GERMANIJSKI DETEKTOR

Nakon što je 1949. McKay primijenio germanijsku poluvodičku n - p diodu za detekciju α čestica, postepeno su se razvile metode izrade sve boljih i većih poluvodičkih dioda za detekciju kako nabijenih čestica, tako i fotona rendgenskog i γ zračenja. Poznato je da se poluvodičke diode i drugi poluvodički elementi upotrebljavaju u nebrojeno mnogim napravama. Te se primjene naglo i sve više šire što nam svjedoči snažan razvoj elektroničke industrije.

Za detekciju nabijenih čestica (elektrona, protona, deuterona, α čestica, itd.), a posredno i γ i redgenskog zračenja (putem procesa kojima ta zračenja izbacuju elektrone), upotrebljavaju se poluvodiči od dvaju elemenata, silicija i germanija. Poznati su mnogi drugi poluvodički materijali, mahom binarni materijali. Poluvodički detektori su najčešće naprosto silicijske ili germanijske poluvodičke diode. Razlikuju se po vrsti osnovnog monokristalnog materijala (po postupku izrade n-tipa odn. p-tipa materijala), po načinu pripravljanja n - p spoja, a u nekim detektorima, i tzv. intrinsičnog sloja.

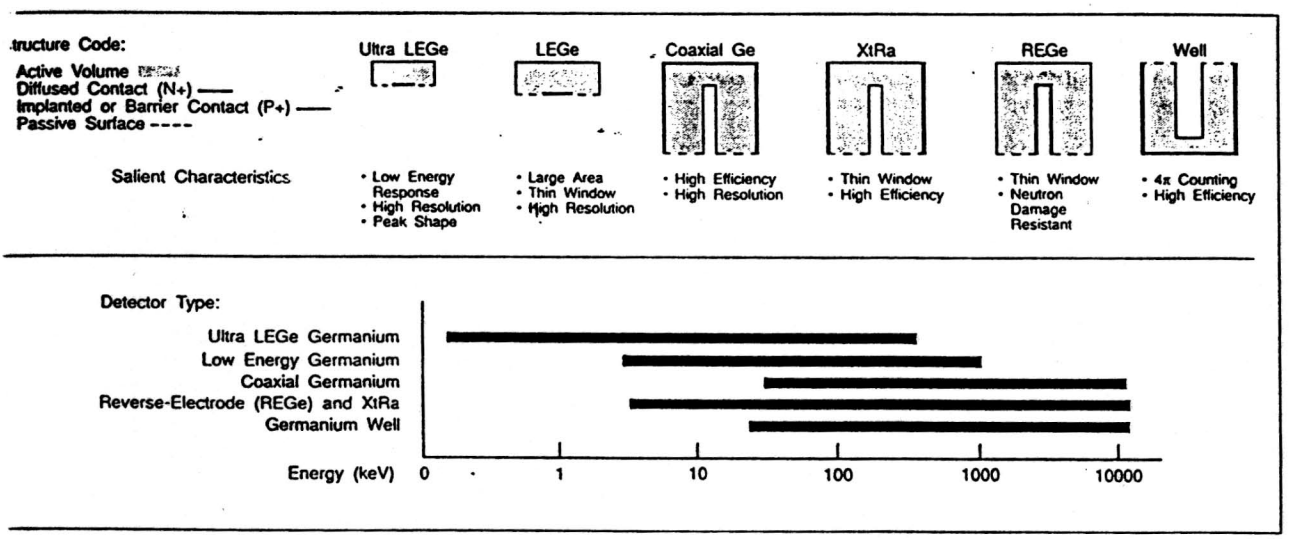
Opišimo kratko silicijske detektore koji se mnogo upotrebljavaju za detekciju "teških" nabijenih čestica (protona, deuterona, tritona, α čestica, "teških" iona, npr., iona litija, berilija, ugljika, ..., te vrlo teških iona kao npr., fisijskih fragmenata) na energijama od oko 1 MeV do par stotina MeV, te za detekciju fotona niske energije, od oko 500 eV do oko 15 keV. Izvedbe se razlikuju u tehnologiji pripravljanja n - p spoja.

Silicijski detektori s površinskom barijerom izrađuju se od silicija n-tipa na kojemu se oksidacijom silicija dobiva ekstremno tanak sloj p-tipa. Kontakt na strani silicija n-tipa (kojim se izbjegava stvaranje oksidnog sloja) je sloj naparenog aluminija, a kontakt na strani p-tipa dobiva se naparavanjem vrlo tankog ($\approx$ 40 $\mu g/cm^2$) sloja zlata. Detektori ove izvedbe upotrebljavaju se za α čestice, protone, i druge "teške" nabijene čestice, sve do fisijskih fragmenata. Također za elektrone niske energije jer je "mrtvi" sloj na ulazu u detektor vrlo tanak. Naparen sloj zlata na ulaznoj strani ovih detektora je vrlo osjetljiv. Otisak prsta ili neki drugi dodir najčešće uništi detektor.

Silicijski detektori s difundiranim kontaktom izrađuju se od monokristala silicija p-tipa na kojemu se difuzijom fosfora postiže (samo na jednoj strani) tanak sloj n-tipa. Upotrebljavaju se za detekciju gotovo kao

i silicijski detektori s površinskom barijerom, s time da im je osnovna prednost da nisu osjetljivi na dodir. Međutim, loša strana im je relativno debeo i često prilično nejednoličan "mrtvi" sloj na ulaznoj (difundiranoj) strani detektora.

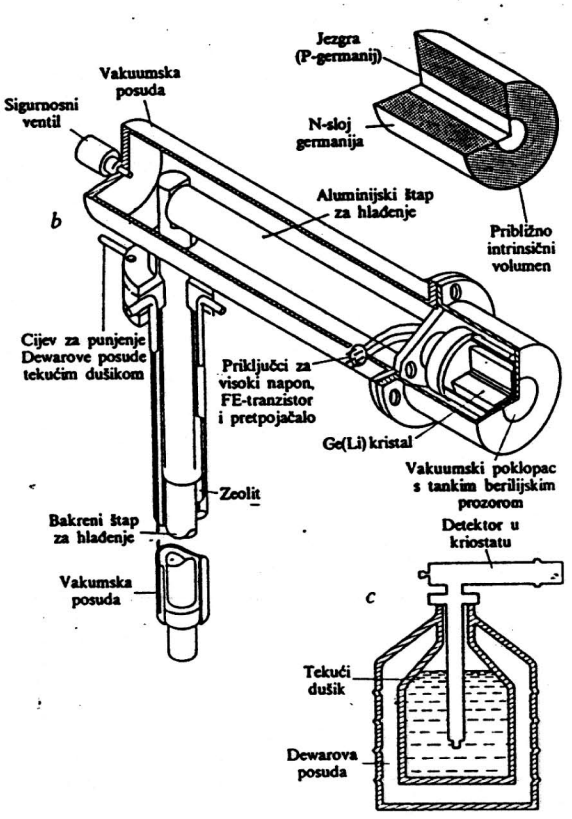
Si(Li) detektori su silicijske diode n-i-p tipa. Prvi detektor ove vrste načinio je Mayer 1960. primjenom Pellove metode "vučenja" litija u siliciju. Intrinsično područje, bolje rečeno, kompenzirano područje, dobiva se tako da se na silicij p-tipa nanese sloj litija, te se na povišenoj temperaturi, stavljajući pozitivan naponski priključak na stranu naparavanja, a negativan na drugu stranu, propušta relativno jaka struja kroz materijal. Pozitivne litijeve ione "vuče" električno polje i oni ulaze u kristal. Prilikom prolaženja kroz silicij p-tipa Li^+ ioni vežu se na akceptorska stanja te ih "neutraliziraju". Tako dobiven sloj je "kompenziran" i ima svojstva kao silicij bez akceptorskih i donorskih stanja. Cijeli kompenzirani sloj može se upotrebljavati kao osjetljiv volumen. Tako se postižu relativno debeli detektorski slojevi. U siliciju oni dosežu do oko 1 cm, a u germaniju i preko 3 cm. Ge(Li) detektori proizvode se na sličan način, ali njima je nađena vrlo dobra zamjena, detektori od germanija velike čistoće koji će se opisati dalje. Si(Li) detektori se mnogo upotrebljavaju, ponajviše za detekciju fotona energije izmedu oko 500 eV i oko 15 keV.



Sl.1. Više vrsta germanijskih detektora. Nacrtani su samo monokristali.

Pored opisanih jednostavnih detektora u upotrebi su varijante, kao pozicijski-osjetljivi poluvodički detektori i drugi.

Otkako je usavršena tehnologija proizvodnje monokristala germanija visoke čistoće, germanijski poluvodički detektori se izrađuju od tog materijala. Kako se s tim materijalom mogu postizati relativno velike debljine osjetljivog sloja (do oko 3 cm), primjenjuju se različiti oblici osjetljivog volumena i kontakata. Tako su poznati planarni, "pravi" koaksijalni, koaksijalni sa zatvorenom bazom, i drugi germanijski detektori (vidi Sl. 1). Oni se ugraduju u kriostate kako bi se mogli hladiti na temperaturu tekućeg dušika (Sl.2.).



Sl.2. Shematski prikaz koaksijalnog germanijskog detektora.

DETEKTORSKA POLUVODIČKA DIODA

U poluvodiču (ograničit ćemo se na monokristale silicija i germanija) se kao pokretni nositelji naboja nalaze elektroni u vodljivom pojasu i šupljine u valentnom pojasu. U idealnom intrinsičnom poluvodiču toplinsko

gibanje uzrokovalo bi prebacivanje nekog broja elektrona iz valentnog u vodljiv pojas, zbog čega bi takav materijal bio vodljiv. Kako je širina zabranjenog pojasa relativno velika (0.95 eV u germaniju i 1.2 eV u siliciju) u odnosu na energiju toplinskog gibanja (kT ≈ 1/40 eV na sobnoj temperaturi), vodljivost čistog intrinsičnog poluvodiča je vrlo mala. Ona jako raste s temperaturom.

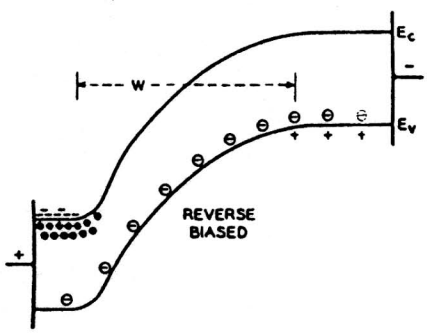
Germanij i silicij su četverovalentni elementi. Osnovna značajka monokristala tih elemenata, kao i drugih poluvodičkih materijala, je da su energije elektrona koji sudjeluju u vođenju struje ograničene na tzv. valentni pojas, koji bi u osnovnom stanju (na apsolutnoj nuli) bio potpuno popunjen, i na tzv. vodljiv pojas, koji bi u osnovnom stanju bio potpuno prazan. Između ova dva pojasa je tzv. zabranjeni pojas. Na apsolutnoj nuli poluvodič ne bi vodio struju, bio bi izolator. Termička uzbuda bi u idealno čistim i pravilnim kristalima uzrokovala malu vodljivost zbog prijelaza malog broja elektrona iz valentnog u vodljiv pojas. Dodavanjem relativno vrlo malih količina atoma iz III skupine (obično bora), odnosno iz V skupine (obično fosfora), jako se promijene svojstva tih materijala. Atomi ovih elemenata se tijekom proizvodnje monokristala ugrađuju kao supstitucijske nečistoće, tj. kao zamjene atomima silicija odn. germanija u kristalnoj rešetki. Odabir tih atoma kojima se ovi kristali "dopiraju" je takav da oni u zabranjenom pojasu stvaraju lokalna elektronska stanja koja bitno mijenjaju vodljiva svojstva poluvodičkog materijala. Dopiranjem borom stvaraju se u poluvodiču "akceptorska" stanja i oni postaju poluvodiči p-tipa. Dopiranjem fosforom stvaraju se u poluvodiču "donorska" stanja i oni postaju poluvodiči n-tipa.

Lokalna akceptorska stanja nalaze se u zabranjenom pojasu malo iznad gornjeg ruba valentnog pojasa. U osnovnom stanju ona nisu popunjena elektronima. Kako je energijska razlika od valentnog pojasa mala, termičkom uzbudom elektroni lako prelaze iz valentnog pojasa u ta lokalna (nepokretna) akceptorska stanja. U valentnom pojasu ostane nepopunjeno mjesto, "elektronska šupljina", u koje može preskočiti elektron iz susjednog atoma. Pod djelovanjem električnog polja elektroni preskaču suprotno smjeru polja, a svakim preskokom šupljina se pomakne u smjeru polja. Stoga ovi poluvodiči imaju svojstva vodiča s pozitivnim pokretnim nositeljima naboja i nazivaju se poluvodičima p-tipa.

Lokalna donorska stanja nalaze se u zabranjenom pojasu malo ispod donjeg ruba vodljivog pojasa. Na apsolutnoj nuli ta su stanja popunjena zbog

petog valentnog elektrona fosfora ili drugog donorskog centra. Termičkom uzbudom, zbog male razlike energije, lako prelaze u vodljiv pojas. Pod djelovanjem električnog polja oni se gibaju kao negativni pokretni nositelji naboja. Stoga ovi poluvodiči imaju svojstva vodiča s negativnim pokretnim nositeljima naboja i nazivaju se poluvodičima n-tipa.

Poluvodička dioda je poluvodič s n - p spojem. Taj se spoj može načiniti na više načina, no oni se proizvode najčešće tako da se poluvodič jednog tipa na svojoj jednoj strani dopiranjem prevede u poluvodič drugog tipa. Tako se dobivaju u samom monokristalnom materijalu izvanredno pouzdani n - p spojevi. Ako se dioda spoji na napon u "vodljivom" smjeru, a to je ako je napon strane p-tipa na višem potencijalu od strane n-tipa, kroz diodu će teći struja.



Sl.3. Stanje u poluvodičkoj diodi koja je spojena u zapornom smjeru.

Nas će prvenstveno zanimati što se dešava kada se dioda spoji sa suprotnom polarizacijom napona, u tzv. zapornom smjeru. Naime, to su uvjeti u kojima rade poluvodički detektori. U trenutku priključivanja u poluvodiču stvori se električno polje. Kako su posmične brzine pokretnih nositelja naboja u promatranim poluvodičima vrlo velike, ovi se naboji gotovo trenutno premještaju te nastaje stanje koje prikazuje Sl. 2. U n-poluvodiču donorska stanja dala su elektrone koji su pod djelovanjem polja povučeni ka pozitivnoj elektrodi, a zaostali su lokalni pozitivni ioni donorskih stanja koji nisu pokretni. Dakle, stvori se nepokretan sloj pozitivnog naboja u n-poluvodiču. Slično tome, u p-poluvodiču pozitivne šupljine, koje su nastale prijelazima elektrona u lokalna akceptorska stanja, pod djelovanjem električnog polja povučene su ka negativnoj elektrodi, a zaostanu vezani negativni naboji (elektroni) u akceptorskim stanjima. Dok u poluvodiču postoji električno polje u dijelovima volumena gdje ima pokretnih nositelja naboja, oni će se pod djelovanjem polja gibati i dalje razdvajati. Tako nastaje stanje u kojemu imamo prostornu raspodjelu vezanih električnih

naboja oko n - p spoja, pa tako i električno polje samo u tom sloju vezanih naboja. Taj se sloj naziva "osiromašeni" sloj. U realnim uvjetima kroz diodu spojenu u zapornom smjeru ipak teče struja, jer se termičkom uzbudom i zbog nepravilnosti u osiromašenom sloju manje ili više stvaraju pokretni nositelji naboja koji se gibaju pod djelovanjem električnog polja u sloju.

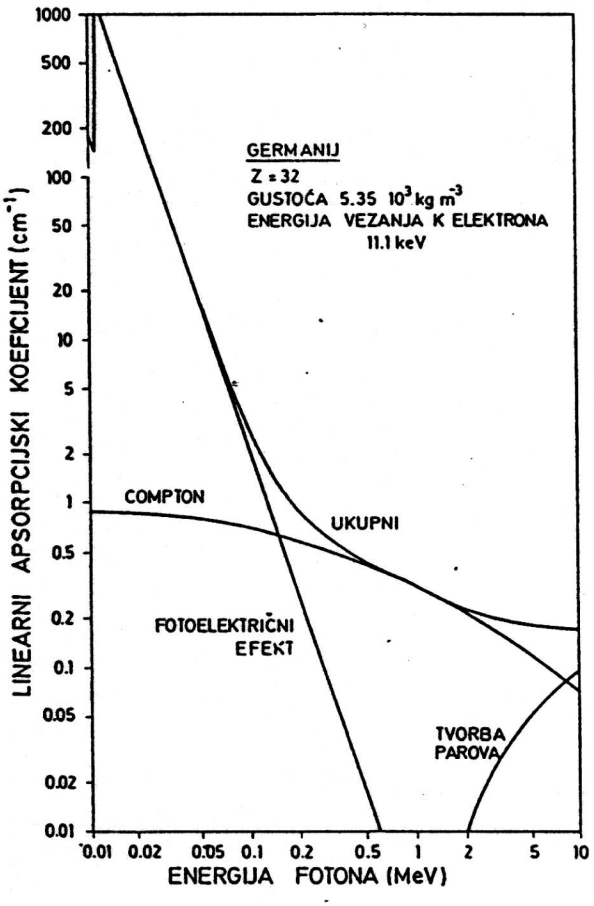
Ako se u osiromašenom sloju n - p diode, koja je spojena u zapornom smjeru, nekim procesom stvore pokretni nositelji naboja, oni će se pod djelovanjem polja brzo gibati. Tako struja kroz diodu u ovim uvjetima izravno odražava proces uzbudivanja elektrona u vodljiv pojas i/ili šupljina u valentni pojas. Poznati su mnogi procesi ovog uzbudivanja, a za nas je važan proces kojim električki nabijene čestice relativno visoke energije prolaze kroz osiromašeni sloj. Brzi elektroni, protoni, muoni, pioni, deuteroni, itd., izbacuju elektrone iz svih stanja (ne samo one iz valentnog i vodljivog pojasa) u stanja više energije, najčešće u stanja u kontinuumu. Nakon niza vrlo brzih sudarnih procesa u osiromašenom sloju (a slično i u drugim dijelovima diode koji sada nisu od interesa), izvjestan broj elektrona nađe se u vodljivom i podjednak broj šupljina u valentnom pojasu. Električno ih polje gotovo trenutno povuče prema pozitivnoj, odn. negativnoj, elektrodi. Tako nastaje električni impuls koji se može mjeriti i tako dobiti podatak o energiji koju je nabijena čestica izgubila u osiromašenom sloju i o trenutku kada je ušla u diodu.

GAMA SPEKTROSKOPIJA POMOĆU GERMANIJSKOG DETEKTORA

U ranijem periodu upotrebljavali su se Ge(Li) detektori, tj. germanijski detektori s intrinsičnim slojem dobivenim vučenjem litija. Posljednjih nekoliko godina razvila se proizvodnja germanijskih monokristala visoke čistoće (engl. high purity, skaćeno HP, što ćemo upotrebljavati kao kraticu), pa se više ne nabavljaju Ge(Li) detektori. Oni su prilično nezgodni zbog toga šo se moraju neprekidno hladiti na temperaturi tekućeg dušika. Zbog velike pokretljivosti litijevih iona u germaniju, intrinsični sloj se na sobnoj temperaturi pokvari i detektor izgubi svojstva. To su u mnogim slučajevima bili veliki gubici - cijene detektora bile su i do $ 40 000 !). HPGe (detektori s germanijem visoke čistoće) su podjednakih cijena, ali velika im je prednost da se mogu "ciklirati", tj. hladiti, pa pustiti da se zagriju na sobnu temperaturu, pa ponovo hladiti itd.).

Procesi koji se dešavaju prilikom apsorpcije fotona visoke energije u HPGe detektoru potpuno su slični onima u scintilacijskom detektoru.

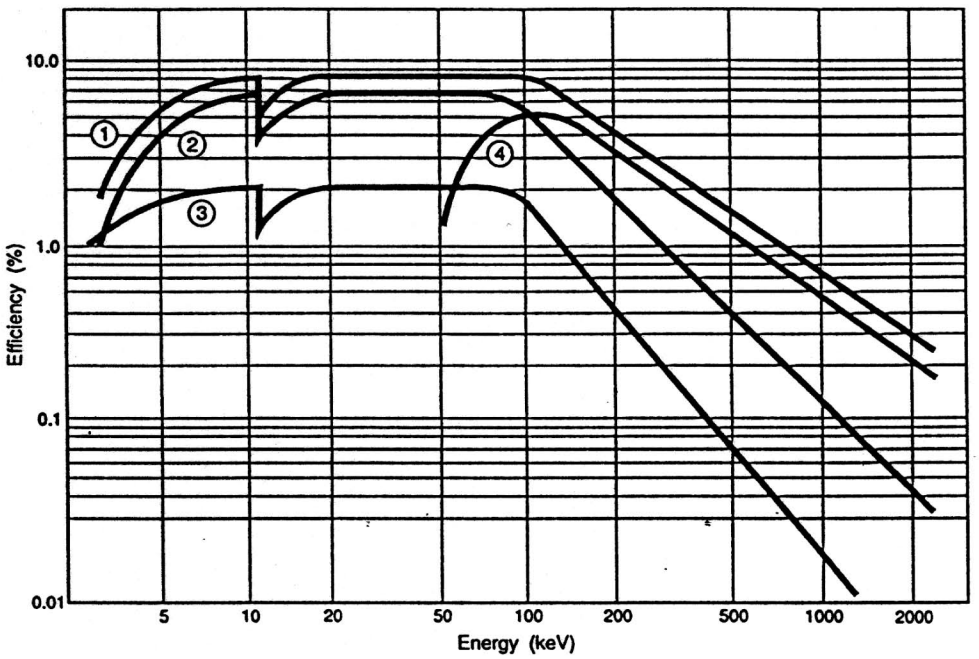
Apsorpcijski koeficijenti (vidi Sl. 3) su različiti zbog druge vrijednosti rednog broja. Z germanija je 32, a u NaI(Tl) imamo Z(Na) = 11 i Z(I) = 53.



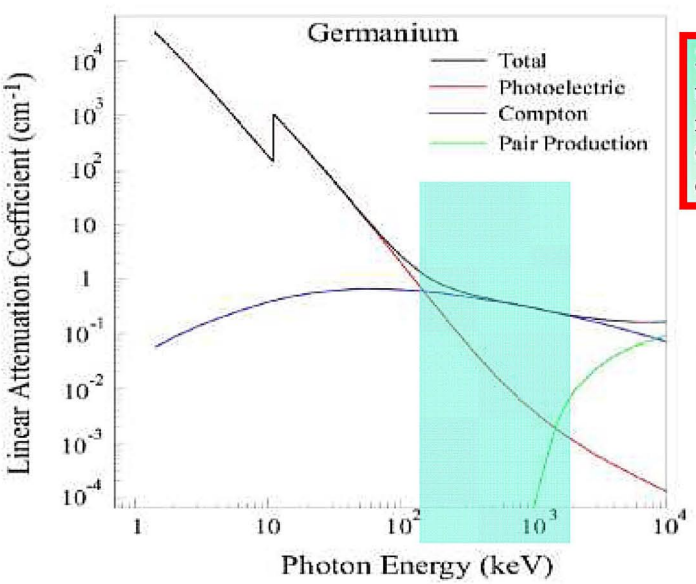
Sl.4. Apsorpcijski koeficijenti za germanij.

Kako se mogu proizvesti HPGe detektori volumena koji je usporediv onome za osrednje NaI(Tl) detektore, tako u pogledu djelotvornosti nema nekih bitnih razlika. Međutim, velika je prednost HPGe detektora u tome što se njima postiže daleko bolje energijsko razlučivanje. To je razlučivanje dovoljno dobro da se pomoću njih mogu razlučiti i najkompleksniji γ spektri.

Kao za NaI(Tl) detektore, djelotvornost HPGe detektora jako ovisi o veličini (i nešto o obliku) osjetljivog volumena. Sl. 4 prikazuje tu ovisnost izraženu kao omjer broja impulsa u vrhu ukupne energije i broja fotona koje izvor zrači u prostorni kut 4π. Za opis djelotvornosti HPGe detektora redovno se upotrebljava njegova relativna djelotvornost prema NaI(Tl) detektoru veličine ϕ78 x 78 mm za γ zračenje ^{60}Co energije 1.332 MeV, za udaljenost izvor - vanjska površina ulazne strane detektora od 250 mm.



Sl.5. Djelotvornost više vrsta HPGe detektora.



300keV-2MeV is typical gamma-ray energy range in nuclear science. Compton scattering is dominant (in Ge)!

Photo effect: $\sim Z^{4-5}$, $E_\gamma^{-3.5}$

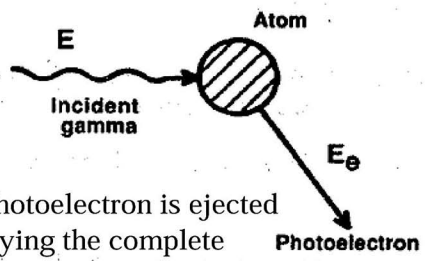
Compton: $\sim Z$, E_γ^{-1}

Pair: $\sim Z^2$, **increases with** E_γ

Sl. 6 Linearni atenuacijski koeficijenti

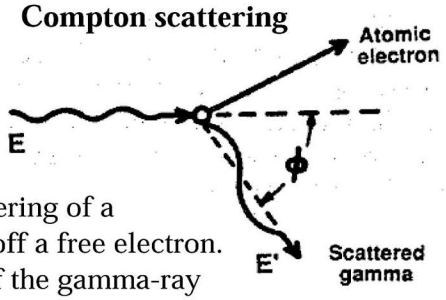
Interakcija gama zračenja s materijom

Photo effect



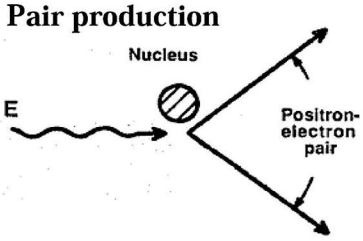
A photoelectron is ejected carrying the complete gamma-ray energy (- binding)

Compton scattering



Elastic scattering of a gamma ray off a free electron. A fraction of the gamma-ray energy is transferred to the Compton electron

Pair production

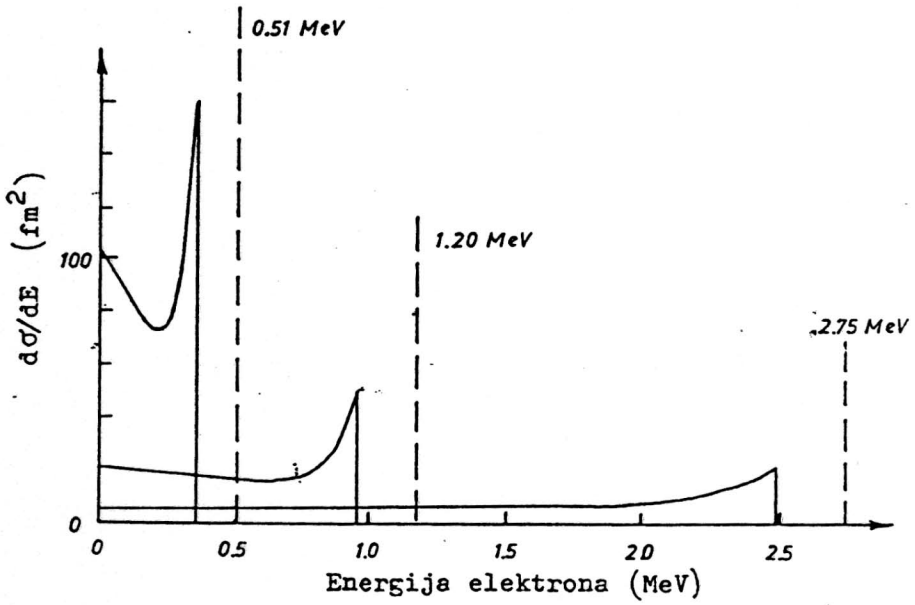


If gamma-ray energy is >> 2 m_0c^2 (electron rest mass 511 keV), a positron-electron can be formed in the strong Coulomb field of a nucleus. This pair carries the gamma-ray energy minus 2 m_0c^2.

Prilikom detekcije γ zračenja opaža se energija, koju ove zrake predaju elektronima u kristalu i njegovoj neposrednoj okolini. Tri procesa su bitna za apsorpciju γ zračenja : fotoelektrični efekt, Comptonov efekt i tvorba parova. U fotoelektričnom efektu foton se apsorbira i izbaci elektron energije $E = h\nu_o - B$, gdje je $h\nu_o$ energija fotona, a B energija vezanja elektrona. Međutim, atom u vrlo kratkom vremenu emitira višak energije u vidu X (rendgenskog) zračenja i drugih fotona, koji se snažno apsorbiraju u kristalu. Zbog toga, prilikom fotoelektričnog efekta u kristalu bude izbačeno više elektrona, a njihova ukupna energija gotovo je jednaka energiji upadne fotona γ zračenja. Prilikom Comptonovog efekta elektron primi samo dio energije upadnog fotona. Priličan dio energije odnosi sekundarni foton. Ako se i on apsorbira u kristalu, ukupna energija svih elektrona opet će biti približno jednaka energiji upadnog fotona γ zračenja. Dakle, takav dogodaj dat će impuls u "vrhu ukupne energije". Međutim, za veće energije sekundarnog Comptonovog fotona, u manjim kristalima nalazimo

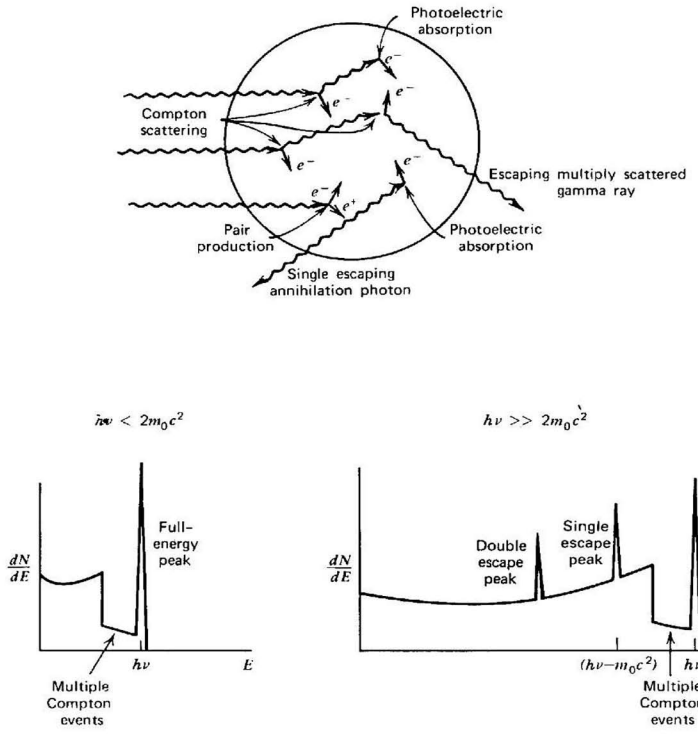
prilično vjerojatnost da on izade iz kristala. Tada je energija koju je upadni foton ostavio u NaI kristalu od nula do maksimalne energije Comptonskog elektrona, koja iznosi $(h\nu_o)^2/(h\nu_o+mc^2/2)$. Sl.5. prikazuje vjerojatnost za Comptonski efekt u području energije elektrona E do E+dE pomoću udarnih presjeka. Također su prikazane pune vrijednosti energije fotona pomoću vertikalnih crtkanih linija. Treba istaći da stvarni mjereni spektri nemaju takav oblik zbog toga, što se sekundarni Comptonski fotoni djelomično apsorbiraju.

U trećem procesu, tvorbi parova, fotoni energije preko $2mc^2$ u polju atomskih jezgri proizvode parove elektron-pozitron. Zajednička kinetička energija jednog para manja je za 1.02 MeV od energije gama zrake jer se ta energija utroši na stvaranje para. Međutim pozitron se u vrlo kratkom vremenu zaustavi u kristalu, anihilira s jednim elektronom, i u tom procesu emitiraju se dva fotona energije 0.51 MeV. Ako ovi budu apsorbirani, opet dobivamo potpunu apsorpciju energije, pa u tom slučaju i ovaj proces daje doprinos vrhu od ukupne energije. Međutim, ako jedan, odnosno oba anihila-

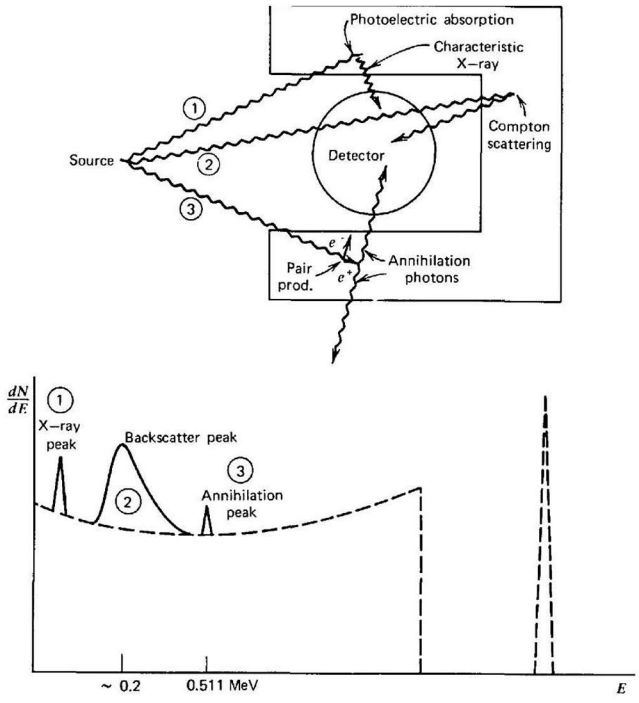


Sl.5. Ovisnost Comptonovog diferencijalnog udarnog presjeka o energiji odbijenog elektrona za tri energije gama zraka

cijska fotona izadu iz kristala, dobit će se "anihilacijski" vrhovi na 0.51 odnosno 1.02 MeV nižoj energiji od položaja vrha od ukupne energije.



Sl. 7 Interakcije gama zračenja u detektoru



Sl. 8 Interakcije gama zračenja sa štitom detektora

RADNI ZADATAK VJEŽBE GERMANIJSKI DETEKTOR

1. Uključiti NIM Bin napajačku kutiju. Ta je kutija zajednička za tri mjerna uređaja, pa se uređaji trebaju dogovorno uključiti i isključiti. Prije uključivanja radnog napona priključiti osciloskop na izlaz pojačala i promatrati šum detektora. Postepeno povećavati napon detektora i promatrati kako se šum detektora smanjuje. Postaviti napon na vrijednost označenu na detektoru.

PAŽNJA. Radni napon HPGe ne smije se premašiti. Također, ako se prilikom podizanja napona ili kasnije u radu primijete nepravilnosti, prekid rada detektora, ili sl., odmah pozvati voditelja praktikuma.

2. Postaviti izvor ^{60}Co pred HPGe detektor. Podesiti (ako treba) pojačanje pojačala da vrh 1332 keV bude oko 1500-tog kanala. Ne mijenjati pojačanje do završetka vježbe. Snimiti spektar γ zračenja ^{60}Co. Nacrtati spektar na računalu (vidi posebne upute).

3. Postaviti izvore ^{133}Ba, ^{152}Eu i ^{137}Cs, te za svaki snimiti amplitudni spektar γ zračenja. Nacrtati spektre na računalu.

4. Proučiti sheme raspada nuklida kojima su izmjereni spektri. Naći koji vrh pripada kojim energijama fotona γ zračenja. Pomoću računala odrediti položaje (kanale) vrhova. Unijeti dobivene podatke u računalo i nacrtati kalibracijski dijagram energija - kanal.

5. Načiniti mjerenje amplitudnog spektra nepoznatog izvora. Nacrtati spektar. Odrediti položaje vrhova. Na osnovi kalibracijskog pravca izračunati energije γ zračenja iz nepoznatog izvora. Pregledati tablice energija γ zračenja i naći o kojem se radioaktivnom izotopu radi.

Dodatna literatura:

(1) W.R. Leo, Techniques for Nuclear and Particle Physics Experiments
Poglavlje 2.7: The Interaction of Photons
Poglavlje 10: Semiconductor Detectors
(2) http://www.nndc.bnl.gov/nudat2/

Table 2. Principal Gamma-Rays from Isotopes with Half-lives > 1.0 h

An energy-ordered list of principal γ rays from nuclei whose parent or grandparent half-life exceeds 1.0 h is given in Table 2. The table includes only the most intense γ rays (up to a maximum of four) from each parent. Intensities are absolute (γ 's per 100 parent decays) unless preceded by a †. E_γ for the strongest associated lines from each decay are listed in order of decreasing intensity.

Energy	Intensity	Parent - Associated γ-rays
1.113		^{110}Ag(249.79 d) - 116.48
1.642 *2*	0.0081	^{193}Pt(4.33 d) - 12.634, 135.50
2.1726 *4*		^{99}Tc(6.01 h) - 140.511, 142.628
6.238 *20*	1.03 *3*	^{181}W(121.2 d) - 136.266, 152.315
6.29 *8*		^{121}Sn(55 y)
6.96 *6*		^{85}Sr(67.63 m) - 151.159, 129.820, 731.812
7.133 *10*	4.95 *15*	^{160}Er(28.58 h) - 59.98
8.4 *2*		^{129}Ba(2.16 h) - 182.32, 1459.1, 202.38
8.41031 *19*	0.158 *18*	^{169}Er(9.40 d) - 109.77987, 118.19018
9.3 *1*		^{227}Ac(21.773 y) - 100, 69.21, 160.26
9.396 *7*	4.90 *15*	^{83}Kr(1.83 h) - 32.1473
~10		^{162}Ho(67.0 m) - 185.005, 1220.0, 282.864
10.6 *5*	0.8	^{137}Ce(9.0 h) - 447.15, 436.59, 433.22
11.242 *7*	1.08 *6*	^{134}Cs(2.903 h) - 127.5021, 138.733
12.327 *6*	1.53 *9*	^{133}Ba(38.9 h) - 632.56
12.4	3.0×10^{-6}	^{45}Ca(162.61 d)
12.598 *15*	0.29 *3*	^{152}Eu(96 m) - 89.8492, 18.265, 77.2583
12.634 *8*	0.658	^{193}Pt(4.33 d) - 135.50, 1.642
12.75 *5*	0.30 *6*	^{228}Ra(5.75 y) - 13.52, 16.2, 15.5
13.271 *18*	0.089 *calc*	^{73}As(80.30 d) - 53.440
13.52 *2*	1.6	^{228}Ra(5.75 y) - 16.2, 12.75, 15.5
14.41300 *15*	9.16 *15*	^{57}Co(271.79 d) - 122.0614, 136.4743, 692.03
15.2 *1*		^{227}Ac(21.773 y) - 100, 69.21, 160.26
15.5 *2*	0.16 *3*	^{228}Ra(5.75 y) - 13.52, 16.2, 12.75
16.2 *1*	0.72 *8*	^{228}Ra(5.75 y) - 13.52, 12.75, 15.5
16.21 *3*	0.159 *20*	^{195}Hg(41.6 h) - 261.75, 560.27, 387.87
16.4 *3*	8.3 *17*	^{72}Zn(46.5 h) - 145.04, 191.96, 103.14
18.265 *7*	1.26 *21*	^{152}Eu(96 m) - 89.8492, 77.2583, 12.598
18.5 *5*	27.2 *6*	^{112}Pd(21.03 h)
19.394 *2*	13.7 *7*	^{171}Lu(8.24 d) - 739.78, 667.404, 75.878
21.542 *3*	0.031	^{151}Sm(90 y)
21.542 *3*	2.85 *12*	^{151}Gd(124 d) - 153.60, 243.282, 174.70
~22		^{132}I(1.387 h) - 98.0
22.510 *8*	>0.050	^{149}Pm(53.08 h) - 285.95, 859.46, 590.88
22.510 *8*	2.32 *6*	^{149}Eu(93.1 d) - 327.526, 277.089, 254.566
23.001 *17*	0.15 *3*	^{255}Fm(20.07 h) - 81.477, 58.477, 80.92
23.1 *1*	0.037 *6*	^{198}Tl(1.87 h) - 636.4, 411.80205, 587.2
23.28 *1*	6.4 *6*	^{126}Sn(1×10^5 y) - 87.57, 64.28, 86.94
23.870 *8*	16.1 *5*	^{119}Sn(293.1 d) - 25.271, 65.66
23.870 *8*	16.1 *5*	^{119}Sb(38.19 h)
23.9331 *2*	20.3 *11*	^{172}Hf(1.87 y) - 125.812, 67.35, 81.7513
24.46 *1*	3.90 *15*	^{101}Pd(8.47 h) - 296.29, 590.44, 269.67
24.5 *2*		^{227}Ac(21.773 y) - 100, 69.21, 160.26
24.889 *21*	0.0389 *12*	^{58}Co(9.04 h)
25.271 *1*	14.3 *3*	^{119}Sn(293.1 d) - 23.870, 65.66
25.646 *4*	14.5 *3*	^{231}Th(25.52 h) - 84.216, 89.944, 81.227
25.646 *4*	12	^{231}U(4.2 d) - 84.216, 217.940, 58.570
25.646 *4*	0.00041 *5*	^{235}Np(396.1 d) - 84.216, 81.227, 58.570
25.65150 *7*	23.2 *10*	^{161}Tb(6.88 d) - 48.91562, 74.56711, 57.196
25.65150 *7*	27 *3*	^{161}Ho(2.48 h) - 103.062, 77.414, 59.235
26.3 *1*	0.00010	^{190}Ir(1.2 h)
26.3448 *2*	2.43 *6*	^{237}U(6.75 d) - 59.5412, 208.00, 164.61
26.3448 *2*	0.221 *7*	^{237}Pu(45.2 d) - 59.5412, 33.1964, 43.423
26.3448 *2*	2.40 *2*	^{241}Am(432.2 y) - 59.5412, 33.1964, 43.423
27.36 *1*	10.3 *4*	^{231}Pa(32760 y) - 300.07, 302.65, 283.69
27.58 *2*	3.5 *4*	^{246}Pu(10.84 d) - 43.81, 223.75, 179.94
27.81 *5*	16.3 *16*	^{129}Te(69.6 m) - 459.60, 487.39, 278.43
28.242 *9*	1.13 *8*	^{166}Dy(81.6 h) - 82.471, 54.2400, 426.00
29.10 *10*	21.6 *15*	^{86}Zr(16.5 h) - 242.80, 612.00, 135.6
29.192 *1*	0.0120 *3*	^{233}U(1.592×10^5 y) - 42.44, 97.134, 54.699
29.374 *20*	15.0 *10*	^{237}Np(2.144×10^6 y) - 86.477, 94.66, 143.249
29.8 *1*	0.056 *6*	^{228}Pa(22 h) - 308.0, 43.3, 316.8
29.9640 *7*	14.1 *4*	^{140}Ba(12.752 d) - 537.261, 162.660, 304.849
30.332 *8*		^{108}Ag(418 y) - 722.907, 433.937, 614.276
30.60 *3*	0.253 *5*	^{201}Tl(72.912 h) - 167.43, 135.34, 32.19
30.6383 *11*	95 *1*	^{28}Mg(20.91 h) - 1342.27, 941.72, 400.56
30.77 *2*		^{93}Zr(1.53×10^6 y)
30.77 *2*	0.0006	^{93}Nb(16.13 y)
30.77 *2*		^{93}Mo(4.0×10^3 y)
30.814 *18*	0.00031	^{189}Os(5.8 h)
30.898 *4*	1.3 *calc*	^{195}Ir(2.5 h) - 98.85, 211.407, 129.70
30.898 *4*	2.28 *15*	^{195}Pt(4.02 d) - 98.85, 129.70, 129.5
30.898 *4*	0.75 *3*	^{195}Au(186.09 d) - 98.85, 129.70, 211.407
31.89 *10*	0.058 *13*	^{134}Ce(3.16 d) - 162.306, 130.414, 300.884
32.1473 *16*	0.0549 *15*	^{83}Kr(1.83 h) - 9.396
32.19 *3*	0.258 *5*	^{201}Tl(72.912 h) - 167.43, 135.34, 30.60
33.1964 *3*	0.0745 *23*	^{237}Pu(45.2 d) - 280.40, 298.89, 320.75
33.1964 *3*	0.126 *3*	^{241}Am(432.2 y) - 59.5412, 26.3448, 43.423
33.568 *10*	0.200 *22*	^{144}Ce(284.893 d) - 133.515, 80.120, 40.98
33.7 *3*		^{196}Tl(1.41 h) - 426.0, 635.5, 695.6
34.0		^{251}Es(33 h) - 177.7, 152.8, 163.8
35.4919 *5*	6.67 *20*	^{125}Te(57.40 d) - 109.276, 144.780
35.4919 *5*	6.68 *13*	^{125}I(59.408 d)
35.7 *3*		^{255}Es(39.8 d) - 269.1, 233.6
36.202 *16*	0.67 *6*	^{189}Ir(13.2 d) - 245.09, 69.537, 59.053
37.052 *2*	39.1 *8*	^{80}Br(4.4205 h) - 48.786
37.09 *3*	1.84 *6*	^{195}Hg(41.6 h) - 261.75, 560.27, 387.87
37.138 *10*	1.9	^{121}Sn(55 y) - 6.29
37.138 *10*	0.94 *10*	^{121}Te(154 d) - 1102.149, 998.291, 909.847
37.9681 *7*	>2.9	^{156}Sm(9.4 h) - 87.4897, 203.818, 165.8452
38.3 *1*	8	^{162}Ho(67.0 m) - 185.005, 1220.0, 282.864
38.661 *2*	0.0105 *2*	^{239}Pu(24110 y) - 51.624, 129.297, 375.045
38.9 *1*	7.0×10^{-5}	^{95}Tc(61 d) - 204.117, 582.082, 835.149
39.51 *3*	0.30	^{193}Hg(11.8 h) - 257.99, 407.63, 573.25
39.578 *4*	7.51 *23*	^{129}I(1.57×10^7 y)
39.578 *4*	7.5 *2*	^{129}Xe(8.88 d) - 196.56
39.578 *4*	2.97 *9*	^{129}Cs(32.06 h) - 371.918, 411.490, 548.945
39.757 *6*	0.07	^{103}Pd(16.991 d) - 357.47, 497.080, 294.978
39.858 *4*	1.091 *25*	^{212}Bi(60.55 m) - 727.330, 1620.50, 785.37
40.09 *5*	30	^{225}Ra(14.9 d)
40.09 *5*	0.104 *9*	^{229}Pa(1.50 d) - 64.70, 75.12, 115.55
40.350 *3*	5.04 *4*	^{186}Re(2.0×10^5 y) - 59.009, 99.362, 87.266
40.8 *1*	30.0 *20*	^{118}Sb(5.00 h) - 1229.68, 253.678, 1050.65
40.84 *3*	25.5 *13*	^{62}Zn(9.186 h) - 596.56, 548.35, 507.60
40.928 *4*	1.147 *15*	^{164}Yb(75.8 m) - 675.41, 390.6, 446.74
40.98 *10*	0.257 *16*	^{144}Ce(284.893 d) - 133.515, 80.120, 33.568
41		^{239}Cm(2.9 h) - 187.1, 146.4
41	0.006	^{243}Bk(4.5 h) - 187.1, 536, 146.4
41.4 *2*	9.2 *9*	^{184}Hf(4.12 h) - 139.1, 344.9, 181.0
41.53 *6*		^{248}Bk(23.7 h) - 592.2, 550.7, 43.38
41.53 *6*	0.011	^{252}Fm(25.39 h) - 96.28
41.79 *5*	~0.050	^{253}Es(20.47 d) - 389.11, 387.1, 42.98
41.8 *2*	0.76 *7*	^{243}Pu(4.956 h) - 84.0, 381.7, 67
41.86 *2*	0.00513 *23*	^{191}Os(15.4 d) - 129.421, 82.407, 47.05
41.938 *20*	0.045	^{102}Rh(2.9 y) - 475.10, 631.28, 697.49
41.95 *3*	0.350 *17*	^{245}Cm(8500 y) - 174.94, 132.99, 189.82
42.10 *2*	7.0 *4*	^{100}Pd(3.63 d) - 84.02, 74.78, 126.05
42.13 *1*		^{242}Am(16.02 h) - 44.54
42.13 *1*	0.014	^{246}Cf(35.7 h) - 96, 146
42.4	†6.7	^{178}Yb(74 m) - 390.8, 348.4
42.44 *2*	0.044 *3*	^{229}Pa(1.50 d) - 40.09, 64.70, 75.12
42.44 *2*	0.0862 *13*	^{233}U(1.592×10^5 y) - 97.134, 54.699, 29.192
42.723 *5*	0.0130 *10*	^{254}Fm(3.240 h) - 99.163, 154.35
42.824 *8*	0.09 *1*	^{240}Am(50.8 h) - 987.76, 888.80, 98.860

Energy	Intensity	Parent - Associated γ-rays
42.824 *8*	0.0240 *24*	^{244}Cm(18.10 y) - 98.860, 152.63, 554.60
42.852 *5*	0.014 *calc*	^{250}Cf(13.08 y)
42.88 *2*	0.06 *calc*	^{245}Am(2.05 h) - 252.80, 240.86, 295.72
42.98 *3*	~0.009	^{253}Es(20.47 d) - 41.79, 389.11, 387.1
43.119 *1*	5	^{194}Os(6.0 y) - 82.339
43.3 *1*	0.048 *6*	^{228}Pa(22 h) - 308.0, 29.8, 316.8
43.38 *3*	0.007 *calc*	^{248}Bk(23.7 h) - 592.2, 550.7
43.38 *3*	0.0148 *9*	^{252}Cf(2.645 y) - 100.4, 155.0
43.423 *10*	~0.0039	^{237}Pu(45.2 d) - 280.40, 298.89, 320.75
43.423 *10*	0.073 *8*	^{241}Am(432.2 y) - 59.5412, 26.3448, 33.1964
43.498 *1*	0.0395 *8*	^{238}Pu(87.7 y) - 99.853, 152.720, 766.38
43.533 *1*	5.93 *13*	^{243}Am(7370 y) - 74.664, 117.84, 86.71
43.81 *3*	28.7 *8*	^{66}Ge(2.26 h) - 381.85, 272.97, 108.90
43.81 *2*	25.0 *13*	^{246}Pu(10.84 d) - 223.75, 179.94, 27.58
44.08 *3*	0.0325 *12*	^{242}Cm(162.8 d) - 101.90, 157.42, 561.11
44.10 *7*	1.05 *5*	^{240}U(14.1 h) - 189.7, 66.5, 169.2
44.54 *2*		^{242}Am(16.02 h)
44.54 *2*		^{246}Cm(4730 y)
44.60 *5*	0.558 *20*	^{220}Fr(27.4 s) - 413.0, 234.5, 178.4
44.63 *10*	0.011	^{236}Np(22.5 h) - 642.35, 687.59, 538.11
44.63 *10*	0.0167 *6*	^{236}Np(1.54×10^{5} y) - 160.308, 104.234, 45.242
44.697 *2*	12.4 *3*	^{174}Lu(142 d) - 272.918, 992.128, 176.645
44.915 *13*	0.036	^{242}Pu(3.733×10^{5} y) - 103.50, 158.80
45.242 *3*	0.13 *3*	^{236}Np(1.54×10^{5} y) - 160.308, 104.234, 104.1
45.242 *3*	0.0450 *8*	^{240}Pu(6563 y) - 104.234, 160.308, 212.46
45.2972 *13*	1.326 *25*	^{155}Eu(4.7611 y) - 86.545, 105.305, 60.0086
45.48 *2*	19.5 *20*	^{76}Kr(14.8 h) - 315.7, 270.2, 406.5
45.5 *2*	2.9 *10*	^{158}Er(2.29 h) - 71.91, 386.84, 248.58
45.85 *9*	58	^{72}Se(8.40 d)
46.3 *2*	†~0.12	^{253}Cf(17.81 d)
46.4839 *4*	7.97 *12*	^{183}Re(70.0 d) - 162.3219, 291.7238, 208.8057
46.539 *1*	4.25 *4*	^{210}Pb(22.3 y)
47.05 *3*	0.00270 *20*	^{191}Os(15.4 d) - 129.421, 82.407, 41.86
47.155 *6*	16.9 *4*	^{165}Tm(30.06 h) - 242.917, 297.369, 806.372
47.574 *9*	0.066 *calc*	^{236}Pu(2.858 y) - 108.96, 166.0, 643.5
48.63 *5*	0.00013	^{242}Am(141 y) - 49.367, 86.68, 109.69
48.786 *5*	0.317 *9*	^{80}Br(4.4205 h) - 37.052
48.91562 *14*	17.0 *4*	^{161}Tb(6.88 d) - 25.65150, 74.56711, 57.196
49.10 *10*	0.005 *1*	^{239}Am(11.9 h) - 277.599, 228.183, 226.378
49.369 *9*	0.078 *calc*	^{236}U(2.342×10^{7} y) - 112.75
49.367 *4*	0.19	^{242}Am(141 y) - 86.68, 109.69, 163.24
49.55 *6*	0.064 *8*	^{238}U(4.468×10^{9} y) - 113.5
49.630 *10*	74	^{156}Tb(24.4 h) - 0
49.72 *1*	15.0 *3*	^{132}Te(3.204 d) - 228.16, 116.30, 111.76
49.82680 *16*	0.360 *9*	^{199}Au(3.139 d) - 158.37947, 208.20597
49.89 *7*	2.7 *9*	^{223}Fr(21.8 m) - 50.13, 79.72, 234.81
50.13 *1*	36.0 *21*	^{223}Fr(21.8 m) - 79.72, 234.81, 49.89
50.13 *1*	8.0 *4*	^{227}Th(18.72 d) - 235.971, 256.25, 329.851
51.624 *1*	0.0271 *5*	^{239}Pu(24110 y) - 38.661, 129.297, 375.045
51.72 *4*	0.026 *3*	^{230}Pa(17.4 d) - 951.95, 918.48, 454.95
52.33 *5*	0.55 *5*	^{252}Es(471.7 d) - 924.12, 800.01, 785.09
53.10 *2*	1.09 *3*	^{197}Pt(95.41 m) - 346.5
53.20 *2*	0.123 *2*	^{234}U(2.455×10^{5} y) - 120.90, 454.95, 508.20
53.29 *3*	0.0092 *7*	^{195}Hg(41.6 h) - 261.75, 560.27, 387.87
53.440 *9*	10.34 *calc*	^{73}As(80.30 d) - 13.271
54.2400 *7*	0.81 *12*	^{166}Dy(81.6 h) - 82.471, 28.242, 426.00
54.548 *9*	3.7 *3*	^{157}Eu(15.18 h) - 63.929, 410.723, 370.509
54.548 *9*	0.0084 *8*	^{157}Tb(71 y)
54.699 *1*	0.0182 *3*	^{233}U(1.592×10^{5} y) - 42.44, 97.134, 29.192
54.968 *4*	6.81 *17*	^{125}Xe(16.9 h) - 188.418, 243.378, 453.796
55.506 *8*	5.8 *3*	^{182}Os(22.10 h) - 510.056, 180.230, 263.285
57.0723 *12*	4.6 *8*	^{167}Tm(9.25 d) - 207.801, 531.54, 264.9
57.196 *1*	1.79 *5*	^{161}Tb(6.88 d) - 25.65150, 48.91562, 74.56711
57.356 *7*	11.7 *3*	^{143}Ce(33.039 h) - 293.266, 664.571, 721.929
57.555 *17*	48.0 *9*	^{180}Hf(5.5 h) - 332.277, 443.09, 215.256
57.61 *2*	0.50 *5*	^{127}Te(109 d) - 88.26
57.766 *5*	0.1999 *18*	^{232}U(68.9 y) - 129.065, 270.245, 328.000
57.8 *1*	4.4	^{162}Ho(67.0 m) - 185.005, 1220.0, 282.864
58.00 *1*	2.15 *10*	^{159}Gd(18.479 h) - 363.55, 348.16, 226.01
58.00 *1*	2.22 *13*	^{159}Dy(144.4 d) - 348.16, 79.45, 290.27
58.39 *3*	19.2 *4*	^{133}Ce(4.9 h) - 477.22, 510.36, 130.803
58.477 *15*	0.67	^{255}Fm(20.07 h) - 81.477, 80.92, 23.001
58.570 *3*	0.44	^{231}U(4.2 d) - 25.646, 84.216, 217.940
58.570 *3*	1.6×10^{-5} *5*	^{235}Np(396.1 d) - 25.646, 84.216, 81.227
58.603 *7*	1.98	^{60}Fe(1.5×10^{6} y)
59.009 *4*	17.83 *18*	^{186}Re(2.0×10^{5} y) - 40.350, 99.362, 87.266
59.053 *15*	1.20 *12*	^{189}Ir(13.2 d) - 245.09, 69.537, 36.202
59.08 *2*	0.0288 *11*	^{174}Lu(142 d) - 272.918, 992.128, 176.645
59.235 *2*	0.60 *5*	^{161}Ho(2.48 h) - 25.65150, 103.062, 77.414
59.5412 *2*	34.5 *8*	^{237}U(6.75 d) - 208.00, 26.3448, 164.61
59.5412 *2*	3.28 *10*	^{237}Pu(45.2 d) - 26.3448, 33.1964, 43.423
59.5412 *2*	35.9 *4*	^{241}Am(432.2 y) - 26.3448, 33.1964, 43.423
59.97 *3*	2.30 *13*	^{200}Pt(12.5 h) - 76.21, 135.90, 243.71
59.97 *3*	2.9 *6*	^{200}Au(18.7 h) - 332.82, 146.07, 133.23
59.98 *3*	0.0689 *19*	^{160}Ho(5.02 h) - 728.18, 879.383, 962.317
59.98 *3*	0.069 *4*	^{160}Er(28.58 h) - 7.133
60.0086 *10*	1.13 *5*	^{155}Eu(4.7611 y) - 86.545, 105.305, 45.2972
60.0 *1*	5.7 *12*	^{185}Ir(14.4 h) - 254.4, 1828.8, 97.4
60.82 *7*	0.5 *3*	^{157}Dy(8.14 h) - 326.16, 182.20, 83.01
61.25 *5*	12	^{145}Sm(340 d) - 492.31, 431.4
61.29	†152	^{176}W(2.5 h) - 100.20, 94.86, 84.14
61.46 *3*	6.2 *4*	^{195}Hg(9.9 h) - 779.80, 585.13, 180.11
61.5 *3*	0.56 *22*	^{251}Cf(898 y) - 176.6, 227.0, 285.0
61.6 *1*	1.45 *8*	^{257}Fm(100.5 d) - 241.0, 179.4, 104.4
62.2		^{148}Pm(41.29 d) - 75.7
62.47 *5*	0.16	^{253}Fm(3.00 d) - 271.8, 144.99, 405
62.6 *2*	0.9 *4*	^{173}Tm(8.24 h) - 398.9, 461.4
63.0 *1*	†40 *2*	^{230}Ra(93 m) - 72.0, 202.8, 469.7
63.0 *20*	2.0 *2*	^{254}Es(275.7 d) - 316, 304, 385
63.12077 *9*	44.2 *6*	^{169}Yb(32.026 d) - 197.95788, 177.21402, 109.77987
63.29 *2*	4.8 *5*	^{234}Th(24.10 d) - 92.38, 92.80, 112.81
63.582 *3*	0.109 *16*	^{188}W(69.4 d) - 290.669, 227.083, 207.849
63.83 *2*	0.263 *13*	^{232}Th(1.405×10^{10} y) - 140.86
63.929 *8*	23.0 *23*	^{157}Eu(15.18 h) - 410.723, 370.509, 54.548
64.28 *1*	9.6 *11*	^{126}Sn(1×10^{5} y) - 87.57, 86.94, 23.28
64.42 *5*	0.274 *23*	^{252}Es(471.7 d) - 924.12, 800.01, 785.09
64.70 *5*	0.045 *4*	^{229}Pa(1.50 d) - 40.09, 75.12, 115.55
65.548 *13*	0.259 *9*	^{121}Te(16.78 d) - 573.139, 507.591, 470.472
65.66 *1*	0.0198 *6*	^{119}Sn(293.1 d) - 23.870, 25.271
66.5 *1*	0.154 *15*	^{240}U(14.1 h) - 44.10, 189.7, 169.2
66.720 *10*	0.14	^{171}Tm(1.92 y)
67 *1*	0.23 *11*	^{243}Pu(4.956 h) - 84.0, 41.8, 381.7
67.03 *1*	78 *9*	^{73}Se(7.15 h) - 360.80, 865.09, 510
67.058 *3*	7.25 *15*	^{174}Lu(142 d) - 272.918, 992.128, 176.645
67.22 *2*	0.553 *15*	^{145}Pm(17.7 y) - 72.500
67.35 *10*	5.3 *6*	^{172}Hf(1.87 y) - 23.9331, 125.812, 81.7513
67.412 *3*	85	^{61}Co(1.650 h) - 908.631, 841.211
67.412 *3*	4.23 *13*	^{61}Cu(3.333 h) - 282.956, 656.008, 1185.234
67.67 *1*	0.11 *3*	^{226}Ac(29.37 h) - 253.73, 186.05
67.67 *1*	0.377 *21*	^{230}Th(7.538×10^{4} y) - 143.87, 253.73, 186.05
67.74970 *10*	41.2 *6*	^{182}Ta(114.43 d) - 1121.3007, 1221.4066, 1189.0503
67.74970 *10*	38.2 *13*	^{182}Re(12.7 h) - 1121.3007, 1221.4066, 1189.0503
67.74970 *10*	22.2 *22*	^{182}Re(64.0 h) - 229.3207, 1121.3007, 1221.4066
67.875	94.4 *14*	^{44}Ti(63 y) - 78.337, 146.212
68.107 *4*	3.29 *7*	^{172}Er(49.3 h) - 610.062, 407.338, 446.025
68.573 *14*	0.42 *3*	^{211}Rn(14.6 h) - 167.90, 236.48
69.21 *4*	0.0065 *6*	^{227}Ac(21.773 y) - 100, 160.26, 147.48
69.229 *3*	11.6 *3*	^{163}Tm(1.810 h) - 104.320, 241.305, 1434.45
69.537 *15*	3.5 *4*	^{189}Ir(13.2 d) - 245.09, 59.053, 36.202
69.67300 *13*	4.85 *6*	^{153}Sm(46.284 h) - 103.18012, 97.43100, 75.42213
69.67300 *13*	2.419 *23*	^{153}Gd(240.4 d) - 97.43100, 103.18012, 83.36717
69.70 *5*	5.9 *7*	^{173}Ta(3.14 h) - 172.2, 90.3, 160.4
70.44 *5*	2.14 *15*	^{111}Pd(5.5 h) - 172.18
71.1 *1*	†8.0 *5*	^{258}Md(51.5 d) - 367.8, 447.9, 276.8
71.30 *5*	0.043 *4*	^{254}Es(39.3 h) - 648.80, 693.79, 688.68
71.91 *1*	9.99 *13*	^{158}Er(2.29 h) - 386.84, 248.58, 45.5
72.001 *4*	11.14 *22*	^{187}W(23.72 h) - 685.774, 479.531, 134.243
72.0 *1*	†113 *6*	^{230}Ra(93 m) - 63.0, 202.8, 469.7
72.20 *4*	0.56 *13*	^{226}Ac(29.37 h) - 253.73, 186.05, 67.67
72.20 *4*	0.60 *4*	^{230}U(20.8 d) - 154.23, 230.37, 158.18
72.500 *4*	0.261 *14*	^{145}Pr(5.984 h) - 748.278, 675.795, 978.969
72.500 *4*	1.9	^{145}Pm(17.7 y) - 67.22
72.70 *7*	0.59 *3*	^{210}Rn(2.4 h) - 458.25, 648.70, 570.95
73.042 *11*	3.2 *5*	^{193}Os(30.11 h) - 138.938, 460.547, 557.429

Energy	Intensity	Parent - Associated γ-rays
73.174 *12*	38 *4*	^{183}Hf(1.067 h) - 783.754, 459.069, 397.859
74.379 *9*	0.07	^{191}Os(13.10 h)
74.56711 *22*	10.2 *2*	^{161}Tb(6.88 d) - 25.65150, 48.91562, 57.196
74.664 *1*	68	^{243}Am(7370 y) - 43.533, 117.84, 86.71
74.78 *2*	48 *3*	^{100}Pd(3.63 d) - 84.02, 126.05, 42.10
75.12 *5*	0.035 *3*	^{229}Pa(1.50 d) - 40.09, 64.70, 115.55
75.42213 *23*	0.349 *15*	^{153}Sm(46.284 h) - 103.18012, 69.67300, 97.43100
75.7 *1*	1.11 *3*	^{148}Pm(41.29 d) - 62.2
75.878 *5*	6.08 *8*	^{171}Lu(8.24 d) - 739.78, 19.394, 667.404
76.073 *10*	1.17×10^{-8} *20*	^{147}Pm(2.6234 y) - 121.220, 197.299
76.21 *4*	13	^{200}Pt(12.5 h) - 135.90, 243.71, 59.97
76.471 *1*	5.9 *3*	^{174}Lu(3.31 y) - 1241.847, 1318.296, 1065.04
76.471 *1*	0.0638 *16*	^{174}Lu(142 d) - 272.918, 992.128, 176.645
76.9 *5*	15.8 *23*	^{133}Ce(97 m) - 97.261, 557.7, 376.7
77.10 *10*	2.11×10^{-5} *7*	^{241}Pu(14.35 y) - 148.567, 103.680, 159.955
77.2583 *6*	0.69 *5*	^{152}Eu(96 m) - 89.8492, 18.265, 12.598
77.351 *2*	0.0111 *16*	^{197}Pt(95.41 m) - 346.5, 53.10
77.351 *2*	17.0 *16*	^{197}Pt(19.8915 h) - 191.437, 268.78
77.351 *2*	0.029 *4*	^{197}Hg(23.8 h) - 279.01, 130.2, 201.6
77.351 *2*	18.7 *4*	^{197}Hg(64.14 h) - 191.437, 268.78
77.414 *1*	1.91 *16*	^{161}Ho(2.48 h) - 25.65150, 103.062, 59.235
78.337	96	^{44}Ti(63 y) - 67.875, 146.212
78.63 *3*	0.00347 *17*	^{170}Tm(128.6 d)
78.63 *3*	11.87 *17*	^{173}Lu(1.37 y) - 272.105, 100.724, 171.393
78.7426 *6*	6.5 *5*	^{172}Tm(63.6 h) - 1093.657, 1387.093, 1529.72
79.138 *3*	6.63 *5*	^{108}Ag(418 y) - 722.907, 433.937, 614.276
79.45 *2*	0.00048 *13*	^{159}Dy(144.4 d) - 58.00, 348.16, 290.27
79.5104 *14*	11.6 *4*	^{158}Tb(180 y) - 944.09, 962.06, 181.930
79.6139 *26*	0.27 *3*	^{133}Xe(5.243 d) - 80.9971, 160.613, 302.853
79.72 *1*	9.1 *4*	^{223}Fr(21.8 m) - 50.13, 234.81, 49.89
80.120 *5*	1.36 *6*	^{144}Ce(284.893 d) - 133.515, 40.98, 33.568
80.185 *2*	2.62 *3*	^{131}I(8.02070 d) - 364.489, 636.989, 284.305
80.236 *7*	0.0047	^{193}Ir(10.53 d)
80.574 *8*	6.71 *8*	^{166}Ho(26.83 h) - 1379.40, 1581.89, 1662.48
80.723 *2*	11.10 *22*	^{153}Dy(6.4 h) - 213.754, 99.659, 254.259
80.92 *5*	0.27	^{255}Fm(20.07 h) - 81.477, 58.477, 23.001
80.9971 *14*	38.0 *7*	^{133}Xe(5.243 d) - 79.6139, 160.613, 302.853
80.9971 *14*	34.06 *27*	^{133}Ba(10.51 y) - 356.017, 302.853, 383.851
81.227 *3*	0.89 *5*	^{231}Th(25.52 h) - 25.646, 84.216, 89.944
81.227 *3*	3.9×10^{-5} *3*	^{235}Np(396.1 d) - 25.646, 84.216, 58.570
81.477 *20*	0.81	^{255}Fm(20.07 h) - 58.477, 80.92, 23.001
81.5 *1*	6 *1*	^{175}Ta(10.5 h) - 207.4, 348.5, 266.9
81.7513 *5*	4.52 *23*	^{172}Hf(1.87 y) - 23.9331, 125.812, 67.35
81.788 *15*	0.0478 *14*	^{121}Te(154 d) - 1102.149, 37.138, 998.291
81.99 *2*	0.0034 *23*	^{154}Eu(8.593 y) - 184.810
82.13 *2*	0.0070 *14*	^{176}Lu(3.635 h)
82.29 *2*		^{166}Yb(56.7 h)
82.339 *2*	>0.011	^{194}Os(6.0 y) - 43.119
82.407 *14*	0.0255 *20*	^{191}Os(15.4 d) - 129.421, 41.86, 47.05
82.407 *14*	4.9 *5*	^{191}Pt(2.802 d) - 538.90, 409.44, 359.90
82.471 *2*	14	^{166}Dy(81.6 h) - 28.242, 54.2400, 426.00
82.802 *22*	0.012	^{210}At(8.1 h) - 106, 167, 141.2
83.01 *4*	0.62 *18*	^{157}Dy(8.14 h) - 326.16, 182.20, 60.82
83.28 *4*	0.00539 *20*	^{184}Re(169 d) - 252.848, 216.548, 920.932
83.36717 *21*	0.196 *4*	^{153}Gd(240.4 d) - 97.43100, 103.18012, 69.67300
84.0 *2*	23	^{243}Pu(4.956 h) - 41.8, 381.7, 67
84.0 *2*	~40	^{247}Bk(1380 y) - 265
84.02 *2*	52 *3*	^{100}Pd(3.63 d) - 74.78, 126.05, 42.10
84.14	†81	^{176}W(2.5 h) - 100.20, 94.86, 61.29
84.216 *3*	6.6 *3*	^{231}Th(25.52 h) - 25.646, 89.944, 81.227
84.216 *3*	7	^{231}U(4.2 d) - 25.646, 217.940, 58.570
84.216 *3*	0.000179 *10*	^{235}Np(396.1 d) - 25.646, 81.227, 58.570
84.25474 *8*	2.5	^{170}Tm(128.6 d) - 78.63
84.25474 *8*	9.0 *5*	^{170}Lu(2.012 d) - 1280.25, 2041.88, 985.10
84.373 *3*	1.52 *6*	^{224}Ac(2.78 h) - 156.82, 140.7, 144.44
84.373 *3*	1.22 *2*	^{228}Th(1.9131 y) - 215.983, 131.613, 166.410
86.25 *4*	1.33 *10*	^{229}Th(7340 y) - 193.509, 210.853, 86.40
86.40 *5*	2.57 *10*	^{229}Th(7340 y) - 193.509, 210.853, 86.25
86.477 *10*	12.4 *4*	^{237}Np(2.144×10^{6} y) - 29.374, 94.66, 143.249
86.545 *3*	30.7 *6*	^{155}Eu(4.7611 y) - 105.305, 45.2972, 60.0086
86.545 *3*	32.0 *6*	^{155}Tb(5.32 d) - 105.305, 180.103, 262.322
86.68 *4*	0.037	^{242}Am(141 y) - 49.367, 109.69, 163.24
86.71 *2*	0.338 *7*	^{243}Am(7370 y) - 74.664, 43.533, 117.84
86.814 *3*	1.97 *12*	^{233}Pa(26.967 d) - 312.17, 300.34, 340.81
86.94 *1*	8.9 *9*	^{126}Sn(1×10^{5} y) - 87.57, 64.28, 23.28
87.266 *4*	0.053 *18*	^{186}Re(2.0×10^{5} y) - 59.009, 40.350, 99.362
87.4 *1*		^{243}Bk(4.5 h) - 187.1, 536, 146.4
87.4897 *3*	24 *7*	^{156}Sm(9.4 h) - 203.818, 165.8452, 37.9681
87.57 *1*	37	^{126}Sn(1×10^{5} y) - 64.28, 86.94, 23.28
87.73 *1*	1.6×10^{-5} *10*	^{168}Tm(93.1 d) - 198.241, 815.990, 447.515
87.8671 *11*	0.202 *11*	^{77}As(38.83 h) - 238.9963, 520.639, 249.7862
88.04 *5*	3.6 *3*	^{109}Pd(13.7012 h) - 311.4, 647.3, 781.4
88.04 *5*	3.61 *10*	^{109}Cd(462.6 d)
88.26 *8*	0.084 *3*	^{127}Te(109 d)
88.34 *3*	13.3 *13*	^{176}Lu(3.78×10^{10} y) - 306.78, 201.83, 400.99
88.34 *3*	8.9 *4*	^{176}Lu(3.635 h) - 1159.28, 1061.61, 201.83
88.34 *3*	12	^{176}Ta(8.09 h) - 1159.28, 1224.93, 201.83
88.4		^{156}Tb(5.3 h)
88.46 *3*	0.092 *3*	^{123}Te(119.7 d) - 158.97, 247.5
88.867 *1*	64.4 *10*	^{178}Ta(2.36 h) - 426.383, 325.562, 213.440
88.9667 *14*	8.4 *9*	^{156}Eu(15.19 d) - 811.79, 1230.68, 1153.67
88.9667 *14*	17.7 *19*	^{156}Tb(5.35 d) - 534.318, 199.2132, 1222.36
89.36 *1*	2.40 *18*	^{175}Hf(70 d) - 343.40, 433.0, 229.6
89.65 *7*	0.0006	^{99}Tc(2.111×10^{5} y)
89.65 *7*		^{99}Tc(6.01 h) - 322.41, 232.72
89.65 *7*	33.4 *15*	^{99}Rh(16.1 d) - 528.24, 353.05, 322.41
89.8492 *7*	70	^{152}Eu(96 m) - 18.265, 77.2583, 12.598
89.9 *2*	79.5 *16*	^{120}Sb(5.76 d) - 1171.3, 1023.1, 197.3
89.944 *5*	0.94 *6*	^{231}Th(25.52 h) - 25.646, 84.216, 81.227
90.3 *1*	5.0 *5*	^{173}Ta(3.14 h) - 172.2, 69.70, 160.4
90.596 *7*	0.563 *19*	^{122}Xe(20.1 h) - 350.065, 148.612, 416.633
91.00 *2*	16.0 *12*	^{174}Ta(1.05 h) - 206.50, 1205.92, 1228.33
91.105 *2*	28	^{147}Nd(10.98 d) - 531.016, 319.411, 439.895
91.266 *5*	7.0 *1*	^{67}Cu(61.83 h) - 184.577, 93.311, 300.219
91.40 *2*	7	^{164}Tm(2.0 m) - 1154.66, 768.91, 208.08
92.38 *1*	2.81 *15*	^{234}Th(24.10 d) - 63.29, 92.80, 112.81
92.80 *2*	2.77 *15*	^{234}Th(24.10 d) - 63.29, 92.38, 112.81
93.124 *20*	4.8 *3*	^{107}Cd(6.50 h) - 828.93, 796.462, 324.81
93.180 *1*	6.0 *15*	^{178}Lu(28.4 m) - 1340.8, 1310.05, 1269.34
93.311 *5*	16.1 *2*	^{67}Cu(61.83 h) - 184.577, 91.266, 300.219
93.311 *5*	39.2 *10*	^{67}Ga(3.2612 d) - 184.577, 300.219, 393.529
93.326 *2*	4.5	^{180}Ta(8.152 h)
93.88 *3*	33.1 *14*	^{116}Te(2.49 h) - 628.66, 103.01, 637.9
94.33 *3*	7.6 *6*	^{189}Pt(10.87 h) - 721.41, 568.84, 243.37
94.66 *5*	0.6 *2*	^{237}Np(2.144×10^{6} y) - 29.374, 86.477, 143.249
94.700 *3*	3.58 *18*	^{165}Dy(2.334 h) - 361.68, 633.415, 715.328
94.86	†153	^{176}W(2.5 h) - 100.20, 61.29, 84.14
96 *3*	0.012	^{246}Cf(35.7 h) - 42.13, 146
96.28 *6*	0.036 *3*	^{252}Fm(25.39 h) - 41.53
96.5 *1*	0.31	^{97}Tc(90.1 d)
96.75 *2*	0.116 *6*	^{111}Ag(7.45 d) - 342.13, 245.395, 620.26
97.134 *1*	0.020 *3*	^{233}U(1.592×10^{5} y) - 42.44, 54.699, 29.192
97.1949 *17*	69.3 *23*	^{198}Au(2.27 d) - 214.841, 180.31, 204.10
97.261 *10*	45 *7*	^{133}Ce(97 m) - 76.9, 557.7, 376.7
97.4 *2*	4.2 *8*	^{185}Ir(14.4 h) - 254.4, 1828.8, 60.0
97.43100 *21*	0.846 *12*	^{153}Sm(46.284 h) - 103.18012, 69.67300, 75.42213
97.43100 *21*	29	^{153}Gd(240.4 d) - 103.18012, 69.67300, 83.36717
98.0 *10*	3.72 *9*	^{132}I(1.387 h) - 22
98.8 *1*	0.0007	^{102}Rh(2.9 y) - 475.10, 631.28, 697.49
98.85 *5*	10 *calc*	^{195}Ir(2.5 h) - 211.407, 30.898, 129.70
98.85 *5*	10 *calc*	^{195}Ir(3.8 h) - 684.88, 432.86, 319.90
98.85 *5*	11.4 *6*	^{195}Pt(4.02 d) - 129.70, 30.898, 129.5
98.85 *5*	10.9 *5*	^{195}Au(186.09 d) - 129.70, 30.898, 211.407
98.860 *13*	1.5 *2*	^{240}Am(50.8 h) - 987.76, 888.80, 42.824
98.860 *13*	0.00162 *15*	^{244}Cm(18.10 y) - 42.824, 152.63, 554.60
98.918 *1*	4.29 *13*	^{158}Tb(180 y) - 944.09, 962.06, 79.5104
98.918 *1*	†700 *50*	^{158}Ho(11.3 m) - 218.221, 945.61, 948.78
99.163 *6*	0.031 *3*	^{254}Fm(3.240 h) - 42.723, 154.35
99.362 *4*	1.07 *4*	^{186}Re(2.0×10^{5} y) - 59.009, 40.350, 87.266
99.383 *4*	4.6 *8*	^{244}Am(10.1 h) - 743.971, 897.848, 153.863
99.5 *2*	0.11 *4*	^{221}Fr(4.9 m) - 218.19, 410.7, 150.0
99.63 *5*	0.62 *3*	^{225}Ac(10.0 d) - 99.91, 150.04, 188.00
99.659 *2*	10.51 *10*	^{153}Dy(6.4 h) - 80.723, 213.754, 254.259
99.853 *3*	0.00735 *8*	^{238}Pu(87.7 y) - 43.498, 152.720, 766.38

Energy	Intensity	Parent - Associated γ-rays
99.91 *5*	1.01 *6*	^{225}Ac(10.0 d) - 150.04, 99.63, 188.00
100 *5*	0.0009	^{195}Ir(3.8 h)
~100	~0.009	^{227}Ac(21.773 y) - 69.21, 160.26, 147.48
100.20	†1816	^{176}W(2.5 h) - 94.86, 61.29, 84.14
100.4 *3*	~0.013	^{252}Cf(2.645 y) - 43.38, 155.0
100.70 *5*	0.017	^{180}Hf(5.5 h) - 332.277, 443.09, 215.256
100.724 *20*	5.24 *9*	^{173}Lu(1.37 y) - 272.105, 78.63, 171.393
101.25 *4*	0.0012	^{193}Hg(11.8 h) - 257.99, 407.63, 573.25
101.90 *3*	0.0025 *4*	^{242}Cm(162.8 d) - 44.08, 157.42, 561.11
102.2564 *13*	6.4 *4*	^{153}Tb(2.34 d) - 212.0040, 109.7601, 170.4511
102.32 *5*	1.88 *13*	^{252}Es(471.7 d) - 924.12, 800.01, 785.09
102.82 *2*	0.85 *6*	^{236}Np(1.54×10^{5} y) - 160.308, 104.234, 45.242
103.01 *2*	1.98 *11*	^{116}Te(2.49 h) - 93.88, 628.66, 637.9
103.062 *1*	3.9	^{161}Ho(2.48 h) - 25.65150, 77.414, 59.235
103.1 *1*	0.39	^{245}Bk(4.94 d) - 205.879, 471.805, 164.8
103.14 *17*	2.32 *8*	^{72}Zn(46.5 h) - 145.04, 191.96, 16.4
103.18012 *17*	30	^{153}Sm(46.284 h) - 69.67300, 97.43100, 75.42213
103.18012 *17*	21.11 *23*	^{153}Gd(240.4 d) - 97.43100, 69.67300, 83.36717
103.50 *4*	0.0078 *8*	^{242}Pu(3.733×10^{5} y) - 44.915, 158.80
103.557 *7*	0.81 *16*	^{180}Ta(8.152 h) - 93.326
103.680 *5*	.0001017 *12*	^{241}Pu(14.35 y) - 148.567, 77.10, 159.955
104.0 *2*	0.0102 *10*	^{254}Es(39.3 h) - 211.80, 177.30, 71.30
104.1 *10*		^{236}Np(1.54×10^{5} y) - 160.308, 104.234, 45.242
104.234 *6*		^{236}Np(22.5 h) - 44.63
104.234 *6*	7.2 *3*	^{236}Np(1.54×10^{5} y) - 158.35, 102.82, 44.63
104.234 *6*	0.00708 *10*	^{240}Pu(6563 y) - 45.242, 160.308, 212.46
104.320 *3*	18.6 *4*	^{163}Tm(1.810 h) - 69.229, 241.305, 1434.45
104.4 *1*	0.62 *5*	^{257}Fm(100.5 d) - 241.0, 179.4, 61.6
104.62 *5*	0.539 *19*	^{91}Nb(60.86 d) - 1204.77
104.729 *7*	13.4 *4*	^{184}Re(169 d) - 252.848, 216.548, 920.932
105.305 *3*	21.2 *5*	^{155}Eu(4.7611 y) - 86.545, 45.2972, 60.0086
105.305 *3*	25	^{155}Tb(5.32 d) - 86.545, 180.103, 262.322
105.50 *5*	0.145 *6*	^{129}Te(33.6 d)
105.88 *5*	0.299 *20*	^{220}Fr(27.4 s) - 413.0, 234.5, 178.4
106 *1*	0.0044	^{210}At(8.1 h) - 82.802, 167, 141.2
106.125 *2*	27.2 *4*	^{239}Np(2.3565 d) - 277.599, 228.183, 209.753
106.46 *3*	9	^{187}Pt(2.35 h) - 201.52, 110.04, 709.17
107.9322 *4*	11.0 *4*	^{183}Ta(5.1 d) - 246.0591, 353.9912, 161.3467
108.088 *10*	24.3 *9*	^{151}Tb(17.609 h) - 287.357, 251.863, 587.46
108.90 *2*	10.4 *3*	^{66}Ge(2.26 h) - 43.81, 381.85, 272.97
108.96 *5*	0.012	^{236}Pu(2.858 y) - 47.574, 166.0, 643.5
109.276 *15*	0.274 *9*	^{125}Te(57.40 d) - 35.4919, 144.780
109.69 *4*	0.024	^{242}Am(141 y) - 49.367, 86.68, 163.24
109.7601 *14*	6.76 *25*	^{153}Tb(2.34 d) - 212.0040, 102.2564, 170.4511
109.77987 *6*	0.0013 *3*	^{169}Er(9.40 d) - 8.41031, 118.19018
109.77987 *6*	17.47 *18*	^{169}Yb(32.026 d) - 63.12077, 197.95788, 177.21402
110.04 *3*	5.7 *5*	^{187}Pt(2.35 h) - 106.46, 201.52, 709.17
111.12 *2*	13.1 *13*	^{222}Fr(14.2 m) - 206.17, 242.11, 131.00
111.12 *2*	3.29 *20*	^{226}Th(30.57 m) - 242.11, 131.00, 206.17
111.208 *4*	23.7 *10*	^{184}Ta(8.7 h) - 414.03, 252.848, 920.932
111.208 *4*	17.1 *6*	^{184}Re(38.0 d) - 903.279, 792.071, 894.757
111.621 *4*	20.5 *8*	^{171}Er(7.516 h) - 308.31, 295.901, 124.015
111.73 *2*	0.298 *8*	^{174}Lu(142 d) - 272.918, 992.128, 176.645
111.76 *8*	1.74 *4*	^{132}Te(3.204 d) - 228.16, 49.72, 116.30
112.36 *6*	96.0 *6*	^{48}Cr(21.56 h) - 308.25, 420.5
112.75 *2*	0.019 *2*	^{236}U(2.342×10^{7} y) - 49.369
112.81 *5*	0.277 *20*	^{234}Th(24.10 d) - 63.29, 92.38, 92.80
112.9498 *5*	6.4 *3*	^{177}Lu(6.734 d) - 208.3664, 321.3162, 249.6741
112.9498 *5*	7.2 *8*	^{177}Ta(56.56 h) - 208.3664, 1057.8, 745.9
113.5 *1*	0.0102 *15*	^{238}U(4.468×10^{9} y) - 49.55
113.805 *4*	1.88 *3*	^{175}Yb(4.185 d) - 396.329, 282.522, 144.863
113.94 *5*	40 *5*	^{139}Nd(5.50 h) - 737.96, 982.2, 708.06
114.314 *11*	19.2 *13*	^{149}Nd(1.728 h) - 211.309, 270.166, 654.831
114.3152 *16*	2.6 *4*	^{182}Hf(9×10^{6} y) - 270.4031, 156.088, 172.5708
114.3152 *16*	6.2 *6*	^{182}Hf(61.5 m) - 942.80, 799.64, 339.65
114.463 *5*	20.63 *8*	^{183}Os(13.0 h) - 381.768, 167.844, 851.474
114.71 *2*	44.0 *5*	^{146}Gd(48.27 d) - 154.57, 115.51, 576.0
115.05 *5*	8.6 *16*	^{177}W(135 m) - 115.65, 426.98, 1036.4
115.183 *5*	0.592 *7*	^{212}Pb(10.64 h) - 238.632, 300.087, 415.2
115.51 *2*	44.0 *5*	^{146}Gd(48.27 d) - 154.57, 114.71, 576.0
115.55 *5*	0.0182 *14*	^{229}Pa(1.50 d) - 40.09, 64.70, 75.12
115.65 *5*	51 *4*	^{177}W(135 m) - 426.98, 1036.4, 115.05
116.30 *8*	1.96 *5*	^{132}Te(3.204 d) - 228.16, 49.72, 111.76
116.48 *5*	0.008	^{110}Ag(249.79 d) - 1.113
117.159 *2*	0.047 *3*	^{229}Pa(1.50 d) - 40.09, 64.70, 75.12
117.84 *2*	0.57 *8*	^{243}Am(7370 y) - 74.664, 43.533, 86.71
118.03 *4*	12.9 *14*	^{181}Os(105 m) - 238.75, 826.77, 831.62
118.19018 *18*	0.00014 *4*	^{169}Er(9.40 d) - 8.41031, 109.77987
118.72 *3*	31.2 *7*	^{103}Ag(65.7 m) - 148.193, 266.86, 1273.83
118.968 *2*	0.130 *6*	^{229}Pa(1.50 d) - 40.09, 64.70, 75.12
119.12 *5*	11.3 *10*	^{190}Re(3.2 h) - 0
119.7 *1*	6.1 *6*	^{147}Tb(1.7 h) - 1152.4, 694.4, 139.9
119.80 *9*	†449 *31*	^{184}Ir(3.09 h) - 263.97, 390.38, 961.22
120.1 *3*		^{196}Tl(1.41 h) - 426.0, 635.5, 695.6
120.19 *10*	15	^{170}Hf(16.01 h) - 164.71, 620.7, 572.9
120.90 *2*	0.0342 *5*	^{234}U(2.455×10^{5} y) - 53.20, 454.95, 508.20
121.1155 *11*	17.2 *3*	^{75}Se(119.779 d) - 264.6576, 136.0001, 279.5422
121.220 *17*	0.0028	^{147}Pm(2.6234 y) - 197.299, 76.073
121.220 *17*	22.9 *8*	^{147}Eu(24.1 d) - 197.299, 677.516, 1077.043
121.6211 *5*	3.42 *22*	^{177}Yb(1.911 h) - 150.392, 1080.21, 1241.2
121.6211 *5*	5.91 *15*	^{177}Lu(160.4 d) - 413.6636, 319.0205, 171.8576
121.7817 *3*	28.58 *6*	^{152}Eu(13.537 y) - 1408.006, 964.079, 1112.074
121.7817 *3*	7.00 *21*	^{152}Eu(9.3116 h) - 841.570, 963.390, 1389.00
122.0 *1*	†~320	^{171}Hf(12.1 h) - 662.2, 347.18, 1071.8
122.0614 *4*	85.60 *17*	^{57}Co(271.79 d) - 136.4743, 14.41300, 692.03
122.30 *7*	0.603 *6*	^{186}Re(3.7183 d)
122.370 *22*	64.2 *23*	^{90}Mo(5.56 h) - 257.34, 203.13, 323.20
122.78 *3*	0.0283 *8*	^{195}Hg(41.6 h) - 261.75, 560.27, 387.87
122.793 *3*	27.6 *11*	^{179}Hf(25.05 d) - 453.43, 362.39, 146.15
123.071 *1*	40.79 *25*	^{154}Eu(8.593 y) - 184.810, 81.99
123.071 *1*	30 *4*	^{154}Tb(9.4 h) - 247.925, 540.18, 649.564
123.071 *1*	26 *4*	^{154}Tb(21.5 h) - 1274.436, 2187.10, 722.12
123.071 *1*	43 *8*	^{154}Tb(22.7 h) - 247.925, 346.643, 1419.81
123.3790 *20*	0.45 *5*	^{179}Lu(4.59 h) - 214.335, 214.930, 337.713
123.672 *13*	83 *3*	^{173}Hf(23.6 h) - 296.974, 139.634, 311.239
123.805 *3*	28.97 *23*	^{131}Ba(11.50 d) - 496.326, 216.078, 373.246
124.015 *6*	9.1 *3*	^{171}Er(7.516 h) - 308.31, 295.901, 111.621
124.70 *5*	11.37 *13*	^{127}Cs(6.25 h) - 411.95, 462.31, 587.01
125.3581 *9*	0.019	^{185}W(75.1 d)
125.812 *3*	11.3 *6*	^{172}Hf(1.87 y) - 23.9331, 67.35, 81.7513
125.95 *1*	1.28×10^{-7} *2*	^{55}Fe(2.73 y)
126.05 *3*	7.8 *5*	^{100}Pd(3.63 d) - 84.02, 74.78, 42.10
127.164 *3*	16.7 *3*	^{57}Ni(35.60 h) - 1377.63, 1919.52, 1757.55
127.226 *9*	68.0 *7*	^{101}Rh(3.3 y) - 197.99, 325.23, 295.01
127.226 *9*	0.637 *16*	^{101}Rh(4.34 d) - 306.857, 545.117, 179.636
127.5021 *28*	13	^{134}Cs(2.903 h) - 11.242, 138.733
129.065 *1*	0.0682 *4*	^{232}U(68.9 y) - 57.766, 270.245, 328.000
129.14 *9*	5.51 *17*	^{129}Ba(2.23 h) - 214.30, 220.83, 554.1
129.297 *2*	0.00631 *6*	^{239}Pu(24110 y) - 51.624, 38.661, 375.045
129.421 *15*	29.0 *17*	^{191}Os(15.4 d) - 82.407, 41.86, 47.05
129.5 *2*	0.084 *5*	^{195}Pt(4.02 d) - 98.85, 129.70, 30.898
129.64 *4*	81	^{77}Kr(74.4 m) - 146.59, 311.86, 276.0
129.70 *5*	1.2 *calc*	^{195}Ir(2.5 h) - 98.85, 211.407, 30.898
129.70 *5*	2.83 *15*	^{195}Pt(4.02 d) - 98.85, 30.898, 129.5
129.70 *5*	0.818 *22*	^{195}Au(186.09 d) - 98.85, 30.898, 211.407
129.820 *12*	0.300 *8*	^{85}Kr(4.480 h) - 304.87
129.820 *12*	>4.3×10^{-7}	^{85}Kr(10.756 y) - 514.0067, 362.81, 151.159
129.820 *12*	0.15 *4*	^{85}Sr(67.63 m) - 151.159, 731.812, 450.85
130.1 *3*	3.4 *7*	^{251}Bk(55.6 m) - 177.7, 152.8, 163.8
130.2 *1*	0.105 *4*	^{197}Pt(95.41 m) - 346.5, 53.10
130.2 *1*	0.273 *9*	^{197}Hg(23.8 h) - 279.01, 201.6, 77.351
130.414 *15*	0.209 *15*	^{134}Ce(3.16 d) - 162.306, 300.884, 31.89
130.59 *3*	0.119 *11*	^{219}Rn(3.96 s) - 271.23, 401.81, 293.54
130.803 *10*	17.9 *4*	^{133}Ce(4.9 h) - 477.22, 510.36, 58.39
131.00 *2*	0.63 *6*	^{222}Fr(14.2 m) - 206.17, 111.12, 242.11
131.00 *2*	0.278 *13*	^{226}Th(30.57 m) - 111.12, 242.11, 206.17
131.30 *1*	18	^{234}Pa(6.70 h) - 946.00, 883.24, 569.5
131.613 *4*	16.3 *8*	^{224}Fr(3.33 m) - 215.983, 836.90, 1340.70
131.613 *4*	26.9 *6*	^{224}Ac(2.78 h) - 215.983, 84.373, 205.93
131.613 *4*	0.1305 *18*	^{228}Th(1.9131 y) - 84.373, 215.983, 166.410
132.413 *7*	3.86 *20*	^{241}Cm(32.8 d) - 471.805, 430.634, 205.879
132.99 *3*	2.77 *14*	^{245}Cm(8500 y) - 174.94, 41.95, 189.82
133.024 *17*	43.3 *5*	^{181}Hf(42.39 d) - 482.182, 345.916, 136.266
133.23 *12*	2.9 *5*	^{200}Au(18.7 h) - 332.82, 146.07, 59.97

Energy	Intensity	Parent - Associated γ-rays
133.515 *2*	11.09 *11*	^{144}Ce(284.893 d) - 80.120, 40.98, 33.568
133.99 *7*	33	^{197}Hg(23.8 h) - 279.01, 130.2, 201.6
134.243 *6*	8.85 *16*	^{187}W(23.72 h) - 685.774, 479.531, 72.001
135.34 *4*	2.565 *18*	^{201}Tl(72.912 h) - 167.43, 32.19, 30.60
135.50 *3*	0.112	^{193}Pt(4.33 d) - 12.634, 1.642
135.6 *1*	0.47 *5*	^{86}Zr(16.5 h) - 242.80, 29.10, 612.00
135.90 *9*	3.24 *19*	^{200}Pt(12.5 h) - 76.21, 243.71, 59.97
136.0001 *6*	58.3 *7*	^{75}Se(119.779 d) - 264.6576, 279.5422, 121.1155
136.266 *13*	5.85 *19*	^{181}Hf(42.39 d) - 482.182, 133.024, 345.916
136.266 *13*	0.0311 *10*	^{181}W(121.2 d) - 6.238, 152.315
136.4743 *5*	10.68 *8*	^{57}Co(271.79 d) - 122.0614, 14.41300, 692.03
137.157 *8*	9.42 *6*	^{186}Re(3.7183 d) - 122.30
137.157 *8*	41	^{186}Ir(16.64 h) - 296.90, 434.84, 773.28
137.157 *8*	23.0 *23*	^{186}Ir(1.90 h) - 1.5, 767.497, 630.34
138.733 *11*	0.00391 *25*	^{134}Cs(2.903 h) - 127.5021, 11.242
138.938 *5*	4.27 *20*	^{193}Os(30.11 h) - 460.547, 73.042, 557.429
139.03 *5*	13.9 *10*	^{252}Es(471.7 d) - 924.12, 800.01, 785.09
139.1 *2*	44.6 *20*	^{184}Hf(4.12 h) - 344.9, 181.0, 41.4
139.634 *8*	12.7 *3*	^{173}Hf(23.6 h) - 123.672, 296.974, 311.239
139.9 *1*	27.46 *20*	^{147}Tb(1.7 h) - 1152.4, 694.4, 119.7
140.511 *1*	89.43 *23*	^{99}Mo(65.94 h) - 739.50, 181.063, 777.921
140.511 *1*	89	^{99}Tc(6.01 h) - 142.628, 2.1726
140.7 *1*	0.32 *3*	^{224}Ac(2.78 h) - 156.82, 144.44, 261.3
140.86 *2*	0.021 *4*	^{232}Th(1.405×10^{10} y) - 63.83
141.178 *15*	66.8 *7*	^{90}Nb(14.60 h) - 1129.224, 2318.968, 2186.242
141.2	0.0016	^{210}At(8.1 h) - 82.802, 106, 167
141.3147 *22*	6.6 *5*	^{75}Br(96.7 m) - 286.572, 427.883, 377.385
142.628 *29*	0.0187 *18*	^{99}Tc(6.01 h) - 140.511, 2.1726
142.652 *2*	1.02 *4*	^{59}Fe(44.503 d) - 1099.251, 1291.596, 192.349
143.249 *20*	0.43 *2*	^{237}Np(2.144×10^{6} y) - 29.374, 86.477, 94.66
143.764 *2*	10.96 *8*	^{235}U(7.038×10^{8} y) - 185.712, 163.358, 205.309
143.87 *1*	0.0488 *22*	^{230}Th(7.538×10^{4} y) - 67.67, 253.73, 186.05
144.232 *10*	3.22 *7*	^{223}Ra(11.435 d) - 269.459, 154.21, 323.871
144.44 *5*	0.205 *18*	^{224}Ac(2.78 h) - 156.82, 140.7, 261.3
144.780 *25*	3.9×10^{-7}	^{125}Te(57.40 d) - 35.4919, 109.276
144.863 *5*	0.328 *11*	^{175}Yb(4.185 d) - 396.329, 282.522, 113.805
144.99 *6*	0.192 *24*	^{253}Fm(3.00 d) - 271.8, 62.47, 405
145.04 *13*	83	^{72}Zn(46.5 h) - 191.96, 16.4, 103.14
145.252 *10*	4.29 *13*	^{127}Xe(36.4 d) - 202.860, 172.132, 374.991
145.4405 *28*	48.2 *3*	^{141}Ce(32.501 d)
145.4405 *28*	0.239 *24*	^{141}Nd(2.49 h) - 1126.8, 1292.6, 1147.2
145.544 *10*		^{241}Cm(32.8 d) - 471.805, 430.634, 205.879
146 *5*	0.0035	^{246}Cf(35.7 h) - 42.13, 96
146.07 *20*	3.5 *5*	^{200}Au(18.7 h) - 332.82, 59.97, 133.23
146.15 *7*	27.0 *11*	^{179}Hf(25.05 d) - 453.43, 362.39, 122.793
146.212	0.089 *6*	^{44}Ti(63 y) - 78.337, 67.875
146.345 *2*	†35 *5*	^{229}Ac(62.7 m) - 164.522, 569.1, 261.92
146.345 *2*	0.098 *6*	^{229}Pa(1.50 d) - 40.09, 64.70, 75.12
146.4 *5*	0.21 *3*	^{146}Pm(5.53 y) - 453.88, 735.72, 589.3
146.4 *5*		^{239}Cm(2.9 h) - 187.1, 41
146.4 *5*	0.012 *5*	^{243}Bk(4.5 h) - 187.1, 536, 41
146.59 *4*	37.3 *16*	^{77}Kr(74.4 m) - 129.64, 311.86, 276.0
147.48 *4*	0.0031 *3*	^{227}Ac(21.773 y) - 100, 69.21, 160.26
147.63 *2*	37.7 *10*	^{200}Pb(21.5 h) - 257.17, 235.63, 268.38
147.81 *2*	43	^{196}Au(9.6 h) - 188.27, 168.37, 285.49
148.193 *27*	28.3 *5*	^{103}Ag(65.7 m) - 118.72, 266.86, 1273.83
148.567 *10*	.0001855 *20*	^{241}Pu(14.35 y) - 103.680, 77.10, 159.955
148.612 *4*	2.62 *9*	^{122}Xe(20.1 h) - 350.065, 416.633, 90.596
148.7 *1*	0.011	^{190}Ir(3.25 h) - 616.08, 502.53, 361.136
148.9 *2*	49	^{123}Xe(2.08 h) - 178.1, 330.2, 1093.4
149.735 *3*	48.2 *3*	^{149}Gd(9.28 d) - 298.634, 346.651, 748.601
150.0 *2*	0.07 *3*	^{221}Fr(4.9 m) - 218.19, 410.7, 99.5
150.04 *2*	0.80 *3*	^{225}Ac(10.0 d) - 99.91, 99.63, 188.00
150.059 *3*	10.8 *5*	^{232}Pa(1.31 d) - 969.315, 894.351, 453.655
150.392 *3*	20.3 *11*	^{177}Yb(1.911 h) - 1080.21, 1241.2, 121.6211
150.824 *13*	0.0028	^{111}In(2.8047 d) - 245.395, 171.28
151.159 *6*	75.0 *4*	^{85}Kr(4.480 h) - 304.87
151.159 *6*	2.2×10^{-6} *13*	^{85}Kr(10.756 y) - 514.0067, 362.81, 129.820
151.159 *6*	0.0012 *9*	^{85}Sr(64.84 d) - 514.0067, 868.5, 362.81
151.159 *6*	12.9 *3*	^{85}Sr(67.63 m) - 129.820, 731.812, 450.85
152.22 *7*	7.3 *5*	^{197}Tl(2.84 h) - 425.84, 1411.34, 577.97
152.315 *17*	0.0083 *3*	^{181}W(121.2 d) - 6.238, 136.266
152.63 *2*	0.00098 *5*	^{244}Cm(18.10 y) - 42.824, 98.860, 554.60
152.720 *2*	0.000937 *10*	^{238}Pu(87.7 y) - 43.498, 99.853, 766.38
152.8 *2*	2.23 *15*	^{251}Bk(55.6 m) - 177.7, 130.1, 163.8
152.8 *2*	0.91 *10*	^{251}Es(33 h) - 177.7, 163.8, 34.0
152.9 *2*	25 *3*	^{246}Am(39 m) - 679.0, 205.0, 756
153.4 *1*	0.259 *20*	^{220}Fr(27.4 s) - 413.0, 234.5, 178.4
153.59 *3*	66 *3*	^{119}Te(4.70 d) - 1212.73, 270.53, 1136.75
153.60 *1*	6.20 *3*	^{151}Gd(124 d) - 243.282, 174.70, 21.542
153.863 *2*	16 *3*	^{244}Am(10.1 h) - 743.971, 897.848, 99.383
154.21 *1*	5.62 *14*	^{223}Ra(11.435 d) - 269.459, 323.871, 144.232
154.23 *3*	0.125 *7*	^{230}U(20.8 d) - 72.20, 230.37, 158.18
154.35 *6*	0.0010 *3*	^{254}Fm(3.240 h) - 99.163, 42.723
154.57 *2*	47	^{146}Gd(48.27 d) - 115.51, 114.71, 576.0
155.0 *4*	~0.0019	^{252}Cf(2.645 y) - 43.38, 100.4
155.032 *12*	15.1 *5*	^{188}Re(17.005 h) - 632.99, 477.99, 931.34
155.032 *12*	29.7 *24*	^{188}Ir(41.5 h) - 2214.62, 632.99, 477.99
155.16 *12*	0.097	^{192}Ir(241 y)
155.37 *4*	10.5 *5*	^{132}Ce(3.51 h) - 182.11, 216.83, 190.04
156.02 *3*	2.113 *6*	^{117}Sn(13.60 d) - 158.562, 314.3
156.088 *2*	7.0 *10*	^{182}Hf(9×10^{6} y) - 270.4031, 114.3152, 172.5708
156.82 *5*	0.74 *5*	^{224}Ac(2.78 h) - 140.7, 144.44, 261.3
157.2 *3*	7	^{192}Hg(4.85 h) - 274.8, 306.5, 186.4
157.41 *4*	0.241 *4*	^{101}Rh(4.34 d) - 306.857, 545.117, 127.226
157.42 *5*	0.0014 *2*	^{242}Cm(162.8 d) - 44.08, 101.90, 561.11
158.18 *3*	17.5 *5*	^{226}Ac(29.37 h) - 253.73, 186.05, 67.67
158.18 *3*	0.070 *5*	^{230}U(20.8 d) - 72.20, 154.23, 230.37
158.260 *4*	0.290 *10*	^{135}Xe(9.14 h) - 249.770, 608.151, 408.009
158.35 *2*	4.0	^{236}Np(1.54×10^{5} y) - 160.308, 104.234, 45.242
158.37947 *9*	40.0 *3*	^{199}Au(3.139 d) - 208.20597, 49.82680
158.37947 *9*	4.96 *25*	^{199}Tl(7.42 h) - 455.46, 208.20597, 247.26
158.38 *3*	98.8 *10*	^{56}Ni(6.077 d) - 811.85, 749.95, 269.50
158.562 *12*	16	^{117}In(116.2 m) - 315.302
158.562 *12*	86	^{117}Sn(13.60 d) - 156.02, 314.3
158.562 *12*	86	^{117}Sb(2.80 h) - 861.35, 1004.51, 1021.0
158.80 *8*	0.00045 *15*	^{242}Pu(3.733×10^{5} y) - 44.915, 103.50
158.97 *5*	84	^{123}Te(119.7 d) - 88.46, 247.5
158.97 *5*	83	^{123}I(13.27 h) - 528.96, 440.02, 538.54
159.377 *12*	68.3 *4*	^{47}Sc(3.3492 d)
159.955 *20*	6.54×10^{-6} *15*	^{241}Pu(14.35 y) - 148.567, 103.680, 77.10
160.26 *5*	0.0058 *6*	^{227}Ac(21.773 y) - 100, 69.21, 147.48
160.308 *3*	32	^{236}Np(1.54×10^{5} y) - 104.234, 45.242, 104.1
160.308 *3*	0.000402 *3*	^{240}Pu(6563 y) - 45.242, 104.234, 212.46
160.32 *9*	0.97 *11*	^{137}Pr(1.28 h) - 836.7, 433.9, 514.0
160.33 *5*	0.00191 *9*	^{123}Sn(129.2 d) - 1088.64, 1030.23, 1021.00
160.4 *1*	4.9 *5*	^{173}Ta(3.14 h) - 172.2, 69.70, 90.3
160.613 *8*	0.066 *5*	^{133}Xe(5.243 d) - 80.9971, 79.6139, 302.853
160.7 *1*	0.379 *20*	^{220}Fr(27.4 s) - 413.0, 234.5, 178.4
161.269 *9*	6.49 *12*	^{184}Re(169 d) - 252.848, 216.548, 920.932
161.3467 *5*	8.9 *3*	^{183}Ta(5.1 d) - 246.0591, 353.9912, 107.9322
162.306 *10*	0.230 *16*	^{134}Ce(3.16 d) - 130.414, 300.884, 31.89
162.3219 *5*	23.3 *4*	^{183}Re(70.0 d) - 46.4839, 291.7238, 208.8057
162.660 *1*	6.22 *7*	^{140}Ba(12.752 d) - 537.261, 29.9640, 304.849
163.24 *4*	0.024	^{242}Am(141 y) - 49.367, 86.68, 109.69
163.358 *2*	5.08 *4*	^{235}U(7.038×10^{8} y) - 185.712, 143.764, 205.309
163.8 *2*	0.35 *7*	^{251}Bk(55.6 m) - 177.7, 130.1, 152.8
163.8 *2*	~0.10	^{251}Es(33 h) - 177.7, 152.8, 34.0
163.930 *8*	1.91 *6*	^{131}Xe(11.84 d)
164.522 *2*	†100 *10*	^{229}Ac(62.7 m) - 569.1, 261.92, 146.345
164.61 *2*	1.86 *3*	^{237}U(6.75 d) - 59.5412, 208.00, 26.3448
164.71 *10*	26	^{170}Hf(16.01 h) - 620.7, 120.19, 572.9
164.8 *2*	0.0084 *18*	^{245}Bk(4.94 d) - 205.879, 471.805, 430.634
164.97 *7*	0.26	^{197}Hg(23.8 h) - 279.01, 130.2, 201.6
164.98 *2*	26.4 *3*	^{149}Tb(4.118 h) - 352.24, 388.57, 652.12
165.049 *8*	2.97 *20*	^{241}Cm(32.8 d) - 471.805, 430.634, 205.879
165.8452 *24*	12.7 *20*	^{156}Sm(9.4 h) - 87.4897, 203.818, 37.9681
165.864 *6*	23.7 *24*	^{139}Ba(83.06 m) - 1420.5, 1254.7, 1310.6
165.864 *6*	80 *calc*	^{139}Ce(137.640 d)
166.0 *3*	0.00066	^{236}Pu(2.858 y) - 47.574, 108.96, 643.5
166.410 *4*	0.1036 *15*	^{228}Th(1.9131 y) - 84.373, 215.983, 131.613
167 *2*	0.0028	^{210}At(8.1 h) - 82.802, 106, 141.2
167.43 *7*	10	^{201}Tl(72.912 h) - 135.34, 32.19, 30.60
167.75 *2*	8.3 *5*	^{151}Pm(28.40 h) - 340.08, 275.21, 717.72

Energy	Intensity	Parent - Associated γ-rays
167.844 *12*	8.81 *8*	^{183}Os(13.0 h) - 381.768, 114.463, 851.474
167.90 *2*	0.07	^{211}Rn(14.6 h) - 68.573, 236.48
168.37 *2*	7.6 *4*	^{196}Au(9.6 h) - 147.81, 188.27, 285.49
168.688 *2*	99.2 *19*	^{52}Fe(8.275 h) - 377.748, 1727.57, 1039.928
169.2 *1*	0.115 *8*	^{240}U(14.1 h) - 44.10, 189.7, 66.5
169.26 *4*	0.44 *3*	^{137}Ce(34.4 h) - 824.82, 762.3, 835.38
170.4511 *16*	6.3 *3*	^{153}Tb(2.34 d) - 212.0040, 109.7601, 102.2564
170.71 *5*	0.0697 *21*	^{183}Os(9.9 h) - 1101.94, 1107.92, 1034.85
171.28 *3*	90 *calc*	^{111}In(2.8047 d) - 245.395, 150.824
171.393 *13*	2.90 *11*	^{173}Lu(1.37 y) - 272.105, 78.63, 100.724
171.8576 *8*	4.81 *12*	^{177}Lu(160.4 d) - 413.6636, 319.0205, 121.6211
172.132 *10*	25.5 *8*	^{127}Xe(36.4 d) - 202.860, 374.991, 145.252
172.18 *8*	34	^{111}Pd(5.5 h)
172.2 *1*	18	^{173}Ta(3.14 h) - 69.70, 90.3, 160.4
172.5708 *22*	0.20 *4*	^{182}Hf(9×10^{6} y) - 270.4031, 156.088, 114.3152
172.6 *2*	16	^{256}Es(7.6 h) - 861.8, 231.1, 1092.9
173.4 *1*	18	^{198}Pb(2.40 h) - 290.3, 365.4, 865.3
173.52 *5*	2.7	^{193}Au(17.65 h) - 186.17, 255.57, 268.22
173.7 *1*	8.8 *6*	^{132}I(1.387 h) - 98.0, 22
174.70 *1*	2.96 *6*	^{151}Gd(124 d) - 153.60, 243.282, 21.542
174.94 *4*	10	^{245}Cm(8500 y) - 132.99, 41.95, 189.82
174.954 *5*	82.00 *25*	^{71}As(65.28 h) - 1095.490, 499.876, 326.785
175.361 *5*	7.48 *9*	^{48}Sc(43.67 h) - 1312.096, 983.517, 1037.599
175.4 *3*	10.1 *12*	^{80}Sr(106.3 m) - 589.0, 553.4, 378.8
176.6 *1*	17.7 *15*	^{251}Cf(898 y) - 227.0, 285.0, 61.5
176.645 *2*	0.470 *11*	^{174}Lu(142 d) - 272.918, 992.128, 76.471
177.21402 *6*	22.16 *18*	^{169}Yb(32.026 d) - 63.12077, 197.95788, 109.77987
177.30 *10*	0.056 *6*	^{254}Es(39.3 h) - 211.80, 71.30, 104.0
177.595 *17*	48.6 *20*	^{208}At(1.63 h) - 686.527, 660.040, 845.044
177.7 *2*	6	^{251}Bk(55.6 m) - 130.1, 152.8, 163.8
177.7 *2*	2.4	^{251}Es(33 h) - 152.8, 163.8, 34.0
178.1 *2*	14.9 *7*	^{123}Xe(2.08 h) - 148.9, 330.2, 1093.4
178.4 *2*	0.025 *3*	^{220}Fr(27.4 s) - 413.0, 234.5, 44.60
179.4 *1*	8.7 *7*	^{257}Fm(100.5 d) - 241.0, 61.6, 104.4
179.636 *15*	0.532 *12*	^{101}Rh(4.34 d) - 306.857, 545.117, 127.226
179.94 *2*	9.7 *5*	^{246}Pu(10.84 d) - 43.81, 223.75, 27.58
180.103 *1*	7.45 *15*	^{155}Tb(5.32 d) - 86.545, 105.305, 262.322
180.11 *4*	1.90 *9*	^{195}Hg(9.9 h) - 779.80, 61.46, 585.13
180.230 *11*	33.5 *16*	^{182}Os(22.10 h) - 510.056, 263.285, 55.506
180.31 *5*	50 *3*	^{198}Au(2.27 d) - 214.841, 97.1949, 204.10
181.0 *2*	13.8 *13*	^{184}Hf(4.12 h) - 139.1, 344.9, 41.4
181.063 *8*	5.99 *7*	^{99}Mo(65.94 h) - 140.511, 739.50, 777.921
181.3 *5*	0.41 *11*	^{257}Md(5.52 h) - 371.4, 325.1, 388.5
181.528 *4*	20.6 *4*	^{172}Lu(6.70 d) - 1093.657, 900.724, 810.064
181.930 *4*	9.9 *3*	^{158}Tb(180 y) - 944.09, 962.06, 79.5104
182.11 *3*	77	^{132}Ce(3.51 h) - 155.37, 216.83, 190.04
182.20 *20*	1.84 *18*	^{157}Dy(8.14 h) - 326.16, 83.01, 60.82
182.25 *2*	0.9 *calc*	^{131}Te(30 h)
182.32 *5*	†100	^{129}Ba(2.16 h) - 1459.1, 202.38, 419.83
184.285 *1*	17.45 *16*	^{168}Tm(93.1 d) - 198.241, 815.990, 447.515
184.410 *6*	72.6 *7*	^{166}Ho(1200 y) - 810.276, 711.683, 280.459
184.410 *6*	16.1 *3*	^{166}Tm(7.70 h) - 778.817, 2052.36, 1273.540
184.564 *4*	3.37 *6*	^{155}Dy(9.9 h) - 226.918, 1089.8, 1090.0
184.577 *10*	48.7 *3*	^{67}Cu(61.83 h) - 93.311, 91.266, 300.219
184.577 *10*	21.2 *3*	^{67}Ga(3.2612 d) - 93.311, 300.219, 393.529
184.810 *25*	0.0042 *11*	^{154}Eu(8.593 y) - 81.99
185.005 *3*	28.6 *17*	^{162}Ho(67.0 m) - 1220.0, 282.864, 937.2
185.712 *1*	57.2 *5*	^{235}U(7.038×10^{8} y) - 143.764, 163.358, 205.309
185.85 *3*	1.89 *4*	^{189}Re(24.3 h) - 216.663, 219.395, 245.09
186.05 *1*	4.8 *3*	^{226}Ac(29.37 h) - 253.73, 67.67
186.05 *1*	0.0088 *4*	^{230}Th(7.538×10^{4} y) - 67.67, 143.87, 253.73
186.17 *3*	9.4 *5*	^{193}Au(17.65 h) - 255.57, 268.22, 173.52
186.211 *13*	3.59 *6*	^{226}Ra(1600 y) - 262.27, 600.66, 414.60
186.4 *3*	3.3 *6*	^{192}Hg(4.85 h) - 274.8, 157.2, 306.5
186.718 *2*	27.8 *12*	^{190}Re(3.2 h) - 119.12, 0
186.718 *2*	52.4 *21*	^{190}Ir(11.78 d) - 605.24, 518.55, 557.972
186.718 *2*	66.3 *6*	^{190}Ir(3.25 h) - 616.08, 502.53, 361.136
187.1 *5*		^{239}Cm(2.9 h) - 146.4, 41
187.1 *5*	0.060 *15*	^{243}Bk(4.5 h) - 536, 146.4, 41
187.59 *10*	19.4 *10*	^{188}Pt(10.2 d) - 195.05, 381.43, 423.34
188.00 *5*	0.54 *3*	^{225}Ac(10.0 d) - 99.91, 150.04, 99.63
188.01 *4*	0.00023 *12*	^{184}Re(169 d) - 252.848, 216.548, 920.932
188.27 *3*	37.4 *17*	^{196}Au(9.6 h) - 147.81, 168.37, 285.49
188.418 *4*	54	^{125}Xe(16.9 h) - 243.378, 54.968, 453.796
189.7 *1*	0.24 *1*	^{240}U(14.1 h) - 44.10, 66.5, 169.2
189.82 *6*	0.193 *12*	^{245}Cm(8500 y) - 174.94, 132.99, 41.95
190.04 *5*	2.67 *12*	^{132}Ce(3.51 h) - 182.11, 155.37, 216.83
190.29 *3*	15.56 *15*	^{114}In(49.51 d) - 725.298, 558.456
190.46 *16*	64.0 *14*	^{81}Rb(4.576 h) - 446.15, 510.31, 456.76
191.2137 *15*	20.6 *5*	^{169}Lu(34.06 h) - 960.622, 1449.74, 889.753
191.437 *10*	3.7	^{197}Pt(19.8915 h) - 77.351, 268.78
191.437 *10*	0.632 *21*	^{197}Hg(64.14 h) - 77.351, 268.78
191.96 *9*	9.37 *17*	^{72}Zn(46.5 h) - 145.04, 16.4, 103.14
192.349 *5*	3.08 *10*	^{59}Fe(44.503 d) - 1099.251, 1291.596, 142.652
193.509 *4*	4.4	^{229}Th(7340 y) - 210.853, 86.40, 86.25
195.0 *1*	22.6 *10*	^{209}At(5.41 h) - 545.0, 781.9, 790.2
195.05 *10*	18.6 *10*	^{188}Pt(10.2 d) - 187.59, 381.43, 423.34
196.301 *10*	25.98 *17*	^{88}Kr(2.84 h) - 2392.11, 2195.842, 834.830
196.56 *3*	4.59 *14*	^{129}Xe(8.88 d) - 39.578
197.299 *12*	3.4×10^{-7} *6*	^{147}Pm(2.6234 y) - 121.220, 76.073
197.299 *12*	27	^{147}Eu(24.1 d) - 121.220, 677.516, 1077.043
197.3 *3*	87.0 *11*	^{120}Sb(5.76 d) - 1171.3, 1023.1, 89.9
197.95788 *6*	35.8 *3*	^{169}Yb(32.026 d) - 63.12077, 177.21402, 109.77987
197.99 *6*	73	^{101}Rh(3.3 y) - 127.226, 325.23, 295.01
198.241 *1*	52.39 *16*	^{168}Tm(93.1 d) - 815.990, 447.515, 184.285
198.6060 *12*	1.19 *3*	^{75}Ge(82.78 m) - 264.6576, 468.6, 419.1
199.2132 *10*	40.9 *22*	^{156}Tb(5.35 d) - 534.318, 1222.36, 88.9667
199.50 *5*	0.55 *3*	^{138}Nd(5.04 h) - 325.76, 341.65, 215.31
200.38 *4*	0.79 *8*	^{195}Hg(41.6 h) - 261.75, 560.27, 387.87
201.3112 *7*	0.472 *6*	^{192}Ir(73.831 d) - 205.79549, 484.5780, 374.4852
201.52 *6*	6.4 *18*	^{187}Pt(2.35 h) - 106.46, 110.04, 709.17
201.6 *3*	0.034 *5*	^{197}Pt(95.41 m) - 346.5, 53.10
201.6 *3*	0.089 *13*	^{197}Hg(23.8 h) - 279.01, 130.2, 77.351
201.83 *3*	86 *5*	^{176}Lu(3.78×10^{10} y) - 306.78, 88.34, 400.99
201.83 *3*	>0.0007	^{176}Lu(3.635 h) - 88.34, 1159.28, 1061.61
201.83 *3*	6	^{176}Ta(8.09 h) - 1159.28, 88.34, 1224.93
202.21 *5*	†4.7 *5*	^{224}Rn(107 m) - 260.581, 265.806, 328.331
202.38 *7*	†33.7 *6*	^{129}Ba(2.16 h) - 182.32, 1459.1, 419.83
202.51 *3*	97.3 *4*	^{90}Y(3.19 h) - 479.17, 681.8
202.8 *1*	†30.8 *10*	^{230}Ra(93 m) - 72.0, 63.0, 469.7
202.860 *10*	0.0580 *21*	^{127}Te(9.35 h) - 417.95, 360.32, 215.17
202.860 *10*	68	^{127}Xe(36.4 d) - 172.132, 374.991, 145.252
203.13 *10*	6.4 *5*	^{90}Mo(5.56 h) - 257.34, 122.370, 323.20
203.5 *2*	74	^{109}In(4.2 h) - 623.7, 1148.9, 426.25
203.818 *3*	20.6 *20*	^{156}Sm(9.4 h) - 87.4897, 165.8452, 37.9681
204.10 *6*	40.8 *23*	^{198}Au(2.27 d) - 214.841, 97.1949, 180.31
204.117 *2*	0.028 *9*	^{95}Nb(34.975 d) - 765.794, 561.67
204.117 *2*	2.33 *7*	^{95}Nb(86.6 h) - 582.082, 786.198, 820.624
204.117 *2*	63.25 *13*	^{95}Tc(61 d) - 582.082, 835.149, 786.198
205.0 *10*	36 *4*	^{246}Am(39 m) - 679.0, 152.9, 756
205.309 *2*	5.01 *5*	^{235}U(7.038×10^{8} y) - 185.712, 143.764, 163.358
205.79549 *6*	3.300 *17*	^{192}Ir(73.831 d) - 484.5780, 374.4852, 201.3112
205.879 *13*	0.040 *6*	^{245}Bk(4.94 d) - 471.805, 164.8, 430.634
205.93 *5*	>0.32	^{224}Ac(2.78 h) - 156.82, 140.7, 144.44
206.17 *5*	50 *5*	^{222}Fr(14.2 m) - 111.12, 242.11, 131.00
206.17 *5*	0.189 *8*	^{226}Th(30.57 m) - 111.12, 242.11, 131.00
206.50 *4*	58	^{174}Ta(1.05 h) - 91.00, 1205.92, 1228.33
207.4 *3*	14.0 *8*	^{175}Ta(10.5 h) - 348.5, 266.9, 81.5
207.801 *5*	4.9 *3*	^{167}Ho(3.1 h) - 346.547, 321.336, 237.873
207.801 *5*	41 *6*	^{167}Tm(9.25 d) - 57.0723, 531.54, 264.9
207.849 *5*	0.0080 *16*	^{188}W(69.4 d) - 290.669, 227.083, 63.582
208.00 *1*	21.2 *3*	^{237}U(6.75 d) - 59.5412, 26.3448, 164.61
208.08 *3*	1.14 *9*	^{164}Tm(2.0 m) - 91.40, 1154.66, 768.91
208.20597 *11*	8.732 *12*	^{199}Au(3.139 d) - 158.37947, 49.82680
208.20597 *11*	12.3 *6*	^{199}Tl(7.42 h) - 455.46, 247.26, 158.37947
208.3664 *5*	11.0 *6*	^{177}Lu(6.734 d) - 112.9498, 321.3162, 249.6741
208.3664 *5*	57.7 *11*	^{177}Lu(160.4 d) - 228.4838, 378.5029, 418.5391
208.3664 *5*	0.94 *8*	^{177}Ta(56.56 h) - 112.9498, 1057.8, 745.9
208.8057 *6*	2.95 *5*	^{183}Re(70.0 d) - 162.3219, 46.4839, 291.7238
209.753 *2*	3.42 *5*	^{239}Np(2.3565 d) - 106.125, 277.599, 228.183
209.753 *2*	3.50 *20*	^{239}Am(11.9 h) - 49.10, 277.599, 228.183
209.753 *2*	3.29 *10*	^{243}Cm(29.1 y) - 277.599, 228.183, 285.460
210.4 *1*	2.8	^{186}Pt(2.2 h) - 689.4, 611.5, 635.3
210.853 *3*	2.8 *3*	^{229}Th(7340 y) - 193.509, 86.40, 86.25

Energy	Intensity	Parent - Associated γ-rays
211.03 *3*	30.8 *9*	^{77}Ge(11.30 h) - 264.44, 215.51, 416.33
211.15 *3*	12.2 *5*	^{161}Er(3.21 h) - 826.6, 592.6, 314.77
211.309 *7*	25.9 *10*	^{149}Nd(1.728 h) - 114.314, 270.166, 654.831
211.407 *2*	2.4 *calc*	^{195}Ir(2.5 h) - 98.85, 30.898, 129.70
211.407 *2*	0.0109 *11*	^{195}Au(186.09 d) - 98.85, 129.70, 30.898
211.80 *10*	0.096 *10*	^{254}Es(39.3 h) - 177.30, 71.30, 104.0
212.0040 *14*	31.0 *15*	^{153}Tb(2.34 d) - 109.7601, 102.2564, 170.4511
212.189 *27*	81	^{121}Te(154 d) - 1102.149, 37.138, 998.291
212.189 *27*	84	^{121}I(2.12 h) - 532.08, 598.74, 475.28
212.46 *5*	2.9×10^{-5} *3*	^{240}Pu(6563 y) - 45.242, 104.234, 160.308
213.440 *3*	81.4 *11*	^{178}Hf(31 y) - 426.383, 325.562, 574.215
213.440 *3*	81.4 *11*	^{178}Ta(2.36 h) - 426.383, 325.562, 88.867
213.754 *5*	10.90 *22*	^{153}Dy(6.4 h) - 80.723, 99.659, 254.259
214.30 *7*	13.4 *4*	^{129}Ba(2.23 h) - 220.83, 129.14, 554.1
214.335 *3*	11.3 *11*	^{179}Lu(4.59 h) - 214.930, 123.3790, 337.713
214.841 *3*	77	^{198}Au(2.27 d) - 97.1949, 180.31, 204.10
214.930 *3*	0.46 *16*	^{179}Lu(4.59 h) - 214.335, 123.3790, 337.713
215.17 *13*	0.0387 *17*	^{127}Te(9.35 h) - 417.95, 360.32, 202.860
215.256 *2*	81.3 *7*	^{180}Hf(5.5 h) - 332.277, 443.09, 57.555
215.31 *6*	0.29 *3*	^{138}Nd(5.04 h) - 325.76, 199.50, 341.65
215.51 *3*	28.6 *9*	^{77}Ge(11.30 h) - 264.44, 211.03, 416.33
215.718 *24*	86	^{97}Ru(2.9 d) - 324.48, 569.31, 460.57
215.983 *5*	33.1 *16*	^{224}Fr(3.33 m) - 131.613, 836.90, 1340.70
215.983 *5*	52.3 *12*	^{224}Ac(2.78 h) - 131.613, 84.373, 205.93
215.983 *5*	0.254 *3*	^{228}Th(1.9131 y) - 84.373, 131.613, 166.410
216.078 *8*	19.66 *23*	^{131}Ba(11.50 d) - 496.326, 123.805, 373.246
216.548 *9*	9.43 *20*	^{184}Re(169 d) - 252.848, 920.932, 161.269
216.663 *24*	5.50 *14*	^{189}Re(24.3 h) - 219.395, 245.09, 185.85
216.83 *4*	4.95 *23*	^{132}Ce(3.51 h) - 182.11, 155.37, 190.04
217.6 *3*	†100	^{244}Bk(4.35 h) - 891.5, 921.5, 490.5
217.940 *18*	~0.8	^{231}U(4.2 d) - 25.646, 84.216, 58.570
218.19 *5*	11.6 *4*	^{221}Fr(4.9 m) - 410.7, 99.5, 150.0
218.221 *4*	0.933 *18*	^{158}Tb(180 y) - 944.09, 962.06, 79.5104
218.221 *4*	†1000 *4*	^{158}Ho(11.3 m) - 98.918, 945.61, 948.78
219.395 *21*	4.54 *10*	^{189}Re(24.3 h) - 216.663, 245.09, 185.85
220.83 *7*	8.5 *3*	^{129}Ba(2.23 h) - 214.30, 129.14, 554.1
220.94 *2*	0.0541 *6*	^{135}La(19.5 h) - 480.51, 874.51, 587.83
223.75 *2*	23.5 *18*	^{246}Pu(10.84 d) - 43.81, 179.94, 27.58
224.38 *10*	35	^{182}Hf(61.5 m) - 344.1, 506.60, 455.80
226.01 *4*	0.215 *5*	^{159}Gd(18.479 h) - 363.55, 58.00, 348.16
226.2 *3*	5.4 *8*	^{198}Tl(1.87 h) - 636.4, 411.80205, 587.2
226.378 *8*	3.30 *20*	^{239}Am(11.9 h) - 49.10, 277.599, 228.183
226.918 *4*	68.4 *12*	^{155}Dy(9.9 h) - 184.564, 1089.8, 1090.0
227.0 *10*	5.8 *16*	^{247}Am(23.0 m) - 285.0
227.0 *10*	6.3 *11*	^{251}Cf(898 y) - 176.6, 285.0, 61.5
227.083 *7*	0.221 *8*	^{188}W(69.4 d) - 290.669, 63.582, 207.849
228		^{202}Pt(44 h) - 244
228.16 *6*	88.0 *18*	^{132}Te(3.204 d) - 49.72, 116.30, 111.76
228.183 *1*	10.76 *18*	^{239}Np(2.3565 d) - 106.125, 277.599, 209.753
228.183 *1*	11.3 *6*	^{239}Am(11.9 h) - 49.10, 277.599, 226.378
228.183 *1*	10.6 *3*	^{243}Cm(29.1 y) - 277.599, 209.753, 285.460
228.4838 *6*	37.0 *7*	^{177}Lu(160.4 d) - 413.6636, 319.0205, 121.6211
228.56 *20*	0.000331 *14*	^{237}Pu(45.2 d) - 280.40, 298.89, 320.75
229.32 *2*	63 *3*	^{147}Gd(38.06 h) - 396.00, 929.01, 370.0
229.3207 *6*	26	^{182}Re(64.0 h) - 67.74970, 1121.3007, 1221.4066
229.50 *6*	0.106 *9*	^{128}Ba(2.43 d) - 273.44, 374.99, 359.10
229.6 *6*	0.683 *17*	^{175}Hf(70 d) - 343.40, 89.36, 433.0
230.37 *5*	27	^{226}Ac(29.37 h) - 253.73, 186.05, 67.67
230.37 *5*	0.122 *6*	^{230}U(20.8 d) - 72.20, 154.23, 158.18
231.1 *2*	19	^{256}Es(7.6 h) - 861.8, 172.6, 1092.9
231.15 *5*	0.7 *calc*	^{139}Nd(5.50 h) - 113.94, 737.96, 982.2
231.67 *1*	84.4 *16*	^{85}Sr(67.63 m) - 151.159, 129.820, 731.812
231.67 *1*	84 *6*	^{85}Y(2.68 h) - 504.45, 913.93, 409.5
231.67 *1*	22.8 *14*	^{85}Y(4.86 h) - 2123.8, 767.40, 535.61
232.72 *12*	8.5×10^{-6} *15*	^{99}Tc(6.01 h) - 140.511, 142.628, 2.1726
233.221 *18*	10	^{133}Xe(2.19 d)
233.6 *1*	19.6 *10*	^{126}Ba(100 m) - 257.6, 241.0, 681.8
233.6 *3*		^{255}Es(39.8 d) - 269.1, 35.7
234.5 *1*	0.011 *3*	^{220}Fr(27.4 s) - 413.0, 178.4, 44.60
234.81 *9*	3.0	^{223}Fr(21.8 m) - 50.13, 79.72, 49.89
235.63 *2*	4.30 *13*	^{200}Pb(21.5 h) - 147.63, 257.17, 268.38
235.69 *2*	0.294 *16*	^{95}Zr(64.02 d) - 756.729, 724.199
235.69 *2*	24.9 *8*	^{95}Nb(86.6 h)
235.971 *20*	12.3 *9*	^{227}Th(18.72 d) - 50.13, 256.25, 329.851
236.48 *1*	0.063 *9*	^{211}Rn(14.6 h) - 68.573, 167.90
237.873 *15*	5.0 *3*	^{167}Ho(3.1 h) - 346.547, 321.336, 207.801
238.632 *2*	43.3 *4*	^{212}Pb(10.64 h) - 300.087, 115.183, 415.2
238.75 *9*	44 *4*	^{181}Os(105 m) - 826.77, 118.03, 831.62
238.9 *4*	0.277 *5*	^{85}Sr(67.63 m) - 151.159, 129.820, 731.812
238.9963 *18*	1.6	^{77}As(38.83 h) - 520.639, 249.7862, 87.8671
238.9963 *18*	23	^{77}Br(57.036 h) - 520.639, 297.2151, 249.7862
240.0 *5*		^{196}Tl(1.41 h) - 426.0, 635.5, 695.6
240.86 *2*	0.34 *7*	^{245}Am(2.05 h) - 252.80, 295.72, 42.88
240.986 *6*	4.10 *5*	^{224}Ra(3.66 d) - 292.70, 645.50, 422.04
241.0 *1*	6.0 *5*	^{126}Ba(100 m) - 233.6, 257.6, 681.8
241.0 *1*	11.0 *6*	^{257}Fm(100.5 d) - 179.4, 61.6, 104.4
241.1 *1*	0.84 *15*	^{202}Pb(3.53 h) - 490.47, 459.72, 389.94
241.305 *5*	10.9 *3*	^{163}Tm(1.810 h) - 104.320, 69.229, 1434.45
241.56 *5*	2.92 *12*	^{92}Sr(2.71 h) - 1383.93, 953.31, 430.49
242.11 *2*	1.95 *20*	^{222}Fr(14.2 m) - 206.17, 111.12, 131.00
242.11 *2*	0.866 *40*	^{226}Th(30.57 m) - 111.12, 131.00, 206.17
242.15 *5*	4.3 *3*	^{195}Tl(1.16 h) - 563.52, 884.47, 1363.88
242.80 *10*	96	^{86}Zr(16.5 h) - 29.10, 612.00, 135.6
242.917 *7*	35.5 *7*	^{165}Tm(30.06 h) - 47.155, 297.369, 806.372
243.282 *12*	5.60 *3*	^{151}Gd(124 d) - 153.60, 174.70, 21.542
243.378 *5*	30.1 *6*	^{125}Xe(16.9 h) - 188.418, 54.968, 453.796
243.37 *6*	7.0 *10*	^{189}Pt(10.87 h) - 721.41, 94.33, 568.84
243.71 *3*	2.49 *16*	^{200}Pt(12.5 h) - 76.21, 135.90, 59.97
244		^{202}Pt(44 h) - 228
245.09 *3*	3.5 *4*	^{189}Re(24.3 h) - 216.663, 219.395, 185.85
245.09 *3*	6	^{189}Ir(13.2 d) - 69.537, 59.053, 36.202
245.31 *1*	79 *4*	^{210}At(8.1 h) - 82.802, 106, 167
245.395 *20*	1.33 *4*	^{111}Ag(7.45 d) - 342.13, 96.75, 620.26
245.395 *20*	94	^{111}In(2.8047 d) - 171.28, 150.824
246.0591 *5*	27 *4*	^{183}Ta(5.1 d) - 353.9912, 107.9322, 161.3467
247.26 *3*	9.3 *5*	^{199}Tl(7.42 h) - 455.46, 208.20597, 158.37947
247.5 *2*	0.00034 *3*	^{123}Te(119.7 d) - 158.97, 88.46
247.925 *6*	22.1 *20*	^{154}Tb(9.4 h) - 123.071, 540.18, 649.564
247.925 *6*	79 *9*	^{154}Tb(22.7 h) - 346.643, 1419.81, 123.071
248.58 *1*	3.42 *22*	^{158}Er(2.29 h) - 71.91, 386.84, 45.5
249.6741 *10*	0.212 *11*	^{177}Lu(6.734 d) - 208.3664, 112.9498, 321.3162
249.770 *4*	90	^{135}Xe(9.14 h) - 608.151, 408.009, 158.260
249.7862 *21*	0.394 *16*	^{77}As(38.83 h) - 238.9963, 520.639, 87.8671
249.7862 *21*	2.98 *7*	^{77}Br(57.036 h) - 238.9963, 520.639, 297.2151
251.863 *10*	26.3 *9*	^{151}Tb(17.609 h) - 287.357, 108.088, 587.46
252.4 *3*	8.5 *3*	^{127}Sb(3.85 d) - 685.7, 473.0, 783.7
252.80 *2*	6	^{245}Am(2.05 h) - 240.86, 295.72, 42.88
252.80 *2*	29.1 *19*	^{245}Bk(4.94 d) - 380.8, 385.0, 103.1
252.80 *2*	2.50 *8*	^{249}Cf(351 y) - 388.16, 333.37, 266.62
252.848 *5*	43 *3*	^{184}Ta(8.7 h) - 414.03, 920.932, 111.208
252.848 *5*	10.7 *3*	^{184}Re(169 d) - 216.548, 920.932, 161.269
253.678 *10*	99 *6*	^{118}Sb(5.00 h) - 1229.68, 1050.65, 40.8
253.73 *1*	5.7 *4*	^{226}Ac(29.37 h) - 186.05, 67.67
253.73 *1*	0.0111 *5*	^{230}Th(7.538×10^{4} y) - 67.67, 143.87, 186.05
254.259 *17*	8.58 *22*	^{153}Dy(6.4 h) - 80.723, 213.754, 99.659
254.29 *5*	11.0 *4*	^{137}Ce(34.4 h) - 824.82, 169.26, 762.3
254.4 *2*	13.3 *13*	^{185}Ir(14.4 h) - 1828.8, 60.0, 97.4
254.566 *23*	0.636 *12*	^{149}Eu(93.1 d) - 327.526, 277.089, 22.510
255.05 *3*	1.82 *6*	^{113}Sn(115.09 d) - 391.690, 638.02, 382.9
255.11 *2*	0.236 *7*	^{139}Pr(4.41 h) - 1347.33, 1630.67, 1375.56
255.57 *4*	6.2 *5*	^{193}Au(17.65 h) - 186.17, 268.22, 173.52
255.87 *8*	71 *5*	^{200}Au(18.7 h) - 332.82, 146.07, 59.97
256.25 *2*	7.0 *4*	^{227}Th(18.72 d) - 235.971, 50.13, 329.851
256.93 *13*	98	^{152}Dy(2.38 h)
257.17 *2*	4.46 *13*	^{200}Pb(21.5 h) - 147.63, 235.63, 268.38
257.34 *4*	78 *3*	^{90}Mo(5.56 h) - 122.370, 203.13, 323.20
257.6 *1*	7.6 *4*	^{126}Ba(100 m) - 233.6, 241.0, 681.8
257.99 *3*	9.0 *21*	^{193}Hg(3.80 h) - 381.60, 861.11, 1118.84
257.99 *3*	49 *5*	^{193}Hg(11.8 h) - 407.63, 573.25, 932.37
258.72 *2*	1.64 *3*	^{113}Ag(5.37 h) - 298.60, 316.21, 672.34
259.5 *1*	2.9 *5*	^{198}Tl(1.87 h) - 636.4, 411.80205, 587.2
260.48 *3*	0.7	^{209}Po(102 y) - 262.81
260.581 *17*	†21.5 *10*	^{224}Rn(107 m) - 265.806, 202.21, 328.331
260.890 *30*	1.94 *1*	^{115}Cd(53.46 h) - 336.240, 527.900, 492.3

Energy	Intensity	Parent - Associated γ-rays
260.9 *3*	1.29 *22*	^{198}Tl(1.87 h) - 636.4, 411.80205, 587.2
261.3 *2*	0.173 *14*	^{224}Ac(2.78 h) - 156.82, 140.7, 144.44
261.35 *7*	13	^{79}Kr(35.04 h) - 397.54, 606.09, 306.47
261.75 *4*	30.9 *25*	^{195}Hg(41.6 h) - 560.27, 387.87, 200.38
261.92 *5*	†39 *5*	^{229}Ac(62.7 m) - 164.522, 569.1, 146.345
262.27 *5*	0.0050 *5*	^{226}Ra(1600 y) - 186.211, 600.66, 414.60
262.322 *2*	5.29 *5*	^{155}Tb(5.32 d) - 86.545, 105.305, 180.103
262.81 *3*	0.225 *11*	^{209}Po(102 y) - 260.48
263.062 *5*	56.7 *14*	^{93}Mo(6.85 h) - 949.82, 689.07, 541.22
263.285 *10*	6.71 *21*	^{182}Os(22.10 h) - 510.056, 180.230, 55.506
263.7 *3*	0.0230 *7*	^{113}Cd(14.1 y)
263.97 *7*	†1000	^{184}Ir(3.09 h) - 119.80, 390.38, 961.22
264.44 *3*	54	^{77}Ge(11.30 h) - 211.03, 215.51, 416.33
264.6576 *9*	11	^{75}Ge(82.78 m) - 198.6060, 468.6, 419.1
264.6576 *9*	58.90 *18*	^{75}Se(119.779 d) - 136.0001, 279.5422, 121.1155
264.9	>0.07	^{167}Tm(9.25 d) - 207.801, 57.0723, 531.54
265 *10*	~30	^{247}Bk(1380 y) - 84.0
265.56 *2*	41.8 *13*	^{135}Ce(17.7 h) - 300.07, 606.76, 518.05
265.806 *17*	†20.1 *10*	^{224}Rn(107 m) - 260.581, 202.21, 328.331
265.832 *5*		^{210}Bi(5.013 d) - 304.896
265.832 *5*	50	^{210}Bi(3.04×10^{6} y) - 304.896, 649.42, 344.52
266.62 *2*	0.69 *3*	^{249}Cf(351 y) - 388.16, 333.37, 252.80
266.86 *4*	13.3 *4*	^{103}Ag(65.7 m) - 118.72, 148.193, 1273.83
266.9 *1*	7.3 *4*	^{93}Y(10.18 h) - 947.1, 1917.8, 680.2
266.9 *4*	10.8 *13*	^{175}Ta(10.5 h) - 207.4, 348.5, 81.5
268.218 *20*	15.6 *4*	^{135}Ba(28.7 h)
268.22 *5*	3.6 *3*	^{193}Au(17.65 h) - 186.17, 255.57, 173.52
268.38 *2*	3.96 *17*	^{200}Pb(21.5 h) - 147.63, 257.17, 235.63
268.78 *5*	0.231 *22*	^{197}Pt(19.8915 h) - 77.351, 191.437
268.78 *5*	0.0393 *19*	^{197}Hg(64.14 h) - 77.351, 191.437
~269.1		^{255}Es(39.8 d) - 233.6, 35.7
269.459 *10*	13.7 *3*	^{223}Ra(11.435 d) - 154.21, 323.871, 144.232
269.50 *2*	36.5 *8*	^{56}Ni(6.077 d) - 158.38, 811.85, 749.95
269.67 *7*	6.43 *12*	^{101}Pd(8.47 h) - 296.29, 590.44, 24.46
270.068 *11*	27.8 *9*	^{204}Po(3.53 h) - 883.984, 1016.31, 534.90
270.166 *7*	10.7 *3*	^{149}Nd(1.728 h) - 211.309, 114.314, 654.831
270.2 *2*	21.1 *23*	^{76}Kr(14.8 h) - 315.7, 45.48, 406.5
270.245 *2*	0.00316 *5*	^{232}U(68.9 y) - 57.766, 129.065, 328.000
270.4031 *20*	80 *5*	^{182}Hf(9×10^{6} y) - 156.088, 114.3152, 172.5708
270.53 *4*	28.0 *4*	^{119}Te(4.70 d) - 153.59, 1212.73, 1136.75
271.13	86.7 *3*	^{44}Sc(58.6 h) - 1001.85, 1126.08, 1157.031
271.131 *8*	0.074 *3*	^{152}Eu(9.3116 h) - 841.570, 963.390, 121.7817
271.131 *8*	8.6 *6*	^{152}Tb(17.5 h) - 344.2785, 586.2648, 778.9040
271.23 *1*	10.8 *3*	^{219}Rn(3.96 s) - 401.81, 130.59, 293.54
271.8 *4*	2.6	^{253}Fm(3.00 d) - 144.99, 62.47, 405
272.105 *15*	21.2 *3*	^{173}Lu(1.37 y) - 78.63, 100.724, 171.393
272.918 *6*	0.550 *17*	^{174}Lu(142 d) - 992.128, 176.645, 76.471
272.97 *4*	10.4 *4*	^{66}Ge(2.26 h) - 43.81, 381.85, 108.90
273.349 *18*	28	^{117}Cd(2.49 h) - 1303.27, 344.459, 1576.62
273.44 *1*	15	^{128}Ba(2.43 d) - 374.99, 229.50, 359.10
274.6 *6*		^{196}Tl(1.41 h) - 426.0, 635.5, 695.6
274.8 *3*	50.4 *20*	^{192}Hg(4.85 h) - 157.2, 306.5, 186.4
275.21 *2*	6.8 *5*	^{151}Pm(28.40 h) - 340.08, 167.75, 717.72
275.925 *7*	17.8 *3*	^{133}Ba(38.9 h) - 632.56
275.988 *12*	0.30	^{81}Kr(2.29×10^{5} y)
276.0 *2*	2.92 *16*	^{77}Kr(74.4 m) - 129.64, 146.59, 311.86
276.8 *1*	†20.2 *19*	^{258}Md(51.5 d) - 367.8, 447.9, 71.1
277.089 *10*	3.56 *6*	^{149}Eu(93.1 d) - 327.526, 22.510, 254.566
277.3 *3*	96	^{78}Ge(88.0 m) - 293.9
277.599 *1*	14.38 *21*	^{239}Np(2.3565 d) - 106.125, 228.183, 209.753
277.599 *1*	15.0 *7*	^{239}Am(11.9 h) - 49.10, 228.183, 226.378
277.599 *1*	14.0 *4*	^{243}Cm(29.1 y) - 228.183, 209.753, 285.460
277.88 *2*	7.2 *5*	^{191}Au(3.18 h) - 586.45, 674.19, 283.91
278.0 *8*	3.4 *7*	^{247}Cm(1.56×10^{7} y) - 402.6, 287.4, 344.5
278.43 *5*	0.567 *17*	^{129}Te(69.6 m) - 27.81, 459.60, 487.39
278.835 *17*	1.60 *5*	^{133}La(3.912 h) - 302.353, 290.06, 632.765
279.01 *5*	2.4	^{197}Pt(95.41 m) - 346.5, 53.10
279.01 *5*	6	^{197}Hg(23.8 h) - 130.2, 201.6, 77.351
279.1967 *12*	81	^{203}Hg(46.612 d)
279.1967 *12*	81	^{203}Pb(51.873 h) - 401.323, 680.516
279.5422 *10*	24.99 *5*	^{75}Se(119.779 d) - 264.6576, 136.0001, 121.1155
280.23 *2*	47.3 *20*	^{237}Am(73.0 m) - 438.4, 473.5, 908.8
280.40 *20*	0.000916 *18*	^{237}Pu(45.2 d) - 298.89, 320.75, 228.56
280.41 *6*	0.167 *13*	^{105}Rh(35.36 h) - 319.14, 306.25, 442.37
280.41 *6*	30.2 *17*	^{105}Ag(41.29 d) - 344.520, 644.55, 443.37
280.459 *8*	29.77 *22*	^{166}Ho(1200 y) - 184.410, 810.276, 711.683
280.462 *9*		^{110}Sn(4.11 h)
282.522 *14*	3.01 *5*	^{175}Yb(4.185 d) - 396.329, 113.805, 144.863
282.8 *2*	28 *3*	^{198}Tl(1.87 h) - 636.4, 411.80205, 587.2
282.864 *8*	11.3 *4*	^{162}Ho(67.0 m) - 185.005, 1220.0, 937.2
282.956 *2*	12.2 *3*	^{61}Cu(3.333 h) - 656.008, 67.412, 1185.234
283.53 *4*	0.00058 *8*	^{137}Cs(30.07 y) - 661.657
283.69 *1*	1.7	^{231}Pa(32760 y) - 27.36, 300.07, 302.65
283.91 *2*	6.7 *4*	^{191}Au(3.18 h) - 586.45, 277.88, 674.19
284.305 *5*	6.14 *5*	^{131}I(8.02070 d) - 364.489, 636.989, 80.185
285.0 *2*	23	^{247}Am(23.0 m) - 227.0
285.0 *2*	1.4 *3*	^{251}Cf(898 y) - 176.6, 227.0, 61.5
285.460 *2*	0.728 *20*	^{243}Cm(29.1 y) - 277.599, 228.183, 209.753
285.49 *7*	4.3 *4*	^{196}Au(9.6 h) - 147.81, 188.27, 168.37
285.95 *1*	3.1	^{149}Pm(53.08 h) - 859.46, 590.88, 22.510
286.410 *26*	23.8 *5*	^{206}Po(8.8 d) - 1032.26, 511.36, 807.38
286.572 *5*	88	^{75}Br(96.7 m) - 141.3147, 427.883, 377.385
287.357 *10*	28.3 *9*	^{151}Tb(17.609 h) - 251.863, 108.088, 587.46
287.4 *3*	2.0 *3*	^{247}Cm(1.56×10^{7} y) - 402.6, 278.0, 344.5
288	6.0×10^{-5} *4*	^{133}Ba(38.9 h) - 632.56
288.07 *7*	0.31 *4*	^{212}Bi(60.55 m) - 727.330, 1620.50, 785.37
290.06 *5*	0.904 *8*	^{133}La(3.912 h) - 278.835, 302.353, 632.765
290.27 *17*	0.00014 *5*	^{159}Dy(144.4 d) - 58.00, 348.16, 79.45
290.3 *1*	36 *5*	^{198}Pb(2.40 h) - 365.4, 173.4, 865.3
290.669 *13*	0.402 *12*	^{188}W(69.4 d) - 227.083, 63.582, 207.849
291.7 *1*	0.0011	^{208}Po(2.898 y) - 570.4, 601.6, 861.9
291.7238 *5*	3.05 *16*	^{183}Re(70.0 d) - 162.3219, 46.4839, 208.8057
292.70 *10*	0.0062 *7*	^{224}Ra(3.66 d) - 240.986, 645.50, 422.04
293.266 *2*	42.80 *13*	^{143}Ce(33.039 h) - 57.356, 664.571, 721.929
293.545 *13*	2.52 *9*	^{194}Ir(19.28 h) - 328.455, 645.157, 1150.76
293.545 *13*	10.4 *6*	^{194}Au(38.02 h) - 328.455, 1468.91, 2043.67
293.54 *4*	0.073 *4*	^{219}Rn(3.96 s) - 271.23, 401.81, 130.59
293.9 *5*	4.0 *8*	^{78}Ge(88.0 m) - 277.3
294.1 *1*	0.98 *7*	^{247}Cf(3.11 h) - 447.8, 417.9, 407.0
294.978 *20*	0.00280 *7*	^{103}Pd(16.991 d) - 39.757, 357.47, 497.080
295.01 *3*	0.595 *18*	^{101}Rh(3.3 y) - 197.99, 127.226, 325.23
295.72 *2*	0.22 *7*	^{245}Am(2.05 h) - 252.80, 240.86, 42.88
295.901 *13*	28.9 *8*	^{171}Er(7.516 h) - 308.31, 111.621, 124.015
295.95827 *12*	28.67 *9*	^{192}Ir(73.831 d) - 205.79549, 484.5780, 374.4852
295.95827 *12*	22.3 *3*	^{192}Au(4.94 h) - 316.50791, 2236.89, 612.46564
296.29 *3*	19	^{101}Pd(8.47 h) - 590.44, 269.67, 24.46
296.90 *3*	62.3 *15*	^{186}Ir(16.64 h) - 137.157, 434.84, 773.28
296.974 *9*	33.9 *7*	^{173}Hf(23.6 h) - 123.672, 139.634, 311.239
297.2151 *20*	4.16 *18*	^{77}Br(57.036 h) - 238.9963, 520.639, 249.7862
297.32 *5*	79.8 *16*	^{73}Ga(4.86 h) - 325.70, 739.42, 767.8
297.369 *6*	12.71 *25*	^{165}Tm(30.06 h) - 242.917, 47.155, 806.372
297.88 *10*	0.012	^{163}Er(75.0 m) - 1113.5, 436.1, 439.94
298.580 *2*	26.13 *18*	^{160}Tb(72.3 d) - 879.383, 966.171, 1177.962
298.60 *1*	10	^{113}Ag(5.37 h) - 258.72, 316.21, 672.34
298.634 *5*	28.6 *7*	^{149}Gd(9.28 d) - 149.735, 346.651, 748.601
298.89 *20*	0.44 *5*	^{233}Np(36.2 m) - 312.17, 546.9, 506.5
298.89 *20*	0.000661 *16*	^{237}Pu(45.2 d) - 280.40, 320.75, 228.56
300.07 *2*	23.5 *3*	^{135}Ce(17.7 h) - 265.56, 606.76, 518.05
300.07 *1*	2.46 *7*	^{231}Pa(32760 y) - 27.36, 302.65, 283.69
300.087 *10*	3.28 *3*	^{212}Pb(10.64 h) - 238.632, 115.183, 415.2
300.219 *10*	0.797 *11*	^{67}Cu(61.83 h) - 184.577, 93.311, 91.266
300.219 *10*	16.80 *22*	^{67}Ga(3.2612 d) - 93.311, 184.577, 393.529
300.34 *2*	6.62 *6*	^{233}Pa(26.967 d) - 312.17, 340.81, 86.814
300.654 *12*	12.8 *6*	^{207}At(1.80 h) - 814.41, 588.33, 467.12
300.884 *15*	0.088 *7*	^{134}Ce(3.16 d) - 162.306, 130.414, 31.89
302.353 *8*	1.05 *3*	^{133}La(3.912 h) - 278.835, 290.06, 632.765
302.65 *1*	2.2 *3*	^{231}Pa(32760 y) - 27.36, 300.07, 283.69
302.7 *1*	80 *5*	^{138}Pr(2.12 h) - 1037.8, 788.742, 390.9
302.853 *1*	0.0048 *3*	^{133}Xe(5.243 d) - 80.9971, 79.6139, 160.613
302.853 *1*	18.33 *6*	^{133}Ba(10.51 y) - 356.017, 80.9971, 383.851
303.41 *3*	21.6 *11*	^{250}Es(8.6 h) - 828.82, 349.4, 383.7
304 *2*	0.07 *1*	^{254}Es(275.7 d) - 63.0, 316, 385
304.849 *3*	4.29 *5*	^{140}Ba(12.752 d) - 537.261, 29.9640, 162.660
304.87 *2*	14	^{85}Kr(4.480 h)

Energy	Intensity	Parent - Associated γ-rays
304.896 *6*	31	^{206}Hg(8.15 m) - 649.42, 344.52
304.896 *6*		^{210}Bi(5.013 d) - 265.832
304.896 *6*	28	^{210}Bi(3.04×10^{6} y) - 265.832, 649.42, 344.52
306.25 *3*	5.1 *3*	^{105}Rh(35.36 h) - 319.14, 280.41, 442.37
306.47 *10*	2.6 *1*	^{79}Kr(35.04 h) - 261.35, 397.54, 606.09
306.5 *3*	5.4 *6*	^{192}Hg(4.85 h) - 274.8, 157.2, 186.4
306.78 *4*	94	^{176}Lu(3.78×10^{10} y) - 201.83, 88.34, 400.99
306.857 *5*	81 *4*	^{101}Rh(4.34 d) - 545.117, 127.226, 179.636
306.9 *2*	0.150 *15*	^{140}Pr(3.39 m) - 1596.210, 751.637, 925.189
308.0 *1*	0.080 *8*	^{228}Pa(22 h) - 29.8, 43.3, 316.8
308.222 *8*	4.9 *5*	^{245}Pu(10.5 h) - 327.428, 560.13, 376.676
308.222 *8*	3.2×10^{-6} *9*	^{249}Bk(320 d) - 327.428
308.25 *5*	100	^{48}Cr(21.56 h) - 112.36, 420.5
308.31 *3*	64.4 *16*	^{171}Er(7.516 h) - 295.901, 111.621, 124.015
308.45692 *13*	30.00 *8*	^{192}Ir(73.831 d) - 205.79549, 484.5780, 374.4852
311.239 *8*	10.75 *20*	^{173}Hf(23.6 h) - 123.672, 296.974, 139.634
311.4 *1*	0.032 *3*	^{109}Pd(13.7012 h) - 88.04, 647.3, 781.4
311.86 *14*	3.7 *5*	^{77}Kr(74.4 m) - 129.64, 146.59, 276.0
312.17 *2*	38.6 *4*	^{233}Pa(26.967 d) - 300.34, 340.81, 86.814
312.17 *2*	0.7	^{233}Np(36.2 m) - 298.89, 546.9, 506.5
312.6	0.336 *20*	^{42}K(12.360 h) - 1524.70, 899.43, 1922.18
314.12 *2*	61 *3*	^{128}Sb(9.01 h) - 753.82, 743.22, 526.57
314.3 *3*	0.000423 *10*	^{117}Sn(13.60 d) - 158.562, 156.02
314.77 *4*	2.49 *10*	^{161}Er(3.21 h) - 826.6, 211.15, 592.6
314.8 *3*	0.094 *12*	^{230}Pa(17.4 d) - 951.95, 918.48, 454.95
315.302 *13*	19	^{117}In(116.2 m)
315.7 *2*	39 *4*	^{76}Kr(14.8 h) - 270.2, 45.48, 406.5
316 *2*	0.15 *2*	^{254}Es(275.7 d) - 63.0, 304, 385
316.21 *2*	1.343 *20*	^{113}Ag(5.37 h) - 298.60, 258.72, 672.34
316.44 *15*	11.1 *4*	^{105}Ru(4.44 h) - 724.21, 469.37, 676.36
316.50791 *13*	82.81 *21*	^{192}Ir(73.831 d) - 205.79549, 484.5780, 374.4852
316.50791 *13*	58.0 *8*	^{192}Au(4.94 h) - 295.95827, 2236.89, 612.46564
316.8 *1*	0.044 *6*	^{228}Pa(22 h) - 308.0, 29.8, 43.3
319.0205 *8*	10.5 *3*	^{177}Lu(160.4 d) - 413.6636, 121.6211, 171.8576
319.14 *6*	19	^{105}Rh(35.36 h) - 306.25, 280.41, 442.37
319.411 *18*	1.95 *11*	^{147}Nd(10.98 d) - 91.105, 531.016, 439.895
319.90 *7*	9.4 *5*	^{195}Ir(3.8 h) - 100
320.0824 *4*	10	^{51}Cr(27.7025 d)
320.75 *20*	0.000546 *16*	^{237}Pu(45.2 d) - 280.40, 298.89, 228.56
321.3162 *16*	0.219 *11*	^{177}Lu(6.734 d) - 208.3664, 112.9498, 249.6741
321.336 *24*	23.5 *8*	^{167}Ho(3.1 h) - 346.547, 237.873, 207.801
322.41 *8*	9.7×10^{-5} *5*	^{99}Tc(6.01 h) - 140.511, 142.628, 2.1726
322.41 *8*	6.2 *3*	^{99}Rh(16.1 d) - 528.24, 353.05, 89.65
323.20 *18*	6.3 *5*	^{90}Mo(5.56 h) - 257.34, 122.370, 203.13
323.871 *10*	3.93 *7*	^{223}Ra(11.435 d) - 269.459, 154.21, 144.232
324.48 *3*	10.79 *17*	^{97}Ru(2.9 d) - 215.718, 569.31, 460.57
324.81 *3*	0.0314 *15*	^{107}Cd(6.50 h) - 93.124, 828.93, 796.462
325.1 *2*	2.5 *3*	^{257}Md(5.52 h) - 371.4, 181.3, 388.5
325.23 *3*	11.83 *11*	^{101}Rh(3.3 y) - 197.99, 127.226, 295.01
325.562 *4*	94.1 *11*	^{178}Hf(31 y) - 426.383, 574.215, 213.440
325.562 *4*	94.1 *11*	^{178}Ta(2.36 h) - 426.383, 213.440, 88.867
325.70 *7*	11.17 *24*	^{73}Ga(4.86 h) - 297.32, 739.42, 767.8
325.76 *5*	2.93 *7*	^{138}Nd(5.04 h) - 199.50, 341.65, 215.31
326.16 *20*	92	^{157}Dy(8.14 h) - 182.20, 83.01, 60.82
326.785 *15*	3.034 *25*	^{71}As(65.28 h) - 174.954, 1095.490, 499.876
327.428 *8*	25.4 *25*	^{245}Pu(10.5 h) - 560.13, 308.222, 376.676
327.428 *8*	1.7×10^{-5} *3*	^{249}Bk(320 d) - 308.222
327.526 *10*	4.03 *12*	^{149}Eu(93.1 d) - 277.089, 22.510, 254.566
327.96 *10*	0.139 *11*	^{212}Bi(60.55 m) - 727.330, 1620.50, 785.37
328.000 *6*	0.00283 *6*	^{232}U(68.9 y) - 57.766, 129.065, 270.245
328.331 *21*	†3.7 *3*	^{224}Rn(107 m) - 260.581, 265.806, 202.21
328.455 *11*	93 *5*	^{194}Ir(171 d) - 482.833, 600.5, 687.7
328.455 *11*	13.1 *4*	^{194}Ir(19.28 h) - 293.545, 645.157, 1150.76
328.455 *11*	61 *3*	^{194}Au(38.02 h) - 293.545, 1468.91, 2043.67
328.762 *8*	20.3 *3*	^{140}La(1.6781 d) - 1596.210, 487.021, 815.772
329.851 *20*	2.7 *3*	^{227}Th(18.72 d) - 235.971, 50.13, 256.25
330.2 *2*	8.6 *5*	^{123}Xe(2.08 h) - 148.9, 178.1, 1093.4
331.19 *3*	79 *5*	^{201}Pb(9.33 h) - 361.27, 945.96, 907.56
332.277 *10*	94.1 *8*	^{180}Hf(5.5 h) - 443.09, 215.256, 57.555
332.82 *40*	12.1 *23*	^{200}Au(18.7 h) - 146.07, 59.97, 133.23
332.983 *24*	22.9 *5*	^{196}Au(6.183 d) - 355.684, 521.175, 1091.331
333.37 *2*	14.6 *4*	^{249}Cf(351 y) - 388.16, 252.80, 266.62
333.4 *4*	6.2×10^{-5} *15*	^{186}Re(3.7183 d) - 122.30
333.971 *12*	68	^{150}Pm(2.68 h) - 1324.51, 1165.74, 831.92
333.971 *12*	4.0 *3*	^{150}Eu(12.8 h) - 406.52, 1165.74, 921.2
333.971 *12*	96	^{150}Eu(36.9 y) - 439.401, 584.274, 737.455
336.240 *12*	45.9 *1*	^{115}Cd(53.46 h) - 527.900, 492.3, 260.890
336.240 *12*	45.83 *10*	^{115}In(4.486 h)
336.43 *3*	70.2 *5*	^{95}Ru(1.643 h) - 1096.76, 626.77, 1178.66
337.713 *5*	0.181 *19*	^{179}Lu(4.59 h) - 214.335, 214.930, 123.3790
338.320 *3*	11.27 *19*	^{228}Ac(6.15 h) - 911.204, 968.971, 964.766
339.65 *6*	5.6 *5*	^{182}Hf(61.5 m) - 344.1, 224.38, 506.60
340.08 *1*	23	^{151}Pm(28.40 h) - 167.75, 275.21, 717.72
340.547 *8*	42.2 *13*	^{136}Cs(13.16 d) - 818.514, 1048.073, 1235.362
340.71 *13*	70 *3*	^{99}Rh(4.7 h) - 617.8, 1261.2, 936.7
340.81 *3*	4.47 *4*	^{233}Pa(26.967 d) - 312.17, 300.34, 86.814
341.65 *5*	0.41 *4*	^{138}Nd(5.04 h) - 325.76, 199.50, 215.31
342.13 *2*	7	^{111}Ag(7.45 d) - 245.395, 96.75, 620.26
343.40 *8*	84	^{175}Hf(70 d) - 89.36, 433.0, 229.6
344.1 *1*	42 *4*	^{182}Hf(61.5 m) - 224.38, 506.60, 455.80
344.2785 *12*	26.5 *4*	^{152}Eu(13.537 y) - 121.7817, 1408.006, 964.079
344.2785 *12*	2.38 *3*	^{152}Eu(9.3116 h) - 841.570, 963.390, 121.7817
344.2785 *12*	65	^{152}Tb(17.5 h) - 586.2648, 271.131, 778.9040
344.459 *10*	17.9 *4*	^{117}Cd(2.49 h) - 273.349, 1303.27, 1576.62
344.5 *5*	~1.3	^{247}Cm(1.56×10^{7} y) - 402.6, 278.0, 287.4
344.520 *21*	41	^{105}Ag(41.29 d) - 280.41, 644.55, 443.37
344.52 *17*	0.7	^{206}Hg(8.15 m) - 304.896, 649.42
344.52 *17*	0.7	^{210}Bi(3.04×10^{6} y) - 265.832, 304.896, 649.42
344.9 *2*	35.2 *14*	^{184}Hf(4.12 h) - 139.1, 181.0, 41.4
344.95 *20*	0.0030 *3*	^{65}Zn(244.26 d) - 1115.546, 770.6
345.916 *25*	15.12 *10*	^{181}Hf(42.39 d) - 482.182, 133.024, 136.266
346.5 *2*	11.1 *3*	^{197}Pt(95.41 m) - 53.10
346.547 *15*	56	^{167}Ho(3.1 h) - 321.336, 237.873, 207.801
346.643 *5*	69 *5*	^{154}Tb(22.7 h) - 247.925, 1419.81, 123.071
346.651 *3*	23.9 *3*	^{149}Gd(9.28 d) - 149.735, 298.634, 748.601
346.93 *7*	0.0076 *5*	^{60}Co(5.2714 y) - 1332.501, 1173.237, 826.06
347.18 *10*	†150 *20*	^{171}Hf(12.1 h) - 122.0, 662.2, 1071.8
348.16 *7*	0.234 *5*	^{159}Gd(18.479 h) - 363.55, 58.00, 226.01
348.16 *7*	0.00095 *10*	^{159}Dy(144.4 d) - 58.00, 79.45, 290.27
348.4	†64	^{178}Yb(74 m) - 390.8, 42.4
348.5 *5*	12.0 *6*	^{175}Ta(10.5 h) - 207.4, 266.9, 81.5
349.4 *1*	19.8 *9*	^{250}Es(8.6 h) - 828.82, 303.41, 383.7
349.9 *1*	0.82 *4*	^{251}Fm(5.30 h) - 880.8, 453.1, 405.6
350.065 *10*	7.80 *15*	^{122}Xe(20.1 h) - 148.612, 416.633, 90.596
352.24 *2*	29.43 *9*	^{149}Tb(4.118 h) - 164.98, 388.57, 652.12
353.05 *6*	34.6 *10*	^{99}Rh(16.1 d) - 528.24, 89.65, 322.41
353.39 *6*	9.5 *5*	^{199}Pb(90 m) - 366.90, 1135.04, 720.24
353.9912 *5*	11.2 *3*	^{183}Ta(5.1 d) - 246.0591, 107.9322, 161.3467
355.40 *9*	2.09 *9*	^{97}Zr(16.91 h) - 743.36, 507.64, 1147.97
355.684 *2*	94 *3*	^{196}Ir(1.40 h) - 393.346, 521.175, 447.1
355.684 *2*	87	^{196}Au(6.183 d) - 332.983, 521.175, 1091.331
356.017 *2*	62.05 *19*	^{133}Ba(10.51 y) - 80.9971, 302.853, 383.851
357.47 *5*	0.0221 *7*	^{103}Pd(16.991 d) - 39.757, 497.080, 294.978
358.3 *1*	0.315 *20*	^{251}Fm(5.30 h) - 425.4, 480.4, 383.2
359.10 *4*	0.096 *9*	^{128}Ba(2.43 d) - 273.44, 374.99, 229.50
359.90 *9*	6.0 *3*	^{191}Pt(2.802 d) - 538.90, 409.44, 82.407
360.32 *10*	0.1346 *10*	^{127}Te(9.35 h) - 417.95, 202.860, 215.17
360.70 *11*	20 *4*	^{181}Re(19.9 h) - 365.57, 639.30, 953.42
360.80 *10*	108	^{73}Se(7.15 h) - 67.03, 865.09, 510
361.136 *6*	89.57 *9*	^{190}Ir(3.25 h) - 616.08, 502.53, 186.718
361.27 *5*	9.9 *5*	^{201}Pb(9.33 h) - 331.19, 945.96, 907.56
361.68 *2*	0.84 *4*	^{165}Dy(2.334 h) - 94.700, 633.415, 715.328
362	<0.00026	^{206}Tl(4.199 m) - 803.10, 1166
362.39 *13*	39.5 *9*	^{179}Hf(25.05 d) - 453.43, 122.793, 146.15
362.81 *4*	2.2×10^{-6} *4*	^{85}Kr(10.756 y) - 514.0067, 151.159, 129.820
362.81 *4*	>0.0010	^{85}Sr(64.84 d) - 514.0067, 868.5, 151.159
363.55 *4*	11.4 *6*	^{159}Gd(18.479 h) - 58.00, 348.16, 226.01
364.489 *5*	81.7 *6*	^{131}I(8.02070 d) - 636.989, 284.305, 80.185
365.4 *1*	19 *3*	^{198}Pb(2.40 h) - 290.3, 173.4, 865.3
365.57 *12*	56 *6*	^{181}Re(19.9 h) - 360.70, 639.30, 953.42
366.27 *3*	4.81 *5*	^{65}Ni(2.5172 h) - 1481.84, 1115.546, 1623.42
366.56 *10*	0.076 *12*	^{230}Pa(17.4 d) - 951.95, 918.48, 454.95
366.90 *6*	44.2 *22*	^{199}Pb(90 m) - 353.39, 1135.04, 720.24
367.8 *1*	†100 *7*	^{258}Md(51.5 d) - 447.9, 276.8, 71.1

Energy	Intensity	Parent - Associated γ-rays
367.943 *10*	73	^{200}Au(18.7 h) - 332.82, 146.07, 59.97
367.943 *10*	87	^{200}Tl(26.1 h) - 1205.717, 579.298, 828.320
368.76 *6*	0.35 *2*	^{249}Cm(64.15 m) - 634.31, 560.45, 621.87
370.0 *1*	17.2 *6*	^{147}Gd(38.06 h) - 229.32, 396.00, 929.01
370.509 *8*	11.0 *6*	^{157}Eu(15.18 h) - 63.929, 410.723, 54.548
371.4 *1*	11.7 *6*	^{257}Md(5.52 h) - 325.1, 181.3, 388.5
371.918 *2*	30.60 *9*	^{129}Cs(32.06 h) - 411.490, 548.945, 39.578
372.760	87	^{43}K(22.3 h) - 617.490, 396.861, 593.390
372.760	23	^{43}Sc(3.891 h) - 1931.3, 1558.5, 593.390
373.246 *11*	14.04 *19*	^{131}Ba(11.50 d) - 496.326, 123.805, 216.078
374.4852 *8*	0.721 *5*	^{192}Ir(73.831 d) - 205.79549, 484.5780, 201.3112
374.72 *7*	89 *15*	^{204}Pb(67.2 m) - 899.15, 911.78, 622.53
374.72 *7*	82 *4*	^{204}Bi(11.22 h) - 899.15, 984.02, 911.78
374.991 *12*	17.2 *6*	^{127}Xe(36.4 d) - 202.860, 172.132, 145.252
374.99 *2*	0.309 *15*	^{128}Ba(2.43 d) - 273.44, 229.50, 359.10
375.045 *6*	0.001554 *9*	^{239}Pu(24110 y) - 51.624, 38.661, 129.297
375.1 *1*	3.3 *3*	^{249}Es(102.2 m) - 379.5, 813.2, 1218.5
376.676 *3*	3.2 *3*	^{245}Pu(10.5 h) - 327.428, 560.13, 308.222
376.7 *3*	~0.9	^{133}Ce(97 m) - 97.261, 76.9, 557.7
377.385 *4*	3.93 *4*	^{75}Br(96.7 m) - 286.572, 141.3147, 427.883
377.4 *3*	0.122 *15*	^{252}Es(471.7 d) - 924.12, 800.01, 785.09
377.748 *5*	1.643 *19*	^{52}Fe(8.275 h) - 168.688, 1727.57, 1039.928
378.5029 *7*	29.7 *12*	^{177}Lu(160.4 d) - 413.6636, 319.0205, 121.6211
378.8 *5*	4.2 *4*	^{80}Sr(106.3 m) - 589.0, 175.4, 553.4
379.5 *1*	40.4 *25*	^{249}Es(102.2 m) - 813.2, 375.1, 1218.5
380.79 *7*	78	^{87}Y(13.37 h)
380.8 *1*	2.40 *17*	^{245}Bk(4.94 d) - 205.879, 471.805, 164.8
381.17 *3*	2.49 *24*	^{83}Sr(32.41 h) - 762.65, 381.53, 418.37
381.43 *10*	7.5 *4*	^{188}Pt(10.2 d) - 187.59, 195.05, 423.34
381.53 *3*	14.1 *5*	^{83}Sr(32.41 h) - 762.65, 418.37, 381.17
381.60 *4*	16 *5*	^{193}Hg(3.80 h) - 861.11, 257.99, 1118.84
381.7 *3*	0.56 *5*	^{243}Pu(4.956 h) - 84.0, 41.8, 67
381.768 *12*	89.6 *9*	^{183}Os(13.0 h) - 114.463, 167.844, 851.474
381.85 *5*	28	^{66}Ge(2.26 h) - 43.81, 272.97, 108.90
382.9 *1*	>6.0×10^{-5}	^{113}Sn(115.09 d) - 391.690, 255.05, 638.02
383.2 *3*	0.0196 *20*	^{251}Fm(5.30 h) - 425.4, 480.4, 358.3
383.6 *5*	0.036 *3*	^{230}Pa(17.4 d) - 951.95, 918.48, 454.95
383.7 *1*	13.6 *7*	^{250}Es(8.6 h) - 828.82, 303.41, 349.4
383.851 *3*	8.94 *3*	^{133}Ba(10.51 y) - 356.017, 80.9971, 302.853
385.0 *1*	0.57 *4*	^{245}Bk(4.94 d) - 205.879, 471.805, 164.8
385 *2*	0.05 *1*	^{254}Es(275.7 d) - 63.0, 316, 304
385.31 *13*	0.060 *10*	^{93}Mo(6.85 h) - 949.82, 689.07, 541.22
386.28 *5*	93	^{71}Zn(3.96 h) - 487.38, 620.18, 511.56
386.84 *4*	9.0 *4*	^{158}Er(2.29 h) - 71.91, 248.58, 45.5
387.1 *5*	0.0181 *18*	^{253}Es(20.47 d) - 41.79, 389.11, 42.98
387.87 *5*	2.15 *8*	^{195}Hg(41.6 h) - 261.75, 560.27, 200.38
388.16 *2*	66	^{249}Cf(351 y) - 333.37, 252.80, 266.62
388.5 *15*	~0.07	^{257}Md(5.52 h) - 371.4, 325.1, 181.3
388.531 *3*	81.9 *5*	^{87}Sr(2.803 h)
388.531 *3*	82	^{87}Y(79.8 h) - 484.805
388.57 *2*	18.37 *13*	^{149}Tb(4.118 h) - 352.24, 164.98, 652.12
388.633 *11*	34.1 *7*	^{126}I(13.11 d) - 666.331, 753.819, 1420.17
388.633 *11*	41	^{126}Cs(1.64 m) - 491.243, 925.24, 879.876
389.11 *8*	0.0264 *3*	^{253}Es(20.47 d) - 41.79, 387.1, 42.98
389.94 *7*	6.2 *5*	^{202}Pb(3.53 h) - 490.47, 459.72, 241.1
390.38 *7*	†381 *27*	^{184}Ir(3.09 h) - 263.97, 119.80, 961.22
390.6 *2*	0.31 *3*	^{164}Yb(75.8 m) - 40.928, 675.41, 446.74
390.8	†100	^{178}Yb(74 m) - 348.4, 42.4
390.9 *1*	6.1 *3*	^{138}Pr(2.12 h) - 1037.8, 788.742, 302.7
391.28 *6*	1.53 *12*	^{111}Pd(5.5 h) - 172.18
391.690 *15*	64.2	^{113}In(1.6582 h)
391.690 *15*	64	^{113}Sn(115.09 d) - 255.05, 638.02, 382.9
392.87 *9*		^{88}Zr(83.4 d)
393.346 *7*	97.0 *19*	^{196}Ir(1.40 h) - 521.175, 447.1, 355.684
393.529 *10*	4.68 *6*	^{67}Ga(3.2612 d) - 93.311, 184.577, 300.219
396.00 *10*	34.3 *16*	^{147}Gd(38.06 h) - 229.32, 929.01, 370.0
396.329 *20*	6.40 *10*	^{175}Yb(4.185 d) - 282.522, 113.805, 144.863
396.861	11.85 *8*	^{43}K(22.3 h) - 372.760, 617.490, 593.390
397.54 *10*	9.3 *3*	^{79}Kr(35.04 h) - 261.35, 606.09, 306.47
397.859 *12*	2.9 *3*	^{183}Hf(1.067 h) - 783.754, 73.174, 459.069
398.9 *6*	88	^{173}Tm(8.24 h) - 461.4, 62.6
400 *20*		^{256}Md(78.1 m)

Energy	Intensity	Parent - Associated γ-rays
400.56 *5*	36.6 *10*	^{28}Mg(20.91 h) - 30.6383, 1342.27, 941.72
400.89 *7*	3.94 *13*	^{187}Ir(10.5 h) - 912.95, 427.12, 610.68
400.99 *4*	0.329 *19*	^{176}Lu(3.78×10^{10} y) - 306.78, 201.83, 88.34
401.323 *10*	3.35 *7*	^{203}Pb(51.873 h) - 279.1967, 680.516
401.81 *1*	6.37 *22*	^{219}Rn(3.96 s) - 271.23, 130.59, 293.54
402.586 *10*	49.6 *20*	^{87}Kr(76.3 m) - 2554.8, 845.43, 2558.1
402.6 *3*	72 *6*	^{247}Cm(1.56×10^{7} y) - 278.0, 287.4, 344.5
405 *2*	~0.08	^{253}Fm(3.00 d) - 271.8, 144.99, 62.47
405.6 *1*	0.99 *5*	^{251}Fm(5.30 h) - 880.8, 453.1, 349.9
405.75 *6*	9.7 *5*	^{207}Po(5.80 h) - 992.33, 742.64, 911.79
406.5 *2*	12.1 *12*	^{76}Kr(14.8 h) - 315.7, 270.2, 45.48
406.52 *5*	2.81 *24*	^{150}Eu(12.8 h) - 333.971, 1165.74, 921.2
407.0 *1*	0.190 *20*	^{247}Cf(3.11 h) - 294.1, 447.8, 417.9
407.338 *3*	42.1 *8*	^{172}Er(49.3 h) - 610.062, 68.107, 446.025
407.351 *15*	38.8 *3*	^{116}Sb(60.3 m) - 1293.558, 972.564, 542.867
407.63 *4*	32 *5*	^{193}Hg(11.8 h) - 257.99, 573.25, 932.37
408.009 *8*	0.359 *12*	^{135}Xe(9.14 h) - 249.770, 608.151, 158.260
409.44 *2*	8.0 *4*	^{191}Pt(2.802 d) - 538.90, 359.90, 82.407
409.5 *3*	0.84 *6*	^{85}Y(2.68 h) - 231.67, 504.45, 913.93
410.7 *2*	0.14 *4*	^{221}Fr(4.9 m) - 218.19, 99.5, 150.0
410.723 *9*	17.5 *9*	^{157}Eu(15.18 h) - 63.929, 370.509, 54.548
411.1163 *11*	2.234 *4*	^{152}Eu(13.537 y) - 121.7817, 1408.006, 964.079
411.490 *2*	22.31 *9*	^{129}Cs(32.06 h) - 371.918, 548.945, 39.578
411.80205 *17*	96	^{198}Au(2.69517 d) - 675.8836, 1087.684
411.80205 *17*	82 *7*	^{198}Tl(5.3 h) - 675.8836, 636.4, 1200.6
411.80205 *17*	57 *5*	^{198}Tl(1.87 h) - 636.4, 587.2, 226.2
411.95 *5*	63	^{127}Cs(6.25 h) - 124.70, 462.31, 587.01
413.0 *1*	0.0147 *20*	^{220}Fr(27.4 s) - 234.5, 178.4, 44.60
413.6636 *7*	17.4 *6*	^{177}Lu(160.4 d) - 319.0205, 121.6211, 171.8576
414.03 *4*	72	^{184}Ta(8.7 h) - 252.848, 920.932, 111.208
414.60 *5*	0.00030	^{226}Ra(1600 y) - 186.211, 262.27, 600.66
414.81 *2*	83.3 *21*	^{126}Sb(12.46 d) - 695.03, 666.331, 720.64
415.2	0.143 *22*	^{212}Pb(10.64 h) - 238.632, 300.087, 115.183
416.33 *3*	21.8 *5*	^{77}Ge(11.30 h) - 264.44, 211.03, 215.51
416.633 *25*	1.87 *4*	^{122}Xe(20.1 h) - 350.065, 148.612, 90.596
417.9 *1*	0.34 *3*	^{247}Cf(3.11 h) - 294.1, 447.8, 407.0
417.95 *10*	1.0	^{127}Te(9.35 h) - 360.32, 202.860, 215.17
418.01 *3*	34.2 *10*	^{130}I(12.36 h) - 536.09, 668.54, 739.48
418.37 *3*	4.41 *15*	^{83}Sr(32.41 h) - 762.65, 381.53, 381.17
418.5 *3*	0.220 *23*	^{252}Es(471.7 d) - 924.12, 800.01, 785.09
418.5391 *7*	21.3 *8*	^{177}Lu(160.4 d) - 413.6636, 319.0205, 121.6211
419.1 *3*	0.185 *7*	^{75}Ge(82.78 m) - 264.6576, 198.6060, 468.6
419.83 *7*	†<26.7	^{129}Ba(2.16 h) - 182.32, 1459.1, 202.38
420.5	<0.03	^{48}Cr(21.56 h) - 308.25, 112.36
422.04 *10*	0.0030 *5*	^{224}Ra(3.66 d) - 240.986, 292.70, 645.50
422.18 *4*	86 *5*	^{202}Pb(3.53 h) - 490.47, 459.72, 389.94
422.18 *4*	83.7 *25*	^{202}Bi(1.72 h) - 960.67, 657.49, 954.45
423.34 *10*	4.36 *23*	^{188}Pt(10.2 d) - 187.59, 195.05, 381.43
425.1 *3*	0.0137 *20*	^{45}Ti(184.8 m) - 720.22, 1408.6, 1662.4
425.4 *1*	0.95 *5*	^{251}Fm(5.30 h) - 480.4, 358.3, 383.2
425.84 *10*	13.0 *9*	^{197}Tl(2.84 h) - 152.22, 1411.34, 577.97
426.00 *3*	0.58 *12*	^{166}Dy(81.6 h) - 82.471, 28.242, 54.2400
426.0 *1*	7	^{196}Au(6.183 d) - 355.684, 332.983, 521.175
426.0 *1*	84 *5*	^{196}Tl(1.84 h) - 610.5, 635.5, 1495.8
426.0 *1*	91 *14*	^{196}Tl(1.41 h) - 635.5, 695.6, 505.2
426.25 *21*	4.12 *15*	^{109}In(4.2 h) - 203.5, 623.7, 1148.9
426.383 *6*	97.0 *13*	^{178}Hf(31 y) - 325.562, 574.215, 213.440
426.383 *6*	97.0 *13*	^{178}Ta(2.36 h) - 325.562, 213.440, 88.867
426.98 *5*	13.2 *6*	^{177}W(135 m) - 115.65, 1036.4, 115.05
427.12 *4*	4.12 *13*	^{187}Ir(10.5 h) - 912.95, 400.89, 610.68
427.875 *6*	30	^{125}Sb(2.7582 y) - 600.600, 635.954, 463.365
427.883 *4*	4.4 *4*	^{75}Br(96.7 m) - 286.572, 141.3147, 377.385
430.49 *3*	3.28 *15*	^{92}Sr(2.71 h) - 1383.93, 953.31, 241.56
430.634 *20*	4.06 *20*	^{241}Cm(32.8 d) - 471.805, 205.879, 165.049
430.634 *20*	0.0015 *3*	^{245}Bk(4.94 d) - 205.879, 471.805, 164.8
431.4 *5*	5.2×10^{-5} *4*	^{145}Sm(340 d) - 61.25, 492.31
432.86 *7*	9	^{195}Ir(3.8 h) - 100
433.0 *5*	1.436 *25*	^{175}Hf(70 d) - 343.40, 89.36, 229.6
433.22 *9*	0.0518 *9*	^{137}Ce(9.0 h) - 447.15, 10.6, 436.59
433.9 *2*	1.28 *11*	^{137}Pr(1.28 h) - 836.7, 514.0, 160.32
433.937 *4*	90	^{108}Ag(418 y) - 722.907, 614.276
434.84 *3*	33.9 *9*	^{186}Ir(16.64 h) - 296.90, 137.157, 773.28

Energy	Intensity	Parent - Associated γ-rays
436.1 *1*	0.0285 *6*	^{163}Er(75.0 m) - 1113.5, 439.94, 297.88
436.59 *9*	0.265 *9*	^{137}Ce(9.0 h) - 447.15, 10.6, 433.22
438.4 *1*	8.3 *4*	^{237}Am(73.0 m) - 280.23, 473.5, 908.8
438.63 *2*	94.77 *20*	^{69}Zn(13.76 h)
439.401 *15*	80.4 *16*	^{150}Eu(36.9 y) - 333.971, 584.274, 737.455
439.56 *1*	10.0 *5*	^{202}Au(28.8 s) - 1125.25, 1306.5, 1204.1
439.56 *1*	91	^{202}Tl(12.23 d) - 520.2, 960.1
439.895 *22*	1.20 *8*	^{147}Nd(10.98 d) - 91.105, 531.016, 319.411
439.94 *10*	0.0276 *6*	^{163}Er(75.0 m) - 1113.5, 436.1, 297.88
440.02 *5*	0.428 *14*	^{123}I(13.27 h) - 158.97, 528.96, 538.54
442.2 *1*	23.0 *14*	^{211}Rn(14.6 h) - 68.573, 167.90, 236.48
442.37 *5*	0.042 *6*	^{105}Rh(35.36 h) - 319.14, 306.25, 280.41
442.901 *10*	26.8 *3*	^{128}Cs(3.66 m) - 526.557, 1140.079, 969.458
443.09 *4*	81.9 *9*	^{180}Hf(5.5 h) - 332.277, 215.256, 57.555
443.37 *7*	10.5 *5*	^{105}Ag(41.29 d) - 344.520, 280.41, 644.55
443.799 *19*	3.27 *9*	^{103}Ru(39.26 d) - 497.080, 610.33, 557.039
446.025 *9*	2.96 *7*	^{172}Er(49.3 h) - 610.062, 407.338, 68.107
446.15 *2*	23.2 *7*	^{81}Rb(4.576 h) - 190.46, 510.31, 456.76
446.74 *26*	0.28 *3*	^{164}Yb(75.8 m) - 40.928, 675.41, 390.6
447.1 *2*	94.1 *19*	^{196}Ir(1.40 h) - 393.346, 521.175, 355.684
447.15 *8*	1.8	^{137}Ce(9.0 h) - 10.6, 436.59, 433.22
447.515 *3*	23.05 *10*	^{168}Tm(93.1 d) - 198.241, 815.990, 184.285
447.8 *1*	0.55 *4*	^{247}Cf(3.11 h) - 294.1, 417.9, 407.0
447.9 *1*	†37 *4*	^{258}Md(51.5 d) - 367.8, 276.8, 71.1
448.34 *9*	2.34 *14*	^{92}Y(3.54 h) - 934.46, 1405.28, 561.03
450.85 *2*	0.011 *4*	^{85}Kr(4.480 h) - 304.87
450.85 *2*	0.0108 *5*	^{85}Sr(67.63 m) - 151.159, 129.820, 731.812
450.97 *3*	24.2 *13*	^{106}Rh(131 m) - 511.842, 1045.83, 717.24
450.97 *3*	28.2 *7*	^{106}Ag(8.28 d) - 511.842, 1045.83, 717.24
452.83 *10*	0.31 *6*	^{212}Bi(60.55 m) - 727.330, 1620.50, 785.37
453.1 *1*	1.45 *8*	^{251}Fm(5.30 h) - 425.4, 480.4, 358.3
453.43 *17*	68 *3*	^{179}Hf(25.05 d) - 362.39, 122.793, 146.15
453.655 *5*	8.61 *19*	^{232}Pa(1.31 d) - 969.315, 894.351, 150.059
453.796 *11*	4.69 *10*	^{125}Xe(16.9 h) - 188.418, 243.378, 54.968
453.88 *6*	65 *2*	^{146}Pm(5.53 y) - 735.72, 589.3, 146.4
454.95 *5*	8	^{230}Ac(122 s) - 508.20, 1243.9, 1347.7
454.95 *5*	6.27 *16*	^{230}Pa(17.4 d) - 951.95, 918.48, 898.68
454.95 *5*	2.5×10^{-5} *7*	^{234}U(2.455×10^{5} y) - 53.20, 120.90, 508.20
455.46 *3*	12.4 *6*	^{199}Tl(7.42 h) - 208.20597, 247.26, 158.37947
455.80 *8*	18.5 *14*	^{182}Hf(61.5 m) - 344.1, 224.38, 506.60
456.76 *5*	3.02 *9*	^{81}Rb(4.576 h) - 190.46, 446.15, 510.31
458.25 *7*	1.7	^{210}Rn(2.4 h) - 648.70, 570.95, 72.70
459.069 *11*	27 *3*	^{183}Hf(1.067 h) - 783.754, 73.174, 397.859
459.60 *5*	7.70 *23*	^{129}Te(69.6 m) - 27.81, 487.39, 278.43
459.72 *7*	8.6 *5*	^{202}Pb(3.53 h) - 490.47, 389.94, 241.1
459.88 *12*	26.62 *19*	^{96}Nb(23.35 h) - 778.224, 568.80, 849.929
460.547 *7*	3.95 *20*	^{193}Os(30.11 h) - 138.938, 73.042, 557.429
460.57 *3*	0.121 *3*	^{97}Ru(2.9 d) - 215.718, 324.48, 569.31
461.4 *8*	6.9 *3*	^{173}Tm(8.24 h) - 398.9, 62.6
462.31 *5*	5.07 *5*	^{127}Cs(6.25 h) - 411.95, 124.70, 587.01
463.004 *6*	20.9 *10*	^{228}Pa(22 h) - 308.0, 29.8, 43.3
463.365 *4*	10.493 *15*	^{125}Sb(2.7582 y) - 427.875, 600.600, 635.954
464.55 *4*	1.73 *8*	^{132}Cs(6.479 d) - 667.718, 630.19, 505.79
464.55 *4*	76 *5*	^{132}La(4.8 h) - 567.14, 1909.91, 663.07
467.12 *1*	7.1 *5*	^{207}At(1.80 h) - 814.41, 588.33, 300.654
468.07152 *24*	47.83 *17*	^{192}Ir(73.831 d) - 205.79549, 484.5780, 374.4852
468.58 *4*	2.42 *17*	^{102}Rh(207 d) - 475.10, 628.05, 1103.16
468.6 *4*	0.223 *9*	^{75}Ge(82.78 m) - 264.6576, 198.6060, 419.1
469.37 *10*	17.5 *5*	^{105}Ru(4.44 h) - 724.21, 676.36, 316.44
469.7 *1*	†29.3 *10*	^{230}Ra(93 m) - 72.0, 63.0, 202.8
470.472 *13*	1.41 *3*	^{121}Te(16.78 d) - 573.139, 507.591, 65.548
471.805 *20*	71 *3*	^{241}Cm(32.8 d) - 430.634, 205.879, 165.049
471.805 *20*	0.026 *5*	^{245}Bk(4.94 d) - 205.879, 164.8, 430.634
473.0 *4*	25.8 *7*	^{127}Sb(3.85 d) - 685.7, 783.7, 252.4
473.5 *1*	4.3 *3*	^{237}Am(73.0 m) - 280.23, 438.4, 908.8
475.10 *3*	95 *4*	^{102}Rh(2.9 y) - 631.28, 697.49, 766.84
475.10 *3*	38.4 *25*	^{102}Rh(207 d) - 628.05, 1103.16, 468.58
475.28 *4*	1.02 *4*	^{121}I(2.12 h) - 212.189, 532.08, 598.74
476.8 *1*	42.0 *8*	^{144}Pm(363 d) - 696.510, 618.01, 778.5
477.2 *2*	20.2 *14*	^{55}Co(17.53 h) - 931.3, 1408.4, 1316.4
477.22 *4*	39	^{133}Ce(4.9 h) - 510.36, 58.39, 130.803
477.595	10.52 *6*	^{7}Be(53.12 d)
477.99 *2*	1.02 *3*	^{188}Re(17.005 h) - 155.032, 632.99, 931.34
477.99 *2*	15	^{188}Ir(41.5 h) - 155.032, 2214.62, 632.99
479.17 *9*	90.74 *3*	^{90}Y(3.19 h) - 202.51, 681.8
479.531 *17*	21.8 *4*	^{187}W(23.72 h) - 685.774, 72.001, 134.243
480.4 *1*	0.392 *20*	^{251}Fm(5.30 h) - 425.4, 358.3, 383.2
480.51 *2*	1.5	^{135}La(19.5 h) - 874.51, 587.83, 220.94
482.182 *23*	80.50 *11*	^{181}Hf(42.39 d) - 133.024, 345.916, 136.266
482.833 *22*	97 *5*	^{194}Ir(171 d) - 328.455, 600.5, 687.7
484.40 *4*	2.21 *11*	^{183}Os(9.9 h) - 1101.94, 1107.92, 1034.85
484.470 *20*	0.290 *2*	^{115}Cd(44.6 d) - 933.8, 1290.580, 1132.570
484.5780 *4*	3.184 *11*	^{192}Ir(73.831 d) - 205.79549, 374.4852, 201.3112
484.805 *5*	89.7 *3*	^{87}Y(79.8 h) - 388.531
487.021 *12*	45.5 *6*	^{140}La(1.6781 d) - 1596.210, 815.772, 328.762
487.38 *4*	62 *3*	^{71}Zn(3.96 h) - 386.28, 620.18, 511.56
487.39 *5*	1.42 *5*	^{129}Te(69.6 m) - 27.81, 459.60, 278.43
489.23 *10*	6.2 *4*	^{47}Ca(4.536 d) - 1297.09, 807.86, 767.1
490.47 *7*	9.1 *5*	^{202}Pb(3.53 h) - 459.72, 389.94, 241.1
490.5 *5*	†18 *2*	^{244}Bk(4.35 h) - 891.5, 217.6, 921.5
491.243 *11*	2.85 *6*	^{126}I(13.11 d) - 666.331, 753.819, 1420.17
491.243 *11*	5.0 *4*	^{126}Cs(1.64 m) - 388.633, 925.24, 879.876
492.3 *6*	8.03 *9*	^{115}Cd(53.46 h) - 336.240, 527.900, 260.890
492.31 *15*	0.00328 *12*	^{145}Sm(340 d) - 61.25, 431.4
496.242 *15*	0.146 *7*	^{150}Tb(3.48 h) - 638.050, 511, 3383.6
496.326 *13*	47	^{131}Ba(11.50 d) - 123.805, 216.078, 373.246
497.080 *7*	90.9 *10*	^{103}Ru(39.26 d) - 610.33, 443.799, 557.039
497.080 *7*	0.00396 *14*	^{103}Pd(16.991 d) - 39.757, 357.47, 294.978
497.358 *24*	0.047 *1*	^{115}In(4.486 h) - 336.240
497.77 *10*	73 *5*	^{200}Au(18.7 h) - 332.82, 146.07, 59.97
499.876 *10*	3.624 *16*	^{71}As(65.28 h) - 174.954, 1095.490, 326.785
502.53 *7*	92.31 *4*	^{190}Ir(3.25 h) - 616.08, 361.136, 186.718
504.45 *10*	60	^{85}Y(2.68 h) - 231.67, 913.93, 409.5
505.2 *7*	6 *3*	^{196}Tl(1.41 h) - 426.0, 635.5, 695.6
505.79 *3*	0.73 *5*	^{132}Cs(6.479 d) - 667.718, 630.19, 1317.927
506.5 *5*	0.154 *21*	^{233}Np(36.2 m) - 312.17, 298.89, 546.9
506.60 *8*	21.6 *17*	^{182}Hf(61.5 m) - 344.1, 224.38, 455.80
507.4 *7*	85 *7*	^{89}Nb(1.18 h) - 587.83, 769.69, 1277.5
507.591 *11*	17.7 *4*	^{121}Te(16.78 d) - 573.139, 470.472, 65.548
507.60 *10*	14.8 *8*	^{62}Zn(9.186 h) - 596.56, 40.84, 548.35
507.64 *8*	5.03 *19*	^{97}Zr(16.91 h) - 743.36, 1147.97, 355.40
508.20 *10*	5.15 *16*	^{230}Ac(122 s) - 454.95, 1243.9, 1347.7
508.20 *10*	1.5×10^{-5} *4*	^{234}U(2.455×10^{5} y) - 53.20, 120.90, 454.95
508.8 *5*	0.0228 *18*	^{142}Pr(19.12 h) - 641.285
~510	0.296 *9*	^{73}Se(7.15 h) - 360.80, 67.03, 865.09
510.056 *10*	52	^{182}Os(22.10 h) - 180.230, 263.285, 55.506
510.31 *9*	5.3 *9*	^{81}Rb(4.576 h) - 190.46, 446.15, 456.76
510.36 *7*	20.7 *5*	^{133}Ce(4.9 h) - 477.22, 58.39, 130.803
510.530 *11*	1.83 *4*	^{133}I(20.8 h) - 529.872, 875.329, 1298.223
510.77 *10*	22.6 *3*	^{208}Tl(3.053 m) - 2614.533, 583.191, 860.564
511	0.449 *22*	^{150}Tb(3.48 h) - 638.050, 496.242, 3383.6
511 *2*	0.076	^{222}Rn(3.8235 d)
511.36 *5*	24.1 *5*	^{206}Po(8.8 d) - 1032.26, 286.410, 807.38
511.56 *4*	28.4 *19*	^{71}Zn(3.96 h) - 386.28, 487.38, 620.18
511.842 *28*	86 *4*	^{106}Rh(131 m) - 1045.83, 717.24, 450.97
511.842 *28*	88 *3*	^{106}Ag(8.28 d) - 1045.83, 717.24, 450.97
514.0067 *19*	0.43	^{85}Kr(10.756 y) - 362.81, 151.159, 129.820
514.0 *2*	1.08 *11*	^{137}Pr(1.28 h) - 836.7, 433.9, 160.32
514.0067 *19*	96	^{85}Sr(64.84 d) - 868.5, 151.159, 362.81
516.18 *4*	40.7 *4*	^{206}Bi(6.243 d) - 803.10, 881.01, 1718.70
518.05 *2*	13.6 *5*	^{135}Ce(17.7 h) - 265.56, 300.07, 606.76
518.55 *7*	34.0 *11*	^{190}Ir(11.78 d) - 186.718, 605.24, 557.972
520.2 *1*	0.58 *4*	^{202}Tl(12.23 d) - 439.56, 960.1
520.39 *1*	0.0576 *18*	^{83}Br(2.40 h) - 529.635, 552.63, 648.9
520.39 *1*	44.7 *22*	^{83}Rb(86.2 d) - 529.635, 552.63, 790.0
520.639 *4*	0.558 *22*	^{77}As(38.83 h) - 238.9963, 249.7862, 87.8671
520.639 *4*	22.4 *4*	^{77}Br(57.036 h) - 238.9963, 297.2151, 249.7862
521.175 *5*	96	^{196}Ir(1.40 h) - 393.346, 447.1, 355.684
521.175 *5*	0.389 *9*	^{196}Au(6.183 d) - 355.684, 332.983, 1091.331
522.65 *9*	16.0 *5*	^{132}I(2.295 h) - 667.718, 772.60, 954.55
526.557 *14*	2.41 *3*	^{128}Cs(3.66 m) - 442.901, 1140.079, 969.458
526.57 *4*	45 *2*	^{128}Sb(9.01 h) - 753.82, 743.22, 314.12
527.900 *10*	27.45 *18*	^{115}Cd(53.46 h) - 336.240, 492.3, 260.890
528.24 *7*	38	^{99}Rh(16.1 d) - 353.05, 89.65, 322.41

Energy	Intensity	Parent - Associated γ-rays
528.96 *5*	1.39 *4*	^{123}I(13.27 h) - 158.97, 440.02, 538.54
529.635 *9*	1.200 *17*	^{83}Br(2.40 h) - 520.39, 552.63, 648.9
529.635 *9*	29.3 *13*	^{83}Rb(86.2 d) - 520.39, 552.63, 790.0
529.872 *11*	87.0 *17*	^{133}I(20.8 h) - 875.329, 1298.223, 510.530
531.016 *22*	13.1 *7*	^{147}Nd(10.98 d) - 91.105, 319.411, 439.895
531.54 *4*	1.6	^{167}Tm(9.25 d) - 207.801, 57.0723, 264.9
532.08 *4*	6.07 *25*	^{121}I(2.12 h) - 212.189, 598.74, 475.28
534.318 *11*	66.6 *3*	^{156}Tb(5.35 d) - 199.2132, 1222.36, 88.9667
534.90 *2*	13.2 *7*	^{204}Po(3.53 h) - 883.984, 270.068, 1016.31
535.61 *18*	3.46 *14*	^{85}Y(4.86 h) - 231.67, 2123.8, 767.40
536 *10*	>0.015	^{243}Bk(4.5 h) - 187.1, 146.4, 41
536.09 *3*	99	^{130}I(12.36 h) - 668.54, 739.48, 418.01
537.261 *9*	24.39 *7*	^{140}Ba(12.752 d) - 29.9640, 162.660, 304.849
538.11 *10*	0.0110 *9*	^{236}Np(22.5 h) - 642.35, 687.59, 104.234
538.54 *5*	0.382 *12*	^{123}I(13.27 h) - 158.97, 528.96, 440.02
538.90 *5*	13.7 *7*	^{191}Pt(2.802 d) - 409.44, 359.90, 82.407
539.512 *5*		^{100}Mo(1.00×10^{19} y) - 590.792
539.512 *5*	80.6 *4*	^{100}Rh(20.8 h) - 2375.976, 822.654, 1553.348
540.18 *6*	20	^{154}Tb(9.4 h) - 123.071, 247.925, 649.564
541.22 *7*	0.060 *10*	^{93}Mo(6.85 h) - 949.82, 689.07, 385.31
542.867 *15*	48.1 *4*	^{116}Sb(60.3 m) - 1293.558, 972.564, 407.351
544.7 *3*	17.9 *9*	^{129}Sb(4.40 h) - 812.8, 914.6, 1030.1
545.0 *1*	91	^{209}At(5.41 h) - 781.9, 790.2, 195.0
545.117 *7*	4.27 *24*	^{101}Rh(4.34 d) - 306.857, 127.226, 179.636
546.9 *4*	0.280 *14*	^{233}Np(36.2 m) - 312.17, 298.89, 506.5
548.35 *11*	15.3 *8*	^{62}Zn(9.186 h) - 596.56, 40.84, 507.60
548.945 *8*	3.40 *3*	^{129}Cs(32.06 h) - 371.918, 411.490, 39.578
549.76 *4*	0.114 *17*	^{220}Rn(55.6 s)
550.284 *12*	94.5 *7*	^{148}Pm(41.29 d) - 75.7, 62.2
550.284 *12*	22.00 *16*	^{148}Pm(5.370 d) - 1465.12, 914.85, 611.293
550.284 *12*	98.5 *22*	^{148}Eu(54.5 d) - 629.987, 611.293, 553.231
550.7 *1*	5.0	^{248}Bk(23.7 h) - 592.2, 43.38
552.63 *2*	0.0200 *11*	^{83}Br(2.40 h) - 529.635, 520.39, 648.9
552.63 *2*	16.0 *7*	^{83}Rb(86.2 d) - 520.39, 529.635, 790.0
553.231 *14*	12.9 *22*	^{148}Eu(54.5 d) - 550.284, 629.987, 611.293
553.4 *5*	6.9 *7*	^{80}Sr(106.3 m) - 589.0, 175.4, 378.8
554.1 *2*	2.94 *9*	^{129}Ba(2.23 h) - 214.30, 220.83, 129.14
554.348 *2*	70.8 *7*	^{82}Br(35.30 h) - 776.517, 619.106, 698.374
554.348 *2*	62.4 *8*	^{82}Rb(6.472 h) - 776.517, 619.106, 1044.002
554.60 *7*	7.9×10^{-5} *5*	^{244}Cm(18.10 y) - 42.824, 98.860, 152.63
555.796 *23*	92.6 *9*	^{104}Ag(69.2 m) - 767.72, 941.7, 926.2
556.41 *5*	96 *10*	^{102}Rh(207 d) - 475.10, 628.05, 1103.16
556.65 *5*	0.121 *4*	^{129}Te(33.6 d) - 105.50
557.039 *20*	0.8672 *9*	^{103}Ru(39.26 d) - 497.080, 610.33, 443.799
557.429 *21*	1.30 *12*	^{193}Os(30.11 h) - 138.938, 460.547, 73.042
557.7 *3*	11.3 *23*	^{133}Ce(97 m) - 97.261, 76.9, 376.7
557.972 *14*	14.3 *10*	^{190}Re(3.2 h) - 119.12, 0
557.972 *14*	30.1 *9*	^{190}Ir(11.78 d) - 186.718, 605.24, 518.55
558.456 *2*	3.24 *23*	^{114}In(49.51 d) - 725.298
559.101 *5*	45	^{76}As(1.0778 d) - 657.041, 1216.104, 1212.94
559.101 *5*	74	^{76}Br(16.2 h) - 657.041, 1853.67, 1216.104
560.13 *5*	5.4 *5*	^{245}Pu(10.5 h) - 327.428, 308.222, 376.676
560.27 *4*	7	^{195}Hg(41.6 h) - 261.75, 387.87, 200.38
560.44 *2*	73	^{120}I(81.0 m) - 1523.0, 640.85, 601.11
560.45 *3*	0.84 *6*	^{249}Cm(64.15 m) - 634.31, 368.76, 621.87
561.03 *6*	2.40 *14*	^{92}Y(3.54 h) - 934.46, 1405.28, 448.34
561.03 *6*	100	^{92}Nb(3.47×10^{7} y) - 934.46
561.11 *7*	10.9 *6*	^{238}Am(98 m) - 962.77, 918.69, 605.13
561.11 *7*	0.00015 *4*	^{242}Cm(162.8 d) - 44.08, 101.90, 157.42
561.67 *10*	0.013 *3*	^{95}Nb(34.975 d) - 765.794, 204.117
563.246 *5*	0.362 *6*	^{134}La(6.45 m) - 604.721, 1554.946, 1732.12
563.52 *5*	10.5 *5*	^{195}Tl(1.16 h) - 884.47, 1363.88, 242.15
564.119 *17*	71	^{122}Sb(2.7238 d) - 1140.55
564.119 *17*	18	^{122}I(3.63 m) - 692.794, 793.278, 683.647
564.397 *16*	14.7 *8*	^{117}Cd(3.36 h) - 1997.33, 1065.98, 1432.91
566.34 *6*	25.3 *13*	^{240}Np(61.9 m) - 973.9, 600.57, 895.8
567.14 *3*	0.234 *9*	^{132}Cs(6.479 d) - 667.718, 630.19, 505.79
567.14 *3*	15.7 *12*	^{132}La(4.8 h) - 464.55, 1909.91, 663.07
568.80 *12*	58.0 *3*	^{96}Nb(23.35 h) - 778.224, 459.88, 849.929
568.84 *5*	7.1 *3*	^{189}Pt(10.87 h) - 721.41, 94.33, 243.37
569.1 *2*	†91 *12*	^{229}Ac(62.7 m) - 164.522, 261.92, 146.345
569.31 *4*	0.873 *17*	^{97}Ru(2.9 d) - 215.718, 324.48, 460.57
569.310 *14*	13.7 *10*	^{190}Re(3.2 h) - 119.12, 0
569.331 *3*	15.38 *6*	^{134}Cs(2.0648 y) - 847.025
569.5 *1*	8.2 *8*	^{234}Pa(6.70 h) - 131.30, 946.00, 883.24
569.702 *2*	97.74 *3*	^{207}Bi(31.55 y) - 1063.662, 1770.237, 1442.20
570.4 *3*	0.0006	^{208}Po(2.898 y) - 291.7, 601.6, 861.9
570.95 *7*	0.840 *22*	^{210}Rn(2.4 h) - 458.25, 648.70, 72.70
572.9 *1*	15	^{170}Hf(16.01 h) - 164.71, 620.7, 120.19
573.139 *11*	80.3 *17*	^{121}Te(16.78 d) - 507.591, 470.472, 65.548
573.25 *6*	26 *3*	^{193}Hg(11.8 h) - 257.99, 407.63, 932.37
574.17 *3*	0.033	^{69}Zn(13.76 h) - 438.63
574.17 *3*	13.3 *11*	^{69}Ge(39.05 h) - 1107.01, 872.14, 1336.72
574.215 *21*	88 *3*	^{178}Hf(31 y) - 426.383, 325.562, 213.440
574.8 *3*	0.070 *8*	^{226}Ac(29.37 h) - 253.73, 186.05, 67.67
575.10 *10*	0.90 *9*	^{111}Pd(5.5 h) - 172.18
576.0 *2*	0.065 *9*	^{146}Gd(48.27 d) - 154.57, 115.51, 114.71
577.97 *10*	4.5 *3*	^{197}Tl(2.84 h) - 425.84, 152.22, 1411.34
579.298 *13*	72 *5*	^{200}Au(18.7 h) - 332.82, 146.07, 59.97
579.298 *13*	13.8 *7*	^{200}Tl(26.1 h) - 367.943, 1205.717, 828.320
582.082 *3*	0.055 *7*	^{95}Nb(86.6 h) - 235.69
582.082 *3*	29.96 *5*	^{95}Tc(61 d) - 204.117, 835.149, 786.198
583.191 *2*	84.5 *7*	^{208}Tl(3.053 m) - 2614.533, 510.77, 860.564
584.274 *12*	52.6 *14*	^{150}Eu(36.9 y) - 333.971, 439.401, 737.455
584.32 *2*	2.84 *20*	^{254}Es(39.3 h) - 211.80, 177.30, 71.30
585.13 *5*	1.99 *8*	^{195}Hg(9.9 h) - 779.80, 61.46, 180.11
586.2648 *25*	9.4 *6*	^{152}Tb(17.5 h) - 344.2785, 271.131, 778.9040
586.45 *3*	17	^{191}Au(3.18 h) - 277.88, 674.19, 283.91
587.01 *5*	4.21 *6*	^{127}Cs(6.25 h) - 411.95, 124.70, 462.31
587.2 *3*	52	^{198}Tl(1.87 h) - 636.4, 411.80205, 226.2
587.46 *2*	15.6 *5*	^{151}Tb(17.609 h) - 287.357, 251.863, 108.088
587.83 *9*	100	^{89}Nb(1.18 h) - 507.4, 769.69, 1277.5
587.83 *2*	0.1108 *8*	^{135}La(19.5 h) - 480.51, 874.51, 220.94
588.33 *2*	19.2 *10*	^{207}At(1.80 h) - 814.41, 300.654, 467.12
589.0 *5*	39 *4*	^{80}Sr(106.3 m) - 175.4, 553.4, 378.8
589.3 *1*	0.42 *9*	^{146}Pm(5.53 y) - 453.88, 735.72, 146.4
590.44 *6*	12.06 *19*	^{101}Pd(8.47 h) - 296.29, 269.67, 24.46
590.792 *6*		^{100}Mo(1.00×10^{19} y) - 539.512
590.88 *1*	0.069 *3*	^{149}Pm(53.08 h) - 285.95, 859.46, 22.510
592.2	>0.015	^{248}Bk(23.7 h) - 550.7, 43.38
592.6 *1*	3.7 *4*	^{161}Er(3.21 h) - 826.6, 211.15, 314.77
593.31 *9*	0.00228 *19*	^{127}Te(109 d) - 88.26
593.390	11.26 *8*	^{43}K(22.3 h) - 372.760, 617.490, 396.861
593.390	0.0022 *7*	^{43}Sc(3.891 h) - 372.760, 1931.3, 1558.5
595.847 *6*	59 *3*	^{74}As(17.77 d) - 608.353, 1204.208, 887.19
596.56 *13*	26	^{62}Zn(9.186 h) - 40.84, 548.35, 507.60
598.74 *5*	1.47 *6*	^{121}I(2.12 h) - 212.189, 532.08, 475.28
600.1 *1*	14.0 *7*	^{132}I(1.387 h) - 98.0, 22
600.5 *1*	62 *3*	^{194}Ir(171 d) - 482.833, 328.455, 687.7
600.57 *6*	18.4 *9*	^{240}Np(61.9 m) - 566.34, 973.9, 895.8
600.600 *4*	17.86 *5*	^{125}Sb(2.7582 y) - 427.875, 635.954, 463.365
600.66 *5*	0.00049	^{226}Ra(1600 y) - 186.211, 262.27, 414.60
601.11 *2*	5.8 *12*	^{120}I(81.0 m) - 560.44, 1523.0, 640.85
601.6 *2*	0.00049	^{208}Po(2.898 y) - 291.7, 570.4, 861.9
602.729 *3*	98.26 *23*	^{124}Sb(60.20 d) - 1690.983, 722.786, 645.8549
602.729 *3*	63	^{124}I(4.1760 d) - 1690.983, 722.786, 1509.47
604.721 *2*	97.62 *3*	^{134}Cs(2.0648 y) - 847.025
604.721 *2*	5.04 *10*	^{134}La(6.45 m) - 1554.946, 563.246, 1732.12
605.13 *9*	7.6 *5*	^{238}Am(98 m) - 962.77, 918.69, 561.11
605.24 *5*	14.9 *10*	^{190}Re(3.2 h) - 119.12, 0
605.24 *5*	39.9 *14*	^{190}Ir(11.78 d) - 186.718, 518.55, 557.972
606.09 *10*	8.12 *20*	^{79}Kr(35.04 h) - 261.35, 397.54, 306.47
606.76 *2*	18.8 *5*	^{135}Ce(17.7 h) - 265.56, 300.07, 518.05
606.88 *15*	3.1 *3*	^{112}Ag(3.130 h) - 617.516, 1387.67, 694.863
608.151 *12*	2.90 *9*	^{135}Xe(9.14 h) - 249.770, 408.009, 158.260
608.353 *5*	0.552 *12*	^{74}As(17.77 d) - 595.847, 1204.208, 887.19
610.0 *8*	1.47 *21*	^{132}I(1.387 h) - 98.0, 22
610.062 *2*	44.2 *10*	^{172}Er(49.3 h) - 407.338, 68.107, 446.025
610.33 *20*	5.75 *5*	^{103}Ru(39.26 d) - 497.080, 443.799, 557.039
610.5 *5*	11.9 *12*	^{196}Tl(1.84 h) - 426.0, 635.5, 1495.8
610.68 *11*	3.93 *15*	^{187}Ir(10.5 h) - 912.95, 427.12, 400.89
611.293 *8*	1.021 *11*	^{148}Pm(5.370 d) - 1465.12, 550.284, 914.85
611.293 *8*	20.5 *4*	^{148}Eu(54.5 d) - 550.284, 629.987, 553.231
611.5 *1*	5.7 *9*	^{186}Pt(2.2 h) - 689.4, 210.4, 635.3

Energy	Intensity	Parent - Associated γ-rays
612.00 *10*	5.7 *3*	^{86}Zr(16.5 h) - 242.80, 29.10, 135.6
612.46564 *20*	4.34 *4*	^{192}Au(4.94 h) - 316.50791, 295.95827, 2236.89
613.725 *3*	54	^{78}As(90.7 m) - 694.916, 1308.59, 828.189
614.0 *8*	2.5 *7*	^{132}I(1.387 h) - 98.0, 22
614.276 *4*	89.8 *18*	^{108}Ag(418 y) - 722.907, 433.937
616.08 *14*	93.10 *3*	^{190}Ir(3.25 h) - 502.53, 361.136, 186.718
616.6 *1*	25	^{80}Rb(34 s) - 703.9, 639.6, 1256.3
617.490	79.2 *6*	^{43}K(22.3 h) - 372.760, 396.861, 593.390
617.516 *11*	43	^{112}Ag(3.130 h) - 1387.67, 606.88, 694.863
617.8 *3*	12.0 *10*	^{99}Rh(4.7 h) - 340.71, 1261.2, 936.7
618.01 *3*	98.6 *10*	^{144}Pm(363 d) - 696.510, 476.8, 778.5
619.106 *4*	43.4 *4*	^{82}Br(35.30 h) - 776.517, 554.348, 698.374
619.106 *4*	37.976 *8*	^{82}Rb(6.472 h) - 776.517, 554.348, 1044.002
620.18 *4*	57 *3*	^{71}Zn(3.96 h) - 386.28, 487.38, 511.56
620.26 *13*	0.0110 *8*	^{111}Ag(7.45 d) - 342.13, 245.395, 96.75
620.7 *1*	18	^{170}Hf(16.01 h) - 164.71, 120.19, 572.9
621.87 *6*	0.182 *13*	^{249}Cm(64.15 m) - 634.31, 560.45, 368.76
622.53 *8*	0.268 *20*	^{204}Pb(67.2 m) - 899.15, 911.78, 374.72
623.7 *3*	5.5 *3*	^{109}In(4.2 h) - 203.5, 1148.9, 426.25
626.77 *3*	17.8 *5*	^{95}Ru(1.643 h) - 336.43, 1096.76, 1178.66
627.72 *10*	32.6 *10*	^{86}Y(14.74 h) - 1076.64, 1153.01, 777.35
628.05 *5*	3.8 *3*	^{102}Rh(207 d) - 475.10, 1103.16, 468.58
628.66 *3*	3.212 *21*	^{116}Te(2.49 h) - 93.88, 103.01, 637.9
629.1 *2*	24.0 *12*	^{201}Bi(108 m) - 936.2, 1014.1, 786.4
629.95 *3*	24.8 *5*	^{72}Ga(14.10 h) - 834.01, 2201.69, 2507.82
629.95 *3*	7.92 *14*	^{72}As(26.0 h) - 834.01, 1463.95, 1050.73
629.987 *8*	89	^{148}Pm(41.29 d) - 75.7, 62.2
629.987 *8*	71.9 *16*	^{148}Eu(54.5 d) - 550.284, 611.293, 553.231
630.19 *2*	0.95 *3*	^{132}Cs(6.479 d) - 667.718, 505.79, 1317.927
630.34 *3*	0.0293 *6*	^{186}Re(3.7183 d) - 122.30
630.34 *3*	15.6 *12*	^{186}Ir(1.90 h) - 1.5, 767.497, 773.28
631.28 *5*	56 *2*	^{102}Rh(2.9 y) - 475.10, 697.49, 766.84
632.56 *10*	0.010	^{133}Ba(38.9 h)
632.76 *10*	1.01 *9*	^{111}Pd(5.5 h) - 172.18
632.765 *8*	0.624 *19*	^{133}La(3.912 h) - 278.835, 302.353, 290.06
632.99 *2*	1.273 *12*	^{188}Re(17.005 h) - 155.032, 477.99, 931.34
632.99 *2*	18 *3*	^{188}Ir(41.5 h) - 155.032, 2214.62, 477.99
633.083 *23*	2.15 *20*	^{146}Pm(5.53 y) - 453.88, 735.72, 589.3
633.083 *23*	35.9 *8*	^{146}Eu(4.61 d) - 747.159, 634.137, 665.424
633.415 *20*	0.568 *12*	^{165}Dy(2.334 h) - 94.700, 361.68, 715.328
634.137 *21*	45.0 *10*	^{146}Eu(4.61 d) - 747.159, 633.083, 665.424
634.31 *2*	1.5 *1*	^{249}Cm(64.15 m) - 560.45, 368.76, 621.87
634.32 *10*	~0.036	^{74}As(17.77 d) - 595.847, 608.353, 1204.208
634.78 *10*	15.4 *5*	^{74}As(17.77 d) - 595.847, 608.353, 1204.208
635.3 *1*	2.6 *4*	^{186}Pt(2.2 h) - 689.4, 611.5, 210.4
635.5 *1*	9.8 *10*	^{196}Tl(1.84 h) - 426.0, 610.5, 1495.8
635.5 *1*	51 *8*	^{196}Tl(1.41 h) - 426.0, 695.6, 505.2
635.954 *5*	11.31 *9*	^{125}Sb(2.7582 y) - 427.875, 600.600, 463.365
636.4 *3*	10.1 *7*	^{198}Tl(5.3 h) - 411.80205, 675.8836, 1200.6
636.4 *3*	57 *5*	^{198}Tl(1.87 h) - 411.80205, 587.2, 226.2
636.989 *4*	7.17 *9*	^{131}I(8.02070 d) - 364.489, 284.305, 80.185
637.9 *2*	0.753 *21*	^{116}Te(2.49 h) - 93.88, 628.66, 103.01
638.02 *6*	0.00095 *4*	^{113}Sn(115.09 d) - 391.690, 255.05, 382.9
638.050 *16*	0.72 *4*	^{150}Tb(3.48 h) - 511, 496.242, 3383.6
639.30 *14*	6.4 *13*	^{181}Re(19.9 h) - 365.57, 360.70, 953.42
639.6 *1*	1.50 *15*	^{80}Rb(34 s) - 616.6, 703.9, 1256.3
640.85 *5*	9.1 *4*	^{120}I(81.0 m) - 560.44, 1523.0, 601.11
641.285 *9*	47	^{142}La(91.1 m) - 2397.8, 2542.7, 894.9
641.285 *9*	0.0022	^{142}Pr(19.12 h)
641.4 *5*	0.384 *20*	^{142}Pm(40.5 s) - 1575.85, 2384.3, 2845.9
642.35 *9*	0.9	^{236}Np(22.5 h) - 687.59, 538.11, 104.234
643.5 *5*	0.00024	^{236}Pu(2.858 y) - 47.574, 108.96, 166.0
644.01 *4*	84	^{119}Te(16.03 h) - 699.85, 1749.65, 1413.19
644.55 *7*	11.1 *5*	^{105}Ag(41.29 d) - 344.520, 280.41, 443.37
645.157 *16*	1.18 *3*	^{194}Ir(19.28 h) - 328.455, 293.545, 1150.76
645.50 *10*	0.0054 *9*	^{224}Ra(3.66 d) - 240.986, 292.70, 422.04
645.8549 *20*	7.456 *24*	^{124}Sb(60.20 d) - 602.729, 1690.983, 722.786
646.116 *9*	78.0 *8*	^{185}Os(93.6 d) - 874.813, 880.523, 717.424
647.3 *1*	0.024	^{109}Pd(13.7012 h) - 88.04, 311.4, 781.4
648.70 *7*	0.843 *22*	^{210}Rn(2.4 h) - 458.25, 570.95, 72.70
648.80 *2*	28.4 *20*	^{254}Es(39.3 h) - 211.80, 177.30, 71.30
648.9 *1*	0.0124 *10*	^{83}Br(2.40 h) - 529.635, 520.39, 552.63
649.42 *5*	2.6	^{206}Hg(8.15 m) - 304.896, 344.52
649.42 *5*	3.8	^{210}Bi(3.04×10^{6} y) - 265.832, 304.896, 344.52
649.564 *11*	10.9 *6*	^{154}Tb(9.4 h) - 123.071, 247.925, 540.18
650.91 *13*	0.00028 *10*	^{127}Te(109 d) - 88.26
652.12 *2*	16.25 *22*	^{149}Tb(4.118 h) - 352.24, 164.98, 388.57
652.43 *4*	100	^{98}Tc(4.2×10^{6} y) - 745.36
652.9 *2*	8.0 *3*	^{91}Sr(9.63 h) - 1024.3, 749.8, 925.8
653.512 *25*	15.0 *7*	^{145}Eu(5.93 d) - 893.73, 1658.53, 1997.00
654.831 *13*	8.0 *4*	^{149}Nd(1.728 h) - 211.309, 114.314, 270.166
656.008 *4*	10.77 *18*	^{61}Cu(3.333 h) - 282.956, 67.412, 1185.234
657.041 *5*	6.2 *3*	^{76}As(1.0778 d) - 559.101, 1216.104, 1212.94
657.041 *5*	15.9 *7*	^{76}Br(16.2 h) - 559.101, 1853.67, 1216.104
657.49 *3*	32.4 *15*	^{202}Pb(3.53 h) - 490.47, 459.72, 389.94
657.49 *3*	60.6 *18*	^{202}Bi(1.72 h) - 960.67, 422.18, 954.45
657.7622 *21*	94.0 *4*	^{110}Ag(249.79 d) - 116.48, 1.113
657.7622 *21*	98 *5*	^{110}In(69.1 m) - 2129.53, 2211.49, 2317.54
657.7622 *21*	98.3 *20*	^{110}In(4.9 h) - 884.685, 937.493, 707.40
658.08 *6*	98	^{97}Nb(72.1 m) - 1024.49, 1268.68, 1515.59
658.89 *6*	0.0123 *10*	^{127}Te(109 d) - 88.26
660.040 *17*	89 *4*	^{208}At(1.63 h) - 686.527, 177.595, 845.044
661.657 *3*	85.1 *2*	^{137}Cs(30.07 y) - 283.53
662.06 *5*	0.0259 *15*	^{141}La(3.92 h) - 1354.52, 1693.3, 2267.0
662.2 *1*	†266 *30*	^{171}Hf(12.1 h) - 122.0, 347.18, 1071.8
663.07 *3*	9.0 *6*	^{132}La(4.8 h) - 464.55, 567.14, 1909.91
664.571 *15*	5.69 *4*	^{143}Ce(33.039 h) - 293.266, 57.356, 721.929
665.424 *15*	7.23 *15*	^{146}Eu(4.61 d) - 747.159, 634.137, 633.083
666.331 *12*	100	^{126}Sb(12.46 d) - 695.03, 414.81, 720.64
666.331 *12*	33.1 *7*	^{126}I(13.11 d) - 753.819, 1420.17, 2045.17
667.404 *20*	11.04 *19*	^{171}Lu(8.24 d) - 739.78, 19.394, 75.878
667.718 *3*	99	^{132}I(2.295 h) - 772.60, 954.55, 522.65
667.718 *3*	98	^{132}Cs(6.479 d) - 630.19, 505.79, 1317.927
668.54 *3*	96 *3*	^{130}I(12.36 h) - 536.09, 739.48, 418.01
669.60 *7*	0.0035 *6*	^{211}At(7.214 h) - 687.0, 742.64
672.34 *2*	0.87 *3*	^{113}Ag(5.37 h) - 298.60, 258.72, 316.21
674.1 *1*	45	^{211}Rn(14.6 h) - 68.573, 167.90, 236.48
674.19 *3*	6.8 *5*	^{191}Au(3.18 h) - 586.45, 277.88, 283.91
675.41 *22*	0.38 *3*	^{164}Yb(75.8 m) - 40.928, 390.6, 446.74
675.795 *5*	0.514 *7*	^{145}Pr(5.984 h) - 748.278, 72.500, 978.969
675.8836 *7*	0.804 *3*	^{198}Au(2.69517 d) - 411.80205, 1087.684
675.8836 *7*	11	^{198}Tl(5.3 h) - 411.80205, 636.4, 1200.6
676.36 *8*	15.7 *5*	^{105}Ru(4.44 h) - 724.21, 469.37, 316.44
677.516 *7*	9.8 *3*	^{147}Eu(24.1 d) - 197.299, 121.220, 1077.043
678.4 *1*	28.9 *14*	^{211}Rn(14.6 h) - 68.573, 167.90, 236.48
679.0 *10*	53	^{246}Am(39 m) - 205.0, 152.9, 756
680.2 *1*	0.658 *14*	^{93}Y(10.18 h) - 266.9, 947.1, 1917.8
680.516 *10*	0.753 *18*	^{203}Pb(51.873 h) - 279.1967, 401.323
681.8 *6*	0.32 *3*	^{90}Y(3.19 h) - 202.51, 479.17
681.8 *2*	4.4 *5*	^{126}Ba(100 m) - 233.6, 257.6, 241.0
683.647 *19*	0.796 *16*	^{122}I(3.63 m) - 564.119, 692.794, 793.278
684.672 *9*	99.7 *20*	^{93}Mo(6.85 h) - 949.82, 689.07, 541.22
684.88 *7*	9.4 *5*	^{195}Ir(3.8 h) - 100
685.7 *5*	37	^{127}Sb(3.85 d) - 473.0, 783.7, 252.4
685.774 *18*	27.3 *6*	^{187}W(23.72 h) - 479.531, 72.001, 134.243
686.527 *20*	98	^{208}At(1.63 h) - 660.040, 177.595, 845.044
687.0	0.261 *6*	^{211}At(7.214 h) - 669.60, 742.64
687.59 *9*	0.250 *5*	^{236}Np(22.5 h) - 642.35, 538.11, 104.234
687.7 *1*	59 *3*	^{194}Ir(171 d) - 482.833, 328.455, 600.5
688.68 *2*	12.3 *9*	^{254}Es(39.3 h) - 211.80, 177.30, 71.30
689.07 *5*	0.070 *10*	^{93}Mo(6.85 h) - 949.82, 541.22, 385.31
689.4 *1*	70 *11*	^{186}Pt(2.2 h) - 611.5, 210.4, 635.3
692.03 *2*	0.157 *9*	^{57}Co(271.79 d) - 122.0614, 136.4743, 14.41300
692.794 *17*	3.85 *13*	^{122}Sb(2.7238 d) - 1140.55
692.794 *17*	1.355 *25*	^{122}I(3.63 m) - 564.119, 793.278, 683.647
693.79 *2*	24.3 *17*	^{254}Es(39.3 h) - 211.80, 177.30, 71.30
694.4 *10*	43	^{147}Tb(1.7 h) - 1152.4, 139.9, 119.7
694.863 *12*	3.0 *3*	^{112}Ag(3.130 h) - 617.516, 1387.67, 606.88
694.916 *4*	16.7 *11*	^{78}As(90.7 m) - 613.725, 1308.59, 828.189
695.03 *2*	100	^{126}Sb(12.46 d) - 666.331, 414.81, 720.64
695.6 *1*	41 *6*	^{196}Tl(1.41 h) - 426.0, 635.5, 505.2
695.88 *6*	3.071 *12*	^{129}Te(33.6 d) - 105.50
696.510 *5*	1.3	^{144}Pr(17.28 m) - 2185.662, 1489.160, 1387.9
696.510 *5*	99	^{144}Pm(363 d) - 618.01, 476.8, 778.5

Energy	Intensity	Parent - Associated γ-rays
697.49 *8*	44 *2*	^{102}Rh(2.9 y) - 475.10, 631.28, 766.84
698.374 *5*	28.49 *25*	^{82}Br(35.30 h) - 776.517, 554.348, 619.106
699.85 *6*	10.1 *5*	^{119}Te(16.03 h) - 644.01, 1749.65, 1413.19
702.622 *19*	97.9 *20*	^{94}Nb(2.03×10^{4} y) - 871.091
702.622 *19*	99.6 *18*	^{94}Tc(293 m) - 871.091, 849.74, 916.10
703.44 *3*	31	^{205}Bi(15.31 d) - 1764.36, 987.62, 1043.72
703.9 *2*	1.88 *20*	^{80}Rb(34 s) - 616.6, 639.6, 1256.3
707.40 *2*	29.5 *10*	^{110}In(4.9 h) - 657.7622, 884.685, 937.493
708.06 *6*	26.4 *11*	^{139}Nd(5.50 h) - 113.94, 737.96, 982.2
709.17 *7*	5.2 *4*	^{187}Pt(2.35 h) - 106.46, 201.52, 110.04
711.683 *8*	55.32 *22*	^{166}Ho(1200 y) - 184.410, 810.276, 280.459
715.328 *20*	0.534 *11*	^{165}Dy(2.334 h) - 94.700, 361.68, 633.415
717.24 *6*	28.9 *15*	^{106}Rh(131 m) - 511.842, 1045.83, 450.97
717.24 *6*	28.9 *8*	^{106}Ag(8.28 d) - 511.842, 1045.83, 450.97
717.424 *12*	3.94 *4*	^{185}Os(93.6 d) - 646.116, 874.813, 880.523
717.72 *8*	4.05 *22*	^{151}Pm(28.40 h) - 340.08, 167.75, 275.21
719.7 *7*	65	^{117}Te(62 m) - 1716.4, 2300.0, 1090.7
720.22 *17*	0.154 *12*	^{45}Ti(184.8 m) - 1408.6, 1662.4, 425.1
720.24 *6*	6.5 *3*	^{199}Pb(90 m) - 366.90, 353.39, 1135.04
720.64 *4*	53.8 *24*	^{126}Sb(12.46 d) - 695.03, 666.331, 414.81
721.41 *3*	9.3 *4*	^{189}Pt(10.87 h) - 94.33, 568.84, 243.37
721.929 *13*	5.39 *4*	^{143}Ce(33.039 h) - 293.266, 57.356, 664.571
722.12 *8*	7.7 *5*	^{154}Tb(21.5 h) - 123.071, 1274.436, 2187.10
722.786 *4*	10.81 *4*	^{124}Sb(60.20 d) - 602.729, 1690.983, 645.8549
722.786 *4*	10.35 *11*	^{124}I(4.1760 d) - 602.729, 1690.983, 1509.47
722.907 *10*	90.8 *18*	^{108}Ag(418 y) - 433.937, 614.276
723.304 *5*	20.22 *9*	^{154}Eu(8.593 y) - 184.810, 81.99
724.199 *5*	44.17 *13*	^{95}Zr(64.02 d) - 756.729, 235.69
724.21 *8*	47	^{105}Ru(4.44 h) - 469.37, 676.36, 316.44
725.298 *9*	3.24 *23*	^{114}In(49.51 d) - 558.456
725.673 *9*	32.7 *3*	^{148}Pm(41.29 d) - 75.7, 62.2
727.330 *9*	6.58 *5*	^{212}Bi(60.55 m) - 1620.50, 785.37, 1078.62
728.18 *2*	†2200 *60*	^{160}Ho(5.02 h) - 879.383, 962.317, 966.171
729.57 *5*	0.72 *3*	^{129}Te(33.6 d) - 105.50
731.812 *13*	0.007 *3*	^{85}Kr(4.480 h) - 304.87
731.812 *13*	0.0147 *8*	^{85}Sr(67.63 m) - 151.159, 129.820, 450.85
735.72 *6*	22.5 *15*	^{146}Pm(5.53 y) - 453.88, 589.3, 146.4
737.455 *15*	9.60 *19*	^{150}Eu(36.9 y) - 333.971, 439.401, 584.274
737.96 *8*	35	^{139}Nd(5.50 h) - 113.94, 982.2, 708.06
739.42 *5*	4.23 *24*	^{73}Ga(4.86 h) - 297.32, 325.70, 767.8
739.48 *3*	82 *3*	^{130}I(12.36 h) - 536.09, 668.54, 418.01
739.50 *2*	12.13 *12*	^{99}Mo(65.94 h) - 140.511, 181.063, 777.921
739.78 *2*	47.8 *7*	^{171}Lu(8.24 d) - 19.394, 667.404, 75.878
741.98 *4*	1.2×10^{-6} *4*	^{143}Pr(13.57 d)
741.98 *4*	39	^{143}Pm(265 d)
742.64 *8*	28.2 *4*	^{207}Po(5.80 h) - 992.33, 911.79, 405.75
742.64 *8*	0.0010 *3*	^{211}At(7.214 h) - 687.0, 669.60
743.22 *2*	100 *5*	^{128}Sb(9.01 h) - 753.82, 314.12, 526.57
743.36 *3*	93	^{97}Zr(16.91 h) - 507.64, 1147.97, 355.40
743.971 *5*	66 *18*	^{244}Am(10.1 h) - 897.848, 153.863, 99.383
744.233 *13*	90.0 *8*	^{52}Mn(5.591 d) - 1434.068, 935.538, 1333.649
745.36 *4*	102 *7*	^{98}Tc(4.2×10^{6} y) - 652.43
745.9 *1*	0.207 *17*	^{177}Ta(56.56 h) - 112.9498, 208.3664, 1057.8
747.159 *16*	34.0 *16*	^{146}Pm(5.53 y) - 453.88, 735.72, 589.3
747.159 *16*	98.5 *20*	^{146}Eu(4.61 d) - 634.137, 633.083, 665.424
748.278 *5*	0.5250 *21*	^{145}Pr(5.984 h) - 675.795, 72.500, 978.969
748.601 *2*	8.22 *10*	^{149}Gd(9.28 d) - 149.735, 298.634, 346.651
749.8 *1*	23.61 *17*	^{91}Sr(9.63 h) - 1024.3, 652.9, 925.8
749.95 *3*	49.5 *12*	^{56}Ni(6.077 d) - 158.38, 811.85, 269.50
751.637 *18*	0.032 *3*	^{140}Pr(3.39 m) - 1596.210, 306.9, 925.189
753.819 *13*	4.16 *9*	^{126}I(13.11 d) - 666.331, 1420.17, 2045.17
753.82 *2*	100 *5*	^{128}Sb(9.01 h) - 743.22, 314.12, 526.57
755 *2*	†10	^{243}Bk(4.5 h) - 187.1, 536, 146.4
756 *1*	13.3 *11*	^{246}Am(39 m) - 679.0, 205.0, 152.9
756.729 *12*	54	^{95}Zr(64.02 d) - 724.199, 235.69
762.3 *1*	0.192 *9*	^{137}Ce(34.4 h) - 824.82, 169.26, 835.38
762.65 *10*	30	^{83}Sr(32.41 h) - 381.53, 418.37, 381.17
765.794 *7*	100	^{95}Nb(34.975 d) - 204.117, 561.67
765.794 *7*	93.82 *19*	^{95}Tc(20.0 h) - 1073.71, 947.67, 869.60
766.38 *2*	2.2×10^{-5} *2*	^{238}Pu(87.7 y) - 43.498, 99.853, 152.720
766.84 *6*	34 *2*	^{102}Rh(2.9 y) - 475.10, 631.28, 697.49
767.1 *3*	0.191 *13*	^{47}Ca(4.536 d) - 1297.09, 489.23, 807.86
767.40 *19*	3.6 *4*	^{85}Y(4.86 h) - 231.67, 2123.8, 535.61
767.497 *25*	0.0327 *6*	^{186}Re(3.7183 d) - 122.30
767.497 *25*	18.4 *15*	^{186}Ir(1.90 h) - 1.5, 630.34, 773.28
767.72 *8*	65.7 *19*	^{104}Ag(69.2 m) - 555.796, 941.7, 926.2
767.8 *1*	1.44 *8*	^{73}Ga(4.86 h) - 297.32, 325.70, 739.42
768.91 *8*	1.25 *10*	^{164}Tm(2.0 m) - 91.40, 1154.66, 208.08
769.69 *19*	6.5 *6*	^{89}Nb(1.18 h) - 587.83, 507.4, 1277.5
770.6 *2*	0.0030 *3*	^{65}Zn(244.26 d) - 1115.546, 344.95
772.60 *1*	75.6 *13*	^{132}I(2.295 h) - 667.718, 954.55, 522.65
773.28 *3*	8.9 *4*	^{186}Ir(16.64 h) - 296.90, 137.157, 434.84
773.28 *3*	11.7 *10*	^{186}Ir(1.90 h) - 1.5, 767.497, 630.34
773.67 *3*	49.9 *5*	^{131}Te(30 h) - 182.25
776.517 *3*	83.5 *8*	^{82}Br(35.30 h) - 554.348, 619.106, 698.374
776.517 *3*	84	^{82}Rb(6.472 h) - 554.348, 619.106, 1044.002
777.35 *10*	22.4 *6*	^{86}Y(14.74 h) - 1076.64, 627.72, 1153.01
777.921 *20*	4.26 *5*	^{99}Mo(65.94 h) - 140.511, 739.50, 181.063
778.224 *15*	96.45 *19*	^{96}Nb(23.35 h) - 568.80, 459.88, 849.929
778.224 *15*	100	^{96}Tc(4.28 d) - 849.929, 812.581, 1126.965
778.5 *1*	1.51 *5*	^{144}Pm(363 d) - 696.510, 618.01, 476.8
778.817 *10*	18.9 *4*	^{166}Tm(7.70 h) - 2052.36, 184.410, 1273.540
778.9040 *18*	12.942 *19*	^{152}Eu(13.537 y) - 121.7817, 1408.006, 964.079
778.9040 *18*	5.8 *4*	^{152}Tb(17.5 h) - 344.2785, 586.2648, 271.131
779.80 *5*	7	^{195}Hg(9.9 h) - 61.46, 585.13, 180.11
781.4 *2*	0.0112 *12*	^{109}Pd(13.7012 h) - 88.04, 311.4, 647.3
781.9 *1*	83.5 *22*	^{209}At(5.41 h) - 545.0, 790.2, 195.0
783.29 *9*	17	^{50}V(1.4×10^{17} y) - 1553.768
783.7 *5*	15.1 *3*	^{127}Sb(3.85 d) - 685.7, 473.0, 252.4
783.754 *14*	66 *7*	^{183}Hf(1.067 h) - 73.174, 459.069, 397.859
785.09 *6*	18.3 *10*	^{252}Es(471.7 d) - 924.12, 800.01, 139.03
785.37 *8*	1.102 *13*	^{212}Bi(60.55 m) - 727.330, 1620.50, 1078.62
786.198 *4*	0.0158 *21*	^{95}Nb(86.6 h) - 235.69
786.198 *4*	8.66 *4*	^{95}Tc(61 d) - 204.117, 582.082, 835.149
786.4 *5*	9.5 *5*	^{201}Bi(108 m) - 629.1, 936.2, 1014.1
786.99 *6*	50	^{202}Pb(3.53 h) - 490.47, 459.72, 389.94
788.742 *8*	34	^{138}La(1.05×10^{11} y) - 1435.795
788.742 *8*	100 *5*	^{138}Pr(2.12 h) - 1037.8, 302.7, 390.9
790.0 *4*	0.657 *18*	^{83}Rb(86.2 d) - 520.39, 529.635, 552.63
790.2 *1*	63.5 *17*	^{209}At(5.41 h) - 545.0, 781.9, 195.0
792.071 *6*	37.5 *6*	^{184}Re(38.0 d) - 903.279, 111.208, 894.757
793.278 *25*	0.016 *4*	^{122}Sb(2.7238 d) - 1140.55
793.278 *25*	1.327 *25*	^{122}I(3.63 m) - 564.119, 692.794, 683.647
793.60 *9*	0.10 *2*	^{87}Zr(1.68 h) - 1227, 1209.8, 1024
793.75 *3*	18.10 *25*	^{131}Te(30 h) - 182.25
795.864 *4*	85.53 *4*	^{134}Cs(2.0648 y) - 847.025
796.462 *25*	0.0665 *20*	^{107}Cd(6.50 h) - 93.124, 828.93, 324.81
798.80 *4*	61 *4*	^{246}Bk(1.80 d) - 1081.40, 833.60, 1124.29
799.64 *6*	9.4 *10*	^{182}Hf(61.5 m) - 344.1, 224.38, 506.60
801.953 *4*	8.69 *4*	^{134}Cs(2.0648 y) - 847.025
803.10 *5*	0.0050 *8*	^{206}Tl(4.199 m) - 362, 1166
803.10 *5*	99	^{206}Bi(6.243 d) - 881.01, 516.18, 1718.70
803.10 *5*	0.00121 *4*	^{210}Po(138.376 d)
805.75 *6*	0.084 *4*	^{68}Ga(67.629 m) - 1077.35, 1883.09, 1260.97
805.9 *4*	8.4 *9*	^{127}Sn(2.10 h) - 1114.3, 1095.6, 823.1
806.372 *17*	9.5 *3*	^{165}Tm(30.06 h) - 242.917, 47.155, 297.369
807.38 *8*	22.7 *5*	^{206}Po(8.8 d) - 1032.26, 511.36, 286.410
807.86 *10*	6.2 *4*	^{47}Ca(4.536 d) - 1297.09, 489.23, 767.1
810.064 *15*	16.63 *25*	^{172}Lu(6.70 d) - 1093.657, 900.724, 181.528
810.276 *8*	58.08 *22*	^{166}Ho(1200 y) - 184.410, 711.683, 280.459
810.775 *9*	99	^{58}Co(70.86 d) - 863.959, 1674.730
811.79 *5*	9.70 *4*	^{156}Eu(15.19 d) - 88.9667, 1230.68, 1153.67
811.85 *3*	86.0 *9*	^{56}Ni(6.077 d) - 158.38, 749.95, 269.50
812.581 *15*	82 *4*	^{96}Tc(4.28 d) - 778.224, 849.929, 1126.965
812.8 *5*	43	^{129}Sb(4.40 h) - 914.6, 544.7, 1030.1
813.2 *1*	9.2 *6*	^{249}Es(102.2 m) - 379.5, 375.1, 1218.5
814.41 *3*	44.5 *22*	^{207}At(1.80 h) - 588.33, 300.654, 467.12
815.772 *19*	23.28 *19*	^{140}La(1.6781 d) - 1596.210, 487.021, 328.762
815.990 *4*	48.99 *16*	^{168}Tm(93.1 d) - 198.241, 447.515, 184.285
817.04 *5*	0.093 *3*	^{129}Te(33.6 d) - 105.50
818.514 *12*	100	^{136}Cs(13.16 d) - 1048.073, 340.547, 1235.362
820.3 *3*	30	^{203}Bi(11.76 h) - 825.2, 896.9, 1847.4
820.624 *5*	0.00037 *21*	^{95}Nb(86.6 h) - 235.69
822.48 *5*	4.28 *16*	^{125}Sn(9.64 d) - 1067.10, 1089.15, 915.55

Energy	Intensity	Parent - Associated γ-rays
822.654 *7*	21.09 *6*	^{100}Rh(20.8 h) - 539.512, 2375.976, 1553.348
823.1 *4*	10.9 *23*	^{127}Sn(2.10 h) - 1114.3, 1095.6, 805.9
824.82 *12*	0.44	^{137}Ce(34.4 h) - 169.26, 762.3, 835.38
825.2 *1*	14.6 *7*	^{203}Bi(11.76 h) - 820.3, 896.9, 1847.4
826.06 *3*	0.0076 *8*	^{60}Co(5.2714 y) - 1332.501, 1173.237, 346.93
826.6 *1*	64 *3*	^{161}Er(3.21 h) - 211.15, 592.6, 314.77
826.77 *22*	20	^{181}Os(105 m) - 238.75, 118.03, 831.62
828.189 *13*	8.1 *5*	^{78}As(90.7 m) - 613.725, 694.916, 1308.59
828.320 *12*	10.8 *6*	^{200}Tl(26.1 h) - 367.943, 1205.717, 579.298
828.82 *3*	5.5 *9*	^{250}Es(2.22 h) - 989.12, 1031.85, 1167.25
828.82 *3*	72 *4*	^{250}Es(8.6 h) - 303.41, 349.4, 383.7
828.93 *3*	0.17	^{107}Cd(6.50 h) - 93.124, 796.462, 324.81
831.62 *22*	7.7 *10*	^{181}Os(105 m) - 238.75, 826.77, 118.03
831.92 *25*	11.9 *5*	^{150}Pm(2.68 h) - 333.971, 1324.51, 1165.74
833.537 *3*	0.220 *4*	^{66}Cu(5.120 m) - 1039.231, 1333.120, 1872.753
833.537 *3*	5.89 *6*	^{66}Ga(9.49 h) - 1039.231, 2751.852, 2189.631
833.60 *4*	5.0 *3*	^{246}Bk(1.80 d) - 798.80, 1081.40, 1124.29
834.01 *2*	96	^{72}Ga(14.10 h) - 2201.69, 629.95, 2507.82
834.01 *2*	80	^{72}As(26.0 h) - 629.95, 1463.95, 1050.73
834.830 *3*	12.98 *14*	^{88}Kr(2.84 h) - 2392.11, 196.301, 2195.842
834.848 *3*	99.976 *1*	^{54}Mn(312.3 d)
835.149 *5*	26.63 *19*	^{95}Tc(61 d) - 204.117, 582.082, 786.198
835.38 *12*	0.103 *4*	^{137}Ce(34.4 h) - 824.82, 169.26, 762.3
836.7 *1*	1.8	^{137}Pr(1.28 h) - 433.9, 514.0, 160.32
836.79 *6*	19.2 *11*	^{205}Po(1.66 h) - 872.39, 1001.21, 849.83
836.90 *7*	9.8 *5*	^{224}Fr(3.33 m) - 215.983, 131.613, 1340.70
840 *40*	†3	^{243}Bk(4.5 h) - 187.1, 536, 146.4
841.211 *17*	0.79 *7*	^{61}Co(1.650 h) - 67.412, 908.631
841.570 *5*	14.2 *3*	^{152}Eu(9.3116 h) - 963.390, 121.7817, 1389.00
845.044 *20*	19.7 *9*	^{208}At(1.63 h) - 686.527, 660.040, 177.595
845.43 *4*	7.34 *20*	^{87}Kr(76.3 m) - 402.586, 2554.8, 2558.1
846.771 *5*	98.9 *3*	^{56}Mn(2.5785 h) - 1810.772, 2113.123, 2522.88
846.771 *5*	100	^{56}Co(77.27 d) - 1238.282, 2598.459, 1771.351
847.025 *25*	0.00030 *10*	^{134}Cs(2.0648 y)
849.74 *7*	95.7 *18*	^{94}Tc(293 m) - 871.091, 702.622, 916.10
849.83 *7*	25.5 *15*	^{205}Po(1.66 h) - 872.39, 1001.21, 836.79
849.929 *13*	20.45 *19*	^{96}Nb(23.35 h) - 778.224, 568.80, 459.88
849.929 *13*	98 *4*	^{96}Tc(4.28 d) - 778.224, 812.581, 1126.965
850.647 *24*	0.065 *13*	^{88}Y(106.65 d) - 1836.063, 898.042, 2734.086
851.474 *17*	4.56 *3*	^{183}Os(13.0 h) - 381.768, 114.463, 167.844
852.21 *3*	27.0 *6*	^{131}Te(30 h) - 182.25
859.46 *6*	0.109 *3*	^{149}Pm(53.08 h) - 285.95, 590.88, 22.510
860.564 *5*	12.42 *10*	^{208}Tl(3.053 m) - 2614.533, 583.191, 510.77
861.11 *17*	12.4 *21*	^{193}Hg(3.80 h) - 381.60, 257.99, 1118.84
861.35 *5*	0.019 *3*	^{117}In(116.2 m) - 315.302
861.35 *5*	0.31 *3*	^{117}Sb(2.80 h) - 158.562, 1004.51, 1021.0
861.8	32	^{256}Es(7.6 h) - 231.1, 172.6, 1092.9
861.9 *2*	0.00034	^{208}Po(2.898 y) - 291.7, 570.4, 601.6
863.959 *9*	0.683 *11*	^{58}Co(70.86 d) - 810.775, 1674.730
865.09 *12*	0.584 *18*	^{73}Se(7.15 h) - 360.80, 67.03, 510
865.3 *1*	5.9 *5*	^{198}Pb(2.40 h) - 290.3, 365.4, 173.4
868.5 *4*	0.0120 *5*	^{85}Sr(64.84 d) - 514.0067, 151.159, 362.81
869.60 *3*	0.317 *8*	^{95}Tc(20.0 h) - 765.794, 1073.71, 947.67
871.091 *18*	100	^{94}Nb(2.03×10^{4} y) - 702.622
871.091 *18*	100	^{94}Tc(293 m) - 702.622, 849.74, 916.10
872.14 *3*	11.9 *9*	^{69}Ge(39.05 h) - 1107.01, 574.17, 1336.72
872.39 *7*	37	^{205}Po(1.66 h) - 1001.21, 849.83, 836.79
874.51 *2*	0.164 *3*	^{135}La(19.5 h) - 480.51, 587.83, 220.94
874.813 *13*	6.29 *6*	^{185}Os(93.6 d) - 646.116, 880.523, 717.424
875.329 *11*	4.51 *10*	^{133}I(20.8 h) - 529.872, 1298.223, 510.530
875.68 *5*	0.150 *7*	^{62}Cu(9.74 m) - 1172.9, 2301.8, 1128.9
879.383 *3*	30.10 *6*	^{160}Tb(72.3 d) - 298.580, 966.171, 1177.962
879.383 *3*	†1450 *50*	^{160}Ho(5.02 h) - 728.18, 962.317, 966.171
879.876 *13*	0.754 *17*	^{126}I(13.11 d) - 666.331, 753.819, 1420.17
879.876 *13*	1.29 *3*	^{126}Cs(1.64 m) - 388.633, 491.243, 925.24
880.523 *13*	5.17 *6*	^{185}Os(93.6 d) - 646.116, 874.813, 717.424
880.8 *1*	2.19 *11*	^{251}Fm(5.30 h) - 425.4, 480.4, 358.3
881.01 *5*	66.2 *7*	^{206}Bi(6.243 d) - 803.10, 516.18, 1718.70
881.610 *3*	69	^{84}Rb(32.77 d) - 1897.761, 1016.162
883.24 *4*	9.6 *6*	^{234}Pa(6.70 h) - 131.30, 946.00, 569.5
883.984 *20*	29.9 *6*	^{204}Po(3.53 h) - 270.068, 1016.31, 534.90
884.47 *5*	10.0 *5*	^{195}Tl(1.16 h) - 563.52, 1363.88, 242.15
884.685 *3*	72.2 *3*	^{110}Ag(249.79 d) - 116.48, 1.113
884.685 *3*	92.9 *19*	^{110}In(4.9 h) - 657.7622, 937.493, 707.40
887.19 *7*	0.0255 *12*	^{74}As(17.77 d) - 595.847, 608.353, 1204.208
888.80 *5*	25.1 *4*	^{240}Am(50.8 h) - 987.76, 98.860, 42.824
889.277 *3*	99.984 *1*	^{46}Sc(83.79 d) - 1120.545, 2010
889.753 *21*	5.36 *14*	^{169}Lu(34.06 h) - 960.622, 191.2137, 1449.74
889.96 *2*	1.530 *23*	^{250}Bk(3.217 h) - 989.12, 1031.85, 1028.65
891.5 *10*	†114 *12*	^{244}Bk(4.35 h) - 217.6, 921.5, 490.5
893.73 *3*	66 *3*	^{145}Eu(5.93 d) - 653.512, 1658.53, 1997.00
894.351 *12*	19.8 *3*	^{232}Pa(1.31 d) - 969.315, 150.059, 453.655
894.757 *6*	15.6 *3*	^{184}Re(38.0 d) - 903.279, 792.071, 111.208
894.9 *4*	8.34 *14*	^{142}La(91.1 m) - 641.285, 2397.8, 2542.7
895.8 *1*	13.6 *6*	^{240}Np(61.9 m) - 566.34, 973.9, 600.57
896.28 *6*	0.47	^{209}Po(102 y) - 260.48, 262.81
896.9 *3*	13	^{203}Bi(11.76 h) - 820.3, 825.2, 1847.4
897.848 *7*	28 *8*	^{244}Am(10.1 h) - 743.971, 153.863, 99.383
898.042 *3*	14.04 *9*	^{88}Rb(17.78 m) - 1836.063, 2677.892, 1382.406
898.042 *3*	93.7 *3*	^{88}Y(106.65 d) - 1836.063, 2734.086, 850.647
898.68 *10*	5.8 *3*	^{230}Pa(17.4 d) - 951.95, 918.48, 454.95
899.15 *3*	99	^{204}Pb(67.2 m) - 911.78, 374.72, 622.53
899.15 *3*	98 *8*	^{204}Bi(11.22 h) - 374.72, 984.02, 911.78
899.43	0.0515 *25*	^{42}K(12.360 h) - 1524.70, 312.6, 1922.18
900.724 *20*	29.8 *4*	^{172}Lu(6.70 d) - 1093.657, 181.528, 810.064
903.279 *7*	37.9 *6*	^{184}Re(38.0 d) - 792.071, 111.208, 894.757
907.56 *11*	5.7 *3*	^{201}Pb(9.33 h) - 331.19, 361.27, 945.96
908.631 *17*	3.6 *3*	^{61}Co(1.650 h) - 67.412, 841.211
908.8 *2*	2.60 *15*	^{237}Am(73.0 m) - 280.23, 438.4, 473.5
908.96 *4*	0.010	^{89}Sr(50.53 d)
908.96 *4*	100	^{89}Zr(78.41 h) - 1713.06, 1744.52, 1657.28
909.847 *18*	0.0703 *15*	^{121}Te(154 d) - 1102.149, 37.138, 998.291
911.204 *4*	25.8 *4*	^{228}Ac(6.15 h) - 968.971, 338.320, 964.766
911.204 *4*	23.0 *11*	^{228}Pa(22 h) - 463.004, 968.971, 964.766
911.78 *7*	90.69 *10*	^{204}Pb(67.2 m) - 899.15, 374.72, 622.53
911.78 *7*	13.5 *16*	^{204}Bi(11.22 h) - 899.15, 374.72, 984.02
911.79 *9*	16.95 *24*	^{207}Po(5.80 h) - 992.33, 742.64, 405.75
912.73 *9*	1.78 *10*	^{92}Nb(10.15 d) - 934.46, 1847.27, 1132.24
912.95 *4*	4.79 *18*	^{187}Ir(10.5 h) - 427.12, 400.89, 610.68
913.93 *11*	9.0 *5*	^{85}Y(2.68 h) - 231.67, 504.45, 409.5
914.6 *5*	20.0 *11*	^{129}Sb(4.40 h) - 812.8, 544.7, 1030.1
914.85 *3*	11.46 *9*	^{148}Pm(5.370 d) - 1465.12, 550.284, 611.293
915.55 *5*	4.13 *16*	^{125}Sn(9.64 d) - 1067.10, 1089.15, 822.48
916.10 *15*	7.6 *4*	^{94}Tc(293 m) - 871.091, 702.622, 849.74
918.48 *10*	8.2 *4*	^{230}Pa(17.4 d) - 951.95, 454.95, 898.68
918.69 *4*	23.0 *14*	^{238}Am(98 m) - 962.77, 561.11, 605.13
920.932 *9*	32.0 *8*	^{184}Ta(8.7 h) - 414.03, 252.848, 111.208
920.932 *9*	8.14 *12*	^{184}Re(169 d) - 252.848, 216.548, 161.269
921.2 *3*	0.210 *16*	^{150}Eu(12.8 h) - 333.971, 406.52, 1165.74
921.5 *10*	†22 *3*	^{244}Bk(4.35 h) - 891.5, 217.6, 490.5
923.98 *2*	2.86 *9*	^{238}Np(2.117 d) - 984.45, 1028.54, 1025.87
924.12 *5*	2.41 *16*	^{252}Es(471.7 d) - 800.01, 785.09, 139.03
925.189 *21*	0.0260 *25*	^{140}Pr(3.39 m) - 1596.210, 306.9, 751.637
925.24 *5*	4.56 *8*	^{126}Cs(1.64 m) - 388.633, 491.243, 879.876
925.8 *2*	3.84 *3*	^{91}Sr(9.63 h) - 1024.3, 749.8, 652.9
926.2 *1*	12.5 *15*	^{104}Ag(69.2 m) - 555.796, 767.72, 941.7
929.01 *7*	20.2 *8*	^{147}Gd(38.06 h) - 229.32, 396.00, 370.0
931.3 *2*	75	^{55}Co(17.53 h) - 477.2, 1408.4, 1316.4
931.34 *2*	0.553 *5*	^{188}Re(17.005 h) - 155.032, 632.99, 477.99
932.37 *15*	12.5 *13*	^{193}Hg(11.8 h) - 257.99, 407.63, 573.25
933.8 *7*	2.000 *6*	^{115}Cd(44.6 d) - 1290.580, 484.470, 1132.570
934.46 *5*	13.9 *8*	^{92}Y(3.54 h) - 1405.28, 561.03, 448.34
934.46 *5*	99	^{92}Nb(10.15 d) - 912.73, 1847.27, 1132.24
934.46 *5*	100	^{92}Nb(3.47×10^{7} y) - 561.03
935.538 *11*	94.5 *9*	^{52}Mn(5.591 d) - 1434.068, 744.233, 1333.649
936.2 *5*	11.3 *6*	^{201}Bi(108 m) - 629.1, 1014.1, 786.4
936.7 *4*	2.20 *6*	^{99}Rh(4.7 h) - 340.71, 617.8, 1261.2
937.2 *2*	10.8 *4*	^{162}Ho(67.0 m) - 185.005, 1220.0, 282.864
937.493 *4*	34.13 *11*	^{110}Ag(249.79 d) - 116.48, 1.113
937.493 *4*	68.4 *14*	^{110}In(4.9 h) - 657.7622, 884.685, 707.40
941.7 *1*	25.0 *23*	^{104}Ag(69.2 m) - 555.796, 767.72, 926.2
941.72 *5*	38.3 *10*	^{28}Mg(20.91 h) - 30.6383, 1342.27, 400.56
942.80 *11*	18.8 *17*	^{182}Hf(61.5 m) - 344.1, 224.38, 506.60
944.09 *5*	44	^{158}Tb(180 y) - 962.06, 79.5104, 181.930

Energy	Intensity	Parent - Associated γ-rays
944.104 *7*	7.76 *9*	^{48}V(15.9735 d) - 983.517, 1312.096, 2240.375
945.61 *4*	†366 *40*	^{158}Ho(11.3 m) - 218.221, 98.918, 948.78
945.96 *8*	7.4 *6*	^{201}Pb(9.33 h) - 331.19, 361.27, 907.56
946.00 *3*	13.4 *8*	^{234}Pa(6.70 h) - 131.30, 883.24, 569.5
946 *2*	†~8	^{243}Bk(4.5 h) - 187.1, 536, 146.4
947.1 *1*	2.09 *11*	^{93}Y(10.18 h) - 266.9, 1917.8, 680.2
947.67 *2*	1.951 *19*	^{95}Tc(20.0 h) - 765.794, 1073.71, 869.60
948.78 *5*	†345 *10*	^{158}Ho(11.3 m) - 218.221, 98.918, 945.61
949.82 *3*	0.120 *10*	^{93}Mo(6.85 h) - 689.07, 541.22, 385.31
951.95 *5*	29.1 *14*	^{230}Pa(17.4 d) - 918.48, 454.95, 898.68
953.31 *7*	3.52 *14*	^{92}Sr(2.71 h) - 1383.93, 430.49, 241.56
953.42 *16*	3.6 *9*	^{181}Re(19.9 h) - 365.57, 360.70, 639.30
954.45 *4*	7.8 *5*	^{202}Bi(1.72 h) - 960.67, 422.18, 657.49
954.55 *9*	17.6 *5*	^{132}I(2.295 h) - 667.718, 772.60, 522.65
960.1 *1*	0.069 *6*	^{202}Tl(12.23 d) - 439.56, 520.2
960.622 *20*	23.4 *5*	^{169}Lu(34.06 h) - 191.2137, 1449.74, 889.753
960.67 *5*	92 *8*	^{202}Pb(3.53 h) - 490.47, 459.72, 389.94
960.67 *5*	99	^{202}Bi(1.72 h) - 422.18, 657.49, 954.45
961.22 *8*	†183 *13*	^{184}Ir(3.09 h) - 263.97, 119.80, 390.38
962.06 *4*	20.3 *4*	^{158}Tb(180 y) - 944.09, 79.5104, 181.930
962.317 *4*	†1300 *50*	^{160}Ho(5.02 h) - 728.18, 879.383, 966.171
962.77 *3*	28	^{238}Am(98 m) - 918.69, 561.11, 605.13
963.390 *12*	11.67 *10*	^{152}Eu(9.3116 h) - 841.570, 121.7817, 1389.00
964.079 *18*	14.605 *21*	^{152}Eu(13.537 y) - 344.2785, 778.9040, 411.1163
964.766 *10*	4.99 *9*	^{228}Ac(6.15 h) - 911.204, 968.971, 338.320
964.766 *10*	11.4 *6*	^{228}Pa(22 h) - 911.204, 463.004, 968.971
966.171 *3*	25.10 *12*	^{160}Tb(72.3 d) - 879.383, 298.580, 1177.962
966.171 *3*	†1200 *50*	^{160}Ho(5.02 h) - 728.18, 879.383, 962.317
968.971 *17*	15.8 *3*	^{228}Ac(6.15 h) - 911.204, 338.320, 964.766
968.971 *17*	13.9 *8*	^{228}Pa(22 h) - 911.204, 463.004, 964.766
969.315 *11*	41.6 *19*	^{232}Pa(1.31 d) - 894.351, 150.059, 453.655
969.458 *20*	0.630 *19*	^{128}Cs(3.66 m) - 442.901, 526.557, 1140.079
970.350 *9*	0.588 *20*	^{152}Eu(9.3116 h) - 841.570, 963.390, 121.7817
972.564 *19*	74.2 *7*	^{116}Sb(60.3 m) - 1293.558, 542.867, 407.351
973.9 *1*	23.8 *12*	^{240}Np(61.9 m) - 566.34, 600.57, 895.8
978.969 *15*	0.256 *5*	^{145}Pr(5.984 h) - 748.278, 675.795, 72.500
982.2 *2*	26.4 *8*	^{139}Nd(5.50 h) - 113.94, 737.96, 708.06
983.517 *5*	100.1 *3*	^{48}Sc(43.67 h) - 1312.096, 1037.599, 175.361
983.517 *5*	99.98 *20*	^{48}V(15.9735 d) - 1312.096, 944.104, 2240.375
984.02 *2*	59 *3*	^{204}Bi(11.22 h) - 899.15, 374.72, 911.78
984.45 *2*	27.8	^{238}Np(2.117 d) - 1028.54, 1025.87, 923.98
985.10 *10*	5.54 *18*	^{170}Lu(2.012 d) - 84.25474, 1280.25, 2041.88
987.62 *3*	16.13 *16*	^{205}Bi(15.31 d) - 1764.36, 703.44, 1043.72
987.76 *6*	73.2 *10*	^{240}Am(50.8 h) - 888.80, 98.860, 42.824
989.12 *2*	45	^{250}Bk(3.217 h) - 1031.85, 1028.65, 889.96
989.12 *2*	13.3 *9*	^{250}Es(2.22 h) - 1031.85, 828.82, 1167.25
992.128 *13*	0.546 *11*	^{174}Lu(142 d) - 272.918, 176.645, 76.471
992.33 *9*	59.3 *7*	^{207}Po(5.80 h) - 742.64, 911.79, 405.75
996.82	0.0014 *2*	^{24}Na(14.9590 h) - 1368.633, 2754.028, 3866.19
998.291 *11*	0.0796 *18*	^{121}Te(154 d) - 1102.149, 37.138, 909.847
1001.21 *7*	28.8 *15*	^{205}Po(1.66 h) - 872.39, 849.83, 836.79
1001.85	1.2	^{44}Sc(58.6 h) - 1126.08, 1157.031
1004.51 *15*	0.0062 *13*	^{117}In(116.2 m) - 315.302
1004.51 *15*	0.21 *3*	^{117}Sb(2.80 h) - 158.562, 861.35, 1021.0
1004.725 *6*	18.01 *5*	^{154}Eu(8.593 y) - 184.810, 81.99
1013.808 *11*	20.20 *17*	^{148}Pm(41.29 d) - 75.7, 62.2
1014.1 *5*	10.7 *5*	^{201}Bi(108 m) - 629.1, 936.2, 786.4
1016.162 *13*	0.349 *10*	^{84}Rb(32.77 d) - 881.610, 1897.761
1016.31 *2*	24.1 *5*	^{204}Po(3.53 h) - 883.984, 270.068, 534.90
1020.6 *5*	0.0068 *14*	^{117}In(116.2 m) - 315.302
1021.0 *5*	0.112 *17*	^{117}Sb(2.80 h) - 158.562, 861.35, 1004.51
1021.00 *20*	0.00193 *10*	^{123}Sn(129.2 d) - 1088.64, 1030.23, 160.33
1023.1 *2*	99.4 *3*	^{120}Sb(5.76 d) - 1171.3, 197.3, 89.9
1024 *1*	0.28 *2*	^{87}Zr(1.68 h) - 1227, 1209.8, 793.60
1024.3 *1*	33	^{91}Sr(9.63 h) - 749.8, 652.9, 925.8
1024.49 *11*	1.09 *7*	^{97}Nb(72.1 m) - 658.08, 1268.68, 1515.59
1025.87 *2*	9.6 *5*	^{238}Np(2.117 d) - 984.45, 1028.54, 923.98
1028.54 *2*	20.3 *8*	^{238}Np(2.117 d) - 984.45, 1025.87, 923.98
1028.65 *2*	4.90 *13*	^{250}Bk(3.217 h) - 989.12, 1031.85, 889.96
1030.1 *6*	12.6 *8*	^{129}Sb(4.40 h) - 812.8, 914.6, 544.7
1030.23 *10*	0.0310 *12*	^{123}Sn(129.2 d) - 1088.64, 1021.00, 160.33
1031.70 *3*	0.125 *5*	^{132}Cs(6.479 d) - 667.718, 630.19, 505.79

Energy	Intensity	Parent - Associated γ-rays
1031.85 *2*	35.6 *5*	^{250}Bk(3.217 h) - 989.12, 1028.65, 889.96
1031.85 *2*	10.6 *8*	^{250}Es(2.22 h) - 989.12, 828.82, 1167.25
1032.26 *10*	32.9 *7*	^{206}Po(8.8 d) - 511.36, 286.410, 807.38
1034.85 *5*	6.02 *6*	^{183}Os(9.9 h) - 1101.94, 1107.92, 484.40
1036.4 *3*	10.3 *2*	^{177}W(135 m) - 115.65, 426.98, 115.05
1037.599 *26*	97.6 *5*	^{48}Sc(43.67 h) - 1312.096, 983.517, 175.361
1037.8 *1*	101 *5*	^{138}Pr(2.12 h) - 788.742, 302.7, 390.9
1039.231 *6*	9	^{66}Cu(5.120 m) - 833.537, 1333.120, 1872.753
1039.231 *6*	37	^{66}Ga(9.49 h) - 2751.852, 833.537, 2189.631
1039.928 *17*	0.095 *4*	^{52}Fe(8.275 h) - 168.688, 377.748, 1727.57
1043.72 *3*	7.51 *9*	^{205}Bi(15.31 d) - 1764.36, 703.44, 987.62
1044.002 *5*	32.068 *8*	^{82}Rb(6.472 h) - 776.517, 554.348, 619.106
1045.83 *8*	30.4 *15*	^{106}Rh(131 m) - 511.842, 717.24, 450.97
1045.83 *8*	29.6 *10*	^{106}Ag(8.28 d) - 511.842, 717.24, 450.97
1048.073 *20*	80 *3*	^{136}Cs(13.16 d) - 818.514, 340.547, 1235.362
1050.65 *3*	97 *5*	^{118}Sb(5.00 h) - 1229.68, 253.678, 40.8
1050.73 *4*	0.984 *21*	^{72}As(26.0 h) - 834.01, 629.95, 1463.95
1057.8 *1*	0.29 *3*	^{177}Ta(56.56 h) - 112.9498, 208.3664, 745.9
1061.61 *9*	0.000762 *25*	^{176}Lu(3.635 h) - 82.13
1063.662 *4*	74.5 *2*	^{207}Bi(31.55 y) - 569.702, 1770.237, 1442.20
1065.04 *8*	0.0164 *21*	^{174}Lu(3.31 y) - 76.471, 1241.847, 1318.296
1065.98 *3*	23.1 *5*	^{117}Cd(3.36 h) - 1997.33, 564.397, 1432.91
1067.10 *5*	10	^{125}Sn(9.64 d) - 1089.15, 822.48, 915.55
1071.8 *1*	†148 *15*	^{171}Hf(12.1 h) - 122.0, 662.2, 347.18
1073.71 *2*	3.74 *4*	^{95}Tc(20.0 h) - 765.794, 947.67, 869.60
1076.64 *4*	9	^{86}Rb(18.631 d)
1076.64 *4*	83	^{86}Y(14.74 h) - 627.72, 1153.01, 777.35
1077.043 *6*	6.15 *19*	^{147}Eu(24.1 d) - 197.299, 121.220, 677.516
1077.35 *4*	3.0	^{68}Ga(67.629 m) - 1883.09, 805.75, 1260.97
1078.62 *10*	0.564 *19*	^{212}Bi(60.55 m) - 727.330, 1620.50, 785.37
1080.21 *8*	5.6 *3*	^{177}Yb(1.911 h) - 150.392, 1241.2, 121.6211
1081.40 *6*	5.8 *4*	^{246}Bk(1.80 d) - 798.80, 833.60, 1124.29
1087.684 *3*	0.159 *2*	^{198}Au(2.69517 d) - 411.80205, 675.8836
1088.64 *10*	0.6	^{123}Sn(129.2 d) - 1030.23, 1021.00, 160.33
1089.15 *10*	4.59 *16*	^{125}Sn(9.64 d) - 1067.10, 822.48, 915.55
1089.737 *5*	1.727 *6*	^{152}Eu(13.537 y) - 121.7817, 1408.006, 964.079
1089.8	>2.8	^{155}Dy(9.9 h) - 226.918, 184.564, 1090.0
1090.0	>2.8	^{155}Dy(9.9 h) - 226.918, 184.564, 1089.8
1090.7 *7*	6.9 *7*	^{117}Te(62 m) - 719.7, 1716.4, 2300.0
1091.331 *17*	0.149 *6*	^{196}Au(6.183 d) - 355.684, 332.983, 521.175
1092.9	15	^{256}Es(7.6 h) - 861.8, 231.1, 172.6
1093.4 *3*	2.79 *24*	^{123}Xe(2.08 h) - 148.9, 178.1, 330.2
1093.657 *13*	6.0 *3*	^{172}Tm(63.6 h) - 78.7426, 1387.093, 1529.72
1093.657 *13*	62.5 *13*	^{172}Lu(6.70 d) - 900.724, 181.528, 810.064
1095.490 *10*	4.08 *6*	^{71}As(65.28 h) - 174.954, 499.876, 326.785
1095.6 *4*	20 *4*	^{127}Sn(2.10 h) - 1114.3, 823.1, 805.9
1096.76 *6*	21.0 *10*	^{95}Ru(1.643 h) - 336.43, 626.77, 1178.66
1099.251 *4*	56.5 *15*	^{59}Fe(44.503 d) - 1291.596, 192.349, 142.652
1101.94 *4*	49.0 *5*	^{183}Os(9.9 h) - 1107.92, 1034.85, 484.40
1102.149 *18*	2.54 *6*	^{121}Te(154 d) - 37.138, 998.291, 909.847
1103.16 *4*	2.42 *8*	^{102}Rh(207 d) - 475.10, 628.05, 468.58
1107.01 *6*	36	^{69}Ge(39.05 h) - 574.17, 872.14, 1336.72
1107.92 *4*	22.36 *20*	^{183}Os(9.9 h) - 1101.94, 1034.85, 484.40
1112.074 *4*	13.644 *21*	^{152}Eu(13.537 y) - 121.7817, 1408.006, 964.079
1113.5 *3*	0.0490 *14*	^{163}Er(75.0 m) - 436.1, 439.94, 297.88
1114.3 *4*	39 *4*	^{127}Sn(2.10 h) - 1095.6, 823.1, 805.9
1115.546 *4*	15.43 *9*	^{65}Ni(2.5172 h) - 1481.84, 366.27, 1623.42
1115.546 *4*	50.60 *24*	^{65}Zn(244.26 d) - 344.95, 770.6
1118.84 *17*	8.0 *12*	^{193}Hg(3.80 h) - 381.60, 861.11, 257.99
1120.545 *4*	99.987 *1*	^{46}Sc(83.79 d) - 889.277, 2010
1121.3007 *5*	34.9 *1*	^{182}Ta(114.43 d) - 67.74970, 1221.4066, 1189.0503
1121.3007 *5*	32	^{182}Re(12.7 h) - 67.74970, 1221.4066, 1189.0503
1121.3007 *5*	22.0 *6*	^{182}Re(64.0 h) - 229.3207, 67.74970, 1221.4066
1124.29 *4*	~4.4	^{246}Bk(1.80 d) - 798.80, 1081.40, 833.60
1125.25 *8*	2.30 *8*	^{202}Au(28.8 s) - 439.56, 1306.5, 1204.1
1125.46 *4*	14.9 *3*	^{131}Te(30 h) - 182.25
1126.08	1.2	^{44}Sc(58.6 h) - 1001.85, 1157.031
1126.8 *2*	0.8	^{141}Nd(2.49 h) - 1292.6, 1147.2, 145.4405
1126.965 *21*	15.2 *12*	^{96}Tc(4.28 d) - 778.224, 849.929, 812.581
1128.9 *1*	0.0324 *17*	^{62}Cu(9.74 m) - 1172.9, 875.68, 2301.8
1129.224 *15*	92.7 *4*	^{90}Nb(14.60 h) - 2318.968, 141.178, 2186.242
1129.67 *10*	2.5 *2*	^{26}Al(7.17×10^{5} y) - 1808.65, 2938

Energy	Intensity	Parent - Associated γ-rays
1131.511 *18*	22.74 *14*	^{135}I(6.57 h) - 1260.409, 1678.027, 1457.56
1132.24 *8*	0.005	^{92}Nb(10.15 d) - 934.46, 912.73, 1847.27
1132.570 *10*	0.0856 *10*	^{115}Cd(44.6 d) - 933.8, 1290.580, 484.470
1135.04 *8*	7.8 *4*	^{199}Pb(90 m) - 366.90, 353.39, 720.24
1136.75 *7*	7.66 *7*	^{119}Te(4.70 d) - 153.59, 1212.73, 270.53
1140.079 *23*	1.168 *11*	^{128}Cs(3.66 m) - 442.901, 526.557, 969.458
1140.55 *3*	0.76 *4*	^{122}Sb(2.7238 d)
1147.2 *2*	0.306 *12*	^{141}Nd(2.49 h) - 1126.8, 1292.6, 145.4405
1147.97 *8*	2.61 *10*	^{97}Zr(16.91 h) - 743.36, 507.64, 355.40
1148.9 *4*	4.3 *4*	^{109}In(4.2 h) - 203.5, 623.7, 426.25
1150.76 *4*	0.601 *17*	^{194}Ir(19.28 h) - 328.455, 293.545, 645.157
1152.4 *1*	100 *8*	^{147}Tb(1.7 h) - 694.4, 139.9, 119.7
1153.01 *4*	30.5 *9*	^{86}Y(14.74 h) - 1076.64, 627.72, 777.35
1153.67 *10*	6.79 *6*	^{156}Eu(15.19 d) - 811.79, 88.9667, 1230.68
1154.66 *5*	1.64 *13*	^{164}Tm(2.0 m) - 91.40, 768.91, 208.08
1157.031	99.9	^{44}Sc(3.927 h) - 1499.43, 2656.41, 2144.2
1157.031	1.2	^{44}Sc(58.6 h) - 1001.85, 1126.08
1159.28 *9*	0.00139 *4*	^{176}Lu(3.635 h) - 82.13
1159.28 *9*	25	^{176}Ta(8.09 h) - 88.34, 1224.93, 201.83
1165.74 *3*	15.8 *6*	^{150}Pm(2.68 h) - 333.971, 1324.51, 831.92
1165.74 *3*	0.257 *24*	^{150}Eu(12.8 h) - 333.971, 406.52, 921.2
1166 *3*		^{206}Tl(4.199 m) - 803.10, 362
1167.25 *3*	2.94 *20*	^{250}Es(2.22 h) - 989.12, 1031.85, 828.82
1171.3 *2*	100	^{120}Sb(5.76 d) - 1023.1, 197.3, 89.9
1172.9 *1*	0.34	^{62}Cu(9.74 m) - 875.68, 2301.8, 1128.9
1173.237 *4*	99.9736 *7*	^{60}Co(5.2714 y) - 1332.501, 346.93, 826.06
1177.962 *4*	14.87 *6*	^{160}Tb(72.3 d) - 879.383, 298.580, 966.171
1178.66 *6*	5.16 *25*	^{95}Ru(1.643 h) - 336.43, 1096.76, 626.77
1181.39 *1*	99.3 *25*	^{210}At(8.1 h) - 82.802, 106, 167
1185.234 *15*	3.75 *7*	^{61}Cu(3.333 h) - 282.956, 656.008, 67.412
1189.0503 *5*	16.23 *4*	^{182}Ta(114.43 d) - 67.74970, 1121.3007, 1221.4066
1189.0503 *5*	15.0 *6*	^{182}Re(12.7 h) - 67.74970, 1121.3007, 1221.4066
1200.6 *2*	9.7 *10*	^{198}Tl(5.3 h) - 411.80205, 675.8836, 636.4
1204.1 *1*	2.01 *16*	^{202}Au(28.8 s) - 439.56, 1125.25, 1306.5
1204.208 *12*	0.285 *18*	^{74}As(17.77 d) - 595.847, 608.353, 887.19
1204.77 *6*	0.30	^{91}Y(58.51 d)
1204.77 *6*	2.9	^{91}Nb(60.86 d)
1205.717 *14*	29.9 *17*	^{200}Tl(26.1 h) - 367.943, 579.298, 828.320
1205.92 *4*	4.9 *4*	^{174}Ta(1.05 h) - 206.50, 91.00, 1228.33
1209.8 *7*	0.33 *2*	^{87}Zr(1.68 h) - 1227, 1024, 793.60
1212.73 *7*	66	^{119}Te(4.70 d) - 153.59, 270.53, 1136.75
1212.94 *4*	1.44 *9*	^{76}As(1.0778 d) - 559.101, 657.041, 1216.104
1216.104 *20*	3.42 *18*	^{76}As(1.0778 d) - 559.101, 657.041, 1212.94
1216.104 *20*	8.8 *4*	^{76}Br(16.2 h) - 559.101, 657.041, 1853.67
1218.5 *1*	1.5 *1*	^{249}Es(102.2 m) - 379.5, 813.2, 375.1
1220.0 *2*	22.5 *12*	^{162}Ho(67.0 m) - 185.005, 282.864, 937.2
1221.4066 *5*	26.98 *10*	^{182}Ta(114.43 d) - 67.74970, 1121.3007, 1189.0503
1221.4066 *5*	24.8 *10*	^{182}Re(12.7 h) - 67.74970, 1121.3007, 1189.0503
1221.4066 *5*	17.4 *4*	^{182}Re(64.0 h) - 229.3207, 67.74970, 1121.3007
1222.36 *7*	31.00 *12*	^{156}Tb(5.35 d) - 534.318, 199.2132, 88.9667
1224.93 *7*	6	^{176}Ta(8.09 h) - 1159.28, 88.34, 201.83
1227 *1*	1.0	^{87}Zr(1.68 h) - 1209.8, 1024, 793.60
1228.33 *7*	1.4 *4*	^{174}Ta(1.05 h) - 206.50, 91.00, 1205.92
1229.68 *2*	100 *5*	^{118}Sb(5.00 h) - 253.678, 1050.65, 40.8
1230.68 *6*	7.98 *3*	^{156}Eu(15.19 d) - 811.79, 88.9667, 1153.67
1235.362 *23*	20.0 *7*	^{136}Cs(13.16 d) - 818.514, 1048.073, 340.547
1238.282 *7*	67.6 *4*	^{56}Co(77.27 d) - 846.771, 2598.459, 1771.351
1241.2 *2*	3.47 *17*	^{177}Yb(1.911 h) - 150.392, 1080.21, 121.6211
1241.847 *6*	5.14 *10*	^{174}Lu(3.31 y) - 76.471, 1318.296, 1065.04
1243.9 *1*	3.50 *8*	^{230}Ac(122 s) - 454.95, 508.20, 1347.7
1254.7 *2*	0.026 *3*	^{139}Ba(83.06 m) - 165.864, 1420.5, 1310.6
1256.3 *2*	0.57 *8*	^{80}Rb(34 s) - 616.6, 703.9, 639.6
1256.901 *19*	0.81 *4*	^{122}Sb(2.7238 d) - 1140.55
1260.409 *17*	28.90 *17*	^{135}I(6.57 h) - 1131.511, 1678.027, 1457.56
1260.97 *5*	0.083 *4*	^{68}Ga(67.629 m) - 1077.35, 1883.09, 805.75
1261.2 *4*	11	^{99}Rh(4.7 h) - 340.71, 617.8, 936.7
1266.12 *11*	0.07	^{31}Si(157.3 m)
1268.68 *9*	0.148 *20*	^{97}Nb(72.1 m) - 658.08, 1024.49, 1515.59
1269.06 *10*	0.0018 *6*	^{74}As(17.77 d) - 595.847, 608.353, 1204.208
1269.34 *2*	0.93 *4*	^{178}Lu(28.4 m) - 93.180, 1340.8, 1310.05
1273.540 *16*	14.9 *3*	^{166}Tm(7.70 h) - 778.817, 2052.36, 184.410
1273.83 *8*	9.3 *3*	^{103}Ag(65.7 m) - 118.72, 148.193, 266.86
1274.436 *6*	35.19 *18*	^{154}Eu(8.593 y) - 184.810, 81.99
1274.436 *6*	10.5 *7*	^{154}Tb(21.5 h) - 123.071, 2187.10, 722.12
1274.53 *2*	99.944 *14*	^{22}Na(2.6019 y)
1277.5 *15*	1.6 *5*	^{89}Nb(1.18 h) - 587.83, 507.4, 769.69
1280.25 *10*	8.18 *23*	^{170}Lu(2.012 d) - 84.25474, 2041.88, 985.10
1290.580 *10*	0.890 *14*	^{115}Cd(44.6 d) - 933.8, 484.470, 1132.570
1291.596 *7*	43.2 *11*	^{59}Fe(44.503 d) - 1099.251, 192.349, 142.652
1292.6 *2*	0.46 *4*	^{141}Nd(2.49 h) - 1126.8, 1147.2, 145.4405
1293.558 *15*	100.0 *9*	^{116}Sb(60.3 m) - 972.564, 542.867, 407.351
1293.587	99.1	^{41}Ar(109.34 m) - 1677.198
1297.09 *10*	71	^{47}Ca(4.536 d) - 489.23, 807.86, 767.1
1298.223 *11*	2.35 *5*	^{133}I(20.8 h) - 529.872, 875.329, 510.530
1303.27 *3*	18.4 *4*	^{117}Cd(2.49 h) - 273.349, 344.459, 1576.62
1306.5 *1*	2.25 *7*	^{202}Au(28.8 s) - 439.56, 1125.25, 1204.1
1308.59 *4*	13.0 *11*	^{78}As(90.7 m) - 613.725, 694.916, 828.189
1310.05 *4*	1.40 *5*	^{178}Lu(28.4 m) - 93.180, 1340.8, 1269.34
1310.6 *2*	0.0159 *8*	^{139}Ba(83.06 m) - 165.864, 1420.5, 1254.7
1312.096 *6*	100.1 *5*	^{48}Sc(43.67 h) - 983.517, 1037.599, 175.361
1312.096 *6*	97.5 *8*	^{48}V(15.9735 d) - 983.517, 944.104, 2240.375
1314.67 *1*	0.931 *14*	^{152}Eu(9.3116 h) - 841.570, 963.390, 121.7817
1316.4 *2*	7.09 *10*	^{55}Co(17.53 h) - 931.3, 477.2, 1408.4
1317.927 *7*	0.585 *20*	^{132}Cs(6.479 d) - 667.718, 630.19, 505.79
1318.296 *10*	0.035 *3*	^{174}Lu(3.31 y) - 76.471, 1241.847, 1065.04
1324.51 *6*	17.5 *7*	^{150}Pm(2.68 h) - 333.971, 1165.74, 831.92
1332.501 *5*	99.9856 *4*	^{60}Co(5.2714 y) - 1173.237, 346.93, 826.06
1333.120 *6*	0.0037 *3*	^{66}Cu(5.120 m) - 1039.231, 833.537, 1872.753
1333.649 *17*	5.07 *5*	^{52}Mn(5.591 d) - 1434.068, 935.538, 744.233
1336.72 *6*	4.5 *4*	^{69}Ge(39.05 h) - 1107.01, 574.17, 872.14
1340.70 *10*	4.8 *5*	^{224}Fr(3.33 m) - 215.983, 131.613, 836.90
1340.8 *2*	3.22 *14*	^{178}Lu(28.4 m) - 93.180, 1310.05, 1269.34
1342.27 *4*	52.6 *16*	^{28}Mg(20.91 h) - 30.6383, 941.72, 400.56
1345.84 *4*	0.473 *10*	^{64}Cu(12.700 h)
1347.33 *1*	0.47	^{139}Pr(4.41 h) - 1630.67, 255.11, 1375.56
1347.7 *1*	1.57 *4*	^{230}Ac(122 s) - 454.95, 508.20, 1243.9
1354.52 *9*	1.64 *9*	^{141}La(3.92 h) - 1693.3, 2267.0, 662.06
1362.9 *1*	32.5 *18*	^{211}Rn(14.6 h) - 68.573, 167.90, 236.48
1363.02 *4*	0.787 *20*	^{93}Mo(6.85 h) - 949.82, 689.07, 541.22
1363.02 *4*	66	^{93}Tc(2.75 h) - 1520.37, 1477.13, 1539.01
1363.88 *10*	8.4 *4*	^{195}Tl(1.16 h) - 563.52, 884.47, 242.15
1368.633	100	^{24}Na(14.9590 h) - 2754.028, 3866.19, 996.82
1375.56 *3*	0.154 *7*	^{139}Pr(4.41 h) - 1347.33, 1630.67, 255.11
1377.63 *3*	81.7 *16*	^{57}Ni(35.60 h) - 127.164, 1919.52, 1757.55
1379.40 *6*	0.93 *3*	^{166}Ho(26.83 h) - 80.574, 1581.89, 1662.48
1382.406 *26*	0.74 *3*	^{88}Rb(17.78 m) - 1836.063, 898.042, 2677.892
1383.93 *5*	90 *3*	^{92}Sr(2.71 h) - 953.31, 430.49, 241.56
1384.300 *5*	24.12 *8*	^{110}Ag(249.79 d) - 116.48, 1.113
1387.093 *4*	5.6 *3*	^{172}Tm(63.6 h) - 78.7426, 1093.657, 1529.72
1387.67 *17*	5.4 *6*	^{112}Ag(3.130 h) - 617.516, 606.88, 694.863
1387.9 *1*	0.00672 *5*	^{144}Pr(17.28 m) - 696.510, 2185.662, 1489.160
1389.00 *1*	0.748 *23*	^{152}Eu(9.3116 h) - 841.570, 963.390, 121.7817
1405.28 *9*	4.8 *3*	^{92}Y(3.54 h) - 934.46, 561.03, 448.34
1408.006 *3*	21.005 *24*	^{152}Eu(13.537 y) - 121.7817, 964.079, 1112.074
1408.4 *2*	16.88 *8*	^{55}Co(17.53 h) - 931.3, 477.2, 1316.4
1408.6 *5*	0.085 *9*	^{45}Ti(184.8 m) - 720.22, 1662.4, 425.1
1411.34 *10*	4.6 *4*	^{197}Tl(2.84 h) - 425.84, 152.22, 577.97
1413.19 *8*	1.09 *8*	^{119}Te(16.03 h) - 644.01, 699.85, 1749.65
1419.81 *8*	46 *3*	^{154}Tb(22.7 h) - 247.925, 346.643, 123.071
1420.17 *2*	0.295 *6*	^{126}I(13.11 d) - 666.331, 753.819, 2045.17
1420.5 *2*	0.26 *3*	^{139}Ba(83.06 m) - 165.864, 1254.7, 1310.6
1432.91 *3*	13.4 *3*	^{117}Cd(3.36 h) - 1997.33, 1065.98, 564.397
1434.068 *14*	100.0 *5*	^{52}Mn(5.591 d) - 935.538, 744.233, 1333.649
1434.45 *3*	7.96 *19*	^{163}Tm(1.810 h) - 104.320, 69.229, 241.305
1435.36 *4*	6.38 *25*	^{234}Np(4.4 d) - 1558.31, 1527.21, 1601.80
1435.795 *10*	66	^{138}La(1.05×10^{11} y)
1436.70 *2*	29.0 *13*	^{210}At(8.1 h) - 82.802, 106, 167
1442.20 *9*	0.130 *3*	^{207}Bi(31.55 y) - 569.702, 1063.662, 1770.237
1449.74 *4*	9.92 *21*	^{169}Lu(34.06 h) - 960.622, 191.2137, 889.753
1457.56 *3*	8.73 *6*	^{135}I(6.57 h) - 1260.409, 1131.511, 1678.027
1459.1 *2*	†50.0 *20*	^{129}Ba(2.16 h) - 182.32, 202.38, 419.83
1460.830	11	^{40}K(1.277×10^{9} y)
1463.95 *15*	1.107 *19*	^{72}As(26.0 h) - 834.01, 629.95, 1050.73
1465.12 *3*	22	^{148}Pm(5.370 d) - 550.284, 914.85, 611.293

Energy	Intensity	Parent - Associated γ-rays
1468.91 *4*	6.4 *4*	^{194}Au(38.02 h) - 328.455, 293.545, 2043.67
1477.13 *4*	99.1 *25*	^{93}Mo(6.85 h) - 949.82, 689.07, 541.22
1477.13 *4*	8.7 *5*	^{93}Tc(2.75 h) - 1363.02, 1520.37, 1539.01
1481.84 *5*	24	^{65}Ni(2.5172 h) - 1115.546, 366.27, 1623.42
1483.39 *2*	46.5 *20*	^{210}At(8.1 h) - 82.802, 106, 167
1489.160 *5*	0.278 *4*	^{144}Pr(17.28 m) - 696.510, 2185.662, 1387.9
1495.8 *5*	8.2 *9*	^{196}Tl(1.84 h) - 426.0, 610.5, 635.5
1499.43	0.912 *15*	^{44}Sc(3.927 h) - 1157.031, 2656.41, 2144.2
1509.47 *4*	3.13 *5*	^{124}I(4.1760 d) - 602.729, 1690.983, 722.786
1515.59 *12*	0.122 *13*	^{97}Nb(72.1 m) - 658.08, 1024.49, 1268.68
1520.37 *9*	24.4 *8*	^{93}Tc(2.75 h) - 1363.02, 1477.13, 1539.01
1523.0 *4*	11.2 *7*	^{120}I(81.0 m) - 560.44, 640.85, 601.11
1524.70	18	^{42}K(12.360 h) - 312.6, 899.43, 1922.18
1527.21 *4*	11.2 *5*	^{234}Np(4.4 d) - 1558.31, 1601.80, 1435.36
1529.72 *4*	5.1 *3*	^{172}Tm(63.6 h) - 78.7426, 1093.657, 1387.093
1539.01 *10*	0.76 *4*	^{93}Tc(2.75 h) - 1363.02, 1520.37, 1477.13
1553.348 *10*	20.67 *8*	^{100}Rh(20.8 h) - 539.512, 2375.976, 822.654
1553.768 *8*	83	^{50}V(1.4×10^{17} y)
1554.946 *24*	0.412 *8*	^{134}La(6.45 m) - 604.721, 563.246, 1732.12
1558.31 *4*	18.72 *20*	^{234}Np(4.4 d) - 1527.21, 1601.80, 1435.36
1558.5	0.0084 *5*	^{43}Sc(3.891 h) - 372.760, 1931.3, 593.390
1575.85 *15*	3.7	^{142}Pr(19.12 h) - 641.285
1575.85 *15*	2.0	^{142}Pm(40.5 s) - 641.4, 2384.3, 2845.9
1576.62 *3*	11.19 *22*	^{117}Cd(2.49 h) - 273.349, 1303.27, 344.459
1581.89 *8*	0.187 *4*	^{166}Ho(26.83 h) - 80.574, 1379.40, 1662.48
1596.210 *35*	95.4 *14*	^{140}La(1.6781 d) - 487.021, 815.772, 328.762
1596.210 *35*	0.50	^{140}Pr(3.39 m) - 306.9, 751.637, 925.189
1601.80 *4*	9.1 *4*	^{234}Np(4.4 d) - 1558.31, 1527.21, 1435.36
1620.50 *10*	1.49 *3*	^{212}Bi(60.55 m) - 727.330, 785.37, 1078.62
1623.42 *6*	0.498 *14*	^{65}Ni(2.5172 h) - 1481.84, 1115.546, 366.27
1627.20 *20*	3.4	^{89}Nb(1.9 h) - 1833.46, 3092.7, 2572.3
1630.67 *2*	0.343 *10*	^{139}Pr(4.41 h) - 1347.33, 255.11, 1375.56
1642.714	31.9 *10*	^{38}Cl(37.24 m) - 2167.405
1657.28 *14*	0.107 *4*	^{89}Zr(78.41 h) - 908.96, 1713.06, 1744.52
1658.53 *5*	14.9 *8*	^{145}Eu(5.93 d) - 893.73, 653.512, 1997.00
1662.4 *6*	0.041 *4*	^{45}Ti(184.8 m) - 720.22, 1408.6, 425.1
1662.48 *8*	0.120 *2*	^{166}Ho(26.83 h) - 80.574, 1379.40, 1581.89
1674.730 *10*	0.518 *8*	^{58}Co(70.86 d) - 810.775, 863.959
1677.198	0.052 *5*	^{41}Ar(109.34 m) - 1293.587
1678.027 *21*	9.62 *20*	^{135}I(6.57 h) - 1260.409, 1131.511, 1457.56
1690.983 *7*	47.79 *15*	^{124}Sb(60.20 d) - 602.729, 722.786, 645.8549
1690.983 *7*	10.88 *13*	^{124}I(4.1760 d) - 602.729, 722.786, 1509.47
1692.420	0.166 *17*	^{38}S(170.3 m) - 1941.944, 1745.77, 2750.97
1693.3 *1*	0.074 *4*	^{141}La(3.92 h) - 1354.52, 2267.0, 662.06
1713.06 *24*	0.763 *13*	^{89}Zr(78.41 h) - 908.96, 1744.52, 1657.28
1716.4 *7*	15.9 *16*	^{117}Te(62 m) - 719.7, 2300.0, 1090.7
1718.70 *7*	31.8 *4*	^{206}Bi(6.243 d) - 803.10, 881.01, 516.18
1727.57 *8*	0.211 *10*	^{52}Fe(8.275 h) - 168.688, 377.748, 1039.928
1732.12 *3*	0.234 *5*	^{134}La(6.45 m) - 604.721, 1554.946, 563.246
1744.52 *15*	0.129 *3*	^{89}Zr(78.41 h) - 908.96, 1713.06, 1657.28
1745.77	2.44 *8*	^{38}S(170.3 m) - 1941.944, 2750.97, 1692.420
1749.65 *8*	3.95 *25*	^{119}Te(16.03 h) - 644.01, 699.85, 1413.19
1757.55 *3*	5.75 *16*	^{57}Ni(35.60 h) - 1377.63, 127.164, 1919.52
1760.70 *20*		^{90}Y(64.00 h) - 2186.242
1764.36 *4*	32.5 *6*	^{205}Bi(15.31 d) - 703.44, 987.62, 1043.72
1770.237 *10*	6.87 *4*	^{207}Bi(31.55 y) - 569.702, 1063.662, 1442.20
1771.351 *16*	15.69 *15*	^{56}Co(77.27 d) - 846.771, 1238.282, 2598.459
1778.969 *12*	100	^{28}Al(2.2414 m)
1808.65 *7*	99.76 *4*	^{26}Al(7.17×10^{5} y) - 1129.67, 2938
1810.772 *17*	27.2 *8*	^{56}Mn(2.5785 h) - 846.771, 2113.123, 2522.88
1828.8	10	^{185}Ir(14.4 h) - 254.4, 60.0, 97.4
1833.46 *17*	3.16 *24*	^{89}Nb(1.9 h) - 1627.20, 3092.7, 2572.3
1836.063 *12*	21.40 *24*	^{88}Rb(17.78 m) - 898.042, 2677.892, 1382.406
1836.063 *12*	99.2 *3*	^{88}Y(106.65 d) - 898.042, 2734.086, 850.647
1847.27 *8*	0.85 *4*	^{92}Nb(10.15 d) - 934.46, 912.73, 1132.24
1847.4 *3*	11.4 *6*	^{203}Bi(11.76 h) - 820.3, 825.2, 896.9
1853.67 *5*	14.7 *7*	^{76}Br(16.2 h) - 559.101, 657.041, 1216.104
1872.753 *6*	<0	^{66}Cu(5.120 m) - 1039.231, 833.537, 1333.120
1883.09 *7*	0.138 *6*	^{68}Ga(67.629 m) - 1077.35, 805.75, 1260.97
1897.761 *14*	0.738 *21*	^{84}Rb(32.77 d) - 881.610, 1016.162
1909.91 *4*	9.0 *6*	^{132}La(4.8 h) - 464.55, 567.14, 663.07
1917.8 *1*	1.55 *3*	^{93}Y(10.18 h) - 266.9, 947.1, 680.2
1919.52 *5*	12.26 *25*	^{57}Ni(35.60 h) - 1377.63, 127.164, 1757.55
1922.18	0.041 *4*	^{42}K(12.360 h) - 1524.70, 312.6, 899.43
1931.3	0.0151 *9*	^{43}Sc(3.891 h) - 372.760, 1558.5, 593.390
1941.944	83	^{38}S(170.3 m) - 1745.77, 2750.97, 1692.420
1997.00 *4*	7.2 *4*	^{145}Eu(5.93 d) - 893.73, 653.512, 1658.53
1997.33 *3*	26	^{117}Cd(3.36 h) - 1065.98, 564.397, 1432.91
2010	1.3×10^{-5} *10*	^{46}Sc(83.79 d) - 1120.545, 889.277
2041.88 *10*	6.10 *18*	^{170}Lu(2.012 d) - 84.25474, 1280.25, 985.10
2043.67 *5*	3.60 *18*	^{194}Au(38.02 h) - 328.455, 293.545, 1468.91
2045.17 *2*	0.0046 *3*	^{126}I(13.11 d) - 666.331, 753.819, 1420.17
2052.36 *3*	17.2 *3*	^{166}Tm(7.70 h) - 778.817, 184.410, 1273.540
2113.123 *10*	14.3 *4*	^{56}Mn(2.5785 h) - 846.771, 1810.772, 2522.88
2123.8 *2*	5.0 *3*	^{85}Y(4.86 h) - 231.67, 767.40, 535.61
2129.53 *16*	2.13 *9*	^{110}In(69.1 m) - 657.7622, 2211.49, 2317.54
2144.2	0.0069 *15*	^{44}Sc(3.927 h) - 1157.031, 1499.43, 2656.41
2167.405	42.4 *11*	^{38}Cl(37.24 m) - 1642.714
2185.662 *7*	0.694 *13*	^{144}Pr(17.28 m) - 696.510, 1489.160, 1387.9
2186.242 *25*	1.4×10^{-6} *3*	^{90}Y(64.00 h) - 1760.70
2186.242 *25*	17.96 *16*	^{90}Nb(14.60 h) - 1129.224, 2318.968, 141.178
2187.10 *16*	9.9 *6*	^{154}Tb(21.5 h) - 123.071, 1274.436, 722.12
2189.631 *9*	5.58 *6*	^{66}Ga(9.49 h) - 1039.231, 2751.852, 833.537
2195.842 *7*	13.18 *10*	^{88}Kr(2.84 h) - 2392.11, 196.301, 834.830
2201.69 *5*	25.9 *5*	^{72}Ga(14.10 h) - 834.01, 629.95, 2507.82
2211.49 *10*	1.76 *7*	^{110}In(69.1 m) - 657.7622, 2129.53, 2317.54
2214.62 *20*	18.7 *13*	^{188}Ir(41.5 h) - 155.032, 632.99, 477.99
2236.89 *17*	5.6 *6*	^{192}Au(4.94 h) - 316.50791, 295.95827, 612.46564
2240.375 *19*	2.41 *4*	^{48}V(15.9735 d) - 983.517, 1312.096, 944.104
2267.0 *2*	0.0413 *25*	^{141}La(3.92 h) - 1354.52, 1693.3, 662.06
2300.0 *7*	11.2 *12*	^{117}Te(62 m) - 719.7, 1716.4, 1090.7
2301.8 *2*	0.0414 *20*	^{62}Cu(9.74 m) - 1172.9, 875.68, 1128.9
2317.54 *10*	1.31 *5*	^{110}In(69.1 m) - 657.7622, 2129.53, 2211.49
2318.968 *10*	0.0018	^{90}Y(3.19 h) - 202.51, 479.17, 681.8
2318.968 *10*	82.03 *16*	^{90}Nb(14.60 h) - 1129.224, 141.178, 2186.242
2375.976 *16*	32.64 *24*	^{100}Rh(20.8 h) - 539.512, 822.654, 1553.348
2384.3 *6*	0.067 *6*	^{142}Pm(40.5 s) - 1575.85, 641.4, 2845.9
2392.11 *4*	34.6 *1*	^{88}Kr(2.84 h) - 196.301, 2195.842, 834.830
2397.8 *9*	13.3 *3*	^{142}La(91.1 m) - 641.285, 2542.7, 894.9
2507.82 *6*	12.78 *23*	^{72}Ga(14.10 h) - 834.01, 2201.69, 629.95
2522.88 *6*	0.99 *3*	^{56}Mn(2.5785 h) - 846.771, 1810.772, 2113.123
2542.7 *10*	10.00 *24*	^{142}La(91.1 m) - 641.285, 2397.8, 894.9
2554.8 *2*	9.2 *5*	^{87}Kr(76.3 m) - 402.586, 845.43, 2558.1
2558.1 *2*	3.92 *25*	^{87}Kr(76.3 m) - 402.586, 2554.8, 845.43
2572.3 *4*	2.58 *20*	^{89}Nb(1.9 h) - 1627.20, 1833.46, 3092.7
2598.459 *13*	17.28 *15*	^{56}Co(77.27 d) - 846.771, 1238.282, 1771.351
2614.533 *13*	99	^{208}Tl(3.053 m) - 583.191, 510.77, 860.564
2614.533 *13*	100	^{208}Bi(3.68×10^{5} y)
2656.41	0.115 *6*	^{44}Sc(3.927 h) - 1157.031, 1499.43, 2144.2
2677.892 *21*	1.96 *3*	^{88}Rb(17.78 m) - 1836.063, 898.042, 1382.406
2734.086 *13*	0.71 *7*	^{88}Y(106.65 d) - 1836.063, 898.042, 850.647
2750.97	1.38 *5*	^{38}S(170.3 m) - 1941.944, 1745.77, 1692.420
2751.852 *6*	23.28 *18*	^{66}Ga(9.49 h) - 1039.231, 833.537, 2189.631
2754.028	99.944 *4*	^{24}Na(14.9590 h) - 1368.633, 3866.19, 996.82
2845.9 *8*	0.047 *4*	^{142}Pm(40.5 s) - 1575.85, 641.4, 2384.3
2938	0.24 *4*	^{26}Al(7.17×10^{5} y) - 1808.65, 1129.67
3092.7 *2*	3.0 *3*	^{89}Nb(1.9 h) - 1627.20, 1833.46, 2572.3
3383.6 *5*	0.06 *3*	^{150}Tb(3.48 h) - 638.050, 511, 496.242
3817 *2*		^{150}Eu(12.8 h) - 333.971, 406.52, 1165.74
3836 *2*		^{150}Eu(12.8 h) - 333.971, 406.52, 1165.74
3846 *2*		^{150}Eu(12.8 h) - 333.971, 406.52, 1165.74
3866.19	0.052 *4*	^{24}Na(14.9590 h) - 1368.633, 2754.028, 996.82
3927 *2*		^{150}Eu(12.8 h) - 333.971, 406.52, 1165.74