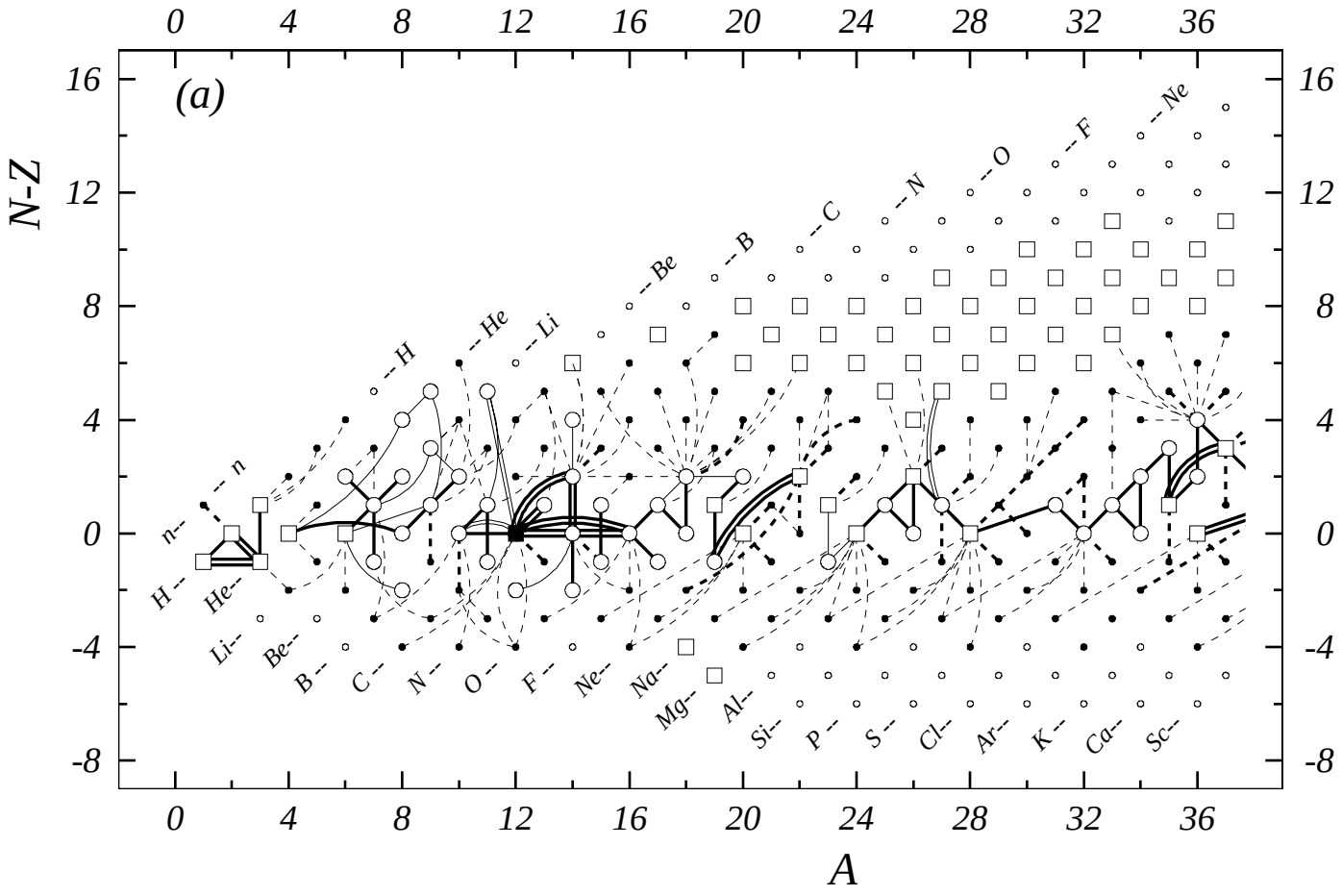
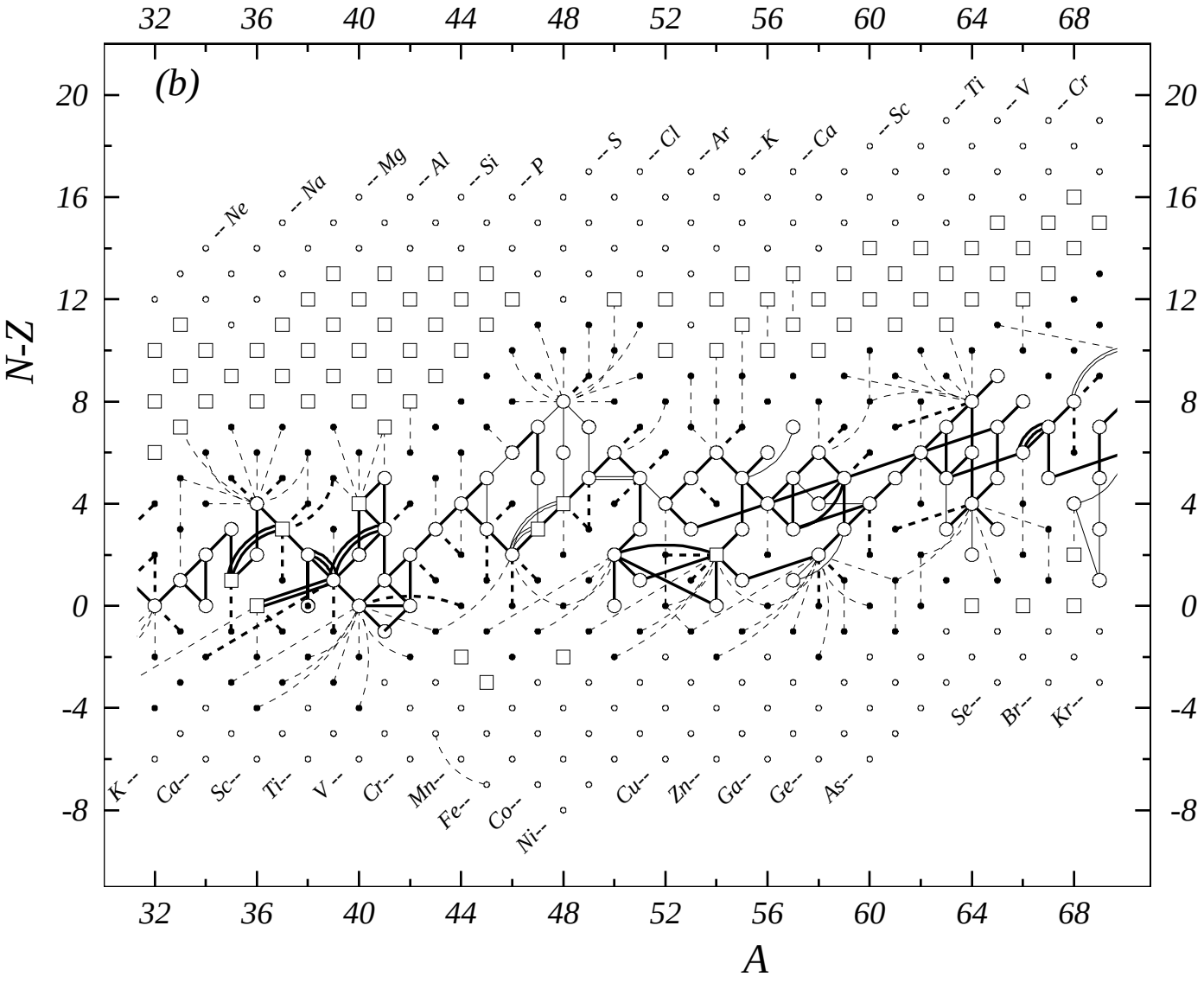
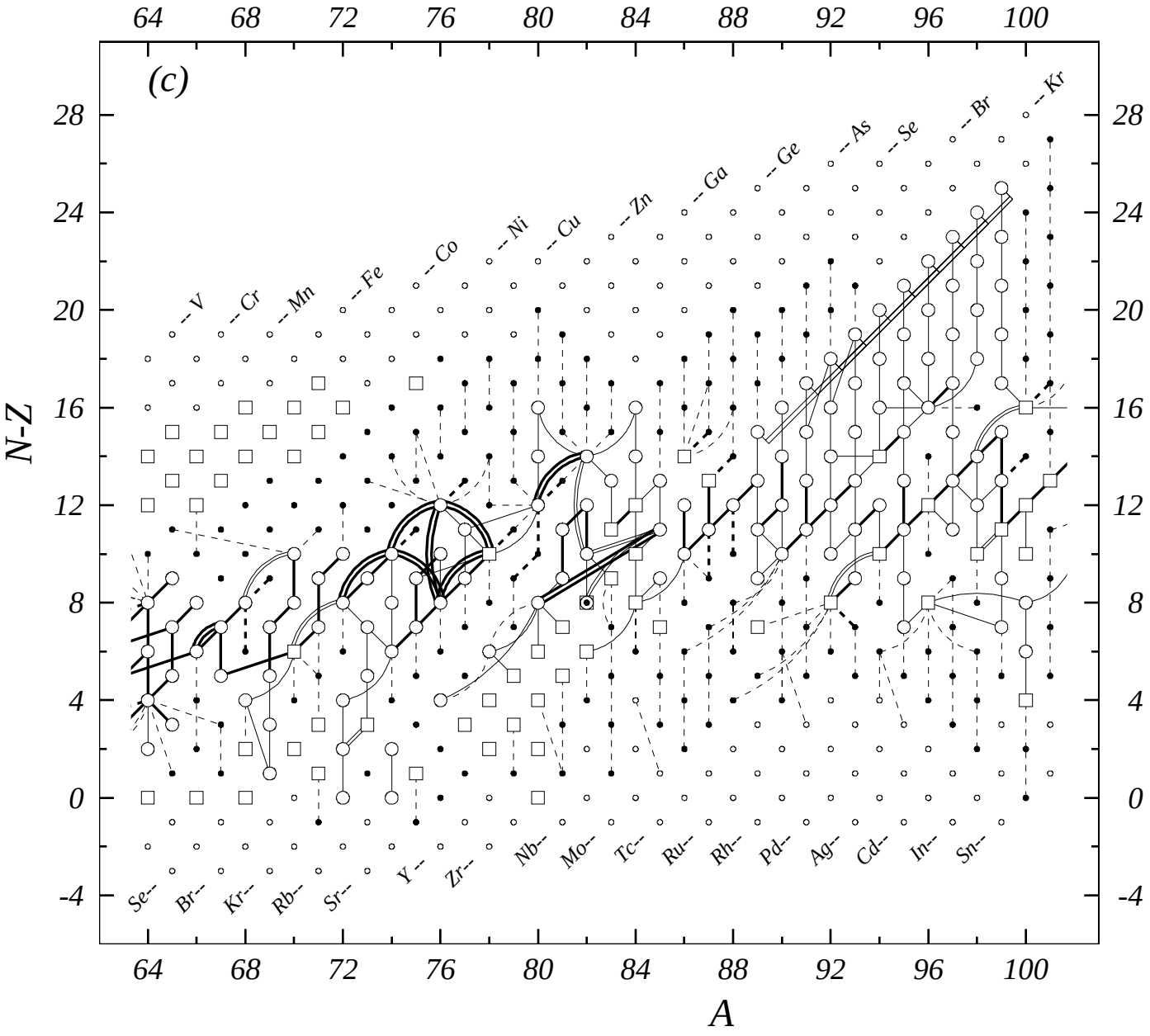
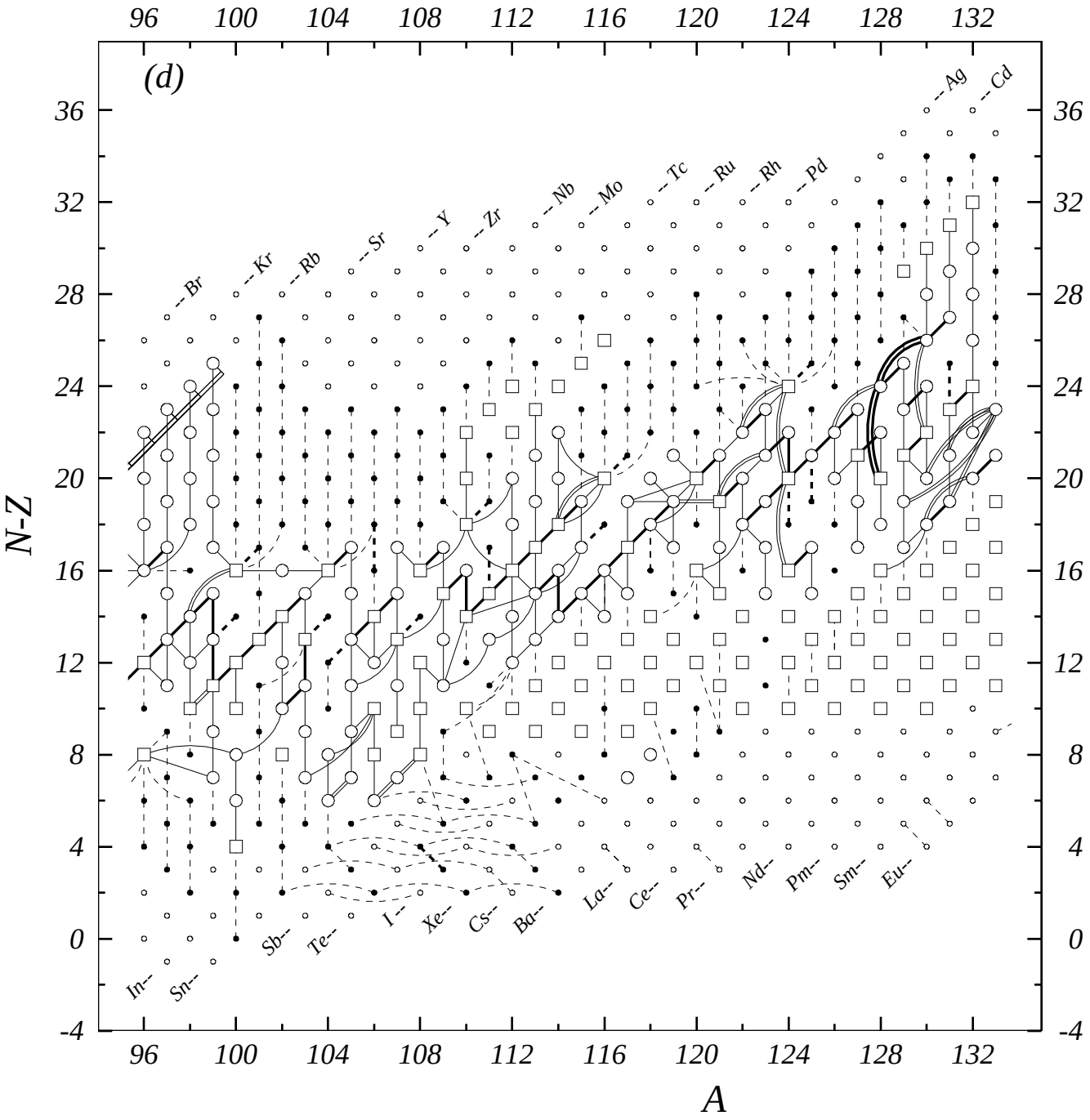
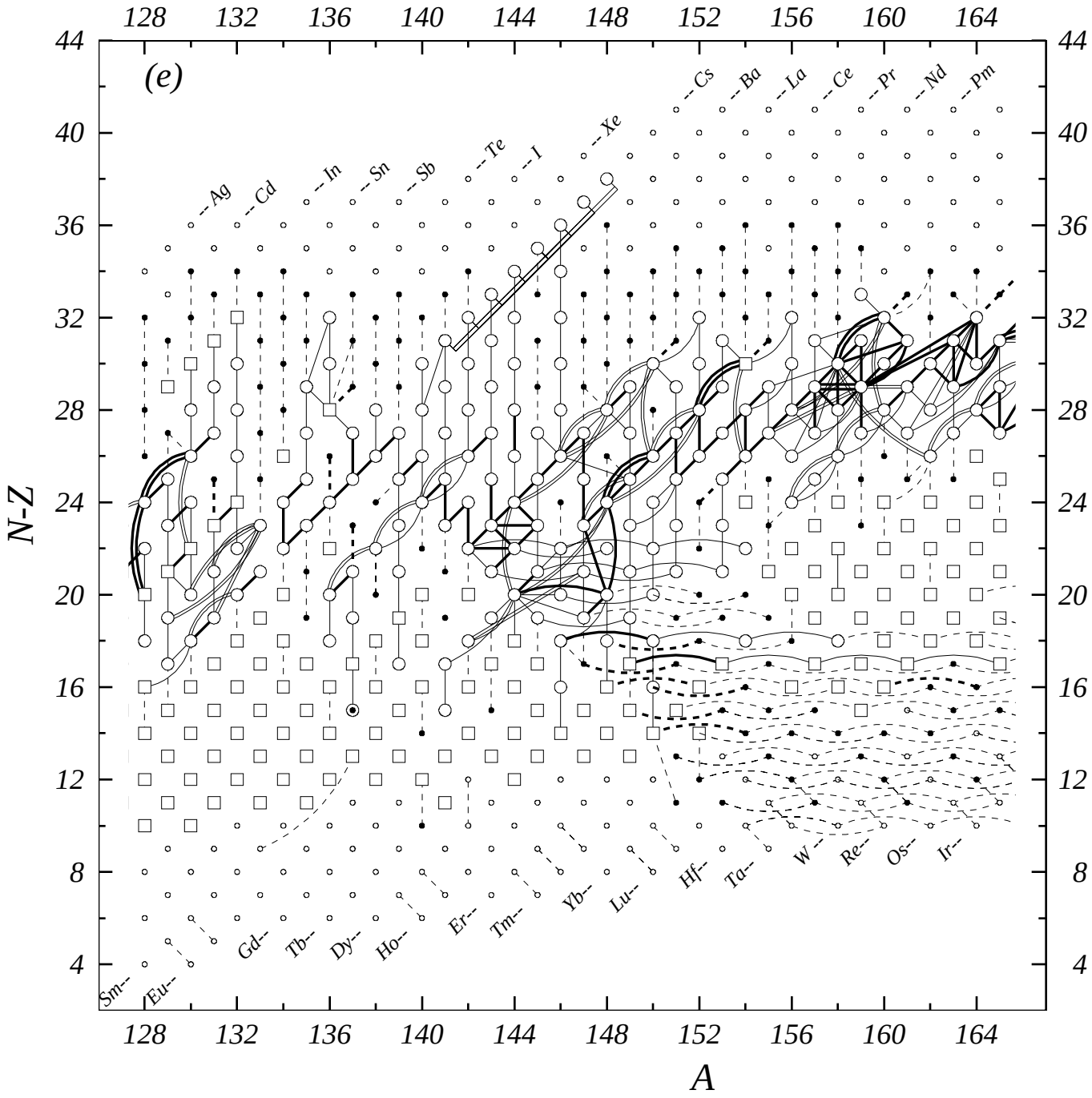
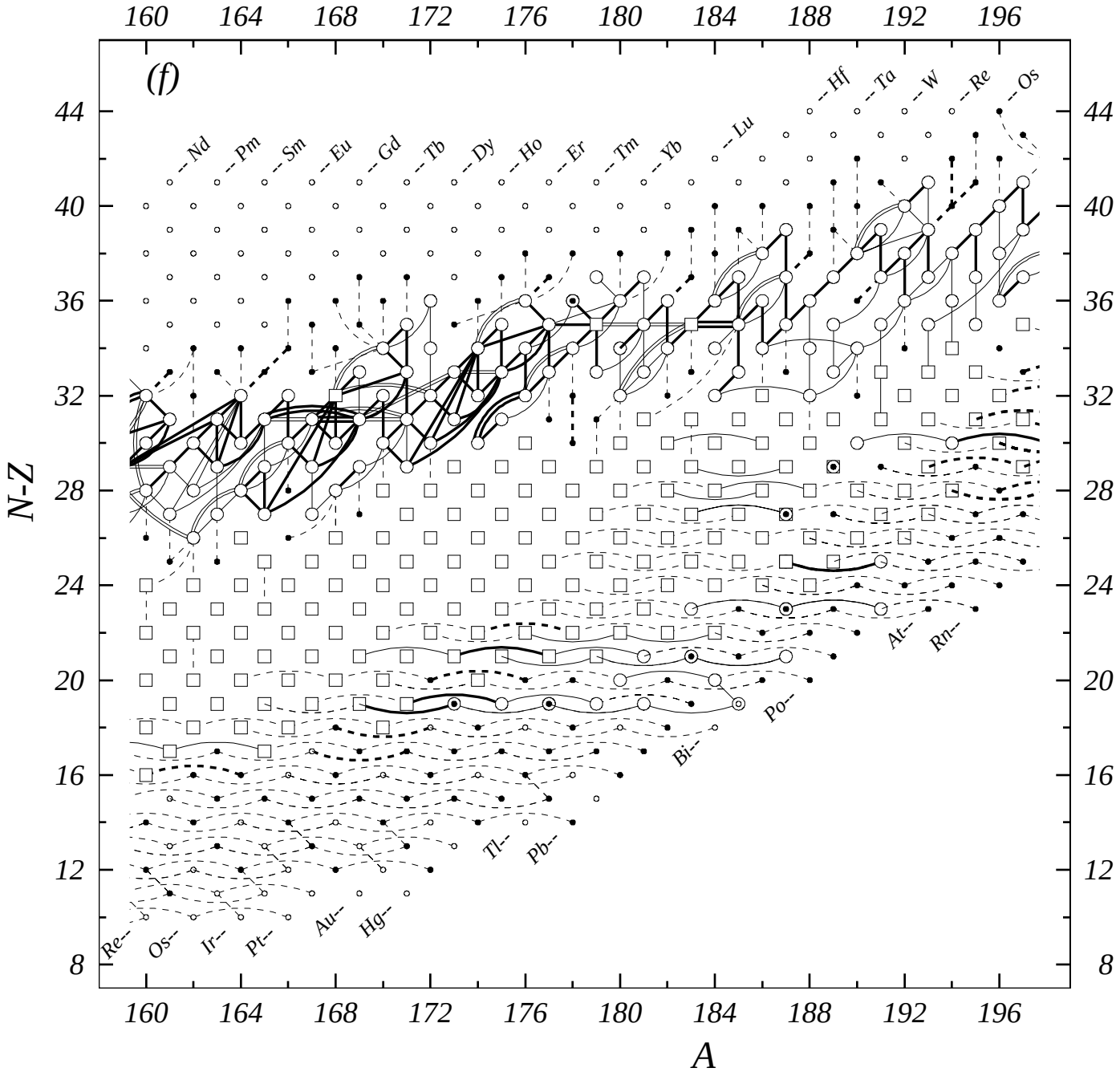

(a)
N-Z
A
0
4
8
12
16
20
24
28
32
36
16
12
8
4
0
-4
-8
n
H
He
Li
Be
B
C
N
O
F
Ne
Na
Mg
Al
Si
P
S
Cl
Ar
K
Ca
Sc

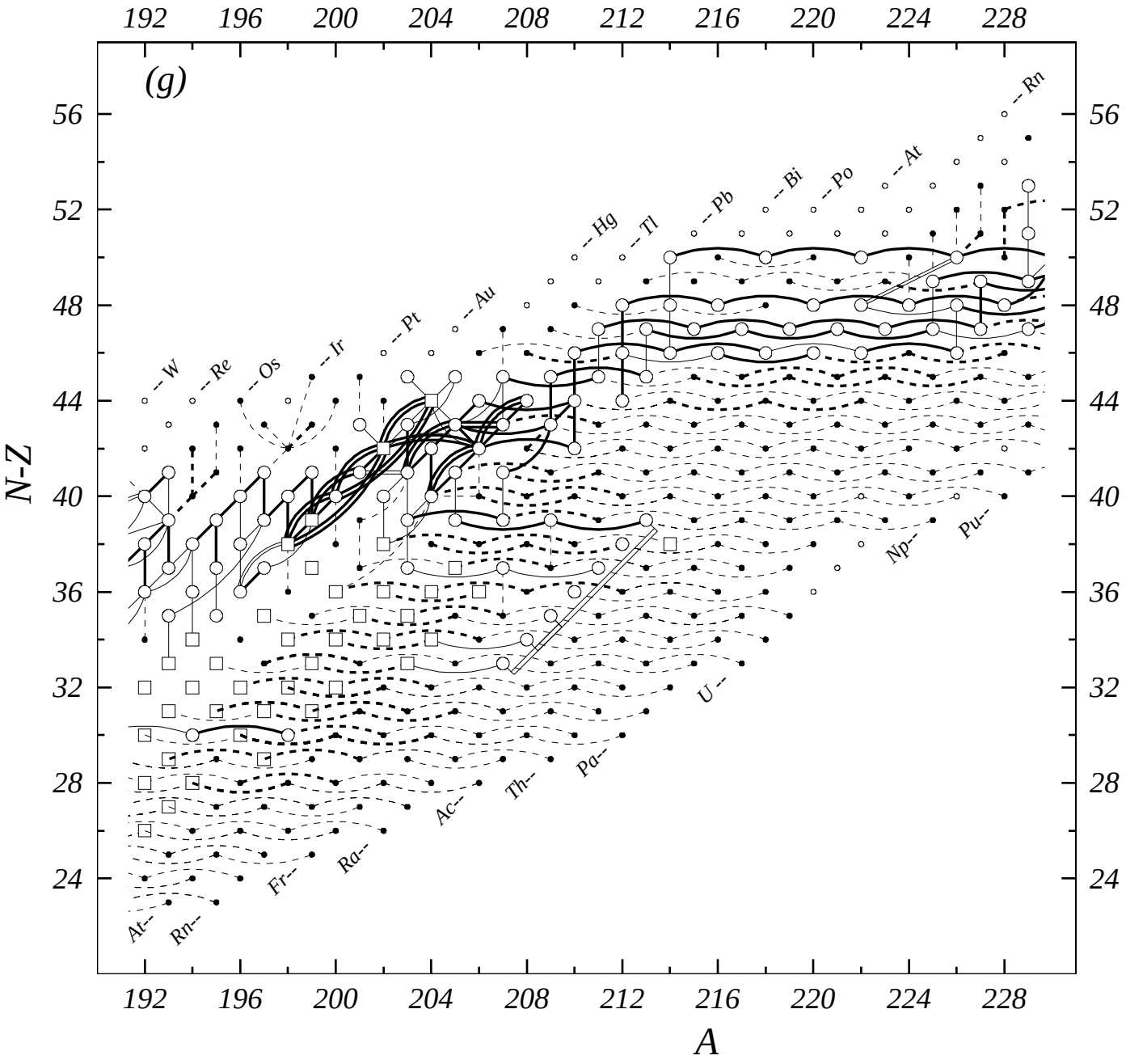

(b)
N-Z
A
32
36
40
44
48
52
56
60
64
68
20
16
12
8
4
0
-4
-8
Ne
Na
Mg
Al
Si
P
S
Cl
Ar
K
Ca
Sc
Ti
V
Cr
K
Ca
Sc
Ti
V
Cr
Mn
Fe
Co
Ni
Cu
Zn
Ga
Ge
As
Se
Br
Kr

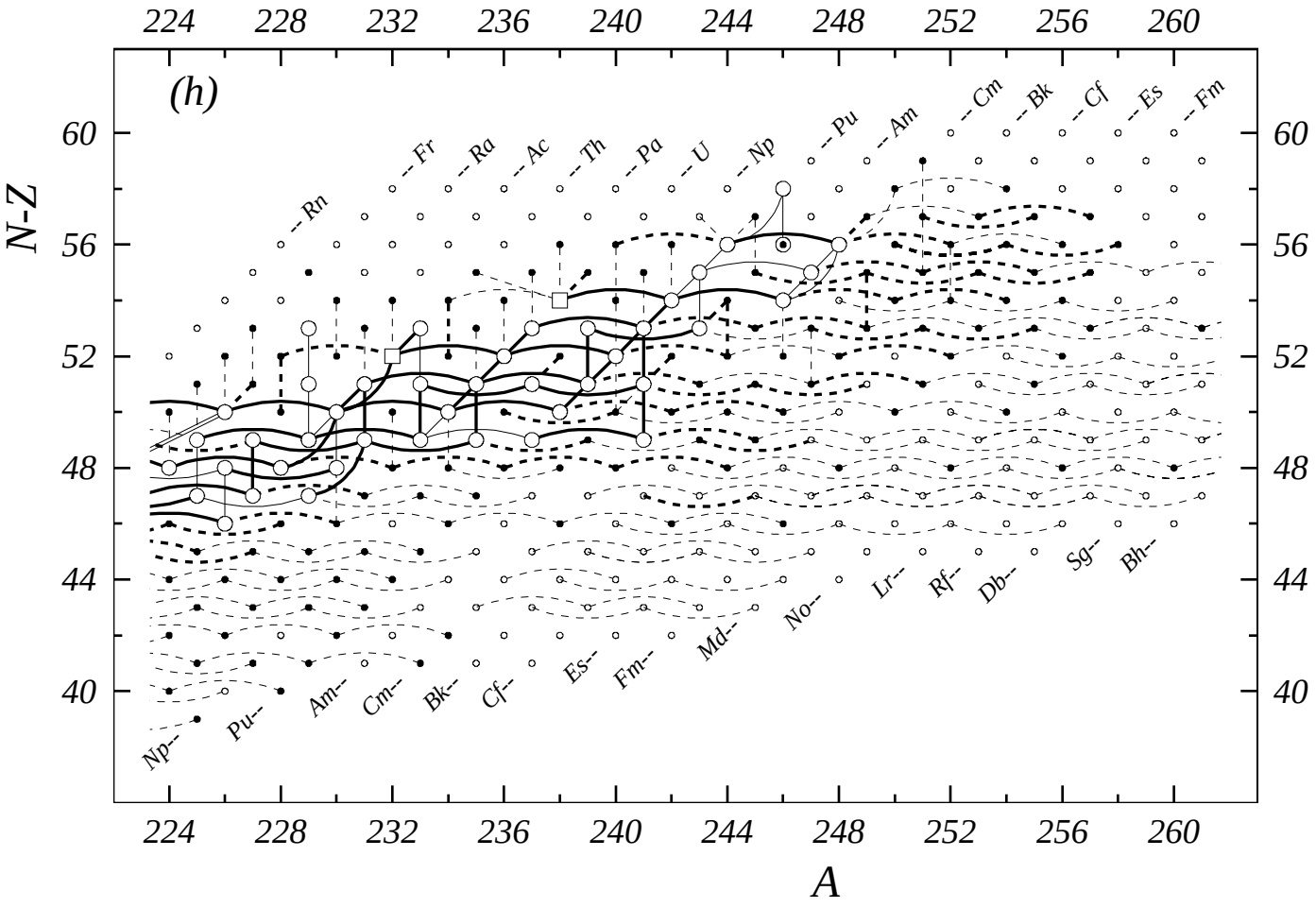

(c)
N-Z
A
64
68
72
76
80
84
88
92
96
100
28
24
20
16
12
8
4
0
-4
V
Cr
Mn
Fe
Co
Ni
Cu
Zn
Ga
Ge
As
Se
Br
Kr
Se--
Br--
Kr--
Rb--
Sr--
Y --
Zr--
Nb--
Mo--
Tc--
Ru--
Rh--
Pd--
Ag--
Cd--
In--
Sn--

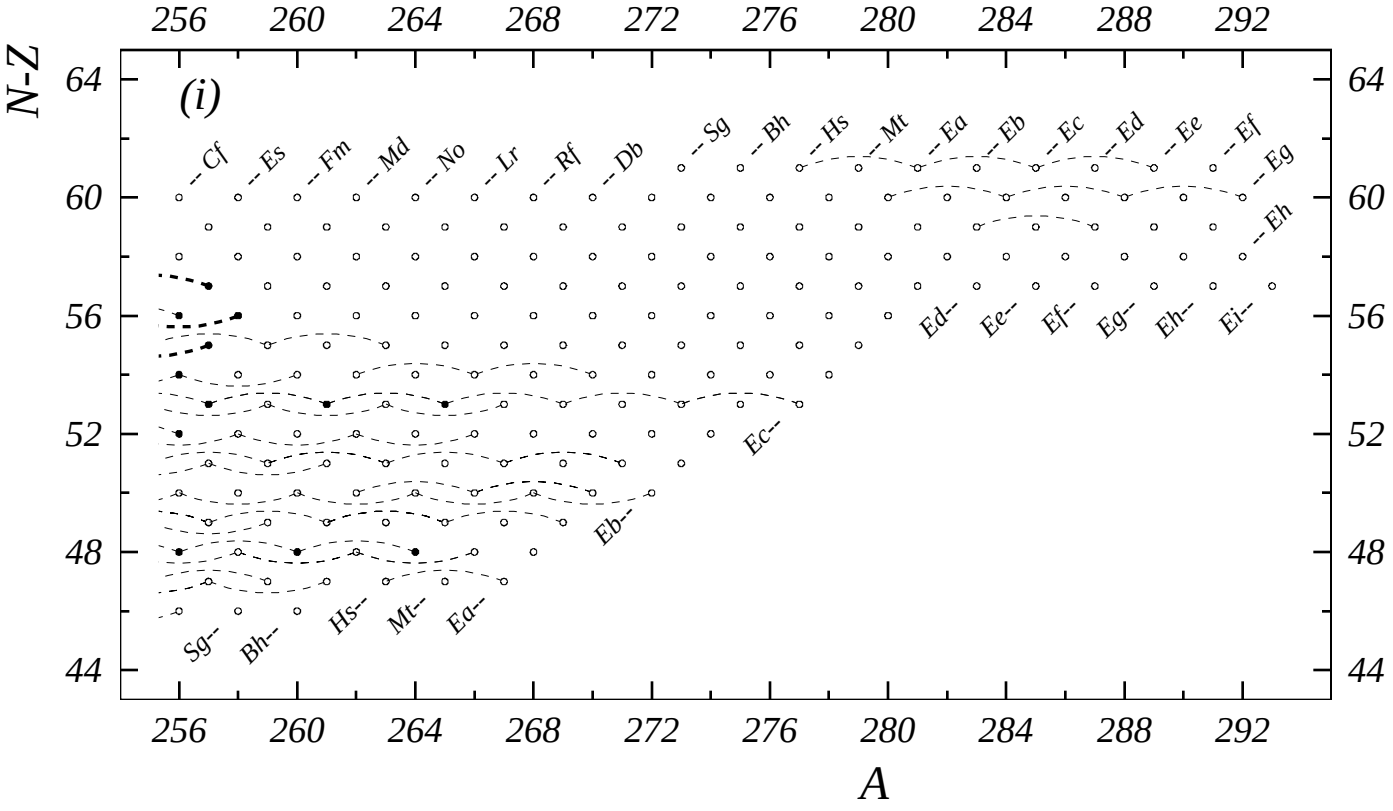

(d)
N-Z
A
96
100
104
108
112
116
120
124
128
132
36
32
28
24
20
16
12
8
4
0
-4
Br
Kr
Rb
Sr
Y
Zr
Nb
Mo
Tc
Ru
Rh
Pd
Ag
Cd
In
Sn
Sb
Te
I
Xe
Cs
Ba
La
Ce
Pr
Nd
Pm
Sm
Eu


(e)
N-Z
A
128
132
136
140
144
148
152
156
160
164
4
8
12
16
20
24
28
32
36
40
44
Ag
Cd
In
Sn
Sb
Te
I
Xe
Cs
Ba
La
Ce
Pr
Nd
Pm
Sm
Eu
Gd
Tb
Dy
Ho
Er
Tm
Yb
Lu
Hf
Ta
W
Re
Os
Ir


(f)
Nd
Pm
Sm
Eu
Gd
Tb
Dy
Ho
Er
Tm
Yb
Lu
Hf
Ta
W
Re
Os
Re--
Os--
Ir--
Pt--
Au--
Hg--
Tl--
Pb--
Bi--
Po--
At--
Rn--
N-Z
A
160
164
168
172
176
180
184
188
192
196
8
12
16
20
24
28
32
36
40
44


(g)
N-Z
A
192
196
200
204
208
212
216
220
224
228
24
28
32
36
40
44
48
52
56
W
Re
Os
Ir
Pt
Au
Hg
Tl
Pb
Bi
Po
At
Rn
At--
Rn--
Fr--
Ra--
Ac--
Th--
Pa--
U--
Np--
Pu--


(h)
N-Z
A
224
228
232
236
240
244
248
252
256
260
40
44
48
52
56
60
Rn
Fr
Ra
Ac
Th
Pa
U
Np
Pu
Am
Cm
Bk
Cf
Es
Fm
Md
No
Lr
Rf
Db
Sg
Bh
Np--
Pu--
Am--
Cm--
Bk--
Cf--
Es--
Fm--


(i)
N-Z
A
256
260
264
268
272
276
280
284
288
292
44
48
52
56
60
64
Cf
Es
Fm
Md
No
Lr
Rf
Db
Sg
Bh
Hs
Mt
Ea
Eb
Ec
Ed
Ee
Ef
Eg
Eh
Sg--
Bh--
Hs--
Mt--
Ea--
Eb--
Ec--
Ed--
Ee--
Ef--
Eg--
Eh--
Ei--