4100 of Yamato98 meteorite collected by JARE 39th in 1998 - 99 season; H. Kojima', H. Kaiden' and T. Yada',
1National Institute of Polar Research, Kaga, Itabashi-ku, Tokyo 173-8515, kojima@nipr.ac.jp,'Tohoku Univ., Aoba-
ku, Sendai, 980-8577, kaiden@lexus.imr.tohoku.ac.jp, 3Dept. Earth & Planet. Sci., Kyushu Univ., Fukuoka 812-
8581, yada@geo.kyushu-u.ac.jp.

Introduction: Prior to the 1998-99 field season, 6000 meteorites have been already collected by 13 times of
the expeditions on bare ice fields around the Yamato Mountains (e.g. [1], [2]). However, we expected to
collect many additional meteorites by following two reasons. Although the area of bare ice around the Ya-
mato Mountains is estimated about 4000 km² [3], 2/3 of the area is still remaining as the blank for meteorite
search. Meteorite search has not done for last twelve years on these ice fields. As more than one meter of ice
sheet is estimated to be abraded for the period, some meteorites are expected to appear to the surface from
the abraded ice sheet. We have planed to search mete-
orite again in the meteorite ice field around the Yamato
Mountains.

Meteorite search and result: We have used 3
large oversnow vehicles and 4 snowmobiles for mete-
orite search. Collection positions of the all meteorites
were recorded by a global positioning system (GPS).
Approximately 2000 meteorites have been collected
for 7 days around the Minami Yamato Nunataks 50km
far from southern end of the main massif. We collected
450 meteorites on the most successful day. Approxim-
ately 1000 meteorites have been collected around the
JARE IV Nunataks that situated eastern side of the
main mountains. These two areas are the most meteor-
ite concentrated regions. Over 4100 meteorites have
been collected around the Yamato Mountains. We
have also searched meteorites around the Belgica
Mountains, 200km west from the Yamato Mountains.
21 ordinary chondrites have been collected.

Total numbers of the meteorites we collected are
4136. They include many kinds of rare meteorites. By
the classification in the field, 2 lunar meteorites, 3
irons, 3 stony irons, 15 ureilites, 37 diogenites, 63
eucrites, 29 unclassified achondrites and 160 carbona-
ceous chondrites were distinguished. The largest mete-
orite is an ordinary chondrite with approximately 10kg
in weight.

One lunar meteorite was found several km west of
the Kurakake Nunatak of the Minami Yamato Nuna-
taks. This rock has some thin, yellow-green fusion
crust and consists of dark gray matrix with light-
colored clasts and mineral fragments. This feature in-
dicates that the rock is an anorthositic breccia derived
from the lunar highland. Yamato-793274 had been
classified into an anorthositic breccia. As this lunar
meteorite had found near the Kurakake Nunatak, both
meteorites are possibly paired. The other lunar meteor-
It was found near of northern end nunatak of the
JARE IV Nunataks, about 50km northeast of the other
lunar meteorite. This rock also has thin, yellow-green
fusion crust. The rock consists mainly of dark gray
matrix with some light-colored lithic fragments. This
feature may indicate that the rock is lunar highland
origin.

35 of complete stones and fragments of coarse-
grained eucritic meteorites were found in about 100
km² of southwest of Kuwagata Nunatak. These meteor-
ites are judged as one pair of the same fall from the
occurrence.

Three concentrations of several to a few tens of
fragments of carbonaceous chondrites were found in 1
km². Total numbers of the fragments are 54. These
fragments consist of black matrix. No chondrules and
inclusions are observed under naked eye. One of the
authors judged these meteorites into C1 from the fea-
tures at the field. The occurrence possibly shows that
three complete stones have broken into three concen-
trations of several to a few tens of fragments after ap-
pearing on the surface of the bare ice.

Number of irons is very small population in such
great number of the meteorites.

Issue, 8, 1-37.