Joint Oceanographic Assembly
2–13 August 1982

Halifax, Nova Scotia
Canada

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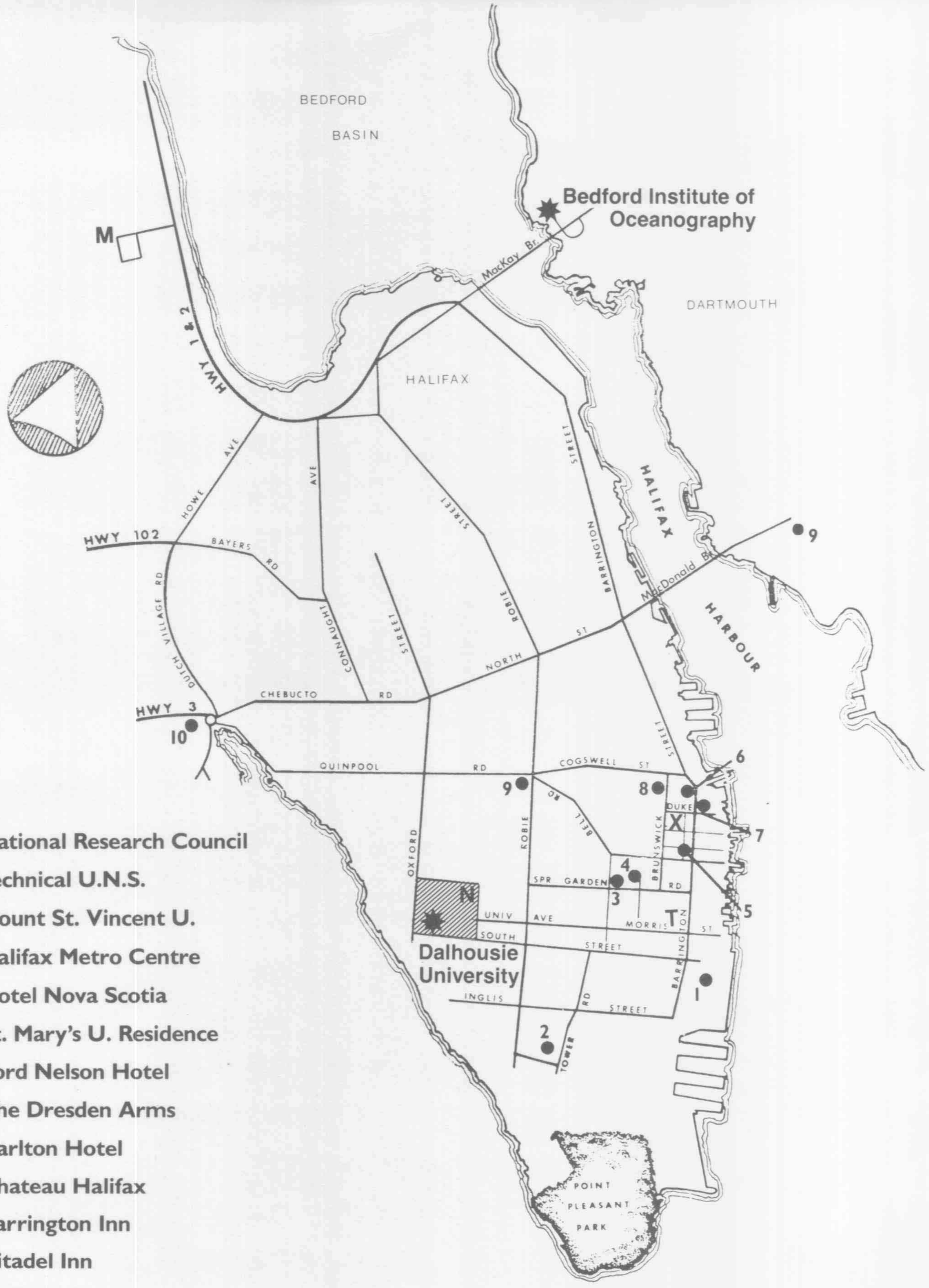

N National Research Council

T Technical U.N.S.

M Mount St. Vincent U.

X Halifax Metro Centre

1 Hotel Nova Scotia

2 St. Mary's U. Residence

3 Lord Nelson Hotel

4 The Dresden Arms

5 Carlton Hotel

6 Chateau Halifax

7 Barrington Inn

8 Citadel Inn

9 Holiday Inn

10 Keddy's Motor Inn

Joint Oceanographic Assembly
2-13 August 1982

Dalhousie University

Halifax, Nova Scotia

Canada

Deadline for receipt of advance registration and accommodation reservation forms is 15 May, 1982

Secretariat Address

Leo O'Quinn
Executive Secretary, JOA-82
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OUTLINE OF SCHEDULED EVENTS

July			
29-31			SCOR Executive Meeting
31			Registration Desk Opens (1 p.m. - 9 p.m.)
August			
1	Sunday	afternoon	JOA Registration Desk Opens (1 p.m. - 9 p.m.)
		evening	Welcoming Reception (Evening)
2	Monday	morning	Opening Ceremonies - Rebecca Cohn Auditorium
		afternoon	Scientific Sessions
3	Tuesday		Scientific Sessions
4	Wednesday		Scientific Sessions
5	Thursday		Scientific Sessions
6	Friday		Scientific Sessions
7	Saturday		SCOR General Meeting
8	Sunday		SCOR General Meeting
9	Monday		Scientific Sessions
10	Tuesday		Scientific Sessions
11	Wednesday		Scientific Sessions
12	Thursday		Scientific Sessions
13	Friday		Summary and Closing Session

INTRODUCTION

At the invitation of the National Research Council of Canada, the Scientific Committee on Oceanic Research (SCOR) will hold its Joint Oceanographic Assembly and General Meeting on the campus of Dalhousie University, Halifax, Nova Scotia, during the period of 2-13 August 1982. Correspondence regarding this Assembly and requests for additional copies of the brochure should be addressed to the Executive Secretary (see page 1). The Assembly is open to all scientists throughout the world. All conference offices, registration, information desks, and other information services will be located in the Student Union Building (SUB) (refer to map of Dalhousie University campus on inside French cover).

SCIENTIFIC PROGRAMME

The assembly will begin on Monday morning, August 2, with an opening ceremony at the Rebecca Cohn Auditorium at 10:00 a.m. The scientific programme will commence with a keynote address by Professor K. Hare (Trinity College).

TENTATIVE LIST OF SESSIONS WITH SPEAKERS AND CONVENORS

FIRST WEEK

MONDAY	A.M.		Opening Session
	P.M.	G.1	Major advances in oceanography
TUESDAY	A.M.	G.2	The ocean and climate
	P.M.	A.1	Results of the first GARP Global Experiment (IAMAP/IAPSO)
		A.2	Sea level changes and coast/ocean interaction (CMG)
		A.3	Productivity and determinants of the structure of seaweed communities (IABO/ISA)
WEDNESDAY	A.M.	S.1	North Atlantic circulation (IAPSO)
		S.2	Deep-sea biology, the role of physical and chemical variability (IABO)
	P.M.	A.4	Ocean/atmosphere material exchange (IABO/WG44) (IAPSO/IAMAP)
		A.5	Active continental margins (CMG)
		A.6	Mangrove ecosystems (IABO/WG60)
THURSDAY	A.M.	G.3	Ocean resources
	P.M.	S.3	The southern ocean (IAPSO/IABO/CMG)
		A.7	Physiological ecology of plankton at high latitudes (IABO)
FRIDAY	A.M.	S.4	The CO_2 problem (IAPSO/IAMAP/CMG/IABO)
		S.5	Evolution of passive margins (CMG)
	P.M.	A.8	Ocean crust and mineralization at plate boundaries (CMG)
		S.6	Sedimentation at continental margins (CMG)
		A.9	Velocity fine and microstructure in the oceans (IAPSO)
SATURDAY			Free
SUNDAY			Free

SECOND WEEK

MONDAY	A.M.	G.4	Transient tracers
	P.M.	A.10	Eddy dynamics (IAPSO)
		A.11	Experiment design in submarine scientific observation by divers
		A.12	Developments in fisheries and exploitation of multi-species systems (IABO)
TUESDAY	A.M.	S.7	Bottom boundary layer (IAPSO/CMG/IABO)
		S.8	Polar year and the IGY (IAPSO/IAMAP)
	P.M.	A.13	Suspended matter in open seas (IAPSO/IABO/CMG)
		A.14	High energy coastal environment (ECOR/CMG)
		A.15	Cross frontal mixing (IAPSO)
WEDNESDAY	A.M.	G.5	Paleooceanography
	P.M.	S.9	Marine pollution (IABO/IAPSO/CMG/ECOR)
		S.10	Oceanography from space (COSPAR)
THURSDAY	A.M.	S.11	Arctic ocean research (IABO/IAPSO/CMG)
		S.12	Variability in primary productivity (IABO)
	P.M.	A.16	Geochronological methods (CMG)
		A.17	Oceanography of continental shelves (IAPSO/IABO/CMG)
		A.18	Arctic Ocean engineering (ECOR)
FRIDAY	A.M.	G.6	Summary and closing session

SESSION	CONVENOR	SPEAKERS	TITLE/SUBJECT
G-1	W.W. Hay	A. Monin (USSR)	_____
		C. Rooth (US)	A chemical revolution in physical oceanography: the re-emergence of water mass analysis.
		H. Jannasch (US)	Chemosynthesis at deep sea hydrothermals and vents
		K. Hinz (FRG)	_____
G-2	K. Hasselmann	P. Killworth (UK)	Oceanic heat movements.
		K. Bryan (US)	The role of the ocean in the transient climate response to increasing CO_2.
		J. O'Brien (US)	Seasonal & interannual variability of the surface currents in the tropical Pacific Ocean.
		R. Davis (US)	Special problems in statistical analysis of climate data.
		E. Barron (US)	The oceans & atmosphere during warm geologic periods.
G-3	B. Rothschild/ P.A. Moiseev		
G-4	C. Rooth	P. Brewer (US)	TTO - a post-GEOSECS large-scale survey.
		W. Roether (FRG)	Use of tritium, ^3He, and freon as constraints in models of ocean circulation.
		W. Jenkins (US)	Regional studies of circulation and mixing using tritium and ^3He.
		J. Sarmiento (US)	Tests of large-scale model parameterization.
		Panel Discussion	Prospects for the 80's.
G-5	J. Thiede	J. Thiede	Oceanic crises.
		J. Sclater	Paleogeography of the ocean during the past 150 M.Y.
		H. Thierstein	Cretaceous-Tertiary crises.
		N. Shackleton	Eocene-Miocene: cooling of the polar seas.
		J-C. Duplessy	Pliocene-Quaternary: glacial-inter-glacial crises.
S-1	F. Schott	N. Fofonoff (US)	Gulf Stream branching and recirculation studies.
		W. Krauss (FRG)	Recent studies of the North Atlantic Current.
		F. Schott (US)	The Florida and Antilles Current.
		K. Hasselmann (FRG)	Multi-regional ocean models.
		W. Holland (US)	Eddy resolving ocean modeling.
		T. Rossby (US)	A Lagrangian view of the subtropical north Atlantic Gyre.
S-2	P. Jumars	H. Felbeck (FRG)	Organisms utilizing redox gradients.
		A-S. Khripounoff (Fr)	Trophic structure and organic matter varibility.
		_____	_____
		J. Baross (US)	Rapid gas production by thermophilic microbes.
		R. Carney (US)	Environmental variation over ecological vs. paleontological time-scales.
		D. Thistle (US)	Community effects of sediment transport.
S-3	G. Hempel		
S-4	W. Roether	T. Takahashi (US)	The CO_2 problem: overview.
		_____	The role of the cryosphere.
		E. Degens (FRG)	Land use, rivers, estuaries and oceanic shelves.
		_____	Lessons from the past.
		S. Manabe (US)	How might the future climate look like?
		R. Revelle (US)	CO_2 climate and society.
S-5	C. Keen	W. Pitman III (US)	Some aspects of eustatic sea level changes and stratigraphy on passive margins.
		J. Ewing (US)	Results of the LASE experiment on the margin of the eastern U.S.
		L. Jansa (Can)	Mesozoic-Cenozoic sedimentary formations of north Atlantic margins & margin evolution.
		D.J. Stanley (US)	Models of sedimentary processes on active and passive margins: a comparison.
		J.E. VanHinte (Neth)	Subsidence of passive margins.
		M.H.P. Bott (UK)	Models for development of passive margins.

SESSION	CONVENOR	SPEAKERS	TITLE/SUBJECT
S-6	I.N. McCave	R.W. Sternberg (US)	Sediment transport on continental shelves.
		D.J. Stanley (US)	Sediment bypassing over the outer shelf to canyons and the upper slope.
		G. Almagor (Isreal)	Geotechnical aspects of sediments on submarine slopes.
		J.D. Milliman (US)	Biogenic sedimentation from shelf to rise.
		D.J.W. Piper (Can)	Turbidity current flow and turbidite geometry on the continental margin.
		I.N. McCave (UK)	Suspended sediment transport and deposition from nepheloid layers.
S-7	R. Wollast	B. Berner (US)	Distribution of organic carbon and pyrite sulfur in sediments.
		I.N. McCave (UK)	Deposition, resuspension, and transport of sediments.
		F.T. MacKenzie (US)	Early diagenesis of clay minerals in the benthic boundary layer.
		G.L. Weatherly	Currents and turbulence in the bottom boundary layer.
		H. Blackburn (Den) (or G. Billen)	The bacterial activity in the benthic boundary layer.
		R.C. Aller (US) (or M.L. Bender)	Bioturbation and its consequences on the transport of solid and dissolved materials.
S-8	G. Deacon	M. Deacon	Oceanography and the Polar Years.
		M.J. Dunbar	A unique IGY contribution.
			Use of IGY data.
		A.F. Treshnikov	Influence of the IGY on the growth of marine geophysics.
		R.I. Currie	Influence of the IGY on biological oceanography.
		R.W. Stewart	The future.
S-9	G.B. Kullenberg	M. Waldichuk	Sources of marine pollution.
		E.J. Tutuwan	Marine pollution in coastal waters of Western Africa.
		G. Kullenberg	Oceanic processes and marine pollution.
		D. Lal	Geochemistry in relation to marine pollution.
		S. Fowler	Biological transfer of pollutants in the marine environment.
		A.D. McIntyre	Biological effects of marine pollution and techniques for their surveillance.
S-10		R. Smith/ K. Baker (US)	Measurements of oceanic productivity.
		J. O'Brien (US)	Measurement of oceanic wind.
		R. Legeckis (US)	Infrared observations of the sea.
		E. Njoku (US)	Microwave radiometer observations of the sea.
		R. Ramseier (Canada)	Observations of the Arctic.
		R. Cheney (US)	Satellite Altimetry.
S-11	A. Foldvik	K. Aagaard (US)	Cirulation in the Arctic Ocean-recent developments.
		V. Alexander (US)	Some unique features of northern ice-impacted ecosystems.
		D. Dyrssen (Swe)	Mixing of Arctic water masses - conclusions from traces and constituent concentrations.
		J. Thiede (Nor)	Quarternary paleo-oceanography of the North Polar Seas.
		N. Untersteiner (US)	Sea ice as a geophysical material.
		J. Walsh (US)	Sea ice in the global climate system.
S-12	O.J. Koblentz-Mishke	K. Denman (Canada)	Rates of formation and decay of vertical line scale phytoplankton variability.
		R. Eppley	Time and length scales of phytoplankton species assemblages and primary production on the shelf off Southern California.
		T. Platt	Mesoscale plankton variability in the southwest Tasman Sea.
		R.S. Smith	
A-1	P. Hisard	Dr. Miyakoda (US)	
		E. Sarachik (US)	
		C. Gautier (US)	
		M. Fieux (France)	
		P. Speth (US)	

SESSION	CONVENOR	SPEAKERS	TITLE/SUBJECT
A-2	W. Pitman	A.B. Watts (US)	Subsidence, flexure and sea level changes and the stratigraphy of passive margins.
		B.C. Schreiber (US)	Permo-Triassic sea level changes.
		W.B.F. Ryan (US)	Sea level changes and the development of submarine canyons.
		D. Swift (US)	Coastal response to sea level change: fluid and sediment dynamical responses.
		Fifth person to be selected	
A-3	J.L. McLachlan	A. Chapman (Canada)	The effects of physical, chemical, and biological variables on estimates of seaweed production in the northwest Atlantic.
		I. Wallentinus (Swe)	Productivity and determinants of the structure of seaweed communities - a Baltic perspective.
		K.H. Mann (Canada)	Predators as determinants of the structure of seaweed communities.
		M.M. Littler	Primary productivity and survival strategies of tropical marine macroalgae.
		B. Santelices (Chile)	Factors regulating intertidal algal community structure in central Chile.
A-4	R. Chesselet	D. Lal (India)	Introductory remarks
		R. Duce (US)	Sea salt and trace element transport across the sea/air interface.
		J. Prospero (US)	Mineral aerosol transport to the world ocean.
		R. Chesselet (France)	Organic carbon exchange between the ocean and atmosphere.
		O. Zafiriou (US)	Photochemical effects on sea/air exchange.
		W. Seiler (FRG)	The ocean as a source of biogenic gases.
		E. Goldberg (US)	Atmospheric fluxes of anthropogenic substances to the ocean.
A-5	S. Uyeda/ T. Hilde	S. Uyeda (Japan)	Tectonics (thermal)
		H. Kanamori (US)	Seismicity
		T. Hilde (US)	Subduction-erosion
		A. Nur/Z. Ben-Avranam (US)	Collision-accretion
		I. Kushiro (Japan)	Arc volcanism (petrology)
		C. Langmuir (US)	Arc volcanism (geochemical)
A-6	S. Snedaker	A. Lugo	Global standing-stock biomass and carbon metabolism of mangroves relative to atmospheric carbon.
		F. Pannier	Physiology of the woody halophytes with emphases on salt tolerance and protein synthesis.
		S. Snedaker	Global inventory of mangrove forest with reference to current status, species dominance, climatic regions, and fisheries.
		(two additional speakers to be selected.)	
A-7	T. Platt	B. von Bodungen (FRG)	Phytoplankton growth dynamics during spring blooms in antarctic waters.
		S. Taguchi (US)	Energy efficiency of primary production in high latitude phytoplankton.
		G. Jacques (Fra)	Physiological ecology of antarctic phytoplankton.
		G.E. Fogg (UK)	Influence of hydrography and nutrient supply on growth of antarctic phytoplankton.
		W.K. Li (Can)	Physiological and biochemical aspects of temperature adaption in arctic phytoplankton.
		T. Hoshiai (Japan)	Ecology of ice-algae in the antarctic.
A-8	D. Cronan	P.A. Rona	"Hydrothermal mineralization at slow-spreading oceanic ridges: the mid-Atlantic & Carlsberg Ridges."
		R. Hekinian	"Hydrothermal mineralization at a fast-spreading oceanic ridge: the East Pacific Rise."
		M. Menzies	"The influence of rock/water interaction on mineralization at mid-ocean ridges."
		A. Morrison	"Disseminated mineralization within the ocean crust."
		D. Cronan	"Mineralization at convergent plate boundaries."
		J. Edmond	"Geochemistry of mineralizing hydrothermal solutions at plate boundaries."

SESSION	CONVENOR	SPEAKERS	TITLE/SUBJECT
A-9	T. Sanford	C. Ericksen (US)	Fine-scale connections of current with density.
		A. Gargett (Can)	The boundary between waves & turbulence.
		N. Oakey (Can)	The energetics and statistics of the microscale velocity structure in the ocean.
		J.D. Smith (US)	Turbulence at ocean boundaries.
		R. Pinkel (US)	Acoustic remote measurement of small-scale motion in the ocean.
A-10	P. Rhines		
A-11	N. Flemming	A. Edwards	Marine bilogy of St. Paul's Rocks.
		N. Flemming	Quarternary low sea levels & human occupation of the continental shelf.
		P. Zoutendyk	Energy flow in algal ecosystems.
		A. Stefanon	Submarine outcrops of the north Adriatic.
		(additional speakers to be selected)	
A-12	M. Ishino	J. Shepard (UK)	Multispecies promising methods for the assessment of fisheries.
		T. Laevastu (US)	Multispecies ecosystem simulations for the evaluation of fisheries resources and for the determination of the response of the resources to fishery & ocean environmental anomalies.
		G.I. Murphy (Australia)	Multispecies population dynamics: a cul-de-sac?
		R.W. Sheldon (Can)	The biomass spectrum and its relevance to multispecies fisheries.
		E. Ursin (Den)	Factors stabilizing fish stocks in marine ecosystems.
A-13	S. Honjo	D.W. Spencer (US)	Geochemistry of marine particulates.
		S. Honjo (US)	Roles of settling particles in pelagic sedimentation.
		I.N. McCave (UK)	Size spectra and aggregation of suspended particles.
		J.H. Martin (US)	Transportation of energy & nutrients via particulate matter in the ocean.
		S. Wakeham (US)	Sedimentary processes of organic compounds in deep-sea columns.
		R. Thunell (US)	Pelagic sedimentation of skeletal particles: biocoenosis and micropaleontology.
A-14	L.D. Wright	E.B. Thornton (US)	Dynamics of breaking waves.
		R. Holman (US)	Run-up spectra on high-energy beaches.
		R.T. Guza (US)	Edge waves and surf beats.
		R.J. Byrne (US)	Tidal inlets in high-energy environments.
		B.G. Thom (Australia)	Barrier evolution on high-energy coasts.
		L.D. Wright (Australia)	Morphodynamics of high-energy beaches.
A-15	K. Federov	J.D. Woods (FRG)	Three-dimensional fine structure of an upper ocean mesoscale front measured by Batfish.
		J.S. Turner (Australia)	The formation and propagation of double-diffusive instrusions across fronts.
		C. Garrett/J.W. Loder (Canada)	The role of internal friction in frontal decay and cross-frontal transfer.
		M.E. Stern (US)	instabilities and non-linear waves on baroclinic fronts.
		R.W. Garvine (US)	Cross-frontal mixing for upper ocean density fronts deduced from an integral circulation model.
		C.N.K. Moores (US)	Cross-frontal mixing in coastal upwelling frontal zones.
		M.J. Bowman (US)	Cyclonic eddies, cross-frontal mixing and squid fishing stratigies in the western approaches to Cook Strait, New Zealand.

SESSION	CONVENOR	SPEAKERS	TITLE/SUBJECT
A-16	V. Krasheninnikov	I. McDougal	Numerical time scales, K-Ar isotopic dating, and their application to the ocean basins.
		V. Krasheninnikov	Problem of biostratigraphic correlation of oceanic sediments of different climatic belts and paleo-environments.
		E. Kaufmann	Dating and correlating tectonoeustatic correlations in the Mesozoic.
		D. Kent	The geomagnetic-reversal time scale and prospects for future refinement.
		N. Shakleton	The extension of high-resolution isotope stratigraphy beyond the past million years.
		A. Fisher	
A-17	J. Simpson	P.F. Linden	Density-driven coastal currents.
		J. Zimmerman	The interaction of tidal & residual flows with seabed topography.
		J.S. Allen	The dynamics of wind-driven currents in shelf seas.
		R.O. Fournier	Biomass distributions in relation to the physical structure of shelf seas.
		I.D. James	The modeling of circulation and fronts in the shelf seas.
		R.D. Pingree	Interdisciplinary studies at the European shelf break.
A-18	K. Croasdale	J.R. Moore (US)	Arctic Ocean engineering research: needs and opportunities to support Arctic developments.
		B.D. Wright (Can)	Arctic engineering for Canadian offshore resource developments.
		T. Carstens/J. Nordoe (Norway)	Special hazards in ice-free waters at high latitudes.
		M. Metge (Can)	Oceanographic research for Beaufort Sea petroleum exploration and production.
		N. Nobel. (Can)	Arctic ship technology to the year 2000.

POSTER SESSIONS

A large number of interesting contributions will be given through display presentations. All delegates are encouraged to visit these displays. At specific times, authors will be in attendance by their displays to discuss their work. A listing of all poster sessions will be distributed to all delegates at the Assembly.

EXHIBITION OF MARINE SCIENCE RESEARCH EQUIPMENT (MAREX '82)

MAREX '82 is planned to complement the Joint Oceanographic Assembly. It will focus attention not only on the "state of the art" but will provide a window on future developments in marine science research equipment. MAREX '82 is being managed by Denman Exhibitions Limited.

Delegates attending the Joint Oceanographic Assembly will be able to attend this exhibition free of charge (please see accompanying brochure).

REGISTRATION

INTRODUCTION

Registration is necessary in order to participate in scheduled activities. The organization of the Assembly is based on advance registration prior to 15 May 1982. Registrations received after this date or during the Assembly will be accepted but at a higher fee. If you plan to attend the Assembly, please complete the enclosed registration form and return it together with a full remittance as promptly as possible to:

Mr. H.B. Nicholls
JOA Registration Office
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia
Canada, B2Y 4A2
(Telephone No. (902) 426-7879;
Telex No. 019-31552)

Please use SEPARATE FORMS (make photocopies if necessary) FOR EACH REGULAR, STUDENT AND RETIRED REGISTRATION. Remittances should be made by cheque or money order, in Canadian $ payable to the JOINT OCEANOGRAPHIC ASSEMBLY.

REGISTRATION FEES

All fees are quoted in Canadian $

	Before 15 May 1982	After 15 May 1982
Regular	$250	$300
Student	$125	$150
Retired	$125	$150
Accompanying Adult	$ 50	$ 50
Children under 18 years	$ 25	$ 25

Regular, student and retired registrants will be entitled to attend the opening and closing ceremonies, all scientific sessions, exhibits, and Assembly social events and receptions. They will receive personal copies of the collected Abstracts and other Assembly literature, and will be able to purchase tickets for tours, visits and other events and to receive daily coffee services. Additionally, delegates will receive a copy of the Proceedings, in book form, of the General Symposia.

Accompanying adults and children will receive the same benefits but will not participate in scientific sessions nor receive the collected Abstracts or Proceedings.

REGISTRATION CONFIRMATION

Receipts will be sent as soon as a remittance is received. Please present the receipt at the Registration Desk in order to collect your Assembly material. Note that receipts will not be mailed out if there is insufficient time to ensure delivery; such receipts can be claimed upon arrival.

CANCELLATION AND REFUNDS

Written or cabled requests for cancellation and refund of registration fees should be addressed to the JOA Registration Office (address above). Full refunds will be possible if the requests are received BEFORE 24 JULY 1982.

REGISTRATION DESK

The Registration Desk for the Assembly will be located in the "Green Room" of the Student Union Building, Dalhousie University. It will be open on Saturday, July 31, and Sunday, August 1, from 1 p.m. to 9 p.m. Thereafter it will be open from 8 a.m. to 4 p.m. daily. On Saturday, August 7, and Sunday, August 8, it will be closed. On Friday, August 13, it will close at noon.

ACCOMMODATION

INTRODUCTION

Please use the enclosed Accommodation Reservation Form to obtain your accommodation. This form should be returned to the JOA Registration Office (address under REGISTRATION, above). It is strongly recommended that you return your Accommodation Reservation Form with your Registration Form, but in any case not later than 15 May 1982. There are always many tourists in Halifax during the summer months; so early reservation of accommodation is essential.
Confirmation of reservations will be sent to you by the JOA Registration Office.

HOTELS

For those preferring to stay at a hotel, double (i.e. one double bed or two single beds) and single rooms have been reserved in the following Halifax/Dartmouth hotels:

Barrington Inn, Halifax
Chateau Halifax, Halifax
Citadel Inn, Halifax
Dresden Arms, Halifax
Holiday Inn, Dartmouth
Holiday Inn, Halifax
Hotel Nova Scotian, Halifax
Keddy's Motor Inn, Halifax
Lord Nelson Hotel, Halifax

All the Halifax hotels are within approximately 2 km of Dalhousie University, the site of the Assembly (refer to map inside front cover for locations). A special bus service will be provided linking all hotels with Dalhousie University. Hotel prices (subject to change) are stated on the Accommodation Reservation Form. The prices quoted do not include meals. In general, children are accommodated free of charge when sharing their parents' room but there may be an additional charge for rollaway beds. An advance deposit of $65 per room is required for all hotels.

UNIVERSITY RESIDENCES

Accommodation is available at the following universities in the form of single and twin-bedded rooms:

Dalhousie University
Technical University of Nova Scotia (TUNS)
Saint Mary's University
Mount Saint Vincent University

Saint Mary's University and the Technical University of Nova Scotia are both within a short distance, approx. 1.5 km, of Dalhousie University, the site of the Assembly. Mount Saint Vincent University is approx. 7 km from Dalhousie University (refer to map inside front cover for locations). A special bus service will be provided linking Saint Mary's, TUNS and Mount Saint Vincent with Dalhousie University. Residence prices (subject to change) are stated on the Accommodation Reservation Form. In each case breakfast is included in the price. Other meals are available, which can be purchased either on an individual basis or (at a reduced rate) as a full-day package, details available on arrival. In general, children are accommodated free of charge when sharing their parents' room but there may be an additional charge for rollaway beds. An advance deposit of $50 per room is required for all university student residences.

CAMPING

There are camping facilities available near Halifax. Those registrants wishing further information should write directly to:

JOA Travel Information
P.O. Box 1749
Halifax, Nova Scotia
Canada, B3J 3A5

GENERAL INFORMATION

INTRODUCTION

Halifax, the capital city of the Province of Nova Scotia, is a major conference and convention centre located on Canada's Atlantic Coast. It is about 1250 km from Montreal and 920 km from Boston, USA. Dalhousie University, the site for this Joint Oceanographic Assembly is situated in the south east end of the city.

TRAVEL

BY AIR

The official carriers for the Assembly are Canadian Pacific Airline (CP Air) and Air Canada (AC). They will make special arrangements to assist delegates. CP Air and AC will also provide a facility at the Assembly for delegates to arrange and/or confirm the homeward reservations, and flights to other destinations as required.

Halifax can be reached via Montreal (Air Canada, CP Air and Eastern Provincial Airways (EPA)), Toronto (Air Canada, CP Air (EPA)). Transatlantic flights arrive in Halifax direct from Europe and in Montreal from which there are commuting flights to Halifax. Air Canada also provides daily flights from Boston and New York. CP Air is the Canadian carrier serving the far East and South America. Halifax International airport is located approximately 30 km from downtown Halifax. The airport is serviced by bus service and taxis.

BY TRAIN

Train service (VIA Rail) is available from Toronto and Montreal to Halifax. VIA Rail service connects most major centres across Canada.

BY CAR

Access routes are detailed on the map on the inside cover of the brochure. When they reach the Dalhousie University Campus, drivers should follow the "Registration Area" signs which lead to the Student Union Building. A valid driver's licence from any country is good in Nova Scotia and other provinces of Canada for a period of three months. If driving across the US/Canadian border, bring the vehicle's registration certificate. If you are driving a rent-a-car ensure that you have the rental contract.

PASSPORTS AND VISAS

Delegates are strongly advised to determine their individual requirements with respect to entering Canada. Citizens of some countries require visitors visas in addition to passports. Persons from outside the U.S.A., wishing to enter the U.S.A. from Canada should make arrangements before leaving their home country. Multiple entry visas are required in entering Canada and/or the U.S.A. more than once.

US citizens do not require passports or visas to enter Canada, but may be asked to prove their citizenship by showing a birth certificate, voter's registration card or driver's licence. Registered Aliens driving in the U.S.A. must have their Alien Registration Cards.

Information concerning entry into Canada may be obtained at any Canadian Embassy or Consulate.

CUSTOMS

For Customs Regulations as they apply to visitors entering Canada, please contact the nearest Canadian Embassy or Consulate, or write to:

Customs and Excise Branch
Revenue Canada
Connaught Building
Mackenzie Avenue
Ottawa, Canada
K1A 0L5

HEALTH REQUIREMENTS

All visitors are strongly advised to check that they have complied with all requirements both for entry to Canada and for their return journey.

In view of the high cost of hospitalization and medical services in Canada, visitors are strongly advised to make any necessary arrangements for short-term health and accident insurance before departure or upon arrival. Arrangements have been made with the Mutual of Omaha Insurance Company for the sale of this insurance at the Registration Desk. Coverage takes effect immediately upon purchase and costs approximately $2.50 (Canadian) per person per day.

INSURANCE

No responsibility can be assumed for personal accidents, sickness, theft or property damage on behalf of the delegates. Delegates are encouraged to take out insurance as they consider necessary.

BANKING FACILITIES AND FOREIGN EXCHANGE

Foreign exchange facilities for travellers arriving in Canada are available daily at most major airports. Banking facilities will be available at the Assembly site during the week days. This service will be provided by the Royal Bank of Canada. It is strongly recommended that delegates purchase travellers cheques in Canadian funds before leaving their home countries.

SPORTS FACILITIES

Delegates will have access to sports facilities on all the University campuses (i.e. Dalhousie, St. Mary's, Mount St. Vincent and the Technical University of Nova Scotia). There are sport and recreation facilities in the Halifax-Dartmouth area, available at going rates. However, this period of this year being at the height of the tourist season in Nova Scotia you may find it necessary to make reservations.

MEALS AND DRINKS

A cafeteria and bar facilities are situated in the Student Union Building. In addition, the University Faculty Club which houses a restaurant and bar will be available to delegates.

TRANSPORTATION

Transportation between local hotels and the Assembly site will be provided as well as from the University residences other than Dalhousie residence. There is a public bus system which runs to all parts of the city of Halifax and to the airport.

MESSAGES AND LETTERS

During the Assembly, letters and messages can be addressed to the

JOA secretariat
Student Union Building
Dalhousie University
Halifax, Nova Scotia
Canada
Phone No. (902) 426-7879

CLIMATE

During August it is usually warm in Halifax.

Temperatures	Daily near 18°C
	Mean minimum 14°C
	Mean maximum 22°C

ASSEMBLY SPECIAL EVENTS

The National Steering Committee for the Joint Oceanographic Assembly invites all attendees to the following special events to which admission is free:

Welcoming Reception: An informal social event to welcome all delegates to the Assembly will be held in the Faculty Club, on the evening of Sunday August 1. Drinks will be served and it is hoped that all will attend.

Opening Ceremonies: The opening ceremonies will take place on Monday morning August 2 at 0930. The opening ceremonies will be held in the Rebecca Cohn Auditorium.

Lobster Dinner: A lobster dinner will be held during the second week of the Assembly.

Chowder Party: A chowder party will be held at the Bedford Institute of Oceanography. Transportation from hotels and community residences will be provided.

Buffet Dinner: A buffet dinner will be held in connection with the opening of the MAREX '82. All delegates to the JOA are invited free of charge.

Further details concerning all social events will be provided to delegates in the registration kits.

*Please note dress for all functions will be informal.

JOINT OCEANOGRAPHIC ASSEMBLY
HALIFAX, NOVA SCOTIA, CANADA, 2-13 AUGUST 1982

ACCOMMODATION RESERVATION FORM

Please complete and return this form, together with your Registration Form and appropriate remittance to: Mr. H.B. Nicholls, JOA Registration Office, Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, Nova Scotia, Canada, B2Y 4A2.

PLEASE TYPE OR PRINT LEGIBLY

NAME _____ SEX: ☐ MALE ☐ FEMALE

FULL MAILING ADDRESS _____

_____

_____ TELEX _____ TELEPHONE _____

TYPE OF ACCOMMODATION DESIRED:
- ☐ HOTEL (Complete Section A below)
- ☐ UNIVERSITY STUDENT RESIDENCE (Complete Section B below)
- ☐ WILL MAKE OWN ARRANGEMENTS ELSEWHERE (If possibie, indicate your place of residence while in Halifax): _____

All requests for accommodation reservations must be received NO LATER THAN 15 May 1982. Room assignments will be on a first come first served basis.

SECTION A: HOTELS

List of Hotels and Prices

Hotel	Single Room* (one single bed)	Double Room* (one double bed or two single beds)
Hotel Nova Scotian	Can. $ 42	Can. $ 52
Holiday Inn, Dartmouth	44	53
Lord Nelson	45	51
Dresden Arms	45	55
Keddy's Motor Inn	48	54
Chateau Halifax	52	61
Holiday Inn, Halifax,	55	61
Barrington Inn	56	66
Citadel Inn	57.50	66.50

*Note prices subject to change

HOTEL PREFERRED

Please indicate your first four choices in order of preference:

1st _____ 2nd _____

3rd _____ 4th _____

DATES

Arrival Date _____ Time _____

Departure Date _____ Time _____

NUMBER IN PARTY

Adults _____ Children _____

ROOMS REQUIRED

Type (please check)		Number of Rooms
Single (1 Single Bed)	_____	_____
Double (1 Double Bed)	_____	_____
Double (2 Single Beds)	_____	_____

DEPOSIT ENCLOSED: No. of Rooms____ x $ 65 Can. = $ ____

DATE: _____ SIGNATURE: _____

SECTION B: UNIVERSITY STUDENT RESIDENCES

List of Residences and Prices

Residence	Single* (one single bed)	Twin* (two single beds)
Mount Saint Vincent	Can. $ 14	Can. $ 21
Saint Mary's	17	27
+Dalhousie-House Hall	20	30
Technical Univ. of N.S.	22	30
+Dalhousie-Shirreff Hall	25	35

*Note prices subject to change

+Cannot accommodate children under 12.

RESIDENCE PREFERRED

Please indicate your first three choices in order of preference:

1st _____ 2nd _____

3rd _____

DATES

Arrival Date _____ Time _____

Departure Date _____ Time _____

NUMBER IN PARTY

Adults _____ Children _____

ROOMS REQUIRED

Type (please check)		Number of Rooms
Single (1 Single Bed)	_____	_____
Twin (2 Single Beds)	_____	_____

DEPOSIT ENCLOSED: No. of Rooms____ x $ 50 Can. = $ ____

DATE: _____ SIGNATURE: _____

Please give the names of any registered delegates sharing accommodation with you:

Name _____ Name _____

JOINT OCEANOGRAPHIC ASSEMBLY

HALIFAX, NOVA SCOTIA, CANADA, 2-13 AUGUST 1982

REGISTRATION FORM

Please complete and return this form, together with a full remittance to: Mr. H.B. Nicholls, JOA Registration Office, Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, Nova Scotia, Canada, B2Y 4A2.

NOTE: Forms received WITHOUT the appropriate remittance DO NOT CONSTITUTE REGISTRATION and will not be processed. Deadline for receipt in Dartmouth is 15 May 1982.

PLEASE TYPE OR PRINT LEGIBLE

PERSONAL DATA PROF. ☐ DR. ☐ MR. ☐ MRS. ☐ MS. ☐ MISS ☐

FAMILY NAME: _____ GIVEN NAME(S): _____ _____ _____

FULL MAILING ADDRESS: _____
(for correspondence)

_____

_____

SCIENTIFIC DISCIPLINE: _____

TELEX NUMBER: _____ TELEPHONE NUMBER: _____

REPRESENTING GOVERNMENT, INSTITUTION, ETC.: _____

NUMBER OF ACCOMPANYING NON-PARTICIPATING PERSONS: ADULTS _____ CHILDREN _____

GIVE NAMES AS YOU WISH THEM TO APPEAR ON NAME TAGS

REGULAR, STUDENT, RETIRED: _____

ACCOMPANYING ADULT(S): _____

ACCOMPANYING CHILDREN: _____

TRAVEL INFORMATION

Please provide following information if available:

I plan to arrive in Halifax on (state day and date): _____

If travelling by air: Flight No. _____ Time of Arrival in Halifax _____ No. in party _____

Expected date of departure from Halifax: _____

AFFILIATION WITH ASSOCIATED ORGANIZATIONS (Please indicate)

☐ CCCO ☐ CMG ☐ ECOR ☐ IABO ☐ IAMAP ☐ IAPSO ☐ SCOR

☐ OTHER (Please name) _____

REGISTRATION FEES:

	Received BEFORE 15 May 1982	AFTER 15 May 1982	CAN. $
☐ Regular	Can. $250	Can. $300 =	
☐ Student*	Can. $100	Can. $125 =	
☐ Retired	Can. $100	Can. $125 =	
☐ Accompanying Adults	Can. $50	Can. $50 x No. _____ =	
☐ Children under 18 years	Can. $25	Can. $25 x No. _____ =	

* The following statement must be completed: I certify that the registrant is a student currently working towards a recognized degree.

SUPERVISOR'S SIGNATURE: _____

ACCOMMODATION FEES: Enter deposit from Accommodation Reservation Form. ☐

TOTAL REMITTANCE IN CANADIAN $, MADE PAYABLE TO: JOINT OCEANOGRAPHIC ASSEMBLY ☐

METHOD OF PAYMENT: CHEQUE ENCLOSED ☐ MONEY ORDER ENCLOSED ☐

DATE: _____ SIGNATURE: _____