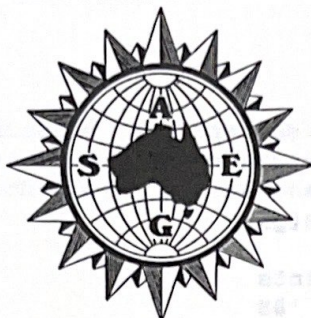


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AUSTRALIAN SOCIETY OF  
EXPLORATION GEOPHYSICISTS

NEWSLETTER

*ASEG*  
*EXTENDS*  
*BEST WISHES AND*  
*SEASONS GREETINGS*  
*TO ALL OUR*  
*MEMBERS*

P.O. BOX 44, EASTWOOD S.A. 5063



PREVIEW # 12:

OCTOBER - DECEMBER 1987

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RESULTS OF S.A. BRANCH STUDENTS NIGHT  
25/11/87

BEST PAPER

"GRAVITY SURVEY OF THE ADELAIDE HILLS FACE ZONE  
AND EASTERN SUBURBS"

-- Allister Wood ( University of Adelaide ).

BEST PRESENTATION

"THE ANALYSIS OF SHORT-PERIOD GEOMAGNETIC VARIATIONS  
AROUND HEARD ISLAND"

-- David Coorey ( Flinders University ).

OTHER PAPERS

"SEISMIC VELOCITY ANALYSIS USING DYNAMIC  
PROGRAMMING".

-- Grant Archer ( Adelaide University ).

"NON-LINEAR SEISMIC ARRAY PROCESSING WITH  
APPLICATION TO DEEP CRUSTAL REFLECTION STUDIES"

-- Stephen Karner (Flinders University ).



## THE ASSOCIATION OF PETROLEUM GEOCHEMICAL EXPLORATIONISTS

### THE ASSOCIATION

The A.P.G.E. is dedicated to the development and advancement of surface and near-surface exploration for geochemical manifestations of oil and gas.

### VERTICAL MIGRATION

Hydrocarbon microseepage to the surface results in subtle geochemical expressions which can be detected by increasingly sensitive techniques and analysis. In particular, exploration for near-surface alteration related to hydrocarbon microseepage can be conducted geophysically using

- magnetics
- radiometrics
- IP and complex resistivity
- TEM and CSAMT
- micro-gravity
- remote sensing

### OBJECTIVE OF THE ASSOCIATION

- \* Provide a forum for ideas and observations in surface geochemical exploration.
- \* Encourage cooperation and fellowship among petroleum explorationists.
- \* Maintain a high professional standing among its members.
- \* Support research, development, and application of surface and near-surface geochemical and related techniques for petroleum exploration.

For further information and a membership form, write to :A.P.G.E. P.O. Box 8287, Denver, Colorado 80201, U.S.A.



## COMING EVENTS

You are referred to the Calendar on the last page of this preview for dates of coming events.

**NORTH WEST SHELF SYMPOSIUM - PESA - WESTERN AUSTRALIAN  
BRANCH AUGUST 10 - 12, 1988 - Sheraton Hotel, Perth W.A.**

Enquiries to Mr. White, Secretary, North West Shelf  
Symposium, C/- Woodside Offshore Petroleum Pty. Ltd.,  
GPO Box D188, Perth, 6001.

The aim of this three day symposium is to develop a current and comprehensive summary of the geology and petroleum potential of the NORTH WEST SHELF.

The first call for contributions has been released, and the following topics have been suggested :

Geology, Physiology.  
Marine Geology, Ecology.  
Regional Structure, Basin Classification,  
Nomenclature.  
Regional Setting, Plate Tectonics,  
Geological Evolution.  
Stratigraphy, Basin History,  
Palaeoenvironments.  
Structure, Styles, Timing, Traps.  
Palaeontology, Palynology.  
Geochemistry, Source Rocks, Maturity.  
Petrology, Diagenesis.  
Seismic Techniques, Improvements, Examples.  
Gravity, Magnetism.  
Hydrocarbons, Generation, Migration,  
Entrapment.  
Exploration Philosophy, History.  
Discoveries.  
Economics, Logistics, Infrastructure.  
Social Aspects, Heritage, Environment.

All intending contributors of papers to the symposium must indicate their interest by forwarding advice to the Symposium Secretary no later than November 15, 1987.

To assist planning, and to ensure receiving the brochure, all persons interested in attending the Symposium are asked to notify the Symposium Secretary at their earliest convenience.



1988 CENTENARY CONGRESS ANZAAS -- UNIVERSITY OF  
SYDNEY . MAY 16 -- 20 , 1988 .

118 Darlington Road , NSW 2006 . Ph : (02) 6924356  
Tlx : UNISYD26169 .  
Fax : (02) 6924202 .

This congress will take place on the campus  
of the University of Sydney where the Inaugural  
Congress took place during the final week of  
August 1888 .

As a general objective ANZAAS seeks to promote  
communication between scientists and the  
general public , especially in Australia , New  
Zealand and the South Pacific region , and the  
program is planned to reflect that objective .

The specific aims of the program are :

- \* To provide a forum for the exchange of  
viewpoints ranging across a spectrum of  
scientific topics , and thus endeavour to  
bridge the gap between scientists and  
the public .
- \* To review progress in science and  
technology in Australia and New Zealand  
over the past 100 years , to define  
significant developments , and to  
contemplate the future .
- \* To provide opportunity for presentation of  
original research findings at the  
frontiers of science .
- \* To enable delegates to meet experts from  
the scientific community in a scholarly  
as well as a social environment , and to  
use the occasion to undertake fruitful  
discussions .

The program has been arranged at three levels  
-- to satisfy a range of interests , to cater  
for various levels of scientific knowledge and to  
encourage wide participation by scholars , special  
interest groups , and individuals .



The three levels are :

- \* Popular Symposia -- of concern to the general public .
- \* General Symposia -- scholarly and special interest groups .
- \* Sectional Symposia -- highlight current research .

1988 CANADIAN SOCIETY OF EXPLORATION GEOPHYSICISTS  
(CSEG) NATIONAL CONVENTION . MAY 3 - 5 , 1988. Calgary  
Convention Centre , Calgary , Alberta , Canada .

Planning is underway for the CSEG annual National  
Convention and the topic will be  
.. EXPLORING NEW HORIZONS ..

The call for papers has been released and  
abstracts from authors will be accepted until  
February 12 , 1988 .

Please forward the abstracts to :

Canadian Society of Exploration  
Geophysicists  
1988 National Convention  
Technical Chairman -- Mr. A. Rivett  
501 , 206 -- 7th Avenue S.W.  
Calgary , Alberta , Canada  
T2P 0W7  
Telephone : (403) 232--7100

INDIAN GEOPHYSICAL UNION SEMINAR ON ..GEOTOMOGRAPHY ..  
December 30 -- 31,  
1987 . Balakrishna Hall , National Geophysical  
Research Institute Hyderabad -- 500 007 .OB

#### OBJECTIVES .

The seminar has been arranged to provide  
a forum for the exchange of knowledge and  
to review the status of the studies of the  
following topics with regard to India.



TOPICS TO BE COVERED ARE :

1. Solid Earth Tomography - whole Earth applications.
2. Tomography of the ocean.
3. Tomography of the atmosphere.
4. Tomography - Applications in Exploration Geophysics.
5. Tomography - space applications.
6. Instrumentation for Tomography.

STOP PRESS

ANNOUNCEMENT      ADELAIDE '88      -      CONFERENCE NEWS

Vacancies still exist for the following "Hard rock" workshops and short course and the Engineering seminar which are being held pre and post the ASEG/SEG ADELAIDE '88 Conference.

W1    EM Workshop 13 - 14th Feb. \$280.00 - all inclusive live in style at Raywood in the Adelaide Hills. This workshop is to be chaired by Mr. Michael Asten of BHP minerals. It will include such topics as EM image processing techniques, case histories, inversion techniques, instrumentation, EM/IP and instrumental effects and "hands on" interpretation of various data sets. Workshop leaders will include Australian and Overseas experts. For further information call Mr. M. Asten on (03) 813 3666.

Please note that a maximum of 35 participants can be accepted.

W2    Downhole Geophysics 20 - 21st Feb. \$280.00 - all inclusive live in style at Raywood in the Adelaide Hills. This workshop is being co-chaired by Mr. T. Eadie of Aberfoyle Resources and Mr. E.D. Tyne of the Geological Survey of N.S.W. The workshop will include such topics as IP, EM, Radar, and various crosshole techniques. The workshop is being designed for the practising geophysicist. For further information please call Mr. T. Eadie on (03) 882 2226.

Please note that a maximum of 35 participants can be accepted.

W3    Airborne Geophysics Short Course 20 - 21st Feb. \$250.00  
A very experienced line-up of local and international experts have been organised to present lectures on the following :

POSITIONING:    Tim Crago, President, Nortech Surveys, Canada.

GRAVITY:        John Brozena, US Naval Research Laboratory,  
Washington, DC.



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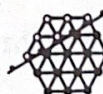
*Aidan Moore*

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EM: Doug Fraser, President, Digham Ltd., Canada.  
Steve Thomson, Geoterrex Ltd., Canada.

SPECTROMETRY: Graham Jenke, General Manager, Keyron  
Geophysics, Perth.  
Paul Wilkes, Manager, ECS Ltd., Perth.

REMOTE SENSING: Graeme Lacey, National Safety Council of  
Australia, Sale, Austirex International, Sydney.

For further details contact Graham Butt on (02) 438 3866.

W4 ENGINEERING GEOPHYSICS SEMINAR 13 - 14 Feb. \$170.00  
This seminar will cover many areas of geotechnical and mining  
engineering geophysics. It will attempt to highlight the rele-  
vance of the geophysics to the engineer or geologist  
predicting performance figures.

Presentations will be from geophysicists on an application  
basis and engineers and geologists on a problem basis. Ample  
time will be allowed for discussion and questions. The seminar  
is supported by the Geomechanics Society and should be of  
interest to all engineering geologists, mining engineers,  
geotechnical engineers and engineering geophysicists. For any  
further details please contact Kim Frankcombe on (08) 332 5633.

To register for any of the above please contact ASEG/SEG  
Adelaide '88 Conference, C/- Ellisservice Convention  
Management, P.O. Box 753, Norwood 5067, South Australia,  
including a cheque to ensure registration.

#### SPONSORS 1988 ASEG/SEG CONFERENCE

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June, 1987

## PETROPHYSICS LABORATORY

Department of Geology and Geophysics, University of Sydney, NSW 2006

Facilities available for RTP studies of rocks, ores, unconsolidated materials and minerals now include:

1. Sample preparation : Cleaning, trimming, blocking, coring, silicone potting.
2. Textural properties : Dry Bulk Density, Apparent Porosity (vacuum saturation), Total Porosity, Grain Density, Air Permeability, Helium and Mercury Injection Porosities.
3. Magnetic Susceptibility : Bulk  $k$   
Anisotropic  $k - k_1, k_2, k_3$
4. Remanent Magnetization : 'raw' NRM -  $J, D, I$  and subsequent AF demagnetization.
5. Thermomagnetic Properties : Curie point, etc. - by arrangement.
6. (a) Electrical Resistivity : galvanic, 2 electrode, 20 Hz to 20 kHz audio and higher frequencies, bridge technique.  
(b) Electrical Conductivity : inductive, non-contact, 100 kHz and 2.5 MHz.  
(c) Groundwater Conductivity ( $c_w$ ) and pH.
7. Induced Polarization and Resistivity : 0.0001 Hz - 10 kHz, 4-electrode method.  
Frequency Domain : PFE, phase to 1 milliradian  
Time Domain : Decay curve, chargeability  
Non-Linearity studies : harmonic, Hilbert, amplitude
8. Dielectric Constant (Permittivity) : *in vacuo* tests lossy rocks at low (audio) frequencies and high frequencies to >1 MHz.
9. Thermal Conductivity.
10. Acoustic (ultrasonic) velocity :  $V_p$  63 kHz, 200 kHz, 500 kHz;  $V_s$  33 kHz;  $V_p$  can be done under axial load. Dynamic Elastic Constants from 10 and 2.
11. Nuclear properties : K, U, Th counts, reasonable accuracy.
12. Fluorescence studies : by arrangement.
13. Mechanical properties : by arrangement.
14. High pressure/temperature measurements : by special arrangement.
15. Anisotropy studies : physical property tensor determination.

Some of this work is done in collaboration with the CSIRO Mineral Physics and Applied Physics Divisions (by arrangement). During 1987-88 it is planned to provide electrical and acoustic tests for simulated *in situ* pressure conditions.

Several Petrophysical Laboratory Reports are either available or in preparation. These cover skarns; Sydney Basin coals and sediments; NSW Palaeozoic metavolcanics; mafics and ultramafics; massive and disseminated sulphides; zeolites; and concretes.

D. W. Emerson  
Associate Professor in Exploration Geophysics  
692 2031, 692 3244 (W) : (045) 79 1183 (H)



## SOUTH AUSTRALIAN STATE NEWS

### RESEARCH

The Minister of Mines and Energy has, earlier this year approved the funding for a further five energy

research projects recommended by the State Energy Research Advisory Committee ( SENRAC ) .

Two research projects of special interest are :

- \* Application of Thin Bed Seismics to Hydrocarbon Exploration in the Cooper / Eromanga Basins ( National Centre for Petroleum Geology and Geophysics ) . \$12 000
- \* Moomba / Big Lake Core and Log Analysis ( Dept. of Mines and Energy ) . \$26 000

These are in addition to twelve energy research projects, outlined earlier in the year.

### GAS NEWS

Earlier this year, a proposed merger by the two Government owned oil and gas producers, the South Australian Oil and Gas Corporation (SAOG), and the South Australian Gas Company (SAGASCO).

Under this proposal, SAOGC and SAGASCO would be merged into a holding company, SA Gas Holdings Pty Ltd.

The new SAGASCO will have two separate operational areas. The first will include non-utility activities, such as SAOG's existing oil and gas exploration and development: the second will be traditional gas reticulation.



## NEW PUBLICATION

### AGIA

The Australian Geoscience Information Association ( W.A. Branch ) has just published .. A Directory of Geoscience Information Sources for Western Australia .. The directory is a listing of organisations both Public and Private that held information , through subscriptions , borrowings or sale , on all aspects of geoscience in Western Australia .

It is a handy reference tool for tracking down possible sources of information in areas that your own organisation may not have any specialist knowledge .

The directory's index is based on the Australian Mineral Foundation's Subject Thesaurus and utilises many .see. references that makes the task of locating the information you require simple .

A.G.I.A. ( W.A. ) plans to update the directory regularly .

The cost of the directory is \$20.00 to Non AGIA members and \$15.00 to members ( including postage ) It is available at the following organisations :

- \* Australian Mineral Foundation Bookshop on  
( 08 ) 329 0444
- \* The Librarian , The Geological Survey of  
Western Australia on ( 09 ) 222 3333 .
- \* And from Elden Chamberlain at Petroz  
N.L. on ( 09 ) 325 2433 .

Currently , AGIA has a special free membership offer until the end of the year . For details of this offer or any enquiries relating to AGIA generally please contact Steve Lipple on 222 3173 ( work ) or 384 5613 ( home ) .



TRIBUTE TO KEN RICHARDS

News of the sudden death of Ken Richards on July 21 of this year has been recieved with great regret. Ken, a former director of Esso Australia and a past chairman of APEA, was one of Australia's foremost explorers and a respected industry thinker and organiser.

He began his career with the Frome - Broken Hill company (a combine of Esso, BP, Mobil and Zinc Corp ) in 1955 and, due to his work with that group in the Otway and onshore Gippsland Basins, he was one of the first to recognise the oil potential of Bass Strait. Consequently, when Frome - Broken Hill disbanded in the early 1960.s Ken joined the small, determined Esso task force in Sydney which set out to run its own surveys in the region and eventually forged the now long-standing partnership with BHP. He rose through the ranks of Esso to become exploration manager in 1973 and a director in 1978. He was chairman of APEA in 1982 and 1983.

Since leaving Esso in 1984 he had been less visible, but no less active behind the scenes of the succesful BA Petroleum Explorers Trust ( now Auspet ) and, more recently, one of those behind the forward steps of the Australian Gas Light Co.

Ken was noted for his patience, skill and willingness in explaining the intricacies of the oil industry to the media. Many oil and gas writers, have been grateful for his clarity and for his approachable manner.

From Rick Wilkinson,  
in Australian Business,  
19 / 8 / 87 : p 140.



TRIBUTE TO FRANK C. FRISCHKNECHT

Frank C. Frischknecht , 58 , of Morrison , a research geophysicist with the U.S. Geological Survey for 35 years , died in a helicopter accident in southeastern Alaska , on August 15 , this year .

Frischknecht was an internationally recognised expert in electromagnetics , and his work produced major applications in the fields of geologic mapping , and mineral and energy exploration .

Among his accomplishments as a consultant to the United Nations and a number of foreign countries was a key role in the discovery of the North Sea oil fields . He was the author of more than 55 articles and papers , including the basic textbook on geoelectric methods .

Frischknecht was born in Bicknell , Utah , Oct . 12 , 1928 . He obtained a Bachelor's Degree in Electrical Engineering (1950 ) and a Master's Degree in Geophysics (1953 ) from the University of Utah .

He later earned a master's degree in geophysical mathematics ( 1967 ) and a doctorate in electrical engineering physics ( 1973 ) from the University of Colorado .

He joined the USGS in 1952 in Salt Lake City and was the leader of the Geological Survey's research in the field of electromagnetics throughout most of his career .

He was a specialist in airborne magnetic and electromagnetic prospecting and was responsible for the design and installation of these systems on USGS aircraft . He pioneered in the application of electromagnetic methods for the mapping of rock units in covered metamorphic terrain .

He moved to Denver in 1964 where , between research and other assignments , he served as chief, Branch of Electromagnetism and Geomagnetism ( 1976 - 1980 ) , and as chief , Branch of Geophysics ( 1984 to 1987 ) .

Frischknecht was a member of the Society of Exploration Geophysicists ; the European Association of Exploration Geophysicists ; the Australian Society of Exploration Geophysicists ; the American Institute of Mining , Metallurgical and Petroleum Engineers ; the Institute of Electrical and Electronic Engineers ; the American Association for the Advancement of Science ; and is listed in the American Men and Women of Science.

He is survived by his wife , Jacqueline, and his three daughters , Amalie, Ella Marie, and Deborah, and his five grandchildren.

From the Rock Mountain News,



## ASEG/SEG INTERNATIONAL GEOPHYSICAL CONFERENCE – TECHNICAL PROGRAM UPDATE

The Conference Technical Program Committee is still 'juggling papers' but at the time of rushing this to print status is as set out below. All other aspects of the program, including pre- and post-Conference Workshops are as set out in the Program Outline which included Registration Form (distributed August 1987).

Monday February 15, 1988

### SESSION 1A – Seismic Processing I

*Deconvolution with an Inexact Wavelet:* Fullagar, P.K. & C.R.T. Ramsden, Australia. *Bandlimited Spikiness Deconvolution (BLSD):* Pusey, L.C., USA. *Imaging A Diffuse Field of Seismic Scatterers:* Newnan, P., England.

### SESSION 1B – Basin Studies I

*Bonaparte Rift Basin – Effects of Axial Doming and Crustal Splitting:* Gunn, P.J., Australia. *The role of Modern Seismic Reflection Processing in Understanding the Offshore Otway Basin:* Smit, R., Australia. *Late Tertiary Structuring in the Bass Basin – New Trends recognised:* Williamson, P.E., & F.R. Brassil, Australia.

### SESSION 1C – Magnetism I

*Geomagnetic Fluctuation Anomalies Across the South East Australian Coast:* Kellett, R.L., A. White, I.J. Ferguson & F.E.M. Lilley, Australia. *Application of Regional Gravity and Magnetism to Asisting the Regional Geology of Australia:* White, D.A., Australia. *Interpretation of Magnetism using Magnetic Property Data – Case Histories from Australia:* Clark, D.A., Australia.

### SESSION 1D – Coal

*Waves in Discontinuous Coal Seams with Absorption – Finite Difference Simulations:* Korn, M. & H. Emmerich, Australia. *Faults and Attenuation in Coal Seams:* Drake, L., Australia. *Comparison of Radio Imaging Method (RIM) Electromagnetic Wave Tomography with In-Mine Geological Mapping in the Liddel, Bulli and Wongawilli Coal Seams:* Hatherly, P., L. Stolarczyk & G. Rogers Australia.

### SESSION 2A – Seismic Processing II

*A Comparison of Minimum Phase Correlation and its role in Seismic Data Misties:* Fitzgerald, N.A., Australia. *Phase Correction and Resolution Enhancement of Seismic Data utilising Post Stack Wavelet Extraction from Well Data:* Hobson, M.R., C.R.T. Ramsden & P. Carter, Singapore. *The Tau-P Transform – Aliasing Considerations and Application to High Resolution Seismic Data:* Turner, G., Australia.

### SESSION 2B – Basin Studies II

*A Seismic Analysis of the Style and History of Structuring in South West Queensland:* Shaw, R.D., Australia. *A Fundamental Addition to the Classical Stress/Strain Ellipsoid:* Kuang, K.S., Australia. *Geophysical Synthesis of the Tectonic and Sedimentological Evolution of The Canning Basin, Western Australia:* Reilly, J.M., England.

### SESSION 2C – Magnetism II

*A Report on some Magnetic Modelling Experiments for Image Processing Applications:* Gallagher, R.G., B.D. Johnson & A.A. Green, Australia. *Upward Continuation of Aeromagnetic Profiles:* Williams, J.P., Australia. *Extraction of Intrusive Rocks from Aeromagnetic Map in Japan:* Okubo, Y. & K. Ogawa, Japan.

### SESSION 2D – Geotechnical

*Resolving Overburden Characteristics via Shear Wave Propagation:* Davis, A.M. & J.D. Bennell, Wales. *In-Situ Characterization of Jointed Crystalline Rock using the Ultrasonic Cross-Hole Method:* Fry, M.F., USA. *Some Applications of Geophysical Techniques for Fracture Identification and Characterization in Crystalline Rocks:* Bronskil, S.P., USA.

Tuesday February 16, 1988

### SESSION 3A – Seismic Processing III (Case Histories)

*In Quest of the Flank Spring (1988 SEG Distinguished Lecture):* Larner, K., USA. *The Processing of Land Seismic Data for Stratigraphic Interpretation:* Bayly, M., Australia. *Removal of Reflection Point Smearing and the Dip-Dependence of the Stacking Velocities:* Sincer, I. & M. Ali Ak, Turkey.

### SESSION 3B – Seismic Acquisition I (Marine)

*Development of the Programmable TVG-TVF Seismic Profiler:* Nishimura, K., K. Tamaki & K. Yoritatsu, Japan. *Off-Line Deep-Towed Seismic Profiler:* Kisimoto, K., K. Nishimura, T. Miyazaki, M. Jishima, F. Murakami & T. Ishihara, Japan. *Increased Flexibility in Marine Seismic Recording Systems:* Wardell, J., T. Allen & G. Mansfield, Australia.

### SESSION 3C – Waste Management

*The Mapping of Groundwater Contamination with TEM and DC Methods:* Buselli, G., C. Barber & A. Zerilli, Australia. *Mapping and Monitoring of Toxic Wastes with Subsurface Electrical Resistivity Arrays:* Asch, T., & H.F. Morrison, USA. *Radar Probing through 500 Meters of Zechstein Salt:* Unterberger, R.R., & J.H. Mims, USA.

### SESSION 3D – E.M. Processing

*Digital Filtering of Sirotem Data – A Case Study:* Elliott, P.J., Australia. *Over Burden Mapping by Airborne EM:* Reford, S.W. & N.R. Paterson, Canada. *Analytic Continuation in the Interpretation of Transient Electromagnetic Data:* Andersen, H.T., USA.

### SESSION 4A – Seismic Processing IV (Case Histories)

*Source Directivity and its Effects on Resolution and Signature Deconvolution:* Brummitt, J.G., Republic of Ireland.

### SESSION 4B – Seismic Acquisition II (Statics)

*The Seismic Noise Problem in Clinker Areas:* Balachandran, K., USA. *Refraction Statics through Differential Receiver Delaytimes:* Gulunay, N., Australia. *Application of Delay Time Methods in Computing Refraction Statics:* O'Brien, P.D., & W. Gawthrop, USA.

### SESSION 4C – Surface Seismic Tomography

*Seismic Reflection Tomography:* Williamson, P.R., Australia. *Inversion Strategies for Large Scale Non Linear Inverse Problems such as Seismic Tomography:* Kennett, B.L.N., Australia. *Depth Imaging of Reservoirs Using Well-Logs, VSP and 3-D Seismic Data:* Stewart, R.R., Canada.

### SESSION 4D – E.M. I

*TEM Coincident Loop Negatives and the Loop Effect:* Smith, R.S., & G.F. West, Canada. *Time-Domain Electromagnetic & Induced Polarization Responses of a Polarizable Target:* Thomas, L., & T. Lee, Australia. *Influence of Galvanic Currents and Inductive Interactions on Inductive FDEM Anomalies – Some Model Studies:* Verma, O.P., Brazil.

### SESSION 5A – Seismic Processing V (Case Histories)

*Scattered Seismic Noise:* Balachandran, K., USA. *Low Frequencies for Better Continuity Beneath Complex Media:* Ali Ak, M., Turkey. *Reprocessing via Post-Stack Static Application Alone:* Fisher, N., Australia.

### SESSION 5B – Seismic Acquisition III (Land)

*Attenuation of Vibrator Harmonic Ghosts:* Espey, H., USA. *Experimental Analysis of the Polarity of Vibrator and Impulsive Source Data:* Wason, C.B., R.A. Brook & L.J. Meister, USA. *The Common Reflecting Element (CRE) Method. (Non-uniform Asymmetric Multifold System):* Gelchinsky, B., Israel.

### SESSION 5C – Groundwater

*Geophysical Site Investigation of a Water Supply Scheme – Case Study:* Al-Rawi, F.R., & D.S. Mahmood, Iraq. *Lake Vermont Geophysical Investigations:* Dixon, O., R.D. Huber & P.A. Rowston, Australia. *Application of Geophysics to Saline Reclamation of Farm land in Western Australia:* Linford, J.G., & S.M. West, Australia.

### SESSION 5D – I.P.I.

*Inversion of Time Domain Spectral IP Data:* Lewis, R.J.G., & J.R. Bishop, Australia. *A New Look at I.P. Electrode Arrays:* Coggon, J., Australia. *Negative Induced Polarization Effect:* Sumner, J.S., USA.

### SESSION 6A – Seismic (General)

*Application of a Recently Developed Inversion Procedure to Seismic Data from the Gippsland Basin:* Moore, B.J., & G.R. Sutton, Australia. *Interpretation of Seismic Refraction Data with a Personal Computer On-Site:* Stoyer, C.H., USA. *Transformation of Faults in Seismic Migration and Modeling:* Sattlegger, J., West Germany. *Digital Integration of Satellite and Seismic Data:* Rango, R.N., & G. Beresford-Smith, Australia.

### SESSION 6B – Seismic Acquisition IV (Instruments)

*The Woofer, The Squarker and The Tweeter – An Experiment in Geophone Response:* Evans, B.J., Australia. *The Media Problem and Practical Aspects of Developing the Next Generation of Seismic Recording Instrumentation:* Heath, R.G., England.

### SESSION 6C – Geotechnical (Case Histories)

*Determination of the Location and Extent of Karst in Limestone with the Use of Geophysical Methods:* Rafeek, A.G., & G. Duplitzer, Malaysia.

### SESSION 6D – Minerals (Theoretical)

*Terrace Function Inversion for three-dimensional modeling of Potential-Field Data:* Cordell, L., USA. *Compact Electrical Inversion:* Last, B.J., Ethiopia. *Fractals in Applied Geophysics – A Guided Tour:* Korvin, G., Australia.

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### SESSION 7A – Crustal Studies I

*A Non Linear Optimization Technique for the Inversion of Long Range Refraction Profiles:* Ginzburg, A., & Z. Koren, Israel. *Lateral Variations in Seismic Velocities in the Central Australian Region from both Conventional and Experimental Seismic Reflection Profiling:* Wright, C., B.R. Goleby & T. Barton, Australia. *Alternative Stacking Techniques for Deep Crustal Reflection Data:* Kennett, B.L.N., B.R. Goleby & C. Wright, Australia.

### SESSION 7B – Management

*An Overview of the Prospects for the Australian Resources Sector:* Story, I., Australia. *Leaving No Stone Unturned on the Incidence of Taxation Since Cook's Time:* Priest, P.W., Australia. *The Employable Geophysicist:* Denham, J.I., Australia. *The Real Breakthroughs:* Ross, J.G., & M.R. Smith, England.

### SESSION 7C – Downhole (Mineral)

*Three-Component Down-Hole TEM Surveys:* Duncan, A.C., & J.P. Cull, Australia. *The Downhole Magnetometric Resistivity Method:* Astin, M.W., Australia. *Application of Underground Synthetic Electrical Survey in searching for Non-Ferrous Metals Deposits – Some Case Histories:* Dexin, L., & W. Shaogwang, People's Republic of China.

### SESSION 7D – Minerals (Instrumentation)

*Evaluation of a New Resistivity Meter – Full Automatic Measuring and Built-in Processing:* Goebuchi, T., T. Hara, & H. Shima, Japan. *The new Scintrex CG-3 Automated Gravity Meter: – Description & Test Results:* Huggill, A., Canada.

### SESSION 8A – Crustal Studies II

*The Use of Closely Spaced Receiver Arrays to Delineate the Structure of the Upper Mantle Under Northern Australia:* Bowman, J.R., Australia. *An Array Study of Ground Tremors & its Application to Exploration:* Nabetani, S., Japan. *Gravity Investigations Under Extreme Mountainous Conditions:* Steinhilber, P., Austria.

### SESSION 8B – Databases

*Database Management Systems for the Earth Sciences:* Dampney, C.N.G., & B.D. Johnson, Australia. *The Relevance of Network Computing Concepts to the Geophysical Workstation Environment:* Hearn, S., C. Astill & P. Davies, Australia. *History, Objectives, Procedures, Applications and Benefits of Development of a High Grade Digital Geophysical Log Database for Petroleum Exploration:* Withshire, M.J., Australia.



## SESSION 8C - VSPs

*Three Component Offset VSPs in New Zealand . . . A Case History:* James, A., G. Bulte & D. Mullen, Indonesia. *The BRENDA 3D VSP Survey - A Case History:* Deluchi, L., Italy. *Caliper Effect on Borehole Coupling:* White, J.E., & M. Lessenger, USA.

**SESSION 8D - Minerals (Case Histories & New Developments)**  
*The Application of Geophysics on the West Coast of Tasmania:* Bishop, J.R., & R.J.G. Lewis, Australia. *Geothermal Signatures and Uranium Ore Deposits on the Stuart Shelf of South Australia:* Houseman, G.A., J.P. Cull, P.M. Muir & H.L. Paterson, Australia. *The Geophysics of the Trough Tank Gold/Copper Prospect:* Gidley, P.R., Australia.

## SESSION 9A - Seismic Case Histories I

*Case Study of the Zenad/Ghani Field, West Central Sirte Basin, Libya:* Chen, T.C., Libya. *Occurrence, Causes and Detection of Abnormal High Pressure in the Tertiary Himalayan Foredeep, Punjab Basin:* Das, K., & M.C. Pande, India. *The Recognition of Stratigraphic Anomalies through Improved Acquisition and Processing Technology in the Hugoton Embayment:* Yalch, J.L., USA.

## SESSION 9B - 3-Component Seismic I

*Omniphase Polarization Filtering - An Effective Way of Removing Groundroll Without Geophone Arrays:* Gassaway, G.S., B.H. Berrong, A.T. Long, R.H. Angerer & D.R. Miles, USA. *A Processing Technique for Three Component Seismic Data - Use of Polarization Characteristics:* Takahashi, T., & K. Ohta, Japan. *A Study of Surface Wave Motion using Particle Motion Sections:* Evans, B.J., D. Heath & R. Young, Australia.

## SESSION 9C - Minerals (General)

*Application of Moment Method to Solve Direct Problem of 3-D Earth Structures:* Linyuan, L., & Yang Jianwen, People's Republic of China. *Computation of Response Spectra from Adjusted Strong Motion Accelerograms:* Mumme, I.A., Australia. *Electromagnetic Holographic Studies:* Pfeifer, M.C., G.V. Keller, C.K. Skokan & H.T. Andersen, USA.

## SESSION 9D - Workstations

*Database Strategy for an Exploration and Production Workstation:* Gillespie, J., USA. *Application of an Integrated Approach to Interactive Seismic Interpretation:* Inouye, F., G. Williams & L. Kok Moo, Singapore. *High Tech Results Without High Cost:* Valenta, W.T., USA.

## SESSION 10A - Seismic Case Histories II

*Seismic Modeling - Case Histories from Onshore and Offshore Basins in Australia:* Harrison, P.L., Australia.

## SESSION 10B - 3-Component Seismic II

*Separation of P-SV Waves Using 2-D Convolution Filters to Improve the Resolution of Stratigraphic Targets:* Bilgeri, D., Mazzotti, Ferber & Marschall, Italy.

## SESSION 10D - E.M. II

*The Measurement and Interpretation of EM Impedance at Frequencies up to 100KHz:* Holstein, H., T. Lewis & J. Phillips, Wales. *Transient Electromagnetic Responses of High Contrast Prisms in a Layered Earth:* Newman, G.A., & G.W. Hohmann, USA.

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## SESSION 11A - Seismic Processing VI (Amplitude vs Offset)

*Detection of Hydrocarbons in Carbonate Lithologic Packages Using Amplitude Vs. Offset Inversion (Sample) of Seismic Data - A Case History from Alberta, Canada:* Gassaway, G.S., D.R. Miles, R.A. Brown, L.E. Bennett & R.W. Bainer, USA. *Amplitude Versus Offset Analysis - A Systems Approach:* Long, A.T., & A.H. Berrong, USA. *Seismic Lithologic Modeling of Amplitude Versus Offset Data:* Larner, K., V. Gelfande, P. Ng & H. Nguyen, USA.

## SESSION 11B - Shear Waves

*A Physical Model Study of Shear-Wave Splitting and Fracture Anisotropy:* Tatham, R.H., M.D. Matthews & K.K. Sekharan, USA. *Inversion of Seismic Wave Field Data for P- and S-wave Velocity:* Mora, P., USA. *Synthetic Shear VSPs in Azimuthally Anisotropic Media:* Schoenberg, M., S. Mallick & L.N. Frazer, USA.

## SESSION 11C - Crosshole Tomography

*A Method for the Uniquel Solution of Seismic Tomography Problems:* Balia, R., G. Ranieri & R. Tocco, Italy. *Tomographic Estimation of Seismic Velocity on an Interactive Workstation:* Edwards, S.A., & P.G. Rogers, Australia. *Incorporation of Curved Rays in a Fourier-Based Tomographic Reconstruction:* Rogers, P.G., S.C. Bannister & J.A. Young, Australia. *Seismic Ray Tomography using the Method of Damped Least Squares:* Saito, H., & H. Ohtomo, Japan.

## SESSION 11D - Magnetic Rock Properties

*The Magnetisation and Magnetic Modeling of the Elura Ore-body:* Tonkin, C., D.A. Clark & D.W. Emerson, Australia. *Magnetic Mineral Petrogenesis, Rock Magnetism and Aeromagnetic Response in the Eastern Arunta Inlier, Northern Territory, Australia:* Whiting, T.H., Australia. *The Use of Conductivity and Susceptibility Tensors in Rock Textural Studies - Implications for Exploration:* Emerson, D.W., D.A. Clark & T.L. Kerr, Australia.

## SESSION 12A - Seismic Case Histories III

*Seismic Expression of the Upper Morrow Channel Sands, Western Andarko Basin:* Halverson, J.R., USA. *A Seismic Stratigraphic Study of the Talgeberry Birkhead Formation Reservoir:* Micenko, M.I., & J. Torkington, Australia. *Seismic Reflection Amplitude (Dim Spot) Study over The Goodwyn Field, Northwest Shelf, Australia:* Tilbury, L.A., Australia.

## SESSION 12B - Non-Seismic Petroleum Exploration

*NOAA Thermal Imagery in the Search for Hydro Carbons:* Lappi, D., Australia. *Field Trials of Non-Conventional Geophysical Techniques for Petroleum Exploration:* Webster, S.S., Australia. *Case Studies & Modeling Advances in Producing Conductivity - Depth Sections:* MacNae, J., & Y. Lamontagne, Canada.

## SESSION 12C - Magneto Tellurics

*Time Domain CSMT Method:* Murakami, Y., Japan. *Transfer Function Estimation for Natural Electromagnetic Fields:* Nichols, E., C. Torres-Verdin & H.F. Morrison, USA. *Overprint Effects due to Source Location in EM Sounding:* Zonge, K.L., S.C. McInnes & L.J. Hughes, USA.

**KEYNOTE SPEAKERS** are as detailed in the Program Outline already distributed with Registration Form:

**JIM KIRK**, Chairman of the Australian Bicentennial Authority.  
**NORMAN R. PATERSON**, President, Paterson, Grant and Watson Ltd, Toronto, Canada.

**DAVID TUCKER**, Director of Preview Resources Pty Ltd, Australia.  
**KATHARINE WEST**, Broadcaster and Author; Senior Lecturer in Political Science at the University of Melbourne, Australia.  
**MARVIN HEWITT**, 1985/86 President of the SEG.

**ACCOMMODATION** has been reserved in various hotels and apartments; also in a University College. The grading system we have adopted is related to the room only cost per night. A lower price does not necessarily imply a lower standard. Unless otherwise indicated all rooms have en suite bathroom, tea/coffee making facilities, colour TV/radio, direct dial telephone including STD/ISD. Some hotels are able to cater for handicapped guests and these are indicated (\*H\*). 19th Century hotel accommodation (tastefully refurbished) is indicated (\*19C\*). The Adelaide Convention Centre (and adjacent Casino) is on North Terrace. Apart from the beach accommodation no selected hotel is more than a 15 minutes' walk away.

## CATEGORY A (\$110+ Single)

**THE GATEWAY HOTEL**, 147 North Tce, Adelaide 5000, Australia; Ph: (618) 217.7552 Fax: (618) 216.5131 Telex: AA88325. (Executive Suites \$155) - Almost opposite Convention Centre. Double bedroom (en suite bathroom) and separate lounge area.

**HILTON INTERNATIONAL ADELAIDE**, 233 Victoria Sq, Adelaide 5000, Australia; Ph: (618) 217.0711 Fax: (618) 231.0158 Telex: AA87173. (Single \$120; Double/Twin \$140) - 6 blocks from Convention Centre. Deluxe accommodation. (\*H\*)

## CATEGORY B (\$80-\$100 Single)

**THE BARRON TOWNHOUSE**, 164 Hindley St, Adelaide 5000, Australia; Ph: (618) 211.8255 Telex: AA8291. (Single \$85; Double/Twin \$90). 2 blocks from Convention Centre in the centre of Adelaide's nightlife.

**THE GATEWAY HOTEL** (Single \$100; Double/Twin \$100) - No separate lounge with standard rooms.

**THE GROSVENOR HOTEL**, 125 North Terrace, Adelaide 5000, Australia; Ph: (618) 51.2961 Fax: (618) 231.0765 Telex: AA82634. (Single \$80; Double/Twin \$88) - Opposite Casino/Convention Centre.

**HAVEN MOTOR INN**, 6-10 Adelphi Terrace, Glenelg 5045, Australia; Ph: (618) 294.1555 Fax: (618) 294.5773. (Single \$74; Double/Twin \$79). Glenelg is a seaside resort, 10 km from city. Hotel overlooks boat haven, 10 minutes from airport. Games room, swimming pool & sauna, 2 licensed restaurants, cocktail bar.

**THE RICHMOND HOTEL**, 128 Rundle Mall, Adelaide 5000; Ph: (618) 223.4044. (Single \$85; Double/Twin \$90; Executive \$110). In the heart of Adelaide's shopping district. Queen size brass beds. (\*H\*)(\*19C\*)

## CATEGORY C (\$65-\$75 Single)

**ADELAIDE PARINGA MOTEL**, 15 Hindley St, Adelaide 5000, Australia; Ph: (618) 231.1000 Telex: AA186405 (Single \$65; Double/Twin \$70; Executive \$80). Convention Centre 400 paces away. Spa baths in some rooms. (\*H\*)(\*19C\*)

**HOTEL ADELAIDE**, 62 Brougham Place, N. Adelaide 5006, Australia; Ph: (618) 267.3444 Fax: (618) 239.0189 Telex: AA82174 (Single \$75; Double/Twin \$75) - Spectacular views. 10 minutes' walk from Convention Centre. (\*H\*)

**OLD ADELAIDE INN**, 160 O'Connell St, N. Adelaide 5006, Australia; Ph: (618) 267.5066 Fax: (618) 267.2946 Telex: 89271 (Single \$75; Double/Twin \$85) - 2 km from city centre - bus passes door. (\*H\*)

## CATEGORY D (\$40-\$60 Single)

**EARL OF ZETLAND HOTEL**, Cnr Gawler Place & Flinders St, Adelaide 5000, Australia; Ph: (618) 223.5500. (Single \$40; Double/Twin \$50) - Near Hilton International. The Earl's tastefully furnished self-contained bedrooms are air-conditioned. (\*19C\*)

**THE FESTIVAL LODGE**, 140 North Tce, Adelaide 5000, Australia; Ph: 618 212.7877 Telex AA87231. (Single \$60; Double/Twin \$60). Older style building, recently refurbished (formerly Commercial Travellers Club). Adjacent Gateway Hotel.

**THE GROSVENOR HOTEL** (Budget Sleeper Single with en suite bathroom, \$45) - refer Category B for location details.

**GREENWAYS APARTMENTS**, 41-45 King William Road, North Adelaide 5006, Australia; Ph: 618 267.5903. Reception: Mr Brenton Smith, Unit 16, 1st Floor. (Spacious lounge/dining area, TV/radio, air conditioned, modern bathroom, direct dial phone, off-street parking, guests' laundry). Rates quoted are per apartment on the basis of occupancy. 2-bedrooms - 1-3 people \$65, 4 people \$70. 3-bedrooms - 1-5 people \$75, 6 people \$80, 7 people \$85. 1 bedroom - single occupancy \$45, 2 people \$50, 3 people \$55. Greenways Apartments are near Hotel Adelaide.

**LINCOLN COLLEGE**, 45 Brougham Place, North Adelaide 5006, Australia; Ph: 618 267.2588. Near Hotel Adelaide. (Single study bedroom with shared bathroom facilities - \$25 including breakfast). In house laundry facilities, STD/ISD phones, TV room, music room, volleyball, table tennis, dining room (pre-book evening meals).