

**Society of Crystallographers in
Australia and New Zealand
SCANZ**

Newsletters

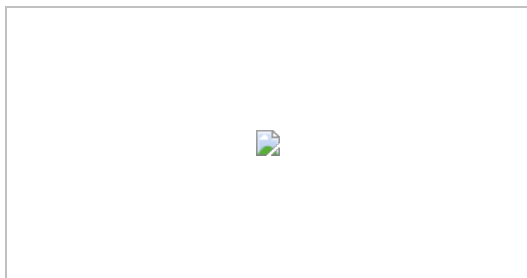
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The SCANZ homepage is located at <http://www.sca.asn.au>

FROM THE PAST PRESIDENT

In preparing to write this report (which is less an attempt to summarise a term as President, and more my final *Newsletter* contribution) I looked back on similar reports from the last three Presidents of the *Society* (Mitchell Guss, Max Taylor and Richard Welberry). They make for very interesting reading, spanning as they do, the years 1998 to the present. From them it is very clear that crystallography in this region of the world has moved a long way forward in what is really a short time. Mitchell's report discussed the increasing role of synchrotron techniques, especially within the context of Australia's involvement with the Photon Factory in Japan. Max mentioned neither synchrotrons nor research reactors, but Richard mentioned "progress towards the building of a new research reactor and the possibility of Australia getting its own synchrotron". Of course now both the Replacement Research Reactor at Lucas Heights, and the Australian Synchrotron at Monash University are very much reality – if not yet complete.

The ANSTO website (<http://www.ansto.gov.au>) provides up-to-date information, and I encourage all SCANZ members to regularly look there for an update on progress with this exciting project. Relevant timelines include: reactor construction began: April 2002; start of commissioning: February 2005; reactor at full power: August 2005. This picture was taken on 29 August 2003.



Of course crystallographers are more concerned about the experiments that might be performed at the new facility. These are also nicely summarised on the ANSTO website: eight neutron beam instruments are planned for 2005, and ANSTO expects to add more instruments within five years. The initial instruments were selected in conjunction with a Beam Facilities Consultative Group representing various scientific interests in Australia (now replaced by the Beam Instruments Advisory Group), and comprise a high-resolution powder diffractometer, a reflectometer, a 3-axis spectrometer, a quasi-Laue diffractometer, a facility for small-angle scattering, a high-intensity powder diffractometer, a residual-stress diffractometer, and a polarisation analysis spectrometer. It's not hard to see the wealth of opportunities at our very own doorstep in a few years' time!

The Australian Synchrotron Project is also well under way, and regular updates are added to the website at <http://www.synchrotron.vic.gov.au/index.asp>. With commissioning of beamlines planned for 2007, there is still some way to go, but recent news indicates that this project is very real, with the announcement on July 23 that the Thiess construction company was awarded the contract for construction of the building housing the synchrotron. Of particular relevance to SCANZ members, a New Zealand representative has been appointed to the scientific advisory committee to promote collaborative opportunities between New Zealand and Australian scientists, and New Zealand is also looking at other possibilities for supporting the project in the longer term. For now, crystallographers should take advantage of the many workshops and other activities being planned to raise awareness in the scientific community about the capabilities of a facility such as this. Forthcoming workshops include "Bioscience Applications of Synchrotron Radiation in the UV/VIS, Infrared and Terahertz Region" (Monash University, 30 Sept. to 1 Oct. 2003) and the "Australian Synchrotron Summer School" (ANU, 27 January - 5 February, 2004).

All of this recent tangible progress has been preceded by much activity behind the scenes, and for a considerable period of time. Although SCANZ has been involved in only a fraction of this, many SCANZ members and members of the National Committee for Crystallography have played significant roles in bringing these one-time dreams to reality. As a community we owe these people a great deal, as the long-term benefits

to crystallographers in Australia and New Zealand will be far reaching.

The recent SCANZ Business Meeting was held at a new type of SCANZ (Crystal) meeting. In the past, meetings of the *Society* have occurred roughly every two years, and attracted something like 100 participants. On this occasion, SCANZ joined with the Asian Crystallographic Association to offer a combined meeting, and by the time you read this you will know that this was an immensely successful move. But I didn't need to be convinced by attending! When writing the first version of this I knew that the AsCA/Crystal meeting had attracted nearly 250 registrants, and the subsequent Biological Workshop and Sagamore XIV Meeting on Charge, Spin and Momentum Densities attracted 100 and 80 registrants, respectively. Because of this mix of meetings and increased attendance, we were able to attract far more industry sponsorship than ever before, and this should have been evident to you in the social events and trade displays. I think it is only appropriate to again thank all of the sponsors and exhibitors for their generosity and commitment to crystallography in this part of the world. And I also offer my sincere thanks to those people who have committed so much of the last couple of years to making these meetings such a wonderful success: Syd Hall and Mitchell Guss deserve special thanks, but I also include Trevor Hambley, Brian O'Connor, Brian Skelton, Allan White, Matthew Wilce, and Jenny Martin.

President's Reports always end with thanks to SCANZ Council members, and this one will be no different. My term has lasted just over two years, and in that time we've had no formal meetings as such; business has been largely conducted by e-mail, and I think I've been in regular e-mail or phone contact with all Office Bearers of the *Society* over the past two years. Thanks go to all Council members, but especially to our hard-working Secretary, Brendan Kennedy, Treasurer, Paul Carr, (who has always dealt with all matters financial as efficiently as possible), and also to our *Newsletter* Editor, Brian Skelton, who has been doing an exceptional job - without flagging - since No. 24 in April 1994 (that makes something like 32 Newsletters over almost a decade!). Congratulations to the new Office Bearers: Jenny Martin (President), Brendan Kennedy (Vice President), Geoff Jameson (Secretary) and Ray Withers (Council Member), and still more thanks to Syd Hall, who is resigning from the Nominations Standing Committee after almost a decade in that role.

Mark Spackman

AUSTRALIAN SYNCHROTRON PROJECT WORKSHOP

BROOME, AUGUST 2003

About 70 people deserted the beach on the first afternoon of the SCANZ and ASCA meeting to hear about the status of the Australian Synchrotron and plans for the crystallography beamlines. Richard Garrett commenced the session with an outline of recent upgrades of ASRP facilities at the Photon Factory and Advanced Photon Source. Of particular interest to a number of people is the on-going "mail order" services available for both powder diffraction at the PF and single crystal diffraction SCrAPS at APS. Members who are interested in either of these services are urged to contact Richard at Garrett@ansto.gov.au.

Next John Boldeman presented a brief overview of the status of the ASP. The building contract has been let and the design for the 3.0 GeV 216 m storage ring finalized. It is anticipated that beamline installation will commence in mid 2006, with user operation starting in 2007. However it is likely that only one of the beamlines will be commissioned on an insertion device (ID) at this time. This has a number of implications for the Australian and New Zealand crystallography community. The meeting was informed that the ASP is preparing a scientific case to obtain funding from the Federal Government for the first round of beamlines. The crystallography community will have a major role in preparing this case.

Jose Varghese then outlined the current plans for the two single crystal beamlines. One would be on a bending magnet (BM) operating between 4 and 25 KeV optimized for high throughput protein structure analysis. It is planned that this would combine focussing at both the monochromator and a mirror and use an EMBL type microdiffractometer. The second beamline would be installed on an in-vacuum undulator operating between 4 and 20 keV. Although using the same optics as the BM beamline this beamline would be optimized for micro crystals rather than high throughput. The length of this beamline is an issue since this impacts on the ability to focus the beam.

Colin Raston then described the needs of the small molecule community and how these will be accommodated on the same ID beamline as described by Jose. Compared to the protein crystallography users this group has a much wider range of interests and requirements. The requirements of this community are still being defined but it appears likely that the microdiffractometer will not be suitable and there is a strong case to use a conventional 4-circle diffractometer. Members interested in contributing to the scientific case are urged to contact Colin at clraston@chem.uwa.edu.au.

Brendan Kennedy (b.kennedy@chem.usyd.edu.au) outlined the plans for the powder - or more correctly polycrystalline diffraction beamline. It is proposed that this beamline will ultimately be installed on a wiggler but for facility start-up in 2007 be installed on a bending magnet. The beamline will house two instruments, the first a high throughput Debye-Scherrer camera and the second a more flexible 6-circle diffractometer suitable for residual stress and GIXD analysis. The six-circle diffractometer will also house an array of analyser crystals suitable for very high-resolution work. The major problem identified with this beamline is the choice of detector on the Debye-Scherrer camera.

Finally, Steve Wilkins (Steve.wilkins@csiro.au) described the proposed SAX beamline. This will be very similar to the instruments at ChemMatCars at APS that a number of SCANZ members will be familiar with. Again the scientific case for this beamline is currently being prepared. The time frame for the design of the beamlines is tight and it is clear that all Australian crystallographers need to consider their requirements at the Australian Synchrotron and let the contact people listed above know what these are.

Brendan Kennedy

TREASURER'S REPORT

Broome 2003

The accounts are presented for the period 1st July 2001 – 31st June 2003. Funds currently held by the Treasurer have increased by 8.7% over this period. Our main expenses are subscriptions to FASTS (~\$800/year) and AsCA (\$480/year). Maslen Scholarships for SCANZ student members to attend conferences have largely been funded from the 1987 Fund as is customary.

SCANZ funds (\$630.98) were used along with a contribution (\$1500) from the Victorian Government Department of Innovation, Industry, and Regional Development to fund Dr Simon Teat of Daresbury Laboratory, UK to attend a workshop held in Melbourne on the Australian Synchrotron Project, where he gave advise on design specifications for the proposed small molecule beamline.

Paul Carr

Location of Funds

	\$
CBA cheque account	12,667.94
CBA Term Dep. matures 9/03 @ 5.2%	47,826.37
CBA Term Dep. matures 12/03 @ 4.3%	23,686.28
Total	\$84,180.59
(c.f. Total June 2001 at Couran Cove	\$77,419.02)

Income

Membership	4,705.90
Bank Interest	1,109.21
AGC Investment maturation	14,707.00
1987 Fund Support for IUCr Geneva	19,000.00
Support for AsCA/SCANZ Broome	14,700.00
Victorian Government, IIR	1,500.00
Total	\$55,722.11

Expenditure

¹ Scholarships for AsCA'01	3,000.00
² Scholarships for IUCr Geneva	17,000.00
³ Scholarships for AsCA'03/SCANZ Broome	12,600.00
FASTS subscriptions	1,617.00
AsCA subscriptions	480.00
Bank Fees and Government charges	179.30
Broome Meeting advances	2,000.00
Transfer to Term deposit	10,000.00
Payment to Simon Teat	2,130.98
Total	\$49,007.28

Notes:

¹AsCA'01 Scholarship Recipients

Rosalie Hocking
Julian Vivian

²IUCr Geneva Scholarship Recipients

Stephen Graham	Lucy Jankova
Kia Wallwork	Vanessa Peterson
Daniel Riley	Trish van der Werff
Lisa Wittick	Eric Chan
Michelle Dunstone	(David Price)

³Broome Meeting Scholarship Recipients

Michael Moylan	Jacqueline Satchell
Andrew Whitten	Pawel Listwan
Roopwant Judge	Jason Schmidberger
Karena Chapman	Greg Halder
Joyanne Kelly	Stephen Graham
Christian Maunders	Mahjooba Sidiqui
Julian Vivian	Geoffrey Kong
(Elizabeth Goodall)	(Eric Chan)
(Corrine Porter)	(Colin Thompson)

1987 Fund

The last twelve months have been difficult and disappointing, the boom of the previous year followed by the subsequent slump, as members are no doubt aware from their own super funds. Shares, valued at \$238k at the time of the Crystal 22 meeting at Couran Cove are now worth \$177k, chiefly impacted by CSL (down from \$47 to \$17) and FCL (down from \$2.45 to \$1.51, the latter offset by good gains in its spin-off BRS, up from \$2.00 to \$3.65). Cash reserves, now subject to diminished interest rates and impacted by Geneva and Broome allocations, have diminished from \$75k to \$55k; we probably need to tighten our belts in future allocations. Professional management is being negotiated to eliminate the complexities of changing trustees.

Allan White

Share Portfolio at 9/9/03

No of Shares	ASX code	Name of Share	Value/ share (cents)	Total value (\$)
7625	ING	ING Industrial Units	171	13,039
7600	BRS	Bristile	365	27,740
717	CBA	Commonwealth Bank	2829	20,284
2000	CSL	Commonwealth Serum Laboratories	1695	33,900
15750	FCL	Futuris	151	23,783
1127	SGW	Sons of Gwalia	296	3,336
11207	WFT	Westfield Trust	334	37,431
1500	WOW	Woolworths	1171	17,565
Total				\$177,078
		Cf 28/6/01		\$238,065

Notes from the**COUNCIL MEETING**

Items from the SCANZ Council Meeting held in Broome during the AsCA'03/Crystal 23 meeting in Broome include:

- Steve Wilkins confirmed that he would coordinate the arrangements for the next Crystal meeting to be held in Victoria. Due to the dates of the AsCA and IUCr meetings, it will probably be either in January/Feb or after Easter 2005 with a possibility of linkage to the Lorne meeting. This will be a stand-alone SCANZ meeting and should attract around 100 members.
- The Treasurer, Paul Carr noted that his report is presented for the year ending June 30 rather than from meeting to meeting and proposed to continue doing this as the next SCANZ meeting will not be until 2005. The next Treasurer's report will be published in the *SCANZ Newsletter*.

FUTURE CONFERENCES

AsCA'04

The Sixth Conference of the Asian Crystallographic Association, AsCA'04, will be held in Hong Kong at the Hong Kong University of Science and Technology from 27-30 June 2004. The committee heads are Prof. Ian Williams (Local Organising Committee) and Prof. Matt Sakata (Programme Committee). Further information can be obtained from the conference website at <http://www.ust.hk/asca04>.

IUCr XX

The twentieth Congress and General Assembly of the International Union of Crystallography will be held in Florence, Italy from 23-31, August 2005 at the Congress Centre. The committee chairpersons are Carlo Mealli (Scientific Program) and Paolo Dapporto (Local Organising Committee). The Congress Centre is located in the very heart of the city, within walking distance of the main tourist attractions and most of the hotels. Further information, including an Interest Form, can be found at the Congress website: <http://www.iucr2005.it>.

CRYSTAL FRAGMENTS

- Chris Chantler (Department of Physics, University of Melbourne) has been promoted to Associate Professor.
- Joanne Etheridge returned to Australia during 2002 to take up the position of Senior Lecturer and Manager of the Electron Microscopy and Microanalysis Facility in the School of Physics and Materials Engineering at Monash University. Since completing her PhD with Alex Moodie in 1993, she has been at the Dept of Materials Science and Metallurgy, Univ. of Cambridge, most recently as a Royal Society University Research Fellow.

SUBSCRIPTIONS

The Treasurer wishes to remind members that annual membership dues for 2004 are to be paid by December 31, 2004. A statement is included in this issue of the *Newsletter*. The amount payable is \$130 for a corporate member, \$25 for a full member and \$7 for a student member, with these discounted to \$100, \$20 and \$5 respectively if payment is made by April 1, 2004. Members who are over 60 years of age at the time subscriptions are due can elect to become Life Members of the *Society* by paying a one-off amount of five times the current (discounted) subscription rate (i.e. \$100).

Paul Carr