

## CONTENTS

Foreword.....	<i>Keizo YANAI, Hiroshi TAKEDA and Akira SHIMOYAMA...</i>	i
<i>Part A: Reports of consortium studies on the Yamato-791197 (lunar meteorite)</i>		
Geochemistry of lunar meteorite Yamato-791197: Comparison with ALHA81005 and other lunar samples. .....	<i>Paul H. WARREN and Gregory W. KALLEMEYN...</i>	3
Lunar meteorite Yamato-791197: Petrography, shock history and chemical composition. .....	<i>R. OSTERTAG, D. STÖFFLER, A. BISCHOFF, H. PALME, L. SCHULTZ, B. SPETTEL, H. WEBER, G. WECKWERTH and H. WÄNKE...</i>	17
Mineralogy of Antarctic lunar meteorites and differentiated products of the lunar crust. .....	<i>Hiroshi TAKEDA, Hiroshi MORI and Tokuhei TAGAI...</i>	45
Lunar meteorite Yamato-791197: A polymict anorthositic norite breccia. .....	<i>Marilyn M. LINDSTROM, David J. LINDSTROM, Randy L. KOROTEV and Larry A. HASKIN...</i>	58
Yamato-791197: A volatile trace element rich lunar highlands sample from Antarctica. .....	<i>Patrick W. KACZARAL, Jane E. DENNISON and Michael E. LIPSHUTZ...</i>	76
Chemistry of Yamato-791197 Antarctic meteorite: Evidence for its lunar highland origin. .....	<i>Takaaki FUKUOKA, J. C. LAUL, M. R. SMITH, S. S. HUGHES and R. A. SCHMITT...</i>	84
REE abundances and Rb-Sr geochronology of Yamato-791197. ....	<i>Kazuya TAKAHASHI, Akimasa MASUDA and Hiroshi SHIMIZU...</i>	96
REE, Rb-Sr and Pb isotopic characteristics of the Yamato-791197 meteorite: Evidence for a lunar highland origin. .....	<i>Noboru NAKAMURA, Daniel M. UNRUH and Mitsunobu TATSUMOTO...</i>	106
<sup>40</sup> Ar- <sup>39</sup> Ar analyses of an Antarctic meteorite Yamato-791197 of probable lunar origin. .....	<i>Ichiro KANEOKA and Nobuo TAKAOKA...</i>	116
Noble gases in Yamato-791197: Evidence for lunar highland origin. .....	<i>Nobuo TAKAOKA...</i>	124
Thermoluminescence of lunar meteorites Yamato-791197 and ALHA-81005. .....	<i>S. R. SUTTON...</i>	133

Reflectance spectroscopy of lunar meteorite Yamato-791197: Relation to remote sensing data bases of the Moon. ..... <i>Lucy A. MCFADDEN, Carlé M. PIETERS, Robert L. HUGUENIN, B. Ray HAWKE, Trude V. V. KING and Michael J. GAFFEY...</i>	140
Magnetic properties of Yamato-791197 in comparison with those of lunar highland anorthositic breccias. ..... <i>Takesi NAGATA and Minoru FUNAKI...</i>	152
<i>Part B: General topics of Antarctic and non-Antarctic meteorites</i>	
A review of the Yamato-80, -81 and -82 meteorite collections. ..... <i>A. L. GRAHAM and Keizo YANAI...</i>	167
Petrology of Yamato-791493, "lodranite": Melting, crystallization, cooling history, and relationship to other meteorites. ..... <i>Hiroko NAGAHARA and Kazuhito OZAWA...</i>	181
Thermal history of ureilite, Pecora Escarpment 82506 deduced from cation distribution and diffusion profile of minerals. ..... <i>Hiromi TOYODA, Nobuhiko HAGA, Osamu TACHIKAWA, Hiroshi TAKEDA and Teruaki ISHII...</i>	206
Adhesive growth and abrasion of chondrules during the accretion process. ..... <i>Masao KITAMURA and Seiko WATANABE...</i>	222
Phosphate-bearing microspherules in chondrules of unequilibrated ordinary chondrites. ..... <i>Hideo YABUKI and Ahmed EL GORESY...</i>	235
Belgica-7904: A new carbonaceous chondrite from Antarctica; Minor-element chemistry of olivine. ..... <i>C. SKIRIUS, I. M. STEELE and J. V. SMITH...</i>	243
Mineralogical study of matrix- and groundmass-phyllsilicates, and isolated olivines in Yamato-791198 and -793321: With special reference to new finding of 14 Å chlorite in groundmass. ..... <i>Junji AKAI and Jinko KANNO...</i>	259
Volatile-rich chondrules in the Allende meteorite. ..... <i>Hiroshi ISOBE, Masao KITAMURA and Nobuo MORIMOTO...</i>	276
Chemical studies on the distribution of germanium and gallium in Antarctic iron meteorites. ..... <i>Takesi NAGATA, Akimasa MASUDA, Isamu TAGUCHI and Yoshiaki ONO...</i>	287
Cape York IIIAB iron meteorite: Trace element distribution in mineral and metallic phases. ..... <i>Christian KOEBERL, Helmut H. WEINKE, Friedrich KLUGER and Wolfgang KIESL...</i>	297

Trace elements in phases of the Sikhote-Alin iron meteorite. ..... <i>Helmut H. WEINKE, Wolfgang KIESL, Friedrich KLUGER,</i> <i>Christian KOEBERL and Piet VAN ESPEN...</i>	314
Terrestrial <sup>81</sup> Kr-ages of four Yamato meteorites. ..... <i>Ludolf SCHULTZ...</i>	319
Application of a spatial distribution readout system of thermoluminescence to meteorites. ..... <i>Kiyotaka NINAGAWA, Isao YAMAMOTO,</i> <i>Tomonori WADA, Yoshihiko YAMASHITA and Nobuo TAKAOKA...</i>	328
Search for the extra-terrestrial materials in deep sea sediments. ..... <i>Sachiko AMARI, Minoru OZIMA and Mineo IMAMURA...</i>	338
Fractal dimensions of fracture surfaces of rock fragments. ..... <i>Akio FUJIMURA, Yasuhiko TAKAGI,</i> <i>Muneyoshi FURUMOTO and Hitoshi MIZUTANI...</i>	348
Gas permeability of some Antarctic chondrites. .... <i>Naoji SUGIURA, Takafumi MATSUI and D. W. STRANGWAY...</i>	358
Magnetic properties of tetrataenite-rich meteorites II. ..... <i>Takesi NAGATA, Minoru FUNAKI and Jacques A. DANON...</i>	364
Magnetic properties of lamellar tetrataenite in Toluca iron meteorite. ..... <i>Minoru FUNAKI, Takesi NAGATA and Jacques A. DANON...</i>	382