

Proceedings of the NIPR Symposium
on
Antarctic Meteorites

No. 2

Papers presented at the "Thirteenth Symposium on Antarctic Meteorites" held at the National Institute of Polar Research, Tokyo, June 7-9, 1988

CONTENTS

Part A: Reports of consortium studies

Preliminary report on the Yamato-86032 lunar meteorite: I. Recovery, sample descriptions, mineralogy and petrography	Hiroshi TAKEDA, Hideyasu KOJIMA, Fumihiko NISHIO, Keizo YANAI, Marilyn M. LINDSTROM, and YAMATO LUNAR METEORITE CONSORTIUM GROUP... 3
Preliminary examination of the Yamato-86032 lunar meteorite: II. Major and trace element chemistry	Christian KOEBERL, Paul H. WARREN, Marilyn M. LINDSTROM, Bernhard SPETTEL and Takaaki FUKUOKA... 15
Preliminary report on the Yamato-86032 lunar meteorite: III. Ages, noble gas isotopes, oxygen isotopes and chemical abundances	Otto EUGSTER, Samuel NIEDERMANN, Mario BURGER, Urs KRÄHENBÜHL, Hartwig WEBER, Robert N. CLAYTON and Toshiko K. MAYEDA... 25
Yamato-82162: A new kind of CI carbonaceous chondrite found in Antarctica	Kazushige TOMEOKA, Hideyasu KOJIMA and Keizo YANAI... 36
Yamato-86720: A CM carbonaceous chondrite having experienced extensive aqueous alteration and thermal metamorphism	Kazushige TOMEOKA, Hideyasu KOJIMA and Keizo YANAI... 55
Petrochemical study of the Yamato-691 enstatite chondrite (E3) III: Descriptions and mineral compositions of chondrules	Yukio IKEDA... 75
Petrochemical study of the Yamato-691 enstatite chondrite (E3) IV: Descriptions and mineral chemistry of opaque-mineral nodules	Yukio IKEDA... 109
Petrochemical study of the Yamato-691 enstatite chondrite (E3) V: Comparison of major element chemistries of chondrules and inclusions in Y-691 with those in ordinary and carbonaceous chondrites	Yukio IKEDA... 147

Part B: General topics of Antarctic meteorites and the related problems

Texture and chemical composition of pyroxenes in chondrules in carbonaceous and unequilibrated ordinary chondrites	.....	Takaaki NOGUCHI... 169
The evolution of chondrules	.....	Roger H. HEWINS... 200
Mineralogical alteration of CM carbonaceous chondrites: A review	.....	Kazushige TOMEOKA, Harry Y. MCSWEEN, Jr. and Peter R. BUSECK... 221
Vaporization experiments in the system plagioclase-hydrogen	.....	Hiroko NAGAHARA and Ikuo KUSHIRO... 235
Vaporization of sodium from a partially molten chondritic material	.....	Taro SHIMAOKA and Noboru NAKAMURA... 252
The correlation of chondrule texture and magnesium isotope abundance in Allende meteorite	.....	Chiaki UYEDA, Mari SUZUKI and Jun OKANO... 268
Rare earth and some other elements in acid-residues of unequilibrated ordinary chondrites	.....	Mitsuru EBIHARA... 279
Noble gas degassing from meteorites as inferred from ^{40}Ar - ^{39}Ar analytical data	.....	Ichiro KANEOKA... 288
Weathering of some Antarctic meteorites: Infrared spectroscopy	.....	Masamichi MIYAMOTO, Hideyasu KOJIMA and Keizo YANAI... 296
Magnetic properties of the mixtures of Fe-Ni alloys simulated to Y- 74354, Y-74362 and Y-74190 chondrites	.....	Hiroyuki NAGAI, Kan-ichi MOMOSE and Minoru FUNAKI... 303
Magnetic analysis of Antarctic ordinary chondrites and achondrites on the basis of a magnetic binary system model	.....	Takesi NAGATA and Minoru FUNAKI... 310
Penetration of the solar wind after dissipation of the solar nebula: Origin of Venusian Ar by off-disk implantation of the solar wind	.....	Sho SASAKI... 326
Uranium-series dating of tephra-banded Allan Hills ice	.....	Edward L. FIREMAN... 335
Noble gases in the K-T boundary clay from Stevns Klint, Denmark	.....	Nobuo TAKAOKA and Yasunori MIURA... 344
Program of the Thirteenth Symposium on Antarctic Meteorites	.....	351
Author index	.....	354