

**Program of the Fifteenth Symposium on Antarctic Meteorites held
at the National Institute of Polar Research, Tokyo
May 30–June 1, 1990**

1. Distribution of meteorites and strain in ice sheet in Nansenisen, Dronning Maud Land, Antarctica. S. FUJITA, H. NARAOKA, K. YANAI, N. AZUMA and S. MAE.
2. Organic compounds in Asuka carbonaceous chondrites. H. NARAOKA, A. SHIMOYAMA, K. YANAI and K. HARADA.
3. Analyses of insoluble organic matter in some Antarctic carbonaceous chondrites by a DTA/TG-GC/MS method. M. KOMIYA, A. SHIMOYAMA, H. NARAOKA and K. HARADA.
4. Pyrolytic studies of carbonaceous matter in C3 carbonaceous chondrites. T. MURAE and A. MASUDA.
5. Petrology and mineralogy of new enclaves from the Vaca Muerta mesosiderite. M. KIMURA, Y. IKEDA, M. EBIHARA and M. PRINZ.
6. Mineralogical study of eucrites Yamato-793548 and Yamato-82202 with reference to impact histories on the HED parent body. A. YAMAGUCHI and H. TAKEDA.
7. The chemical map analysis (CMA) study of mesostasis in some Antarctic eucrites. K. SAIKI and H. TAKEDA.
8. Mineralogical study of metallic grains in Antarctic ureilites. J. SAITO and H. TAKEDA.
9. Refractory inclusions in anomalous ALH 85085 chondrite: Mineralogy, bulk chemistry and isotopic compositions. M. KIMURA, A. EL GORESY and E. ZINNER.
10. Formation of pallasite and eucrite-diogenite parent magma by partial melting. H. ISOBE, A. TSUCHIYAMA and M. KITAMURA.
11. Alteration texture of pyroxene in Allende chondrules and the formation of matrix materials. S. MATSUNAMI, H. KINO, H. NISHIMURA and H. TAKESHI.
12. Petrological study on evolution and alteration of CM chondrites. H. KOJIMA and K. YANAI.
13. Deformation effects in the Leoville CV carbonaceous chondrite. T. NAKAMURA, K. TOMEOKA and H. TAKEDA.
14. Relationship between grain size and chemical composition of augite in ordinary chondrites. T. NOGUCHI.
15. Preferred orientation of olivine crystals in an inclusion of ALH-764 (LL3). M. KITAMURA, Y. OKAMOTO and S. WATANABE.
16. Comet-like grand parent body of chondrites. M. KITAMURA and A. TSUCHIYAMA.
17. An experimental study on the reaction kinetics of forsterite-SiO gas. N. IMAE and A. TSUCHIYAMA.
18. Fo-En-Gas equilibrium and Mg/Si ratios of chondritic meteorites. A. TSUCHIYAMA.
19. Mineralogical direct evidences of impact from shocked quartz grains in K/T boundary. Y. MIURA, M. IMAI, W. ALVARETZ and G. IZETT.
20. PIXE analysis of magnetic spherules in the Paleozoic-Mesozoic bedded chert. S. MIONO, H. ONO, A. NAKANISHI, Y. NAKAYAMA and M. SHOJI.
21. Magnetic microspherules in Permian and Triassic bedded chert in Southwest Japan. J. IWAHASHI, M. YOSHIDA and S. MIONO.
22. Origin and characteristics of dust particles in Antarctic ice/snow and other terrestrial environments. Y. TAZAWA and T. FUKUOKA.
23. Two dimensional chemical state analysis of meteorites by X-ray fluorescence analysis. I. NAKAI and A. TSUCHIYAMA.
24. Magnetic properties and natural remanent magnetization of carbonaceous chondrites containing pyrrhotite. T. NAGATA, M. FUNAKI and H. KOJIMA.
25. Tetrataenite in chondrites and experimental demonstration of formation of tetrataenite fine grains. T. NAGATA, C. KAITO, Y. SAITO and M. FUNAKI.

26. Shock effects in chondrites-(I) From dislocations and grain shapes. N. FUJII, K. TASHIRO and T. KANAMARU.
27. Formation of chondrules by collisions between planetesimals. H. MIZUTANI, T. YAMAMOTO, T. KOZASA and R. HONDA.
28. Metamorphism of CO and CO-like chondrites and comparisons with type 3 ordinary chondrites. D. SEARS, J. BATCHELOR, Jie LU and B. D. KECK.
29. REE abundances and cosmochronology of several ureilites. K. TAKAHASHI and A. MASUDA.
30. REE and Y abundances in Allende group II inclusions. S. YONEDA, K. SHINOTSUKA, H. MIHARA, H. NAGAI and M. HONDA.
32. The metamorphosed carbonaceous chondrites—A new meteorites group? T. GEIGER and A. BISCHOFF.

Special Session (I): CI Chondrites

33. Mineralogy of clasts in the Y-82162 chondrite (C1). Y. IKEDA.
34. The origin of phyllosilicates in the Yamato-82162 CI carbonaceous chondrite. K. TOMEOKA.
35. Thermal metamorphism in four Antarctic carbonaceous chondrites and its temperature scale estimated by T-T-T diagram. J. AKAI.
36. Compositional heterogeneity of alteration products in Yamato-86720 chondrite. S. MATSUNAMI, H. NISHIMURA and H. TAKESHI.
37. Midinfrared diffuse reflectance spectra of some Antarctic carbonaceous chondrites. M. MIYAMOTO.

Special Session (II): Unique Meteorites

38. Petrology of unique meteorites, Y-74063, Y-74357, Y-75261, Y-75274, Y-75300, Y-75305, A-77081, A-78230, and Y-8002. H. NAGAHARA, T. FUKUOKA, I. KANEOKA, M. KIMURA, H. KOJIMA, I. KUSHIRO, H. TAKEDA, A. TSUCHIYAMA and K. YANAI.
39. Y-74063: Unique meteorite classified between E and H chondrite. K. YANAI and H. KOJIMA.
40. Lithophile trace element abundances in Antarctic unique meteorites and in unique clasts from L6 chondrites. K. YAMAMOTO, N. NAKAMURA, K. MISAWA, K. YANAI and Y. MATSUMOTO.
41. Chemistry of Y-74063, -74357 and ALH-78230 unique meteorites. T. FUKUOKA and M. KIMURA.
42. Noble gases in unique meteorite Y-74063. N. TAKAOKA and Y. YOSHIDA.
43. Reflectance spectroscopy and mineralogy of primitive achondrites-Lodranites. T. HIROI and H. TAKEDA.

Special Session: Lunar Meteorites (No. 44–No. 54)

44. A step toward the primary lunar Pb composition: U-Pb isotope systematics of lunar norite 78235. W. R. PREMIO and M. TATSUMOTO.
45. Consortium reports of lunar meteorites Y-793274 and Y-86032. H. TAKEDA, J. SAITO, H. MORI, K. YANAI and H. KOJIMA.
46. Mineralogy of lunar meteorites, Y-86032, Y-793274 and MAC 88105. H. MORI, J. SAITO and H. TAKEDA.
47. Lunar meteorites Y 793274: A second basaltic breccia. M. LINDSTROM and R. MARTINEZ (R. SCORE).
48. The Elephant Moraine mare basalt breccia and the importance of the lunar meteorites as samples of the lunar crust. J. S. DELANEY, S. R. SUTTON and R. L. HERVIG.
49. Asuka-31: Gabbroic cumulate originated from lunar mare region. K. YANAI.
50. Chemistry of Yamato-793274 lunar meteorite. T. FUKUOKA.

51. U-Pb isotopic characteristics of the lunar meteorite Yamato-793274 and 86032. M. TATSUMOTO.
52. Noble gases in lunar meteorites. N. TAKAOKA and Y. YOSHIDA.
53. Varieties of the lunar meteorites collected from Antarctica. K. YANAI and H. KOJIMA.
54. Lunar meteorites: A survey of the first eight district moon rocks from Antarctica. P. H. WARREN.

56. Another thought on the origin of diamonds in meteorites: 'A radiation crystallization model'. M. OZIMA.
58. *In-situ* micro-Raman observation on some differentiated meteorites: Graphitic materials in Antarctic ureilites. H. KAGI, K. TAKAHASHI, H. SHIMIZU, F. KITAJIMA and A. MASUDA.
59. Chemical composition of Antarctic meteorites (1)—Ordinary chondrites. M. EBIHARA and H. OZAKI.
60. Noble gas composition in the vapour growth diamond. K. FUKUNAGA and J. MATSUDA.
61. Noble gas studies in shock-produced diamonds. J. MATSUDA, H. YAJIMA, K. KUSABA and Y. SYONO.
62. Fractionated alkali metal abundances in Allende BO Chondrules: A clue to melting processes. N. NAKAMURA, H. MATSUDA, S. YOKOYAMA, H. SHIMODA, T. SHIMAOKA and K. YAMAMOTO.
63. Volatilization studies of alkali metals on a chondritic material (V)—an effect of total pressure—. T. SHIMAOKA and N. NAKAMURA.
64. Ne enrichment in tektites and experiment of Ne diffusion into silica glass. K. MATSUBARA and J. MATSUDA.
65. Pairing of five Yamato-79 achondrites by the chemical compositions. T. FUKUOKA.
66. Alteration in ordinary chondrite fusion crust and their relation to chemical and mineral compositions of spherules. Y. TAZAWA and T. SASAKI.
67. Carbon-14 terrestrial, exposed and glacial ages of Antarctic meteorites. Y. MIURA, R. BEUKENS and J. RUCKLIDGE.
68. Thermoluminescence study of ordinary chondrites by TL spatial distribution readout system-II. K. NINAGAWA, H. KUBO, S. FUJIMURA, I. YAMAMOTO, T. WADA, S. MATSUNAMI and H. NISHIMURA.
69. Nitrogen isotope anomaly in ordinary chondrites. K. HASHIZUME and N. SUGIURA.
70. Anomalous nitrogen in Y 74191 (L3) chondrite. N. SUGIURA and K. HASHIZUME.
71. Mg isotope composition of silicates produced from gas-condensation furnace. K. MISAWA and A. TSUCHIYAMA.
72. Mg isotopic composition of chondrules from the Allende meteorite. K. MISAWA and N. NAKAMURA.
73. Mass fractions of minerals produced from gas-condensation process. C. UYEDA and A. TSUCHIYAMA.
74. An attempt to measure cosmogenic ⁸¹Kr in ordinary chondrites. Y. NAKAMURA, A. OGATA and K. NAGAO.
75. Be-10 and Al-26 in Antarctic meteorites. H. NAGAI, M. HONDA, I. KOBAYASHI, M. IMAMURA and K. KOBAYASHI.

Special Lecture

76. Interstellar diamond, graphite, and SiC in meteorites. E. ANDERS (Invited Speaker, Professor, Enrico Fermi Institute, University of Chicago).

Abstract only

31. Antarctic weathering and REE remobilization in Antarctic eucrites. C. FLOSS and G. CROZAZ.
55. Spectral reflectance of the recently fallen chondrites in China. W. LIN.
77. Petrography and chemistry of the three carbonaceous chondrites Y-86720, Y-82162, and B-7904. A. BISCHOFF and K. METZLER.

78. Lunar meteorite Yamato-793274: Cosmic-ray produced and solar wind noble gases. Relation with Allan Hills A81005? O. EUGSTER.
79. Antarctic two new winonaites, Y-74025 and Y-75305: Mineralogy and classification. M. KIMURA.
80. A possible effect of ^{26}Al heating to the formation of CAI's. M. KITAMURA and M. MIYAMOTO.
81. Lunar meteorite Yamato-793274: A lunar Highland sample possibly rich in mare minerals. G. KURAT, F. BRANDSTÄTTER and C. KOEBERL.
82. Oxygen isotopic compositions of B-7904, Y-82162, and Y-86720. T. K. MAYEDA and R. N. CLAYTON.
83. Petrography and chemistry of accretionary dust mantles in the CM-chondrites Y-791198, Y-793321, Y-74662 and ALHA 83100—Indications for nebula processes. K. METZLER and A. BISCHOFF.
84. Mafic contents and densities of meteoritic plagioclase—estimation of impact sites. Y. MIURA.
85. The Chiang Khan meteorite shower, Loei province, Thailand. V. K. NAYAK.
86. Electron microscope observations of Ca-Al-rich inclusions in the Yamato-791717 CO carbonaceous chondrite. K. NOMURA and H. TAKEDA.
87. Cosmic ray exposure history of the lunar meteorites Yamato-791197 and Yamato-86032. S. VOGT, D. AYLMER and G. F. HERZOG.
88. Links between structural features and physical properties in stony meteorites. M. ZBIK.