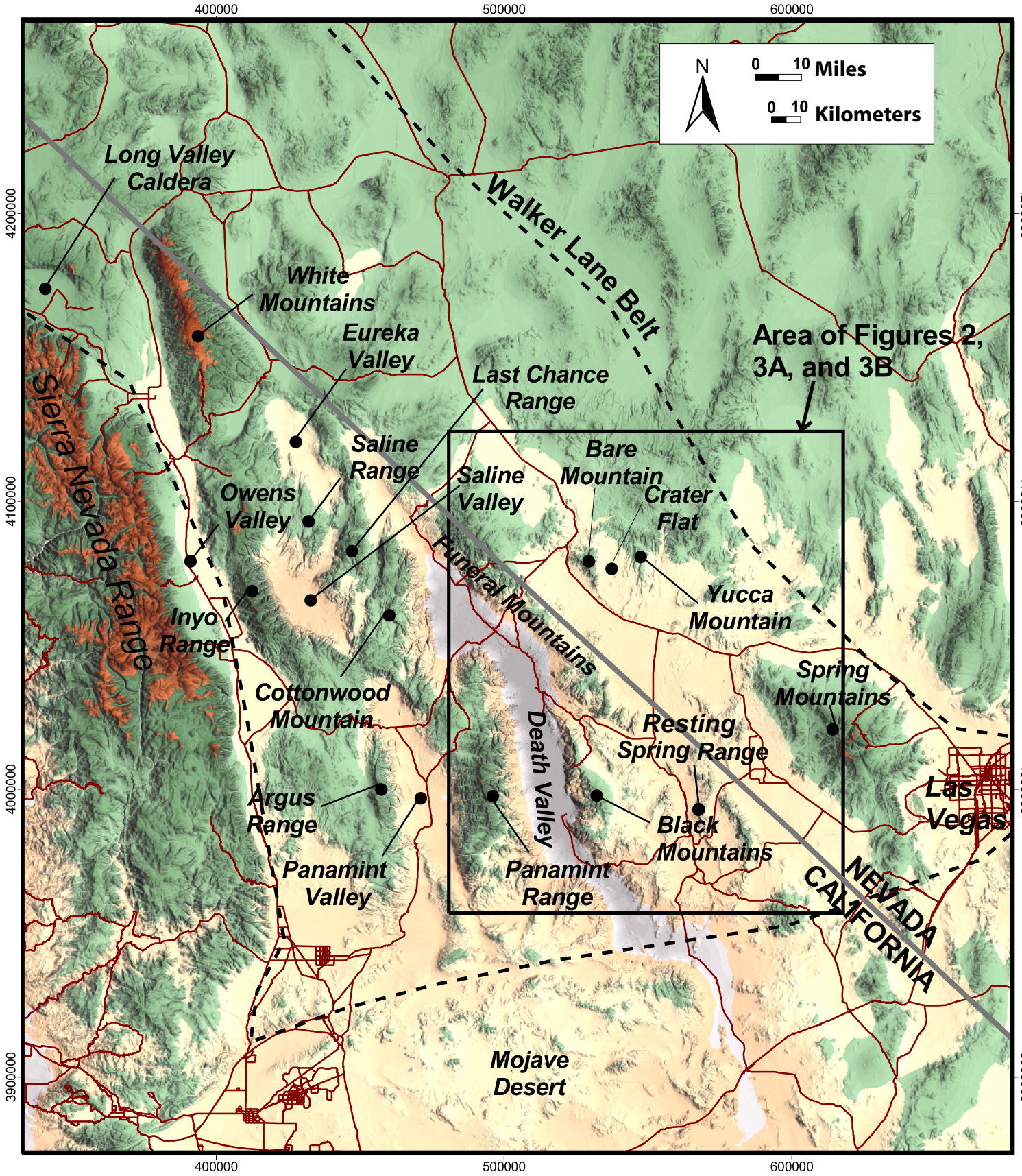

400000
500000
600000
4200000
4100000
4000000
3900000
N
0 10 Miles
0 10 Kilometers
Long Valley Caldera
Walker Lane Belt
White Mountains
Eureka Valley
Area of Figures 2, 3A, and 3B
Last Chance Range
Sierra Nevada Range
Saline Range
Saline Valley
Bare Mountain
Crater Flat
Owens Valley
Funeral Mountains
Yucca Mountain
Inyo Range
Cottonwood Mountain
Spring Mountains
Death Valley
Resting Spring Range
Las Vegas
Argus Range
Black Mountains
Panamint Valley
Panamint Range
NEVADA
CALIFORNIA
Mojave Desert

Figure 1

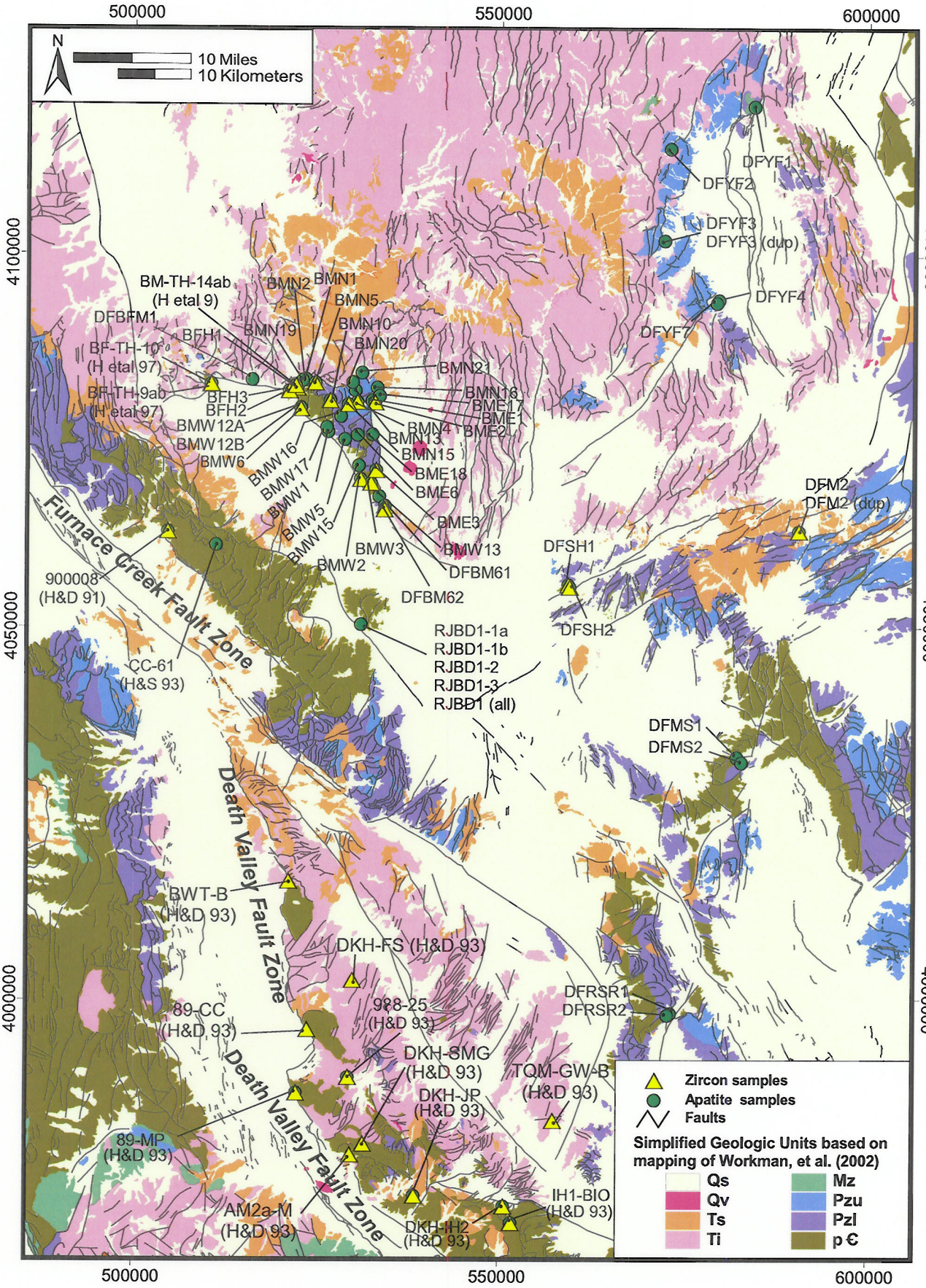

500000
550000
600000
4100000
4050000
4000000
N
10 Miles
10 Kilometers
BM-TH-14ab
(H etal 9)
DFBFM1
BFH1
BF-TH-10
(H etal 97)
BF-TH-9ab
(H etal 97)
BFH3
BFH2
BMW12A
BMW12B
BMW6
BMW16
BMW17
BMW1
BMW5
BMW15
BMW3
BMW2
BMN2
BMN1
BMN5
BMN10
BMN19
BMN20
BMN21
BMN16
BME17
BME1
BMN4
BME2
BMN13
BMN15
BME18
BME6
BME3
BMW13
DFBM61
DFBM62
900008
(H&D 91)
CC-61
(H&S 93)
Furnace Creek Fault Zone
RJBD1-1a
RJBD1-1b
RJBD1-2
RJBD1-3
RJBD1 (all)
DFYF1
DFYF2
DFYF3
DFYF3 (dup)
DFYF4
DFYF7
DFM2
DFM2 (dup)
DFSH1
DFSH2
DFMS1
DFMS2
Death Valley Fault Zone
BWT-B
(H&D 93)
DKH-FS (H&D 93)
89-CC
(H&D 93)
98-25
(H&D 93)
DKH-SMG
(H&D 93)
DKH-JP
(H&D 93)
89-MP
(H&D 93)
AM2a-M
(H&D 93)
DKH-IH2
(H&D 93)
TQM-GW-B
(H&D 93)
IH1-BIO
(H&D 93)
DFRSR1
DFRSR2
Zircon samples
Apatite samples
Faults
Simplified Geologic Units based on mapping of Workman, et al. (2002)
Qs
Qv
Ts
Ti
Mz
Pzu
Pzl
p €

Figure 2

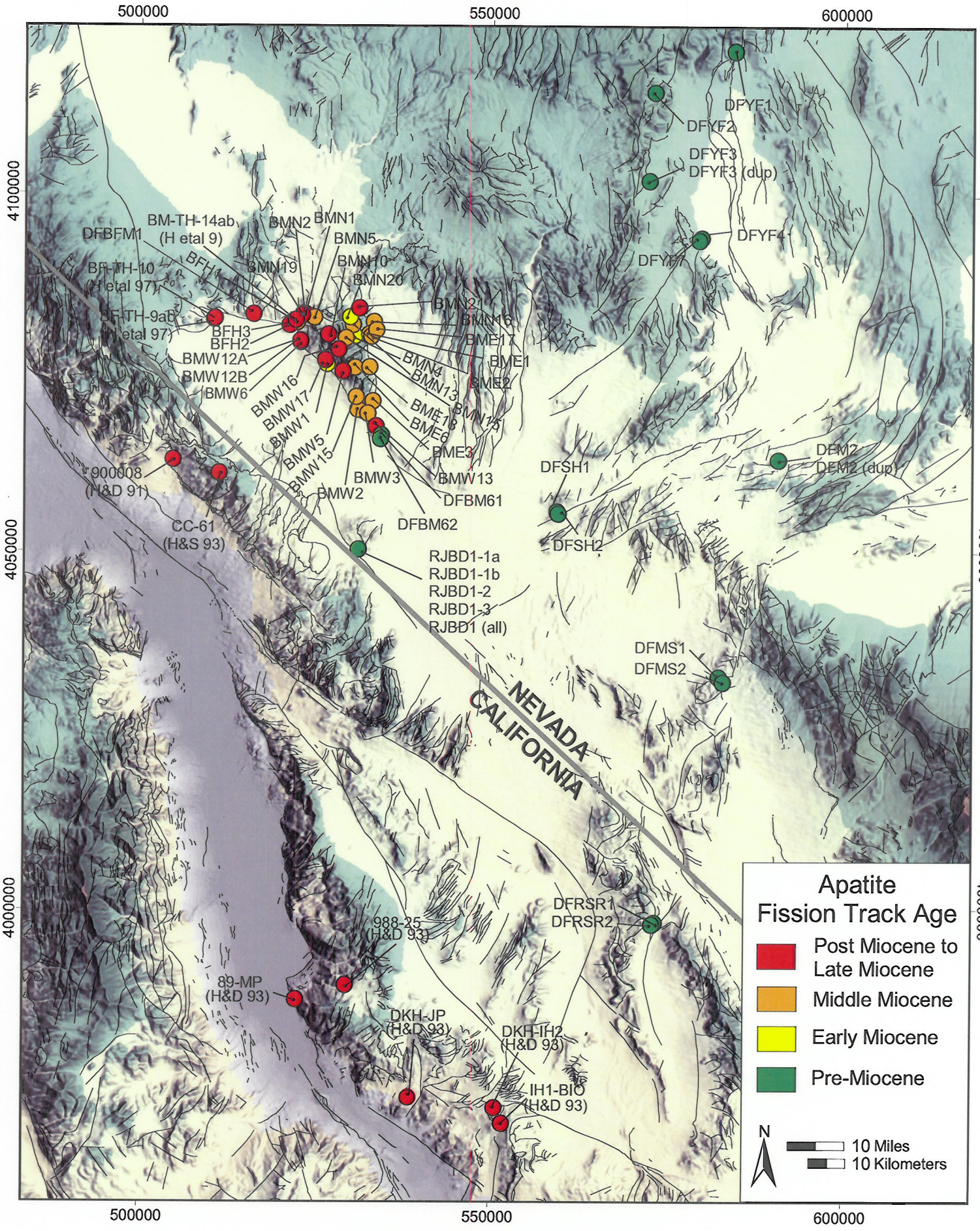

500000
550000
600000
4100000
4050000
4000000
DFYF1
DFYF2
DFYF3
DFYF3 (dup)
DFYF4
DFYF7
BM-TH-14ab
(H etal 9)
DFBFM1
BMN2
BMN1
BMN5
BMN10
BMN20
BMN19
BFH1
BF-TH-10
(H etal 97)
BF-TH-9ab
(H etal 97)
BFH3
BFH2
BMW12A
BMW12B
BMW6
BMW16
BMW17
BMW1
BMW5
BMW15
BMW3
BMW2
BMN21
BMN16
BME17
BME1
BMN4
BME2
BMN13
BMN15
BME18
BME6
BME3
BMW13
DFBM61
DFBM62
900008
(H&D 91)
CC-61
(H&S 93)
DFSH1
DFSH2
DEM2
DEM2 (dup)
RJBD1-1a
RJBD1-1b
RJBD1-2
RJBD1-3
RJBD1 (all)
DFMS1
DFMS2
NEVADA
CALIFORNIA
DFRSR1
DFRSR2
988-25
(H&D 93)
89-MP
(H&D 93)
DKH-JP
(H&D 93)
DKH-IH2
(H&D 93)
IH1-BIO
(H&D 93)
Apatite
Fission Track Age
Post Miocene to
Late Miocene
Middle Miocene
Early Miocene
Pre-Miocene
N
10 Miles
10 Kilometers

Figure 3A

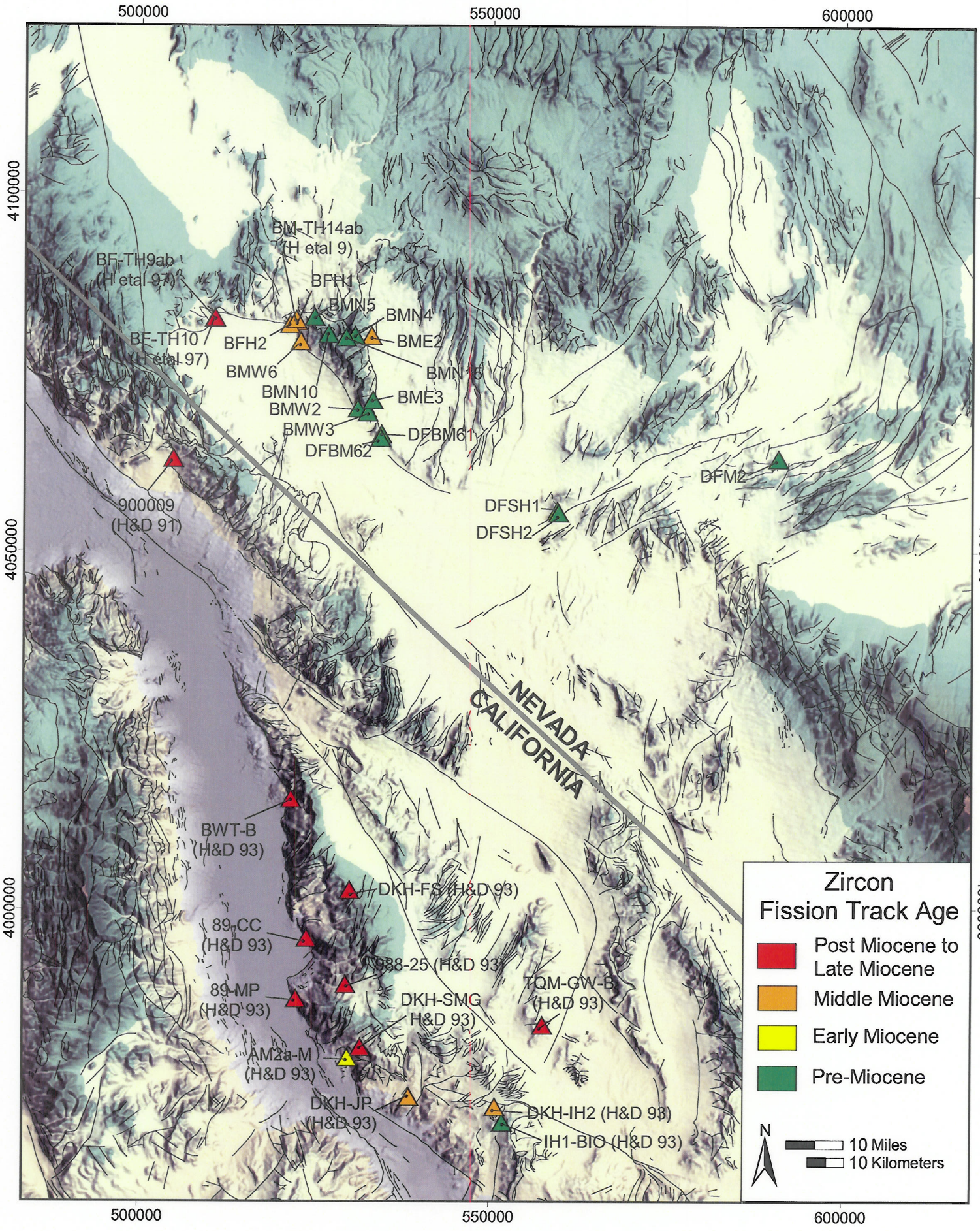

500000
550000
600000
4100000
4050000
4000000
BM-TH14ab
(H etal 9)
BF-TH9ab
(H etal 97)
BFH1
BMN5
BMN4
BME2
BFH2
BE-TH10
(H etal 97)
BMW6
BMN16
BMN10
BME3
BMW2
BMW3
DFBM61
DFBM62
DFM2
900009
(H&D 91)
DFSH1
DFSH2
NEVADA
CALIFORNIA
BWT-B
(H&D 93)
DKH-FS (H&D 93)
89-CC
(H&D 93)
88-25 (H&D 93)
89-MP
(H&D 93)
DKH-SMG
H&D 93)
TQM-GW-B
(H&D 93)
AM2a-M
(H&D 93)
DKH-JP
(H&D 93)
DKH-IH2 (H&D 93)
IH1-BIO (H&D 93)
Zircon
Fission Track Age
Post Miocene to
Late Miocene
Middle Miocene
Early Miocene
Pre-Miocene
N
10 Miles
10 Kilometers

Figure 3B

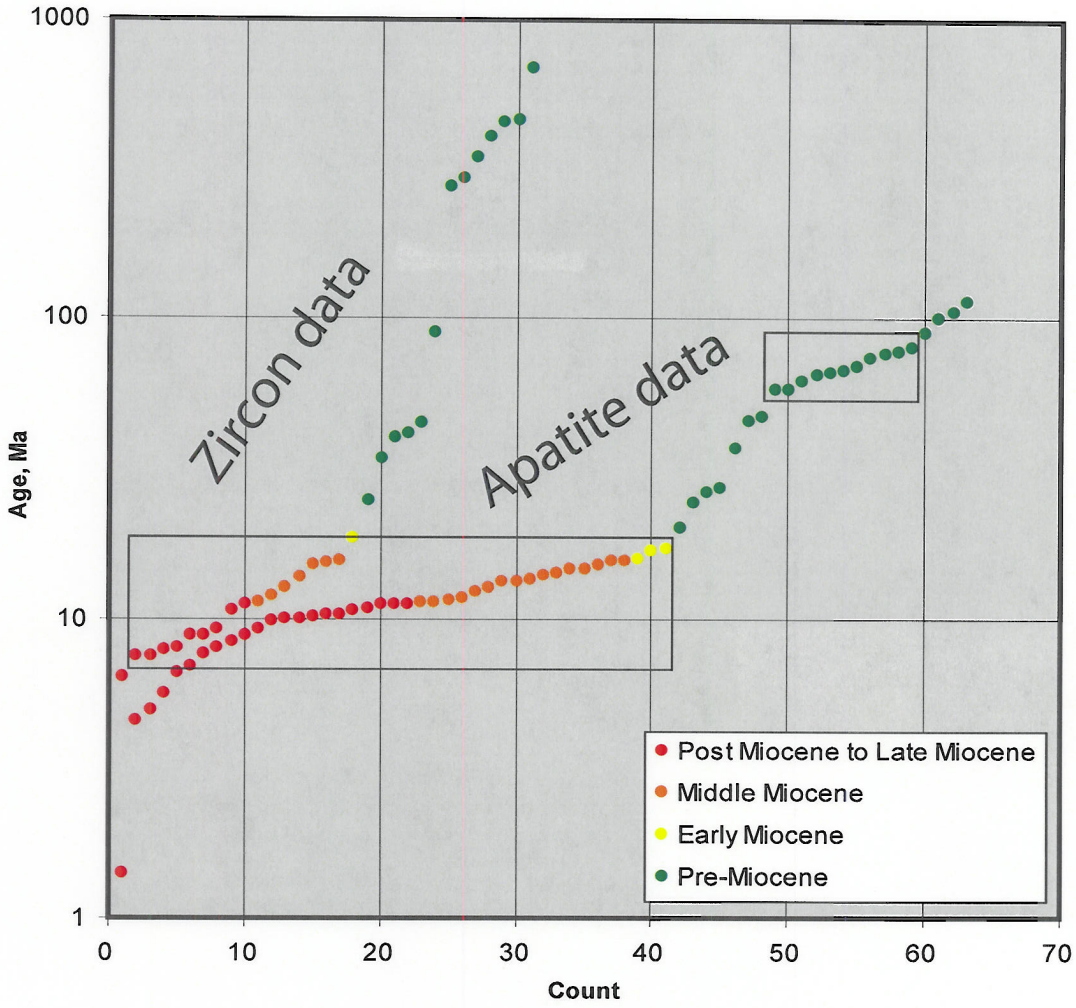
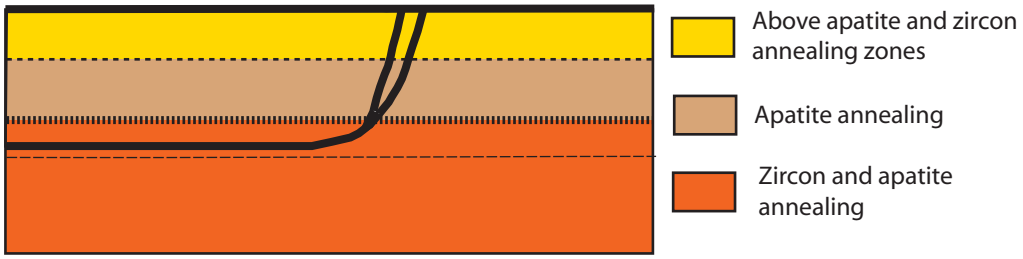
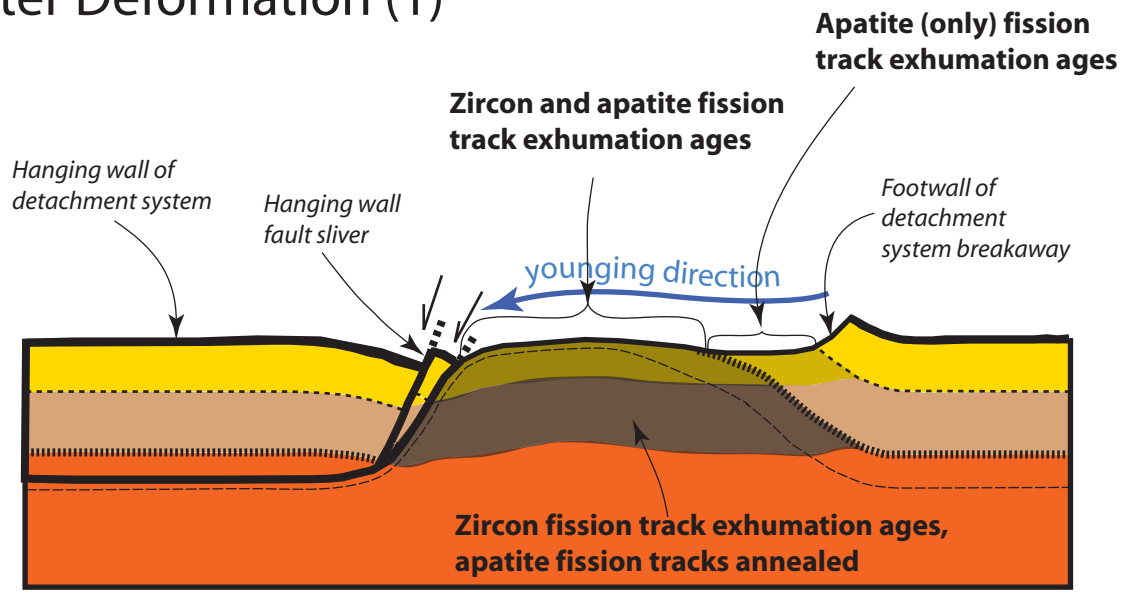

1000
100
10
1
Age, Ma
0
10
20
30
40
50
60
70
Count
Zircon data
Apatite data
Post Miocene to Late Miocene
Middle Miocene
Early Miocene
Pre-Miocene

Figure 4

A. Before Deformation



B. After Deformation (1)



C. After Deformation (2)

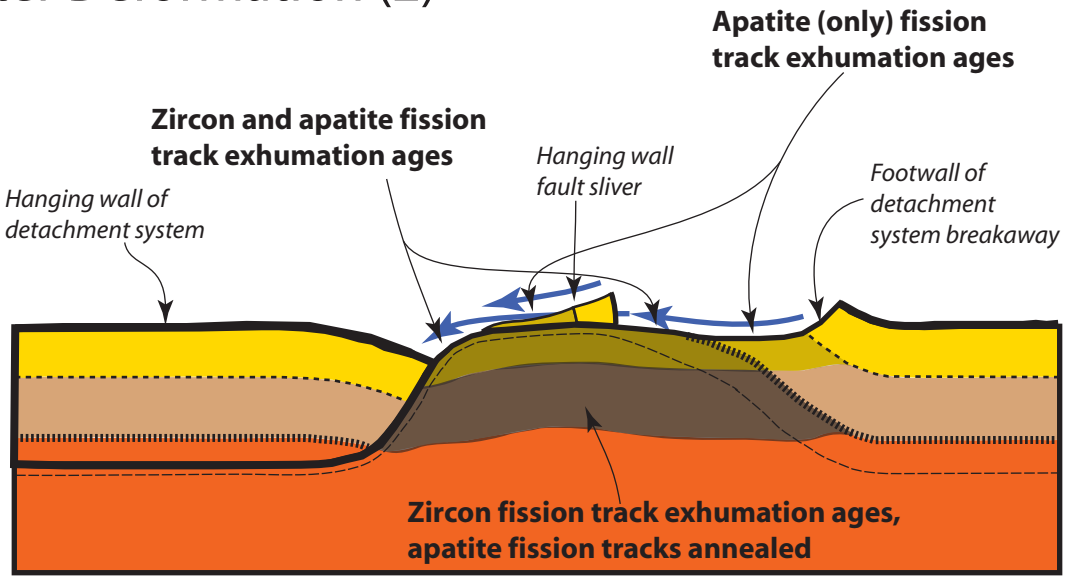
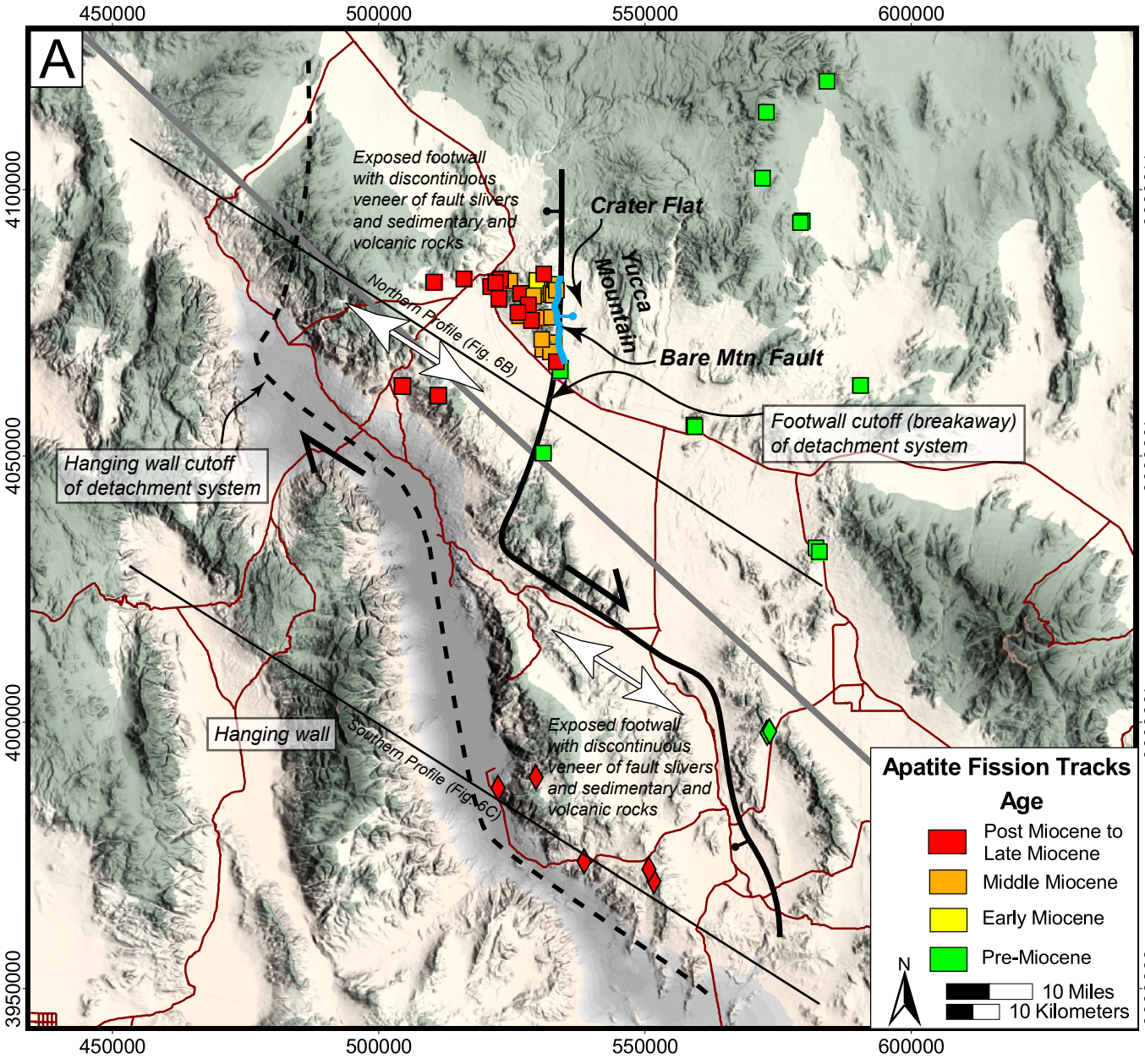
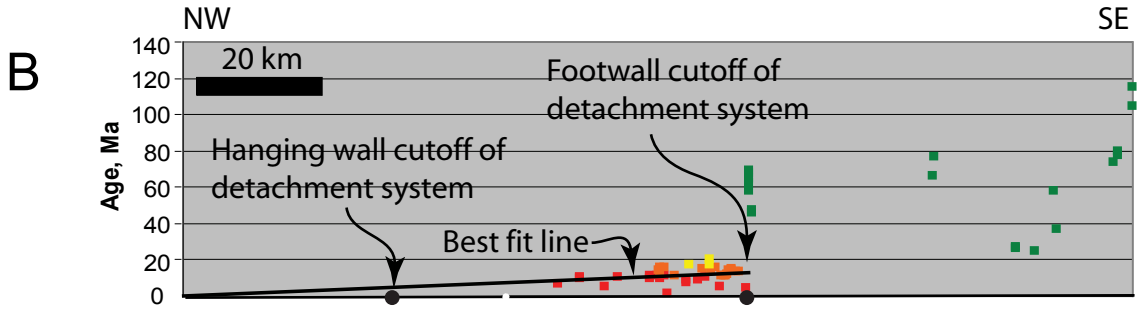


Figure 5


A
450000
500000
550000
600000
4100000
4050000
4000000
3950000
Exposed footwall with discontinuous veneer of fault slivers and sedimentary and volcanic rocks
Crater Flat
Yucca Mountain
Bare Mtn. Fault
Northern Profile (Fig. 6B)
Footwall cutoff (breakaway) of detachment system
Hanging wall cutoff of detachment system
Hanging wall
Southern Profile (Fig. 6C)
Exposed footwall with discontinuous veneer of fault slivers and sedimentary and volcanic rocks
Apatite Fission Tracks
Age
Post Miocene to Late Miocene
Middle Miocene
Early Miocene
Pre-Miocene
N
10 Miles
10 Kilometers


B
NW
SE
20 km
Footwall cutoff of detachment system
Hanging wall cutoff of detachment system
Best fit line
Age, Ma
140
120
100
80
60
40
20
0

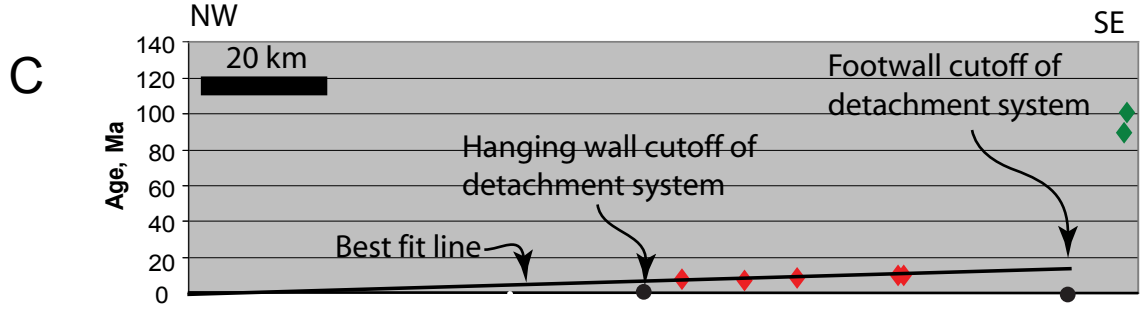

C
NW
SE
20 km
Footwall cutoff of detachment system
Hanging wall cutoff of detachment system
Best fit line
Age, Ma
140
120
100
80
60
40
20
0

Figure 6