Minutes
Charissa Group Meeting

Meeting held on: 5 January 1994
Meeting held at: York

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

Minutes

1. **Minutes of meeting of 17 November:** accepted
2. **Matters Arising/ Actions:** none
3. **NPC/SERC Matters:**

   The NPC would convene on the evening of 24 January for the 2 1/2 day meeting to discuss the current grant requests.
4. **MEGHA Developments:**

   The discussions of the Megha meeting held in the morning was summarized:

   (a) Prototype Module

      i. The mechanical constuction, including grid structures will be completed by 12 January 1994.
      ii. Assembly with scintillators would start when new springs arrive.
      iii. grid structures to RAC as soon as possible to do wires (Paul Lee to be involved). DLW
      iv. second set of grid structures to be constructed when first set checked out.
      v. Module to be tested with grids and scintillators and maybe one silcon detector at DL and York During February. RAC and PL
      vi. Module to be tested in beam at ANU in March. DLW,PL
      vii. Design finalized and contruction to start on the remaining modules by late April.

viii. Use of strip detectors to be investigated ASAP. **MF**

(b) Main Chamber

i. design now needs to be progressed urgently.

ii. meeting to be arranged late Jan or early Feb to consider this. **DLW,RAC,JK,JSL,MF**

(c) Detectors

i. Specification sent to Hamamatsu, Intertechnique (Gresham Power Electronics), Qpar and Micron.

ii. Reply received from Hamamatsu, reply expected from Intertechnique soon.

iii. Meeting required 13 Jan to discuss detectors. **DLW,BRF,SC**

iv. Generally agreed at meeting that tests had shown Hamamatsu detectors to be preferable.

v. The details of the Si wafer mounting were not finalised.

vi. A report on detector tests to be distributed. **DLW,SC**

(d) Gas Supply
It was noted that this system would be required by March.

5. **Progress with electronics construction:**

(a) Preamplifiers

i. 18 prototypes from Oxford being tested at York, presently with pulser

ii. tests with real alpha particles, using both strip and sheet PSDs, to be underway by 12 January. **CDJ**

iii. Steve Lawson to find a suitable manufacturer for the boards (up to 600) **DLW,S.Lawson**

iv. 32 preamps required for ANU in March, preferably 64.

v. Packaging of them to be suitable for the module and for strip detectors

(b) Bias Supplies

i. 78 required plus bins and controllers

ii. 38 boards complete

iii. all front panels available

iv. David Smith from Oxford to come to York on 13 Jan to discuss the bins and controllers **D.Smith**

v. these could be available by March if required

(c) Amplifiers

i. A set of 32 is ready at Oxford to be shipped for the March run in ANU

ii. these can be used like the present amplifiers, in conjunction with the existing 80, but can also be used in TDC mode, so making some of the new features available for tests.

iii. It was not clear how the final design is progressing.

iv. Document CH/Tech/93/10 by R.A. Hunt describes the 32 amps.

6. **Progress with Data Acquisition for next ANU running:**

   (a) Document CH/Tech/93/11 by R.A. Hunt describes the FETCH scheme to speed up data transfer from the Read/Store module. (Note that in some versions \$–signs appear, but all prices are actually in £'s.)

   (b) It was decided that FETCH should go ahead without delay RAH

   (c) Extension beyond 128 channels should wait till it was clear that more than 128 channels was required in March (The experiments to be decided by end Jan, at least in outline.) BRF

7. **Experiments and tests planned for next ANU running:**

   (a) Agreed that first priority was an experiment for Simon Fox.

   (b) Other experiments would be for CDJ and GJG.

   (c) Tests required on

      i. Hydrid (Steve Singer). Test of different wire thicknesses. WNC

      ii. Prototype module (Paul Lee and Chris Jones) CDJ

      iii. Preamp and amplifiers for new array

      iv. Performance and readout of new amps using TDC mode MF

   (d) These experiments and tests would require up to 35 days at the ANU

   (e) Agreed to try and use the same setup to cut down on change-over time

   (f) Outline experiments to be agreed by end of January at the latest. DLW,CDJ,WNC,GJG,BRF

   (g) Manpower coverage to be mapped out by end of January at latest. BRF

   (h) Several options for experiments were discussed, namely:

      i. $^{12}C(^{16}O,^{12}C^{12}C)\alpha$ oblate

      ii. $^{16}O(^{16}O,^{12}C\alpha^{12}C)\alpha$ oblate

      iii. $^{12}C(^{16}O,^{12}C_{2+,g.s.}\ ^{12}C^{*})\alpha$ 4:1

      iv. $^{12}C(^{16}O,^{12}C^{*})^{16}O$ excitation fn 4:1

      v. $^{12}C(^{16}O,^{20}Ne)^{8}Be$ excitation fn 4:1

      vi. $^{12}C(^{12}C,^{12}C^{*})^{12}C$ excitation fn

      vii. $^{12}C(^{12}C,\alpha\alpha)^{20}Ne$ Keeling follow-up

      viii. $^{12}C(^{12}C,^{8}Be)^{20}Ne$ Keeling follow-up (Cormier)

      Of these, the first two require hybrids, the rest: just strip detectors.

8. **Status of equipment for next ANU running:**

   (a) Document CH/DOC/93/14 "Responsibilities for March 1994" is relevant

   (b) York to be responsible for organising shipment $\boxed{\text{CDJ}}$

   (c) Latest date for shipment to leave York: Friday 11 March

   (d) All equipment to get to York ASAP $\boxed{\text{ALL}}$

   (e) All equipment that goes to ANU in March will have to be returned after the run as it will be required for tests and development in UK

   (f) Check status of equipment to be ordered at ANU $\boxed{\text{DLW,BRF}}$

   (g) Responsible persons (see CH/DOC/93/14) to check progress regularly $\boxed{\text{ALL}}$

   In particular, the following points were identified:

   i. 3 TSCA's and 2 TAC's plus multiplicity unit to go to York $\boxed{\text{NMC}}$

   ii. Computing purchases at ANU to be checked with PHR $\boxed{\text{SJAH}}$

   iii. 2 TFA's needed with Z_{in}=1KΩ to replace Birmingham units $\boxed{\text{WNC}}$

   iv. mounts for 4 strip detectors required $\boxed{\text{RPW}}$

   v. provision of 3-phase and water on the 2m line to be checked $\boxed{\text{RPW}}$

   vi. there would be no tests of the new data acquisition in ANU in Feb 94 (cf. item 18 of 93/14).

9. **Scheduling considerations for next ANU running:**

   (a) Scheduling for March run postponed until experiments agreed and exact dates of run known

   (b) Urgent need to liaise with ANU re dates for the next run $\boxed{\text{BRF,DLW}}$

   (c) Further runs at ANU in 1994

   i. Paper "Thoughts on ANU running" by B.R. Fulton was discussed with reference to runs after March.
   (This e-mail is being kept on file at Surrey as Ch/Doc/94/02.)
   General feeling was that *three* runs in ANU this year might be difficult for the collaboration and ANU.

   ii. A different scenario was proposed, by combining the July and September runs. Possibilties discussed were

   A. All July to Mid Aug

   B. All Aug to Mid Sept

   C. Mid Aug to end Sept

   iii. the general preference was B followed by A and then C

   iv. Agreed that a decision on times should be made ASAP and that we need to discuss this with ANU urgently

10. **Any Other Business:**

Three items were discussed:

(a) Spend on Current Grants

i. WDMR tabled the papers "Electronic Schedules and Costings I and II". (These are being kept on file at Surrey as Ch/Doc/94/03.) These summarised the more detailed documents from Dick Hunt (Ch/Tech/93/10,11,12). Paper I gave the cost of equipment to be purchased through Oxford. Paper II the equipment to be purchased through other groups (but with no costs).
These costs to be produced by 13 Jan. **WDMR**
Implications to be correlated for NPC meeting. **BRF,DLW**

ii. DLW gave figures for York spend on mechanical work and detector purchases:

Amount spent to date	£44.7K
Completion of preamps, bias supplies, all 5 modules	£55K
possible extra preamps, replacement vacuum feedthroughs on Charissa chamber	£10K
Total spent or committed out of allocation of £131.2K	£110.2K
Amount not yet committed	£21K

The amount left should be sufficient for a simple scattering chamber but not pumps and controls (Should be able to be clearer on this in early Feb).
The 50 detectors would cost about $108K to be found elsewhere.
Updated figures required to BRF or DLW by 13 Jan for the NPC meeting.

iii. Manpower used by York on Charissa (Oct 92 – Dec 93) is order of 32 man (or should it be person) months.

iv. There were no other manpower figures given.

(b) Detectors

i. The current stock of detectors was reviewed and agreed that there were probably sufficient Hamamatsu for the next run (400μ).

ii. there were a few (4 or 5) thicker Micron detectors, all at ANU.

iii. the state of the micron detectors returned to Birmingham with bad contacts was queried. Could these be repaired for spares for the March ANU run? **BRF**

iv. New strip detectors should have their ribbon plugs turned through 90 degrees. They would then be suitable for the new module (strip detector version).

v. Detector situation to be reviewed when experiments are finalised. **BRF**

vi. Publications

   A. GJG noted that he had set a deadline of 12 January for final comments on his draft paper, before submission to Nucl. Phys. A.

   B. NMC noted the need for contributions of abstracts for the IOP conference, from all Charissa students attending.

11. **Date of Next Meeting:** *not agreed at meeting, but —*

Next Meeting:

11.30 a.m., Wednesday, 23 February 1994 in Birmingham.

Lunch arrangements to be made. $\boxed{\text{BRF}}$

W.N. Catford, Secretary,
(with contributions from D.L. Watson).
January 27, 1994
(released February 1, 1994)