latest member of this golf section who plays off a handicap of 7 at Frilford Heath. Well done Dale!

We tender our congratulations to Daresbury and thank them for hosting a well organised competition. We look forward to next year!

Roy Bell

P.S. As I was unable to attend the Tournament this year the teams presented me with some very welcome lubrication, I would like to thank these members very much and if they would prefer a non playing secretary perhaps we could make this a regular feature.

Cheers Roy

Coffee at Cosener's

Calling all RAL wives!

Now that the autumn is here, the coffee mornings have commenced at the Cosener's House, Abingdon and you are all welcome, especially new wives and visitors. If you have pre-school children, they are welcome too and there is plenty of room for them at Cosener's House.

The next coffee morning will be on Thursday 18th October from 10.30 to 12 noon.

For further information, please ring either Suzanne Litchfield, Abingdon 21310 or Zoe Patrick, Wantage 68809.

Bulletin

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