The 1990 Western Pacific Geophysics Meeting was held in Kanazawa, Japan from August 21-15. This was the first meeting of a new series of meetings for the American Geophysical Union and it proved to be very successful in terms of the scientific program and attendance which was at 1,069 participants. The intent of this meeting was an effort on the part of the American Geophysical Union (AGU) and several Japanese geophysical societies to gather individual Earth and space scientists at a major scientific meeting to focus on geophysical problems being studied in the western Pacific rim. The meeting was organized along the lines of a typical AGU annual meeting with a some invited talks, many contributed talks, poster sessions, and with emphasis on presentations and informal discussions. The program committee consisted of scientists from both the U.S. and Japan.

This meeting provided ample opportunities for U.S. and Japanese scientists to get to know each other and their works on a one-to-one basis. It was also a valuable opportunity for students studying geophysics to get together and interact with each other and with scientists from both the U.S. and Japan.

There were 939 abstracts submitted to the conference and a total of 102 sessions designed as a result of the abstracts received. Some of the special focussed topics are described below.

- **Space Geodetic and Observatory Measurements for Earthquake and Tectonic Studies** - Papers on the applications of high-accuracy space geodetic (GPS, VLBI, SLR) and observatory (strainmeters, tilmeters) techniques to earthquake and tectonics studies were presented. Likewise, talks on continuous measurement of strain were also given.

- **Gravity, Sea Level and Vertical Motion** - A major challenge to Earth scientists in the 1990s will be determining the rate, if any, of global warming caused by increasing carbon dioxide from the combustion of fossil fuels and deforestation. Several papers were presented on information related to gravity and vertical motion sea level changes.

- **Variations in Earth Rotation and Earth Dynamics** - Variations in the Earth orientation are caused by deformation of the solid Earth, and by exchanges of angular momentum between the solid and fluid part of the Earth. These variations are in the rotation rate of the Earth about its spin axis, polar motion, nutations and precessions, Earth tides, the Earth's mass distribution, and the Earth's geopotential. Talks were given that infer dynamic properties of Earth from measured variations in Earth orientation.

- **Sedimentary Magnetism** - This session focussed on magnetization processes in sediments and sedimentary rocks, with special reference to diagenetic alteration of magnetic minerals in oxidizing and reducing conditions, and the implication of diagenetic alternation for the utilization of the rock magnetic rock as a means of stratigraphy correlation. Sedimentary rocks and sediment records of geomagnetic field behavior, including secular variation, transition records, events and excursions, polarity reversal stratigraphy, and the correlation of polarity records with biozonations and the oceanic magnetic anomaly record.
• Global Processes and Precipitation - This session was devoted to results of measurement techniques with potential for global scale measurements of hydrological variables. Present and future space-borne measurements of precipitation, soil moisture, water vapor, snow cover and glacier volume were discussed as well as measurements that can be used to model oceanic evaporation, terrestrial evapotranspiration, runoff and the advection of water vapor.

• Subsurface Contaminant Transport - The first part of this session focussed on theory and interpretation of field experiments and provided a forum in which both experimental and theoretical aspects of issues related to contaminant transport was debated. Questions related to scaling and the possible fractal nature of hydrological parameters, affecting transport was raised. The second part focussed on new measurement techniques which was motivated by the need to enhance field measurement capabilities between Earth scientists and those in engineering fields to move decisively toward solutions to the subsurface contamination problems that face many of the nations that participated in the meeting.

• U.S. Western Pacific Rim Initiatives in Hydrology - This was a forum for individuals who attended the meeting to explore the possibility of developing joint initiatives between the U.S., Japan, and other western Pacific nations. All branches of hydrology were open for discussion in the areas of research, education and exchange programs, as well as funding opportunities.

• Role of Marginal Seas in the Dynamics and Water Mass Characteristics of the Western North Pacific - talks were given on the branching of the Kuroshio and its penetration into coastal regions, incorporation of coastal water into the offshore circulation, lateral mixing across the coastal seas, open ocean boundary, water mass modification in the coastal seas and other topics relevant to the physical makeup of the broad western boundary region.

• Shelf and Coastal Circulation - The session emphasized the role of shelf and coastal circulation in determining the material flux from land to open sea. Talks on mechanisms of material transport, dynamics of wind-driven, buoyancy-driven and tide induced residual circulation, interactions between river rain and coastal, coastal and shelf open-sea waters, fronts, long-term variability, and measurement techniques applied to coastal problems were presented.

• Earthquake Prediction and Hazard Assessment - The focus was on the deterministic and probabilistic approaches to prediction and hazard assessment. Advances in theory and results of observations with emphasis on case histories and on prediction and forecasting.

• Seismic Wave Propagation in Realistic Media - This session explored theory and observations of seismic sources and waves in anisotropic and lossy media, with scattering and lateral heterogeneity, and forward and inverse problems.

• Dynamics and Structure of Plate Boundaries and of the Earth's Deep Interior - These sessions emphasized theory observations processes and structures with applications to regional tectonics and geodynamics models, and results from seismological, geodetic, and core-mantle boundary.

• Physics of Earthquake Processes and Recent Earthquakes - The session focussed on the theory and observations of earthquake nucleation and fault rupture, seismotectonics, and modeling of seismic sources. New results from recent earthquakes and laboratory studies relevant to seismogenesis were presented.
• Computer Experiments in Geospace Plasmas - This session focussed on recent advances in the use of numerical simulation in space plasmas. Talks on the application of such methods to active experiments, waves and instabilities, boundary layer phenomena, and global modeling in magnetospheric, heliospheric, and ionospheric plasmas were given.

• Ground, Balloon, and Rocket Observations of the Aurora - The emphasis of the session was to consolidate all aspects of auroral phenomena that are observed on the ground and on-board balloon and rocket in the regions from the equator to the polar cap. The session also focussed on the results from conjugate observation, multi-ground observation and simultaneous observation with satellites.

• Solar Wind Interaction With Venus - Talks in this session covered the understanding of the plasma and electromagnetic environment of Venus. Subjects included upstream waves and the bow shock, ion pickup, the physics of the ionopause, and ionosphere and VLF waves and lightning.

• Cusp and Boundary Layer ULF Waves - the intent of this session was to assess the spectrum of cusp and boundary layer ULF waves in order to understand their role in the transfer of energy and momentum to the magnetosphere to the magnetosphere and the extent to which they are observable within the magnetosphere. Contributions included wave theory and satellite and ground observations.

• Tectonics, Magmatism and Hydrothermal Processes in Active Backarc Regions - Rifting, igneous activity, and hydrothermal circulation are interlinked dynamic processes operating in active arc-backarc systems. The intent of this session was to increase the understanding of the dynamics of convergent plate margins through exchange of data and ideas on the mechanisms and temporal and spatial relationships of these processes at various arc-backarc systems. Contributions on those dealing with tectonic evolution of backarc basins, petrology in relation to rift tectonics, paleomagnetism applied to backarc opening, hydrothermal activity, and mineralization in various arc-backarc systems were given.

• Chemical Geodynamics and Evolution of the Earth and Planets - The main topics addressed included accretion and thermal evolution of the Earth and planets; Archean tectonics and evolution of the continental crust; geochemical evolution of the Earth's mantle, and global geodynamics.

• Modeling of Volcanoes and Volcanisms - During this two-day session recent developments in volcanology and related research fields was featured with special emphasis on models for particular volcanoes and specific volcanic events, chemical and physical properties of magmatic volatiles, experimental and theoretical studies on the genesis and transport of magmas, and mechanisms for volcanic eruption.

This meeting was considered to be most successful and did set the tone for holding the 1992 Western Pacific Geophysics Meeting which was held in Hong. The only publication produced as a result of this meeting was the abstracts which was printed in Eos. A copy of the abstract volume is attached.
Western Pacific Geophysics Meeting

1990 WPGM PROGRAM

August 21-25  Kanazawa, Japan
Program Committee for the Meeting

• Cochairmen
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The Sponsors of the first Western Pacific Geophysics Meeting

The first Western Pacific Geophysics Meeting is jointly sponsored by the American Geophysical Union and the following major Japanese geophysical scientific societies. (Each society's representative on the organizing committee is listed immediately after the name of the society.)

- Geochemical Society of Japan: Sadao Matsuo, University of Electro-Communications
- Geodetic Society of Japan: Minoru Tanaka, Geographical Survey Institute
- Geological Society of Japan: Asahiko Taira, Ocean Research Institute, University of Tokyo
- Meteorological Society of Japan: Tomio Asai, Ocean Research Institute, University of Tokyo
- Oceanographic Society of Japan: Yutaka Nagata, Department of Geophysics, University of Tokyo
- Seismological Society of Japan: Masataka Ando, Disaster Prevention Research Institute, Kyoto University
- Society of Geomagnetism and Earth, Planetary and Space Sciences: Iwane Kimura, cochairman representing the Japanese societies, Department of Electrical Engineering, Kyoto University
- Volcanological Society of Japan: Shigeo Aramaki, Earthquake Research Institute, University of Tokyo
- Japanese Hydrological Committee for WPGM: Kuniyoshi Takeuchi, Faculty of Engineering, Yamanashi University

- American Geophysical Union:
  Christopher Harrison, cochairman representing AGU, University of Miami
  Juan Roederer, AGU International Secretary, University of Alaska
  A. F. Spilhaus, Jr., AGU Executive Director

Local Organizing Committee
Chairman: Iwane Kimura, Kyoto University
Yoshiteru Kono, Kanazawa University
Masayoshi Mambo, Kanazawa University
Hirosi Matsumoto, Kyoto University
Isamu Nagano, Kanazawa University
Toru Sato, Kyoto University
Nobutada Takase, Kanazawa University

Financial Support
- The Commemorative Association for the Japan World Exposition (Japan)
- Ishikawa Prefecture and Kanazawa City (Japan)
- National Aeronautics and Space Administration (United States)
The 1990 Western Pacific Geophysics Meeting
Kanazawa, Japan / August 21-25, 1990

How To Use This Program

To find the information you need:

Abstracts: These were published in the July 10th issue of Eos. The abstracts are listed within sponsoring sections by day, in numerical order of presentation within each session.

By subject: Scan the Meeting Summary for sessions and jointly sponsored sessions of interest. After finding the day and time of the appropriate session(s), turn to the detailed program.

Detailed Session Program: The title, time, and room name or number appear for each session along with a full listing of the papers and their authors.

Known presenting authors are listed in bold type; and the presentations are oral unless otherwise indicated.

By author: Refer to the author surnames which are listed alphabetically in the index. Each author entry is followed by the numbers of all the published papers for which that person is either author or coauthor.

The papers: Paper numbers give the following information:

- the initial letters are the AGU section abbreviations (see the separate listing on this page)
- the first digit shows what day the paper is to be presented: 2, Tuesday; 3, Wednesday; 4, Thursday; 5, Friday; 6, Saturday
- the second digit indicates whether the presentation is in the morning or the afternoon: 1, A.M.; 2, P.M.
- the number after the hyphen indicates the paper's position in the sequence of papers in that session.

For example, paper number A22A-07 is in Atmospheric Sciences, is being presented on Tuesday afternoon (concurrent session A), and is the seventh paper in the session.

AGU Section Abbreviations

A Atmospheric Sciences
G Geodesy
GP Geomagnetism & Paleomagnetism
H Hydrology
O Ocean Sciences
P Planetology
S Seismology
SP Solar-Planetary Relationships
T Tectonophysics
V Volcanology, Geochemistry, & Petrology

The City of Kanazawa

With a population of 430,000, Kanazawa is both one of Japan's largest coastal cities and the seat of the Ishikawa prefectural government.

A charming blend of the old and the new, Kanazawa is well known as an ancient castle town and was once the headquarters of the Maeda clan. The most powerful feudal clan of Japan's Edo Period, the Maeda ruled for three centuries after 1583. Kanazawa has retained more of the Edo Period culture than any other city in Japan. For these reasons, there are many historic sites to visit, such as the castle, Kenrokuen Park and other monuments. In terms of traditional crafts, the city is comparable to Kyoto both in quality and skills.

There are many excellent restaurants where lunch or dinner costs from about 500 to 1000 yen.

How To Reach the Hotels

From Komatsu Airport: Take the airport limousine bus that goes to Kanazawa train station. In Kanazawa City there are several stops, of which the last four are marked on the map on page 2. Most hotels are within walking distance of these stops.

From Kanazawa Train Station: It usually takes less than 15 minutes by taxi to most hotels. Taxi fare is up to about 1000 yen.

How To Travel to the Convention Halls

Many of the hotels are within a 15-minute walk of the convention halls. From Kanazawa station, it takes 10-15 minutes by taxi to Kosei Nenkin Kaikan. Taxi fare is about 300 yen. You may also take Hokutetsu Bus 18 or 91. Get off at the 'Honda-machi' bus stop in front of Shakai Kyoiku Center (SKC). Bus fare is 180 yen.

Registration Hours

The registration desk will be located at the entrance of Kosei Nenkin Kaikan convention hall (KNK). Registration hours are

<table>
<thead>
<tr>
<th>Date</th>
<th>Hours</th>
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<td>Aug. 20</td>
<td>18:00-20:00</td>
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<tr>
<td>Aug. 22-24</td>
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<td>Aug. 21</td>
<td>08:30-17:00</td>
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<tr>
<td>Aug. 25</td>
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</tbody>
</table>
TUESDAY A.M.

Frontiers of Geophysics
Session U21A  KNK:Large Hall  1000h

TUESDAY P.M.

A  Atmospheric Electricity  
Session A22A  KNK:Horai  1330h

G  Physics of Earthquakes and Recent Earthquakes I  
Session S22A  SKC:Large Hall  1330h
Active Back Arcs I: Japan Sea  
Session V22B  SKF:Middle Hall  1330h

GP  Sedimentary Magnetism I  
Session GP22A  SKC:32.33  1330h

H  Global Processes/Precipitation  
Session H22A  KNK:Fuyo B  1330h

P  Future Planetary Missions  
Session P22A  KNK:Aioi  1330h (joint with SP)

S  Physics of Earthquakes and Recent Earthquakes I  
Session S22A  SKC:Large Hall  1330h (joint with G,T)
Island Arc Volcanism and Upper Mantle Processes  
Session V22A  SKF:Large Hall  1330h

SP  Computer Experiments of Geospace Plasmas I  
Session SP22A  KNK:Kaga  1300h
Ground, Balloon, and Rocket Observation of the Aurora I  
Session SP22B  KNK:Fuyo A  1330h
Future Planetary Missions  
Session P22A  KNK:Aioi  1330h

T  ODP Legs 124–131  
Session T22A  SKF: F  1330h
Physics of Earthquakes and Recent Earthquakes I  
Session S22A  SKC:Large Hall  1330h
Active Back Arcs I: Japan Sea  
Session V22B  SKF:Middle Hall  1330h

V  Island Arc Volcanism and Upper Mantle Processes  
Session V22A  SKF:Large Hall  1330h (joint with S)
Active Back Arcs I: Japan Sea  
Session V22B  SKF:Middle Hall  1330h (joint with G,T)

Joint Session

Meeting Facilities

Sessions will be held simultaneously at four public convention halls in Kanazawa City:

- Ishikawa Kosei Nenkin Kaikan (KNK), Ishikawa-ken Shakai Fukushi Kaikan (SFK), Ishikawa Shakai Kyoiku Center (SKC), Kanazawa-Shi Kanko Kaikan (KKK).

These halls are within walking distance of each other in a park area near the famous Kenrokuen Garden in the middle of the city.

- Many of the hotels are within a 15-minute walk of the convention halls. From Kanazawa station, it takes 10-15 minutes by taxi to Kosei Nenkin Kaikan. Taxi fare is about 300 yen. You may also take Hokutetsu Bus 18 or 91. Get off at the ‘Honda-machi’ bus stop in front of Shakai Kyoiku Center (SKC). Bus fare is 180 yen.

- Registration is at Kosei Nenkin Kaikan (KNK), which is about a 10-minute walk through the park from the other halls.

A courtesy microbus shuttle service is available during the session hours. This shuttle runs every 10 minutes, and takes about 5 minutes to go from Kosei Nenkin Kaikan (KNK) to Shakai Fukushi Kaikan (SFK) and Shakai Kyoiku Center (SKC). Kanko Kaikan (KKK) is just across the street.
### WEDNESDAY A.M.

<table>
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<th>Section</th>
<th>Title</th>
<th>Location</th>
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<tbody>
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<td>U</td>
<td>Fifty Years of Helium 3 Geophysics I</td>
<td>SFK:F</td>
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<tr>
<td>A</td>
<td>Typhoons and Tropical Meteorology</td>
<td>KNK:Horai</td>
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<td></td>
<td>Coupled Ocean-Land-Atmosphere Interaction</td>
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<tr>
<td>A</td>
<td>Aeronomy Posters</td>
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<td>G</td>
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<td>Sedimentary Magnetism II</td>
<td>SKC:21</td>
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</tr>
<tr>
<td>H</td>
<td>Water and Solute Transport in the Unsaturated Zone I</td>
<td>KNK:Fuyo B</td>
<td>0830h</td>
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<td>O</td>
<td>Effect of Marginal Seas on West Pacific Water Masses I</td>
<td>Aioi</td>
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<td>O</td>
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<td>P</td>
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<td>Computer Experiments of Geospace Plasmas II</td>
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<td>Physics of Earthquakes and Recent Earthquakes II</td>
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<td>Active Back Arcs I: Okinawa Trough</td>
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<td>V</td>
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### WEDNESDAY P.M.

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<tr>
<td>O</td>
<td>Origin and Evolution of the Solar System I</td>
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<td>P</td>
<td>Physics of Earthquakes and Recent Earthquakes III</td>
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<tr>
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### THURSDAY A.M.

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<th>Session</th>
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<tr>
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<td>Solar, Interplanetary Physics and Magnetic Storms</td>
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<td>GP</td>
<td>Geomagnetism and Electromagnetic Induction</td>
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<td>H</td>
<td>Surface Water Hydrology I</td>
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<td>SKC:Large Hall</td>
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<td>G</td>
<td>Deep and Intermediate Water Circulation I</td>
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<tr>
<td>G</td>
<td>Earth Rotation and Dynamics</td>
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<td>H</td>
<td>Stable and Radioactive Isotopes in Hydrology I</td>
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<tr>
<td>A</td>
<td>Dynamical Processes in the Middle Atmosphere II</td>
<td>KNK:Fuyo A</td>
<td>1330h</td>
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<tr>
<td>SP</td>
<td>Global Structures of MHD Waves III</td>
<td>KNK:Kaga</td>
<td>1330h</td>
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<tr>
<td>G</td>
<td>Magnetic Storms and Magnetic Quiet Periods</td>
<td>SKC:Large Hall</td>
<td>1330h</td>
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<td>H</td>
<td>Stable and Radioactive Isotopes in Hydrology I</td>
<td>SKC:Large Hall</td>
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<td>Seismicity and Magnitudes</td>
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<td>SKC:Large Hall</td>
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**Japan's Currency**

The Japanese yen is the only currency in use. There are notes for 10,000 yen, 5000 yen and 1000 yen; and coins for 500 yen, 100 yen, 50 yen, 10 yen, 5 yen and 1 yen. You can exchange foreign currencies at major banks or at hotel fronts.

Travelers checks can be used at hotels, many restaurants and shops, although local shops may accept only cash. Major credit cards (VISA, MasterCard, Amex, Diners, etc.) are used commonly, but you must be sure to use an international card.

Personal checks are not accepted. You will need to pay in cash for train, bus and taxi fares. In general, cash is used much more than in the United States.

**Tips and Taxes**

Tips for service are not usual in Japan. Instead, such charges are either included in overall costs or added to the bill as a service charge. A 3% sales tax is added to most charges and prices.
### FRIDAY A.M.

| Session | A | Stratospheric Ozone and Atmospheric Chemistry I  
<table>
<thead>
<tr>
<th>Session SP51B</th>
<th>KNK:Fuyo A</th>
<th>0830h</th>
</tr>
</thead>
</table>
| G               | Gravity, Sea Level, and Vertical Motion  
| Session G51A  | SKC:21  | 0830h |
| Dynamics and Structure of the Deep Interior I  
| Session SS1B  | SKC:32.33  | 1000h |
| H               | Surface Water Hydrology II  
| Session HS1A  | KNK:Fuyo B  | 0830h |
| Contaminant Transport: Theory and Interpretation  
| Session HS1B  | KNK:Horai  | |
| O               | Waves, Tides, and Turbulence  
| Session OS1A  | KNK:Aioi  | 0830h |
| P               | Geodynamics and Evolution of the Earth I  
| Session VS1A  | SFK:Large Hall  | 0830h |
| S               | Dynamics and Structure of Plate Boundaries III  
| Session SS1A  | SKC:Large Hall  | 0930h (joint with T) |
| Dynamics and Structure of the Deep Interior I  
| Session SS1B  | SKC:32.33  | 1000h (joint with G,GP,T,V) |
| Geodynamics and Evolution of the Earth I  
| Session VS1A  | SFK:Large Hall  | 0830h |
| Petrologic Studies of Volcanoes I  
| Session VS1B  | SFK:Middle Hall  | 0830h |

### FRIDAY P.M.

| Session | A | Stratospheric Ozone and Atmospheric Chemistry II  
<table>
<thead>
<tr>
<th>Session SP52B</th>
<th>KNK:Fuyo A</th>
<th>1330h</th>
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</table>
| G               | Western Pacific GPS  
| Session G52A  | SKC:21  | 1330h (joint with T) |
| Dynamics and Structure of the Deep Interior II  
| Session SS2B  | SKC:32.33  | 1330h |
| H               | Stable and Radioactive Isotopes in Hydrology II  
| Session HS2A  | KNK:Fuyo B  | 1330h |
| O               | Western Boundary Currents I  
| Session OS2A  | KNK:Aioi  | 1330h |
| P               | Solar Wind Interactions With Venus  
| Session SP52C  | KNK:Horai  | 1330h |
| Geodynamics and Evolution of the Earth II  
| Session VS2A  | SFK:Large Hall  | 1330h |
| S               | Dynamics and Structure of Plate Boundaries IV  
| Session SS2A  | SKC:Large Hall  | 1330h (joint with T) |
| Dynamics and Structure of the Deep Interior II  
| Session SS2B  | SKC:32.33  | 1330h (joint with G,GP,T,V) |
| Geodynamics and Evolution of the Earth II  
| Session VS2A  | SFK:Large Hall  | 1330h |
| Petrologic Studies of Volcanoes II  
| Session VS2B  | SFK:Middle Hall  | 1330h |
SATURDAY A.M.

| G | Seismotectonic Studies I  
 | Session G61A  SFK:F  0830h  |
|---|---|
| H | Subsurface Transport: New Measurement Techniques  
 | Session H61A  KNK:Fuyo B  0830h  |
| O | Western Boundary Currents II  
 | Session O61A  KNK:Aioi  0830h  |
| P | Geodynamics and Evolution of the Earth III  
 | Session V61A  SKC:Large Hall  0830h  |
| S | Earthquake Prediction and Hazard Assessment I  
 | Session V61A  SKC:Large Hall  0830h  |

SATURDAY P.M.

| G | Seismotectonic Studies II  
 | Session G62A  SFK:F  1330h  |
|---|---|
| H | Snow Hydrology and Spatial Scaling  
 | Session H62A  KNK:Fuyo B  1330h  |
| O | Biogeochemical Flux and Cycling  
 | Session O62A  KNK:Aioi  1330h  |
| P | Geodynamics and Evolution of the Earth IV  
 | Session V62A  SKF:Large Hall  1330h  |
| S | Earthquake Prediction and Hazard Assessment II  
 | Session V62A  SKF:Large Hall  1330h  |

Social Events

Ice Breaker Reception, August 21 (Tuesday), 18:00-20:00 h, MRO Hall, free of charge. Light meal, beer and soft drinks are provided. The MRO Hall is located next to the Shakai Kyoiku Center (SKC).

Noh Play, August 23 (Thursday), 17:30-18:30 h, Nohgakudo Hall, ¥1,000. Noh is Japan’s traditional theatrical art, embodying music, dance and literary art. Nohgakudo Hall is located next to Kosei Nenkai Kaikan.

Banquet, August 23 (Thursday), 19:00-21:00 h, Kosei Nenkai Kaikan, (KNK) ¥ 6,000.

* * *

Many of the hotels are within a 15-minute walk of the convention halls. From Kanazawa station, it takes 10-15 minutes by taxi to Kosei Nenkai Kaikan. Taxi fare is about 300 yen. You may also take Hokutetsu Bus 18 or 91. Get off at the ‘Honda-machi’ bus stop in front of Shakai Kyoiku Center (SKC). Bus fare is 180 yen.

The Courtesy Shuttle Service

A courtesy microbus shuttle service is available during the session hours. This shuttle will run every 10 minutes, and take about 5 minutes to go from Kosei Nenkai Kaikan (KNK) to Shakai Fukushi Kaikan (SKF) and Shakai Kyoiku Center (SKC). Kanko Kaikan (KKK) is just across the street.

The Weather in August

Average daily minimum and maximum temperatures in August are 22°C (72°F) and 30°C (86°F), respectively. However, you may feel hotter because of the relatively high humidity (average RH is 77%). Hotel rooms are air conditioned.

An umbrella or rain coat is necessary equipment since heavy showers are not unusual most days.
KNK: Kosei Nenkin Kaikan (厚生年金会館)

Large Hall (opening ceremony)

Entrance

Registration (Aug. 28, 2021)

1F

Restaurant

2F

* copy machine
SFK: Shakai Fukushi Kaikan (社会福祉会館)
SKC: Shakai Kyoiku Center (社会教育センター)
KKK: Kanko-Kaikan (観光会館)
**Detailed Session Program**

**Tuesday A.M.**

**Paper Numbers.** A paper number designates the section, or other sponsoring group, and chronology of the presentation. **Sample T21A-01.**

<table>
<thead>
<tr>
<th>Section</th>
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Thus, T21A-01 = Tectonophysics, Tuesday, AM, concurrent session A, first paper in that session.

**U21A**

**KNK: Large Hall**

**Tues 1000 h**

**Frontiers of Geophysics**

**Presiding:** Y Honkura, Tokyo Inst. of Tech; C Harrison, RMAS/Univ of Miami

**1000 h** U21A-01 **INVITED** Subductionology: Its Local, Regional and Global Implications: S Uyeda

**1040 h** U21A-02 **INVITED** Space Geodesy: The Third Decade: J B Minster

**1120 h** U21A-03 **INVITED** Climate Changes due to the Increase of Greenhouse Gases—An Overview of the Present Status of Research: T Matsuno

**Tuesday P.M.**

**Paper Numbers.** A paper number designates the section, or other sponsoring group, and chronology of the presentation. **Sample T22A-01.**

<table>
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Thus, T22A-01 = Tectonophysics, Tuesday, PM, concurrent session A, first paper in that session.

**A22A**

**KNK: Horai**

**Tues 1330 h**

**Atmospheric Electricity**

**Presiding:** Z Kawasaki, Ohsaka Univ

**1330 h** A22A-01 Spectrum Analysis for Electric Field, Pressure and Wind Velocity at the Earth's Surface: K Narita, Y Goto, H Komuro

**1345 h** A22A-02 Meteorological Aspects of Winter Thunderstorms Along the Japan Sea Coast: N Kitagawa


**1430 h** A22A-05 Detection of Cloud-to-Ground Lightning Strokes in Winter by a Magnetic Direction Finder: M Ishii, J Hojo

**1445 h** **BREAK**

**1515 h** A22A-07 Triggered Lightning Striking to Several Transmission Line Towers: M Nakano, Y Kawamura, T Takeuti, Z I Kawasaki

**1530 h** A22A-08 Artificially Triggered Lightning Experiments to a Transmission Line and Apparatus: K Nakamura, K Horii, S Aiba, M Nakano

**1545 h** A22A-09 Currents Measurements of Rocket Triggered Lightning: A Wada, K Horii, M Nakano, K Nakamura, M Yoda

**1600 h** A22A-10 A Study of Lightning Strikes to Aircraft in the Winter in the Area Surrounding Kanazawa (Komatsu Airport): K Michimoto

**GP22A**

**SKC: 32.33**

**Tues 1330 h**

**Sedimentary Magnetism I**

**Presiding:** J E T Channell, Univ of Florida; M Hyodo, Kobe Univ

**1330 h** GP22A-01 **INVITED** Magnetic Grain Size of Deep-Sea Sediments: What Controls?: T Yamazaki

**1355 h** GP22A-02 Contribution of Magnetotactic Bacteria to the Sediment Magnetization: M Funaki, H Sakai, H Hirose, Y Tamaura, Y Fukumori

**1410 h** GP22A-03 Further Magnetostatigraphic Results From Shallow-Water Carbonates: Constraints on the Growth of Mururoa Atoll, French Polynesia: D Aissaoui, J L Verosub

**1455 h** **BREAK**

**1510 h** GP22A-07 Magnetic Fabric Study of a MEandering Paleocurrent System: C Caballero-Miranda, J Urrutia-Fucugauchi, G Silva-Romo

**1525 h** GP22A-08 **INVITED** Magnetic Mineral Diagnoses in Sediments and Sedimentary Rocks and Its Effects on the Paleomagnetic Record: R Karlin

**1550 h** LepidocrociteTransformation During the Oxygenation Event?: D O Ozde

**1605 h** GP22A-10 Chemical Remanent Magnetization in Synthetic Hematite: Implications for Sedimentary Magnetism: L B Stokking, L Tauxe

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**WITHDRAWN**
1620 h GP22A-11 Paleomagnetism of the Tansen Group in the Lesser Himalaya, Nepal: Evidence for Large-Scale Northward Motion Since the Early Cretaceous: P Gautam, Y Fujinara

1635 h GP22A-12 Chemical Remanent Magnetization in Paleozoic Sedimentary Rocks in Australia That Constrains the Gondwanan APWP: G A Thrupp, Z X Li

H22A KNK: Fuoy B Tues 1330 h
Global Processes/Precipitation


1355 h H22A-02 Observation of Local Rain Characteristics by Broadcasting Satellite Signals and the MU Radar: T Yamada, T Taguchi, T Sato, I Kimura

1410 h H22A-03 INVITED Synthetic Aperture Microwave Radiometer for Global Soil Moisture Measurements: D M Le Vine, C T Swift, T Jackson

1435 h H22A-04 INVITED Estimation of Evaporation Over Global Oceans Using Satellite Data: W T Liu

1500 h BREAK


1530 h H22A-07 Global Estimates of Oceanic Rain From SSM/I Measurements: T T Wilheit, A T C Chang, L S Chiu


1615 h H22A-10 Raindrop Size Distribution in Darwin, Australia: D A Short, T Kozu, K Nakamura

1630 h H22A-11 Relation Between NOAA Imagery and Rainfalls on the Ground: K Takeuchi

P22A KNK: Aioi Tues 1330 h
Future Planetary Missions (joint with SP)

Presiding: J Boyce, NASA Headquarters


1355 h P22A-02 243 Ida Is a Single Fragment, Not a Rubble Pile Remnant: Y Takagi, H Mizutani

1410 h P22A-03 INVITED Future Space Physics Missions: D N Baker

1435 h P22A-04 The NASA Solar Probe Mission: Science: B T Tsurutani

1450 h BREAK


1530 h P22A-07 Investigation of Magnetosphere/Ionosphere in the Inner Planets: K Tsuruta, T Mukai, T Ogawa

S22A SKC: Large Hall Tues 1330 h

Physics of Earthquakes and Recent Earthquakes I (joint with G,T)

Presiding: T Mikumo, Kyoto Univ

1330 h S22A-01 A Mechanical Interpretation of Velocity Dependent Friction in Simulated Fault Gouge: C Marone

1354 h S22A-02 Invited: T Mikumo

1400 h S22A-03 Fracture Nucleation Within a Seismic Source Region: H Yukutake

1415 h S22A-04 Slip-Dependent Friction Law and Nucleation Process in Earthquake Rupture: M Matsu'ura, H Kataoka, B Shibazaki

1430 h S22A-05 Earthquake Source Nucleation: A Physical Interpretation of Short-Term Precursors: M Ohnaka

1445 h S22A-06 Estimation of the Effective Stress at an Introductory Stage of Rupture Process: M Kikuchi

1500 h BREAK

1515 h S22A-08 Dynamic Fault Rupture Processes Under Depth-Dependent Shear Stress and Frictional Constitutive Relations: T Mikumo

1530 h S22A-09 A Multifractal Model of the Spatial Energy Distribution of Earthquakes: K Ito, T Hirabayashi

1545 h S22A-10 Comparison of Local Tomographic P-Wave Velocity Variations in California and Washington: Can We Image Fault Asperities?: J M Lees

1600 h S22A-11 Gravity Change due to Shear and Tensile Faults: S Okubo

1615 h S22A-12 Piezomagnetic Change due to Shear and Tensile Faults: Y Sasai

1630 h S22A-13 Drilling Into Earthquake Foci: Preliminary Results: H Tsukahara, R Ikeda

SP22A KNK: Kaga Tues 1330 h

Computer Experiments of Geospace Plasmas I

Presiding: H Matsumoto, Kyoto Univ

1300 h SP22A-01 INVITED Two-Dimensional Hybrid Simulations of the Magnetopause: K B Quest

1325 h SP22A-02 INVITED Computer Simulation of Driven Reconnection in the Earth’s Dayside Magnetopause: Z F Fu

1350 h SP22A-03 INVITED Simulation Study of Kelvin-Helmholtz Instability at the Magnetospheric Boundary: A Miura
1415 h SP22A-04 Controlling Parameters for Formation of MHD Shocks: Y C Whang
1430 h SP22A-05 Computer Experiments on the Electrodynamics of High Potential Tethered Satellite: H Usui, H Matsumoto, Y Omura

1445 h BREAK

1505 h SP22A-07 INVITED Particle Simulations of the Active Injection of Electron Beams From Spacecraft: R M Wingler
1530 h SP22A-08 Reforming Quasi-Parallel Shocks: D Winske, V A Thomas, N Omidi, K B Quest
1545 h SP22A-09 Simulations of the Nonlinear Evolution of Electron Plasma Waves: K I Nishikawa

1550 h BREAK

1600 h SP22A-10 INVITED High-Resolution Simulation of the Solar Wind-Magnetosphere Interaction and Tail Reconnection: T Sato, K Watanabe

SP22B KNK: Fuyo A Tues 1330 h Ground, Balloon, and Rocket Observation of the Aurora I
Presiding: T Hirasawa, National Inst. of Polar Res.

1330 h SP22B-01 INVITED Balloon Observations of Auroral Precipitation and Substorms Near the Dayside Cusp: E A Bering, J R Theall, J R Benbrook, D L Matthews, T J Rosenberg
1355 h SP22B-02 INVITED Conjugacy of Auroras and Their Related Phenomena Observed at Syowa-Iceland Conjugate Pairs: N Sato
1420 h SP22B-03 Ionospheric Effects on the Conjugacy of Geomagnetic Variations in High Latitude: S Tsunomura, N Sato
1435 h SP22B-04 Conjugate Ground-Based and Midpoint-Satellite Observations of ULF Waves: A Frey, N Sato, K Takahashi

1505 h BREAK

1525 h SP22B-07 CNA Observations by a Multibeam Riemter at Ny-Alesund in the Polar Cap: M Nishino, Y Tanaka, T Oguti, A Egeland
1540 h SP22B-08 Drift of Cosmic Noise Absorption Associated With Storm Sudden Commencement: T Kikuchi, H Yamagishi
1555 h SP22B-09 Magnitude of Cosmic Noise Absorption (CNA) Over the Southern Polar Region at the Time of sc and sc Triggered Substorm: T Hirasawa
1610 h SP22B-10 Comparison of Aurora and Auroral Absorption Image: H Yamagishi, T Kikuchi, Y Hakura

T22A SFK: F Tues 1330 h ODP Legs 124-131
Presiding: K Tamaki, Tokyo Univ; B Taylor, Hawaii Inst. of Geophysics

1345 h T22A-02 Paleogene Rotation of the Celebes Sea—Orientation of the ODP Cores Utilizing the Secondary Magnetization: H Shibuya, D L Merrill, V Hsu
1400 h T22A-03 INVITED Rifting of the Izu-Bonin Arc: B Taylor
1415 h T22A-04 INVITED Volcanism Along Izu-Bonin Arc, Western Pacific: K Fujikawa, A Nishimura, K Rodolfo, J Gill, M Koyama
1430 h T22A-05 Paleomagnetism and Tectonic History of the Izu-Bonin Arc: M Koyama, S Umino, S Cisowski
1445 h T22A-06 INVITED Rifting and Opening Process of the Japan Sea Derived From ODP Leg 127 Drilling Results: K Tamaki, K Pisciotto

1500 h BREAK

1515 h T22A-08 History of Japan Sea: Preliminary Interpretation of the Sedimentary Record From Leg 127: R Tada
1545 h T22A-10 INVITED Electrical Resistivity Experiment in the Japan Sea: Y Hamano, H Utada, J Oubina, K Becker
1600 h T22A-11 Structure, Physical Properties, Fluids in the Nankai Trough Accretionary Prism—Results of Site Survey and ODP Leg 131: A Taira, J Hill, J Firth
1615 h T22A-12 ODP Nankai Downhole Observatory (ONDO) Experiment During ODP Leg 131: H Fujimoto, H Kinoshita, M Yamano, T Kanazawa, H Ishizaki, H Murakami, H Matsuoka, A Taira

V22A SFK: Large Hall Tues 1330 h Island Arc Volcanism and Upper Mantle Processes (joint with S)
Presiding: E Takahashi, Tokyo Inst. of Tech; D McKenzie, Bullard Labs

1350 h V22A-02 INVITED The Fabric of Late Cenozoic Volcano: Mount Rainier to Mount St Helens: S V Winglee, J B Taylor, M Koyama

1410 h V22A-03 INVITED Quaternary Volcanism and Regional Tectonic Stress Field in Japanese Islands: M Takahashi

WITHDRAWN
1530 h V22A-08 INVITED Role of the Subducted Lithosphere in Arc-Magma Genesis I. Contribution From Phase Petrology and Trace Element Geochemistry: Y Tamura, M Murasaki, S Nohda
1550 h V22A-09 Role of the Subducted Lithosphere in Arc-Magma Genesis II. Contribution From Isotope Geochemistry: S Nohda, M Murasaki, Y Tamura
1605 h V22A-10 Heavy Alkali Metals of Japanese Volcanics: K Okamoto
1620 h V22A-11 Cenozoic Volcanism Related to Mantle Plume in SW Japan: H Iwamori
1635 h V22A-12 Mantle Diapir in the Subduction Zone Estimated From Calc-Alkalic Andesite: Y Tamura
1650 h V22A-13 Pargasitic Amphibole-Dehydration Solids of Peridotites Hydrated in Subduction Wedge Mantle: K Niida, D H Green
1705 h V22A-14 INVITED Melt Distribution in the Mantle from Rare Earth Element Concentrations: D McKenzie, K O'Nions

V22B SFK: Middle Hall Tues 1330 h
Active Back Arcs I: Japan Sea (joint with G,T)
Presiding: Y Otofuji, Kobe Univ
1330 h V22B-01 Fast Drifting of Southwest Japan Inferred From Paleomagnetism and K-Ar Dating: Y Otofuji, T Itaya, T Matsuda
1345 h V22B-02 Timing of Rotational Motion of Southwest and Northeast Japan: Paleomagnetic Data From Miocene Sediments: A Hayashida
1400 h V22B-03 Paleomagnetism and Fission-Track Ages From the Tsushima Strait Area: Implications for the Japan Sea Opening: N Ishikawa, T Tagami
1415 h V22B-04 Opening of Japan Sea by a Hot Region Magmatism: Geochemical and Sr-Nd Isotopic Evidence: O Ujike
1430 h V22B-05 Presence of Primary High-Al Basalt Magma Associated With Rifting of the Japan Sea?: Results of ODP Leg 127: S Yamashita, T Fujii
1445 h V22B-06 Accelerated Intra-Arc Rifting in Miocene NE Japan: Manifestation of Stretching Instability of the Lithosphere: A Yamaji, T Takeshita
1500 h BREAK
1515 h V22B-08 INVITED The Petrogenetic Response of a Continental Volcanic Arc to Rifting: Diverse Volcanism in the Colima Rift, Mexican Volcanic Belt: J F Allan
1535 h V22B-09 Volcanism and Structures of the Chapala Graben: Relationship with a Rifting Process in Western Mexico: H Delgado
1550 h V22B-10 Geochemistry of Mafic Dykes in an Early Palaeozoic Marginal Basin From Southeast Australia: S F Liu, P D Fleming
1605 h DISCUSSION

Wednesday A.M.

Paper Numbers. A paper number designates the section, or other sponsoring group, and chronology of the presentation. Sample T31A-01.

Section Day Time Session Sequence in Session
T 2 = Tues. 1 = AM A 01
3 = Wed. 2 = PM B
4 = Thur. C
5 = Fri. D
6 = Sat.

Thus, T31A-01 = Tectonophysics, Wednesday, AM, concurrent session A, first paper in that session.

U31A SFK: F Wed 0830 h
Fifty Years of Helium 3 Geophysics I
Presiding: H Craig, Scripps Inst. of Oceanogr.; Y Horibe, Tokai Univ
0830 h INTRODUCTION: Y Horibe, Tokai University
0835 h U31A-01 INVITED Thirty Years Crustal and Twenty Primordial: Fifty Years of ³He Geophysics: H Craig
0915 h U31A-02 INVITED Noble Gases in Diamonds and Their Implications on Earth Evolution: M Ozima, S Zashu
0950 h U31A-03 Sorting out the Helium Isotopes in Diamonds: Primordial, Cosmogenic, and Implanted Components: D Lal, H Craig
1000 h BREAK
1020 h U31A-05 INVITED Juvenile Helium in Ancient Rocks: I N Tolstikhin, J L Kamensky, V S Dokuchaeva, V R Vetrin
1100 h U31A-06 INVITED Tritogenic ³He in Groundwater: Applications to Hydrology: N Takaoka, Y Mizutani
1135 h U31A-07 Diffusion of Cosmogenic ³He in Olivine and Quartz: Implications for Exposure Dating: T W Trull, M D Kurz, W J Jenkins

A31A KNK: Horai Wed 0830 h
Typhoons and Tropical Meteorology
Presiding: M Yamazaki, Meteorological Res. Inst.; T N Krishnamurti, Florida State Univ, Tallahassee
0830 h A31A-01 INVITED Prediction of Supertyphoons With High Resolution Models: T N Krishnamurti
0855 h A31A-02 INVITED Numerical Simulation of the Tropical Cyclone Formation: Y Kuribara, R E Tuleya
0920 h A31A-03 Wind Disturbances Associated With a Typhoon Observed by the MU Radar: K Sato
0935 h A31A-04 Radar Observation of Cloud Clusters in the Western Tropical Pacific by Keifu-Maru, June, 1989: K Mori, K Yamada
0950 h A31A-05 Interannual Change of the Activity of the 30-60 Day Variation in the Tropics: N Nishi
1005 h A31A-06 Wave-CISK Mode With a Slow Phase Speed Appearing in a High-Resolution GCM and the Tropical Intraseasonal Oscillation: H Itoh

A31B  KNK: Horai  Wed 1045h
Coupled Ocean-Land-Atmosphere Interaction (joint with O)
Presiding: T Yasunari, Univ of Tsukuba; E W Chiou, NASA, Langley Res. Center
1045 h A31B-01 A Trans-Pacific Network of Wind Profilers—Progress and Plans: K S Gage, B B Balsley, W L Ecklund, R F Woodman, S Avery, J Soegijo
1100 h A31B-02 Numerical Simulation of Orographic-Convective Rainfall Over Western Ghat Mountains Using a Limited Area Nested Grid Model: K Alapati, S Man, R R V Madala
1115 h A31B-03 Influence of the Sea Surface Temperature Distribution on the Regional Scale Circulation Over the Northwestern Pacific Area: K Rikiishi, Y Sasaki, H Iida
1130 h A31B-04 Effects of Solar Activity and the Earth's Pole Tide to Annual Mean Sea Level and Tree-Ring Temperature
1145 h A31B-05 Determining Large Scale Land Surface Processes for Climatic Models: B J Tsuang, J A Dracup

GP31A  SKC: 21  Wed 0830 h
Sedimentary Magnetism II
Presiding: R H Karlin, Univ of Nevada, Reno; M Torii, Kyoto Univ
0830 h GP31A-01 ABIC Analysis of Pass-Through Magnetometer Data of Sediment Cores: H Oda, H Shibuya
0845 h GP31A-02 INVITED High Resolution Geomagnetic Record in the Sedimentary Sequence in Boso Peninsula, Central Japan: N Niitsuma
0910 h GP31A-03 Magnetic Properties of Pleistocene Marine Sediments From the Boso Peninsula, Central Japan: M Torii, H Oda, J E T Channell
0925 h GP31A-04 Stalagmite (One of Speleothems) Magnetization and a Geomagnetic Reversal Record: H Mori, H Oda, Y Sasaki, T Channell
0940 h GP31A-05 Paleomagnetic Study of Unconsolidated Sediments From Beppu Bay in Kyushu, Japan: M Ohno, Y Hamano, M Okamura, K Shimazaki
0955 h GP31A-06 Paleomagnetic Results of Lake Sediments From Central Mexico: B Ortega-Guerrero
1010 h BREAK
1025 h GP31A-08 Spatial Dependence of the Declination and Inclination Inferred From a Model of Geomagnetic Secular Variation: Y Honkura, M Matsushima
1040 h GP31A-09 Separation of Clockwise and Counter-Clockwise Rotations of the Geomagnetic Vectors From Paleosecular Variation in Japan: C Itota, M Hyodo, K Yaskawa
1055 h GP31A-10 Paleosecular Variation for the Last 250 ka in Rapidly Deposited Marine Sediments at DSDP Site 480 in the Gulf of California: R Karlin, S Levi

1110 h GP31A-11 A Long-Term Geomagnetic Excursion Obtained From the Plio-Pleistocene Sediments in Java: M Hyodo, W Sunata
1125 h GP31A-12 INVITED Short Events and Long Intervals: Magnetostratigraphic Challenges: W Lowrie
1150 h GP31A-13 Lower Cretaceous Magnetostratigraphy From Italian Land Sections—Correlations to Nannofossil Biostratigraphy and to the Western Pacific Oceanic Anomaly Record: J E T Channell, E Erba, K Tamaki, M Nakanishi

H31A  KNK: Fuyo B  Wed 0830 h
Water and Solute Transport in the Unsaturated Zone I
Presiding: M T van Genuchten, U.S. Salinity Lab; T Miyazaki, Univ of Tokyo
0830 h H31A-01 Water Path Flow Through the Unsaturated Glass-Bead Layer: Y Sakamoto
0845 h H31A-02 Refraction, Fingering and Lateral Flow of Water in Layered Slopes: T Miyazaki
0900 h H31A-03 On the Role of Characteristic Hysteresis in Vadose Soil Transport Dynamics: R E Smith, W E Niccoli
0915 h H31A-04 The Transmission Model: An Analytical Model of Unsaturated Downward Soil Water Flow: S Shiozawa
0930 h H31A-05 Ternary Heterovalent Cation Exchange During Unsteady, Unsaturated Soil Water Flow: W J Bond
0945 h H31A-06 Transport of Exchanging Na+ and Ca2+ During Evaporation From Ca-Bentonite: N Toride, K Kato, M Nakano
1000 h H31A-07 Nonequilibrium Models for Pesticide Transport and Degradation in Soils: M T van Genuchten, A P Gamerdinger, R J Wagenet
1015 h BREAK
1030 h H31A-09 INVITED Characteristics of Solute Transport Under Unsaturated Conditions: S Iwata, M Ishiguro
1055 h H31A-10 INVITED Field Investigation of Trichloroethylene Vapour Transport in the Unsaturated Zone: R W Gillham, B M Hughes, C A Mendoza
1120 h H31A-11 INVITED Interrelation Between Soilwater Chemistry and Element Cycling in a Forest Ecosystem: K Muraoka, T Hirata

O31A  KNK: Aoi  Wed 0830 h
Effect of Marginal Seas on West Pacific Water Masses I
Presiding: Y Hsueh, Florida State Univ; K Kim, Seoul National Univ
0830 h O31A-01 Periodic Intrusion of Warm Water Mass Into the Bungo Channel: H Takeoka, H Akiyama, T Kikuchi
0850 h O31A-02 The Kuroshio Intrusion Into the East China Sea: Y Hsueh
0910 h O31A-03 INVITED The Relationship Between Currents and Winds Northeast of Taiwan: W S Chuang
0940 h O31A-04 On the Driving Mechanism of the Shelf Circulation Southeast of China: P T Shaw

1000 h BREAK

1020 h O31A-06 Role of Internal Tides in the Water Mass Exchange Between the Kuroshio and the Coastal Water of the East China Sea: T Matsuno

1040 h O31A-07 INVITED Kuroshio-Induced Circulation in the South China Sea and the East China Sea: J L Su

1110 h O31A-08 Circulation of the East China Sea, II: The Monsoon: S Y Chao

1130 h O31A-09 Interdisciplinary Study of the Tidal Front in the Bungo Channel: T Yanagi

P31A SKC: 32.33 Wed 0830 h

Physics of Outer Planets

Presiding: J Boyce, NASA Headquarters

0830 h P31A-01 Coherent Signal Arraying of Voyager/Neptune Radio Science Data Received at Three Stations: E Mizuno, N Kawashima, P A Rosen, D P Hinson, G L Tyler

0845 h P31A-02 Surface Topography on Triton Inferred From Limb Diffraction of Voyager Radio Occultation Signals: P A Rosen, E A Marouf

0900 h P31A-03 The Ionosphere of Neptune: H Shinagawa, J H Waite

0915 h P31A-04 INVITED Neptune’s Atmosphere as Seen by Voyager 2: R F Beebe

0940 h P31A-05 INVITED Voyager 2 Results on Neptune’s Rings: C C Porco

1005 h BREAK

1020 h P31A-07 INVITED Voyager 2 Results at Neptune: Triton and the Satellite System: R G Strom

1045 h P31A-08 INVITED The Structure and Composition of Triton’s Atmosphere: R V Yelle

1110 h P31A-09 A Despin Mechanism for a Protoplanet by Magnetic Torque: T Takata, D J Stevenson

1125 h P31A-10 Evolution of Titan—Early Thermal History and Atmosphere Formation: K Kuramoto, T Matsui

1140 h P31A-11 A Model on Eccentric Tilted Dipole of the Planetary Magnetism: T Saito, Y Kozuka, S I Akasofu

S31A SKC: Large Hall Wed 0930 h

Physics of Earthquakes and Recent Earthquakes II (joint with G,T)

Presiding: F Tajima, Univ of Texas, Austin

0930 h S31A-01 Positive Feedback Fracture Process Induced by Non-Uniform High-Pressure Water Flow in Dilatant Granite: K Masuda, O Nishizawa, K Kusunose, T Satoh, M Takahashi, R L Kranz


1000 h S31A-03 A Preliminary Experimental Study of Aftershocks: Observation of the Acoustic Emission After Turning Out Gas Stove and Electric Cooking-Pot: H Ogasawara

1015 h S31A-04 Characteristics of Foreshock and Aftershock Activities of Adjacent Large Earthquakes Around Japan: N Yamakawa, M Takahashi

1030 h BREAK

1045 h S31A-06 Properties of Aftershock Sequences in Southern California: C Kissinger, L M Jones


1115 h S31A-08 Greek Seismic Migration Explained by Initial Fault Break and CMT Epicenters Distribution: V Arvanitopoulos, N Fujii

1130 h S31A-09 Migration of Large Earthquakes Along San Andreas Fault: T Terashima

1145 h S31A-10 Mathematical Modeling of the Earthquake Strain Field: T Ouchi

SP31A KNK: Kaga Wed 0900 h

Computer Experiments of Geospace Plasmas II

Presiding: D Winske, Los Alamos National Lab


0925 h SP31A-02 Computer Experiments on Nonlinear Plasma Wave Excitation by Microwave Energy Beam: H Matsumoto, H Hirata, Y Hashino

0940 h SP31A-03 INVITED Computer Simulations of VLF Triggered Emissions: Y Omura, H Matsumoto

1005 h SP31A-04 Numerical Simulations of an Active Space Experiment in Three Dimensions: H Okuda

1020 h BREAK

1035 h SP31A-06 Properties of Nonlinear Steepened Waves and Whistler Wave Packets: 1-D Computer Experiments: H Kojima, Y Omura, H Matsumoto, B T Tsurutani

1050 h SP31A-07 Cyclotron Subharmonic Resonance Between Ions and Obliquely Propagating Magnetosonic Waves: T Terasawa, M Nambu, T Hada

1055 h SP31A-08 A Simulation Study of the Solar Wind Including the Solar Rotation Effect: H Washimi, T Sakurai

1120 h SP31A-09 INVITED Global Magnetohydrodynamic Simulation of the Wind and Magnetosphere Interaction: T Ogino, R J Walker, M Ashour-Abdalla

1145 h SP31A-10 A Global Magnetohydrodynamic Simulation of the Dayside Magnetopause and Convection: R J Walker, T Ogino, M Ashour-Abdalla

SP31B KNK: Fuyo A Wed 0900 h

Ground, Balloon, and Rocket Observation of the Aurora II

Presiding: E A Bering, Univ of Houston

0900 h SP31B-01 Where and How Does an Initial Brightening of Auroral Breakup Start?: T Yamamoto

0915 h SP31B-02 Two Different Arcs Near the Polar Cap Region: K Makita
0930 h SP31B-03 A Quantitative Comparison of Imaging Riemeter and All-Sky Camera Measurements at South Pole Station, Antarctica: F T Berkey, T J Rosenberg, Q Wu, H Miyaoa

0945 h SP31B-04 Pulsating Auroral Activity and Energetic Electron Injections: R Nakamura, T Yamamoto, S Kokubun, T Oguti, D N Baker

1000 h SP31B-05 Tether Observations of Auroral Electric Fields: S Watanabe, B A Wahlen, F Creutzberg, H G James

1015 h SP31B-06 Analysis of Auroral Dynamics by Automatic Retrieval System for Auroral Data (ARASD): T Hirayasu, T Ono

1030 h BREAK

1105 h SP31C-08 Auroral Substorm Observed at L = 1.6 During the Great Magnetic Storm of October 1989: K Yamoto, Y Tanaka, H Miyaoa, T Hirayasu, K Takahashi, R D Belian

1120 h SP31C-09 Spectral Characteristics of Low Latitude Aurora on October 21, 1989: T Takahasi, B Saito, Y Kiyama

1135 h SP31C-10 Ionospheric Disturbance Features Associated With Low-Latitude Aurora Observed in Northern Japan on October 21 and November 17, 1989: K Igarashi, A Otani, K Nishimuta, S Kainuma, T Maruyama, H Minakoshi, T Ogawa

1150 h SP31C-11 Optical Characteristics and a Model of Low Latitude Aurora on October 21, 1989: B Saito, Y Kiyama, T Takahasi

SP31C KKK: Large Assembly Wed 0830 h

Aeronomy POSTERS (joint with A)

Presiding: K I Oyama, Inst. of Space and Astronaut. Sci.

0830 h SP31C-01 POSTER Morphology of the Mid-Latitude Field-Aligned Irregularities Observed by the MU Radar: S Fukao, M D Kelley, T Takami, M Yamamoto, T Tsuda, S Kato

0830 h SP31C-02 POSTER Seasonal Behavior of the Mid-Latitude Ionospheric F-Region Observed by the MU Radar: S Fukao, W L Oliver, T Takami, M Yamamoto, T Tsuda, S Kato

0830 h SP31C-03 POSTER Mid-Latitude E-Region Field-Aligned Irregularities Observed With the MU Radar: M Yamamoto, S Fukao, T Tsuda, S Kato, T Ogawa

0830 h SP31C-04 POSTER Dependence of Mid-Latitude Ionospheric Scintillation on Solar Activity: H Minakoshi, H Mitsudosime

0830 h SP31C-05 POSTER Ionospheric Disturbances at Mid-LatitudesObserved With the MU Radar: T Takami, S Fukao, S Kato, T Tsuda, M Yamamoto, T Nakamura, T Sato

0830 h SP31C-06 POSTER Detailed Structure of the Large Scale Equatorial Plasma Bubbles and Blobs Observed by Hinotori-Satellite: T Takahashi, H Oya

0830 h SP31C-07 POSTER Total Electron Content Measurements Using OPS and VLBI: T Kondo, M Imae, J Amagai, A Kaneko, S Matsuzuka, M Tobita

0830 h SP31C-08 POSTER Nonthermal Electrons in the Focus of Sq Current Vortex: K I Oyama

0830 h SP31C-09 POSTER Development of Fabry Perot Doppler ImagingSystem for Observation of the Thermospheric Dynamics: S Okano, H Nakajima, K Shiohawa, H Fukunishi, T Ono

0830 h SP31C-10 POSTER Horizontal Velocities of Thermospheric Wind Observed With an HF Doppler Array: Y Yoshimura, T Shibata, T Okuzawa, M Tsutsui

0830 h SP31C-11 POSTER Temperature and Humidity in the Formationof the Mesospheric Proton Hydrates: T Sugiyama, Y Murakoz

0830 h SP31C-12 POSTER Mapping of Intensity in the Ionosphere for Signals Excited by a Ground Based VLF Transmitter: Y Kitagishi, S Yagitani, I Nagano, M Mambo, I Kimura

0830 h SP31C-13 POSTER An Estimation Method of Electron Density Profile in the Lower Ionosphere From a Knowledge of VLF Ground Observation Data: M Mambo, T Saitoh, I Nagano

0830 h SP31C-14 POSTER Transmission of Power Line Radiation Into Ionosphere: I Tomizawa, H Tagashira

V31A SFK: Large Hall Wed 0830 h

Magma Dynamics and Eruptive Processes (joint with S)

Presiding: T Koyaguchi, Kumamoto Univ; A Rice, Univ of Colorado

0830 h V31A-01 Conditions of the Upper Mantle Magma Segregation— Surface Energy Control Regime: N Fuji, T Nakano


0900 h V31A-03 Variation of Magma Transport With Time by Propagation System of Liquid-Filled Cracks: A Takada

0915 h V31A-04 INVITED Magma Mixing During Magma Ascent: T Koyaguchi, S Blake

0935 h V31A-05 Application of the WLF-Equation to the Viscous Behavior of Diopside-Anorthite Melt: H Taniguchi

0950 h V31A-06 Pahoehoe Versus Aa Lavas: Difference in Heterogeneous Nucleation—An Example From Izu-Oshima Volcano, Japan: H Sato

1005 h BREAK

1020 h V31A-08 Magma Flow Directions Inferred From Preferred Orientations of Phenocrysts: A Composite Feeder Dike of Miyake-Jima Island, Japan: Y Wada

1035 h V31A-09 Liquid Immiscibility in a Calc-Alkaline Magma Chamber, the Hoei Tephra, Fuji Volcano, Japan: T Kawamoto

1050 h V31A-10 Crystal Settling in Convecting Magmas: T Koyaguchi, M A Hallworth, H E Huppert, D Martin

1105 h V31A-11 Fractal Structure of Heterogeneous Ejecta Produced by Mixing in Volcanic Conduit of Me-Akan Volcano, Eastern Hokkaido, Japan: K Wada

1120 h V31A-12 INVITED Modeling of Vesiculation Process in Ascending Magmas: A Toramaru

1140 h V31A-13 INVITED Recent Objections to Suggestions of High Over-Pressures in Volcanic Explosion: Their Flaws: A Rice
### V31B SFK: Middle Hall Wed 0830 h

**Active Back Arcs II: Okinawa Trough (joint with G,T)**

**Presiding:** J Erzinger, Univ of Giesen; H Kinoshita, Chiba Univ

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<tr>
<td>0830 h</td>
<td>V31B-01</td>
<td>Continental Rifting Trending Perpendicular to the Ryukyu Arc-Okinawa Trough Systems: Tectonics of the Kerama Gap</td>
<td>M Furukawa, K Tsuji, N Isezaki</td>
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<td>0845 h</td>
<td>V31B-02</td>
<td>Formation Process of the Ryukyu Arc and the Okinawa Trough: Paleomagnetic and Geochronological Evidence</td>
<td>M Miaki, T Matsuda, Y Otsubo</td>
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<td>0900 h</td>
<td>V31B-03</td>
<td>The Electrical High Conductivity Layer Beneath the Northern Extension of the Okinawa Trough: T Gamo, A Suzuki</td>
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<td>0915 h</td>
<td>V31B-04</td>
<td>Evolution of the Okinawa Backarc Rift System: H Kinoshita</td>
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<td>0930 h</td>
<td>V31B-05</td>
<td>Heat Flow Anomaly Around a Hydrothermal Field in the Izena Hole, Middle Okinawa Trough: M Kinoshita, M Yamano, E Kakawa, T Urabe, K Nakamura, Y Okuda</td>
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<td>1015 h</td>
<td>V31B-08</td>
<td>VOLATIVE COMPONENTS OF THE HYDROTHERMAL FLUIDS IN THE MID-OKINAWA TROUGH: J Ishibashi, Y Sano, H Wakita, T Gamo, M Tsutsumi, H Sakai</td>
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<td>1030 h</td>
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<td>1045 h</td>
<td>V31B-10</td>
<td>INVITED Chemistry of Hydrothermal Vent Fluids From a Back Arc Spreading Ridge (Lau Basin): J Erzinger, J L Charlow</td>
<td>Jolivet, X Le Pichon, J Natland, J D Reid</td>
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<td>1105 h</td>
<td>V31B-11</td>
<td>INVITED Tectonic, Magmatic and Hydrothermal Activity in the Western Woodlark Basin, Papua New Guinea: A Propagating Marginal Basin: R A Binns, S D Scott</td>
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**Wednesday P.M.**

**Paper Numbers.** A paper number designates the section, or other sponsoring group, and chronology of the presentation. **Sample T32A-01.**

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Thus, T32A-01 = Tectonophysics, Wednesday, PM, concurrent session A, first paper in that session.

### U32A SFK: F Wed 1330 h

**Fifty Years of Helium 3 Geophysics II**

**Presiding:** H Craig, Scripps Inst. of Oceanogr.; Y Horibe, Tokai Univ

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<td>1330 h</td>
<td>U32A-01</td>
<td>INVITED Re-Evaluation of He-Ar Isotope Systematics and Significance of He-Pb Isotope Systematics in the Earth’s Interior: I Kaneoka</td>
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<td>1410 h</td>
<td>U32A-02</td>
<td>INVITED U-Th-Pb and He Isotopic Variations in Volcanic Rocks From the Hawaiian and Cook-Austral Chains: M Tatsumoto, Y Nakamura, A R Basu, H Craig</td>
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**1450 h**

**BREAK**

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<tr>
<td>1510 h</td>
<td>U32A-04</td>
<td>INVITED Implications of Sr, Nd, Pb, and He Isotopes for Recycled Continental Crust in the Evolution of the Hawaiian Hot Spot: B E Faggart, A R Basu, M Tatsumoto, H Craig</td>
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<td>1540 h</td>
<td>U32A-05</td>
<td>INVITED Origin of Carbon and Helium in Volcanic Gases From Circum-Pacific Arcs: R J Poreda, H Craig</td>
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<td>1620 h</td>
<td>U32A-06</td>
<td>INVITED Helium and Carbon Isotopic Composition of Gas and Water Samples From Turkey: K Nagao, I Kita, J Matsuda, T Ercan</td>
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<td>1650 h</td>
<td>U32A-07</td>
<td>Helium Isotopes in Samoa: Still Coming of Age: K A Farley, H Craig, J Natland, J D Macdougall</td>
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<td>1330 h</td>
<td>U32A-08</td>
<td>TITLE ONLY Cosmogenic ³He and the Ages of Geomorphologic Surfaces: T E Cerling, H Craig</td>
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### A32A KNK: Horai Wed 1330 h

**Winds and Clouds**

**Presiding:** N Murayama, Meteorological Satellite Center; G Nastrom, St. Cloud State Univ

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<tr>
<td>1330 h</td>
<td>A32A-01</td>
<td>The Christmas Island Wind Profiler: The First Four Years: K S Gage, J R McAfee, B B Balsley, W L Ecklund, D A Carter</td>
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<tr>
<td>1345 h</td>
<td>A32A-02</td>
<td>Vertical Motions at Christmas Island: Implications for the Large-Scale Circulation: K S Gage, J R McAfee, D A Carter, G C Reid, B B Balsley</td>
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</table>
1400 h A32A-03 Diagnosis of a Downward Bias in the Vertical Motions Seen by VHF Clear-Air Doppler Radars: G D Nastrom, T E VanZandt, W L Clark, J M Warnock, J L Green, K S Gage
1415 h A32A-04 Speculations on the Origin of Circumlar Cropped Damage: T Kikuchi, J T Snow, G T Meaden
1430 h A32A-05 Transport of the Dust Clouds Kosa From the East Asian Dust Storms to the Northwestern Pacific Area: N Murayama, T Satomura, H Sasaki, F Kimura

1445 h BREAK

1545 h A32A-08 A Numerical Study of Thermal Convection in a Rotating Annulus Fluid with High Prandtl Number: S Sugata, S Yoden

1600 h A32A-09 Characteristics of High-Cloud Distributions Over the Western Pacific Derived From SAGE II Occultation Measurements: E W Chio, M P McCormick, W P Chu, L R McMaster, G K Yue

GP32A SKC: 21 Wed 1330 h Paleomagnetism/Rock Magnetism
Presiding: R G Gordon, Northwestern Univ; H Tanaka, Tokyo Inst. of Tech
1330 h GP32A-01 Global Plate Motion Circuits and Motion Between Hotspots: A Paleomagnetic Test: G D Acton, R G Gordon
1345 h GP32A-02 Preliminary Results From Paleomagnetism on APW Path for Hubei, South China Block: Y Adachi, H Morinaga, Y Liu, G Fang, K Yaskawa
1400 h GP32A-03 New Miocene Paleomagnetic Results From Northern China and Reappraisal of Late Mesozoic Paleomagnetic Data of Siberia: X Zhao, Y Zhou, S Hu, Z Dong, J Wang
1415 h GP32A-04 Thermal History Deduced From 40Ar/39Ar Geothermometry and Paleomagnetism in the Grenville Province, Canada: Multiple Thermal Events at a Dike Contact: H Hyodo, D York, D J Dunlop
1430 h GP32A-05 Paleomagnetism of Early Cretaceous Block: K Kodama, I Takeuchi, T Ozawa
1445 h GP32A-06 The Utilization of Formation Microscanner (FMS) Logs to Obtain Azimuthal Orientations of Paleomagnetic Samples From Western Pacific ODP Cores: S M Cisowski, R Jarrett, M Koyama

1500 h BREAK

1515 h GP32A-08 The Acambay Graben, Central Mexico, Paleomagnetic Study: A Soler-Arellalde, J Urrutia-Fucugauchi, J Santos-Santiago
1530 h GP32A-09 Paleointensity High at 9000 Years Ago Found From Volcanic Rocks in Japan: H Tanaka
1545 h GP32A-10 Some New Results of Study on the Changes in the Magnetic Moment of the Earth During the Last 5000 Years: J Y Zheng, C Tang, D J Li, S F Wei, Q Y Wei
1560 h GP32A-11 Paleomagnetic Dating of Paleoeathquake: K Hirooka, H Sakai
1615 h GP32A-12 Tectonomagnetic Signals Associated With Earthquake Swarm and Crustal Uplift in the Izu Peninsula Since 1978: N Oshiman, Y Sasai
1645 h GP32A-14 Arm Acquisition in Natural and Synthetic Samples: J Urrutia-Fucugauchi

H32A KNK: Fuyo B Wed 1330 h Water and Solute Transport in the Unsaturated Zone II
Presiding: M T van Genuchten, U.S. Salinity Lab; T Miyazaki, Univ of Tokyo
1330 h H32A-01 INVITED A Nonlocal Theory of Multiphase Transport: B Munhunthan, J H Cushman
1355 h H32A-02 INVITED The Use of Fractal Concepts to Estimate Soil Hydraulic Properties: S W Tyler, S W Wheatcraft
1420 h H32A-03 Occurrence of Zero Flux Plane in the Unsaturated Zones: Y Yamamura
1435 h H32A-04 Experimental Studies on Heat and Moisture Transfer in Saturated-Unsaturated Soil Zone: H Horino, T Moroizumi, T Maruyama
1450 h H32A-05 Effects of a Time-Variation of Wind Speed and Short Wave Radiation on the Evaporation in Bare Land: Y Kuzuna, Y Ishihara, E Shimojima
1505 h H32A-06 Effect of Wind Turbulence on Evaporation From Bare Land: Y Ishihara, E Shimojima
1520 h H32A-07 A Complementary Relationship Between Actual Evapotranspiration and Pan Evaporation in a Small Area: H Oue, K Otsuki, T Maruyama

O32A KNK: Aioi Wed 1330 h Effect of Marginal Seas on West Pacific Water Masses II
1330 h O32A-01 On Kuroshio Front Fluctuations in the East China Sea Using Satellite Images and in Situ Observational Data: B Qiu, T Toda, N Imasato
1350 h O32A-02 Water Exchange Processes Induced By Variations in the Kuroshio South of Japan: T Awaji, K Akimoto, N Imasato
1410 h O32A-03 Characteristics of Sea Surface Height Fields in the Southeastern and Western Pacific Seas by GEOSAT Altimeter: Y J Ro
1430 h O32A-04 INVITED Observations of Water Masses From Low and High Latitudes in the East Sea (Sea of Japan): K Kim, K R Kim

1500 h BREAK

1520 h O32A-06 Sources of North Pacific Intermediate Water From the Sea of Japan and Sea of Okhotsk: S C Riser

—21—
Seismograms: M Takeo  
Earthquake on Kosuga, A Hasegawa  

Presiding:  

1345 h P32A-01  Planetary Formation Through Non-Axisymmetric Gravitational Instabilities in a Dust Layer: Y Nakagawa, M Sekiya  
1400 h P32A-02  Collision and Tidal Interaction Between Planetesimals: S I Watanabe, S M Miyama  
1415 h P32A-03  Angular Momentum Transfer in Oblique Impacts: M Yanagisawa, J Elszkiewicz, T J Ahrens  

Origin and Evolution of the Solar System I  


1345 h P32A-01  
1400 h P32A-02  
1415 h P32A-03  
1430 h P32A-04  

1445 h BREAK  

1515 h P32A-06  Anomalous Nitrogen in Y7491 (L3) Chondrite: N Sugiuara, K Hashizume  
1530 h P32A-07  Nitrogen Isotope Fractionation in Ordinary Chondrites: K Hashizume, N Sugiuara  
1545 h P32A-08  The Rb-Sr Internal Isochron Age of E3 Chondrite, Qingzhen and Yamato-6901: N Torigoe, M Shima  
1600 h P32A-09  INVITED Venus Lightning: C T Russell  
1615 h P32A-10  A Two-Dimensional MHD Model of the Venus Ionosphere: H Shinagawa  
1630 h P32A-11  Chemical Composition of Pyroxenes in Ordinary Chondrites as a Quantitative Parameter for 'Metamorphism': T Noguchi  
1645 h P32A-12  Noble Gas Ion Implantation Into Minerals: T Futagami, M Ozima, S Nagai, Y Aoki  

Global Structures of MHD Waves I  

Presiding: T Kitamura, Kyushu Univ  

1355 h SP32A-02  INVITED Global Dynamics of MHD Waves—Ground Multi-Station Network: K Hayashi  
1420 h SP32A-03  INVITED Global Mode Nature of Pi 2 Magnetic Pulslations: K Yumoto  
1445 h SP32A-04  INVITED Distribution of Pcs 3-5 Wave Energy in the Magnetosphere From AMPTE/OCE Observations: K Takahashi, B J Anderson  

Physics of Earthquakes and Recent Earthquakes III  

(joint with G/T)  

Presiding: M Kikuchi, Yokohama City Univ  

1330 h S32A-01  Seismic Spectrum of Ultra-Microearthquakes: Y Iio  
1400 h S32A-03  The 1989, July 9 Ito-Oki Earthquake (M 5.5): Modeling of Strong Ground Motion: J C Gariel, K Irikura, K Kudo  
1415 h S32A-04  Source Time Function of the Ito-Oki Earthquake on July 9, 1989 Deduced From Strong Motion Seismograms: M Takeo  
1430 h S32A-05  The Rupture Process of the 1946 Nankai Earthquake Derived From Strong Ground Motion Data: K Irikura, T Iwata, J C Gariel  

1445 h BREAK  

1530 h S32A-07  Variable Rupture Mode of Large Earthquakes in the Nankai Trough: K Satake, H Kanamori  
1515 h S32A-08  Rupture Process of Sanriku-Oki Earthquakes Occurring on October 29 and November 1, 1989: Y Yoshida, M Takeo  
1530 h S32A-09  Re-Examination of the Source Process of the 1976 Guatemala Earthquake: M Kikuchi, H Kanamori  
1545 h S32A-10  Teleseismic Interpretation of the Earthquake Sources in Eastern Iran: M R Gheitanchi, M Kikuchi, M Mizoue  

Cusp, Mantle, and Field-Aligned Currents  

Presiding: T Tamao, Univ of Tokyo  

1345 h SP32B-02  Identification and Observations of the Plasma Mantle at Low Altitude: P T Newell, E R Sanchez, C I Meng, M E Greenspan, W Burke, F Rich  
1400 h SP32B-03  Magnetosheath Turbulence and Flux Transfer Events: An Objection to the FTE Momentum Transport Model: T K Nakamura, S I Ohtani  
1415 h SP32B-04  Long-Term Dependence of Pc 3 Activity on Upstream Solar Wind Parameters: A Wolfe, K Yumoto  
1430 h SP32B-05  Linear Analysis of Ion Inertia Effect on Kelvin-Helmholtz Instability: M Fujimoto, A Nishida, T Terasawa  
1445 h SP32B-06  Laboratory Dipole Tilt Effects on the Structure of the Magnetospheres: S Minami, Y Takeya
1500 h 1515 h 1530 h 1545 h 1615 h 1630 h 1645 h 1700 h 1715 h 1730 h 1800 h 1815 h 1830 h 1845 h 1900 h

1515 h SP32B-08 A Test of Magnetic Field Topology Based on Tsyganenko’s Model of the Magnetosphere: N Nishitani, T Ogino, T Oguti
1530 h SP32B-09 Correlation Between Magnetic and Electric Fields Perturbations Associated With Field-Aligned Currents: M Ishii, T Iyemori, M Sugiura, M C Maynard, J A Slavin
1545 h SP32B-10 Field-Aligned Currents With a Cylindrical Structure in Dayside Region 1: S Taguchi, M Sugiura, T Iyemori, J A Slavin, T Araki

SP32C  KNK: Fuyo A Wed 1600 h Titan, Io, and Mars
Presiding: T Tamao, Univ of Tokyo
1600 h SP32C-01 A Theoretical Model of the Ionosphere of Titan: C N Keller, T E Cravens, L Gan
1615 h SP32C-02 3D-Structure of HM-Waves Generated by a Moving Localized Conductor: Reconsideration of Io’s Case: T Tamao, M Yamashita
1630 h SP32C-03 The Ionospheric Effects of a Weak Intrinsic Magnetic Field at Mars: H Shinagawa, T E Cravens

SP32D  KKK: Large Assembly Wed 1330 h Computer Experiments of Geospace Plasmas III
POSTERS
Presiding: T G Onsager, Los Alamos National Lab
1330 h SP32D-01 POSTER Particle Simulations of Wave Propagation in a Nonuniform Plasma: S Yagitani, I Nagano, Y Omura, H Matsumoto
1330 h SP32D-02 POSTER Particle Simulations of Spacecraft-Plasma Interactions: M Okada, Y Omura, H Matsumoto
1330 h SP32D-03 POSTER Computer Experiments of Particle Beam Dynamics in a Nonuniform Plasma: H Furukawa, Y Omura, H Matsumoto
1330 h SP32D-04 POSTER Nonlinear Response of Magnetized Plasma toa Large Amplitude Monochromatic EM Wave Radiated From a Current Sheet Antenna: H Yashiro, H Matsumoto
1330 h SP32D-05 POSTER Computer Experiments of Plasma Chaos: Y Usui, H Matsumoto
1330 h SP32D-06 POSTER Long Time Scale Simulations for Whistler Mode-Wave-Particle Interaction in the Magnetosphere: T Nakayama, Y Omura, H Matsumoto
1330 h SP32D-07 POSTER Particle Simulations of Diama- magnetic Cavity Formation and Related Plasma Dynamics: M E Jones, D Winske, C Barnes, V A Thomas
1330 h SP32D-08 POSTER Simulation of Strong Alfvenic Turbulence:K Akimoto, D Winske
1330 h SP32D-09 POSTER Numerical Simulations of the Beam-Excited UHR Mode and Whistler Mode Waves and Comparison With the Results of the EXOS-D Observations: T Watanabe, H Oya
1330 h SP32D-10 POSTER Particle Loadings of Plasma Shear Layers in Magnetized Plasmas: D Cai, L R O Storey
1330 h SP32D-11 POSTER Decay Process of Incoherent Alfven Waves: H Umeki, T Terasawa
1330 h SP32D-12 POSTER Computer Simulation Study of Ion Dynamicso at Quasi-Parallel Shocks: T G Onsager, D Winske, M F Thomsen
1330 h SP32D-13 POSTER Evolution of the Plasmoid and Accompanied Shocks Induced by a Sudden Reconnection Enhancement Within a Neutral Sheet: K Maezawa

V32A  SKF: Large Hall Wed 1330 h Volcanic Seismology and Eruptive Precursors (joint with S)
Presiding: M Mizoue, Univ of Tokyo; B A Chouet, USGS, Menlo Park
1335 h V32A-02 INVITED Earthquake Swarms Accompanied by Magma Driven Propagation of Cracks: M Mizoue
1420 h V32A-03 A Model for Crustal Deformation Observed With Epicentral Volcanic Tremors: J Okawa, Y Ida
1435 h V32A-04 BL-Type Earthquakes Observed at Asama Volcano, Central Japan: M Sawada
1450 h V32A-05 Source Mechanism of Volcanic Earthquakes Related to Volcanic Activity at Volcano Aso, Japan: T Wada, H Ono
1505 h V32A-06 Observation of Volcanic Microtremors at the Aso Volcano in 1989: Y Sudo

1520 h 1535 h 1550 h 1610 h 1630 h 1645 h 1700 h 1715 h

1520 h 1535 h 1550 h 1610 h 1630 h 1645 h 1700 h 1715 h

1535 h V32A-08 Long Period Microearthquakes Occurring Near the Moho Boundary Beneath Tokachi-Dake Volcano, Hokkaido: S Suzuki, M Kasahara
1550 h V32A-09 INVITED Low-Frequency Micro-earthquakes Occurring at the Bottom of the Crust or in the Uppermost Mantle Beneath Active Volcanoes in North-Eastern Japan: A Yamamoto, A Hasagawa
1630 h V32A-11 Geomagnetic Variations Associated With the 1989 Eruptions of Aso: Y Tanaka
1645 h V32A-12 Temporal Variation of Heat Discharge in Usu Volcano (From 1977 to 1987): N Matsushima, Y Nishida
1700 h V32A-13 Modeling of Hydrothermal Systems and Their Fluctuations due to Volcanic Activity in Some Volcanoes in Kyushu, Japan: K Ohta
1715 h V32A-14 Precursory Changes in Temperature of Fumarolic Gas Emitted From Izu-Oshima Volcano Associated With Submarine Eruption off the Eastern Coast of the Izu Peninsula: K Notsu, H Wakita, G Igarashi
**Thursday A.M.**

*Paper Numbers.* A paper number designates the section, or other sponsoring group, and chronology of the presentation. **Sample T41A-01.**

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<th>Section</th>
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Thus, T41A-01 = Tectonophysics, Thursday, AM, concurrent session A, first paper in that session.

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**GP41A**

*SKC: 21 Thurs 0830 h Geomagnetism and Electromagnetic Induction*  
*Presiding: C G A Harrison, RSMAS/Univ of Miami; N Isezaki, Kobe Univ*

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**DISCUSSION**
### 0830 h O41A-01 Mechanism Controlling the Instability of Slopes Made of Granular Materials: Y Onda, Y Matsukura

### 0845 h H41A-02 Mechanism of Suspended Sediment Supply in the Hiyamizu River, Hokkaido, Japan: Y Kurashige

### 0900 h H41A-03 Surface Velocity Measurement by Radio Wave Current Meter: F Yoshino, T Yamaguchi

### 0915 h H41A-04 The Halphen System of Distributions for Flood Frequency Analysis: F Ashkar, B Bobee

### 0930 h H41A-05 Bayesian Relative Information as a Measure of Model Validity: M E Moss

### 0945 h H41A-06 INVITED Areally-Integrated Land-Surface Evapotranspiration (ET): Controlling Processes Over Varying Space/Time Scales: K S Humes, S Sorooshian

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### 1010 h BREAK

### 1025 h H41A-08 Estimation of Evapotranspiration From Mountainous Watersheds Using the Complementary Method: K Otsuki


### 1105 h H41A-10 Field Observations of Precipitation in an Mountainous Basin and Its Characteristics: T Yamada, T Mogi

### 1120 h H41A-11 A Distributed Rainfall-Runoff Model Using Radar-Measured Rainfall Data: M Lu, T Koike, N Hayakawa

### 1135 h H41A-12 Experimental and Theoretical Studies on Small Scale Rainfall Rates: K P Georgakakos, M B Sharifi

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### 0940 h O41A-04 INVITED The HELIOS Helium 3 Section: Implications for the Deep Water Circulation in the North and South Pacific: H Craig

### 1010 h BREAK

### 1030 h O41A-06 Diagnostic Calculation for Circulation and Water Mass Movement in the Deep Pacific: S Fujita, N Imasato

### 1050 h O41A-07 Flow of Abyssal Water Into the Samoa Passage: B A Taft, S P Hayes, G E Friederich, L A Codispoti

### 1110 h O41A-08 Deep Water Characteristics and Circulation of the Western North Pacific Ocean: H Sudo

### 1130 h O41A-09 INVITED Abyssal Waters of the Coral and Solomon Seas: E J Lindstrom, S P Hayes

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### 0900 h P41A-03 Gravity Coefficients of Outer Planet Satellites: J K Campbell, J D Anderson

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### 0830 h P41A-01 Radial Structure of Kinetic Temperature in Gases Bound by a Gravitational Field: R Shubert

### 0845 h P41A-02 Plate Boundary Structures on Venus: J Raitala, T Tormanen

### 0900 h P41A-03 Gravity Coefficients of Outer Planet Satellites: J K Campbell, J D Anderson

### 0930 h P41A-04 Use of P and pP Phase Data for Relocation of ISC Hypocenters and for 3D Imaging of Subduction Zones Below Japan: R D Van der Hilst, W Spakman, E R Engdahl

### 0945 h S41A-05 Fingering and Lower Mantle Penetration of the Kurile Slab: Y Yamashita, T Miyatake, S Yamauchi

### 1000 h S41A-06 Corrections for Receiver Structure in Teleseismic Travel Time Inversion: 3-D P-Wave Velocity Structure of the New Hebrides: H Taniyama, K Shimazaki, H Hirahara

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### 0830 h S41A-03 Three-Dimensional P and S Wave Velocity Structures in the Kanto-Tokai District, Japan: M Ishida, A Hasemi

### 0900 h S41A-04 Use of P and pP Phase Data for Relocation of ISC Hypocenters and for 3D Imaging of Subduction Zones Below Japan: R D Van der Hilst, W Spakman, E R Engdahl

### 0930 h S41A-05 Fingering and Lower Mantle Penetration of the Kurile Slab: Y Yamashita, T Miyatake, K Hirahara

### 0945 h S41A-06 Corrections for Receiver Structure in Teleseismic Travel Time Inversion: 3-D P-Wave Velocity Structure of the New Hebrides: H Taniyama, K Shimazaki, K Hirahara

### 1000 h S41A-07 Tomographic Determination of the Velocity Structure in and Around the NE Japan: D P Zhao, S Horiuchi, A Hasegawa

### 1025 h S41A-08 Three-Dimensional Seismic Velocity Structure in Northern Tohoku Region, Honshu, Japan: N T Pusztai, T Sato, K Tanaka

### 1050 h S41A-09 Three-Dimensional P and S Wave Velocity Structures in the Kanto-Tokai District, Japan: M Ishida, A Hasemi

### 1115 h S41A-10 Field Observations of Precipitation in an Mountainous Basin and Its Characteristics: T Yamada, T Mogi

### 1140 h S41A-11 A Distributed Rainfall-Runoff Model Using Radar-Measured Rainfall Data: M Lu, T Koike, N Hayakawa

### 1155 h S41A-12 Experimental and Theoretical Studies on Small Scale Rainfall Rates: K P Georgakakos, M B Sharifi

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### 1010 h BREAK
1000 h S41B-05 Extraction of Seismic Signal by a Time Series Model and Screening out Microearthquakes: T Takanami, H Okada, G Kitagawa

1000 h SP41A-13 Regional Difference in Maximum Velocity Amplitude Decay With Distance in the Kanto-Tokai District, Central Japan: S Noguchi

SP41A KNK: Fuyo A Thurs 0830 h
Dynamical Processes in the Middle Atmosphere I (joint with A)

Presiding: M Geller, SUNY Stony Brook

0830 h SP41B-07 The Interplanetary Causes of Great (Dst) W D Gonzalez

0830 h SP41B-10 Observations of Saturated Gravity Waves in the Middle Atmosphere: T Tsuda, Y Murayama, T Nakamura, M Yamamoto, S Kato, S Fukao

0915 h SP41B-03 Doppler-Shifted Atmospheric Gravity Wave Spectra: T E VanZandt, C H Love

0930 h SP41B-04 Comparison of Model Doppler-Shifted Atmospheric Gravity Wave Spectra With Vertical and Oblique Spectra Observed Over Very Flat Terrain: G D Nastrom, T E VanZandt, J L Green, W L Clark, J M Warnock, K S Gage

0945 h SP41B-05 Seasonal Variation of Momentum Flux in the Mesosphere Observed With the MU Radar: Y Murayama, T Tsuda, M Yamamoto, S Kato, S Fukao

1015 h SP41B-06 Solar Wind Speed and Coronal Properties: K Hakamada

1030 h SP41B-07 The Interplanetary Causes of Great (Dst) W D Gonzalez

1055 h SP41B-08 Influence of the Heliospheric Current Sheet on Interplanetary Disturbances: T Watanabe

1110 h SP41B-09 Substorm Activity Controlled by Rotation of the Solar Magnetic Fields: T Okl, T Saito, Y Kozuka

1125 h SP41A-10 Solar and Solar Wind Conditions for Planar Magnetic Structures: T Nakagawa

1200 h S41B-13 Regional Difference in Maximum Velocity Amplitude Decay With Distance in the Kanto-Tokai District, Central Japan: S Noguchi
1000 h BREAK


1045 h SP41B-08 Meso- and Medium-Scale Dynamics by the MU Radar Troposphere Observations: Preliminary Results: M D Yamanaka, S Fukao, G Kotani, T Yokota, Y Maekawa, T Sato, M Yamamoto, T Tsuda, S Kato

1100 h SP41B-09 Meteor Wind Observations with the MU Radar: T Tsuda, T Nakamura, M Tsutsuji, K Kita, M Yamamoto, S Kato, S Fukao

1115 h SP41B-10 Effects of Atmospheric Winds and of Anisotropic Scattering on Radar Interferometry Measurements: J S Van Baalen, A D Richmond, S K Avery, T Tsuda, S Kato, S Fukao, M Yamamoto

1130 h SP41B-11 A Comparison of Atmospheric Radar Techniques with the MU Radar: Doppler Beam Swinging vs Spaced Antenna FCA and Interferometry: J S Van Baalen, T Tsuda, A D Richmond, S K Avery, S Kato, S Fukao, M Yamamoto

1145 h SP41B-12 A Comparative Observation of Vertical Winds by Velocity-Azimuth-Display and Vertical Incidence Methods at the MU Radar: S Fukao, M F Larsen, M D Yamanaka, T Tsuda, S Kato, H Nakamura

SP41C KNK: Horai Thurs 0830 h

Plasma Waves, Instabilities, and Chaos

Presiding: B T Tsuturani, Jet Propulsion Lab

0830 h SP41C-01 INVITED Growth and Damping of Waves Below the Proton Gyrofrequencies During Storm Conditions: R M Thorne, R Horne

0855 h SP41C-02 Parametric Instability of Hydrodynamic Waves in Space Plasmas: T Hada, E Mjolhus

0910 h SP41C-03 A Review of Recent Results on Wave Amplification in a Magnetoplasma: D Summers, R M Thorne

0925 h SP41C-04 Mode Conversion Process From Z-Mode Waves to Free Space Electromagnetic Waves as the Source Mechanism of AKR: M Iizima, H Oya

0940 h SP41C-05 Chaos in Driven Alfven Systems: T Hada, M Nambo, C F Kennedy, B Buti, E Mjolhus

0955 h SP41C-06 On the Role of Energetic Proton Drift Induced Anisotropy in Generating Outer Magnetospheric Pc 1 Waves: B J Anderson, R E Erlandson, K Takahashi, T A Potemra

1010 h SP41C-07 Proton Cyclotron Echoes and Absorption Bands in 3fH and 4fH Resonances: R E Horita, G M Chen

1025 h BREAK

1040 h SP41C-08 Mapping Results of Polar Electrostatic Ion Cyclotron Emissions Associated With Auroral Hiss by Satellites: T Yoshino

1055 h SP41C-10 Relationship Between Mid-Latitude Hiss and Auroral Hiss: T Onodoh

1110 h SP41C-11 Ray Tracing Studies for the Ducted Whistler at a Low Latitude: Y Nakamura, T Onodoh

1125 h SP41C-12 Electron Generation of Broadband Electrostatic Noise in the Earth's Magnetotail: T G Onsager, M F Thomsen, J T Gosling, R R Anderson

1140 h SP41C-13 Dispersion Relation of Electrostatic Noise Observed With ISEE-3 in the Deep Tail Boundary Layer: M Tsutsuji, R J Strangeway, B T Tsuturani, J L Phillips, E W Greenstadt, H Matsumoto

1155 h SP41C-14 AMPTE/IRM Studies of Broadband Electrostatic Noise in the Geomagnetic Tail: R R Anderson

1210 h SP41C-15 A Comparison of the Wide Band Polarization and Multi-Point Fixed Frequency Intensity of Jupiter's Decametric Radiation: K Imai

SP41D KKK: Large Assembly Thurs 0930 h

Global Structures of MHD Waves II Posters

Presiding: J V Olson, Univ of Alaska

0930 h SP41D-01 POSTER Structures of Large Amplitude Pc1 Waves Observed by DE-2 in the Ionosphere: T Iyemori, M Sugihara, J A Slavin, L H Brace, G R Ludlow

0930 h SP41D-02 POSTER Amplification of Electromagnetic Ion Cyclotron Waves Along a Wave Path in the Earth's Multicomponent Magnetosphere: Y D Hu, B J Fraser, J V Olson

0930 h SP41D-03 POSTER Multistation Observations of Pc1-2 ULF Pulsations Between the Plasmapause and Polar Cap: F W Menk, B J Fraser, H J Hansen, P T Newell, C I Meng, R J Morris

0930 h SP41D-04 POSTER High Latitude Pc1 Bursts Originating Within the Low Latitude Boundary Layer: H J Hansen, F W Menk, B J Fraser, Y D Hu, P T Newell, C I Meng, R J Morris

0930 h SP41D-05 POSTER Correlations Between Cusp Pc3 Pulsations and the Solar Wind: J V Olson, P Struckman, C P Price


0930 h SP41D-07 POSTER ULF Wave Structure Near the Plasmapause: B J Fraser, J C Samson, R L McPherron, C T Russell

0930 h SP41D-08 POSTER Multisatellite Studies of the Spatial Extent and Simultaneity of Pc 3-4 Harmonic Pulsations in the Dayside Outer Magnetosphere: M J Egebehtson, K N Erickson, N Lin, B J Anderson, L J Zanetti, T A Potemra

0930 h SP41D-09 POSTER Magnetospheric Oscillations Caused by a Sudden Impulse During the Great Magnetic Storm of February 1986: K Takahashi, K Yamoto, T Watanabe

0930 h SP41D-10 POSTER Eigenmode Analysis of Coupled Hydromagnetic Oscillations in the Dipole Magnetosphere: S Fujita, V L Patel

0930 h SP41D-11 POSTER Drift Mirror and Ballooning Instabilities in the Magnetosphere: C Z Cheng, K Takahashi, A T Y Lui
0930 h SP41D-12 POSTER An Investigation of Low
Latitude Pc3 Geomagnetic Pulsation Resonance Structure
by the Gradient Method: C L Waters, F W Menk, B J Fraser
0930 h SP41D-13 POSTER Spatial Characteristics
of Low Latitude Pc3-4 Geomagnetic Pulsations: C W S Ziesol-
leck, F W Menk, B J Fraser, P W McNabb
0930 h SP41D-14 POSTER The Effects of Non-Uniform
Isonospheric Conductivity on the Equatorial Pc Pulsations:
O Saka
0930 h SP41D-15 POSTER A Conjugate Area Study of
HM Waves Observed in the Auroral Region: Y Tonegawa, N
Sato, T Saemundsson
0930 h SP41D-16 POSTER Observation of Magnetic
Pi2 Pulsations on the Ground and in the Magnetosphere: T
Sakurai, K Takahashi, K Yamoto, N Sato
0930 h SP41D-17 POSTER A Conceptual Model of
Global pi 2 Pulsations in Middle and Low Latitudes: T Tamao
0930 h SP41D-18 POSTER Global Mode of ULF
Waves in the Equatorial Region: T Kitamura, M Shinohara

T41A SFK: F Thurs 0930 h
Rifting, Back Arc Basins, and Tectonics I
Presiding: T Seno, Tokyo Univ; A Klaus, Hawaii
Inst. of Geophysics
0930 h T41A-01 The New Isochron Chart and Tectonic
History of the Western Central Pacific From Late
Jurassic to Early Cretaceous: M Nakanishi, K Tamaki, K
Kobayashi
0945 h T41A-02 Tectonic Evolution of the Central
Mobile Belt (CMB) in New Brunswick: Record of the
Opening and Closing of a Middle Ordovician Back-Arc Basin
in the Northern Appalachians: C R van Staal
1000 h T41A-03 Normal Faults in the Seaward Slope
of the Japan Trench: K Kobayashi, K Tamaki, H Fujimoto,
T Furuta
1015 h T41A-04 Energy Dissipation at the Oblique
Spreading: A Tanaka, N Fujii

1030 h BREAK
0930 h T41A-05 Importance of Volatiles on Activity
Model of Izu-Oshima Volcano: Part 1. General Concept and
Pre-Eruption Process: H Shinohara, K Kazahaya
1020 h T41A-06 Importance of Volatiles on Activity
Model of Izu-Oshima Volcano: Part 2. Eruption and Post-
Eruption Processes: K Kazahaya, H Shinohara
1035 h T41A-07 Origin of Volcanic Tremors at Izu-
Oshima Volcano: H Watanabe
1050 h T41A-08 INVITED Implications of Recent
Eruptions at Izu-Oshima Volcano for Driving Mechanism of
Magma Migration: Y Ida
1110 h T41A-11 INVITED Petrological Model of the
Eruptions of the Izu-Oshima Volcano, Japan: T Fujii, S
Aramaki
1125 h T41A-12 Magmatic Evolution on Izu-Oshima
Volcano, Japan: Y Kawanabe
1140 h T41A-13 INVITED Great Phreatomagmatic
Eruptions of Izu-Oshima Volcano, Japan: H Glicken, K
Nakamura

V41A SFK: Large Hall Thurs 0830 h
Izu-Oshima Volcano/1986 Eruption (joint with S)
Presiding: H Watanabe, Univ of Tokyo; H Glicken,
Univ of California, SB
0830 h V41A-01 INVITED The 1986-87 Eruption of
Izu-Oshima Volcano, Japan: S Aramaki
0850 h V41A-02 INVITED Physical Processes of the
1986 Eruption of Izu-Oshima Volcano, Japan: H Watanabe
0905 h V41A-03 Evidence of Magmatic Activities at
Izu-Oshima Volcano as Inferred From a Seismic Reflection
Survey: H Suzuki, K Kasahara, M Ohtake, T Takahashi, T
Ikawa, S Abe, Y Kawabe
0920 h V41A-04 Magnetization Intensity Mapping on
and Around Izu-Oshima Volcano, Japan: S Okuma, M
Makino, T Nakatsuka
0935 h V41A-05 Interpretation of the Apparent Re-
sistivity Change Prior to the 1986 Eruption of Izu-Oshima
Volcano: H Utada

0950 h BREAK
1005 h V41A-07 Importance of Volatiles on Activity
Model of Izu-Oshima Volcano: Part 1. General Concept and
Pre-Eruption Process: H Shinohara, K Kazahaya
1020 h V41A-08 Importance of Volatiles on Activity
Model of Izu-Oshima Volcano: Part 2. Eruption and Post-
Eruption Processes: K Kazahaya, H Shinohara
1035 h V41A-09 Origin of Volcanic Tremors at Izu-
Oshima Volcano: H Watanabe
1050 h V41A-10 INVITED Implications of Recent
Eruptions at Izu-Oshima Volcano for Driving Mechanism of
Magma Migration: Y Ida
1110 h V41A-11 INVITED Petrological Model of the
Eruptions of the Izu-Oshima Volcano, Japan: T Fujii, S
Aramaki
1125 h V41A-12 Magmatic Evolution on Izu-Oshima
Volcano, Japan: Y Kawanabe
1140 h V41A-13 INVITED Great Phreatomagmatic
Eruptions of Izu-Oshima Volcano, Japan: H Glicken, K
Nakamura

V41B SFK: Middle Hall Thurs 0830 h
Volcanic Avalanche and Pyroclastic Flow (joint
with S)
Presiding: T Ui, Kobe Univ; B Voight, Penn State
Univ
0830 h V41B-01 INVITED Debris Avalanches: Their
Source Areas and Modes of Formation: T Ui
0850 h V41B-02 Flow and Depositional Mechanisms
of Debris Avalanches: S Takarada
0905 h V41B-03 INVITED Computational Fluid Dy-
namic Modeling of Volcanic Avalanches at Ontake, Japan,
and Mount St. Helens, USA: B Voight, J Sousa
0925 h V41B-04 Motion of the Pyroclastic Flows
Which Occurred at Mount Semeru Volcano in 1989: T
Yamada, T Mizuyama
0940 h V41B-05 The 886 A.D. Eruption of Niijima
Island, Izu-Mariana Arc—A Case Study of Silicic
Phreatomagmatic Eruption: J Itoh

—28—
Thursday P.M.

Paper Numbers. A paper number designates the section, or other sponsoring group, and chronology of the presentation. Sample T42A-01.

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Thus, T42A-01 = Tectonophysics, Thursday, PM, concurrent session A, first paper in that session.

G42A SKC: 21 Thurs 1330 h

Earth Rotation and Dynamics

Presiding: K Yokoyama, National Astronomical Observatory; T Herring, MIT

1330 h G42A-01 Global and Regional Studies of the Excitation of Earth Rotation by the Atmosphere/Ocean System: D A Salstein, R D Rosen, R M Ponte

1345 h G42A-02 Earth Rotation Monitoring With Orthogonal VLBI Baselines: T Yoshino, F Takahashi, K Yokoyama

1400 h G42A-03 Variation of UT1 due to Long Period Tides and Mantle Q: Y Tamura

1415 h G42A-04 Tidal Displacements and the Determination of Short Period Earth Rotation Variations: T A Herring

1430 h G42A-05 Earth Orientation Parameters From a Global GPS Tracking Network: E C Pavlis, T A Williams

1445 h G42A-06 Earthquakes and the Decade Fluctuations in Polar Motion: R S Gross

1500 h G42A-07 Results of the IRIS-P Burst Earth Rotation Observations Made in February 1990: K Yokoyama, S Manabe, S Hama, Y Takahasi

H42A KNK: Fuyo B Thurs 1330 h

Stable and Radioactive Isotopes in Hydrology I

Presiding: W W Wood, USGS, Reston; N Tase, Univ of Tsukuba

1330 h H42A-01 INVITED Spatial and Temporal Variations of Environmental Tritium of River Water in Mountainous Catchments: K Sanjo

1355 h H42A-02 INVITED Study of Shallow Groundwater Movement to Perched Springs in Southwest Nevada by Ionic, Isotopic and Discharge Measurements: B F Lyles, N L Ingraham, R L Jacobson, J W Hess

1420 h H42A-03 INVITED Analysis of Temporal Variations in Streamwater Chemistry During Storm: H Ikeda, T Ohsumi
1445 h  H42A-04 Use of $^2$H and $^{18}$O in Defining Solute Balance in an Evaporating Lake-Groundwater System: W W Wood

1500 h  BREAK


1540 h  H42A-07 INVITED Carbon Isotopes and Reappraisal of the Hydrogeological Concept of "Soil Zone as Acid Pump": C K Keller, D L Johnstone, B D Wood, K J Severson, C S Haling

1605 h  H42A-08 INVITED Age Dating of Powertowers From Clayey Till Using Radiocarbon in DIC and DOC: M J Hendry, L I Wassenaar

O42A  KNK: Aioi Thurs 1330 h
Deep and Intermediate Water Circulation II
Presiding: W Schmitz, Woods Hole Oceanogr. Inst.; B Taft, WOCE IPO

1330 h  O42A-01 Direct Current Measurement in the Pacific North Equatorial Current: N Yoshioka, M Endoh, H Ishizaki

1350 h  O42A-02 Tracking of Sofar Floats at Mid-Depth in Shikoku Basin: K Taira, S Kitagawa, K Uehara, H Ichikawa, H Hachiya, T Teramoto

1410 h  O42A-03 The Hydrographic Structure Along 12°N and 13°N in the Philippine Sea: K Uehara, K Taira, A Masuda

1430 h  O42A-04 A Model of the Abyssal Circulation in Relation to the Philippine Sea: A Masuda, K Uehara, K Taira

1450 h  O42A-05 INVITED Abyssal Circulation Model of the Philippine Sea: M Kubota, K Ono

1510 h  BREAK

1530 h  O42A-07 Performances of a World Ocean Model With Seasonal Change in Driving Forces: T Motoi, M Endoh

1550 h  O42A-08 Deep Circulation in the North Pacific Ocean: H Ishizaki

1610 h  O42A-09 INVITED Long-Term Variations of SST and Subsurfce Thermal Conditions in the North Pacific: K Hanawa

S42A  SKC: Large Hall Thurs 1330 h
Dynamics and Structure of Plate Boundaries II (joint with T)
Presiding: C Finn, USGS

1330 h  S42A-01 A Kinematic Model for Evolution of Island Arc-Trench Systems: T Sato, M Matsu'ura

1345 h  S42A-02 Geophysical Models Across Pacific Convergent Margins: Implications for Subduction Erosion: C Finn

1400 h  S42A-03 Interpretation of in Situ Depth Gradient of Horizontal Stress: The Flexure Around Plate Boundaries: H Ogasawara

1415 h  S42A-04 Fissure Events and Tectonics in the Northeastern Margin of the Philippine Sea Plate: T Tada, M Hashimoto

1430 h  S42A-05 Seismotectonics Around the Izu Peninsula: Deformation of the Philippine Sea Plate: A Yoshida

1445 h  S42A-06 Underground Collision of the Philippine Sea Plate With the Pacific Plate: N Hurukawa, M Imoto

1500 h  BREAK

1515 h  S42A-08 Interplate Coupling Along the Nankai Trough: S Yoshioka

1530 h  S42A-09 Extensional Stresses by the Hinge Faulting Between the Nankai and the TonankaiSegment of the Subducting Philippine Sea Plate in the Kii Peninsula, Southwest Japan: M Mizoue, M Nakamura, N Seto

1545 h  S42A-10 Extension of the Overriding Plate at Convergent Margins: Evidence From Shallow Earthquakes Beneath Active Volcanic Arcs: K D Apperson

1600 h  S42A-11 Evidence for Changing Plate Motions in the Eocene Shimanto Belt, Southwest Japan: T Byrne, A Taira, L DiFulio

1615 h  S42A-12 Ductile Extension as a Cause of Exhumation of the Sambagawa High P/T Metamorphic Belt, Japan: S R Wallis, S Banno

S42B  SKC: 32.33 Thurs 1330 h
Seismicity and Magnitudes
Presiding: M Wysession, Northwestern Univ

1330 h  S42B-01 Earthquake Swarm Activities Northwest of Chichijima, Bonin Islands in 1985: T Moriyama

1345 h  S42B-02 Earthquake Swarms in Western Kyushu: Characteristics of Hypocentral Regions: K Umakoshi, H Shimizu

1400 h  S42B-03 Local Earthquake Activities Around Syowa Station, East Antarctica: K Kaminuma, J Akamatsu


1430 h  S42B-05 Systematic Difference in the ISC Body-Wave Magnitude—Seismic Moment Relationship Between Intermediate and Deep Earthquakes Around Japan: K Kuge

1445 h  S42B-06 $M_m$: Application of Mantle Magnitudes to the Single-Station Estimation of the Seismic Moment of Large Historical Earthquakes: E A Okal

1500 h  S42B-07 Use of the Mantle Magnitude $M_m$ for Real-Time, Automated Single-Station Estimation of Teleseismic Moments: D Reymond, O Hyvernaud, J Talandier, E A Okal

SP42A  KNK: Kaga Thurs 1330 h
Global Structures of MHD Waves III
Presiding: B J Fraser, Newcastle Univ

1330 h  SP42A-01 INVITED Generation of Hydromagnetic Waves by Physical Processes at the Dayside Magnetopause: A Review: L C Lee

1355 h  SP42A-02 INVITED The Distributions of Shock-Related ULF Waves Outside the Magnetopause: E W Greenstadt
1420 h SP42A-03 INVITED ULF Pulsations Observed at the Polar Cusp: J V Olson, B J Fraser
1445 h SP42A-04 INVITED Coupling of Compressional and Alfvén Waves in the Magnetosphere: R L Lysak

1510 h BREAK

1530 h SP42A-06 INVITED POSTER PREVIEW Characteristics of ULF Waves Generated by External and Internal Magnetospheric Processes: B J Fraser

SP42B KNK: Fuyo A Thurs 1330 h
Dynamical Processes in the Middle Atmosphere II (joint with A)
Presiding: S Fukao, Kyoto Univ

1330 h SP42B-01 INVITED Kelvin Waves in the Equatorial Middle Atmosphere: I Hirota, M Shiotani, T Sakurai, J C Gille
1400 h SP42B-02 Comparative Radar Observations of the Mesospheric Gravity Waves in the Northern and Southern Hemisphere, Kyoto(35°N) and Adelaide(35°S): T Nakamura, T Tsuda, Y Tawara, Y Murayama, Y Yama-
moto, S Kato, S Fukao
1415 h SP42B-03 Sources of Gravity Waves and Mesoscale Variability From Aircraft Studies in GASP: G D Nastrom, D C Fritts
1430 h SP42B-04 Generation of Stratospheric Inertio-Gravity Waves as a Multiplication of Tropopause: M D Yamanaka
1445 h SP42B-05 A Dynamical Explanation for the Asymmetry in Zonally Averaged Column Ozones Between Northern and Southern Springs: A Hou, H R Schneider, M Ko

1500 h BREAK

1530 h SP42B-07 INVITED Effects of Satellite Observation and Mapping on Middle Atmosphere Fields: M Geller, Y Chl, R Rood, J Kaye
1600 h SP42B-08 A Numerical Modelling on the Time Evolution of Atmospheric Tides: T Aso
1615 h SP42B-09 Tidal Waves Simulated With a General Circulation Model: M Chiba, K Shibata
1630 h SP42B-10 Gravity Wave Drag Parameterization and Stratospheric Sudden Warming: I Yagai, K Yamazaki
1645 h SP42B-11 Seasonal Variation of the Lagrangian-Mean Circulation of NCAR CCM1: T Iwasaki

SP42C KNK: Horai Thurs 1330 h
Magnetic Storms and Magnetic Quiet Periods
Presiding: T Saito, Tohoku Univ

1330 h SP42C-01 INVITED The Space Weather Forecast Program of Japan: K Marubashi, T Kikuchi, M Tokumaru, F Tomita, T Ogawa
1355 h SP42C-02 The Definitions of and Distinctions Between Geomagnetic Sudden Impulses (SI) and Sudden Storm Commencements (SSC): J A Joselyn, B T Tsurutani
1410 h SP42C-03 Low Latitude Auroras on October 21, 1989: H Miyaoaka, T Hirasawa, K Yumoto, Y Tanaka
1425 h SP42C-04 Role of Pil on Red Aurorae Observed in Japan: T Saito, H Matsuoka, H Takeuchi
1440 h SP42C-05 Disturbances of Both Earth’s and Cometary Magnetospheres Excited by the Same Solar Flare: Y Konza, T Saito
1455 h SP42C-06 INVITED Forecasting Magnetically Quiet Periods: J A Joselyn

1520 h BREAK

1550 h SP42C-07 INVITED Geomagnetic Activity for Northward Fields: L Scurry, C T Russell
1550 h SP42C-09 Polarizations of Sudden Commencements and Sudden Impulses in the Magnetotail: H Kawano, T Yamamoto, S Kokubun
1605 h SP42C-10 Current Vortices in the Polar Ionosphere at the Geomagnetic Sudden Commencements: H Nagano, T Araki
1625 h SP42C-11 Magnetic Field Structure at the Geosynchronous Orbit: T Araki, T Iguchi
1640 h SP42C-12 Suprathermal Mass Spectrometer (SMS) Observations of Minor Ions in the Magnetosphere: A W Yau, B A Whalen

T42A SFK: Middle Hall Thurs 1330 h
Rifting, Back Arc Basins, and Tectonics II
Presiding: T Takeshita, Ehime Univ; A Nur, Stanford Univ

1330 h T42A-01 Dynamics and Evolution of the Lithosphere-Asthenosphere System in the Japanese Island Arc: Japan Sea Opening and Hidaka Metamorphism: T Takeshita, M Komatsu, A Yamaji
1345 h T42A-02 Fission-Track Thermochronology of Granitic Bodies Around Kofu Basin, Central Japan: T Nishi-
yama, T Tagami, S Nishimura
1400 h T42A-03 Counter-Clockwise Paleomagnetic Direction From the Gongoenaka Formation (N9-N10) on the Western Coastal Area of Northeast Japan: Implications for the Formation of the Japan Sea: H Momose, M Torii
1415 h T42A-04 Crustal Structure and Magnetic Anomaly in Southern Part of Boso Peninsula, Chiba, Japan: R Morijiri, T Fujikawa, S Ogura, H Kinoshita, T Nagao
1430 h T42A-05 K-Ar Ages of Some Plutonic Rocks in the South Fossa Magna: K Saito, I Otomo, K Kato, Y Takai

1445 h BREAK

1500 h T42A-07 Continental Rifting in Kyusyu, Ja-

1515 h T42A-08 Deformation of a Narrow Zone Along the Indus-Zangbo Suture Between India and Asia: Paleomagnetic Study of Western Tibet: Y Otofuji, S Funahara, J Matsuo, F Murata, K Yaskawa, T Nishiyama, X Zheng
1545 h T42A-10 Deformation of Southern Asia: The Preliminary Paleomagnetic Study of the Western Yunnan Province, China: S Funahara, Y Z Wang
1600 h T42A-11 A New Model for the Formation of Back Arc Basins: A Nur, J Dvorkin, G Mavko, Z Ben-Avraham
1615 h T42A-12 Changes in the Directions of Geomagnetic Anomaly Lineations in Enderby Basin, off Antarctica: Y Nogi, N Seama, N Isezaki, M Funaki, K Kaminuma
1645 h T42A-14 Contemporaneous Rotation of Southwest Japan: Kinematic and Mechanical Model for Past Rotations: S Aitis, T W C Hilde

V42A SFK: Large Hall Thurs 1330 h
Off-Ito Eruption 1989 and Long Valley Caldera (joint with S)
Presiding: Y Ida, Univ of Tokyo; D P Hill, USGS, Menlo Park

1330 h V42A-01 Tilt Changes Associated With Recent Volcanic Eruptions Around the Izu Peninsula, Central Japan: E Yamamoto, Y Okada, T Ohkubo, T Kumagai
1345 h V42A-02 INVITED Interpretation of 1989 off Ito Earthquake Swarm and Submarine Volcanic Activities in Central Japan: Y Okada, E Yamamoto
1410 h V42A-03 The Seismicity Accompanying the Eruption of a New Submarine Volcano off Izu Peninsula, Japan: S Ueki, Y Morita, T Nishimura, S Horiuchi, H Hamaguchi
1425 h V42A-04 INVITED Source Mechanism of Volcanic Ternor Estimated From Seismic Array Observations: K Yamaoka
1450 h V42A-05 Source Process of an Unusual Earthquake (M5.5) During the 1989 Ito-oki, Japan, Pre-Eruption Swarm Activity: E Fukuyama, S Kinoshita, F Yamamizu
1505 h V42A-06 Reflection Profiles of the Active Volcanic Region off the East Coast of Izu Peninsula: K Kasahara, F Yamamizu, A Takahashi, T Ikawa
1520 h V42A-07 Multi-Channel Reflection Profiles of the Active Tectonic Field, off the East Coast of the Izu Peninsula: K Kasahara, H Suzuki, F Yamamizu, Y Okada, T Kuroda, T Ikawa, Y Iwaki, M Asada

V42B SFK: F Thurs 1330 h
Magmatic Volatiles and Hydrothermal Processes
Presiding: M Kusakabe, Okayama Univ; J W Hedenquist, Geological Survey of Japan

1330 h V42B-01 Ne Excess in Natural Glasses: K Matsubara, J Matsuda
1345 h V42B-02 Partition of Nitrogen and Noble Gases Between Gas and Liquid Phases: A Miyazaki, H Hiyagon, K Hashizume, N Sugiuera
1400 h V42B-03 Concentrations of Polonium-210 and Lead-210 in the Surface Air, Sublimates and Condensates From Volcanic Areas of Japan: K Komura, K Uchida, M Yamamoto, K Ueno, H Sakamoto
1415 h V42B-04 Trace and Volatile Element Microanalysis by SIMS: H Yurimoto, M Kurosawa, S Sueno
1430 h V42B-05 Microanalysis of H2O and CO2 in Silicate Glasses by Laser Extraction and QMS: G Saitoh, M Kusakabe
1445 h V42B-06 3He Flux From Subaerial Volcanoes: The 210Po Calibration: B Marty, M F Le Cloarec

1500 h BREAK

1515 h V42B-08 INVITED An Estimate of Thermal and CO2 Fluxes to Lake Nyos, Cameroon: M Kusakabe, Y Nojiri, Y Sano, H Sato, J Hirabayashi, H Shinohara, G Tanyileke
1535 h V42B-09 INVITED Chemistry and Metal Contents of Discharges From Esan and Kirishima Volcanoes, Japn: Effects and Significance of Meteoric Interaction: M Aoki, J W Hedenquist
1555 h V42B-10 Oxygen Isotope Measurement of Wairakite and Its Application to the Kirishima and Takigami Geothermal Fields, Japan: M Noto, M Kusakabe
1610 h V42B-11 Dissolution and Hydration of Olivine Under Hydrothermal Conditions: K Fujimoto, B Velde
1625 h V42B-12 Precipitation and Dissolution of Quartz in Cooling and Diluting Hydrothermal Solution: Y Shibue
1640 h V42B-13 ESR Studies of Thermal Effect in Metamorphic Rock Near the Instruction Rock: S Toyoda, M Ikeya, H Minamibayashi
1655 h V42B-14 Fossilized Argon Wave in Biotite Around a Dike Contact: D York, H Hyodo
1710 h DISCUSSION
Friday A.M.

Paper Numbers. A paper number designates the section, or other sponsoring group, and chronology of the presentation. Sample T51A-01.

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Thus, T51A-01 = Tectonophysics, Friday, AM, concurrent session A, first paper in that session.

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G51A  SKC: 21  Fri 0830 h
Gravity, Sea Level, and Vertical Motion
Presiding: J Segawa, Univ of Tokyo; M Zumberge, Scripps Inst. of Oceanogr.

0845 h G51A-02 A Closed Global Gravity Tie by a Surface Ship Gravimeter and Study of Long-Wavelength Gravity Anomaly: J Segawa, C S Yang, Y Fukuda
0900 h G51A-03 Height Variations of the Global Satellite Laser Ranging Network: E C PavUs, D E Smith
0915 h G51A-04 Tidal Gravity Observation at Asuka Station on the Ice Sheet of Antarctica: K Shibuya, F Ogawa, Y Fukuda
0930 h G51A-05 Gravity Anomaly as a Fossil Evidence of Past Fault Motion: S Okubo, R Shichi, M Sato,mura, M Komazawa
0945 h G51A-06 Secular Gravity Change in Tokai District, Honshu, Japan: S Nakai, R Shichi, K Nakamura, T Higashi

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H51A  KNK: Fuyo B  Fri 0830 h
Surface Water Hydrology II
Presiding: K Takeuchi, Yamanashi Univ

0830 h H51A-01 Experiments on Stream Flow Generation by the Hillslope Model: Y Sakura
0845 h H51A-02 Experimental Study of the Infiltration Processes in a Slope: Y Iwasaki
0900 h H51A-03 A Long-Term Runoff Model Based on Subsurface Flow: M Tani
0915 h H51A-04 Hydrogeomorphological Interactions on the Hillslope With Special Reference to the Throughflow: K Okunishi, T Yoshiya, T Saito
0930 h H51A-05 A Basic Study on Effects of Catchment Scale on Direct Runoff Discharge: K Sunada
0945 h H51A-06 Hydrologic Process Zone Identification for Small Catchments Subject to Land Use Change: S J Burges

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H51B  KNK: Horai  Fri 0830 h
Contaminant Transport: Theory and Interpretation
Presiding: S P Neuman, Univ of Arizona; M Nishigaki, Okayama Univ

0830 h H51B-01 INVITED Characteristic Finite Element Method With Spline Interpolation for Convective-Dispersive Transport: K Fujinawa
0845 h H51B-02 Transverse Dispersivity in the Mixing Zone of Fresh-Salt Groundwater: K Jinno, K Momiyi, T Hosokawa
0910 h H51B-03 Stochastic Analysis of Dispersion in Unsteady Flow Through Heterogeneous Porous Media: K R Rehfeldt, L W Gelhar
0925 h H51B-04 INVITED Solute Movement in Heterogeneous Porous Media: A Discussion of the Position and Arrival Time Analyses: A M Shapiro
0950 h H51B-05 INVITED Effects of Heterogeneity and Viscosity in Simulation of Solute Transport: M F Wheeler, T F Russell

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1015 h BREAK

1030 h H51B-07 An Experimental Investigation of the Role of Scale and Heterogeneity on Fickian Dispersion: J S Haselow, R A Greenkorn
1045 h H51B-08 Difference of Dispersion Coefficient in Intrusion and Exclusion of Salt Water in Sand: S Sugio
1100 h H51B-09 INVITED The Energy Description of Dispersion in Geologic Media: G L Moltyn
1125 h H51B-10 An Evaluation of Contaminant Migrations at Two Waste Disposal Sites: C Tan
1140 h H51B-11 INVITED Stochastic Model of Ensemble-Average Concentration and Its Variance for Transport of Conservative and Reactive Solute in Heterogeneous Aquifers: Z J Kabala, G Sposito
1205 h H51B-12 Universal Scaling of Hydraulic Conductivities and Dispersivities on Geologic Media: S P Newman

O51A KNK: Aoi Fri 0830 h
Waves, Tides, and Turbulence
Presiding: I S F Jones, Univ of Sydney; T Yanagi, Ehime Univ

0830 h O51A-01 Parameterization of Turbulent Mixing in the Western Equatorial Pacific: S Kanari, C Kobayashi, K Takeuchi
0845 h O51A-02 Measurements in the Turbulent Boundary Layer Under Landfast Ice: K Shirasawa, R G Ingram
0900 h O51A-03 Ocean Drag Coefficients Measured From Offshore Structures: I S F Jones
0915 h O51A-04 Existence of Multiple Regimes in Wave Dependence of the Sea-Surface Wind Stress: Y Toba, N Ebuchi
0930 h O51A-05 Growth of Wind Waves With Fetch Observed by the GEOSAT Altimeter in the Japan Sea Under Winter Monsoon: N Ebuchi, H Kawamura, Y Toba

0945 h BREAK

1000 h O51A-07 Sea Surface Height, Wind Speed and Significant Waveheight Variability in the Western Pacific: E B Dobson, D L Porter
1015 h O51A-08 Tidal Current in the Coastal Waters: N Hayakawa, Y Matsuno
1030 h O51A-09 Tide-Induced Residual Currents Caused by the Horizontal Variation of the Tidal Currents in a Rotating Basin: H Yasuda
1045 h O51A-10 Two-Dimensional
1100 h O51A-11 Directional Spectra Observations of Seafloor Microseisms and Gravity and Infragravity Water Waves From an Ocean Subbottom Seismometer Array: T Yamamoto, T Nye, M Trevorrover, D Goodman
1115 h O51A-12 The Bottom Shear Modulus Profiler (BSMP), a Passive Remote Sensor Using a Gravity Wave Inversion: T Yamamoto, M Trevorrover

S51A SKC: Large Hall Fri 0930 h
Dynamics and Structure of Plate Boundaries III (joint with T)
Presiding: K Shimazaki, Tokyo Univ

0930 h S51A-01 Apparent Polar Wander Path of North China Block Since Jurassic: Z Zheng, M Kono, H Tsunakawa, G Kimura, Q Wei, X Zhu, T Hao
0945 h S51A-02 Intraplate Movement Inferred From Paleomagnetic Poles From East of Tanlu Fault in the North China Block: H Uchimura, M Kono, G Kimura, H Tsunakawa, Q Wei
1000 h S51A-03 Incipient Rifting of Oceanic Lithosphere Associated With the Large-Scale Plate Boundary Reorganization Near Easter Island: D F Naar, F Martinez, R N Hey
1015 h S51A-04 Glauconaphic Schists of Diverse Ages Associated With Serpentinite Belts in Eastern Australia: T Watanabe, T Itaya, S Fukui, E L Leitch, M Iwasaki

1030 h BREAK

1045 h S51A-06 Seismicity Along the Southern Segment of the Pacific-Australian Plate Boundary: M E Wyssession, E A Okal
1100 h S51A-07 Means and Variances of Focal Mechanism Solutions: S Matsunami
1115 h S51A-08 Seismic Activity and Tectonic Stress in Kyushu, Southwest Japan: H Shimizu, N Matsuo, K Umakoshi, S Kuwahara
1130 h S51A-09 Subsurface Structure Beneath Beppu Bay Inferred From Seismic Reflection Surveys by an Air-Gun Method: Y Yusa, A Krobotera, S Horie, I Nakaga, Y Kobayashi, K Kitaoka, K Kamiyama, K Takemura, Y Sudo, T Ikawa, M Onishi, M Asada
1145 h S51A-10 Recurrent Slip Pattern: Field Evidence in Beppu Bay, Japan: K Shimazaki, T Nakata, N Chida, M Okamura, T Miyatake

S51B SKC: 32.33 Fri 1000 h
Dynamics and Structure of the Deep Interior I (joint with G,GP,T,V)
Presiding: C Wicks Jr, Univ of California, B

1000 h S51B-01 Hydrogen Distribution in San Carlos Olivine: M Kurosawa, H Yurimoto, S Sueno, K Matsamoto
1015 h S51B-02 Oxygen Diffusion Along High Diffusivity Paths in Forsterite and Implications for Creep Mechanism: H Yurimoto, M Morio, H Nagasawa
1030 h S51B-03 Time-Dependent Convection With T, P-Dependent Non-Newtonian Rheology: T Nakakuki, H Fujimoto
1045 h S51B-04 Seismologic Constraints on the Phase Change at 670 km: C W Wicks, M A Richards
1100 h S51B-05 Global Upper Mantle Lateral Velocity Variations With Spherical Harmonics up to lmax = 30: Y S Zhang, T Tanimoto
1115 h S51B-06 Iterative Waveform Inversion for Laterally Heterogeneous Earth Structure Using a Laterally Heterogeneous Starting Model: T Ibara, S Tsuboi, R J Geller
1130 h S51B-07 Lateral Variation of Q From Single Modal Q Measurements of O2S2: T Tanimoto

—34—
1145 h SPS1B-08  Thickening of Subducted Lithosphere at a Viscosity Step: C Trengove, G F Davies

SP51A  KNK: Kaga  Fri 0830 h  Highlights of the EXOS-D, Viking, and DE Projects

Presiding: H Oya, Tohoku Univ

0830 h SP51A-01 INVITED The Dynamics Explorer Program and Its Application to the Auroral Particle Acceleration Problem: R A Hoffman
0900 h SP51A-02 INVITED ELF/VLF Wave Signatures of Wave-Particle Interactions Observed on the Dynamics Explorer-I Spacecraft: N Iinuma, Y V Sonwalkar, R A Helliwell
0925 h SP51A-03 INVITED Impulsive VLF Signals Observed on the DE I Satellite: R A Helliwell, V V Sonwalkar, U S Inan

0950 h  BREAK

1005 h SP51A-05 INVITED The Viking Project: G Gustafsson
1035 h SP51A-06 INVITED High Latitude Observations of Low Frequency Electromagnetic Waves From Viking: R E Erlandson, T A Potemra, L J Zanetti

SP51B  KNK: Fuyo A  Fri 0830 h  Stratospheric Ozone and Atmospheric Chemistry I

Presiding: N Iwagami, Univ of Tokyo

0830 h SP51B-01 Stratospheric Ozone, Temperature, and Aerosol Measurements by MRI Mark II Mobile Lidar: O Uchino, T Tabata
0855 h SP51B-02 Observation of Stratospheric Ozone and Temperature Profiles Using a Multiple Wavelength UV Lidar at NIES: H Nakane, Y Sasaki, N Sugimoto, S Hayashida-Amano, H Matsui, A Minato
0910 h SP51B-03 Observations of Atmospheric Ozone and Nitrous Oxide With the Laser Heterodyne Spectrometer at Sendai, Japan: M Taguchi, S Okano, H Fukunishi
0925 h SP51B-04 Concurrent Observations of Tropospheric and Stratospheric Ozone With the Laser Heterodyne Spectrometer and Ozonesondes at Sendai, Japan: S Okano, M Taguchi, H Fukunishi, Y Sasaki
0940 h SP51B-05 Diurnal Variation of Nitric Oxide in the Upper Stratosphere: K Kondo, I Iwata, M Pirre, R Ramaroson, P Aimedieu, W A Matthews, W R Sheldon, J R Benbrook
0955 h SP51B-06 Far Infrared Limb Observing Spectrometer for Stratospheric HO3 Measurements: H M Pickett, D B Peterson
1010 h SP51B-07 A Simulation Study to Observe Stratospheric O3 and ClO Using Millimeter-Wave Ground-Based and Limb Sounding Systems: S Ochital, H Masuko
1030 h  BREAK

1045 h SP51B-09 Distribution of Total Ozone Amounts Over Japan Derived From NOAA/TOVS Data: S Takahashi, S Okano, H Fukunishi

1100 h SP51B-10 Plan for Polar Ozone Studies Using Improved LAS Onboard ADEOS Satellite: Y Sasano, M Suzuki, T Yokota, H Akimoto, A Matsuzaki, K Asada

1130 h SP51B-12 Model Assessment of the Ozone Impacts From CFC Substitutes: N D Sze, M Ko
1145 h SP51B-13 Early Detection of Stratospheric Changes: Possible Impact of Heterogeneous Chemistry: J M Rodriguez, N D Sze, M K W Ko

1200 h SP51B-14 Ozone Impact From Hypersonic Civil Transport: A Two-Dimensional Model Assessment: M Ko, N D Sze, D Weisenstein
1215 h SP51B-15 Input of the Atmospheric Trace Elements to the Yellow Sea During the Spring of a Low-Dust Year: Y Gao, R A Duce, R Arimoto

T51A  SFK: F  Fri 0845 h  High Pressure

Presiding: M Nicol, Univ of California, LA; M Akaogi, Hokkaido Univ

0845 h T51A-01 Direct Determination of Cation Diffusion Coefficients in Pyroxenes: K Fujino, H Naohara, H Momoi
0900 h T51A-02 Sulfur at High Pressures: Raman Spectra, Photosensitivity, and Phase Transitions: P Wolf, B J Baer, H Cynn, M Nicol
0915 h T51A-03 Pressure Effect on the Divalent Cation Distribution in Mg-Fe Olivine Solid Solution: T Aka-matsu, M Kumazawa, N Aikawa, F Takei
0945 h T51A-05 Prediction of Inactive Modes and Bulk Moduli for Rutile-Types From Vibrational Spectra: A M Hofmeister

1000 h  BREAK

1015 h T51A-07 Nonhydrostatic and Nonequilibrium Thermodynamics of Rocks: I Shimizu
1030 h T51A-08 Pressure Derivatives of Elastic Constants of Single Crystal MgO and MgAl2O4: A Yoneda
1045 h T51A-09 Transformation Mechanism of Forsterite to Spinel Structures Under Distinctive Stress Conditions: K Fujino, T Irie

1115 h T51A-11 Applicability of Oxygen Proper Solid Electrolyte to High Pressure Research: A Yasuda, T Fujii
1130 h T51A-12 Estimation of Supplied Impact Sites From Density and Composition of Plagioclase Feldspars: Y Miura
1145 h T51A-13 Different An Contents and Crystallization Ages Among Terrestrial, Meteoritic, Martian and Lunar Plagioclase Feldspars: Y Miura
V51A SFK: Large Hall Fri 0830 h
Geodynamics and Evolution of the Earth I (joint with P, S, T)

Presiding: T Matsui, Univ of Tokyo; D J Stevenson, Caltech

0830 h V51A-01 On the Temporal Variation of the Impact Flux of the Moon: S Sugita, T Matsui
0845 h V51A-02 INVITED Differentiation, Convective Mixing and Impact Stirring in the Early Earth: Y Abe
0905 h V51A-03 Thermal Equilibration of the Earth Following a Giant Impact: T Spohn, G Schubert, M Ogawa
0925 h V51A-04 Global Magma Ocean—Formation Mechanism and Constraints: S Sasaki
0940 h V51A-05 A Possible Role of Heavy Bombardments on the Origin and Evolution of Continents: T Matsui, K Kuramoto

1010 h BREAK

1025 h V51A-08 INVITED Core Formation and the Nature of the Core-Mantle Boundary Regions: D J Stevenson

1050 h V51A-09 Numerical Simulation of Rayleigh-Taylor Instability and Its Application to Formation of the Earth’s Core: R Honda, H Mizutani

1105 h V51A-10 Hydrodynamic Stability of the Thermal and Compositional Boundary Layer at the CMB: Y Muromachi, M Kumazawa

1120 h Separation of Earth in WDYHD AWH, K Nakawa

DISCUSSION

V51B SFK: Middle Hall Fri 0830 h
Petrologic Studies of Volcanoes I (joint with S)

Presiding: T Yanagi, Kyushu Univ; M F J Flower, Univ of Illinois

0830 h V51B-01 INVITED Style of Silicic Volcanism in the Snake River Plain—Yellowstone Hotspot Track: A Petrologic Overview: N Honjo, W P Leeman

0850 h V51B-02 A Modeling of Sakurajima Volcano: T Kobayashi

0905 h V51B-03 INVITED Coupled Chambers and Repeated Eruptions of Sakurajima Volcano: T Yanagi

0925 h V51B-04 Multi-Active Volcanic Group Generated in a Slightly Tensile Stress Field: T Kagiyama, Y Ida, M Yamaguchi, M Masutani

0940 h V51B-05 Thermal Structure Beneath Kuju Volcano, Central Kyushu, Japan: S Ehara

0955 h V51B-06 Velocity Structure in the Unzen Volcanic Region, Southwest Japan: S Ohmi, H Shimizu

1010 h BREAK

1025 h V51B-08 INVITED Decompression Melting Beneath Stretched Lithosphere: Hainan Island Basalts, South China: M F J Flower, K Tu, M Zhang, G H Xie

1045 h V51B-09 Two Types of the Cenozoic Alkali Basalts in SW Japan, and Their Source Mantle: N Fujibayashi, T Nagao, H Kagami

1100 h V51B-10 Temporal Variations of Magmas From the Young Somma to the Central Cone Stages of Hakone Volcano, Japan: Y Hirata

1115 h V51B-11 A Petrologic Model for Northern-Yatsugatake Volcanoes, Central Japan: M Nakamura

1130 h V51B-12 Two Reservoir System Beneath Asama Volcano, Central Japan, as Revealed by Leveling Survey: T Miyazaki

WITHDRAWN
Friday P.M.

Paper Numbers. A paper number designates the section, or other sponsoring group, and chronology of the presentation. Sample T52A-01.

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Thus, T52A-01 = Tectonophysics, Friday, PM, concurrent session A, first paper in that session.

G52A SKC: 21 Fri 1330 h

Western Pacific GPS (joint with T)

*Presiding:* I Murata, Univ of Tokyo; M Bevis, North Carolina State Univ

1330 h G52A-01 *INVITED* The Southwest Pacific GPS Project: Monitoring Crustal Dynamics and the Earthquake Cycle in an Area of Rapid and Complex Plate Motions: M Bevis, J Recy

1400 h G52A-02 *INVITED* Geodetic Studies of Oblique Plate Convergence in Sumatra: Y Boek, R McCaffrey, J Rais, I Murata

1430 h G52A-03 Southwest Japan GPS Campaign SWJ9001—Philippine Sea Plate GPS: K Hirahara

1445 h G52A-04 A GPS Study of the Philippine Sea Plate: J Beavan, C H Scholz, I Murata, T Kato, H Ishii, D M Davis, S W Roecker, K Hirahara, T Tamaka

1500 h BREAK

1515 h G52A-06 Crustal Movement Observations Caused by Subduction of the Philippine Sea Plate in Kii Peninsula and Shikoku, Southwestern Japan: T Tanaka, M Kato, K Hirahara, Y Hoso, T Tabei

1530 h G52A-07 Preliminary Results of Crustal Motion Monitoring by GPS in Central Japan: F Kima, M Nakamura, R Miyajima, T Okuda, Y Sumino, I Fujii, M Satomura, Y Sasaki, Y Sasaki


1600 h G52A-09 The Sagami Bay GPS Campaign in the South Kantou, Japan: T Kato

1615 h G52A-10 GPS Campaigns in the Hokuriku District, Central Japan: T Kato, A Takeuchi, Y Yabuta, K Hirahara, Y Kono, T Nagaos, S Okubo, K Kawai, T Miyagi

1630 h G52A-11 GST’s Regional GPS Tracking Network in Japan: H Tsuji, M Murakami

H52A SKC: Fuyo B Fri 1330 h

Stable and Radioactive Isotopes in Hydrology II

*Presiding:* N Tase, Univ of Tsukuba; W Wood, USGS, Reston

1330 h H52A-01 *INVITED* Methane in the Crystalline Environment The Case for Abiogenic Synthesis: B S Lollar, S K Frape, P Fritz, S A Macko, J A Welhan

1355 h H52A-02 *INVITED* Delta$^{15}$N Studies of Groundwater Nitrate Transport Through Macropores in a Mantled Karst Aquifer: N C Krothe

1420 h H52A-03 *INVITED* $^{11}$B/$^{10}$B Isotopic Ratio for Environmental, Geochemical, and Hydrologic Application: R L Bassett, G R Davidson

1445 h H52A-04 Geochemical Study of Natural Groundwater Recharge in Semi-Arid Inland of Tanzania: M Hayashi

O52A SKC: Aioi Fri 1330 h

Western Boundary Currents I

*Presiding:* D Hu, Academia Sinica; W S Chuang, Taiwan National Univ

1330 h O52A-01 Subtropical Mode Water in the North Pacific Ocean: T Suga, K Hanawa

1350 h O52A-02 *INVITED* Temperature Distributions Near the Kuroshio: F Bingham

1420 h O52A-03 The Structure of the Kuroshio Front off Boso to Joban Coast: H R Shin, Y Nagata

1440 h O52A-04 *INVITED* The Kuroshio in the East China Sea: A Three-Dimensional Hydrographic Inversion: D Roemmich, B Cornuelle

1510 h BREAK

1525 h O52A-06 Effects of Coastal Irregularity on the Flow Over a Continental Slope: H Nishigaki, N Imasato, T Awaji

1545 h O52A-07 Spatial and Temporal Variability of Volume Transport of the Kuroshio in the East China Sea: H Ichikawa, R C Beardsley

1605 h O52A-08 Statistical Features of the Turbulent Flow of the Kuroshio: K Rikiishi

1625 h O52A-09 Blocking of an Oceanic Front: Eddy Branching of the Kuroshio: L Y Oey, P Chen

1645 h O52A-10 Southward Intrusion of the Intermediate Oyashio Water Along the Coast of the Boso Peninsula, Japan: S K Yang, Y Nagata, K Taira

S52A SKC: Large Hall Fri 1330 h

Dynamics and Structure of Plate Boundaries IV (joint with T)

*Presiding:* N Hirata, Chiba Univ

1330 h S52A-01 Gravity Anomalies, Their Gradients, and Isostasy Over the Japanese Islands: Y Kono, M Awara, N Furuse

1345 h S52A-02 Geophysical Research on the Structure of Ogchon Belt, Korea: S Nishimura, K D Min, T Mogi, J Nishida, S C Shin
1400 h S52A-03 Gravity Anomalies and Structure of the Ulleung Basin, East Sea (Sea of Japan): M Suh, B C Suk, S R Kim, K Y Kim
1415 h S52A-04 Digital Broadband Borehole Seismometer System in ODP Hole 794D in the Japan Sea: K Suyehiro, T Kanazawa, N Hirata
1430 h S52A-05 High Resolution Seismic Crustal Structure in the Northern Yamato Basin of the Japan Sea by an Array of OBSs and Downhole Seismometer at ODP Site 794D: M Shinohara, N Hirata, H Kinoshita, T Kanazawa, K Suyehiro, H Nanbu, S Abe
1445 h S52A-06 Ocean Bottom Seismometer Measurement of the 1989 DELP Experiment in the Vicinity of T-T-T Triple Junction off Boso Peninsula, Japan: N Hirata

1500 h S52A-08 Network MT Measurement in the Eastern and Central Parts of Hokkaido, Northern Japan: M Uyeshima, H Utada, T Kawase, S Uyeda, Y Nishida
1545 h S52A-10 Waveform Inversion for Vertical Velocity Structure of the Crust and Uppermost Mantle: T Shibutani, K Hirahara
1600 h S52A-11 Reflection Survey on Osaka Basin Structure: Y Iwasaki, S Sawada, T Kagawa, N Matsuyama, K Ohsima

S52B SKC: 32.33 Fri 1330 h
Dynamics and Structure of the Deep Interior II (joint with G,GP,T,V)
Presiding: A M K Szeto, York Univ
1330 h S52B-01 Detection of Core Modes of the Earth's Free Oscillation Using a Superconducting Gravimeter Record: Y Imanishi, M Kumazawa, T Sato, M Ooe
1345 h S52B-02 Variations of the Vertical and Thermal Instability at the CMB: C Kakuta
1400 h S52B-03 The Convective Velocity of the Outer Core: S Yoshida, M Kumazawa
1415 h S52B-04 On the Nature of Fluid Motion in the Outer Core: Y Honkura, H Takayanagi
1430 h S52B-05 Fluid Motion in the Earth's Outer Core Estimated for a Strong Toroidal Magnetic Field Model: M Matsushima, Y Honkura
1445 h S52B-07 The Sixty Year Variation and Fluid Motion Beneath the Core-Mantle Boundary: Y Yokoyama, T Yukutake
1515 h S52B-08 Application of Computer Algebra to Kinematic Dynamos: T Nakajima, M Kono
1530 h S52B-09 A New Multipole Representation of the Geomagnetic Field: Y Sano, M Sugira
1545 h S52B-10 Torque Balance of the Inner Core: A M K Szeto

SP52A KNK: Kaga Fri 1330 h
Highlights of the EXOS-D, Viking, & DE Projects II
Presiding: T A Potemra, APL/Johns Hopkins Univ
1330 h SP52A-01 INVITED Mid-Altitude Signatures of the Dayside Magnetospheric Boundary Layers: Results From the Hot Plasma Instrument on Board Viking: J Woch, R Lundin
1400 h SP52A-02 INVITED Results of EXOS-D (Akebono) Satellite for Auroral Particle Acceleration and Plasmasphere Responses to the Magnetospheric Activities: H Oya
1430 h SP52A-03 Electrostatic Component of AKR Found in the Source Region: A Morioka, H Oya, K Kobayashi
1445 h SP52A-04 The Effect of Non-Uniform Media in the Source Regions of Auroral Kilometric Radiations: K Kobayashi, H Oya

1535 h SP52A-07 Akebono Observation of HIPAS VLF Modulation Signal: I Kimura, M Yamamoto, K Ishida, A Wong, T Okada, I Nagano, K Hashimoto
1550 h SP52A-08 VLF and ELF Wave Phenomena in the Antarctic Region Observed by the Satellite Akebono: A Sawada, S Yajima, Y Kasahara, M Yamamoto, I Kimura, K Hashimoto, I Nagano, T Okada
1605 h SP52A-09 Amplitude and Phase Variation of Omega-Triggered Emissions Observed by the Akebono Satellite: Y Kishi, M Yamamoto, A Sawada, I Kimura

SP52B KNK: Fuyo A Fri 1330 h
Stratospheric Ozone & Atmospheric Chemistry II (joint with A)
Presiding: Y Kondo, Nagoya Univ
1330 h SP52B-01 Global Ozone Distribution in the Stratosphere Based on the EXOS-C Satellite Data: M Kolke, T Ogawa, K Suzuki
1345 h SP52B-02 Polar Stratospheric Aerosol Enhancement and Geochemical Cycle of Nitric Acid: Aerosol Effect on Ozone Hole: Y Iwasaka, M Hayashi, Y Kondo, A Matthews
1400 h SP52B-03 Antarctic Ozone Hole in 1989 Observed at Syowa Station and by Nimbus 7/TOMS: H Kanazawa, S Kawaguchi
1415 h SP52B-04 Zonal Wind Changes Relating to the Development of the Ozone Hole: K Kawahira, T Hirooka
1430 h SP52B-05 Year-to-Year Changes of the Tropopause Height at Syowa, Antarctica: K Kawahira, K Kondo, Y Iwasaka
1445 h SP52B-06 The Relationship Between Total Ozone and Stratospheric Temperature at Syowa Station, Antarctica: S Chubachi

1500 h BREAK

1515 h SP52B-08 Unmanned Aircraft: New Tools for Atmospheric Research in the 1990s: J G Anderson, J S Langford
1530 h SP52B-09 Nitric Oxide and Ozone Measurements From Mid-Latitude to Equator Over the West Pacific: Y Kondo, Y Iwasaka, A Iwata, T Ogawa, Y Sugimura, Y Makino
1545 h SP52B-10 Global Distribution of Atmospheric Ozone and Aerosol During the INSTAC Campaign: Y Makino, Y Tsutsumi, M Ikegami, K Okada, Y Zaizen, Y Nikiado
1600 h SP52B-11 Long-Term Trends and Seasonal Variations of Atmospheric Methane in Japan: H Tsuruta
1615 h SP52B-12 Stratospheric Sulfuric Acid Particles Transported Into the Troposphere Through Tropopause Folding: M Yamato
1630 h SP52B-13 UV Photolysis and Microbial Reduction as Major Sinks of Nitrous Oxide With Emphasis on Kinetic Nitrogen Isotope Discriminations: N Yoshida, H Morimoto, S Matsuo

SP52C KNK: Horai Fri 1330 h Solar Wind Interactions With Venus (joint with P) Presiding: H Fukushima, Tohoku Univ
1330 h SP52C-01 INVITED Pickup Ions at Venus: Present Understanding and Unanswered Questions: J G Luhmann
1355 h SP52C-02 Three-Dimensional Magnetohydrodynamic Simulation of the Interaction of the Solar Wind With the Venus Ionosphere: T Ogino, A Sakurai
1410 h SP52C-03 A Study of Interplanetary Magnetic Flux Ropes Using the PVO Magnetometer Data: K Marubashi
1425 h SP52C-04 INVITED Physics of the Venus Ionosphere: What We Think We Know and Don't Know: T E Cravens
1450 h SP52C-05 Statistical Properties of Impulsive Signals Observed in the Nightside Ionosphere of Venus: R J Strangeway, C M Ho, C T Russell

1505 h BREAK

1520 h SP52C-07 Plasma Waves Observed in the Electron and Ion Foreshock of Venus: G K Crawford, R J Strangeway, C T Russell
1535 h SP52C-08 INVITED Venus Orbiter Program in Middle of 1990s Using Japanese Spacecraft: H Oya
1600 h SP52C-09 Development of EUV Spectrometer Equipped With Absorption Cells for D/H Ratio Measurement: T Kawahara, S Okano, H Fukushima
1615 h SP52C-10 Venus Mantle—Mars Planetosphere: What are the Similarities?: A F Nagy, T I Gombosi, K Szego, R Z Sagdeev, V D Shapiro, V I Shevchenko

T52A SFK: F Fri 1330 h Rheology and Heat Flow
Presiding: H Sato, Okayama Univ
1330 h T52A-01 Thermal Structure and Magma Generation in Island Arc Region From Laboratory and Seismic Anelasticity Studies: H Sato, I S Sacks
1345 h T52A-02 Lateral and Vertical Temperature Profiles in the Upper Mantle Determined From Seismic Anelasticity Structures: H Sato
1400 h T52A-03 Interpretation of Heat Flow vs. Curie Isotherm Depth Relationship by a Simple Three-Layer Thermal Model: O Matsubayashi, K Yasukawa, Y Yamada
1415 h T52A-04 Temperature Structure Under the Japan Arc and the Intraplate Tectonics: Y Furukawa
1430 h T52A-05 Geothermal Study of the Sengan-Hachimantai Area by Deep Drillholes and Geophysical Methods—Case of Large-Scale Volcanic Zone in the NE Japan Arc: O Matsubayashi, S Suto

1445 h BREAK

1500 h T52A-07 Stress Interpretation From Borehole Breakouts at Hijiori Hot Dry Rock Experiment Field, Yamagata, Japan: H Ito, C A Barton
1515 h T52A-08 The Power Source of Continental Drift: H Kin no

V52A SFK: Large Hall Fri 1330 h Geodynamics and Evolution of the Earth II (joint with P,S,T)
Presiding: E Ohtani, Tohoku Univ; C R Agee, Univ Bayreuth
1330 h V52A-01 INVITED High Pressure Geochemistry of Cr, V Mn and O: Implications for the Formation of Planetary Cores and Origin of the Moon: A E Ringwood, W Hibberson
1355 h V52A-02 Carbon as a Light Element in the Outer Core—High Pressure Melting Experiments in the System, Fe-C: Y Hirayama, T Fujii, K Kurita
1410 h V52A-03 INVITED Melting of the Allende CV3 Meteorite up to 25 GPa: Importance of Magnesiowustite in Earth Differentiation: C B Agee
1430 h V52A-04 INVITED Calcium Perovskite Controlling Fractionation of Basaltic Material and Chemical Heterogeneity of the Mantle: T Kato

1510 h BREAK

1525 h V52A-07 Phase Equilibria of Mantle Minerals up to 7.5 GPa: T Kawasaki
1540 h V52A-08 On the Formation of Carbon Reservoir in the Earth’s Mantle: K Kurita, T Fujii
1555 h V52A-09 Stabilities of Carbonate in the Peridotite at High Pressures: Implications for a Carbon Reservoir in the Mantle: T Katsura, E Ito, S Akimoto
1610 h V52A-10 INVITED Komatiite Genesis and Thermal State of the Early Earth: E Ohtani, J Moriyama, N Yurimoto
1630 h V52A-11 INVITED Reconstruction of the Archean Earth: E Takahashi
1650 h DISCUSSION

V52B SFK: Middle Hall Fri 1330 h Petrologic Studies of Volcanoes II (joint with S) 
Presiding: T Hasenaka, Tohoku Univ; R J Arculus, Univ of New England
1330 h V52B-01 INVITED A Model for a Quaternary Andesitic Volcano: Ruapehu, New Zealand: B F Houghton, W R Hackett
1350 h V52B-02 A First Approximate Petrological Model of Minamigassan Activity, Nasu Volcanic Group, NE Japan: M Ban
1405 h V52B-03 INVITED Tholeiitic and Calc-Alkaline Magma Series at Adatara Volcano, Northeast Japan: Mechanism of Evolution and Petrological Relationship: A Fujinawa
1425 h V52B-04 Magmatic Evolution of Zao Volcano, Northeast Japan: A Sakayori
1440 h V52B-05 INVITED Bimodal Volcanism of Moriyoshi Volcano, Northeastern Japan: M Nakagawa
1500 h V52B-06 Volcanism Since 3 Ma in Aizu-Shirakawa District, Tohoku, Japan: I Moriya
1515 h BREAK
1530 h V52B-08 INVITED Klyuchevskoy (Kamchatka), the World’s Most Active arc Volcano is the Product of a non-Steady State RTF Magma Chamber: R J Arculus, A B Kersting, V M Okrugin, S A Fedotov
1550 h V52B-09 INVITED Contrasting Monogenetic Volcanisms in Michoacan-Guanajuato, Mexico: Cinder Cone Group vs. Shield Volcano Group: T Hasenaka
1610 h V52B-10 Magma Chamber Beneath Slow-Spreading Ridge: Petrology of Fe-Ti Oxide Gabbros From ODP Leg 118, Hole 735B, South West Indian Ridge: K Ozawa, P S Meyer
1625 h V52B-11 Origin of Olivine Cumulate in the Toba Ultramafic Complex, Central Japan: H Ozawa
1640 h V52B-12 High Magnesium Primary Magmas From Haleakala Volcano, Hawaii: C Y Chen

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Saturday A.M.

Paper Numbers. A paper number designates the section, or other sponsoring group, and chronology of the presentation. Sample T61A-01.

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G61A SFK: F Sat 0830 h Seismotectonic Studies I
Presiding: T Tanaka, Kyoto Univ
0900 h G61A-02 GPS Observation of Crustal Movements Associated With the 1989 Seismic Swarm and Volcanic Eruption Around Ito: Y Fujinawa, S Sekiguchi, S Ohmi, S Shimada, T Eguchi, Y Okada
0915 h G61A-03 Development of a Permanent GPS Geodetic Array in Southern California for Continuous Monitoring of Crustal Motion: U J Lindqwister, Y Bock
0930 h G61A-04 Application of Advanced GPS Monitoring System Techniques to Tectonic Studies: J W Ladd
0945 h G61A-05 Effects of Groundwater Flow on Strain Measurements: S Takemoto
1000 h BREAK
1015 h G61A-07 High Precision EDM Observations Around the Imperial Fault and the Heber Geothermal Field, S. California, Using a ME300 Mekometer/CR204 Geometer: P M Fleming, R G Mason
1030 h G61A-08 GPS Measurement of Crustal Deformation in the Northern Cascadia Subduction Zone: H Dragnet, J Kouba, M Lisowski
1045 h G61A-09 GPS Solutions of Post-Seismic Crustal Strain Following the Loma Prieta, California Earthquake of October 1989: G Blewitt, K J Hurst
1100 h G61A-10 Comparison of Total Electron Content Between GPS Dual Frequency Method and Faraday Rotation Method: A Yamamoto, M Imae, C Miki, H Minakoshi, E Kawai, F Takahashi
1115 h G61A-11 Precise GPS Dual Frequency Receiver for Measuring Ionospheric Total Electron Content by Using Cross Correlated Signal Phase: M Imae, C Miki, H Kiuchi, A Kaneko
1130 h G61A-12 An Estimation of Excess Path Delay Based on JMA Global Analysis Data: R Ichikawa, M Kasa-hara, I Naitoh

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0900 h G61A-13 Plate Motion Parameters Estimated From Changing Rates of VLBI and SLR Baseline Lengths: K Sato
1200 h G61A-14 Deformation of the Aquifer due to Well Pumping: T Maruyama

H61A KNK: Fuyo B Sat 0830 h Subsurface Transport: New Measurement Techniques
Presiding: I Kaihotsu, Hiroshima Univ; F J Molz, Auburn Univ
0830 h H61A-01 Physical Controls on Contaminant Migration and Recovery in an Alluvial Fan Setting: J A Conte, M M Mitchell, P T Regan
0845 h H61A-02 INVITED Field Measurements of Dispersion Parameters: G L Molonyar
0935 h H61A-04 An Applicability of Directional Velocimeter With a CCD Camera to Groundwater Flow: Y Ando, T Tamura

1015 h BREAK
1030 h H61A-07 Determination of Subsurface Water Flux Using Temperature: M Taniguchi
1045 h H61A-08 Thermal Energy Storage Experiments in an Unconfined Aquifer at Sanrihama Dune: I Kobayashi, A Inamoto, T Hashida, K Fujinawa
1100 h H61A-09 Analysis of Frequency Dependent Fluctuations of Groundwater Discharge Induced by Earth Tides and Atmospheric Loading: N Koizumi
1115 h H61A-10 INVITED An Investigation Method of Groundwater Flow in a Rock Mass Using Resistivity Tomography: K Ichikawa, H Ishibashi
1140 h H61A-11 INVITED In Situ Column Method for Evaluation of Biotransformation Rates: R W Gillham
1205 h H61A-12 INVITED Bioavailability of Organically Bound Micropollutants: J T Novak, K G Robinson

O61A KNK: Aioi Sat 0830 h Western Boundary Currents II
Presiding: F Bingham, Scripps Inst. of Oceanogr.; J H Yoon, Kyushu Univ
0830 h O61A-01 INVITED Currents off Mindanao: D Hu, M Cui
0900 h O61A-02 The Structure and Transport of Low-Latitude Western Boundary Currents in the North Pacific During June and July 1988: P Hacker, E Firing, R Lukas
0920 h O61A-03 Sea-Surface Dynamic Topography in the Western North Pacific Derived From Satellite Altimetry Data: S Imawaki, K Ichikawa

0940 h O61A-04 INVITED Kuroshio/Oyashio Dynamics From 1/4° Models of the North Pacific: H E Hurlburt, E J Metzger, A J Wallcraft

1010 h BREAK
1025 h O61A-06 Observations of Eddy Fields in the North-West Pacific by GEOSAT Altimetry: J Suwa, Y Okada, Y Sugimori
1045 h WITHDRAWN ce Height Variability
1105 h O61A-08 Anomalous Southward Intrusion of the Oyashio East of Japan: Y Sekine
1125 h O61A-09 Oceanic Circulations in the South Hemisphere: J Fukuoka

S61A SFK: Middle Hall Sat 0830 h Earthquake Prediction and Hazard Assessment I
Presiding: C Kisslinger, Univ of Colorado
0830 h S61A-01 Long-Term Prediction of an M 7-Class Disastrous “Odawara Earthquake” in the Izu Collision Zone, Central Japan: K Ishibashi
0845 h S61A-02 Precursory Swarm of Moderate and Small Earthquakes in Northern Kinki District, Japan: K Ito
0900 h S61A-03 Current Seismic Quiescence at Parkfield, California: An Independent Indication of an Imminent Earthquake: M Wyss, P Bodin, R E Habermann
0915 h S61A-04 Time Constants in Seismicity Pattern: T Tsukuda
0930 h S61A-05 Changes in the Poisson Rate Prior to Major Earthquakes in Central Japan: M Imoto
0945 h S61A-06 Characteristics of Distribution of Regional Earthquakes Before the Moderate and Strong Earthquakes: S Jungo

1000 h BREAK
1015 h S61A-08 A Practical Approach to Identifying Foreshocks: Y Motoya
1030 h S61A-09 Earthquake Hazard After a Mainshock in the Kanto-Tokai Districts, Japan: P A Reasenberg, Y Okada, F Yamamizu
1045 h S61A-10 Prediction of and Hazard Assessment for Earthquakes and Tsunamis in the Japan Region: R Carmichael
1115 h S61A-12 Earthquake Hazard Assessment of Damsites: Y Nakayama
1130 h S61A-13 Automated Tsunami Warning Using Mantle Magnitudes and Tsunami Normal Mode Theory: J Talander, E A Okal

SP61A KNK: Kaga Sat 0830 h Highlights of the EXOS-D, Viking, & DE Projects III
Presiding: K Tsuruda, Inst. of Space and Astronaut. Sci.

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0845 h SP61A-02 Some Characteristics of Whistlers Observed by the Akebono Satellite: I Nagano, E Kennai, I Kimura, M Yamamoto, T Okada, K Hashimoto
0900 h SP61A-03 Antenna Impedance Measurements by Akebono VLF Instruments: K Hashimoto, T Okada, I Nagano, M Yamamoto, I Kimura
0915 h SP61A-04 INVITED Structures and Origin of Small-Scale Field-Aligned Currents Observed by the Akebono (EXOS-D) Satellite: H Fukunishi, T Mikai
0945 h SP61A-05 Triaxial Search Coil Measurements of ELF Waves With EXOS-D: S Kokubun, M Takami, K Hayashi, H Fukunishi
1000 h SP61A-06 Field-Aligned Particle Acceleration in Upward Field-Aligned Currents: R Fujii, H Fukunishi, S Kokubun, M Sugira, T Mukai, N Kaya
1015 h SP61A-07 Identification of the Charge Carriers of Field-Aligned Currents by the Akebono (EXOS-D) Satellite: Y Takahashi, H Fukunishi, R Fujii, T Mukai
1030 h BREAK
1050 h SP61A-09 Irregular Electric Field Observed Near Midnight Auroral Region: H Hayakawa, K Tsuruda, T Mukai, A Matsuoka, Y I Kohno, T Okada
1105 h SP61A-10 Polar Cap Convection Related to the Polar Cap Arcs; Observations From the Akebono (EXOS-D): T Obara, T Mukai, H Hayakawa, S Machida, A Matsuoka, Y Kohno, K Tsuruda, A Nishida, N Kaya, T Okada
1150 h SP61A-12 EXOS-D Observations of Plasma Injection and Transport in the Dayside Polar Cusp: T Mukai, A Matsuoka, Y Saito, H Hayakawa, S Machida, K Tsuruda, A Nishida, N Kaya, E Sagawa, W Miyake, H Fukunishi
1205 h SP61A-13 Alternation of Ion Conics and Beams Observed by Low Energy Particle Instrument on Board EXOS-D: W Miyake, E Sagawa, T Mukai, N Kaya, H Fukunishi
1300 h BREAK

SP61B

KNK: Fuyo A Sat 0900 h Substorms and Magnetosphere-Ionosphere Coupling Systems I
Presiding: Y Kamide, Kyoto Sangyo Univ; R L McPherron, Univ of California, LA
0900 h SP61B-01 INVITED Solar Wind and IMF Effects on High-Latitude Ionospheric Plasma Convection: C R Clauer
0925 h SP61B-02 INVITED Computer Simulation of Solar Wind-Magnetosphere-Ionosphere Interaction: K Watanabe
0950 h SP61B-03 A Macroscopic Study of Generation of Field-Aligned Currents in Height Integrated Plasma Sheet Coupled With Ionosphere: M Yamauchi
1005 h SP61B-04 INVITED The Role of Birkeland Currents in Substorms: T A Potemra
1030 h SP61B-05 Observation of Surge-Associated Field-Aligned Currents at Geosynchronous Orbit: N Nishitani, T Oguti
1045 h T61A-06 INVITED Subducting Garnetite Sheet of 450-750 km and Deep Focus Earthquakes: M Toriumi

T61A

SFK: Large Hall Sat 0830 h Deep Earthquakes/Subduction Zones
Presiding: S Kirby, USGS, Menlo Park; T Shimamoto, Tokyo Univ
0830 h T61A-01 INVITED Transformation Faulting: A Physical Mechanism of Deep EQs: S H Kirby
0845 h T61A-02 INVITED Rheological Framework for Comparative Subduction: T Shimamoto, T Seno
0900 h T61A-03 INVITED Faulting Accompanying the Olivine to Spinel Transition Under Stress: A New Mechanism for Deep-Focus Earthquakes: H W Green, P C Burnley
0915 h T61A-04 A Test of the Anticrack Theory of Deep Earthquakes: Initial Results: H W Green, T E Young, D Walker, C Scholz, D Prior
0930 h T61A-05 Kinetics of Dehydration, Fluid Flow and Reaction-Enhanced Ductility in a Subduction Zone: T Nishiyama
0945 h T61A-06 INVITED Subducting Garnetite Sheet...
0920 h V61A-04 INVITED Isotopic Evidence for Recycled Crust in the Sources of the Cook-Austral Island Rocks: M Tatsumoto, Y Nakamura

1000 h BREAK

1015 h V61A-07 Noble Gases in Carbonatites and Their Implications on the Subcontinental Upper Mantle: T Sasada, H Hiyagon
1030 h V61A-08 Anomalous Neon and Xenon Isotopes in Some Crustal Rocks: S Azuma, M Ozima, H Hiyagon
1105 h V61A-10 INVITED Mantle Pb Isotopes: Subduction of Continental Crust, a Geochemical Mystery Tour: E Jagoutz
1125 h V61A-11 INVITED 3.5 Ga Oceanic-Like Lithosphere: Some Chemical and Geodynamic Constraints on (Archean) Earth Models: M J de Wit, M Tredoux, R Hart
1145 h V61A-12 Mantle Plumes, Mantle Stirring and Hotspot Chemistry: G Davies

1200 h DISCUSSION

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**Saturday P.M.**

**Paper Numbers.** A paper number designates the section, or other sponsoring group, and chronology of the presentation. Sample T62A-01.

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Thus, T62A-01 = Tectonophysics, Saturday, PM, concurrent session A, first paper in that session.

G62A SFK: F Sat 1330 h

Seismotectonic Studies II

Presiding: E Pavlis, NASA/Goddard Space Flight Center

1330 h G62A-01 On-Going Distance Changes Between Japan and China From Geodetic Very Long Baseline Interferometry: K Heki, S Hama
1345 h G62A-02 Constraints From VLBI on Pacific-North America Motion and Deformation: D F Argus, R G Gordon
1400 h G62A-03 SLR and VLBI Results for Back Arc Stations: C G A Harrison, S Robaudo
1445 h G62A-06 VLBI Experiments Using the Highly Transportable VLBI Station: J Amagai, H Kiuchi, A Kaneko, Y Sugimoto

1500 h BREAK

1515 h G62A-08 Western Pacific VLBI Network: (1) Overview and Introduction of Minami-Torishima (Marcus) VLBI Station: F Takahashi, C Miki, T Yoshino, E Kawai, K Imamura, Y Sugimoto, J Amagai, H Kiuchi, T Kondo, K Heki
1530 h G62A-09 Western Pacific VLBI Network: (2) The Main Station With 34 m Antenna at Kashima: Y Koyama, H Takaba, M Imae, Y Sugimoto
1545 h G62A-10 Western Pacific VLBI Network: (3) The Result of the First Experiment: S Hama, F Takahashi, C Miki, J Amagai, Y Takahashi, Q Ling
1600 h G62A-11 GSI's VLBI Observations: S Matsuzaka, M Tobita, Y Nakahori
1615 h G62A-12 A New VLBI Data Acquisition System, K-4: H Kiuchi, S Hama, J Amagai, Y Abe, Y Sugimoto
H62A  KNK: Fuyo B  Sat 1330 h
Snow Hydrology and Spatial Scaling
Presiding: D Marks, NSI Environmental Sciences; K Tusima, Toyama Univ

1355 h H62A-02  INVITED Coupling an Energy Balance Snowmelt Model to a Watershed Model: D Marks, D P Lettenmaier, L Vail
1420 h H62A-03  Characterization of Monthly Precipitation Patterns in Mountainous Regions: J Dolph, D Marks, D Phillips
1435 h H62A-04  Continuous Observations of Bottom-Melt and Percolated Meltwater During the Winter: Y Ujihashi, N Takase

1450 h  BREAK

1505 h H62A-06  INVITED Distributed Approach to Modeling the Chemical Composition of Snowmelt Runoff: R Bales, R Davis
1530 h H62A-07  Parameterization of Heterogenous Flow in Melting Snow Covers: P Marsh
1545 h H62A-08  Fundamental Investigation on the Role for the Melting Rate of Snow by Atmospheric Factors: M Hasebe, T Kumeikawa, M Hino

1600 h H62A-09  Hydrologic Regime in Tundra Plain, Permafrost Regions, Alaska: K Nakao, E Tokunaga

S62A  SKF: Middle Hall  Sat 1330 h
Earthquake Prediction and Hazard Assessment II
Presiding: M Ohtake, Tohoku Univ

1330 h S62A-01  On the Detectability of Self-Potential Variations Related to Tectonic Activities: T Mori, M Ozima, H Takayama
1345 h S62A-02  Anomalies of an Electric Field Under the Ground Before a Shallow Earthquake and an Eruption: K Takahashi, Y Fujinawa
1400 h S62A-03  LF Seismogenic Emissions Just Prior to Earthquake and Volcano Eruption and Their Prediction: T Yoshino, I Tomizawa
1415 h S62A-04  Observations of Possible Precursory Electromagnetic Wave Radiations Prior to Earthquakes or Volcanic Eruptions: Y Fujinawa, K Takahashi, T Kumagai
1445 h S62A-06  Individuality of Anomalous Bioelectrical Potential of Silk Tree Prior to Earthquake: H Toriyama

1500 h  BREAK

1515 h S62A-08  Precursory Deformation Expected From a Fault Model Into Which Rheological Properties of the Lithosphere Are Incorporated: T Yamashita, M Ohnaka
1530 h S62A-09  Groundwater Anomalies Associated With Great Earthquakes of Low-Angle Thrust Type (II): The 1923 Great Kwanto Earthquake: I Kawabe
1545 h S62A-10  Time Series Analysis to Detect Coseismic Changes of Groundwater Level: N Matsumoto, G Kitagawa, M Takahashi
1600 h S62A-11  Tidal Responses and Earthquake-Related Changes in the Water Level of Deep Well: G Igarashi, H Wakita
1615 h S62A-12  Tidal Triggering of the 1989 Sanriku-Oki, Japan, Earthquakes: M Ohtake

SP62A  KNK: Kaga  Sat 1330 h
Highlights of the EXOS-D, Viking, & DE Projects IV
Presiding: G Gustafsson, Swedish Inst. of Space Physics

1330 h SP62A-01  EXOS-D Observations of the Ion Energy Dispersion in the Dawnside Auroral Region: M Hirahara, T Mukai, S Machida, H Hayakawa, K I Tsuruda, A Nishida, N Kaya, E Sagawa, M Miyake

1400 h SP62A-03 INVITED Thermal and Suprathermal Ion Observations From the EXOS-D (Akebono) Suprathermal Mass Spectrometer (SMS): B A Whalen, A W Yau, S Watanabe

1430 h SP62A-04 Simultaneous, Mass-Resolved, Observations of Upflowing Ions From Akebono (EXOS-D) and Dynamics Explorer-I: W K Peterson, A W Yau

1445 h SP62A-05 Counter Streaming Ion Events Observed by Akebono: E Sagawa, I Iwamoto, B A Whalen, A W Yau

1500 h SP62A-06 Minor Light Ions Measured by Akebono EXOS-D: S Watanabe, E Sagawa, I Iwamoto, B A Whalen

1515 h SP62B-01 INVITED Studies of Earth's Magnetotail by the GEOTAIL Program: A Nishida

1535 h SP62B-02 INVITED Tail Dynamics Associated With Substorms: E W Hones, T E Cayton, R Elphinstone, A B Galvin, F M Ipavich, N C Heinemann, G K Parks, R L McPherron

1420 h SP62B-03 Mechanism of Multiple-Onset Substorm as Inferred From Disconnection of the Cometary Magnetospheres: T Saito, T Oki, Y Kozuka

1435 h SP62B-04 Predicting the Flux of Relativistic Electrons at Synchronous Orbit From Solar Wind and Substorm Activity Indices: R L McPherron, D N Baker

1450 h SP62B-05 Evidence of Free Energy Input Into the Plasmasphere in the Recovery Phase of Large Magnet.ic Storms Observed by PWS Onboard the EXOS-D Satellite: H Oya, K Kobayashi, A Morioka, M Iizima

1505 h BREAK

1520 h SP62B-07 INVITED Generation of Field Aligned Electric Fields: A Hasegawa

1545 h SP62B-08 Interaction of the Auroral Field Current With the Ionosphere: T K Nakamura, T Tamao, J R Kan

1600 h SP62B-09 Magnetospheric Source Regions of Discrete Arcs Observed by the DMSP-F6 and -F7 Satellites: K Shiozawa, H Fukunishi

1615 h SP62B-10 A Mesoscale Model for Auroral Particle Acceleration and Current System: G A Dulk, R M Winglee, P B Dusenbery

SP62B  KNK: Fuyo A Sat 1330 h

Substorms and Magnetosphere-Ionosphere Coupling Systems II

Presiding: C R Clauer, Stanford Univ; A Nishida, Inst. of Space and Astronaut. Sci.

1330 h SP62B-01 INVITED Studies of Earth's Magnetotail by the GEOTAIL Program: A Nishida

1355 h SP62B-02 INVITED Tail Dynamics Associated With Substorms: E W Hones, T E Cayton, R Elphinstone, A B Galvin, F M Ipavich, N C Heinemann, G K Parks, R L McPherron

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1615 h SP62B-10 A Mesoscale Model for Auroral Particle Acceleration and Current System: G A Dulk, R M Winglee, P B Dusenbery

V62A  SFK: Large Hall Sat 1330 h

Geodynamics and Evolution of the Earth IV (joint with P, S, T)

Presiding: S Maruyama, Univ of Tokyo; B F Windley, Univ of Leicester

1330 h V62A-01 INVITED Crustal Growth and Mantle Dynamics: G Schubert

1355 h V62A-02 INVITED Pattern Transition of Continents on Early Earth: M Toriumi, A Taira, T Matsui

1410 h V62A-03 Evolution of the Atmosphere on the Earth and Thermal History of the Mantle: E Tajika, T Matsui

1425 h V62A-04 INVITED Photoautotrophy and Early Biological Modulation of the Terrestrial Carbon Cycle: M Schidlowski

1450 h V62A-05 Anomalous Mineralogical Data of Shocked Quartz Grains From Colorado K-T Boundary: Y Miura

1520 h BREAK