Minutes

Charissa Group Meeting

Meeting held on: 27 April 1994

Meeting held at: Birmingham

Present:	DLW(Chair),WNC,NMC,RAC,MF,GJG,SJAH, JK,ACM,VP,WDMR,GT,RPW
Apologies:	BRF,RAH,CDJ,JSL
Distribution:	Those above plus DDW, all by e-mail/file-server.

Minutes

1. **Minutes of meeting of 23 February 1994:** accepted
2. **Matters Arising/ Actions:**

   All actions were reviewed and covered satisfactorily.
3. **Update on NPC matters:**

   Grant announcement letters had been received, with no major changes.

   The EPSRC was to admisister NPC studentships, and 1994 allocations were already established. Studentships for 1995 were expected still to number 18.

   The NPC is a subcommittee of the Physics Committee of EPSRC, at least until the end of July 1994.
4. **Progress with MEGHA development:**

   i. *Prototype Module:* discussed under Item 6.

   ii. *Chamber Design:* A meeting was required to finalise the modifications required for mounting strip detectors. JK tabled a drawing (32/8039) resulting from discussions with MF at end February 1994. It was agreed that there should be a MEGHA meeting on Tuesday 10 May at DL. RAC
   The strip detector details would be decided at the MEGHA meeting. The target date for latest placing of external construction was 29 September 1994.

iii. *Detectors:* An order for 50 detectors had been placed with Hamamatsu, wherein 20 detectors are due before 15 July with the remainder to follow after satisfactory testing of the first batch.
The low-friction pins have proved very successful for mounting. Final drawing to be faxed to Hamamatsu by 5 May. DLW
A response was awaited from Intertechnique regarding the cost of developing 3 detectors with edge resistive strips, and this would proceed provided that an economical price and short delivery were quoted.

iv. *Gas Supply:* this work was progressing as a lower priority.

v. *Beamline on Linac at the ANU:* **ITEM ADDED TO AGENDA**
DLW tabled a plan of the Linac hall at the ANU. An initial suggestion involving 2 quadrupole doublets required 150 A to bend the most rigid ions from the Linac, but only one such supply is available. A viable alternative is to use a triplet, or two doublets cabled as a triplet, but at the cost of a slightly larger waist. The beam optics calculations would be sent to WNC and kept on file (Ch/Tech/94/01). It was hoped that T. Aitken could carry out more optics calculations to help decide a final plan.
It was anticipated that the beamline would be assembled and tested at DL prior to shipping, as was being done for the Strasbourg line. Installation at the ANU was planned for March/April 1995.

5. **Progress with electronics and data acquisition:**

(a) *Electronics:* WDMR reported. The resolution of the amplitude-to-time conversion was still under test, and some problems were being experienced in reproducing the expected performance. It was planned to postpone manufacture of the amplifiers to the next period.

The spend of the remaining grant monies was discussed, and is reported under Item 8.

(b) *Data acquisition:* VP reported. The FETCH module had tested satisfactorily at Oxford, but failed at the ANU. The return of the hardware from ANU was awaited. It was thought that a feedback mechanism was required, to maintain synchronisation between VME and CAMAC.

Priority targets to be achieved for the next run in July:

i. **Fetch module:** to be fully operational SJAH,RAH

ii. **Tape Operation:** graphical control to be implemented VP,SJAH

iii. **Data Broadcasting:** adapt Eurogam/TARDIS programs to put data on private ethernet and let it be picked up by *sunsort*. VP

It was agreed that an extra exabyte drive was required for running at the ANU. A scheme where one university buys an extra drive, on the understanding that it goes to the ANU for running, received support.

A paper was tabled by SJAH, describing the components available for assembly into a small second-line data acquisition system suitable for testing equipment or running abroad (Ch/Tech/94/02).

6. **De-briefing on recent ANU running period:**

1. Chain state excitation functions: DLW reported briefly. There had been around 220 beam energy energy changes in these runs, for which the ANU facility had proved uniquely suited.

2. Hybrid tests: WNC reported. Detectors had been tested with ^{16}O ions using 6 different electrode configurations, a wide range of collection voltages, and a range of amplifier shaping times. The tests indicated on-line that the best configuration without degrading the ΔE resolution noticeably was $2\mu s$ shaping, 2V/cm/torr bias, 20 μm anode grids, and no shielding grids.

It was hoped that more-complete results, from off-line analysis, could be presented at the next meeting (May 27). WNC

WNC suggested that the resolution of the ΔE could be improved in the future by using shorter cables out of the chamber,as had been introduced by WNC and NMC at Daresbury.

3. ^{28}Si resonance experiment: WNC reported. The experiment had proceeded according to plan, and the statistics appeared to be excellent.

The high-gain preamplifiers had been cause for some concern. One box (original design) had operated well. The only other box (surface-mounted circuits) had not operated well. One channel suffered a blown FET, due to sparking in the detector, and the other channel exhibited spiky noise of a magnitude comparable with genuine signals. This noise would have prevented a suffuciently low setting of the discriminator, if another preamp had not been available. DLW reported that both units had been returned to York for assessment.

4. MEGHA in-beam tests: DLW reported. The module was tested with CsI in 7 of the 9 positions, the beam tube in the central position, and a special cabling board on the ninth position. Two CsI's were obscured from the target. The module was mounted in the 2m chamber approximately 22cm from the target, so that the detector elements to the left and right of the beam axis were at an angle of 20 degrees. These elements were fitted with Intertechnique sheet-resistance PSD's. Preamplifiers were outside of the vacuum, which required cable adaptor boxes. The gas pressure was very low due to a small leak in the window. The beam was 70 MeV ^{12}C on various targets. Data were collected for coincidences between CsI and Si, and for singles. No gas signals were observed, which was attributed to the low pressure.

The focussing of the beam through the central tube of the detector had been difficult, and a larger diameter tube may be necessary.

The ΔE signals exhibited spiky noise similar to that seen in the hybrid runs.

A preliminary summary would be produced soon (Ch/Tech/94/03). DLW

5. Detector/window stocks and shipping:

RPW reported. There are 3 new 1000μm Micron detectors at the ANU. The Hamamatsu detectors were returned to York. There are $6 \times 1.5\mu$m, $1 \times 3.5\mu$m, and $4 \times 5.0\mu$m, windows at the ANU, and plenty of each type of 100μm grid. The two 20μm anodes are in the hybrid bodies; one is horizontal and one vertical. Four frames were returned to York, along with all used windows.

6. Other operational matters:

DLW suggested that silicon detector details were becoming difficult to keep track of, and this was agreed. It was further agreed to instigate a data-base on the Daresbury sun system. $\boxed{\text{DLW}}$

NMC reminded the Chair of the question of sticky labels for identifying Charissa modules. It was noted that an earlier initiative in this area had stalled. It was agreed that some simple cheap labels should be acquired. $\boxed{\text{NMC}}$

WDMR expounded the merits of a bar-code system marketed by Radio Spares that could enable efficient shipping information to be maintained, as well as labelling equipment.

7. **Plans for July running:**

The suggestions by BRF (Ch/Doc/94/08) circulated before the meeting were discussed. The next running period after July was suggested in that document to be February/March 1995. DLW reported that the following period was anticipated for July/August 1995. These dates were not discussed in detail.

The running times for July 94 met with no serious objections. The manpower coverage suggested by BRF (Ch/Doc/94/08) was discussed. It was noted that manpower to set up the hybrid detectors was a priority, with S. Chappell and S. Singer being possible additions.

8. **Proposed spend of remaining grant money:**

The discussion under Item 5 had resulted in the proposed grant spend details (circulated prior to the meeting by BRF, see Ch/Doc/94/07) being agreed. DLW supplied updated figures for the York grant.

It was agreed that York would buy the ethernet components for broadcasting data (cf. Item 5(b)), estimated at less than £8K.

9. **Author list for ANU publications:**

The document circulated by BRF (Ch/Doc/94/09) was discussed. There were no objections to the suggestion therein that author lists for March 1994 and future work at the ANU be derived in the conventional manner.

WNC suggested that drafts of papers based on ANU work should be circulated to all collaboration members ideally, irrespective of authorship, to encourage new ideas and the sharing of information. This was generally agreed to be desirable.

10. **Publications:**

    The summary document prepared by BRF (Ch/Doc/94/10) was discussed, so that each piece of work-in-progress was reviewed.

    The Cluster Conference in Strasbourg (Sep 94) was considered to be an ideal opportunity to publicise new results from the collaboration.

11. **Any Other Business:**

    (a) *Lunch:*

    It was noted that, not only was no lunch provided by the host department, but the canteen also failed in this regard.

    (b) *Strasbourg beamline:*

    Uncertainties remain concerning the control system. The hardware and construction seem to be under control, but details require urgent discussions. These could be held on 10 May at DL. **[DLW]**

    The recabling of the Charissa chamber for Strasbourg required information on cable lengths, to be obtained from PHR. **[DLW]**

    DLW reported that shipping of the beamline to Strasbourg was anticipated for September 1994. This was to be confirmed to DL. **[DLW,BRF]**

12. **Date of Next Meeting:**

Charissa Physics Meeting,

To be attended by all staff and students

9.30 a.m.,
Friday, 27 May 1994

Daresbury Laboratory

Charissa Documents Cited in Text:

Ch/Doc/94/07:	"Grant Funds: Proposed Remaining Spend"
Ch/Doc/94/08:	"ANU Running: Plans for July 1994"
Ch/Doc/94/09:	"Authorship: Practice for Papers from ANU"
Ch/Doc/94/10:	"Publications: Summary of Current Status"
Ch/Tech/94/01:	"Memorandum: Optics Calculations for ANU Beam Line"
Ch/Tech/94/02:	"A Second Charissa Data Acquisition System"
Ch/Tech/94/03:	"Preliminary Report on the Tests of the MEGHA Module"

W.N. Catford, Secretary. May 6, 1994 (released May 12, 1994)