Chapter 11

Epilogue

An Environmental Impact Statement.

These days of course, no major development is undertaken without an environmental impact statement. Such bureaucratic concern did not exist in 1950, and indeed the environs of Acton were less than impressive anyway. Most of the area had been cleared for pastoral use, even much of Black Mountain remained treeless into the early twenties until it slowly reverted to bushland. The aerial photograph of April 1953 shows eucalypts (mainly Blakely's Red Gum - *e. blakelyi*) scattered around the developing campus with a substantial stand of them near the present location of the Joint Schools. Australian fauna, except for magpies and currawongs - and the notorious ball-stealing crows on the Federal Golf Club course, were not immediately evident at the ANU or elsewhere. Into the early sixties, a dairy herd grazed on the flats opposite the School, held at bay only by Sullivan's Creek. It was here that the mushrooms, referred to in a *University News*, appeared in incredible abundance after spring and late summer rains. There were only a few rabbits about by the mid-fifties, survivors of the early ravages of myxomatosis, although hares could often be seen loping across the flats in the early morning[1].

Suburban Canberra was little different at first. Few native trees were left where the first northern suburbs of Braddon, Turner, Ainslie and O'Connor gradually became established. Their gardens though introduced the now-frowned upon cotoneasters and firethorns, so that as the years went by they were sometimes visited for short periods during the autumn by parrots that evidently relished the berries. Sightings of them caused no little excitement and comment amongst locals.

All of this changed dramatically during the latter part of the sixties, seemingly the result of a particularly severe drought. Many birds, most strikingly the parrots and cockatoos, moved into Canberra under duress and have stayed ever since, finding the rose buds and fruit trees of suburban gardens and the extensive tree plantings much to their liking. Shortages of hollow logs for nesting sites proved a minor problem. Rosellas adapted readily to use building cavities. Changes around the ANU campus were no less apparent. Landscaping and planting there followed the vagaries of horticultural fashion. The predominance of natives until the sixties was followed by a return to greater tolerance of exotics, before natives again found favour. Even with natives, the early preponderance of eucalypts

and wattles has yielded to new trends, such as the dryland gardens around ANUTECH and the extensive stand of native grasses at the Barrie Drive entrance, and an over-zealous predilection for bottlebrushes. The campus has become a splendid, catholic arboretum with a rich variety of eucalypts and native shrubs, studded with more than enough ornamentals of exotic origin to please those with other tastes.

The School stands amidst elements of all the fashions. Periwinkle and hypericum ground covers "rub

The surviving red gums in the Nuclear Physics area. Though one continues to flourish, the other has had three branches from the subterranean fork, as well as two above ground limbs, removed.

The bucolic surrounds of the northern side of the School in the early days. The two red gums at the right remain (February 2 1959).

shoulders" with Flinders (*a. iteaphylla*) and Snowy Mountains (*a. boormanii*) wattles at the western end of the School. Nuclear Physics has a fine stand of Victorian blue gums (*e. bicostata*) and hakeas, yet saxifrage and variegated lamium were planted in window boxes at the entrance. At the eastern end of the School, in front of the Huxley Building, a once huge bed of native correas (*c. mannii* and *c. backhousiana*) has slowly been enveloped by dwarf juniper ground cover. Low maintenance requirements have overwhelmed patriotic sentiment here as elsewhere.

The original, stately red gums have suffered though. Successive aerial photographs record their demise as the JCSMR building, the Menzies Library and the Joint Schools buildings came into being. Some of those at the western side of the School died, presumably from a combination of age and disease. Two remain between the Nuclear Physics buildings, despite destructive attacks by lerps and lorries, and occasional plagues of sawfly grubs. One of them had the base of its trunk covered to a depth of well over a metre by fill during the early sixties but has survived, though by no means flourished, since then. The other, in much better condition, has been threatened from time to time by ill-conceived musings

relating to extension of the target area of the 14UD accelerator. Fortunately, wiser counsel has prevailed to save what is arguably the finest remaining specimen on campus.

Much of Canberra, and especially the ANU campus, has become a bird-watcher's delight. Huge flocks of sulphur-crested cockatoos, containing hundreds of birds, are a common sight. Galahs, crimson and eastern rosellas, king parrots and gang-gang cockatoos abound. With the lake, water birds became residents as well. Maned ducks and swamp hens have become prolific along the banks of the now-dammed Sullivan's Creek.

During the migrations of spring and autumn, diligent and patient watching reveals the full gamut of the confusing to identify honeyeaters - be they white-throated, black-headed or whatever. Blue wrens are a common sight and sound in the parking area of Nuclear Physics. Bird-feeding trays around the School attract the majority of the parrots and cockatoos, choughs, currawongs, magpies, murray magpies and the wrens with occasional appearances of the rarer yellow rosella, corellas that have strayed from their inland territory and a pair of large, grey currawongs.

In summary then, an extremely favourable environmental impact statement for both the School and the ANU can be filed after the event. Should one have been required in 1950, comparison of it with the situation now would be interesting indeed.

1. Frank Dickson, who later was involved in the erection of the first Cockcroft-Walton accelerator while employed by Philips, lived at 6 Balmain Crescent around 1930. In a letter to Tony Brinkley in 1977, he recalled that:

Amongst those bulrushes (of Sullivan's Creek) we used to go shooting water rats and there were hares in the paddocks. The rabbits we just ignored and it was considered ethical to shoot hares on the jump with a 0.22 rifle. Mostly they got away. The other kind of game was nurses from the hospital and the hunting ground for them was among those pine trees behind where Geophysics now is.

One of the more colourful visitors to a feeding tray at the School. Though flocks of gang-gang cockatoos are often seen, they usually shun feeding trays.

Appendix I

Foundation Members of the ANU appointed to the Research School of Physical Sciences

JOHN STANLEY GOODEN	1/6/48
JOHN LLOYD SYMONDS	27/6/48
SIDNEY RAYMOND CORNICK	1/10/48
MAURICE PERCY EDWARDS	1/10/48
LEONARD ULYSSES HIBBARD	1/1/49
DAVID MILLER HUGH WALKER	19/1/49
RONALD PURCHASE	1/7/49
KENNETH STANLEY CHAMPION	1/8/49
FREDERICK CHARLES BARKER	1/10/49
DAVID BARRY SHENTON	1/10/49
JOHN WILLIAM BLAMEY	1/1/50
ALICE MAY RICE	1/1/50
RICHARD GOLDBERG	3/4/50
MARCUS LAWRENCE OLIPHANT	1/7/50
RICHARD VAN DE RIET WOOLLEY	5/7/50
ERNEST WILLIAM TITTERTON	1/9/50
CLAIRE RUSSEL GOODEN	11/9/50
PETER EDWARD DARLING	4/10/50
DAVID HENRY HAWKESWORTH	1/11/50

Those holding ANU travelling scholarships (p149) could perhaps be appended to this list.

Appendix II

The Research School of Physical Sciences

DIRECTOR
Marcus Laurence Elwin Oliphant, B.Sc. (Adel.), M.A., Ph.D. (Cantab.), LL.D. (St. Andrews), D.Sc. (Melb., Toronto, Belf., Birm. and N.S.W. Univ. Tech.), F. Inst.P., F.R.S.

ASTRONOMY
Professor: Richard van de Riet Woolley, M.Sc. (Cape Town), M.A., Ph.D. (Cantab.).
Research Associates: Arthur Robert Hogg, D.Sc. (Melb.), F.Inst.P.
Sydney Charles Bartholomew Gascoigne, Ph.D. (Bristol).
Research Fellow: Gerard Henri de Vaucouleurs, L. es Sc. (Paris), D.U.P.

GEOPHYSICS
Professor: John Conrad Jaeger, M.A. (Cantab.), D.Sc. (Syd.), F.Inst.P.
Fellow: Germaine Anne Joplin, B.A., D.Sc. (Syd.), PhD. (Cantab.)

NUCLEAR PHYSICS
Professor: Ernest William Titterton, Ph.D., Dip.Ed. (Birm.).
Fellow: Robert Sharp Wilson, B.A. (Cantab.), Ph.D. (Liverpool).
Research Fellow: Leonard Ulysses Hibbard, B.Sc., B.E. (Syd.), M.Sc., Ph.D. (Birm). John William Blamey, M.Sc. (Melb.). Edward Kenneth Inall, B.Sc., B.E. (Syd). Peter Bradley Treacy, M.Sc. (Syd). William Irving Berry Smith, B.Sc. (Adel.), Ph.D. (Birm.).

RADIOCHEMISTRY
Reader: Frank Scarf, M.Sc. (Birm).

THEORETICAL PHYSICS
Research Fellow: Frederick Charles Barker, M.Sc. (Melb.), Ph.D. (Birm).

RESEARCH ENGINEER
David Barry Shenton, B.Sc. (Lond.)

LABORATORY MANAGER
Ronald Purchase

CHIEF TECHNICAL OFFICER
Sidney Raymond Cornick

October 1952

Appendix III

PhD Graduates from R.S. Phys S. and R.S. Phys S.E. 1950-1996

The compilation was obtained from ANU Annual Reports (1951-1994) and R.S. Phys S.E. Annual Reports (1970-1995), cross-checked against a Graduate School data base (1994-1980) and Graduation Programs (1972-1996). A second Graduate School list of graduates by field for (1969-1980) was also used.

As new Schools/reporting units emerged, graduates from the departments involved have been included for the first year after separation from the School (ie RSES in 1974; MSSSO in 1986; SMS (Maths) 1989 and RSISE in 1994).*

The list does not include PhD awards

• based on research in the School where the designated supervisor was a staff member of the Faculties (SGS)

• based on research in the School by external users

• resulting from ANU Scholarships for study overseas (1948-53). Six of these were associated with the School - BUCKINGHAM M J (Theoretical Physics, Bristol), BUTLER S.T (Theoretical Physics, Birmingham), CARVER J H (Nuclear Physics - Cambridge), HURST C A (Theoretical Physics, Cambridge), PRESCOTT J R (Nuclear Physics, Oxford) WRIGHT I F (Nuclear Physics -Glasgow).

Assembly of the list was not straightforward. ANU Annual Reports 1954-1972 list all graduates by field and distinguish between IAS and SGS. (One exception was found - two graduates who received degrees on 13/7/62 were not included in the annual report).

Thereafter, only an alphabetical list of all PhD graduates without field is given - except in 1991 when the list was omitted. R.S. Phys S.E. annual reports until very recent times are remarkably unhelpful. Most Departments and units did not include students in the staff list and many made no reference to theses presented nor those accepted. The Graduate School data base has detailed information on the periods students were on course and the outcome of theses presented, but does not include year of graduation. Limited resources have prevented extension of the listing to students earlier than about 1980. Finally, the only collection of Graduation Programs located thus far spans the period 1972-1996 (with the exception of one program).

At an early stage of this compilation, a "complete" list of PhD graduates on the convocation roll was obtained. Many omissions were quickly apparent. It turned out that graduates were removed from the list if mail to them was returned with "address unknown". Though it is claimed that this practice was stopped in 1988, the one name checked after 1988 was missing!

Belatedly, it was found that ANU calendars up to 1969 listed all graduates of the University and provided thesis titles for PhD graduates each year. Subsequently, a new format omitted all such information. It would appear that the calendars up to 1969 are more reliable than the annual reports.

* *Application of this simple rule reduces the total number of graduates. For example, one graduate of MSSSO actually graduated in 1990 but was off-course from 1984. There are undoubtedly other such cases.*

PRZYBYLSKI A	Astronomy	1954
GUM Colin	Astronomy	1955
BECK Alan E	Geophysics	1957
BOYLE Alan J F	Nuclear	1958
HAY Halcro J	Nuclear	1958
RIVIERE Anthony C	Nuclear	1958
RODGERS Alexander W	Astronomy	1958
SNELLING Norman J	Geophysics	1958
LOKAN Keith H	Nuclear	1959
MORTON A H	Particle Physics	1959
OPHEL T R	Nuclear	1959
REID A F	Radio Chemistry	1959
CARTER E Keith	Geophysics	1960
GEMMELL Donald S	Nuclear	1960
GODBOLE E W	Radio Chemistry	1960
WALKER Kenneth R	Geophysics	1960
WALPOLE B P	Geophysics	1960
GREEN Ronald	Geophysics	1961
LANG Donald W	Theoretical	1961
McDOUGALL Ian	Geophysics	1961
MAINSBRIDGE Bruce	Nuclear	1961
SMELLIE Donald W	Geophysics	1961
TAYLOR Ray B	Nuclear	1961
BELL R A	Astronomy	1962
BRADFORD Elizabeth†	Theoretical	1962
COOTE Graham E	Nuclear	1962
GREGORY Alan G	Nuclear	1962

PURSER Ken H	Nuclear	1962
SEYMOUR P W	Theoretical	1962
WEIGOLD Erich	Nuclear	1962
WHITEOAK J B	Astronomy	1962
BAILEY Graham M	Nuclear	1963
FALCONER Ian S	Particle Physics	1963
SHERWOOD T Raymond	Nuclear	1963
SYMONS Geoffrey D	Nuclear	1963
CLEARY J R	Geophysics & Geochemistry	1964
DANZIGER I J	Astronomy	1964
EARWAKER Lyndsay G	Nuclear	1964
FAULKNER Don J	Astronomy	1964
GRAHAM J A	Astronomy	1964
GREENLAND L P	Geophysics & Geochemistry	1964
GROSS K A	Geophysics & Geochemistry	1964
HOWARD L E	Geophysics & Geochemistry	1964
JENKIN John G	Nuclear	1964
LAWERGREN Bo T	Nuclear	1964
MITCHELL Ian V	Nuclear	1964
SHER D	Astronomy	1964
SHOBBROOK R R	Astronomy	1964
TARLING D H	Geophysics & Geochemistry	1964
BAXTER Rodney J	Theoretical	1965
BHAVILAI R	Astronomy	1965
BOESEN R S	Geophysics & Geochemistry	1965
DREIZLER Reiner M	Theoretical	1965
DUNWOODY Martin J	Maths	1965
JORY Rodney L	EIDU	1965
LAWRENCE George P	Nuclear	1965
PIDGEON R T	Geophysics & Geochemistry	1965
SASS J H	Geophysics & Geochemistry	1965
BRADLEY E F	Maths	1966
BRIDEN J C	Geophysics & Geochemistry	1966
BROOKS C	Geophysics & Geochemistry	1966
BURNS R G	Maths	1966
COHEN H A	Theoretical	1966
GAUDRY G I	Maths	1966
GUPTA N D	Maths	1966
KOEHLER J A R	Astronomy	1966
KOLBE P	Geophysics & Geochemistry	1966
LYALL K D	Geophysics & Geochemistry	1966
MORGAN J W	Geophysics & Geochemistry	1966
PATTERSON J R	Nuclear	1966
PRICE R M	Astronomy	1966
ROY M K	Theoretical	1966
SPEDDING P L	Diffusion Research	1966
VISVANATHAN N	Astronomy	1966
WARD M A	Maths	1966
YOUNG P G	Nuclear	1966
COSSEY P J	Maths	1967
GAGEN T M	Maths	1967
HOWE A	Maths	1967
McINTOSH A I	EIDU	1967
MARTIN I D	Geophysics & Geochemistry	1967
POATE J M	Nuclear	1967
TUREK A	Geophysics & Geochemistry	1967
WAN FOOK SUN	Maths	1967
BESSELL M S	Astronomy	1968
BOFINGER V M	Geophysics & Geochemistry	1968
BRAY K H	Nuclear	1968
BROOKS M S	Maths	1968
BRYCE R A	Maths	1968
BYDDER E L	Engineering Physics	1968
CLARK G J	Nuclear	1968
EKERS R D	Astronomy	1968
GREEN T H	Geophysics & Geochemistry	1968
GUPTA Chander K	Maths	1968
GUPTA S C	Theoretical	1968
HARASYMIV S R	Maths	1968
HOSKINS E R	Geophysics & Geochemistry	1968
HUANG F C P	Nuclear	1968
HYLAND A R	Astronomy	1968
HYNDMAN R D	Geophysics & Geochemistry	1968
IVANOVICH Mira	Nuclear	1968
KERR George W	Nuclear	1968
LAMBERT I B	Geophysics & Geochemistry	1968
MENZIES J W	Astronomy	1968
MORRIS J M	Nuclear	1968
PORATH H	Geophysics & Geochemistry	1968
SOWERBY B D♠	Nuclear	1968
STEWART A G R	Maths	1968
SULLIVAN D J	Nuclear	1968
WATTS R O	Diffusion Research	1968
WILLIAMS K L	Geophysics & Geochemistry	1968
AITCHISON PW	Maths	1969
AKTAR M Y	Engineering Physics	1969
BEDFORD Don M M	Theoretical	1969
BOURKE W M	Nuclear	1969
BROOKE A L	Astronomy	1969
CHANG KOK WAH	Maths	1969
CHAUT C	Maths	1969
CORDS H	Nuclear	1969
CRAWFORD A R	Geophysics & Geochemistry	1969
ELLIOTT R V	Nuclear	1969
ELTON C C	Maths	1969
EVANS M E	Geophysics & Geochemistry	1969
FAROUQUI I H	Maths	1969
FARQUARSON R B	Geophysics & Geochemistry	1969
GULSON B L	Geophysics & Geochemistry	1969
HAIN Donna M	Astronomy	1969
HARRIS Beverley J	Astronomy	1969
KEAN Douglas C	Nuclear	1969
NEWELL E B	Astronomy	1969
O'CALLAGHAN J F	Engineering Physics	1969
OSMAN Chris H	Nuclear	1969
RANSOM D M	Geophysics & Geochemistry	1969
ROSENGREN K L	Geophysics & Geochemistry	1969
SHAFAAT A	Maths	1969
STIPP J J	Geophysics & Geochemistry	1969
TROFIMENKOFF N N	Theoretical	1969
UNDERWOOD R	Geophysics & Geochemistry	1969
BLACK L P	Geophysics & Geochemistry	1970
BRADY J M	Maths	1970
CAWTHRON E R	Physics of Ionized Gases	1970
COOP Ken L	Nuclear	1970
COOPER J A	Geophysics & Geochemistry	1970
CREASER R P	EIDU	1970
EDMOND J M	Geophysics & Geochemistry	1970
HELLSTROM Jan O V	Nuclear	1970
KLEEMAN J D	Geophysics & Geochemistry	1970
KUMAR N	Theoretical	1970
LEWIS B M	Astronomy	1970
MACLEOD I D G	Engineering Physics	1970
NORRIS J E	Astronomy	1970
PRICE J F	Maths	1970
SCHMIDT E G	Astronomy	1970
WALL J V	Astronomy	1970
WALSH Eleanor W	Theoretical	1970
WALTERS R F C	Maths	1970
WILLIAMS N H	Maths	1970
BOWERS D L	Engineering Physics	1971
CARTER K W	Nuclear	1971
CLEMENT S W J	Geophysics & Geochemistry	1971
DELIC George	Theoretical	1971
DJALOEIS A	Nuclear	1971
GROVES J R J	Maths	1971
HENSEN B J	Geophysics & Geochemistry	1971
LOCKHART J A	Astronomy	1971
MAKAN A R V	Maths	1971
PAGE R W	Geophysics & Geochemistry	1971
POPE R L	Theoretical	1971

POWELL D L	Nuclear	1971
ROBERTSON A G	EIDU	1971
ROSALKY D M	Nuclear	1971
SCOTT S D	Maths	1971
SMITH G B	Theoretical	1971
TACON D G	Maths	1971
TUCKER S N	Nuclear	1971
WATSON R D	Astronomy	1971
WILSON C J L	Geophysics & Geochemistry	1971
WORDEN J M	Geophysics & Geochemistry	1971
WRIGHT C	Geophysics & Geochemistry	1971
BARBER J P	Engineering Physics	1972
CAELLI W J	Nuclear	1972
CARRIVEAU G W	Nuclear	1972
CHADWICK J M	Maths	1972
ETHERIDGE M A	Geophysics & Geochemistry	1972
FISHER R A	Diffusion Research	1972
FREDERIKSEN J S	Theoretical	1972
GILL J B	Geophysics & Geochemistry	1972
GRAHAM Ian G	Nuclear	1972
GRAY C M	Geophysics & Geochemistry	1972
HEARNSHAW J B	Astronomy	1972
IRVING A J	Geophysics & Geochemistry	1972
LEONG Y K	Maths	1972
LUCK G R	Geophysics & Geochemistry	1972
McCAUGHAN D J	Maths	1972
McCOOL M A	Diffusion Research	1972
MARTIN P	Nuclear	1972
MAXWELL P C	Engineering Physics	1972
O'BRIEN G C	Maths	1972
REEVES-SAUNDERS R	Engineering Physics	1972
ROBERTSON J W	Astronomy	1972
ROBERTSON W J	Theoretical	1972
ROBSON R E	Theoretical	1972
SRINIVASACHARYA K G	Engineering Physics	1972
VAN MEGAN W J J	Theoretical	1972
VEIZER J	Geophysics & Geochemistry	1972
WATSON R B	Nuclear	1972
WELLMAN P	Geophysics & Geochemistry	1972
BENNETT D J	Geophysics & Geochemistry	1973
BRADLEY G M	Geophysics & Geochemistry	1973
BRUNNER A M	Maths	1973
CEZUS F A	Maths	1973
CHAPPELL B A	Geophysics & Geochemistry	1973
DAVIS J R	Nuclear	1973
HARRIS L F	Maths	1973
KHAN M R	Geophysics & Geochemistry	1973
KNIGHT J H	Maths	1973
LLOYD J W	Maths	1973
MERRILL Nolan H	Nuclear	1973
MORARIU V	Diffusion Research	1973
NAGORCKA Barry N	Nuclear	1973
NAJAM N R	Nuclear	1973
SARKIES K W	Applied Maths	1973
SILCOCK H L	Maths	1973
SIMPSON D W	Geophysics & Geochemistry	1973
SOMMERLAD E A	Geophysics & Geochemistry	1973
STOKES A N	Maths	1973
TAMMEMAGI H Y	Geophysics & Geochemistry	1973
THOMPSON John V	Nuclear	1973
WOOD G R	Maths	1973
WORTHINGTON M H	Geophysics & Geochemistry	1973
YEO KOK CHYE	Maths	1973
BARBETTI M F	Geophysics & Geochemistry	1974
BLOOM W R	Maths	1974
BOREHAM B W	Engineering Physics	1974
BUTCHER H R	Astronomy	1974
DAVY J L	Maths	1974
DOOBOV Mervyn H	Nuclear	1974
FLOOD J M	Maths	1974
FOOTE Gordon S	Nuclear	1974
FOX C D	Maths	1974
GARDNER Phillip R	Nuclear	1974
GONCZ J H	Engineering Physics	1974
GROVES S C	Maths	1974
HOVEY G R	Engineering Physics	1974
ILLINGWORTH G D	Astronomy	1974
KING D W	Engineering Physics	1974
LAWRENCE T J	Engineering Physics	1974
MILLOY H B	EIDU	1974
PRIDE S J	Maths	1974
SIEGRIST M R	Engineering Physics	1974
SOFIELD Carl J	Nuclear	1974
WILSON K	Engineering Physics	1974
WOOD P R	Astronomy	1974
BORSARU M	Nuclear	1975
BROOK T G	Maths	1975
CHAN D Y C	Applied Maths	1975
HESTERMAN L J	Maths	1975
HUNTER R H	Maths	1975
MACLEAN Ian C	Nuclear	1975
PARKINSON David M	Nuclear	1975
SANDERS J W	Maths	1975
YIP W K*	Solid State Physics	1975
WHITE L R	Applied Maths	1975
BARBOPOULOS Leon O	Nuclear	1976
BARNES C J	Applied Maths	1976
BENNETT L A	Nuclear	1976
CARDEN P O	Engineering Physics	1976
CLEARY M N	Astronomy	1976
GINGOLD R A	Astronomy	1976
KELLAND S B	Theoretical	1976
NEWTON C S	Nuclear	1976
RICHARDSON D D	Theoretical	1976
SAMMUT R	Applied Maths	1976
SHAH G A	Solid State	1976
AHMAD S S	Theoretical	1977
ANIOL K A	Nuclear	1977
CARPENTER D J	Applied Maths	1977
CHUN M K	Astronomy	1977
ESAT M T	Nuclear	1977
FRAWLEY A D	Nuclear	1977
GARRETT Claire	Nuclear	1977
HUTCHINSON I H	Engineering Physics	1977
LEE S W	Astronomy	1977
MCINTYRE P D	Applied Maths	1977
MOULD J R	Astronomy	1977
POLLACCO E C	Nuclear	1977
RHYMES T O	EIDU	1977
ROBINSON P J	Maths	1977
ROUTCLIFFE P	Solid State	1977
SLOCOMBE M G	Nuclear	1977
SRIVASTRAVA SS	Solid State	1977
WILLIAMS I S	Solid State (Director's Unit)	1977
BURRELL J F	Astronomy	1978
DOOLEY A H	Maths	1978
DACOSTA D S	Astronomy	1978
DUNIEC J T	Applied Maths	1978
NGHE T C	Maths	1978
REID I D	EIDU	1978
TALLENTS G J	Plasma	1978
VANDENBERG D A	Astronomy	1978
WALKER P M	Nuclear	1978
WHITE I A	Applied Maths	1978
WRIGHT C C	Applied Maths	1978
AHMAD S	Solid State	1979
ALBERT D B	Plasma	1979
ANKIEWICZ A	Applied Maths	1979
COTTRELL P L	Astronomy	1979
EDWARDS B P	Engineering Physics	1979
KOO W K	Theoretical	1979
MARSHALL R A	Engineering Physics	1979

MEHROTRA R	Theoretical	1979
SAEGUSA N	Solid State	1979
TSANG SK	Theoretical	1979
WARNE D K	Plasma	1979
WINKLER C	Applied Maths	1979
BALDOCK R A	Theoretical	1980
BARRELL K F	Applied maths	1980
BARRELL S L	Astronomy	1980
BEUNEN J A	Applied Maths	1980
BRUNSKILL I H	Solid State	1980
DELPIZZO V	Engineering Physics	1980
DUUS A L	Astronomy	1980
GRIERSMITH D	Astronomy	1980
HAIDER A F M Y	Solid State	1980
HASAN Z U	Solid State	1980
HOWES B D	Solid State	1980
HUGHES B D	Applied Maths	1980
SCULLEY M J	Applied Maths	1980
SUMMERSIDE P	Theoretical	1980
WOLFE J A	Applied Maths	1980
CARNIE S L	Applied Maths	1981
CLARK P D	Nuclear	1981
FERDOUS Nasima	Theoretical	1981
FITZPATRICK P	Maths	1981
HOW G A	Maths	1981
HURLE R I	Diffusion Research	1981
SCHOONEVELDT M G	Maths	1981
SODERBAUM J	Nuclear	1981
STERLING L S	Maths	1981
CAMPBELL M C W	Applied Maths	1982
CONLEY D	Nuclear	1982
COUCH W J	Astronomy	1982
HINDE David J	Nuclear	1982
HUSSEY C D	Applied Maths	1982
JARVIS B J	Astronomy	1982
MCGREGOR P J	Astronomy	1982
O'KANE Mary	Engineering Physics	1982
SRINIVASAN K	Diffusion Research	1982
YAGER R I	Maths	1982
BINETTE I	Astronomy	1983
BURDEN C J	Theoretical	1983
CARIGNAN C	Astronomy	1983
MATIC T	Applied Maths	1983
PATERSON I	Engineering Physics	1983
PORSCH J	Solid State	1983
QUINN P J	Astronomy	1983
REIMERS J R	EIDU	1983
SADLER E M	Astronomy	1983
SMITH G H	Astronomy	1983
SRINIVASAN B	Solid State	1983
WALKER G R	Applied Maths	1983
WILSON I R G	Astronomy	1983
ZARRO D M	Astronomy	1983
BARKLEY H J	Plasma	1984
BLACK R J	Applied Maths	1984
CASSIDY R A	EIDU	1984
CHRISTENSON H K	Applied Maths	1984
COLEMAN C S	Astronomy	1984
de LACEY E H B	Applied Maths	1984
GROCKE M A	Engineering Physics	1984
HILLIER D J	Astronomy	1984
JAYASURIYA K A K D D	Solid State	1984
PICKLES A J	Astronomy	1984
RATNATUNGA K U	Astronomy	1984
SMITH R M	Astronomy	1984
BEREFORD-SMITH B	Applied Maths	1985
BYRNE A P	Nuclear	1985
CHARITY R J	Nuclear	1985
CULLEN D J	Maths	1985
DASGUPTA S	Systems Engineering	1985
DUGGAN J P	Maths	1985
FOX M W	Astronomy	1985
HOTCHKIS M A C	Nuclear	1985
KILLEEN N E B	Astronomy	1985
NUGENT K A	Engineering Physics	1985
SKINNER I M	Applied Maths	1985
VERMEER W J	Nuclear	1985
BERZINS L	UVP	1986
COKER D F	EIDU	1986
FORRESTER P J	Theoretical	1986
MARRA J	Applied Maths	1986
MASOOD-UL-ALAM A K M	Maths	1986
PETROVIC Z L J	EIDU	1986
PORTEOUS R K	Plasma	1986
RUHL F F	Applied Maths	1986
SILVERSMITH A	Solid Sate	1986
VOHRALIK P F	EIDU	1986
ADAMS David	Maths	1987
BOKHORST Josephus J M	Nuclear	1987
DANG T B	Maths	1987
GARDNER Henry J	Theoretical	1987
GARTH Stephen J	Applied Maths	1987
GREEN Michael	Systems Engineering	1987
MAREELS Iven M Y	Systems Engineering	1987
MOREY Ian J	Plasma	1987
PERRY Andrew J	Engineering Physics	1987
BERTILONE Derek C	Applied Maths	1988
BOUGHTON Clive V	AMPL	1988
GYAPONG Godfrey J	Nuclear	1988
KADIMAN K	Systems Engineering	1988
MACKERRAS Paul	Systems Engineering	1988
MADDEVER Richard A M	Engineering Physics	1988
MICHAEWIEZ Marek T	Theoretical	1988
O'BRIEN Edward A	Maths	1988
PARKER Ritchie D	Theoretical	1988
VATARESCU Andrei	Applied Maths	1988
ALLTON Christopher R	Theoretical	1989
ATTARD Phil J	Applied Maths	1989
HALL Michael J W	Theoretical	1989
HENRY Wanda M	Applied Maths	1989
HUME LEIGH R	Maths	1989
KENNEDY R A	Systems Engineering	1989
LIU Y	Systems Engineering	1989
McINTOSH Robert L	Maths	1989
MIKLAVCIC Stanley J	Applied Maths	1989
MUSUMECI Philip C V	Systems Engineering	1989
ORR Nigel A	Nuclear	1989
OWCZAREK A L	Theoretical	1989
PARKER Philip J	Systems Engineering	1989
REDDY Narla R S	Solid State	1989
STEVENSON Andrew J	Applied Maths	1989
TAY Teng T	Systems Engineering	1989
XIA Lize	Systems Engineering	1989
ZHOU Bing B	Computer Science	1989
BARNES Ian S	Applied Maths	1990
BRYANT Gary W R	EIDU	1990
COOPER Gary J	Plasma/Theoretical	1990
ENGLAND J P	AMPL	1990
HOLLIDAY Keith	Systems Engineering	1990
LIM Cheryl S L	Nuclear	1990
NAZIKIAN Rafi	Plasma	1990
PARKER John L	Applied Maths	1990
PARR Judith M	Computer Science	1990
PRASAD Surendra B	Engineering Physics	1990
SHI Xuehua	Plasma	1990
STANDISH Russell K	Theoretical	1990
STRADZINS Peter E	Computer Science	1990
TELFORD Andrew J	Systems Engineering	1990
YAN Wei-Yong	Systems Engineering	1990
ZHENG Xue-Heng	Applied Maths	1990

ALLEN T J	Theoretical	1991
BARK R A	Nuclear	1991
FRATER M R	Systems Engineering	1991
KAHN M H	Computer Science	1991
LESTONE J P	Nuclear	1991
VENDER D	Plasma	1991
YUNG C M	Theoretical	1991
ZHU P	Plasma	1991
BANNISTER P	Energy Research	1992
CLERMONT F	Computer Science	1992
CRISAFULLI S	Systems Engineering	1992
CUI C	Plasma	1992
DUCKER W A	Applied Maths	1992
ER M J	Systems Engineering	1992
FOGDEN A S	Applied Maths	1992
HE X F	Laser	1992
JAMES Ben	Systems Engineering	1992
KOOTSOOKOS P J	Systems Engineering	1992
KRISHNAMURTHY V	Systems Engineering	1992
McILHAGGA W H	Optical Science	1992
PLETZER A	Theoretical	1992
PULFORD G W	Systems Engineering	1992
RUTLAND M W	Applied Maths	1992
HILL P C	AMPL	1993
IRLICHT L S	Systems Engineering	1993
LADOUCEUR F	Optical Science	1993
LOEWENHARDT P K	Plasma	1993
LOVEGROVE K M	Energy Research	1993
PAICE A D B	Systems Engineering	1993
PERKINS J E	Systems Engineering	1993
PETRAVIC M	EME	1993
RADLINSKA E Z	Applied Maths	1993
ROWLAND R D	Optical Science	1993
TRAN H T	Optical Science	1993
WANG Y	Laser	1993
ENNIS-KING J P	Applied Maths	1994
FLETCHER P	Computer Science	1994
GULLEY R	AMPL	1994
JAATINEN E A	Laser	1994
OASA H	Computer Science	1994
RAN S	Computer Science	1994
RAO Z	EME	1994
SENDEN T	Applied Maths	1994
STAUDTE D S	Theoretical	1994
WANG K	Theoretical	1994
WEI J Xin	Nuclear	1994
WESSEN K P	Theoretical	1994
ZANG Z	Systems Engineering	1994
ATAI J	Optical Science	1995
BOFINGER D	Theoretical	1995
BOONYARITH T	Laser	1995
DAVIDSON P M	Nuclear	1995
LEMMON R C	Nuclear	1995
MCGRATH K M	Applied Maths	1995
PIERUSCHKA P W	Applied Maths	1995
VANCE R W C	Optical Science	1995
WANLESS E	Applied Maths	1995
WEI C	Laser	1995
YANG X	Optical Science	1995
ZHANG B C	Plasma	1995
ANDERSSEN S S	Nuclear	1996
DAI X-J	Plasma	1996
DANIEL D J	Theoretical Physics	1996
HURN J M	AMPL	1996
JACKSON D J C	Theoretical Physics	1996
LANE G	Nuclear	1996
LI G	EME	1996
MORTON C R	Nuclear	1996
OH I-K	Theoretical Physics	1996
SELLARS M J	Laser	1996
SHEN Y	AMPL	1996
SHEPPARD A P	Optical Science	1996
SMITH B S	Plasma	1996
TOH T-C	Theoretical Physics	1996
TUMLOS R B	Plasma	1996
ZHANG X	Applied Maths	1996

† Does not appear in the ANU Annual Report

*Known in Solid State as K Y Wong

♠Co-winner of the Australia Prize 1992

Appendix IV

SUMMARY OF SCHOOL RECORDS

ANU Annual Reports

The format, content and style have varied greatly over the years. Inexorably, less and less useful information has become embedded in increasingly extensive exercises of graphic design. The evolution is briefly:

1950-1961
Complete School and Department annual reports with staff lists.

1962-1964
Condensation of School reports to a brief summary. Staff lists omitted. A trend to glossiness and increased use of photographs.

1965-1972
A relapse to a more austere format, though staff lists were still omitted and only summary School reports of varying length given.

1973-1996
The return to a glossy format of considerably less value to would-be historians.

The Public Relations Unit in Balmain Crescent has a complete set of ANU Annual Reports. The library in Nuclear Physics has 1956-1964, 1972 and 1974-1993.

RSPhysS(E) Annual Reports

It would seem that separate issue of School Reports began in 1968, presumably in response to the condensation that had occurred in the ANU Reports. Predictably, a similar pattern of development ensued, from complete section reports to later condensation, along with more photographs and gloss.

1968-1980 A collation of complete section reports, generally with an introductory overview and summary.

1981-1995 Section reports much condensed to interest "the general reader". The use of gloss and colour gradually developed, although considerably more supplementary information has been added. In particular, School Services staff are listed, beginning in 1981.

The Director's office has a complete set from 1968-1995. The library in Nuclear Physics has a complete set, except for 1970.

Departmental Annual Reports

Until 1981, the reports of all School sections are contained in full in the School Annual Report. Thereafter some groups, though not all, produced independent reports to supplement the condensed information within the School Reports. No attempt has been made to establish the existence and whereabouts of these latter reports.

Nuclear Physics has issued a separate report since 1963, probably doing so initially because of the change of format of the ANU reports. Early reports were duplicated on foolscap and then A4 using the dreaded stencils, until better reproduction techniques became available. A new format introduced in 1976 has been maintained since then.

A complete collection from 1963-1995 is available in the Nuclear Physics Library.

Advance - the quarterly newsletter of the School

A complete set has been assembled by Gayle Samuel. The first issue of *Advance* was in the Spring of 1982.

A Submission to the Review Committee, RSPhysSE January 1 1995

A useful compendium of School activities and recent statistical information.

Photographs

Many of the early photographs of the ANU were taken by staff, in particular Bill Pedersen, of the News and Information Bureau, that later was absorbed into the Australian News and Information Service. It would seem that ANIS no longer exists.

Photographs of the ANU were included in two series - the UN series relating to the ANU specifically and the L series of general Australia-wide photographs. It is likely that the UN series negatives were handed to the ANU at various times. A photocopy of the negative register of the UN series for the period between 1950 and February 1969 was obtained from ANIS in 1984. The register is brief in detail - for example, negative #24 is described as "Physics (hole)" and #'s 48-54 as "University Building". No dates are given prior to negative #55 of May 26 1951.

Negatives of the L series are held by Australian Archives. Tony Brinkley has identified many of them in detail, though much work remains to com-

plete the task. A copy of his list of L series negatives and the UN series register are part of Nuclear Physics records.

Departmental photograph collections appear to vary from extensive to none at all. In particular, Nuclear Physics has complete records and files of all photographs, including line diagrams for publications and presentations, from 1951 until about 1983. A register was kept meticulously, recording details and the requisitioner, but completely undated until 1973. All negatives are filed and prints of them likewise in both serial order and by category.

Thereafter, the system lapsed so that reliance has to be placed on personal collections for more recent photographs.

Appendix V

Photograph Sources

Save for the photograph of Prime Minister Chifley laying the School foundation stone and personal material, all of the images used were obtained by electronically scanning existing prints (originals, copies or published versions) from part of the University collection. Included are photographs commissioned on behalf of the School or the ANU from both ANU and external photographers, as well as those taken by School staff in the course of their duties. In the former category, most of the material stems from the former News and Information Bureau, and from the *ANU Reporter*, School and ANU annual reports and the School publication, *Advance*, for which ANU photographers were responsible. Wherever possible, either the photographer and/or the source of the material is identified in what follows. Both thanks and apologies are extended to those contributors who could not be named.

Title Page

Sir Mark Oliphant	News & Information Bureau January 1955

Introduction

School in 1996	Tim Thompson

Chapter 1
Genesis of a University and a Research School

Title Page	Australian Archives (News & Information Bureau negative L37006, A1200 series, J. Lazern)

The photograph is one of the three foundation ceremonies held that day. In all three, a building worker, Wallace Robinson, is holding the chain of the hoist with a relieving foreman, Harry Randall, next to him.

The remainder are all News and Information photographs except for:-

Mick Cornick	Tony Brinkley
"The Microscope Girls"	Tony Brinkley
The Cockcroft Building as of February 14 1952	Fred Barker
The accelerator wing as of February 14 1952	Fred Barker
The newly-completed Chifley Building	Fred Barker

Chapter 2
The Big Machine

All photographs were taken by the News and Information Bureau except for:

Model of the 10.6 GeV accelerator (1960)	Ray Spear
Construction of the cyclotron	Supplied by Ken Inall
Foundation of the magnet and the Model	Taken from Blamey, J.W. Proceedings of the CERN Symposium (1956) 344.

Chapter 3
A Changing School

Title Page	*Canberra Times* photograph taken by Graham Troy
Historical perspective	The original computer drafting was done by Gavin Gilmour. Later, it was modified and updated by Graeme Cornish.
Ted Ringwood	Supplied by Mervyn Patterson
The Neumanns	Supplied by Mike Newman
Siding Spring	ANU Annual Report 1963
The IBM 1620	Supplied by Brian Robson
The Tokamak	ANU Annual Report 1977
Group from Particle Physics	Supplied by Roma Blamey
Rail gun (2)	Supplied by Ken Inall
White Cliffs array	Supplied by Ken Inall, taken by M.P. Thompson
The Link Building	Tim Thompson

Chapter 4
New Fabrics & Facades

Rock Mechanics Laboratory	ANU Annual Report 1958
Tandem Building	Tony Brinkley
Aerial view	News & Information Bureau
Nuclear Physics Building	John Jenkin
Extensions	Tony Brinkley
Cockcroft fire (2)	Trevor Ophel
View from Black Mountain	Gerald Clarkson
Solar Observatory	Fred Barker
Mathematics Building	ANU Annual Report 1963
14UD/tank/tower series	Tony Brinkley, except for July 19 1972 - John Harrison and the completed tower - Trevor Ophel. (The aerial view of July was taken from the crane bucket. Brinkley, for once lacking courage, trusted his camera to Harrison.)
Enge spectrometer	Tony Brinkley
Roof-top view	Tim Thompson

Chapter 5
Underlying Strength

Title page	News and Information Bureau
Boring mill	Supplied by Ken Inall
Tripod leg	Tony Brinkley
Group photograph -Engineering Physics	Supplied by Ken Inall
Group photograph -Electronics	Supplied by Tony Cullen

Chapter 6
An Essential Function

Title page	Supplied by John Jenkin
Summer School group	Supplied by Brian Robson, taken by IRU

Chapter 7
The Accelerators of Nuclear Physics

Title page	Alan Reid
The 1.2 MV Cockcroft-Walton	Tony Brinkley
The 600 kV Cockcroft-Walton	News & Information Bureau
The 33 MeV electron synchrotron	News & Information Bureau
Arrival of the EN tandem	Peter Treacy
Pressure vessel inside building	Tony Brinkley
The EN tandem assembly “crew”	Tony Brinkley
Opening of the EN tandem (2)	News & Information Bureau
The EN Tandem	Tony Brinkley
The control room	Tony Brinkley
The 26 MeV cyclotron (2)	Tony Brinkley
Interior of the 14UD	Tony Brinkley
Prime Minister Whitlam at the 14UD opening	Supplied by Ray Spear
The 14UD tower	Ted Richards
Herb and Titterton	IRU
Resonators (2)	Gerald Clarkson
The Linac	School Annual Report 1994

Chapter 8
Some of the Telescopes of MSSSO

The photographs were supplied by Vince Ford of MSSSO. All were taken by Bob Cooper.

Chapter 9
The Human Face of the School

Title page groups (2)	News & Information Bureau
Sports day (1962) (2)	John Gascoigne
Peter Darling	Tony Brinkley
Mrs Ohlmus	Taken from a group photograph of the School Administration
Paddy Lalor	Tony Brinkley
Susie Radovanovic	Aidan Byrne

Chapter 10
A Rogues Gallery

Title cartoon	Supplied by Roma Blamey
Mark Oliphant	Taken from *Advance*
John Jaeger	Possibly News & Information Bureau
Ernest Titterton	*Melbourne Age* (April 1958)
Robert Street	Taken from *Advance*
Group photograph	Tony Brinkley

Chapter 11
Epilogue

Title page - view from Telecom Tower
Trevor Ophel (January 1995)

The bucolic surrounds — Tony Brinkley

The red gums of Nuclear Physics (2)
Trevor Ophel

The cockatoos — Trevor Ophel

Department Contributions

Applied Mathematics

Surface forces apparatus — Tim Thompson

Astronomy

Richard Woolley (1947) — Australian Official Photograph

Mount Stromlo Observatory — News & Information Bureau

Christmas lawn party — Supplied by Alex Rodgers

Atomic and Molecular Physics Laboratories

EIDU Group — Supplied by John Gascoigne

Sir Leonard Huxley — Supplied by Bob Crompton

AMPL group — ANU photography

EIDU laboratory — Alan Rees

Electronic Materials Engineering

Photographs were taken from issues of *Advance*

Andrew Clark et al. — Darren Boyd
Barry Ninham et al. — Bob Cooper

except, SIMS, MOCVD & workhorse mill
EME image library.
Tim Thompson

Geophysics and Geochemistry

John Jaeger — Supplied by Mervyn Paterson

Deformed samples — Supplied by Mervyn Paterson

Ross Taylor — Taken from *Advance*

Group photograph — Supplied by Ted Lilley. Taken by David Fetherston (Visual Aids)

Laser Physics Centre

Laser experiment — Supplied by Ken Baldwin

Group photograph — Marie Colvill

Laser telephone — Taken from *Advance*, Darren Boyd

Mathematics

Group photo — Supplied by Mike Newman

Nuclear Physics

Photographs are from issues of *Advance* except for:-

George Dracoulis — Taken from the *ANU Reporter*

The Pawsey Medallists — Gavin Gilmour

Jack Leigh — Supplied by Jack Leigh

Group photo 1968 — Tony Brinkley

The "Cube" — Gavin Gilmour

Optical Sciences Centre

Group photo — Supplied by Allan Snyder

Plasma Research Laboratory

All photographs from *Advance*. The photograph of Syd Hamberger was taken by Darren Boyd.

Heliac Drawing — Ding-Fa Zhou

Solid State Physics

All three photographs were supplied by Neil Manson.

Systems Engineering

All are taken from issues of *Advance*.

Bob Bitmead — Darren Boyd
John Moore — Bob Dowhy
Craig Watkins — Stuart Hay

Theoretical Physics

Ken Le Couteur — Supplied by Brian Robson

Rodney Baxter — Taken from *Advance*

Digital photo restoration, re-touching & graphics

Tim Thompson