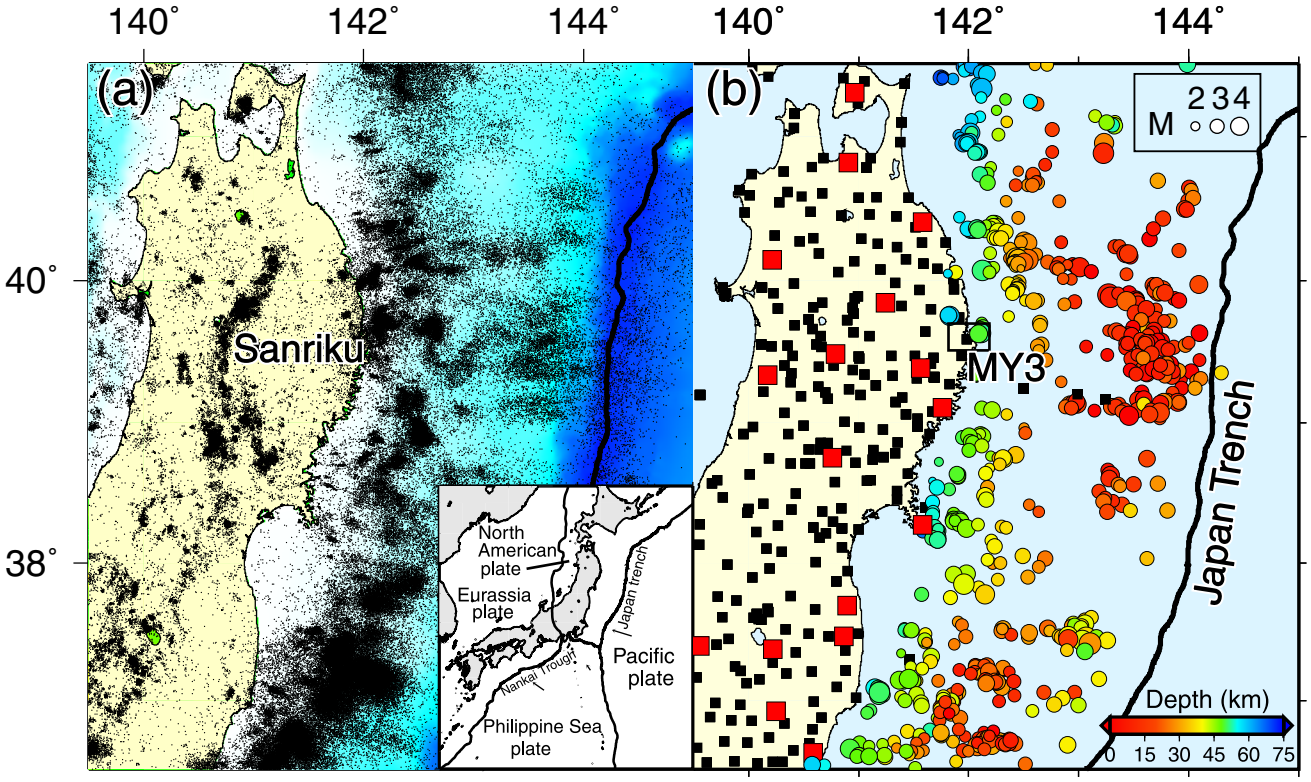
140°
142°
144°
140°
142°
144°
40°
38°
(a)
Sanriku
North American plate
Eurassia plate
Japan trench
Pacific plate
Nankai Trough
Philippine Sea plate
(b)
M
2 3 4
MY3
Japan Trench
Depth (km)
0 15 30 45 60 75

Fig.1

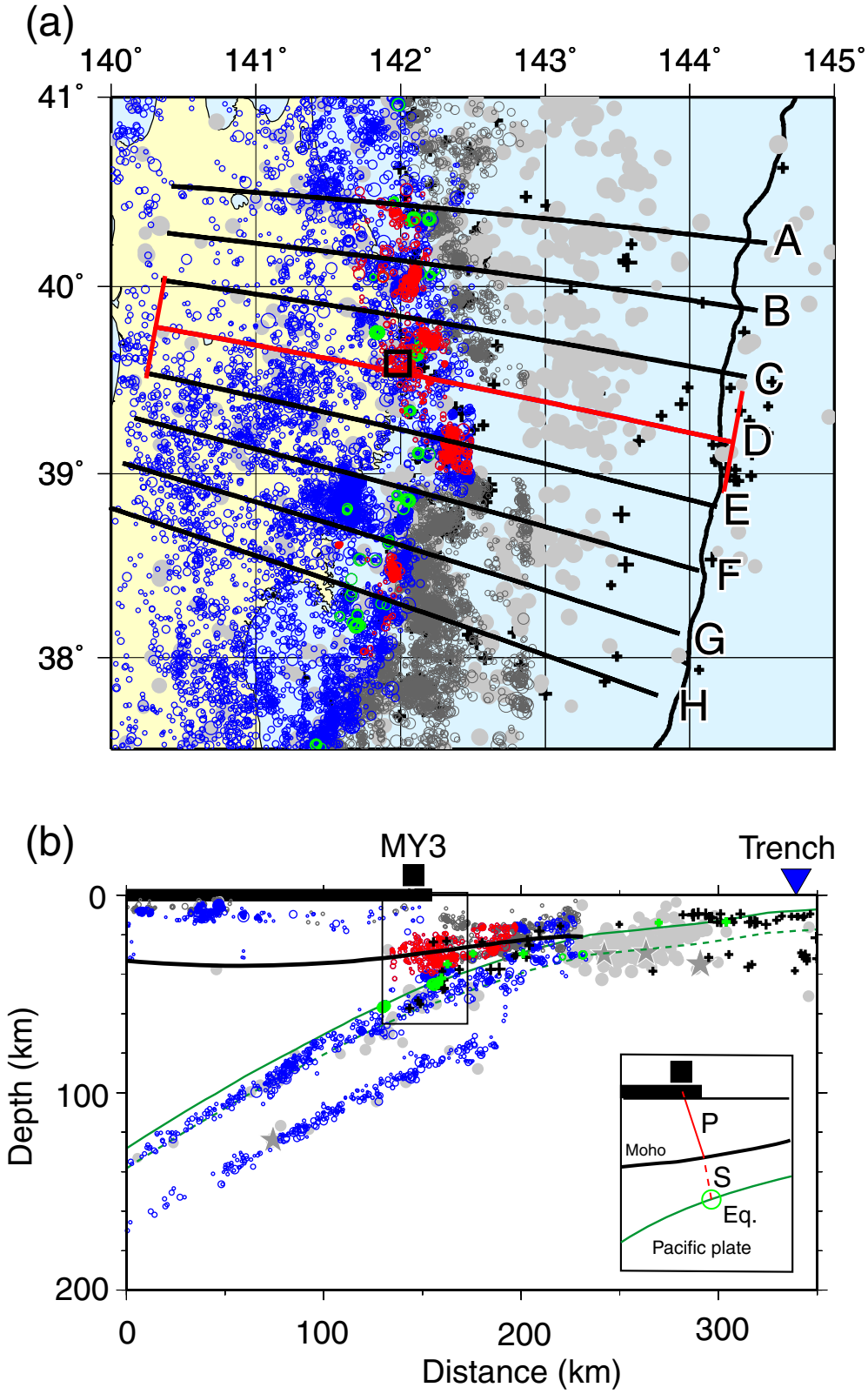
(a)
140˚
141˚
142˚
143˚
144˚
145˚
41˚
40˚
39˚
38˚
A
B
C
D
E
F
G
H
(b)
MY3
Trench
0
100
200
Depth (km)
0
100
200
300
Distance (km)
P
Moho
S
Eq.
Pacific plate

Fig. 2

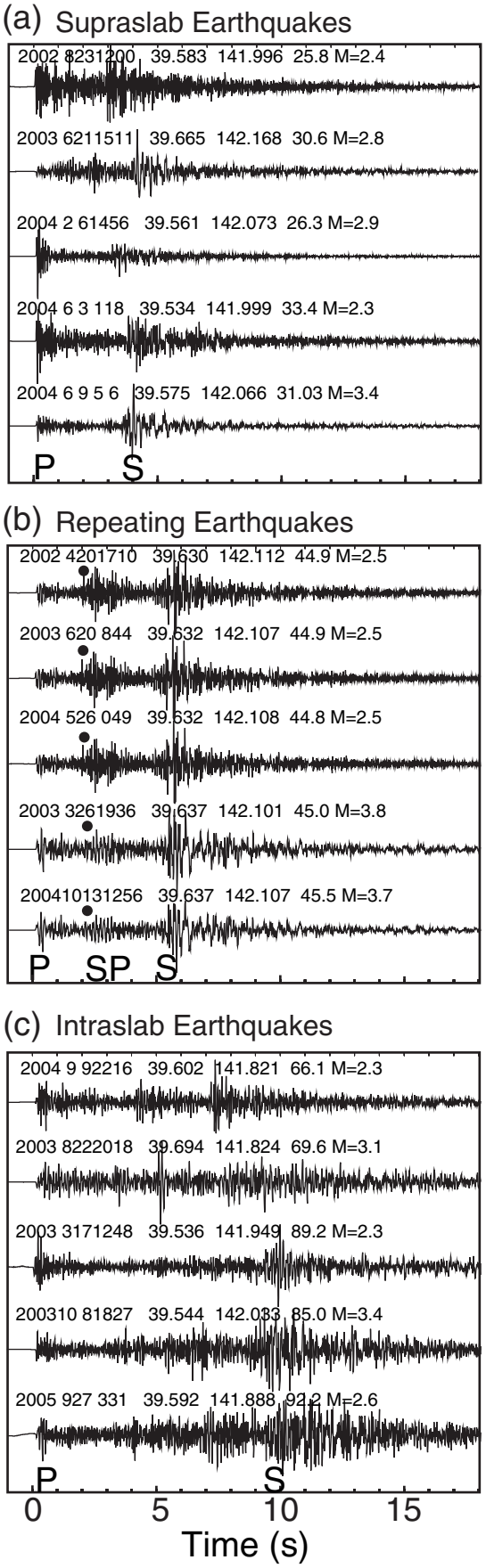
(a) Supraslab Earthquakes
2002 8231200 39.583 141.996 25.8 M=2.4
2003 6211511 39.665 142.168 30.6 M=2.8
2004 2 61456 39.561 142.073 26.3 M=2.9
2004 6 3 118 39.534 141.999 33.4 M=2.3
2004 6 9 5 6 39.575 142.066 31.03 M=3.4
P
S
(b) Repeating Earthquakes
2002 4201710 39.630 142.112 44.9 M=2.5
2003 620 844 39.632 142.107 44.9 M=2.5
2004 526 049 39.632 142.108 44.8 M=2.5
2003 3261936 39.637 142.101 45.0 M=3.8
200410131256 39.637 142.107 45.5 M=3.7
P
SP
S
(c) Intraslab Earthquakes
2004 9 92216 39.602 141.821 66.1 M=2.3
2003 8222018 39.694 141.824 69.6 M=3.1
2003 3171248 39.536 141.949 89.2 M=2.3
200310 81827 39.544 142.033 85.0 M=3.4
2005 927 331 39.592 141.888 92.2 M=2.6
P
S
0
5
10
15
Time (s)

Fig.3

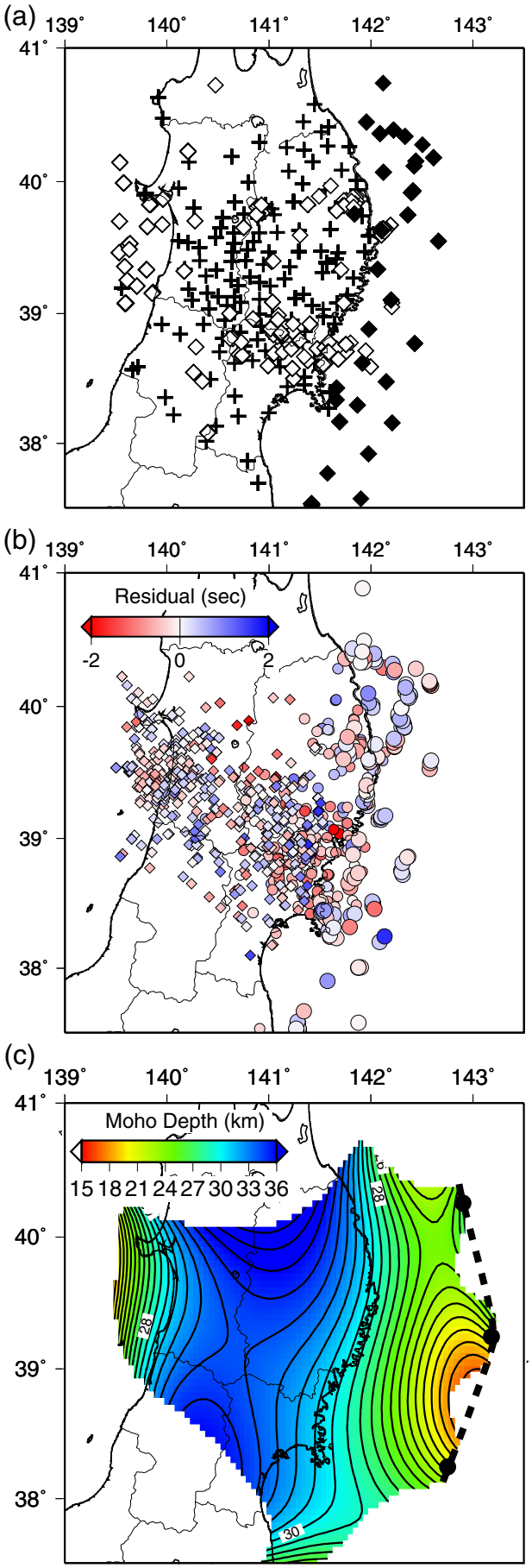
(a)
139°
140°
141°
142°
143°
41°
40°
39°
38°
(b)
Residual (sec)
-2
0
2
(c)
Moho Depth (km)
15 18 21 24 27 30 33 36
28
30

Fig. 4

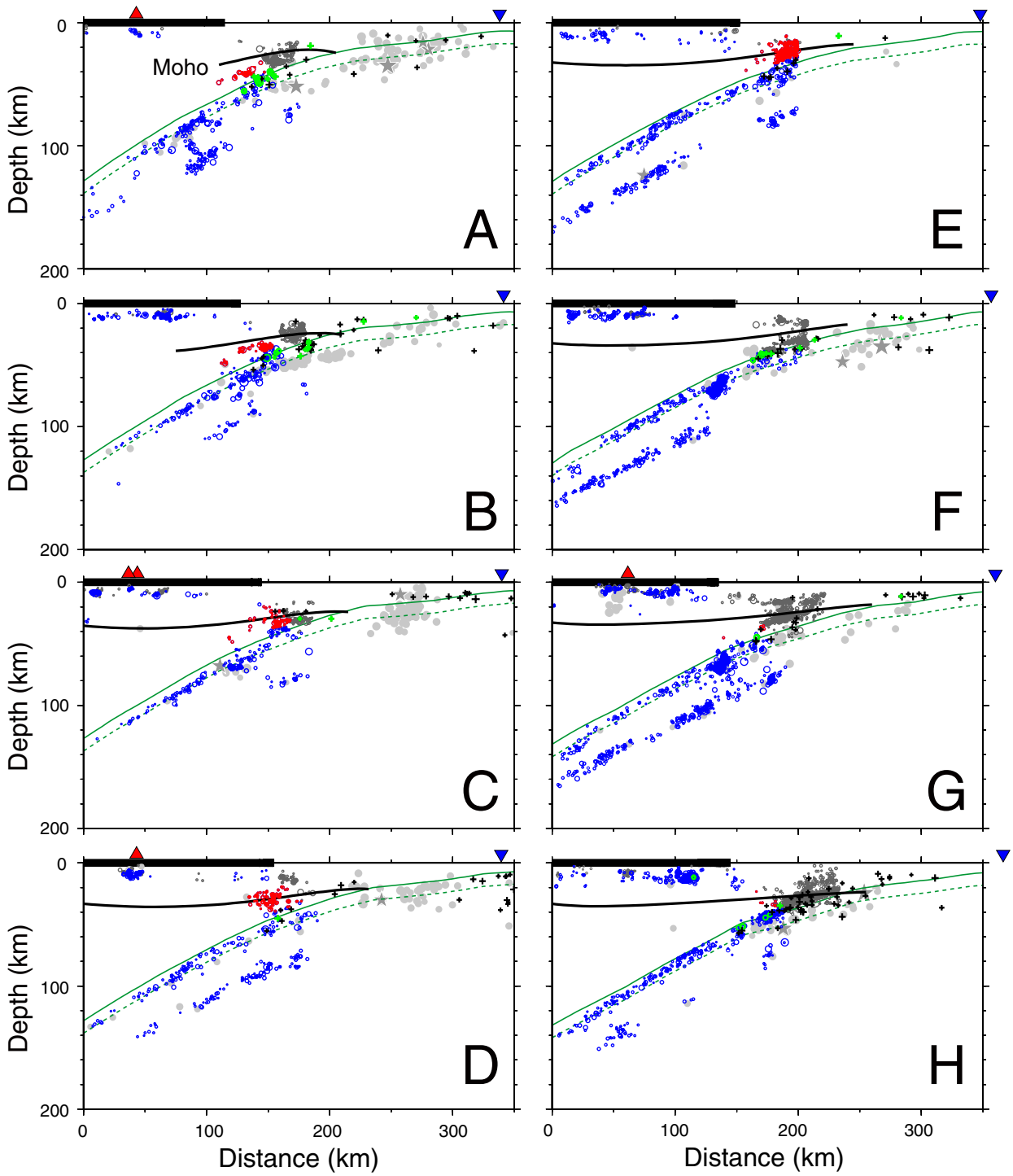

Fig.5

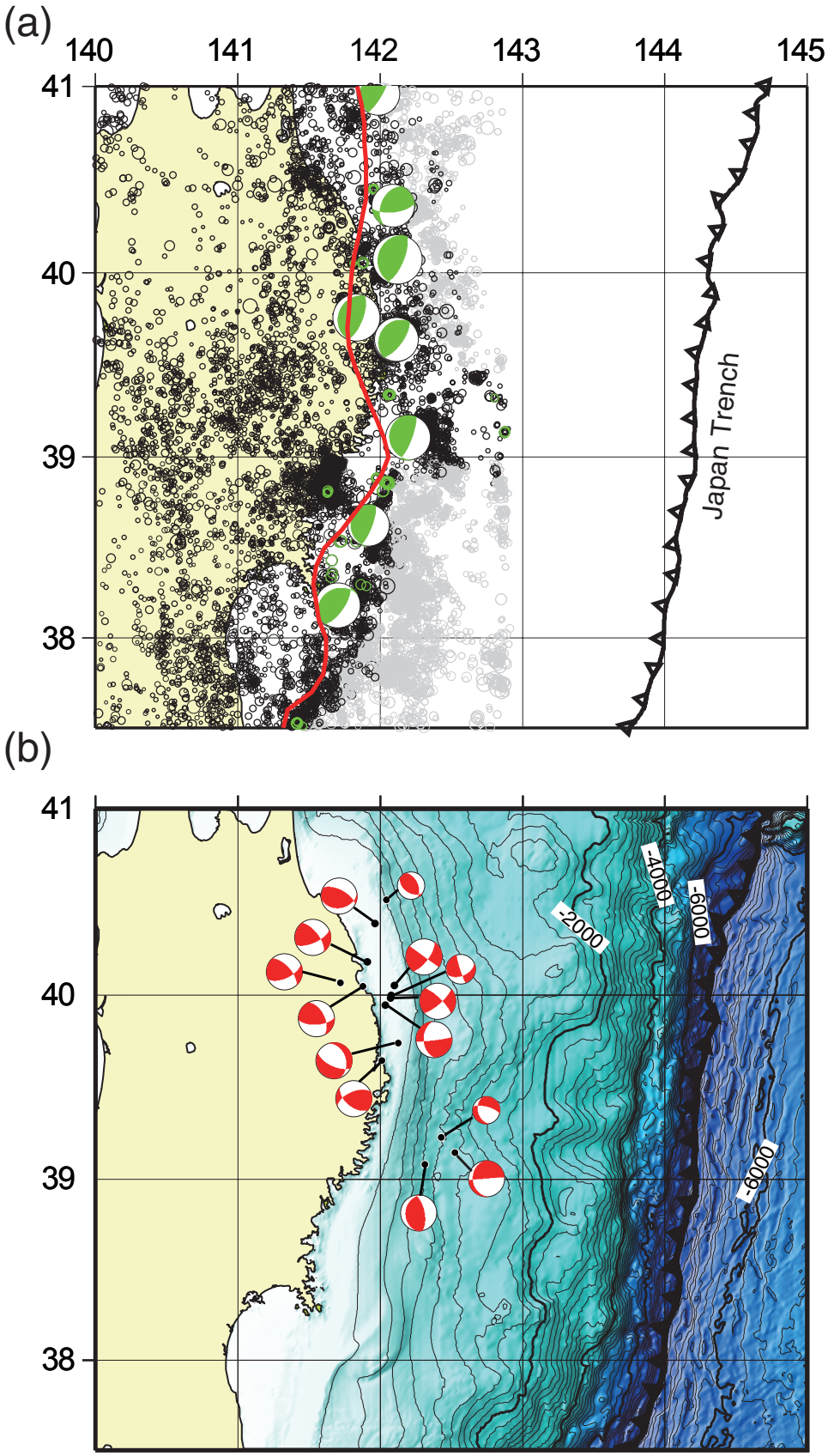
(a)
140
141
142
143
144
145
41
40
39
38
Japan Trench
(b)
41
40
39
38
-2000
-4000
-6000
-6000

Fig.6

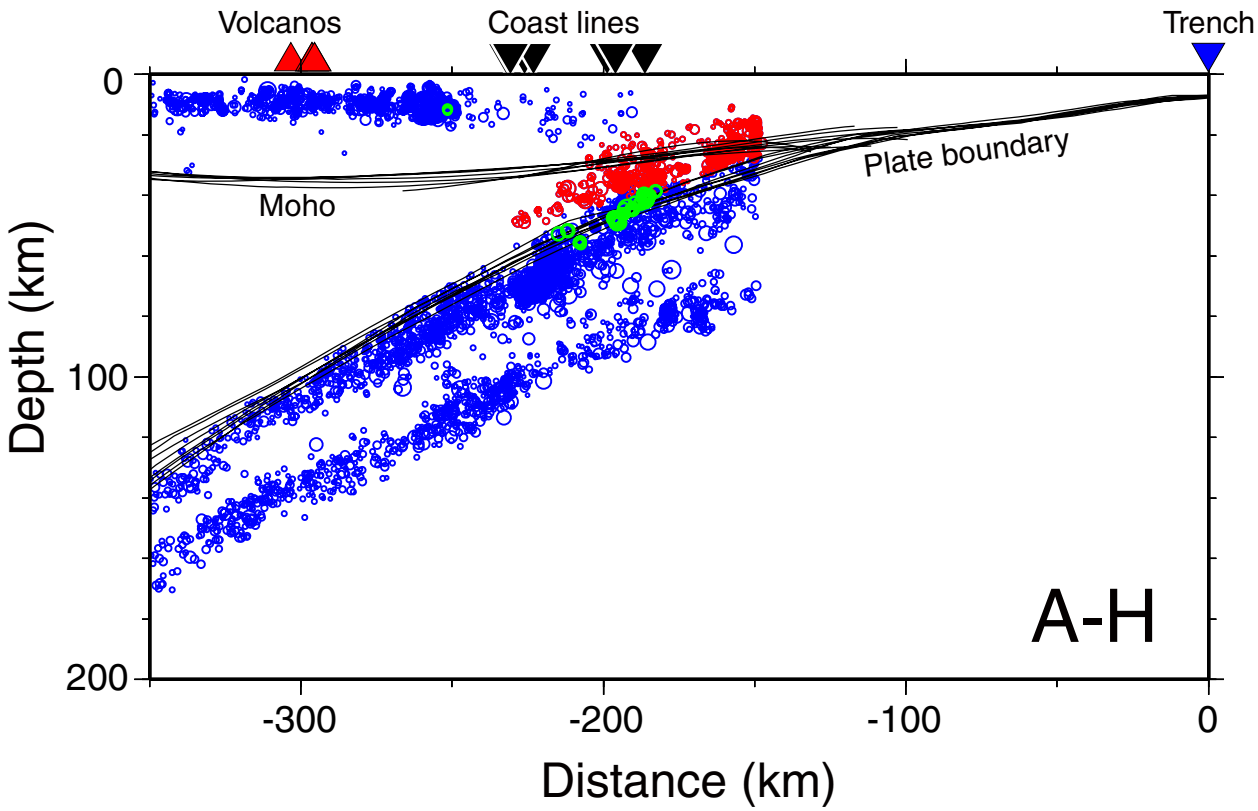
Volcanos
Coast lines
Trench
Plate boundary
Moho
Depth (km)
0
100
200
-300
-200
-100
0
Distance (km)
A-H

Fig.7

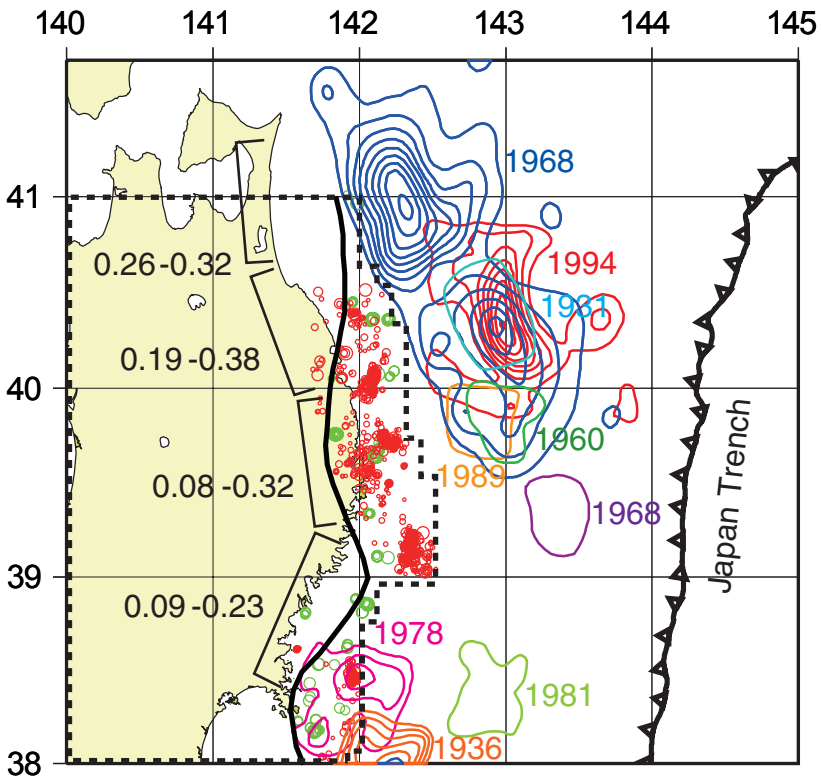
140
141
142
143
144
145
41
40
39
38
0.26-0.32
0.19-0.38
0.08-0.32
0.09-0.23
1968
1994
1981
1960
1989
1968
1978
1981
1936
Japan Trench

Fig. 8

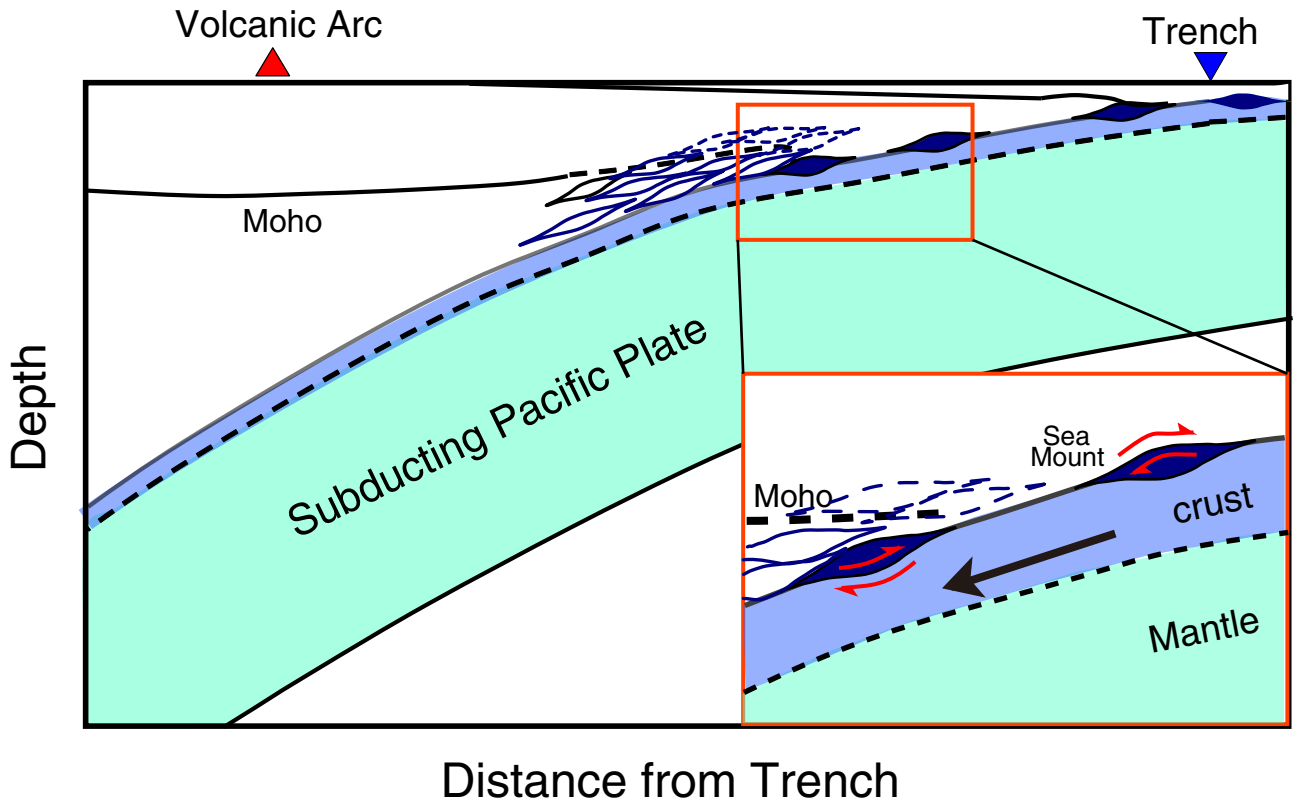
Volcanic Arc
Trench
Moho
Depth
Subducting Pacific Plate
Sea
Mount
Moho
crust
Mantle
Distance from Trench

Fig.9